State of Colorado Lean Program Office Progress Report: Pursuing Effective, Efficient and Elegant Government Services
December 2013

LEAN PROGRAM OFFICE
THE GOVERNOR'S OFFICE OF STATE PLANNING AND BUDGETING

STATE OF COLORADO

OFFICE OF STATE PLANNING AND BUDGETING
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John W. Hickenlooper
Governor

Henry Sobanet
Director

December 2013

Dear Reader,

Thank you for taking the time read our report. We are excited to tell you about the work across State government to develop a culture that focuses on continuous improvement in meeting customer and citizen needs.

We have been working to achieve Governor John Hickenlooper's vision of a government that is more efficient, effective and elegant by making customer-focused improvements, utilizing the expertise and knowledge of those who best know these processes.

The idea of an efficiency project began with a fair bit of skepticism on my part. I had been through or watched prior efforts that produced results but often far less than promised. I knew from experience that merely asking people to just get "better faster cheaper" was a dead end.

In July 2011, I was invited to a Lean training at the Denver Health Medical Center, where they had developed skills and an internal team over 7 years. Their CEO at the time, Dr. Patty Gabow, gave remarks that were truly inspirational. By the end of the second day, I saw how this could work in State government. The foundational ideas are customer service and eliminating waste (time, money, paper, extra steps, re-work, etc.) In the midst of a large budget shortfall, we could still take steps to make the customers of state government a priority.

These ideas really excited me. I was well aware of how customers, including myself, feel when they get bad or delayed service from government agencies. Meanwhile, I was moved by the principles of the Toyota Motor Corporation: "Waste is disrespectful of humanity because it squanders scarce resources; and

waste is disrespectful of workers because it makes them do work that has no value."

I made a proposal to Governor Hickenlooper to use half of the remaining $5 million of stimulus money to start a project out of the Office of State Planning and Budgeting. We also used some of the existing OSPB budget and some donated money to build the team and hire our consultant.

Though we have many successes documented in this report, we are particularly proud of one project in particular: the tax pipeline project. A state audit found the potential for large savings and efficiencies in how paper tax forms are processed. Over time, two departments became responsible for the process and it became something that was taking too long and costing too much. As we parsed out Lean resources, this project was a priority, but past discussions on the subject indicated it would take a serious effort; the initial meetings were characterized by mistrust and turf protection.

Once the right team was assembled and trained, the Lean process unfolded and eventually came to the point where the wasted time, money, and steps were obvious. People in the meeting knew their own jobs and those of other colleagues were on the line. Yet they still made the recommendations. Upon hearing about this, the Executive Directors of the two departments, Barbara Brohl (Department of Revenue) and Kathy Nesbitt (Department of Personnel and Administration) came to the next day's meeting to thank the employees and to commit assistance to find work elsewhere in State government where there were existing vacancies. While this project was exemplary, the larger point is these committed public servants did the right thing without this promise at the front end.

Once completed, this project will permanently save $2 million in cash savings every year. And we will have shrunk a process that took nearly 30 days down to one or two.

Moving forward from these accomplishments, we are also working to provide an ongoing training program to equip employees with the right information and tools to support a systematic, comprehensive and sustainable transformation of how customers interact with and receive Colorado State government services. The “there” for this initiative is that it keeps going and keeps adding value.

We hope you enjoy the report as much as we have enjoyed this project!

Sincerely,

Henry Sobanet

Director

Dedication

We dedicate this publication to the memory of Tom Clements. Mr. Clements was the Executive Director of the Colorado Department of Corrections when he was killed on March 19, 2013.

Mr. Clements was directly involved in and passionate about his department's Lean and process improvement efforts.

Mr. Clements can be seen leading his team's first work on Lean projects at the statewide kickoff event in the picture on page 18.

Forward by Ken Miller

The current problems plaguing government performance nationwide seem almost insurmountable:

- Rising costs
- Reduced revenue
- Slashed budgets
- Low morale
- Low customer satisfaction
- Long lines
- Huge backlogs
- Critical mistakes
- Failed IT projects
- Labor management strife

So how do you even begin to solve all these problems? The State of Colorado offers us hope. Colorado is solving all these problems by recognizing that they are all symptoms of one problem: capacity. Simply put, government does not have the capacity to do all it needs to do or all its citizens want it to do. The demands on government far exceed the capacity of government, which in turn leads to budget shortfalls, long lines, low morale and all the other problems from the list above. To transform government, we need to increase its capacity — to allow it to deliver more value to its citizens with decreasing resources.

To demonstrate the wisdom and impact of Colorado's Lean Program, let me offer an analogy I use in my book Extreme Government Makeover. I would like you to visualize the work of government as a set of water pipes. For example, a pipe that distributes food stamps or environmental permits, court orders, adoption placements, defense contracts, etc.

At one end is the faucet — that's the demand. The faucet is turned on and the water flows through the pipe, coming out the other end for the recipient to drink. The work of government is the pipes. What's happening today is simple to understand: the pipes of government have stayed the same size or become narrower, while the faucet has been cranked wide open.

For example, in human services alone (food stamps, unemployment, child care, etc.), the demand has increased significantly while the capacity of the pipes, (staff size) have been shrinking. What happens when we push more water through narrower pipes? Pressure! Which is what everyone in government is feeling. Employees, managers, elected officials all feel the pressure of trying to do outstanding work for the citizens with fewer and fewer resources.

Rather than complain about the deluge of water and the diminishing resources, the State of Colorado rolled up its sleeves and went to work on the area it could control — the capacity of the pipes — that is, how efficiently customers of state government processes flowed through the pipes. And as the examples in this report demonstrate, the pipes of government are rarely short, straight pathways. No, government pipes instead tend to be kinked up, gummed up, twisted, contorted messes. What used to be a one day three step process years ago has evolved into a 9 month 15 step odyssey. And that odyssey is expensive. What's important to point out, and what I believe is one of the great features of Colorado's Lean Program, is that there is no one to blame for this complexity. No one intentionally set out to make government processes cumbersome and complex. Rather, they evolve this way over time. The pipes are kinked up by 20 years of conflicting laws, rules, CYA, specialization, reorganizations, cost-cutting and abandoned technology projects. Each new kink slows the flow and reduces capacity.

So if capacity is the problem and the pipes are the culprit, then what is the solution? How do we get more water to move through the pipes? Straighten the pipes. Speed the flow. The faster the water moves through the pipes, the more we can get done at less cost. When we study the pipes and find ways to remove the kinks that have evolved and compounded over twenty years, we can move customers through the process significantly faster, at less cost and with better

quality. Agencies are left with streamlined processes with more capacity and more agility to meet changing demands. The goal is short, straight, flexible pipes. This is the Colorado story.

So transforming government is essentially a plumbing problem. Where do we find all the plumbers? As Colorado has demonstrated — there are thousands of plumbers right inside state government more than willing to work on projects to straighten the pipes they use to serve their customers. And as the projects detailed in this report show — these employees have amazing ideas that are radically transforming how government operates. Colorado's Lean Program has demonstrated that the employees of state government are not the problem: they are the solution.

I've watched the Colorado Lean Program with delight. While other states have jumped on fads or tried to cut corners, Colorado has embraced a mindset, a strategy and a method that allows it to systematically deliver better value to taxpayers. They are doing the right thing — fixing the processes of government, the right way — by engaging the hearts and minds of employees, for the right reason — to make government work for the citizens of Colorado. I hope you will commend the amazing results they have accomplished and then challenge them to do even more — I guarantee they are up for it.

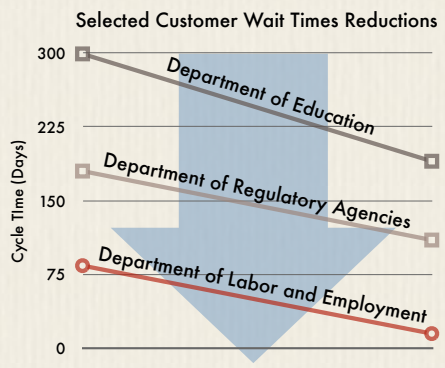
Ken Miller

Author of Extreme Government Makeover: Increasing our capacity to do more good and We Don't Make Widgets: Overcoming the myths that keep government from radically improving.

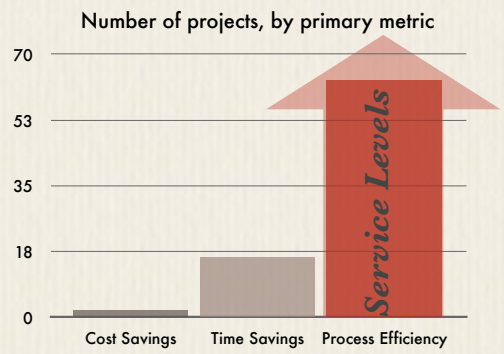
Highlights

Governor John Hickenlooper and his administration have developed innovative approaches for actively engaging Coloradans on the improvements they want to see in their state. Since taking office in 2011, Governor Hickenlooper has launched several initiatives oriented around gathering the input and collaboration of many stakeholders.

The Lean Program was designed as a centrally coordinated and resourced improvement initiative employing proven management and process improvement methodologies. The Program, sponsored by the Director of the Office of State Planning and Budgeting (OSPB) and reporting to the Governor's Budget and Efficiencies Committee focused on creating sustainable and independent capability to provide customer-focused improvements, utilizing the expertise and knowledge of the State's workforce.



From October 2011 through June 2013, OSPB directly supported 81 projects in 16 executive branch departments to improve government processes, with another 60 to 70 projects completed by departments. OSPB also has provided training for more than 2,400 state employees in Lean tools and practices with the goal of transforming the mindset from one of "this is how we've always done it" to "how can we do it better?"



Process improvement projects were categorized into three primary types: mission critical, customer service and support services. Projects focused on improving key metrics with potential to demonstrate a return on investment for the program on a statewide level, including costs saved or avoided, time saved and process efficiency.

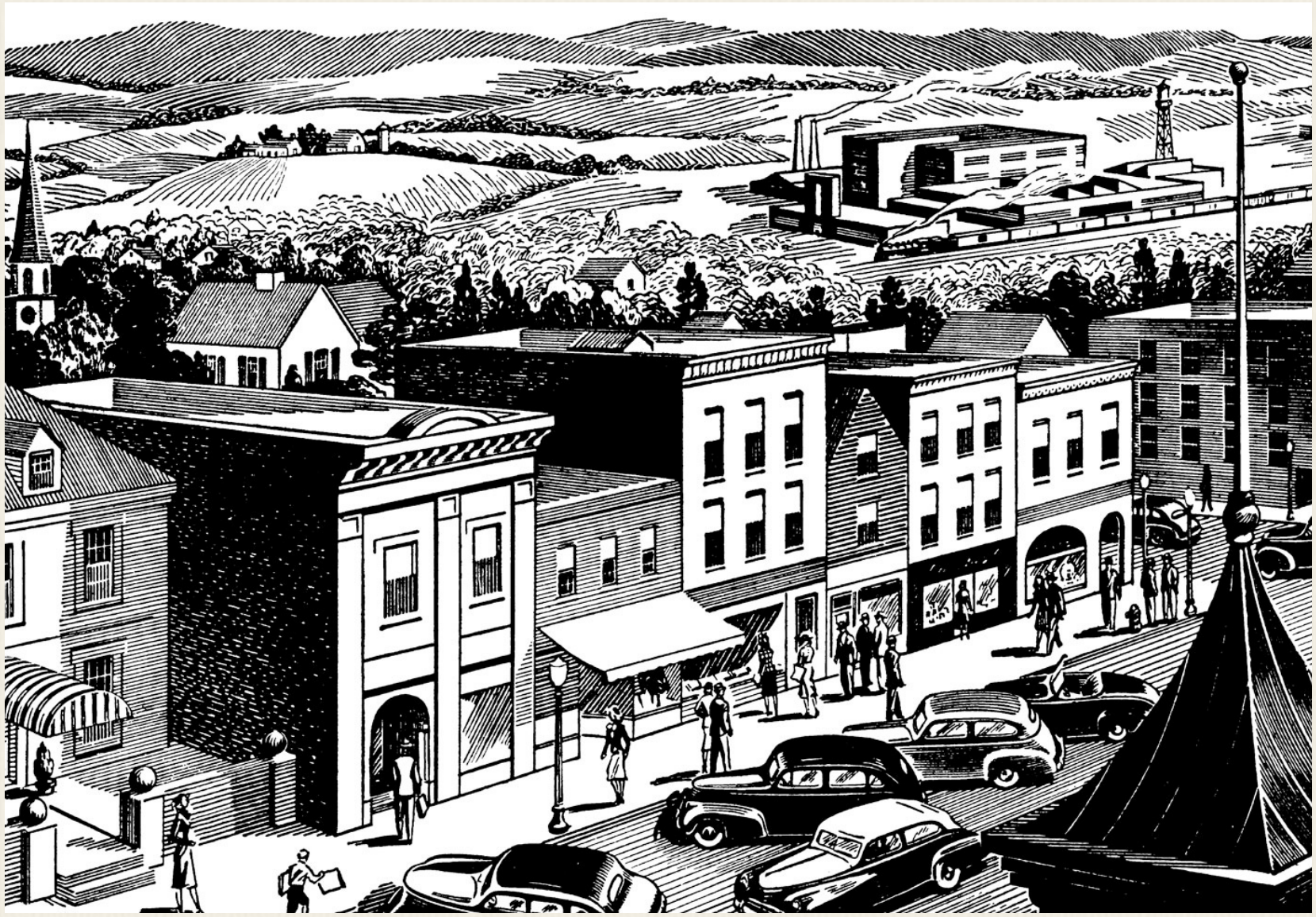
Examples of successful projects include:

- Examining the process by which educator license investigations are conducted in the Department of Education carved off more than 100 days from the resolution cycle for new cases.
- Scrutinizing the process for patients awaiting admission for treatment at the Colorado Mental Health Institute at Pueblo resulted in a 64% reduction in wait periods.
- Studying the steps required for businesses to receive reimbursement payments from the Department of Labor and Employment reduced the overall time from 84 days to 15 days.

Building on the successes achieved with the Lean Program, OSPB is moving forward to support enhanced and integrated departmental performance management and planning methods to focus on strategic goals and priorities that are consistent with the statutory charge of each department, and strategies for enhancing productivity, improving efficiency, reducing costs, and eliminating waste in the processes and operations that deliver goods and services to taxpayers and customers of state government.

CHAPTER 1

Overview



The program, sponsored by the Director of the Office of State Planning and Budgeting and with oversight by the Governor and selected members of the cabinet, led 81 projects across 16 distinct executive branch departments with a total budget of $2.7 million between October 2011 and June 2013.

The State of Colorado

Colorado is a dynamic and vibrant state, home to more than 5.1 million people running several key industries with an entrepreneurial and innovative spirit. Recent reports show that:

- Colorado is ranked the second best state to start a business and seventh among the best states for business *(CNBC, 2013)*
- Colorado has the best labor supply in the nation (Forbes, 2012)
- Colorado has had the fourth fastest job growth in the nation since job growth resumed after the recession (Bureau of Labor and Statistics, 2013)
- Colorado is ranked the 3rd best place to live in 20 years (U.S. News & World Report, 2012)

The State government provides many services to Coloradans through three branches of government: legislative, judicial, and executive. Executive branch agencies overseen by governor-appointed executives and elected officials and over 30,000 state employees dedicated to public service operate a diverse range of programs. The State has a General Fund and State Education Fund budget of $9.2 billion for FY 2013-14, supporting critical services for Coloradans.

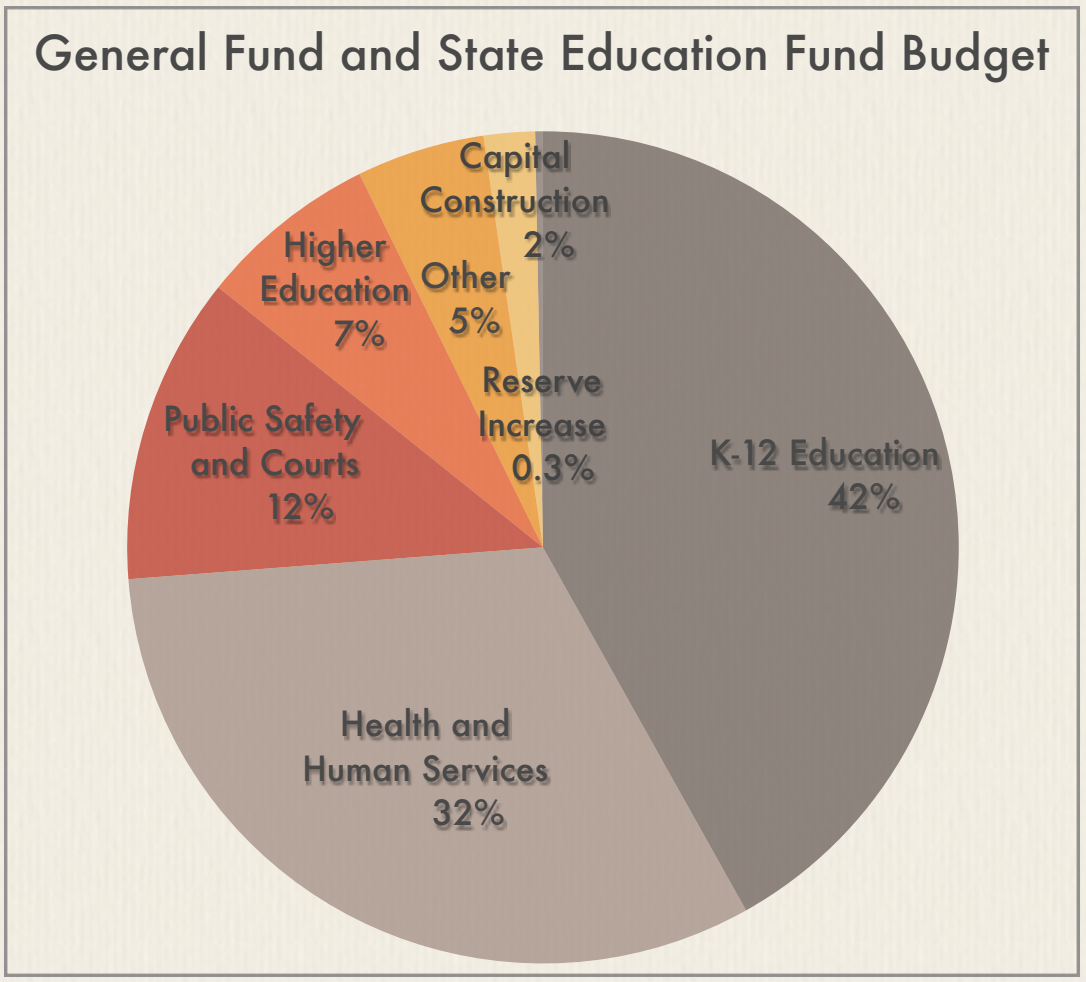
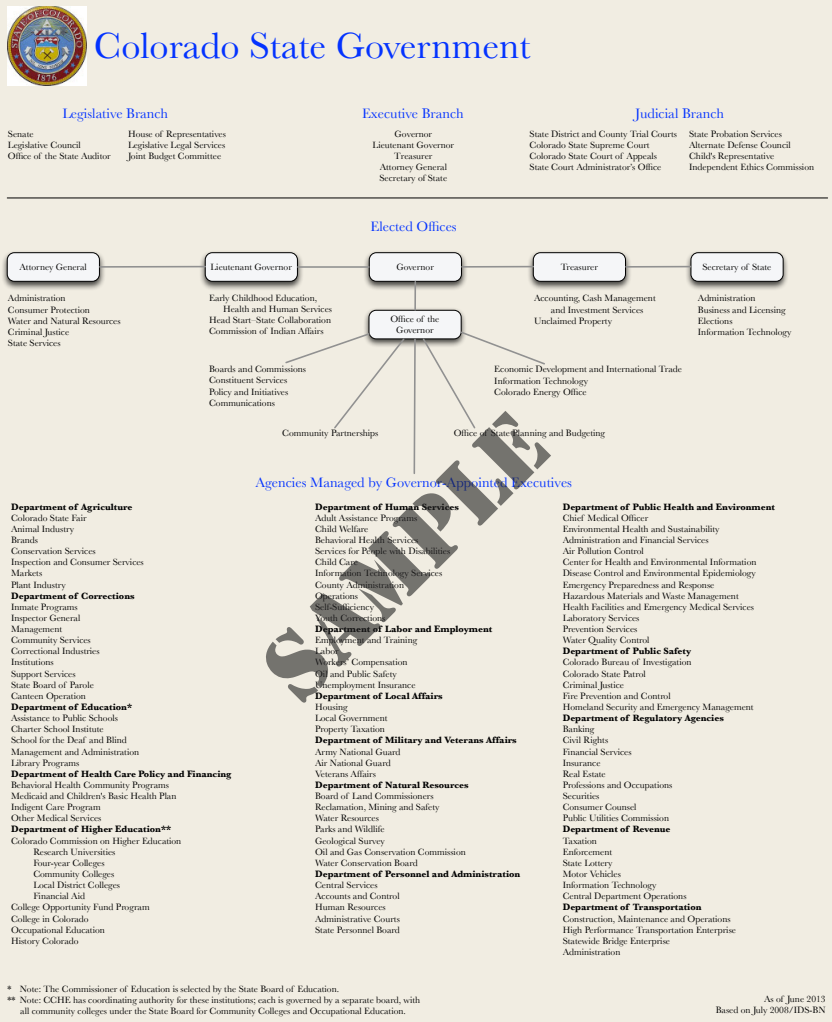


Illustration 1.1, shown below, depicts the three branches of the Colorado State government with details provided for the agencies managed by governor-appointed executives in the executive branch. For each executive branch department, major divisions and programs are listed to allow comparison to the organization of other state governments.

ILLUSTRATION 1.1 State Government Organization Chart



Please refer to Appendix A for the State Government Organization Chart

Statewide Initiatives

Governor John Hickenlooper and his administration have developed innovative approaches for actively engaging Coloradans on the improvements they want to see in their state. Since taking office in 2011, Governor Hickenlooper has launched several initiatives oriented around gathering the input and collaboration of many stakeholders. These initiatives include: Colorado Blueprint, TBD Colorado and Cutting Red Tape in Colorado State Government.

Collaboration informs conversations among Coloradans about some of the biggest issues facing the state. The Colorado Blueprint economic development initiative involved more than 5,000 Coloradans who participated publicly and more than 8,600 who provided input through an online survey. Likewise, the TBD Colorado effort included 70 community meetings and more than 1,200 participants throughout Colorado.

From a Lean Perspective

"Value is anything the customer is willing to pay for in the private sector," said Mike Nugent, chief performance officer with the Department of Public Health and Environment. "We don't charge for services, so value is harder to define."

Please see end note for full interview

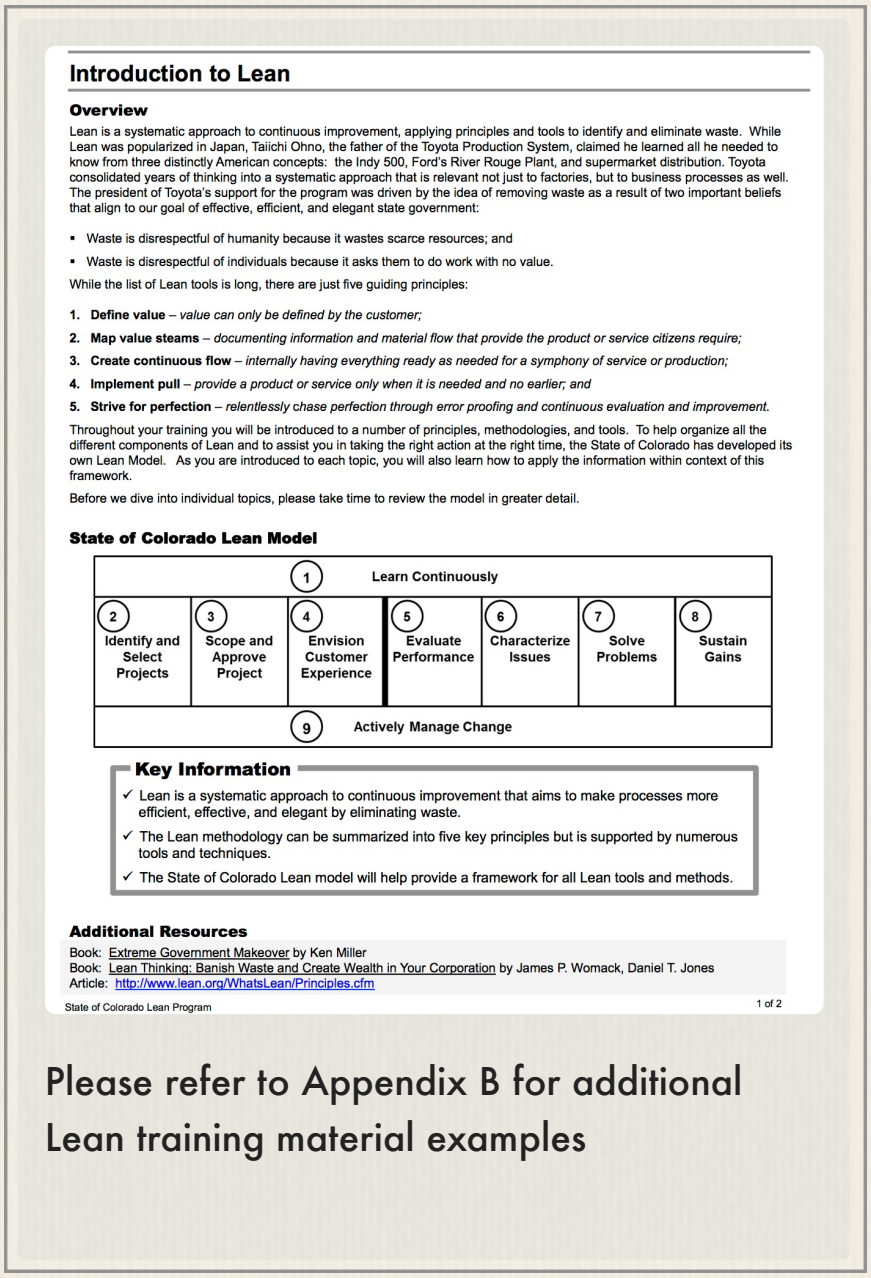
Restoring faith in good government and providing greatly improved services to Colorado citizens means engaging service providers and recipients to understand and develop targeted and meaningful change.

"With public sentiment, nothing can fail; without it, nothing can succeed."
– Abraham Lincoln

The Governor's Office and the Office of State Planning and Budgeting (OSPB) considered the information and perspective offered by Coloradans through these initiatives and coordinated with leaders of complementary improvement initiatives in State departments to multiply the impacts of work in progress. As part of the Cutting Red Tape in Colorado State Government initiative, the State hosted a series of roundtables where business organizations, associations, advocacy groups, public policy groups, academia members, local government officials and non-profit organizations spoke to senior state government executives about the realities of red tape and regulatory agencies. These conversations revealed several key themes, including a need to address the following:

- change in government culture to focus on customer service;
- regulatory inefficiencies and delays; and
- greater coordination among federal, state and local agencies.

Using a toolbox of process improvement techniques to transform state programs into something that could be called efficient, effective and elegant as Governor Hickenlooper set out to create when he took office, OSPB's Lean Program directly addresses the themes, needs and suggestions provided by Coloradans on how best to improve government services.



Introduction to Lean

Overview

Lean is a systematic approach to continuous improvement, applying principles and tools to identify and eliminate waste. While Lean was popularized in Japan, Taiichi Ohno, the father of the Toyota Production System, claimed he learned all he needed to know from three distinctly American concepts: the Indy 500, Ford's River Rouge Plant, and supermarket distribution. Toyota consolidated years of thinking into a systematic approach that is relevant not just to factories, but to business processes as well. The president of Toyota's support for the program was driven by the idea of removing waste as a result of two important beliefs that align to our goal of effective, efficient, and elegant state government:

- Waste is disrespectful of humanity because it wastes scarce resources; and
- Waste is disrespectful of individuals because it asks them to do work with no value.

While the list of Lean tools is long, there are just five guiding principles:

1. **Define value** – *value can only be defined by the customer;*
2. **Map value steams** – *documenting information and material flow that provide the product or service citizens require;*
3. **Create continuous flow** – *internally having everything ready as needed for a symphony of service or production;*
4. **Implement pull** – *provide a product or service only when it is needed and no earlier; and*
5. **Strive for perfection** – *relentlessly chase perfection through error proofing and continuous evaluation and improvement.*

Throughout your training you will be introduced to a number of principles, methodologies, and tools. To help organize all the different components of Lean and to assist you in taking the right action at the right time, the State of Colorado has developed its own Lean Model. As you are introduced to each topic, you will also learn how to apply the information within context of this framework.

Before we dive into individual topics, please take time to review the model in greater detail.

State of Colorado Lean Model

Key Information

- ✓ Lean is a systematic approach to continuous improvement that aims to make processes more efficient, effective, and elegant by eliminating waste.
- ✓ The Lean methodology can be summarized into five key principles but is supported by numerous tools and techniques.
- ✓ The State of Colorado Lean model will help provide a framework for all Lean tools and methods.

Additional Resources

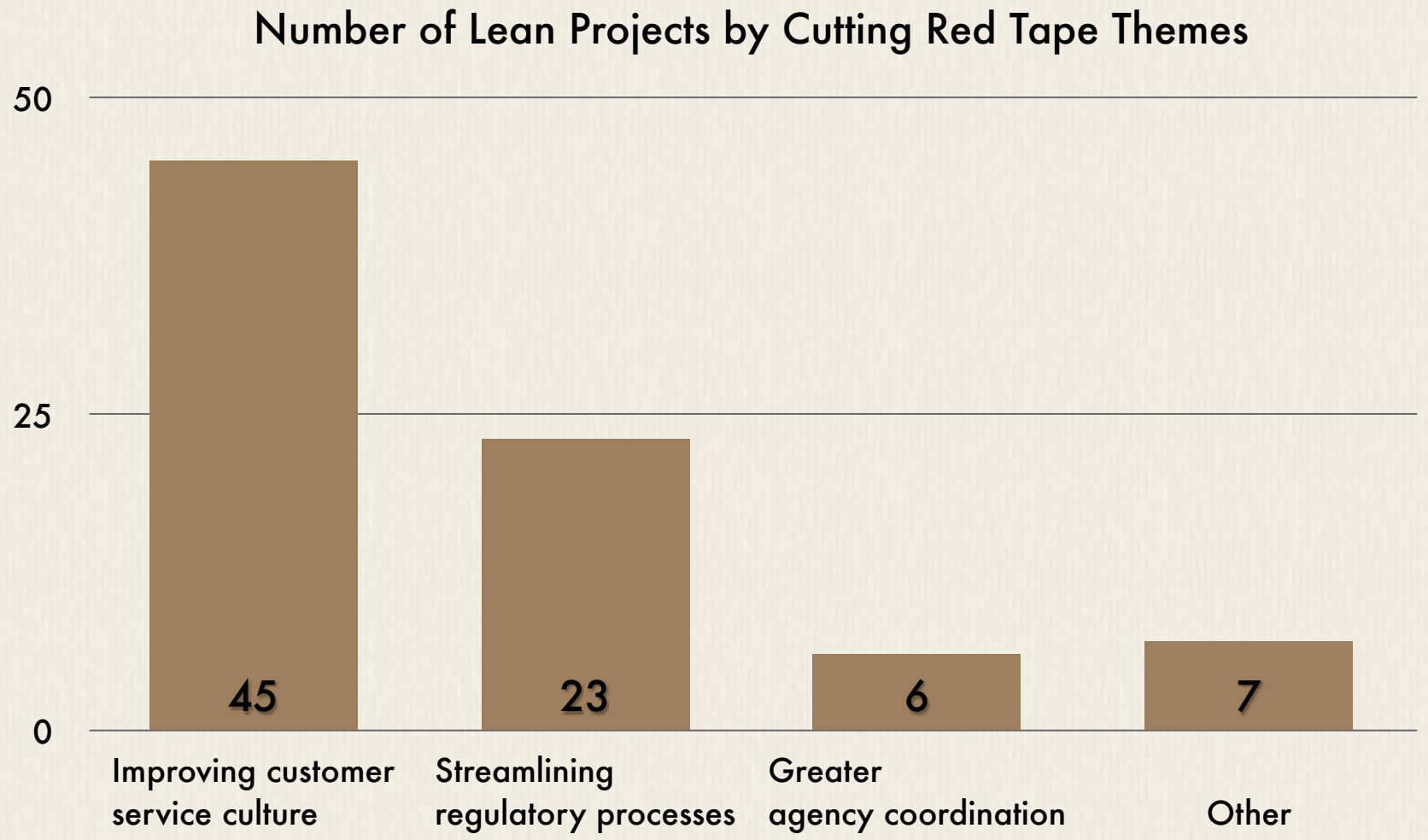
Book: Extreme Government Makeover by Ken Miller
Book: Lean Thinking: Banish Waste and Create Wealth in Your Corporation by James P. Womack, Daniel T. Jones
Article: http://www.lean.org/WhatsLean/Principles.cfm

State of Colorado Lean Program 1 of 2

Please refer to Appendix B for additional Lean training material examples

As described in the training material provided to state employees, Lean is a systematic approach to continuous improvement, applying principles and tools to identify and eliminate waste. The excerpt from the training material included in Appendix B provides a more thorough definition.

With a focus on the customer's perception of what impediments there are to getting the best service, process improvement projects set out to transform and improve the services provided to Colorado citizens, businesses, and other customers.



"While immediate one-time fixes are important, and can certainly provide limited relief, the longer term goal must be to address the root causes of the problem of red tape, and to avoid persistent and recurring governmental inefficiencies."
– Cutting Red Tape in Colorado State Government

End note:

Though Lean process improvement was born as a private-sector philosophy, its benefits are plentiful for both the public and the employees working in state government.

But first, the mindset that Lean is a way to reduce costs must be overcome, and those participating in the process must see it as a way to maximize value for their customers and eliminate waste.

"Value is anything the customer is willing to pay for in the private sector," said Mike Nugent, chief performance officer with the Department of Public Health and Environment. "We don't charge for services, so value is harder to define."

The department had to create a safe environment where employees could candidly talk about the work they were doing and how it could be improved. The staff was able to question long-standing assumptions before they could re-engineer a department's process and redirect its programs into more value-enhancing activities.

"It requires a translation culturally, and people need to feel like Lean is not a cost-cutting, head-reduction approach," Nugent said. "It really needs to be promoted as a way to better accomplish our mission."

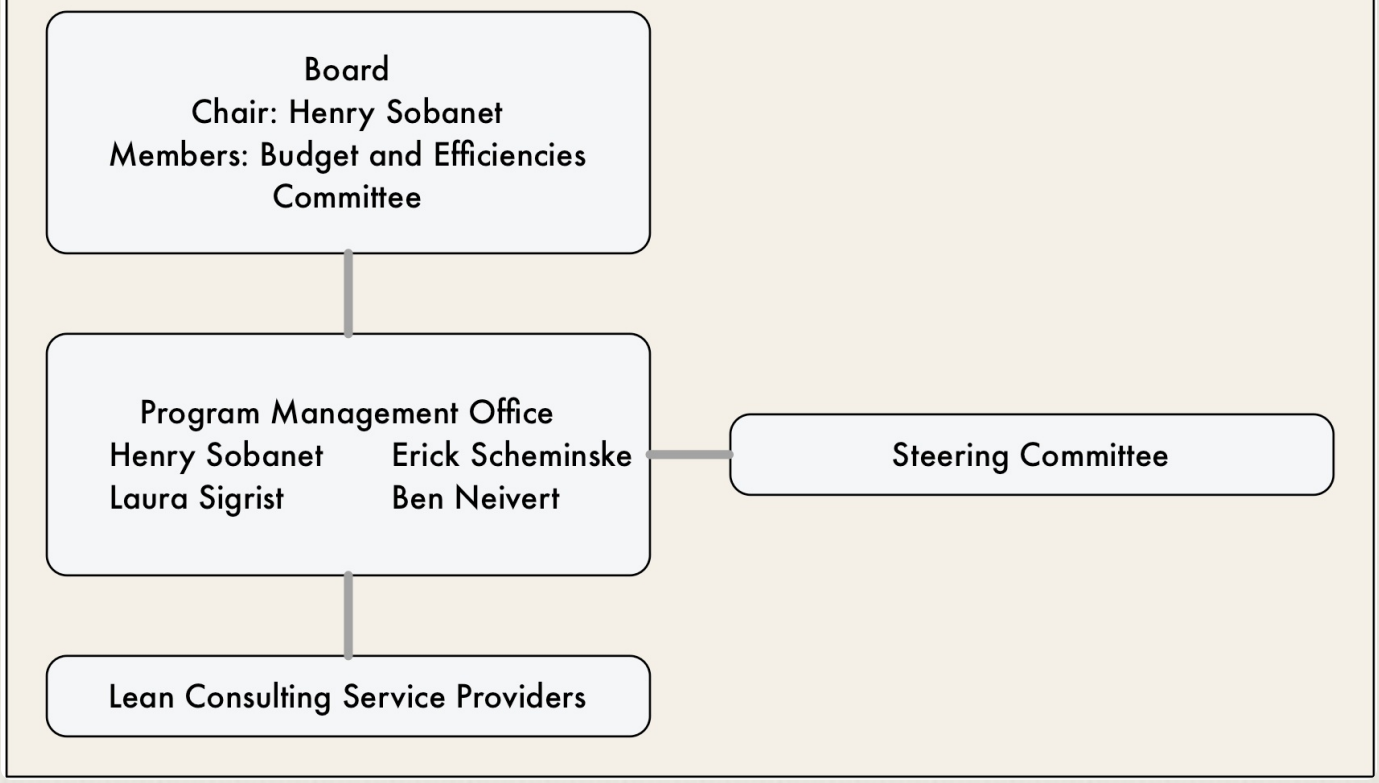
Historically, the government has met budgetary challenges by cutting programs and services or raising taxes — solutions that have become unacceptable in the public sector.

"There's not an appetite for any of those approaches, so Lean is a way to find a way forward in meeting the ever-increasing public demands for services without increasing our resources," Nugent said.

Program Structure

The Lean Program was initially designed as a State-run, contractor-supported strategy employing proven management and process improvement methodologies. The Program, sponsored by the Director of the Office of State Planning and Budgeting and reporting to the Governor's Budget and Efficiencies Committee consisting of the Governor and key cabinet members, focused on creating sustainable and independent capability to provide customer-focused improvements, utilizing the expertise and knowledge of the State's workforce.

ILLUSTRATION 1.2 **Lean Program Organization Chart**

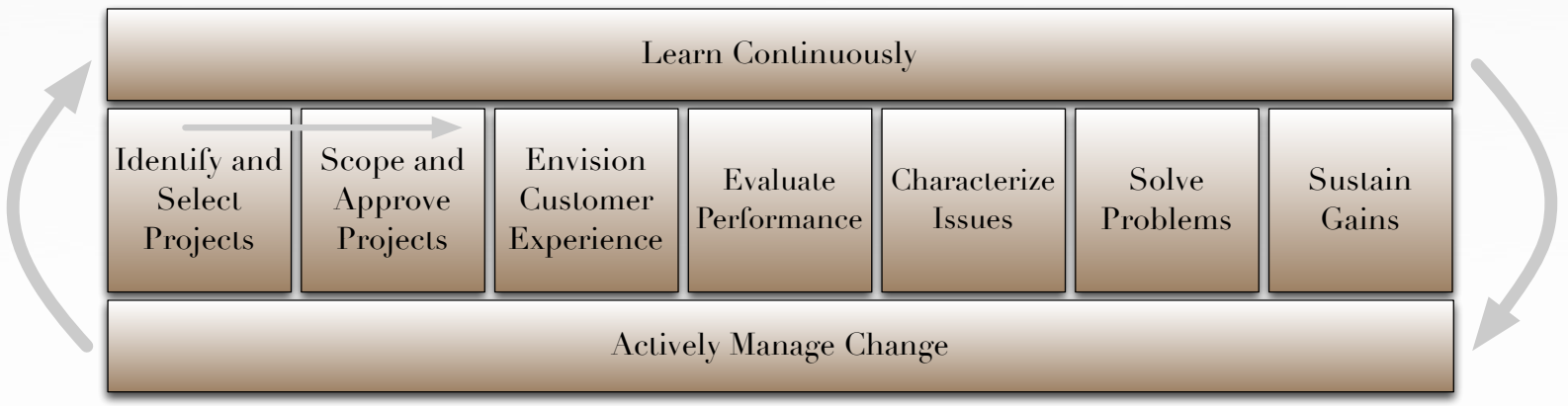


Consultants and external experts provided subject matter expertise to help develop the best possible vision for targeted value streams and processes, and partnered with state employees to prepare for and deliver improvement events. State employees also received coaching to ensure their ongoing and independent

success in deploying Lean tools and ability to share the Lean culture by training others.

The Program Management Office partnered closely with departments and executive leadership to support the development of a culture that focuses on continuous improvement driven by customer and citizen needs. The Program Management Office was responsible for the strategic deployment of support to state departments.

DIAGRAM 1.1 **State of Colorado Lean Model**



Lean projects are identified and developed in line with the Lean Model in the nearby graphic. This model depicts the sequence of activities and is used to organize predefined process evaluation tools to speed department adoption.

The core idea of Lean process improvement, as implemented in Colorado, is to maximize customer value while minimizing waste. The goal is to change the way an entire organization thinks and acts, while building on the knowledge and expertise of its employees to establish customer-focused improvements. Simply

identifying activities that do or do not add value often results in immediate improvements.

"One of the inspiring values of Lean is everybody can contribute," said Henry Sobanet, OSPB's director. "Deep experience is one of the top priorities in understanding what you're working on. You really need to understand what your job is."

Lean Program Value Statement

To achieve Governor Hickenlooper's objective of creating a more efficient, effective, and elegant government, we need to examine and strengthen processes and empower our employees with the right tools they need to cultivate continuous improvement. The successful path forward is with a proven management system that will allow us to work together to enhance our vision of outstanding service, performance, and results. This program is not intended to be an exercise in resource reduction and we will treat state employees with respect and dignity throughout this process.

Since OSPB started the Lean Program, it has directly resourced 81 projects to improve government processes, with another 60 to 70 projects completed by departments. OSPB also has provided training for more than 2,400 state employees in Lean tools and practices with the goal of transforming the mindset from one of "this is how we've always done it" to "how can we do it better?"

Lean teams are organized into specific roles. Ground-level employees, who are tapped for their expertise in an agency's processes, receive about three hours of training and access to online modules.

"Making government more effective, efficient and elegant means listening to our state employees and learning from them how we can do better."
– Governor Hickenlooper, State of the State Address, 2011

"The biggest value of Lean isn't in the process improvements," said Reeves Brown, executive director of the Department of Local Affairs. "The biggest value is how it has empowered employees and makes them feel valued."

In order to provide a mechanism for communicating specific project goals and participants, a standard Lean project scope sheet was developed. The scope sheet, illustrated to the right, not only identifies key aspects of the project and helps keep project teams focused on outcomes but also provides an efficient way to collaborate with other departments and engage with external subject matter experts. The scope sheets identify project metrics that form part of the 30- and 60-day follow-up reviews.

ILLUSTRATION 1.3 Lean Project Scope Sheet

PROJECT OVERVIEW:
LEAN PROCESS IMPROVEMENT SCOPING DOCUMENT - PREPARATION GUIDELINES
VERSION SEPTEMBER 2012

Hint: Convert problem to process problem and prepare a SIPOC in concert with developing the scoping document.

PROJECT NAME:	Include an **Action Verb** (What we want to do) + **Noun** (What do we want to impact or improve?) "Reduce the number of days for new employee onboarding"		
DATE SUBMITTED:			
OPPORTUNITY STATEMENT: (Why is this important to the organization?)	• What is occurring, what is happening, what "pain" are we or our customers experiencing? What is wrong or not working? • When did this problem start? How long has it been going on? • Where does it occur? • How much, or what is the extent or magnitude of the problem?		
TARGETED OUTCOMES: (What will be achieved by working this project? Outcomes are informed by visioning process and interviews.)	• What are the **specific** outcomes we expect? An example might be "Reduce number of days to process a claim by 50%" • What will be different in the future? • What metrics will this project impact? Note: Deliverables may be listed here.		
STAKEHOLDERS AND RESOURCES:	**Names and Roles**		
Executive Sponsor:	The person who is accountable for the success (results) of the project		
Lean Project Leader:	The day-to-day leader of the effort (solution)		
Steering Committee:	Leaders from along the value stream who provide oversight and guidance to project; participates in vision phase and helps remove barriers to project success		
Core Team Members:	Try to keep team to 6-9 team members; make sure all process steps are represented by people who do the work		
Extended Team Members:	Subject matter experts or stakeholders who provide expertise, data or insight. These people are typically "on-call" during the project		
Advisory Committee Members	Typically a group of middle and senior-level leaders from along the value stream convened to support large-scale Lean projects; established by the executive steering committee who will clarify their responsibilities; not all projects will require an advisory committee		
Champion/Mentor:	Lean expert who will coach and mentor the project leader		
CUSTOMER GROUPS: (Note key segments here)	Who are the customers of this project? Who will be impacted by the project?		
PROJECT METRIC(S):	**Primary**	**Secondary**	**Consequential**
(Typical metrics include impact on quality, speed, and cost)	Typically lagging metrics that measure process outcomes and performance to customer requirements	Typically input or process metrics (leading); impacts that may be the result of the project but may not be project metrics	Typically unintended and intended consequences

SAMPLE

State of Colorado Lean Program 1

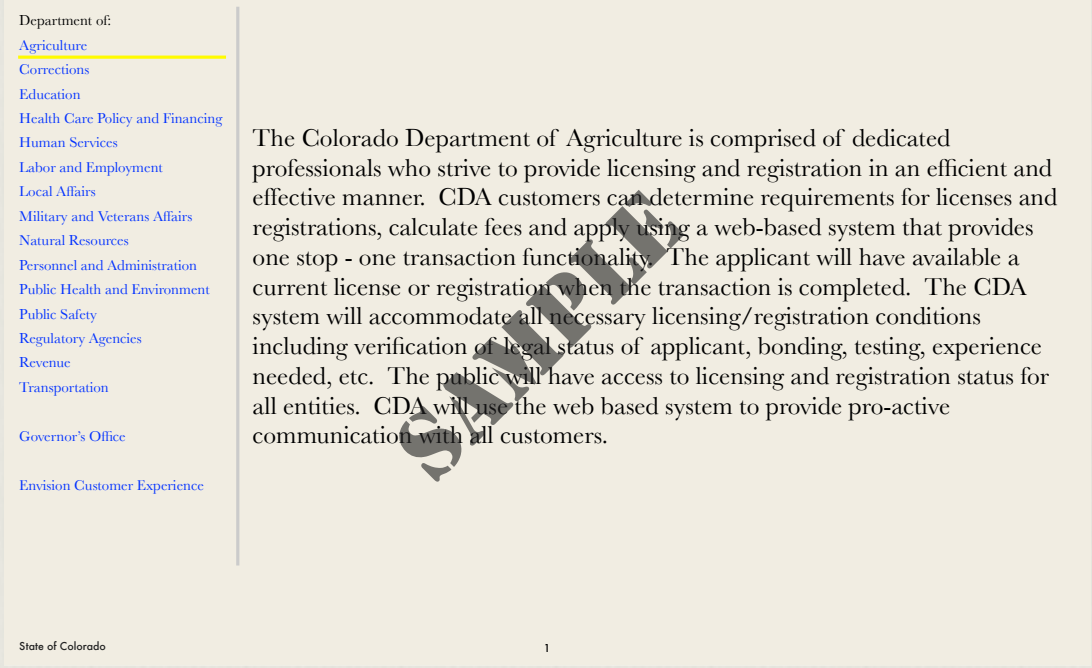
Please refer to Appendix B for full Project Scope Sheet

All projects begin with a vision session to define the department's customers and what kind of experience the customers should have. The subsequent multi-day, team driven event tears apart procedures followed in each department, helping employees to identify wasteful steps.

Lean team members identify each step in the process, whether it is renewing a driver's license or hiring a new employee. During this exercise, the team questions everything from whether a particular step is required by statute or if it is simply a superfluous layer added in the past by an administrator who is no longer with the department.

Questions also address whether the components of a process whether they add value to the customer. Steps that are not required or don't add value often can be eliminated on the spot.

ILLUSTRATION 1.4 **Vision Statements**



Agriculture License Consolidation

Department of:
Agriculture
Corrections
Education
Health Care Policy and Financing
Human Services
Labor and Employment
Local Affairs
Military and Veterans Affairs
Natural Resources
Personnel and Administration
Public Health and Environment
Public Safety
Regulatory Agencies
Revenue
Transportation

Governor's Office

Envision Customer Experience

The Colorado Department of Agriculture is comprised of dedicated professionals who strive to provide licensing and registration in an efficient and effective manner. CDA customers can determine requirements for licenses and registrations, calculate fees and apply using a web-based system that provides one stop - one transaction functionality. The applicant will have available a current license or registration when the transaction is completed. The CDA system will accommodate all necessary licensing/registration conditions including verification of legal status of applicant, bonding, testing, experience needed, etc. The public will have access to licensing and registration status for all entities. CDA will use the web based system to provide pro-active communication with all customers.

SAMPLE

State of Colorado 1

Please refer to Appendix C for a compilation of customer experience vision statements

During the initial Lean projects, consultants collaborated with employees, focusing on introducing the concepts and methodologies for continuous improvement, training employees and accomplishing an array of process improvements with real impacts to employees and customers.

Quickly achieving high-impact, visible results helps employees gain momentum and get excited about applying the Lean tools. To achieve that, projects are ranked by how easy goals are to reach and how big of an improvement they will make to the department.

Some projects take longer than others, but employees equipped with Lean tools often can make immediate improvements to a department's efficiency.

"You rip apart a process and if everybody sees you can fix it today or tomorrow, you just do it," Sobanet said. "You don't need any more than that."

It is critical to involve both long-time state employees, as well as those new to working in government. Involving a third party with subject matter expertise also is beneficial.

"If you do this only with people who've been here forever, you'll get what you've always gotten," said Barbara Brohl, executive director of the Department of Revenue. "If you only do it with people from the outside, they don't understand the nuances with processes and statutes."

From the OSPB National Survey

Internal resources, consultants and partnerships with businesses are the main resources used to lead projects and events.

Interviews with people who have completed Lean projects found that while many departments had employees who initially resisted the initiative, by the end of the project they were firm believers in the process.

"Lean takes processes that are crazy and streamlines and standardizes them," said Kathleen Newberg, Lean leader of the Department of Health Care Policy and Financing's (HCPF) strategy section. "Initially no one was suggesting projects, but as they heard it was actually working there are a significant number of people in the department who are coming up with ideas."

One of the reasons Lean works is it empowers employees to scrutinize processes, eliminate waste and maximize value. It is a collaborative effort toward continuous improvement and eradication of waste from all activities that can be achieved only when all employees embrace, adopt and use new processes.

As Newberg put it in materials she created for her department, "Lean is a journey, not a destination."

"The idea of Lean is that everyone comes to work with the mindset of continuous improvements," Newberg said.

The goal of HCPF's first project was to reduce the time it takes to hire an employee by 20 percent. Leaving positions unfilled was causing a negative ripple effect throughout the department because it increases the workload of employees who already are stretched thin.

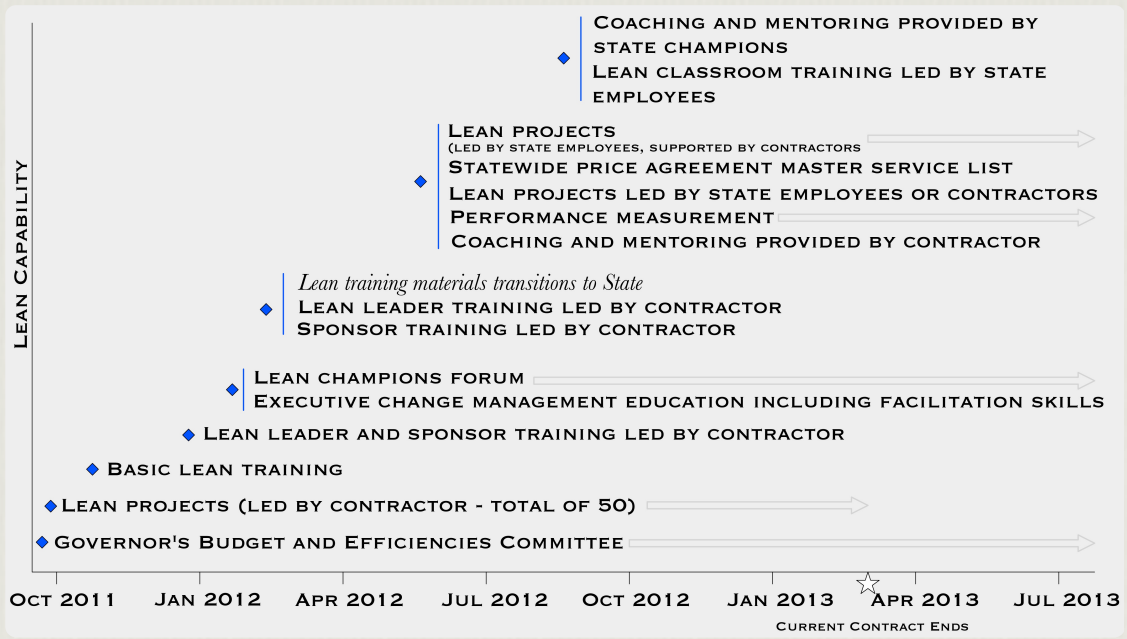
"There were a lot of paper processes because people like to print and hold onto paper," Newberg said. "There also were a lot of approvals required, but the paperwork would just sit on a manager's desk."

"In addition to striking rules and regulations, we are making government work more efficiently. Nothing illustrates the case better than our work with the Lean process."
– Governor Hickenlooper, State of the State Address, 2013

New training materials for human resources analysts and hiring mangers combined with the power of an electronic system already in place but not being used helped the department cut the time it takes to hire an employee 146 days to 60.

To support the transition of Lean principles and empower employees the program evolved over time from contractor led projects and training to state employee led projects and training. This progression is depicted in the illustration to the right.

ILLUSTRATION 1.5 **State of Colorado Lean Roadmap**



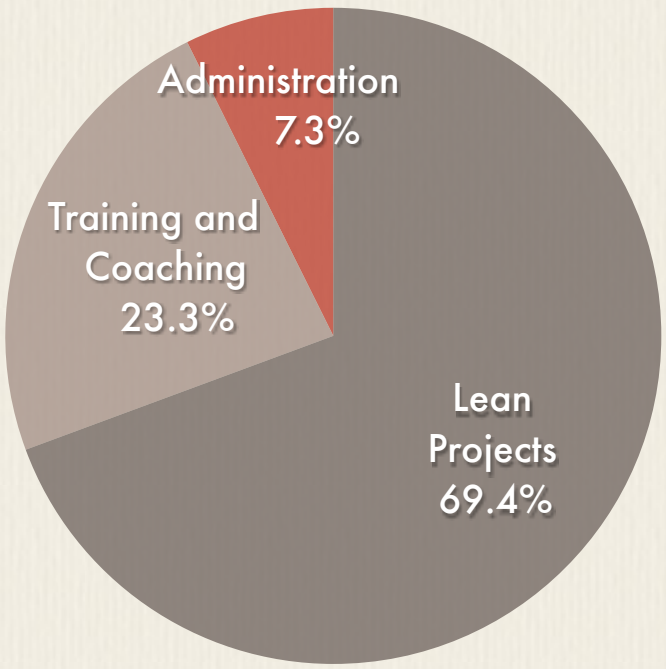
Program Budget

The Lean Program was designed as a centrally coordinated improvement initiative utilizing an initial investment of one-time funds from the American Recovery and Reinvestment Act (ARRA) State Fiscal Stabilization Fund, private contributions and existing state funds totaling $2.7 million. From program inception in October 2011 through its first formal performance period in June 2013, the Lean Program allocated resources to design and launch process improvement projects, develop and administer training and develop a coaching and mentoring program to ensure adoption and ownership by state employees. Priority was given to project, training, and coaching activities, with an emphasis on initiatives that resulted in improvements for Colorado's citizens and businesses.

From the OSPB National Survey

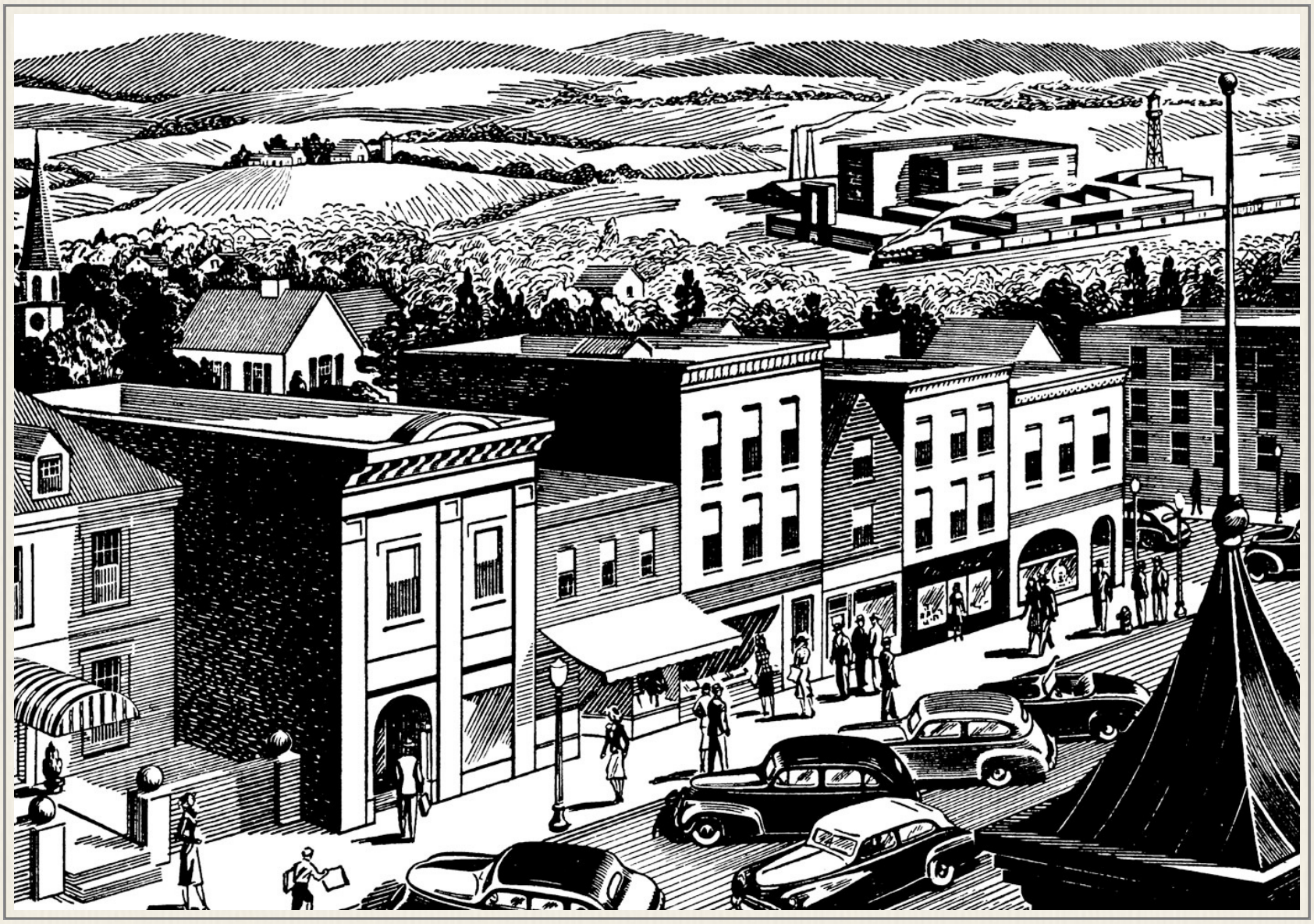
Around the US, funding for Lean is provided in many ways but primarily through individual department resource allocation, incorporating savings from prior implementation back into Lean activities and some resource allocation as part of the state budget.

Program Budget ($2.7 million)



CHAPTER 2

Implementation



Successful and rapid implementation was achieved through the application of key accelerators such as leadership, best practice, customer experience vision, inclusiveness and collaboration. In addition, extensive classroom and online training was paired with a coaching and mentoring program to ensure the success of newly trained Lean champions.

Implementation Accelerators

In deploying Lean as part of Colorado's ongoing continuous improvement program, several factors served as key accelerators to the success of the program:

- leadership;
- best practice;
- customer experience vision;
- inclusiveness;
- collaboration;
- training; and
- employees with a desire to fulfill their departments' missions.

From the OSPB National Survey

Based on our survey, the following elements appear necessary to building a successful culture of continuous improvement:

- Leadership and executive support/buy in
- Follow up and continuous communication
- Focus on outcomes
- Celebrate success and achievement

Instrumental to the success of the Lean Program was the executive leadership of Governor Hickenlooper and his cabinet. Governor Hickenlooper laid out a specific philosophy about transforming State government and directly supported the efficiency initiative that would be known as the Lean Program. This initiative, sponsored by the OSPB director and actively overseen by the Governor and key members of the cabinet, enjoyed widespread support from executive directors and their leadership teams. Critical to the continued efficacy of the program was the department leadership's commitment to sponsor projects and commit department staff to lead and participate in them.

In order to re-focus and streamline processes that may not have been changed significantly in decades, most projects began with a search for best practice, adapted to the government environment. Teams looked at other agencies, inside and outside of government, and spent time with subject matter experts to inspire a

better vision and way of delivering service. Using information and ideas spurred by investigation, employees redesigned processes to meet customer and statutory requirements rather than iterating small changes to existing processes.

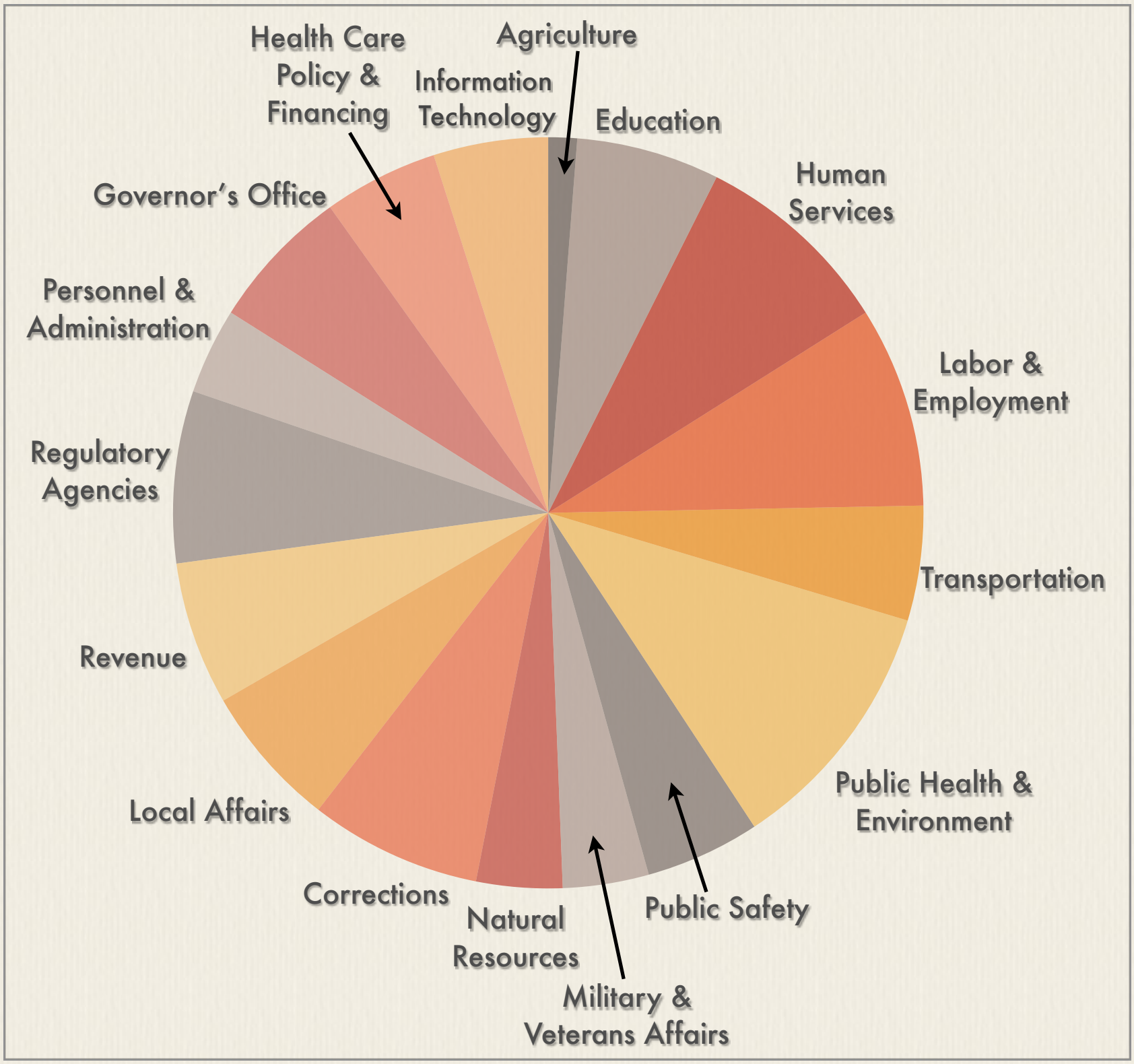
One of the most important principles of Lean is that value is defined by the customer. Keeping this in mind, at the beginning of each Lean project, the teams and their leadership met to develop a long-term vision for what customers should experience while interacting with State government via a particular process or service. This vision served to ensure that the customer's perception of value was clarified, there was a common vision of the customer experience along the value stream, and Lean teams' efforts aligned with customers' experiences.

The next accelerator was inclusiveness. A statewide kick-off event marked the first opportunity to invite State organizations to participate and collaborate with the Lean Program.

GALLERY 2.1 **Kick-off Event, November 15, 2011**

From that initial kick-off, the program was designed to be inclusive of as many departments as possible and avoid the "haves" and the "have nots". The motivation was two-fold: to open a wide front for process improvement efforts and to avoid any negative reactions by departments that felt deprived of resources. Instead of begrudging another department's success, departments were positioned to celebrate each others' accomplishments. The diagram on the next page depicts the distribution of projects across the executive branch departments.

Projects by Department



This cultural shift served to launch collaboration and multiply successes, particularly where results of one Lean project became a starting point for another department with a similar value stream. One of the biggest challenges in state government is the ability for departments to collaborate efficiently on improvements. Running a statewide program from the Governor's Office facilitated smooth solutions to resource challenges and allowed for a more comprehensive perspective on activities in the disparate organizations. As a result,

departments worked together on joint projects to address needs for common customers, participated in joint subject matter expert workshops and hosted conferences to share what they learned with other departments. Further discussion regarding collaboration follows in the next section.

Deploying a robust training and coaching program proved to be a critical factor in the adoption of the Lean Program. Colorado's Lean training program is covered in more detail in Section 3: Training and Section 4: Coaching and Mentoring.

Collaboration — Conferences and Key Learnings

Several conferences were held to share knowledge and experience among departments and promote cross-department collaboration. During these workshops, participants learned from key experts in industry as well as from each other about innovative approaches to improving service for operational matters, such as call and customer care center operations and hiring and onboarding new employees.

GALLERY 2.2 **Conferences**

Call Center Conference

Participants also collaborated to create a common customer experience vision. For example, representatives from 11 different State agencies representing key call centers worked together to leverage strengths from both internal and external best practices for call center operators, focusing on crucial improvements such as resolving customers' requests during the first call or contact, increasing critical information sharing among call operators and managing queue times.

Training

The Lean Program developed a robust fundamental training program, focused on key concepts crucial to successful and sustainable improvements. The training philosophy focused on three methods of learning: instruction (classroom and self-directed), coaching and mentoring, and "on-the-project" or experiential learning.

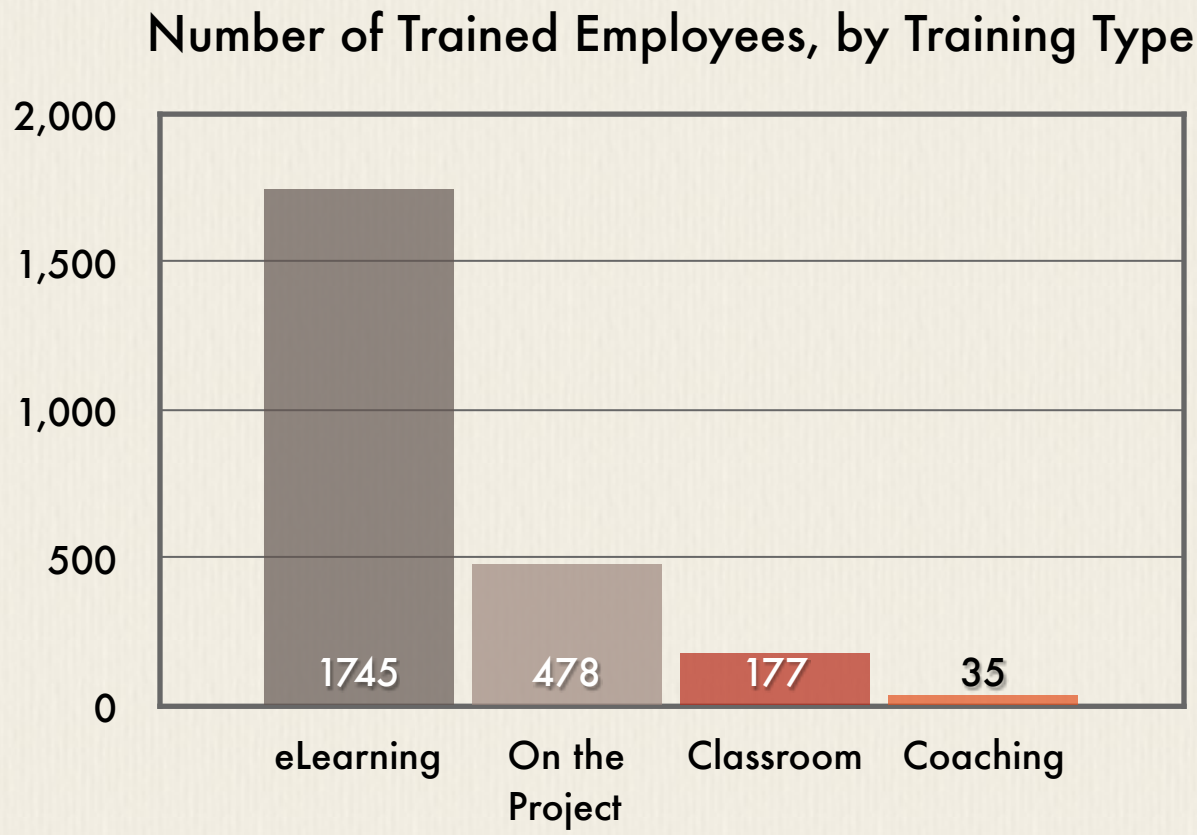
Customized for the government environment, classroom training and coaching sessions focused on the following topics and roles (examples or training material are included in the appendix):

- Lean Facilitation
- Meetings in a Lean Culture
- Lean Acceptance
- Lean Team Member
- Lean Project Leader
- Lean Sponsor
- Lean Manager
- Fundamentals of Change Management (for the Lean Environment)

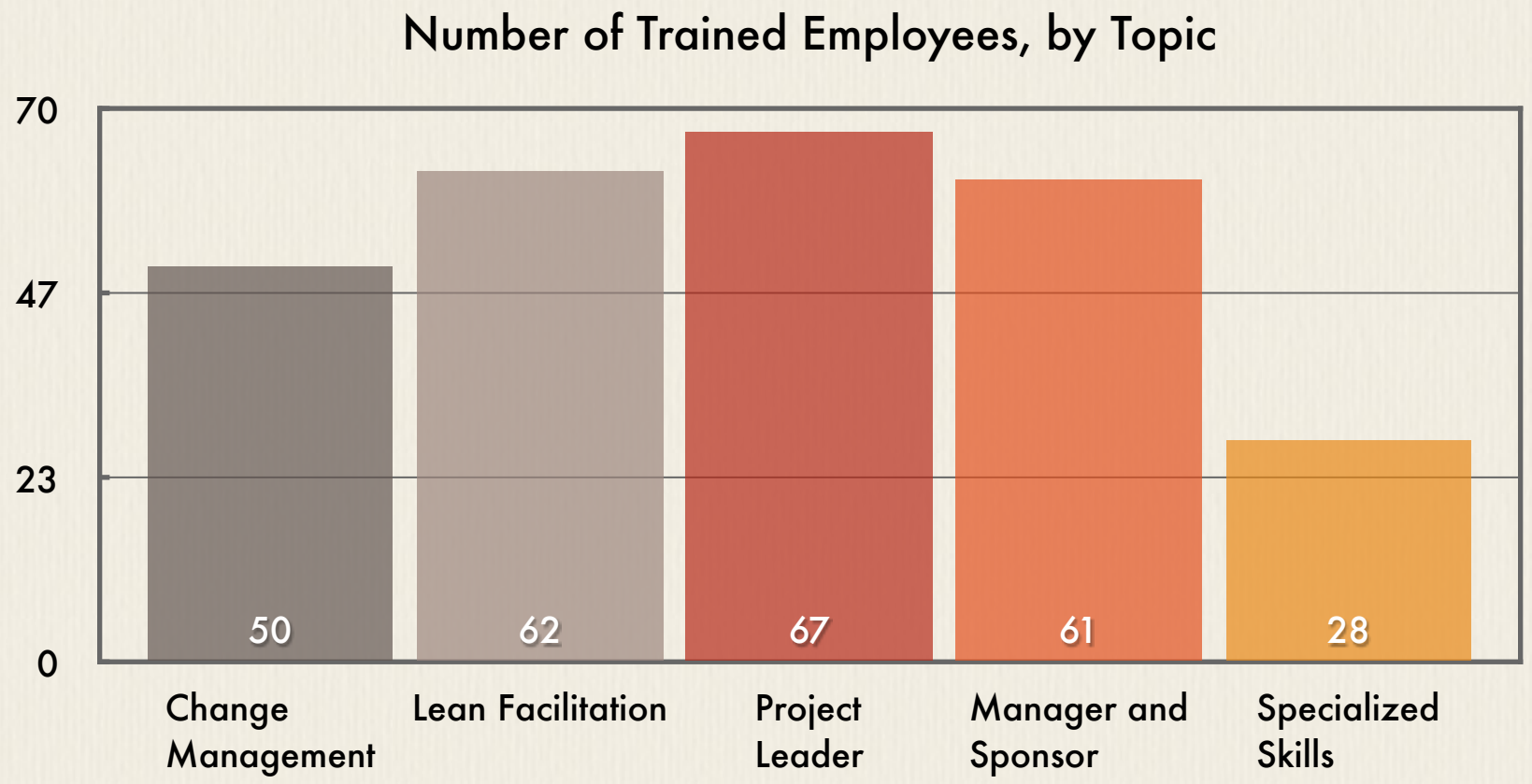
Additionally, employees accessed eLearning modules to cover general Lean concepts and fundamental change management and team leadership principles. Participants in each of these modes of training studied and explored opportunities to:

- identify process issues and eliminate or solve them;
- increase engagement with and knowledge about processes;
- improve participation and alignment with employees and team members; and,
- strengthen the confidence and competencies of team members when discussing or addressing process improvements.

In total, over 2,400 state employees have been trained on the Lean methodology, with nearly 700 receiving classroom instruction, individual coaching, or on-the-project training and experience.



Classroom sessions were oriented around knowledge sharing and skill development, with an emphasis on participation, practice and application. Employees representing all levels participated, from front line staff to executive directors.



Examples of the following Lean training materials are included in Appendix B:

- Lean Training Summary
- Classroom Training Agenda
- Classroom Presentation Material
- Template and Guide
- Reference Material
- Case Study

Please refer to Appendix B for Lean training material examples.

Coaching and Mentoring

To encourage and support a culture focused on continuous improvement, individualized coaching plans to mentor individuals interested in serving as Lean champions were created. Champions are the departmental strategic leaders for Lean thinking.

The coaching program capitalized on the experience of The North Highland Company, the consulting firm hired to guide agencies through projects. While all roles are vitally important to the success of a project, it is the Lean champion who steers the effort. Lean champions gain experience as project leaders as part of the development plan.

Lean champions learn how to prioritize projects, conduct vision sessions, and document lean events. They are able to work with employees at all levels of an organization and mentor new sponsors, project leaders and team members throughout the process.

ILLUSTRATION 2.1 Lean Champion Assessment and Scorecard

Lean Champion Assessment and Scorecard Version 1.5

Champion / Mentee: **Coach / Mentor:** **Date:**

Directions:
1. Use a check mark to indicate experiences, **X**= complete, **N/A**= not required.
2. Assess competency level for Tools and Methodology using key below.
3. Create development plan targeted at closing experience gaps.

Note: Items identified in **bold** below are mandatory Lean champion requirements.

___ **Conduct project prioritization session**
or
___ **Complete project prioritization training**

___ **Participate in a value stream visioning exercise**
___ **Conduct a value stream visioning exercise**
___ Train others on how to lead value stream visioning

___ **Participate in a Lean event**
___ **Facilitate a Lean event**
___ **Document a Lean event**
___ Coach Lean project leaders on their projects

Learn Continuously

___ **Complete Lean project leader pre-work and classroom training**
___ **Complete facilitation and change management training**
___ Utilize self-study materials (eLearning, case studies, best practices, etc., to continually develop base of knowledge
___ Conduct training courses for your department's sponsors and Lean project leaders

Tool and Methodology Application: assess competency level using key (**E** = Able to **E**xplain, **D** = **D**emonstrated Application, **T** = Proven **T**eacher)

Identify and Select Projects	Scope and Approve Project	Envision Customer Experience	Evaluate Performance	Characterize Issues	Solve Problems	Sustain Gains
Topics ___ Project Selection Process ___ Project Prioritization Matrix	Topics ___ SIPOC ___ Project Scoping	Topics ___ Gaining Customer Perspective and Feedback ___ Vision Statements	Topics ___ Value Stream Map ___ Lean Process Metrics ___ 8 Wastes ___ VA/NVA/B-NVA ___ 5 Government Process Pitfalls	Topics ___ Process Flow Diagram ___ Check Sheet ___ Histogram / Pareto ___ Cause & Effect / Fishbone ___ 5 Whys ___ Spaghetti Chart	Topics ___ 5S ___ Kaizen ___ A3 ___ Work Balancing ___ Product Family Matrix ___ Cellular Flow ___ Kanban	Topics ___ Visual Management Techniques ___ Mistake Proofing ___ Lean Daily Management ___ Sustainment Checklist

___ Develop and maintain stakeholder action plans
___ Develop and execute communications plan
___ Guide Lean strategy alignment and deployment activities within your department

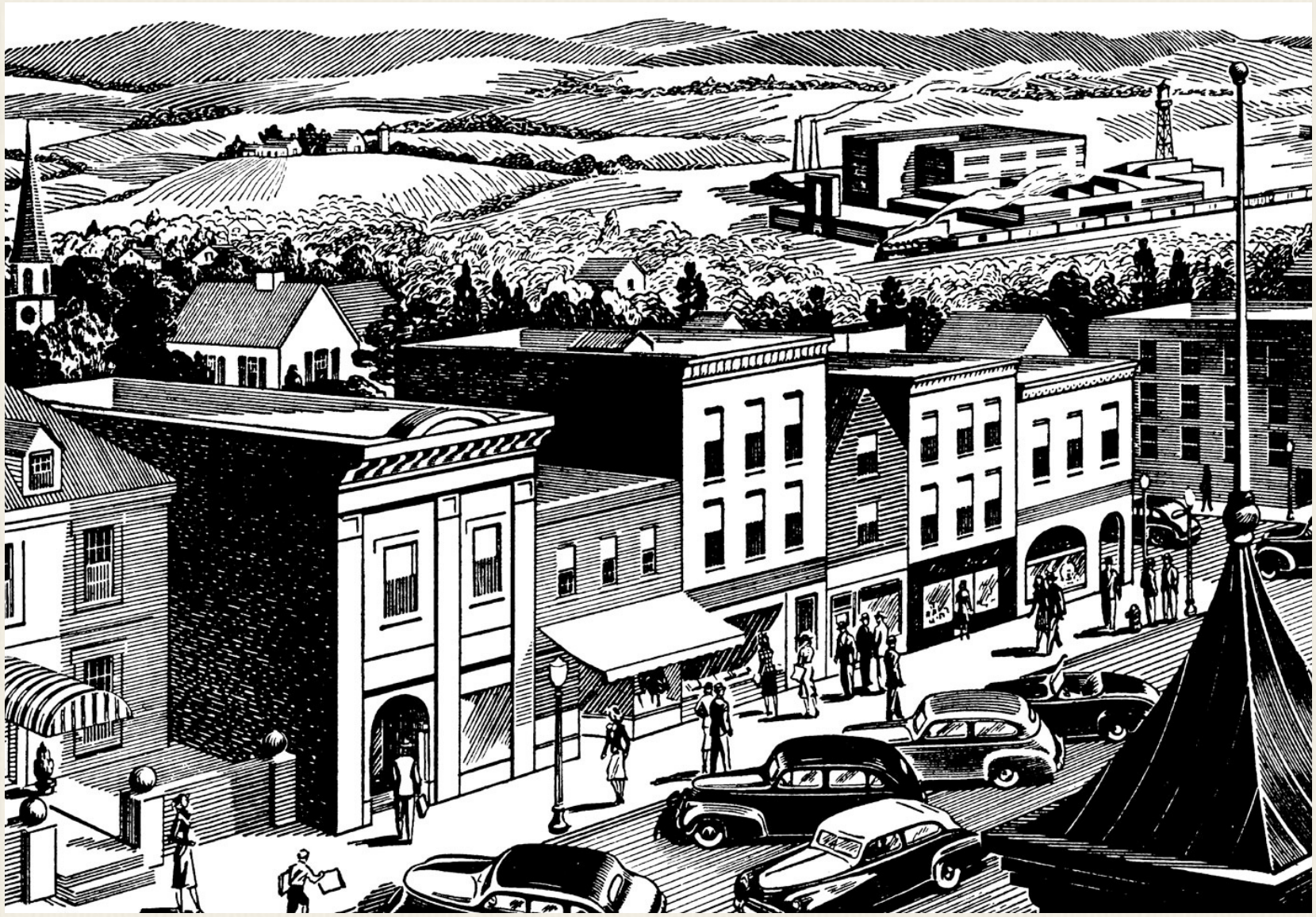
Actively Manage Change

From a Lean Perspective

"The champion role is very important because they help everyone in the organization learn from one another and move strategically forward. It's a bit of an apprenticeship game. The champion stitches the experience together and makes linkages across divisions. They should be the ones who help direct a more strategic role across the agency." Greg Bellomo, North Highland

CHAPTER 3

Lean Projects and Results



The Program achieved great results by primarily focusing on mission critical processes and projects that improved customer service. Key support services also benefited from careful evaluation and targeted improvements. Participating organizations measured process efficiencies that impacted customers with careful consideration for time and cost savings.

Project Types

Key objectives required participants to focus on examining and strengthening processes, empowering employees with the right tools to cultivate continuous improvement, and working together to enhance outstanding service, performance and results.

Projects included several critical components, including a vision of the desired customer experience, subject matter expertise and insights into best practices, measures and targeted outcomes and sustainment measures. Process improvement projects were categorized into three primary types:

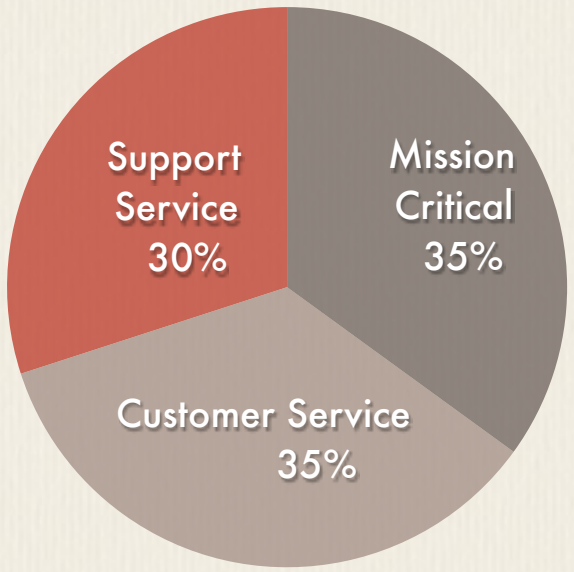
From the OSPB National Survey

The impact of Lean on work culture has been:

- very positive (6%)
- positive (50%)
- slightly positive (44%)
- negative/no impact (0%)

- **mission critical**: projects that improved services critical to the constituents of a particular program, such as mental health hospital admission processes, transportation project delivery services, housing assistance support, and veterans' services.
- **customer service:** projects that focused on key customer-provider interactions such as call center operations and permit and license application processes.
- **support service**: projects that addressed processes for key support services such as grant management, talent management and purchasing activities.

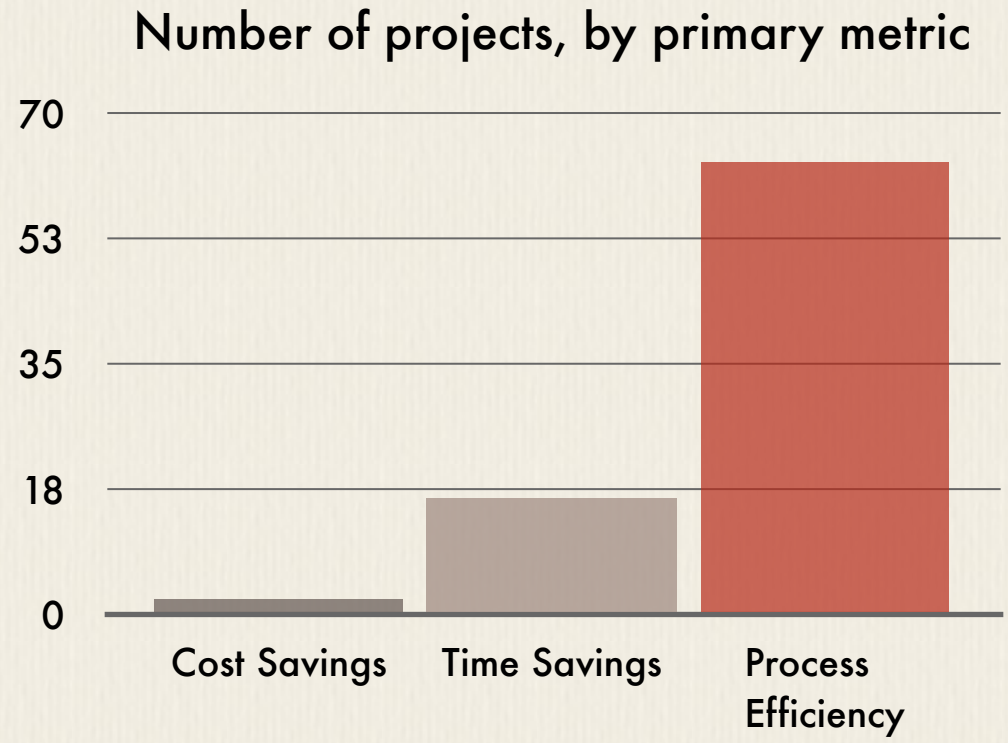
Lean Projects, by Type



Metrics

When considering how best to capture results and impacts from improvement efforts, the Lean Program focused on three common metrics as those with the highest potential to demonstrate a return on investment for on a statewide level. These three metrics are:

- **costs saved or avoided:** verifiable reductions in existing costs resulting directly from an improved process or set of processes impacted by a process improvement project; or, a measure of financial benefit related to avoided spending (different than decreased spending). Calculations are based on current conditions, consider future costs and are verifiably linked to improvements made as a result of a process improvement project;
- **time saved:** verifiable time efficiencies resulting directly from an improved process or set of processes impacted by a process improvement project. Time efficiencies include direct impact to individual customer time and/or employee time and to process cycle time; and



- **process efficiency:** including total output production of a process, between the first step of a process and the last step to include all processing, queuing, reviewing, transporting, etc., with an emphasis on improved service levels.

Projects resourced by OSPB during the initial 21-month period generally focused on creating direct improvements for customers. In fact, primary metrics for each of the projects highlighted an emphasis on streamlining and improving processes and reducing the amount of time required for effective service delivery. Many teams focused on significantly enhancing the experiences that customers have with the State of Colorado by eliminating unnecessary queue times, burdensome approvals and handoffs, backlogs and errors.

Several projects resulted in anticipated cost savings, expected to be realized in budgetary reductions and improved program outcomes.

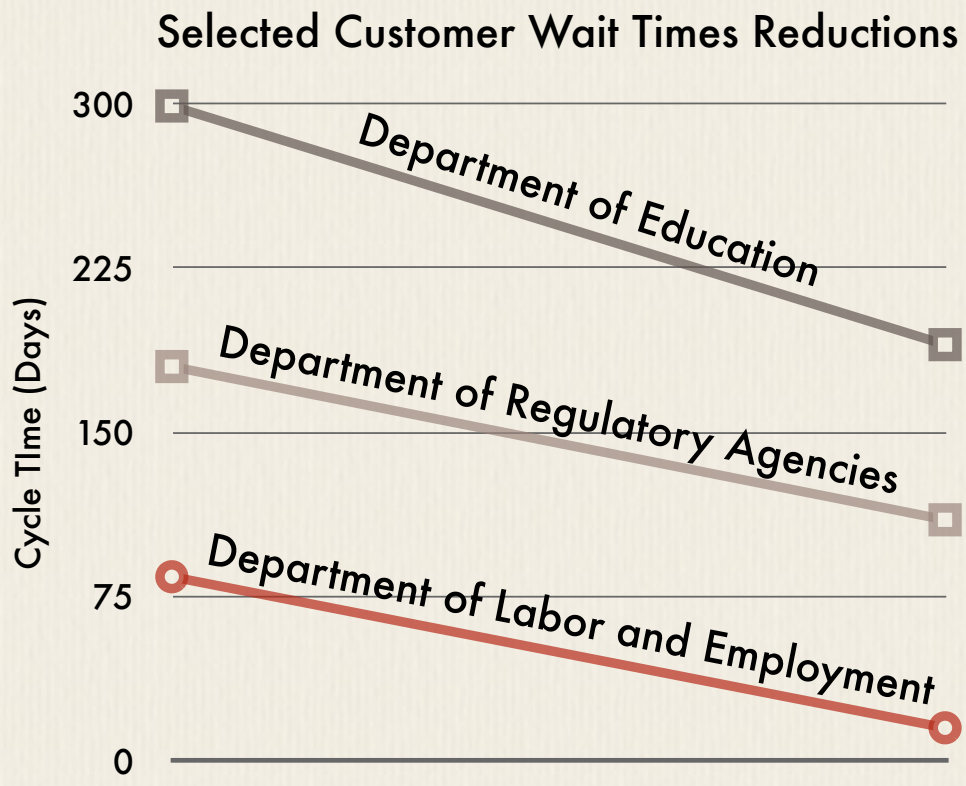
- Redesigning the tax document process in the Departments of Revenue and Personnel and Administration will result in savings of nearly $2.1 million on a ongoing basis.
- Developing a new process for ensuring that released offenders from the Department of Corrections obtain proper forms of identification helped decrease the per unit cost of identification issuance by more than 15%.
- Streamlining the process in the Department of Regulatory Agencies eliminated the need to fill an investigative position. This reduction in resource need is expected to result in lower application fees for licensees.

A result of the new investigation process at DORA "represents an essential elimination of backlog, which has not happened in *over a decade*."

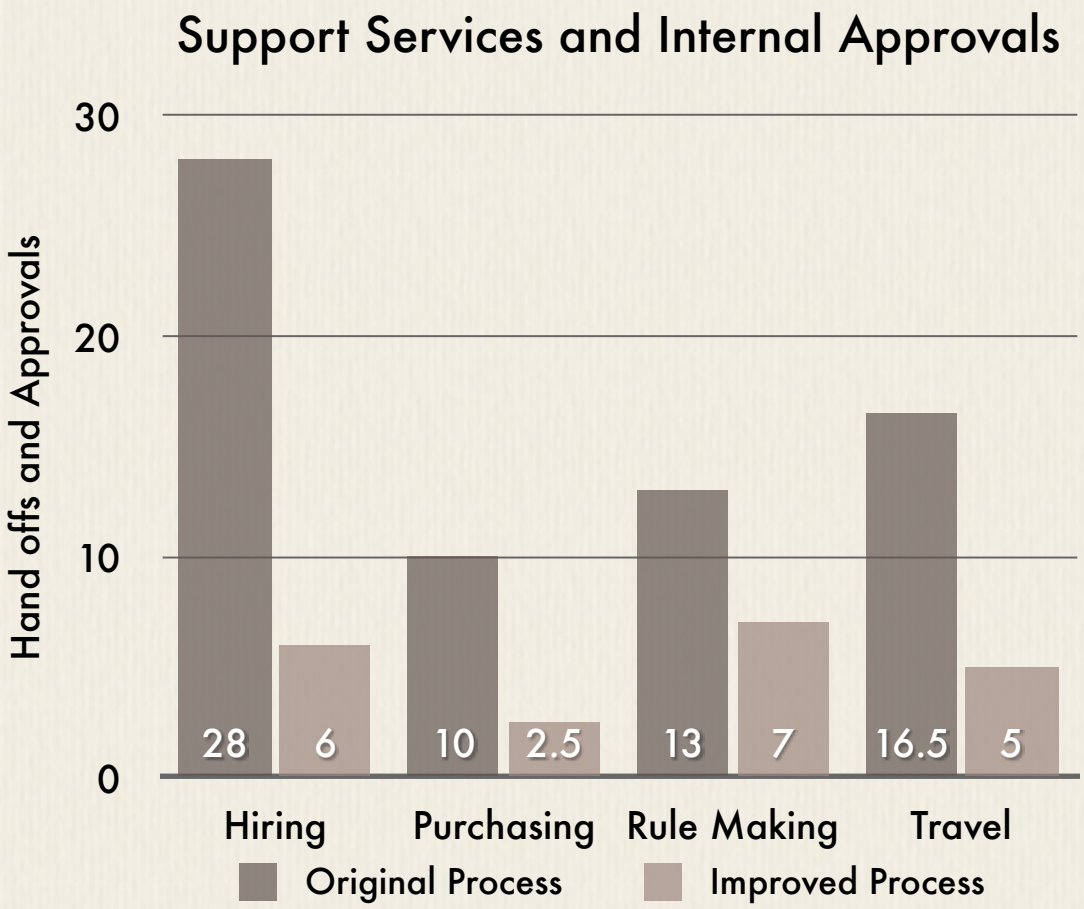
Other efforts focused on reducing the amount of time licensees, businesses, and patients were waiting on State agencies to deliver important services.

- Examining the process by which educator license investigations are conducted in the Department of Education carved off more than 100 days from the resolution cycle for new cases.
- Studying the steps required for businesses to receive reimbursement payments from the Department of Labor and Employment reduced the overall time from 84 days to 15 days.

- Scrutinizing the process for patients awaiting admission for treatment at the Colorado Mental Health Institute at Pueblo resulted in a 64% reduction in wait periods.



Some process improvement initiatives zeroed in on ways to eliminate wasteful steps in key support services such as hiring and purchasing as a way to ensure that customer-facing programs are not bogged down by internal processes.



Importantly, teams without robust sets of data or existing performance measures learned how to prioritize these activities in a way that positively impacts the operational management and efficacy of the services. Continued efforts and ongoing skill development in this area will be a critical component of the next steps for Colorado.

A selection of department initiatives precedes a full list of all projects, arranged by department, in the following pages.

COLORADO

Department of Agriculture

Each year, the Colorado Department of Agriculture issues more than 40,000 licenses and registrations — nearly all of them from paper-based applications handled through the mail.

The department licenses everything from egg dealers to slaughter plants to the scales used in grocery stores, at Denver International Airport and in the medical marijuana industry.

"You don't want inspectors doing paperwork because then they're not out in the field inspecting," said Jeff Stalter, the department's director of budget and business operations who also serves as its Lean Champion. "The Lean process helps keep the talent where the talent needs to be."

By applying the Lean tools, the department determined that streamlining the process and reducing paper transactions would better serve customers such as grocery stores like King Soopers and Wal-Mart, which now have multiple licenses issued by the department at various times throughout the year.

"King Soopers might be doing it for hundreds of locations and dozens of licenses," said Stalter. "The idea was to consolidate it all into one step."

Under the new process, customers will be able to determine requirements for licenses and registrations, calculate fees and apply using a web-based system that provides one stop-one transaction functionality. The applicant will receive a current license or registration when the transaction is completed.

The system will accommodate all necessary licensing and registration conditions including verification of the applicant's legal status, bonding, testing and experience needed. The public will have access to the licensing and registration status of all businesses.

Though the department is still several months away from going live with its new system, administrators and program managers are excited about the potential Lean tools have to improve other areas in the department and already have begun work on a number of projects.

In addition to the Lean champion, the department also has an employee dedicated to running its Lean efforts. Though Kate McRoy has been in her position as manager of licensing and permits, her role is likely to evolve into that of performance improvement manager for the agency.

McRoy already has identified a number of projects she wants to take on, including decreasing the time it takes to run fertilizer samples.

Because the department is smaller than other state agencies, it is easier to implement change, McRoy said.

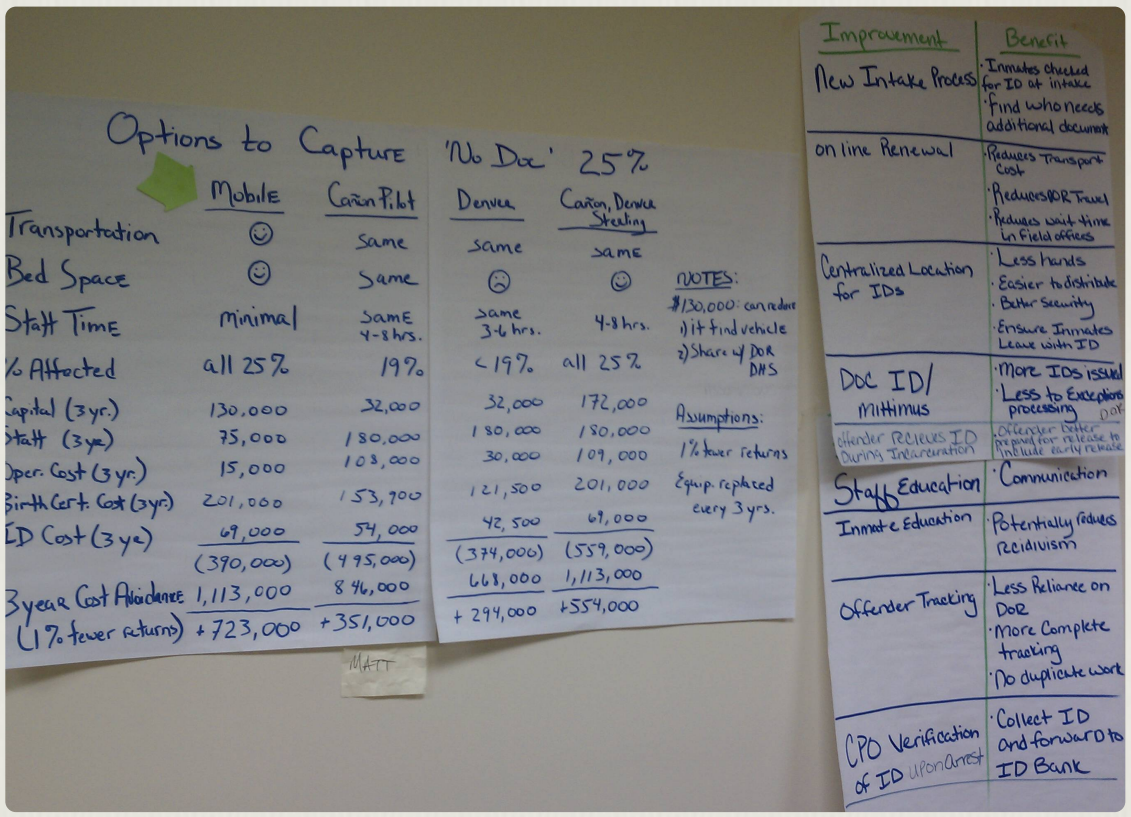
"You don't have to go through the bureaucracy with a smaller agency," she said. "You can change things faster. We just say we don't want to do that anymore, and it's done. We're empowered by management."

COLORADO

Department of Corrections

The Department of Corrections (DOC) and Department of Revenue (DOR) are working together on a project to ensure offenders receive state IDs before they are released so they are able to apply for jobs and public services. Proper identification can be a significant contributor to successful reentry into the community. Collaboration between state agencies is one of the biggest achievements Colorado's Lean Program has encouraged.

GALLERY 3.1 **DOC Lean Event**



"Many of our challenges can't be addressed without engaging other departments," said Julie Wands, strategic planner and Lean Champion for DOC. "We've had projects with DOR, Public Safety, community corrections boards and providers, systems service advocates and offender advocates. Generally, it's been fabulous."

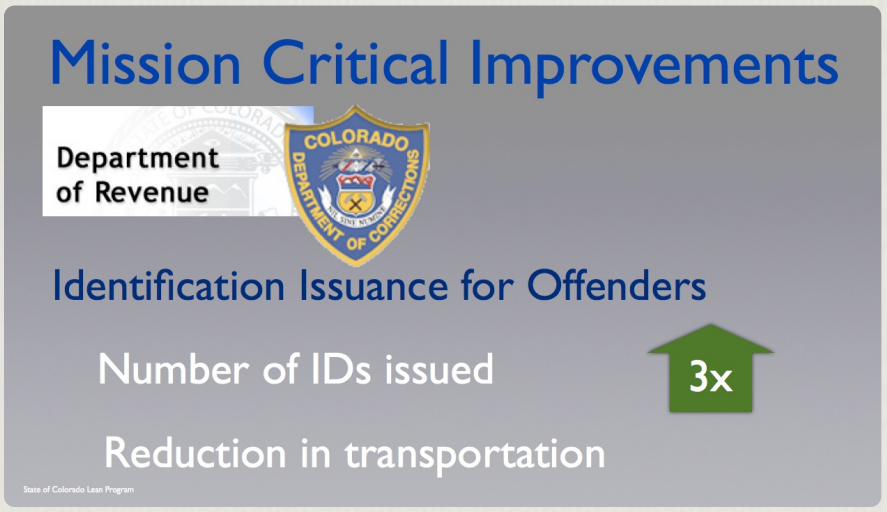
Under the old ID system, offenders had to sign up to be transported to the East Cañon Correctional Facility in Cañon City. Staff from the Department of Revenue drove the 80 miles monthly to review records and issue IDs.

"If everything was in order, they would create the ID and with any luck it would go out the door with the offender when he was released," Wands said. "Less than 17 percent were getting IDs."

Today, half of offenders are able to get IDs online, and as of May 2013, there were 3,858 IDs issued using the new system.

"We would like it to be more, but we've reasoned out that 25 percent couldn't order online because they weren't eligible," Wands said. "You have to have had an ID from Colorado within a certain amount of time to be eligible."

ILLUSTRATION 3.1 **DOC Project Results**



Corrections also used Lean tools to improve parole hearing scheduling. Before undergoing the process, various people created as many as 25 different schedules, which now has been reduced to one electronic calendar available to for everyone involved in hearings.

"All the stakeholders who helped schedule offender parole hearings were doing schedules independently and not communicating with each other," Wands said. "We have the new tool available, but we're still tweaking it and getting people to use it properly."

Lean works because it involves employees at all levels, Wands said, noting that about 130 members of the corrections staff have received at least core team training and participated in one of the 15 projects the agency has performed.

"When people understand what kind of tool this is and you give them permission to speak, they are very forthright," Wands said. "Folks that might have been resistant in another setting tend to not show that resistance in the Lean process."

COLORADO

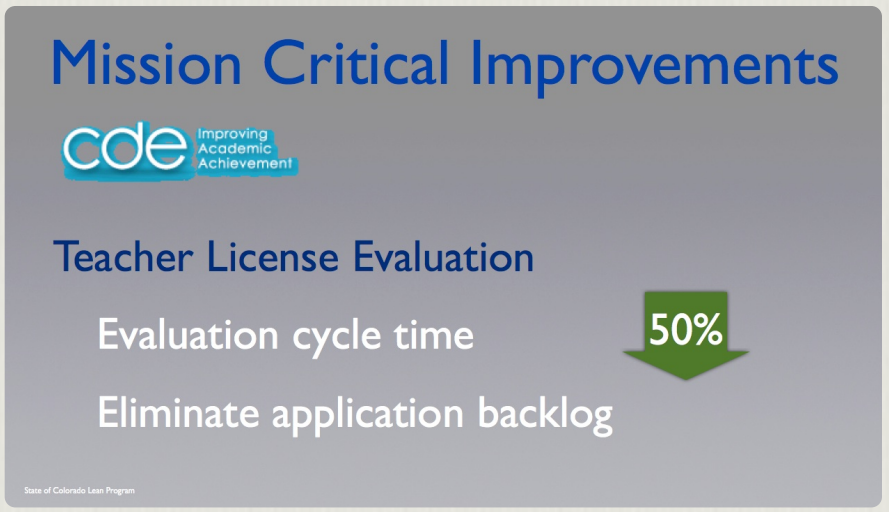
Department of Education

When Chris Lee started working at the Colorado Department of Education in May 2011, it was taking the agency a year to process license applications for educators throughout the state and it had a backlog dating to January 2010.

After using Lean management tools to examine the processes that go into the background checks required for Colorado's teachers, it now takes just two to four weeks to process an application and the backlog has disappeared.

To achieve its goals, the department developed a "clearance flow chart" that allows those evaluating applications to clear a licensee for minor infractions such as traffic tickets, while forwarding major offenses such as felony convictions for domestic violence or child abuse to the attorney general's office. Previously, the applications went through as many as seven people before they were either approved or denied.

ILLUSTRATION 3.2 **Department of Education Project Results**



"Our job is to make sure we have qualified people in the classroom," said Lee, former supervisor of educator licensing who served as the project leader for the effort. "For that to happen, all of this stuff should be happening quickly."

For Lee, applying the Lean tools was the answer to improving processes throughout the department. He also involved the school districts in the effort.

"It's a very good process to look at all the different elements that often are the hindrance to whether you are making progress," Lee said. "I was not expecting as much of the in-depth analysis that occurred, and it really strengthened our relationships with the school districts."

For Lee, one of the most memorable aspects of Lean is the buy-in from employees, who now question every step of any process.

"A couple of people have become very possessive of those processes," he said. "They want to make sure it's done right and not haphazardly."

COLORADO

Department of Labor & Employment

Before the Division of Oil and Public Safety put the corrective action plan for underground storage tanks through the Lean process, it took up to a year for a site to go through the remediation process.

When you're talking about petroleum leaking into the ground, that's a significant amount of time and a potential threat to public safety and the environment.

"Plumes don't just sit around waiting for you to make your decision," said Jennifer Steffes, environmental protection specialist at the division, an organization that falls under the umbrella of the Colorado Department of Labor and Employment. "They're moving."

The Lean team's goal was to decrease the turnaround time for the corrective action plan review and improve the number of plans that pass the first time from less than 5 percent to more than 30 percent.

ILLUSTRATION 3.3 **Department of Labor and Employment Project Results**

The state pays for the cleanup out of its Petroleum Storage Tank Fund, which brings in about $40 million a year from fees imposed on transport of fuel, but the process of reviewing remediation plans was cumbersome.

Stacks of forms up to 2 inches thick were completed for each contaminated site, delivered to an administrator who entered it into the system and assigned it to

a reviewer who would make comments. Next, the plan would be evaluated by as many as seven of the reviewer's peers, who made comments and sent it back to the original reviewer.

Recognizing that most of its employees have been with the division between seven and 30 years and know what constitutes a good plan, the Lean team made the peer review process optional. There also is more up-front communication with the contractors charged with cleaning up the site.

"When you feel uncomfortable, you go to your peers," Steffes said. "We have an obligation to be good stewards of this money, but we've turned it into practically a witch hunt. We were protecting every penny, no matter what it cost."

Though the front-end communication adds time to the process, the end result is a more complete plan that does not need modification. In the past, Steffes said, modifications to the plan would have to go through the entire process again — including the peer reviews.

The division also now requires three bids for the installation of a remediation system, a rule that eliminates the need for review of line items on the elaborate spreadsheets contractors submit.

COLORADO

Department of Local Affairs

When the Department of Local Affairs set out on its first Lean project, the goal was to reduce the number of forms and frequency they are required by 20 percent — a daunting task, considering there were 103 forms required as part of the housing voucher program that serves 7,000 families statewide.

By carefully examining the forms it was using and whether they were required by the U.S. Department of Housing and Urban Development, the department far exceeded that goal, eliminating 56 forms — a reduction of over 50 percent.

"We asked ourselves, if it was a HUD-required form or state required," said Susan Niner, program manager of the Housing Choice Voucher Program and the Lean project leader. "If it was state required, we asked ourselves if the value was still there."

ILLUSTRATION 3.4 **Department of Local Affairs Project Results**

About 75 percent of the department's customers suffer from some form of mental illness or cognitive disability, and the forms often were difficult to complete, so the department surveyed landlords inquiring which documents were the most challenging for their tenants.

"It started out with the forms, but all kinds of other things came out of that," Niner said. "It helped us look at things differently. It was kind of a mind shift."

Among the other projects the division tackled was the purchase of a landlord portal module for direct deposits of rental payments — a move that is expected to

save the $18,000 it spends annually on postage. The one-time cost of $20,000 for the program ensures more timely payments to landlords and eliminates numerous steps in the current process, freeing up employees to work on other tasks.

"Landlords can log in and see if they got paid and who it was for," Niner said. "It's much more customer friendly."

At least one agency is pleased with the new system the housing division has implemented. Dena Kothe, lead housing specialist at the Jefferson Center for Mental Health, says it's cut the total time for processing everything from issuing housing vouchers to rent increases by about 30 percent. "The turnaround time is much quicker now," Kothe said.

The greatest barrier to the department's efforts are its computer systems. In recent years, the legislature merged two housing divisions, mandating a 25 percent reduction in staff. In addition to a shortage of people, the combined agency operates on two separate computer systems.

"Our biggest challenge is implementation," Niner said. "We have great ideas, but our staff is 25 percent down. These things don't happen by themselves."

The division also is in the process of depositing program participants' utility reimbursement checks onto their existing Quest cards, which are debit cards where benefits for food stamps, aid to the needy and disabled and old-age pension are deposited each month. Customers will have easier access to utility funds; staff will have less paperwork, saving the cost to administer payments; and there will be no lost checks that must be redistributed.

"Sometimes their utility check is $10 and they might pay $5 at King Soopers to cash that check," Niner said. "If they already have a Quest Card, why not put the utilities payments there?"

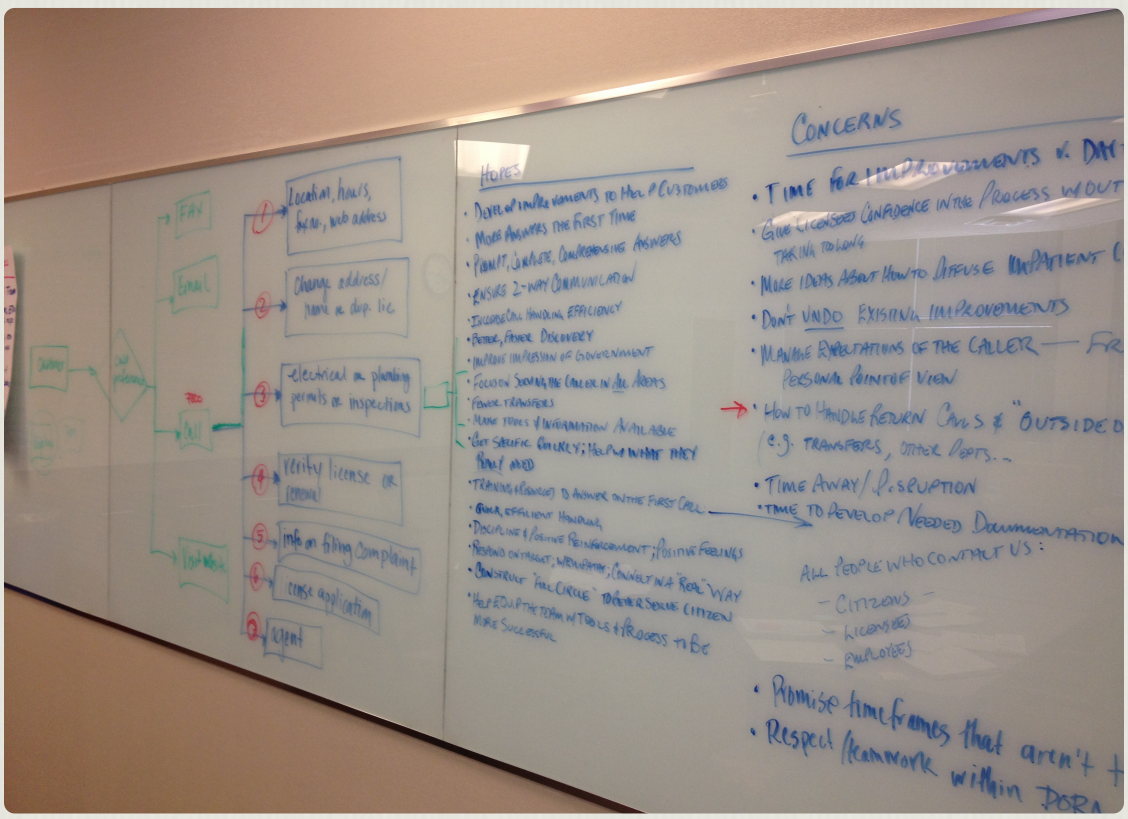
COLORADO

Department of Regulatory Agencies

When the Department of Regulatory Agencies (DORA) embarked on a Lean project to improve the efficiency of its call center, team members dialed into their own offices to experience what the agency's customers do.

They found that the recorded message — all two minutes and 27 seconds of it — was long and confusing and its nine prompts did little to resolve issues the 10,000 customers who call each month have.

GALLERY 3.2 **DORA Lean Event**



And if a customer managed to get a person on the line, he likely was handed off multiple times before talking to an employee who could answer his questions.

"That was a light-bulb moment," said Barbara Kelley, DORA's executive director and sponsor of the Lean project. "What we found was the whole notion of dealing with call centers was really disjointed. The reception desk at the executive director's office was supposed to be the main portal into the department, but there was no dedicated staff or resources for that function."

Through enhanced training and improving the licensing information available to customer service representatives, the number of calls resolved with the first person who answers went from 57 percent to 98 percent. The agency also cut the length of its automated message to just over one minute and reduced the number of prompts to four.

After the call center Lean event, DORA distributed key project take-aways to other state call centers to help them improve customer service.

Another project DORA tackled was cutting down the time it takes to investigate the 1,200 complaints it receives each year about its licensees.

ILLUSTRATION 3.5 Department of Regulatory Agencies Project Results

"It is not OK for someone to be under investigation for almost a year and at the end of it determine they're not guilty," said Hollis Glenn, deputy director for the DORA's Division of Real Estate and the Lean project leader. "Eighty percent of what we investigate is dismissed, and it takes an average of six months to complete."

The department developed a set of 88 standard operating procedures to help it meet its goal of reducing the number of days it takes to resolve a complaint. "Twenty percent of our cases took over six months," Glenn said. "Now we're down to 5 percent taking that long."

DORA now is working on implementing the procedures across its other divisions, in addition to real estate.

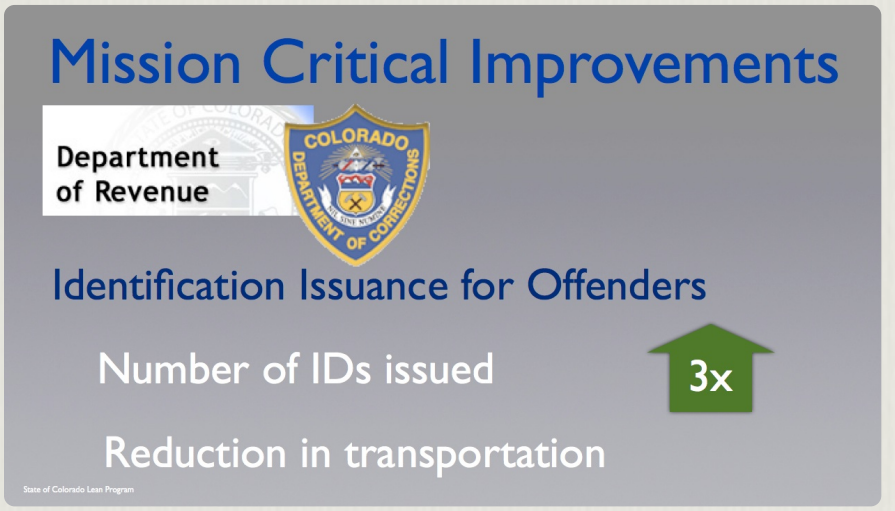
COLORADO

Department of Revenue

Whether it is renewing a driver's license, registering a vehicle or paying taxes, nearly every Colorado resident comes into contact with the Department of Revenue, and historically the experience has been frustrating.

But new processes being implemented across all divisions — everywhere from rules-making to the Division of Motor Vehicles — are making a difference in the experience Colorado residents have when interacting with the department.

ILLUSTRATION 3.6 **Department of Revenue Project Results**



"Revenue had a really bad reputation for not working with people and not adapting to customer needs," said Heather Copp, deputy director of the department and a sponsor of the Lean activities at DOR. "We're trying to approach it from what the customer experience is when they interact with us. We think that has helped focus things differently."

Some changes are as simple as calling the people it serves "customers," rather than "taxpayers" or "licensees." Others involve careful scrutiny of the statutes and rules that dictate processes.

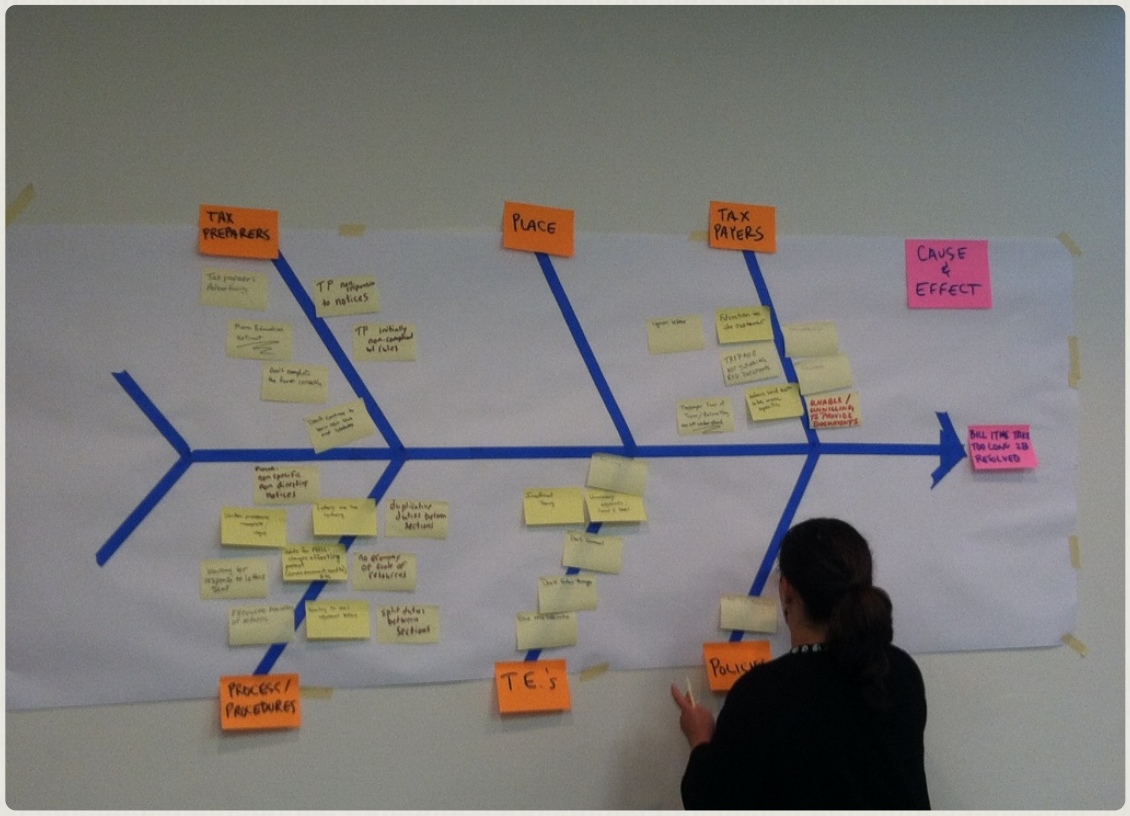
"If you see something that needs to be improved, you have the tools," Copp said. "We just always want to make sure we look at it from the customer's point of view and make sure you have people involved who know the work."

Among the first projects the department tackled under the Lean Program were letters to taxpayers whose filings are incomplete. The department determined its written correspondence was unclear and taxpayers didn't understand what they were being asked to do.

It worked with the Colorado Society of CPAs, which had been complaining for years about the notices.

"The notice process has been completely reengineered as a result of the feedback the department received from our CPAs," said Mary Medley, chief executive of the organization. "The notice process is far enhanced and improved and we anticipate it will work really really well."

GALLERY 3.3 **Revenue Lean Event**



In January 2013, the department rewrote the letters to improve clarity and added deadlines for taxpayers to submit additional documents before the return is adjusted. The department also now gives taxpayers options for submitting the information. Instead of requiring documents to be submitted by mail, they also can be emailed or faxed.

"We've gotten very positive feedback," Copp said. "We had one person who received a new letter, sent the documents and within three days the issue was resolved."

Perhaps the most vexing experience in dealing with the Department of Revenue occurs at the Division of Motor Vehicles, but sweeping changes are in store. In March 2013, the department sponsored a project to examine everything from hours of operation to driver's license renewals to using part-time employees to staff peak hours.

DMV employees reviewed the process a customer goes through to renew a driver's license and found that if it can eliminate taking a photo, it would reduce wait time by at least 12 minutes. The process now dictates that a photo be taken each time a customer visits the office for a document, but Colorado law only requires photos be affixed, not taken each time. Federal requirements under the Real ID Act mandate that photos be taken every 16 years, so the Lean team recommends that a photo is taken every other renewal rather than with each renewal. That would reduce the number of customers who require a photo by 30 percent.

The division also is looking into accepting credit cards. About 30 percent of the division's customers write checks, which takes an average of 60 seconds. And often, customers are sent home because all they have is a credit card.

The division plans to reconfigure its offices to create "one-stop-shop" workstations so customers don't have move from counter to queue multiple times, a change that will save eight minutes of the time they spend waiting.

Currently, all employees share one scanner, which they must log into individually. It takes more than two minutes for the scanner to boot up with each log in, keeping examiners from serving more customers.

Under the proposed plan, two workstations would share a scanner and other office equipment that will save time for both employees and customers.

"There is some expense to this, and maybe it doesn't happen this fiscal year or next, but you put it into your long-term plan," said Barbara Brohl, executive director of the Department of Revenue and a member of the DMV's Lean steering committee.

COLORADO

Department of Transportation

The Colorado Department of Transportation (CDOT) issues about 50,000 oversize-overweight permits a year. A sample of 500 found that the agency was giving incorrect information in about 6 percent of the cases, meaning that about 3,000 of the permits issued annually instructed truckers to follow routes that endangered themselves, the public or infrastructure.

That left truckers with the choice of using the highways they know to be correct and violate the permit, or comply with the permit, which could result in lost time and jeopardizing public safety.

On the first day of the Lean process, the team identified a set of objectives, including reducing the error rate in the permit process; reducing the time it takes to process permits; improving communication with other agencies; and providing permit writers with better tools for increased accuracy.

The Lean event for the permit process resulted in a reduction in the number of steps from 25 to 11. Several other improvements also have been implemented for which metrics, such as error rates and cycle times, are still being gathered. Some of those improvements include replacing fax machines with electronic means of receiving faxes, allowing permit writers to view applications on their computers; outreach training for CDOT region maintenance staff; and a link on the agency's main web page to help customers access the permit system.

"We made it easier for the trucker to get information and make sure the it's the right information," said Gary Vansuch, director of process improvement for CDOT. "The error rate is way down.

Greg Fulton, president of the Colorado Motor Carriers Association, said the permitting permitting process has been easier to navigate since CDOT implemented the changes from the Lean project.

"It's been smoother and more predictable," Fulton said. "They've been very responsive, and it's working a lot better."

The agency's efforts earned it a spot among the finalists competing for the International Team Excellence Award — a roster that includes ABInBev, General Motors, The Boeing Company and The Coca-Cola Co.

One of the most difficult aspects of the Lean Program is identifying who the customer is. For example, hundreds of Walmart trucks travel Colorado highways daily. CDOT sends permitting information to the company's central office, which never reported any problems to the agency.

But when CDOT went to the truckers, they told a different story. The agency found that truckers were receiving different instructions from each of the six different regions in the agency's system.

"If you get the customer wrong, you get the wrong emphasis and probably the wrong solution," Vansuch said.

GALLERY 3.4 **CDOT Lean Event**

Program Resourced Projects and Improvements

The following section summarizes each project supported by OSPB through June 2013. Included is the project title, short description, targeted improvements and the category of project and impact in the following format:

Project Title

Description	Targeted Improvement
Description of the project	Achieved or planned improvements

Project and impact category: Process Efficiency, Mission Critical, Improving Customer Service Culture

Department of Agriculture

Agriculture License Consolidation

Description	Targeted Improvement
Provide "one stop shop" for businesses to obtain all required licenses in one transaction	Targeted 75% reduction in paper transactions and eliminate the duplication of efforts in the license processing system
Project and impact category:	Process Efficiency, Customer Service, Streamlining Regulatory processes

Department of Corrections and Department of Public Safety

Community Corrections Utilization

Description	Targeted Improvement
Create an efficient and appropriate system of referrals, placements and releases of offenders in community corrections	Maximize utilization of existing resources in community corrections
Project and impact category:	Process Efficiency, Customer Service, Streamlining Regulatory Processes

"...we have come more miles in 3 days than we would have alone in 3 months..."

Department of Corrections and Department of Revenue

Identification Issuance for Offenders

Description	Targeted Improvement
Improve the Offender ID process, creating a more effective and efficient process to ensure more offenders will receive an ID upon release	3-fold increase in the number of identification cards issued Reduction in transportation 15% reduction in per unit cost

Project and impact category: Process Efficiency, Mission Critical, Streamlining Regulatory Processes

Department of Corrections

Parole Board Hearings

Description	Targeted Improvement
Standardize the scheduling system for parole board hearing and streamline services for customer groups	26% reduction in the number of parole hearings and simplified scheduling and logistics for all involved parties

Project and impact category: Process Efficiency, Mission Critical, Improving Customer Service Culture

Offender Movement Standard Placement Criteria

Description	Targeted Improvement
Develop an integrated, standardized and weighted-value placement decision process	Reduce the number of offender moves between facilities and create a more transparent offender movement decision-making process

Project and impact category: Process Efficiency, Mission Critical, Improving Customer Service Culture

Offender Movement Value Stream Analysis

Description	Targeted Improvement
Identify processes and opportunities for improvement for the value stream	Value stream map and opportunities identified from the analysis along with an execution roadmap

Project and impact category: Process Efficiency, Mission Critical, Other

Medical Supply Inventory

Description	Targeted Improvement
Improve the management of medical supplies while providing quality care to offenders	Targeted reduction in cost of medical supplies by an estimated 20%

Project and impact category: Cost Savings, Mission Critical, Other

"...I've been a state employee for 15 years and I've never felt this empowered..."

Department of Education

Educator Licensure Evaluations

Description	Targeted Improvement
Decrease licensure cycle and processing time to increase qualified educator capacity at the school district level	50% reduction in evaluation cycle time Reduced application backlog

Project and impact category: Time Savings and Process Efficiency, Customer Service, Streamlining Regulatory Processes

Educator Licensure Enforcement

Description	Targeted Improvement
Reduce cycle time of cases with charges requiring action by the Colorado State Board of Education	More than 100 days (36%) reduction in investigative cycle time for new cases 4-fold increase in number of qualified cases submitted for action

Project and impact category: Time Savings and Process Efficiency, Mission Critical, Streamlining Regulatory Processes

Call Center

Description	Targeted Improvement
Increase first call resolution for an average of 4,500 calls per month	Targeted 85% of incoming calls resolved on first attempt Targeted 70% of calls answered within 2 minutes

Project and impact category: Process Efficiency, Customer Service, Improving Customer Service Culture

Accreditation — School and District Performance Frameworks and Improvement Plans

Description	Targeted Improvement
Increase efficiency and accuracy of school and district performance frameworks and pre-populated unified improvement plans	Significant increase in accuracy and efficacy in the annual process Significant improvement in efficiency and delivery in the annual process

Project and impact category: Process Efficiency, Mission Critical, Streamlining Regulatory Processes

Student Growth Reports

Description	Targeted Improvement
Provide districts with accurate and timely data on student performance to support accountability improvement planning	Target 90% accuracy and 100% on-time delivery to allow for improvement planning

Project and impact category: Time Savings, Customer Service, Streamlining Regulatory Processes

"...everyone left the event, however, nothing short of amazed at the productive change that was accomplished..."

Governor's Office

Office of Information and Technology Procurement*

Description	Targeted Improvement
Establish a single statewide IT requisition form	Reduce number of approvals and activities needed for requisitions with a maximum of two approvals by department and two OIT steps
Project and impact category:	Process Efficiency, Support Service, Greater Agency Coordination

**Multi-department improvement initiative*

Office of Information and Technology Service Lifecycle Model for Voice and Data Services

Description	Targeted Improvement
Improve OIT and agency customer experience with more transparent ordering and billing of new voice and data services	Increase billing accuracy and consistency while reducing the process cycle time
Project and impact category:	Time Savings and Process Efficiency, Customer Service, Improving Customer Service Culture

Office of Information and Technology Call Center for Print Support Services

Description	Targeted Improvement
Enable efficient, consistent and timely services that satisfy the print support needs of customers	Increase first call resolution by 25% Reduce service time for targeted customers by 16%

Project and impact category: Process Efficiency, Customer Service, Improving Customer Service Culture

Office of Information and Technology End User Hardware Provisioning*

Description	Targeted Improvement
Improve end user hardware provisioning process to enhance customer experience and overall satisfaction	Reduce overall cycle time to five business days 90% initial deployment accuracy

Project and impact category: Process Efficiency, Customer Service, Improving Customer Service Culture

**Multi-department improvement initiative*

Colorado Energy Office Procurement

Description	Targeted Improvement
Create an efficient, effective and elegant procurement process that focuses on customer needs	Targeted 25% reduction in cycle time while maintaining only necessary thresholds and approvals

Project and impact category: Time Savings, Support Service, Improving Customer Service Culture

Office of Economic Development and International Trade Best Practices in Grant Management

Description	Targeted Improvement
Create an efficient and effective grant management process	Reduce cycle time to distribute grant funds to customers while eliminating duplicative tasks

Project and impact category: Time Savings and Process Efficiency, Customer Service, Improving Customer Service Culture

Governor's Office Elegant Accounting

Description	Targeted Improvement
Identify opportunities to create an efficient, effective, elegant and standardized procurement process	Increase efficiency, decrease confusion and improve uniformity of accounting processes

Project and impact category: Process Efficiency, Support Service, Greater Agency Coordination

Governor's Office Expenditure and Accounts Payable

Description	Targeted Improvement
Standardize the expenditures and accounts payable processes	Decrease delays and increase efficiency on required processes

Project and impact category: Process Efficiency, Support Service, Greater Agency Coordination

Governor's Office Revenue and Cash Receipts

Description	Targeted Improvement
Standardize the revenue and cash receipts processes	Decrease delays and increase efficiency on required processes

Project and impact category: Process Efficiency, Support Service, Greater Agency Coordination

"Overall I just can't wait to learn and apply more Lean principles and tools. This is amazingly refreshing!"

Department of Health Care Policy and Financing

Long Term Care Case Management

Description	Targeted Improvement
Develop a uniform case management review process	Address the number of appeals and judgments while improving client and case manager experience

Project and impact category: Process Efficiency, Mission Critical, Improving Customer Service Culture

Post Eligibility Treatment of Income

Description	Targeted Improvement
Standardize and streamline processes	33% reduction in the backlog of requests while reducing approval time Improve response time for clients

Project and impact category: Process Efficiency and Time Savings, Mission Critical, Improving Customer Service Culture

Customer Care Center

Description	Targeted Improvement
Improve the Customer Care Center Experience	67.5% increase in call answer rate, with a focus on increased percent of issues addressed on customer's first contact and overall increased customer satisfaction

Project and impact category: Process Efficiency, Customer Service, Improving Customer Service Culture

Time to Hire

Description	Targeted Improvement
Streamline hiring process to reduce overall cycle time and improve the quality of hire	Average 85% reduction in the number of handoffs and approvals Targeted 20% reduction in overall cycle time

Project and impact category: Time Savings and Process Efficiency, Support Service, Improving Customer Service Culture

"...the project has already facilitated substantial improvements in our offices..."

Department of Human Services

Colorado Mental Health Institute at Pueblo — Hospital Admissions

Description	Targeted Improvement
Improve CMHIP's evaluation and restoration services	Targeted 64% reduction in the average number of days for admission to CMHIP treatment unit

Project and impact category: Time Savings, Mission Critical, Improving Customer Service Culture

Colorado Mental Health Institute at Pueblo — Arrival Administration

Description	Targeted Improvement
Improve CMHIP's evaluation and restoration services	Reduce patient waiting time for admission by more than 40% and improve patient care, comfort and safety

Project and impact category: Time Savings and Process Efficiency, Mission Critical, Improving Customer Service Culture

Fort Logan Mental Health Hospital — Medication Errors

Description	Targeted Improvement
Reduce the number of medication errors related to orders, transcription and data entry	Targeted 75% reduction in medication errors rate while streamlining the process to provide more efficient patient intake and medication delivery

Project and impact category: Process Efficiency, Mission Critical, Improving Customer Service Culture

Group Home Facilities

Description	Targeted Improvement
Create a safe and efficient work environment and the best living environment possible for group home residents	Improvements in 14 group homes Established a system to standardize and organize critical areas for all group home facilities

Project and impact category: Process Efficiency, Mission Critical, Improving Customer Service Culture

Developmental Disabilities Prior Authorization Review

Description	Targeted Improvement
Improve the timeliness of services to clients and payments to providers	Targeted 65% reduction in manual reviews, resulting in faster turnaround time for clients and

Project and impact category: Process Efficiency, Customer Service, Improving Customer Service Culture

Performance Management and Pay Process (PMAP)

Description	Targeted Improvement
Implement a new tool for data input, compliance and streamlined process	Increased ease for employees, supervisors, PMAP coordinators and Human Resources (HR) to manage the PMAP process

Project and impact category: Process Efficiency, Support Service, Improving Customer Service Culture

Time to Hire

Description	Targeted Improvement
Streamline the process to fill vacant positions	40% reduction in median time to hire 50% reduction in hand-offs and approvals
Project and impact category:	Process Efficiency and Time Savings, Support Service, Improving Customer Service Culture

"The success of the event also had a very positive impact on all staff and managers involved who are all now, supporters of the Lean methodology and are anxious to continue to identify opportunities and execute improvements."

Department of Labor and Employment

Unemployment Insurance Fact Finding Process

Description	Targeted Improvement
Streamline and coordinate the fact finding process to collect information from all sources related to unemployment insurance claims	Increase in quality of facts obtained, resulting in a more efficient and accurate decision process Reduce follow-up adjudication activities
Project and impact category:	Process Efficiency, Mission Critical, Improving Customer Service Culture

Unemployment Insurance Customer Service Center

Description	Targeted Improvement
Improve the customer experience with the call center through lower wait times and a more consistent and value-added experience	34% reduction in median wait time and 25% increase in number of calls handled (exclusive of staff augmentation) Improved customer satisfaction ratings and scores on quality reviews

Project and impact category: Process Efficiency, Support Service, Improving Customer Service Culture

Worker's Compensation Dispute Resolution

Description	Targeted Improvement
Improve the payment dispute resolution process between payers and providers within the Worker's Compensation system	88% percent of cases closed in 30 days or less 52% reduction in cycle time 20% reduction in hand-offs

Project and impact category: Process Efficiency and Time Savings, Mission Critical, Streamlining Regulatory Processes

Petroleum Storage Tank Fund (PSTF) Reimbursement

Description	Targeted Improvement
Streamline the Petroleum Storage Tank Fund reimbursement processes while maintaining accuracy and supporting faster turnaround times for reimbursing costs	82% reduction in turnaround time for payments to applicants (from 84 to 15 days) Increased efficiency for applicants in providing information and submitting documentation

Project and impact category: Time Savings, Customer Service, Streamlining Regulatory Processes

Petroleum Storage Tank Compliance Registration

Description	Targeted Improvement
Improve application and registration process for petroleum storage tanks while increasing quality of tank and ownership data	Targeted 25 day reduction in cycle time for issuing registrations Improved compliance and quality by 60%

Project and impact category: Time Savings and Process Efficiency, Customer Service, Streamlining Regulatory Processes

Employment Verification Audits

Description	Targeted Improvement
Enhance audit accuracy and data quality to improve overall compliance	Standardize data collection and entry process Minimize claim reporting errors and aggregate data for standardized reports

Project and impact category: Process Efficiency, Customer Service, Improving Customer Service Culture

Hiring Process

Description	Targeted Improvement
Improve and streamline CDLE's hiring process	58% reduction in the number of days to fill positions, improve communications with internal and external customers and ensure consistency in the selection process

Project and impact category: Time Savings and Process Efficiency , Support Service, Improving Customer Service Culture

"I'm excited to get such training for one of our team members to enable us to more aggressively implement a continuous Lean culture here."

Department of Local Affairs

Housing Choice Voucher Program

Description	Targeted Improvement
Streamline the housing choice voucher intake, re-certification, reporting, and transaction processes	50% reduction in the number of required forms 15% reduction in number of days payments are issued to landlords

Project and impact category: Time Savings and Process Efficiency, Mission Critical, Improving Customer Service Culture

Grant Contracting Process

Description	Targeted Improvement
Develop timely and efficient process for grant contracting	Improve turnaround time and enhance accuracy

Project and impact category: Time Savings and Process Efficiency, Support Service, Improving Customer Service Culture

Improve Electronic Filing System

Description	Targeted Improvement
Improve electronic storage system by standardizing naming convention, providing on-going education, and maintaining version control	Increased ease of use of storage system and higher tracking efficiency

Project and impact category: Process Efficiency, Support Service, Improving Customer Service Culture

Department of Local Affairs and Department of Public Health and Environment

Water Quality Loan Application Process

Description	Targeted Improvement
Streamline, automate and make more transparent the loan application process for local governments for water quality construction projects	Reduce turnaround time Reduce handoffs Increase response rate on eligibility survey

Project and impact category: Time Savings and Process Efficiency, Mission Critical, Greater Agency Coordination

Department of Local Affairs, Department of Health Care Policy and Financing and Governor's Office — Colorado Energy Office

Home Modification, Rehabilitation and Weatherization

Description	Targeted Improvement
Streamline the process for customer applying for assistance to address home modification for accessibility, rehabilitation for safety issues and weatherization	Reduce the complexity for customers applying for services while increasing awareness of all services available Reduce the amount of time it takes to complete projects

Project and impact category: Process Efficiency, Mission Critical, Greater Agency Coordination

Department of Military and Veterans Affairs

Colorado Veterans Claims Processes

Description	Targeted Improvement
Increase capacity to process claims for Colorado veterans and increase overall number of Colorado veterans who receive benefits	Targeted reduction in wait times Enhance service to under-represented areas of the state
Project and impact category:	Time Savings and Process Efficiency, Mission Critical, Streamlining Regulatory Processes

Contract Process

Description	Targeted Improvement
Improve the contracting process	Reduce the average processing time Rationalize approvals and handoffs Simplify and streamline the process
Project and impact category:	Time Savings and Process Efficiency, Support Service, Improving Customer Service Culture

Emergency Field Change Orders and Amendments

Description	Targeted Improvement
Improve the emergency field change order process for businesses and internal staff	Improved timelines Simpler, more consistent forms Simplified process
Project and impact category:	Process Efficiency, Support Service, Streamlining Regulatory Processes

Department of Natural Resources

Procurement Processes

Description	Targeted Improvement
Improve and streamline procurement processes	Reduce the number of days to complete a procurement and reduce the number of review and approval steps Improve quality of information exchange, reducing rework
Project and impact category:	Time Savings and Process Efficiency, Support Service, Improving Customer Service Culture

"We have been encouraged to 'think outside the box' and challenge the sacred cows in our process. It's gratifying to see the changes we've suggested be adopted."

State Land Board Leasing Process

Description	Targeted Improvement
Implement a standard, customer-oriented leasing process to reduce processing time and improve executed lease management	Targeted 30% reduction in overall cycle time Increase compliance and accuracy by 80%
Project and impact category:	Time Savings and Process Efficiency, Mission Critical, Improving Customer Service Culture

Travel Approval Process

Description	Targeted Improvement
Streamline ad hoc out-of-state travel request and approval process	60% reduction in number of approvals 60% reduction in cycle time
Project and impact category:	Time Savings and Process Efficiency, Support Service, Other

"This process empowered me personally to know that I've had a hand in changing for the better what was thought to be an unchangeable process."

Department of Personnel and Administration

State Archives

Description	Targeted Improvement
Improve operational efficiency and customer service in the State Archives	Enhance visibility and tracking for individual requests and improve work methods to drive efficiency
Project and impact category:	Process Efficiency, Customer Service, Improving Customer Service Culture

Archives Accounting

Description	Targeted Improvement
Create a simplified cost model reflecting true service and standardize documentation of core processes	Improve overall effectiveness and increase accuracy

Project and impact category: Process Efficiency, Support Service, Improving Customer Service Culture

Statewide Selections Process Improvement*

Description	Targeted Improvement
Increase the efficiency and effectiveness of identifying and selecting employees to fill vacancies	Improve the number of days to fill and percent of positions filled within target Establish best practice and shared service model, as applicable

Project and impact category: Time Savings and Process Efficiency, Support Service, Improving Customer Service Culture

**Multi-department improvement initiative*

Department of Public Health and Environment

Air Permitting Value Stream Analysis

Description	Targeted Improvement
Develop and identify opportunities for improvement for the Air Permitting value stream	Value stream map and opportunities identified from the analysis along with an execution roadmap; CDPHE is working to complete several projects to implement improvement opportunities

Project and impact category: Process Efficiency, Customer Service, Streamlining Regulatory Processes

Air Pollution Permit Modeling

Description	Targeted Improvement
Reduce the frequency, complexity and length of time required to complete permit modeling reviews	Reduce overall permitting cycle times that result from decreasing the number of modeling reviews, the complexity of modeling reviews and the uncertainty that can attach to the modeling process Increase customer satisfaction

Project and impact category: Time Savings and Process Efficiency, Customer Service, Streamlining Regulatory Processes

Laboratory Services Storeroom

Description	Targeted Improvement
Improve the inventory control process for supplies needed for collection and testing by internal and external customers	Improve customer service and satisfaction by reducing the time it takes to fulfill an order and standardize storeroom inventory control processing

Project and impact category: Time Savings and Process Efficiency, Customer Service, Improving Customer Service Culture

Water Quality Control Division Storm Water Construction Compliance

Description	Targeted Improvement
Improve the storm water inspection and compliance process	Improve stakeholder satisfaction and consistent inspection and enforcement processes Increase process transparency Reduce timeframe between inspection and notification of results

Project and impact category: Time Savings and Process Efficiency, Customer Service, Streamlining Regulatory Processes

Human Resources Personal Services Certification

Description	Targeted Improvement
Implement a simplified personal service agreement process	Minimize overall production time and error rates resulting in less rework and improved internal and external customer satisfaction

Project and impact category: Time Savings and Process Efficiency, Support Service, Improving Customer Service Culture

Business Technology Governance

Description	Targeted Improvement
Standardize request process for developing and approving technology business cases, focused on need, innovation, operations and maintenance, and major initiatives	Eliminate duplicative governance and requests Reduce amount of time required for technology request approvals

Project and impact category: Process Efficiency, Support Service, Improving Customer Service Culture

Fiscal Processes Standardization

Description	Targeted Improvement
Improve the internal and external customer experience through standardized fiscal processes	Improvement opportunities identified from the analysis along with an execution roadmap; CDPHE is working to complete several projects to implement improvements

Project and impact category: Process Efficiency, Support Service, Improving Customer Service Culture

Accounts Payable

Description	Targeted Improvement
Improve the fiscal year-end accounts payable process and preserve fiscal compliance	Standardize year-end process across all divisions and improve internal controls

Project and impact category: Process Efficiency, Support Service, Other

New Employee Onboarding

Description	Targeted Improvement
Streamline and improve the onboarding process for new employees	Provide comprehensive and efficient orientation for new employees to increase satisfaction and productivity through a standardized and consistent process
Project and impact category:	Process Efficiency, Support Service, Improving Customer Service Culture

"...the project has already facilitated substantial improvements in our offices..."

Department of Public Safety

Public School Building and Fire Code Permit Process

Description	Targeted Improvement
Improve the Division of Fire Safety public school building and fire code permit process	Create a simplified, 'one-stop-shop' submittal process Reduce major and minor plan review errors Reduce the total permit process timeline
Project and impact category:	Time Savings and Process Efficiency, Customer Service, Streamlining Regulatory Processes

Onboarding New Employees

Description	Targeted Improvement
Improve the new employee onboarding process to increase employee productivity	83% reduction in approvals required Parallel processing to reduce number of days from 110 to a target of 15

Project and impact category: Process Efficiency, Support Service, Improving Customer Service Culture

Grant Administration Process

Description	Targeted Improvement
Improve and standardize the administration of grant funds across the organization	Improve use and efficacy of grant distributions Targeted reduction in overall cycle time

Project and impact category: Time Savings and Process Efficiency, Support Service, Improving Customer Service Culture

Rule Management Process

Description	Targeted Improvement
Standardize and streamline the rule management process	Implement a centralized, consistent and compliant rule making program Improve communication with state and local government agencies

Project and impact category: Process Efficiency, Customer Service, Rule Review

Department of Regulatory Agencies

Call Center Standard of Service

Description	Targeted Improvement
Improve customer service across agency call centers	50% reduction in initial connection time 98% first call resolution, up from 57%

Project and impact category: Time Savings and Process Efficiency, Customer Service, Improving Customer Service Culture

Regulatory Investigative Procedures

Description	Targeted Improvement
Increase the efficiency of the investigative program for the Division of Real Estate	39% reduction in investigative and complaint resolution time 70% reduction of backlogged complaints, representing a virtual elimination of a backlog that has existed for over a decade

Project and impact category: Time Savings and Process Efficiency, Mission Critical, Streamlining Regulatory Processes

Expedited Settlement Procedure

Description	Targeted Improvement
Reduce the time and cost required to resolve disciplinary matters	92% of in cases resolved in 60 days or less

Project and impact category: Time Savings, Mission Critical, Streamlining Regulatory Processes

Division of Real Estate Forms Design

Description	Targeted Improvement
Streamline the annual process to update real estate contracts and disclosure forms	Targeted reduction in overall the cycle time while increasing review efficiency Enhance transparency for the public

Project and impact category: Time Savings and Process Efficiency, Customer Service, Streamlining Regulatory Processes

License Renewal Process

Description	Targeted Improvement
Reduce the number of errors that are made during the renewal process and utilize reviewers' time more efficiently	Targeted 50% reduction in errors and 33% reduction in the collective review time

Project and impact category: Time Savings and Process Efficiency, Customer Service, Streamlining Regulatory Processes

Investigations Process

Description	Targeted Improvement
Facilitate timely and high level investigations for the Division of Professions and Occupations	Targeted reduction in the number of days required to complete investigations

Project and impact category: Time Savings, Mission Critical, Streamlining Regulatory Processes

Department of Revenue

Tax Resource Alignment

Description	Targeted Improvement
Align resources to fully leverage and support the recently implemented customer-centric tax processing and administration system	Operational effectiveness and efficiency through streamlining business processes Decrease processing backlogs

Project and impact category: Process Efficiency, Mission Critical Customer Service Culture — Improving

Driver Control Citations

Description	Targeted Improvement
Streamline the processing of penalty assessments to improve service for law enforcement, driving public, and the courts	Improve turnaround time and accuracy

Project and impact category: Process Efficiency, Customer Service, Improving Customer Service Culture

Rules Management

Description	Targeted Improvement
Develop a single transparent process for reviewing, developing, and implementing rules and regulations	Increase stakeholder engagement with feedback loops 80%+ compliance with best practice Improve collaboration with the Attorney General's office

Project and impact category: Process Efficiency, Customer Service, Rule Review

Outreach and Public Communication Process

Description	Targeted Improvement
Improve customer service and increase public confidence by establishing clear and consistent communication standards and delivery	Targeted reduction in overall lead time and increase in consistency and accessibility of information

Project and impact category: Time Savings and Process Efficiency, Customer Service, Improving Customer Service Culture

"When you are introduced to another process that is meant to streamline government and eliminate waste, you nod politely and expect that new meetings will be added to your calendar. When you listen to other government employees touting the benefits of the process, your interest is piqued. But, when you hear long-tenured state employees express overwhelming support, you hop on the train."

Department of Revenue and Department of Personnel and Administration

Tax Document and Remittance Processing Pipeline

Description	Targeted Improvement
Streamline the tax document and remittance processing pipeline	Anticipated $2.1 million in ongoing savings Significant improvement in number of days required
Project and impact category:	Cost Savings and Time Savings, Mission Critical, Improving Customer Service Culture

"Initial results…are exciting! Instead of weeks (for a previously paper and manual process), it only took 3 hours."

Department of Transportation

Access Permits

Description	Targeted Improvement
Improve the Access Permit process while increasing accessibility and customer satisfaction	Developed customer web-interface that allows access to status of permit request Enhance consultative process, expectations, and customer education Enhance promptness and consistency
Project and impact category:	Process Efficiency, Customer Service, Streamlining Regulatory Processes

Local Agency Project Delivery Value Stream Analysis

Description	Targeted Improvement
Develop and identify current set of processes and opportunities for improvement for the Local Agency Project Delivery value stream	Value stream map and opportunities identified from the analysis along with an execution roadmap; CDOT has since completed several projects to implement improvement opportunities

Project and impact category: Process Efficiency, Mission Critical, Streamlining Regulatory Processes

Procurement and Purchasing

Description	Targeted Improvement
Improve the purchasing and procurement value stream to meet expectations for timeliness, consistency and transparency	Improve speed of completion and reduce cycle time while delivering consistent, professional customer service

Project and impact category: Time Savings and Process Efficiency, Support Service, Other

Oversized Overweight Truck Limits

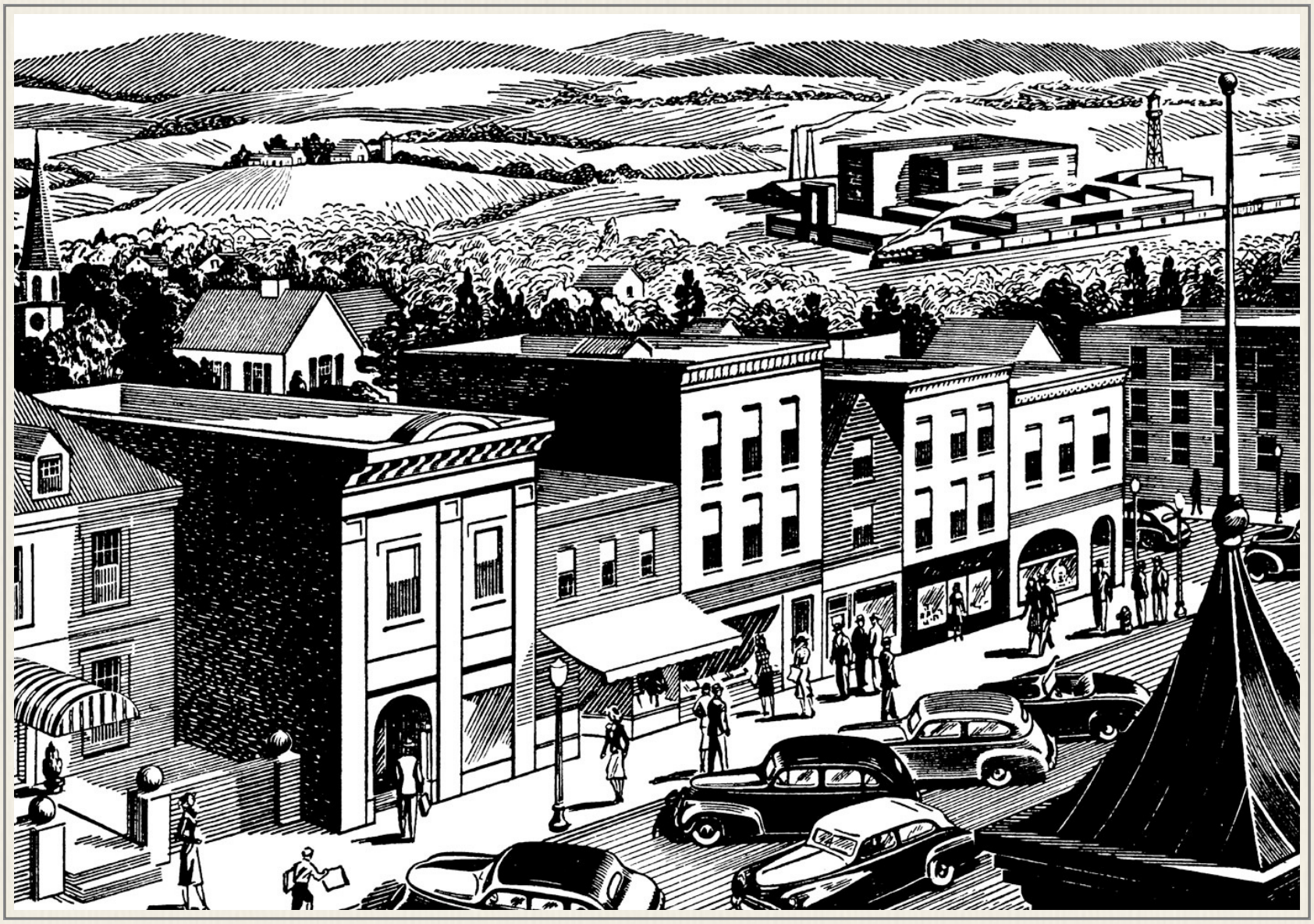
Description	Targeted Improvement
Modernize the permitting process to help reduce the error rate and cycle time for single trip, annual and special permits while also improving customer service	Increase accessibility and ease of use for customers 60% reduction in the error rate 30-50% improvement in permit issuance time (by type)

Project and impact category: Process Efficiency, Mission Critical, Streamlining Regulatory Processes

Note: The projects listed in this section were completed prior to June 30, 2013. Targeted improvements are current through March 31, 2013.

CHAPTER 4

Next Steps



Lean has served as a great mechanism for introducing process improvement tools and was readily accessible in that the principles are well established and understood in both the private and public sectors. In the spirit of continuous improvement, OSPB will build on the success of Lean in Colorado State government and expand statewide capability to include a broad range of tools and methods to achieve customer-focused performance management.

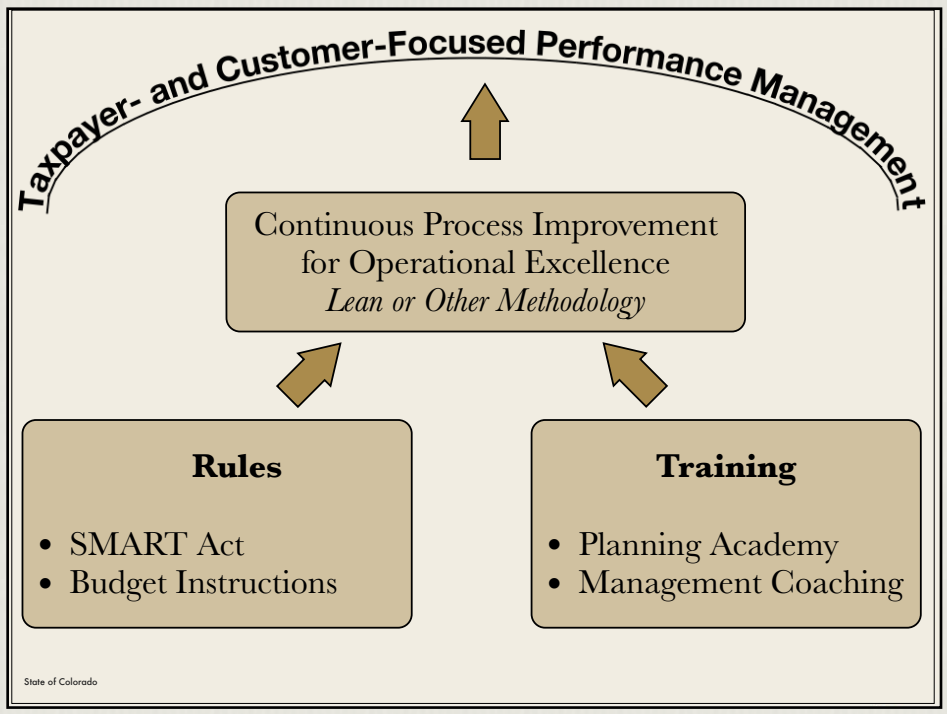
Customer-Focused Performance Management

Ultimately, the Hickenlooper Administration envisions this Lean program to serve as a first step, and ongoing critical cog, in a much broader transformation in the culture of Colorado State Government. "We aim for a culture amongst state employees that is galvanized around the one element that unifies all of us: the customer," said Erick Scheminske, OSPB's Deputy Director. "We call it Taxpayer- and Customer-Focused Performance Management."

OSPB's philosophy begins with the idea that every employee of state government provides a good or service that is consumed by somebody. The greatest and most interesting challenge for all state workers is to improve the interaction with those customers each and every day. Building on the successes achieved with the Lean Program, OSPB is implementing a model of enhanced and integrated departmental performance management and planning methods.

As depicted in the illustration to the right, this concept of consumer-oriented performance management requires support from intelligent rules and targeted training for performance planning and management.

ILLUSTRATION 4.1 Target State



In May 2013, with extensive input from OSPB, the Colorado Legislature passed a revision to the State Measurements for Accountable, Responsive, and Transparent (SMART)

Government Act. This new law mandates that the Governor define a statewide performance management system, and that each executive branch department create and maintain a performance management plan. At the center of the law, however, is a critical charge:

> "Any performance management system must address, among other strategic goals and priorities that are consistent with the charge of each department, strategies for enhancing productivity, improving efficiency, reducing costs, and eliminating waste in the processes and operations that deliver goods and services to taxpayers and customers of state government."

OSPB has designed this system to minimize the amount of standardized reporting required of departments, instead allowing departments to leverage existing planning systems or create new planning systems as they determine best to achieve their mission.

Several important factors are considered key in implementing this new system:

- The system will discourage a separate annual report to the Governor and General Assembly, but instead represent an integrated part of running the operations of the department.
- The new system will provide the ability for departments to identify common customers and to coordinate improvement activities to those customers.
- The new system will enhance the ability of the departments to identify, define, prioritize and collaborate on improvement projects.

In the new management and planning environment, continuous improvement activities will be integrated with more valuable reporting. Additionally, continuous improvement activities should be prioritized based on criticality of the process, the number of customers positively impacted by the change, and the magnitude of the change. Lean techniques or other tools can facilitate the work, but the end state is that continuous improvement will be the guiding philosophy rather than chasing improvement simply for its own sake.

ILLUSTRATION 4.2 Performance Management and Lean

Feature/Design	Performance Management	Lean
Approach	"Open"— Multiple Approaches	"Closed"— Standard Methods
Improvement Focus	Strategic Goals and Outcomes	Processes
Analytical Orientation	Diagnostic	Problem-Solving
Accountability	Diffuse, Multiparty	Process Owners, Coaches
Management Tools	Stat Sessions, Dashboards	"Going to Gemba," Visual Management, Standard Work
Analytical Tools	Logic Models	Value Streams, Root Cause Analysis
Measurement Focus	Outcomes, Outputs, Inputs, Efficiency, Customer Satisfaction	Quality, Cost, Safety, Delivery, Morale
Data Presentation	Trends and Maps	Statistical Process Control Charts
Representative Phrase	"So That..." Chains (to develop logic models)	"Why?" (asked five times to get to root causes)

With permission: Michael Jacobson, Jim Chrisinger – King County, Washington Performance, Strategy and Budget; GFOA June 2013 Government Finance Review, p63-66

Lean and performance management are closely linked and should be leveraged together to achieve significant and long term gains. The illustration above summarizes key features of performance management and Lean.

"Performance management can take the lead strategically and build front-line measurement experience, and the metrics will in turn support Lean improvements. Lean can take the lead operationally, using measurement to improve processes, leading to improved service delivery and outcomes." – *Michael Jacobson, Jim Chrisinger – King County, Washington*

Departments will also be provided with leadership training to support the new department performance planning system. The training academy is expected to leverage a combination of classroom learning, online learning, and coaching and highlight the following topics:

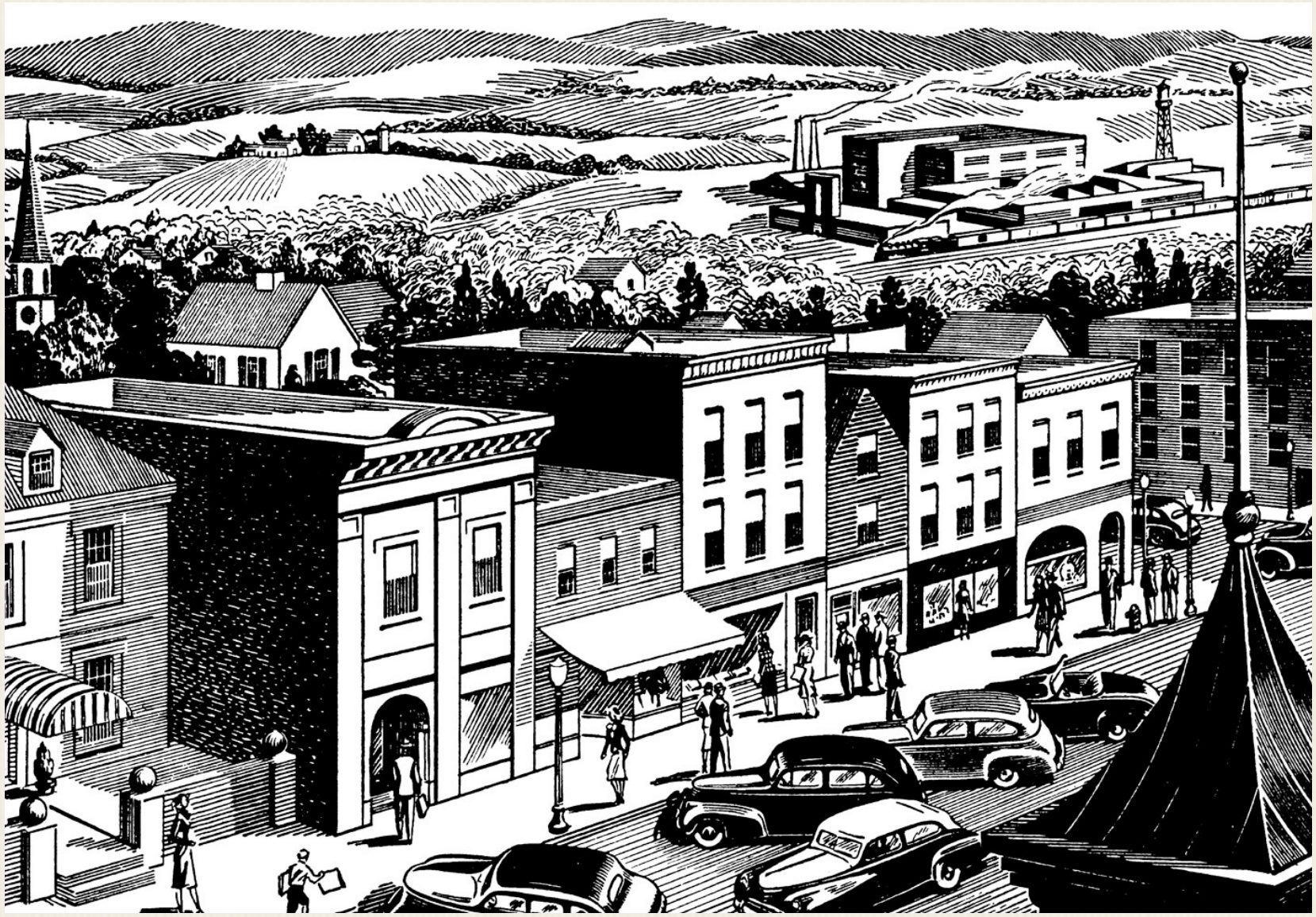
- leadership;
- change management;
- customer identification and modeling;
- service design;
- operations management;
- performance measurement; and
- sustainment.

OSPB is hosting this training academy to provide department personnel with the knowledge, tools and skills to support this transition in operational management and planning. The topics selected for this academy forge connections between leadership, operational management, and continuous improvement principles to support the development of independent and collaborative performance improvement operations.

OSPB aims to spur more efficient, effective and elegant delivery of government services to customers and taxpayers throughout Colorado. With a primary focus on the measurement and improvement of services delivered directly to consumers of government services, however, OSPB expects a direct improvement to broader societal outcomes. According to Scheminske, "In the end, we believe that better service to our customers will necessarily move the needle on larger outcomes such as caring for Colorado's most needy, improving our criminal justice system, or ensuring the efficient movement of goods and people around our state."

CHAPTER 5

OSPB National Survey



The Office of State Planning and Budgeting conducted a national survey over the summer and fall of 2012. The survey identified key success criteria for developing a continuous improvement culture using the Lean tools and methodologies as a starting point, as well as considerations for next steps beyond Lean programs.

OSPB National Survey Background and Purpose

Improvements supported by continuous improvement programs have been successful with several State and local government organizations nationwide. As part of further developing the culture of improvement, OSPB conducted a survey in the fall of 2012. The purpose of this survey was to help understand the span of continuous improvement efforts in state government and describe similarities and differences between Lean efforts. Survey responses identified key factors to consider during Lean transformation, including critical success factors and best practices. Please refer to Appendix D for a complete list of survey questions and responses.

Key similarities in program success emerged, including:

- Five (5) states reported over 500 employees have participated in Lean efforts and projects in many states use a combination of consultants, employees, partnerships with business and donated services.
- The vast majority of respondents indicated that improvements met or exceeded expectations. Consistently, survey participants cited lack of training as the most common reason for improvements that did not meet or exceed expectations.
- Budget constraints were the second biggest obstacle to rolling out Lean, behind other priorities taking precedence.
- Nearly half (44%) reported that employees were more focused on efficiently delivering services through their engagement in the Lean program and one third of respondents plan to permanently incorporate Lean or other process improvement initiatives into state operations.

The following pages include a summary of results and detailed responses.

OSPB National Survey Key Findings

Fall 2012 National Survey
State governments utilizing Lean

Lean methodology is currently utilized by the following state governments:

Arizona	Michigan	Rhode Island
California	Minnesota	South Carolina
Colorado	Nebraska	Tennessee
Connecticut	New Hampshire	Utah
Delaware	New York	Virginia
Iowa	Oklahoma	Washington
Maine	Ohio	Wisconsin

Necessary elements for creating a culture of continuous improvement in state government

Based on our survey, the following elements appear necessary for building a successful culture of continuous improvement:

- Leadership and executive support
- Follow up and continuous communication
- Focus on outcomes
- Celebrate success and achievement

See question 32 in the Survey

Please refer to Appendix D for survey questions and responses

Structure

Structure refers to how the continuous improvement program is organized and funded.

- The survey shows that Lean transformation has been adapted to fit each state's budget and timeline.
- The majority of respondents (66%) shared that Lean transformation in their state government is extensively underway.
- Funding for Lean is provided in many ways but primarily through individual department resource allocation, incorporating savings from prior implementation back into Lean activities and some resource allocation as part of the state budget.
- Internal resources, consultants and partnerships with businesses are the main resources used to lead projects and events.

See questions: 3-10, 16 and 30-32 in the Survey

Leadership and support

The survey looked to determine what influence, if any, various forms of leadership involvement and other support had on the success of a continuous improvement program. The following highlights key points.

- Executive leadership is essential
- Primary leadership of Lean transformation is split among respondents stating that leadership is either part of the Executive Office or an individual agency
- A wide variety of agencies of state government participate in Lean transformation. Human Services and Public Health and Environment agencies had the highest frequency of participation among respondents
- Employee involvement has been moderate to high. 44% of respondents agreed that employees are more focused on efficiently delivering their services after engaging in Lean transformation. All respondents stated that

employee impressions of Lean improved after participation in Lean projects and events

See questions: 2, 11 and 24-26 in the Survey

In general, the survey identified the following factors of successful programs

- Leadership, high level support and motivated employees
- Follow-up, revisiting changes and acknowledge positive change agents
- Respect and support for staff, freedom and license to challenge status quo
- Focus on outcomes and strategically important operations
- Concerns from the middle can challenge successful implementation

Challenges

The top five obstacles to rolling out Lean methodology in state government were (in order of frequency):

1. Other priorities take precedence
2. Budget constraints
3. Reverting back to prior habits and behaviors
4. Middle management resistance
5. Lack of implementation know-how and sufficient training

See questions 23 and 27 in the Survey

Measuring improvements

- 94% of respondents said that they collect information on implementation results and follow up was a necessary component of Lean transformation
- 89% of respondents stated that improvements have met expectations
- The impact of Lean on work culture has been:
  - very positive (6%)
  - positive (50%)
  - slightly positive (44%)
  - negative/no impact (0%)

See questions: 12-15, 17-22 and 28-29 in the Survey

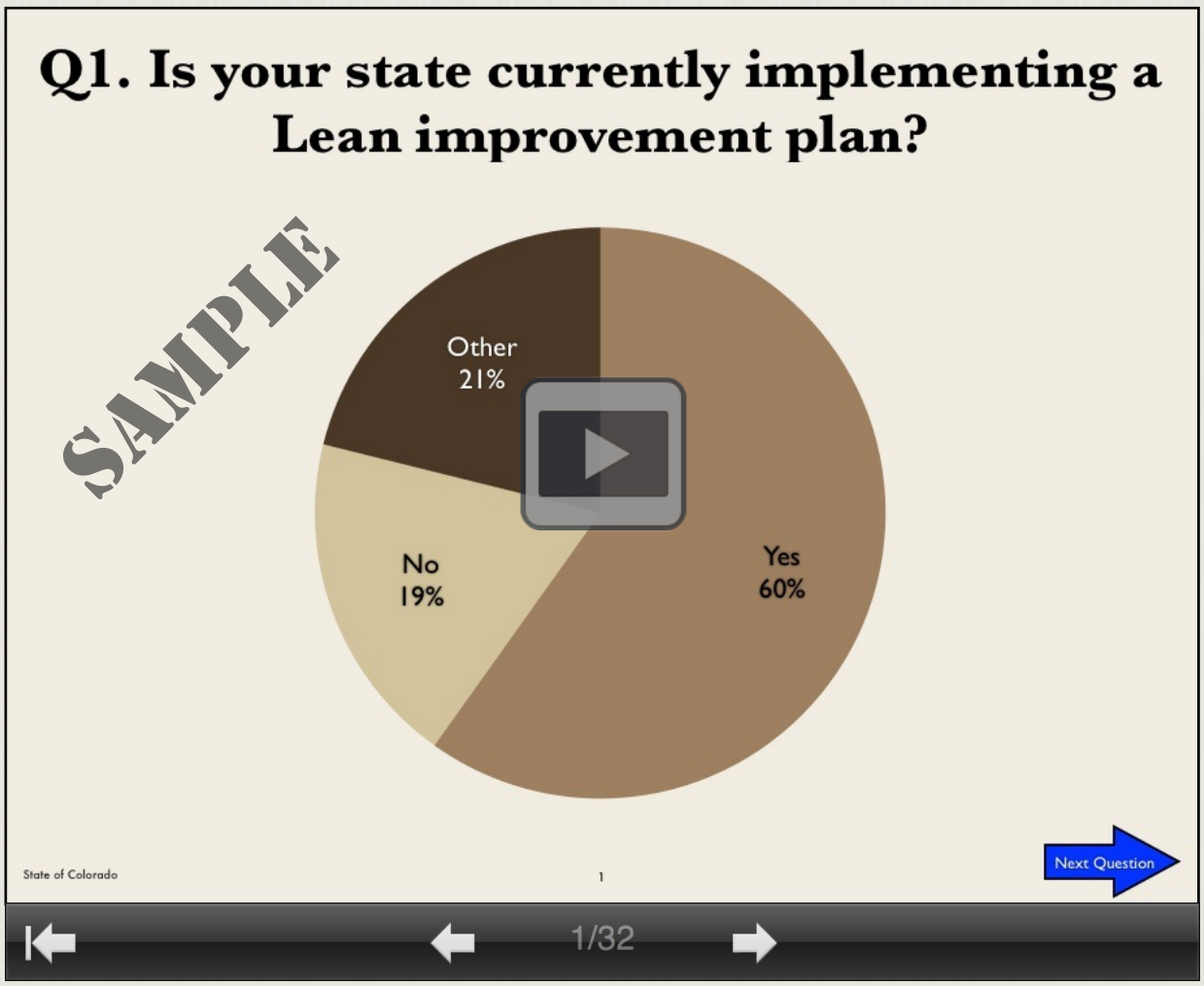
Other improvement methods in use

Respondents identified additional improvement or measurement methods in use, including:

- Performance Management
- ERP Financial, HR/Payroll
- State Stat
- Performance Measures (results-based budgeting)
- Revised DMAIC and Problem Solving
- Red Tape Review to identify unnecessary statutes and rules for elimination
- NIATx
- EPA Lean

OSPB National Survey Questions and Responses

ILLUSTRATION 5.1 OSPB National Survey Questions and Responses



Please refer to Appendix D for the National Survey Questions and Responses

Acknowledgements

This document was produced through the contributions of the following people:

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Erick Scheminske	Deputy Director Governor's Office of State Planning and Budgeting State of Colorado
Laura Sigrist	Lean Project Manager Governor's Office of State Planning and Budgeting State of Colorado
Ben Neivert	Lean Program Office Governor's Office of State Planning and Budgeting State of Colorado

The Governor's Office of State Planning and Budgeting would like to offer a special thank you to writer Margaret Jackson of Denver, Colorado for her excellent contributions and her time spent interviewing program participants, customers and service providers.

OSPB also acknowledges the following people whose contributions helped make this report possible:

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- Intern Cameron Doelling for his work collecting and organizing project information and contributing to key sections.

State of Colorado Lean Program Office Progress Report: Pursuing Effective, Efficient and Elegant Government Services © 2013

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Cover photograph by Dan Sigrist
Table of Contents photograph by Ben Neivert
Chapter photographs by Mark Broste
Wordle images courtesy of wordle.net

Appendix A

State Government Organizational Chart

Colorado State Government

Legislative Branch

Senate
Legislative Council
Office of the State Auditor
House of Representatives
Legislative Legal Services
Joint Budget Committee

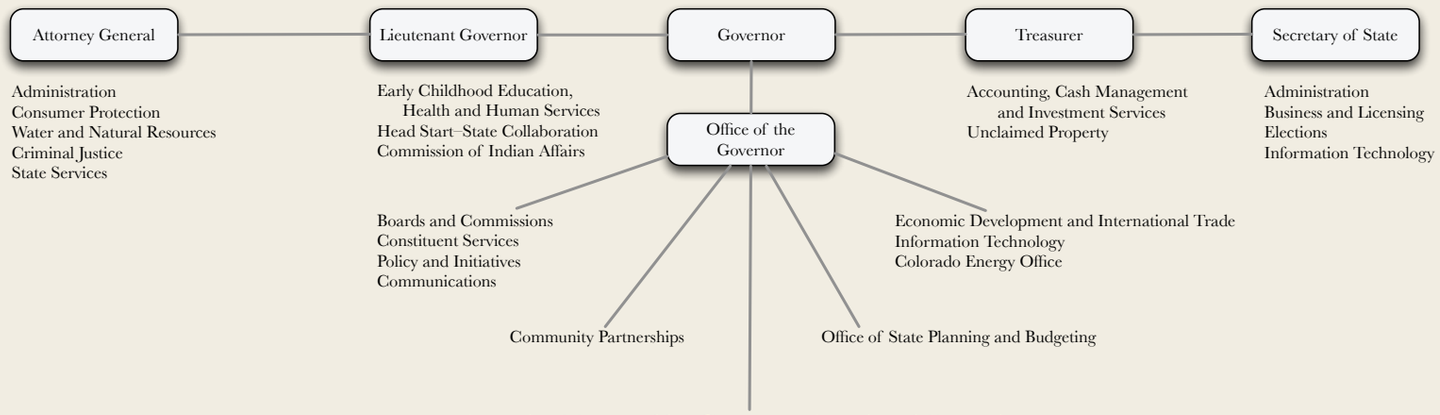
Executive Branch

Governor
Lieutenant Governor
Treasurer
Attorney General
Secretary of State

Judicial Branch

State District and County Trial Courts
Colorado State Supreme Court
Colorado State Court of Appeals
State Court Administrator's Office
State Probation Services
Alternate Defense Council
Child's Representative
Independent Ethics Commission

Elected Offices



Agencies Managed by Governor-Appointed Executives

Department of Agriculture
Colorado State Fair
Animal Industry
Brands
Conservation Services
Inspection and Consumer Services
Markets
Plant Industry

Department of Corrections
Inmate Programs
Inspector General
Management
Community Services
Correctional Industries
Institutions
Support Services
State Board of Parole
Canteen Operation

Department of Education*
Assistance to Public Schools
Charter School Institute
School for the Deaf and Blind
Management and Administration
Library Programs

Department of Health Care Policy and Financing
Behavioral Health Community Programs
Medicaid and Children's Basic Health Plan
Indigent Care Program
Other Medical Services

Department of Higher Education**
Colorado Commission on Higher Education
- Research Universities
- Four-year Colleges
- Community Colleges
- Local District Colleges
- Financial Aid

College Opportunity Fund Program
College in Colorado
Occupational Education
History Colorado

Department of Human Services
Adult Assistance Programs
Child Welfare
Behavioral Health Services
Services for People with Disabilities
Child Care
Information Technology Services
County Administration
Operations
Self-Sufficiency
Youth Corrections

Department of Labor and Employment
Employment and Training
Labor
Workers' Compensation
Oil and Public Safety
Unemployment Insurance

Department of Local Affairs
Housing
Local Government
Property Taxation

Department of Military and Veterans Affairs
Army National Guard
Air National Guard
Veterans Affairs

Department of Natural Resources
Board of Land Commissioners
Reclamation, Mining and Safety
Water Resources
Parks and Wildlife
Geological Survey
Oil and Gas Conservation Commission
Water Conservation Board

Department of Personnel and Administration
Central Services
Accounts and Control
Human Resources
Administrative Courts
State Personnel Board

Department of Public Health and Environment
Chief Medical Officer
Environmental Health and Sustainability
Administration and Financial Services
Air Pollution Control
Center for Health and Environmental Information
Disease Control and Environmental Epidemiology
Emergency Preparedness and Response
Hazardous Materials and Waste Management
Health Facilities and Emergency Medical Services
Laboratory Services
Prevention Services
Water Quality Control

Department of Public Safety
Colorado Bureau of Investigation
Colorado State Patrol
Criminal Justice
Fire Prevention and Control
Homeland Security and Emergency Management

Department of Regulatory Agencies
Banking
Civil Rights
Financial Services
Insurance
Real Estate
Professions and Occupations
Securities
Consumer Counsel
Public Utilities Commission

Department of Revenue
Taxation
Enforcement
State Lottery
Motor Vehicles
Information Technology
Central Department Operations

Department of Transportation
Construction, Maintenance and Operations
High Performance Transportation Enterprise
Statewide Bridge Enterprise
Administration

* Note: The Commissioner of Education is selected by the State Board of Education.
** Note: CCHE has coordinating authority for these institutions; each is governed by a separate board, with all community colleges under the State Board for Community Colleges and Occupational Education.

As of June 2013
Based on July 2008/IDS-BN

Legislative Branch

Senate
Legislative Council
Office of the State Auditor

House of Representatives
Legislative Legal Services
Joint Budget Committee

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Executive Branch

Governor
Lieutenant Governor
Treasurer
Attorney General
Secretary of State

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Judicial Branch

State District and County Trial Courts
Colorado State Supreme Court
Colorado State Court of Appeals
State Court Administrator's Office
State Probation Services
Alternate Defense Council
Child's Representative
Independent Ethics Commission

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Elected Offices

- Attorney General
- Lieutenant Governor
- Governor
  - Office of the Governor
- Treasurer
- Secretary of State

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Attorney General

Administration
Consumer Protection
Water and Natural Resources
Criminal Justice
State Services

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Lieutenant Governor

Early Childhood Education,
Health and Human Services
Head Start–State Collaboration
Commission of Indian Affairs

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Treasurer

Accounting, Cash Management
and Investment Services
Unclaimed Property

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Secretary of State

Administration
Business and Licensing
Elections
Information Technology

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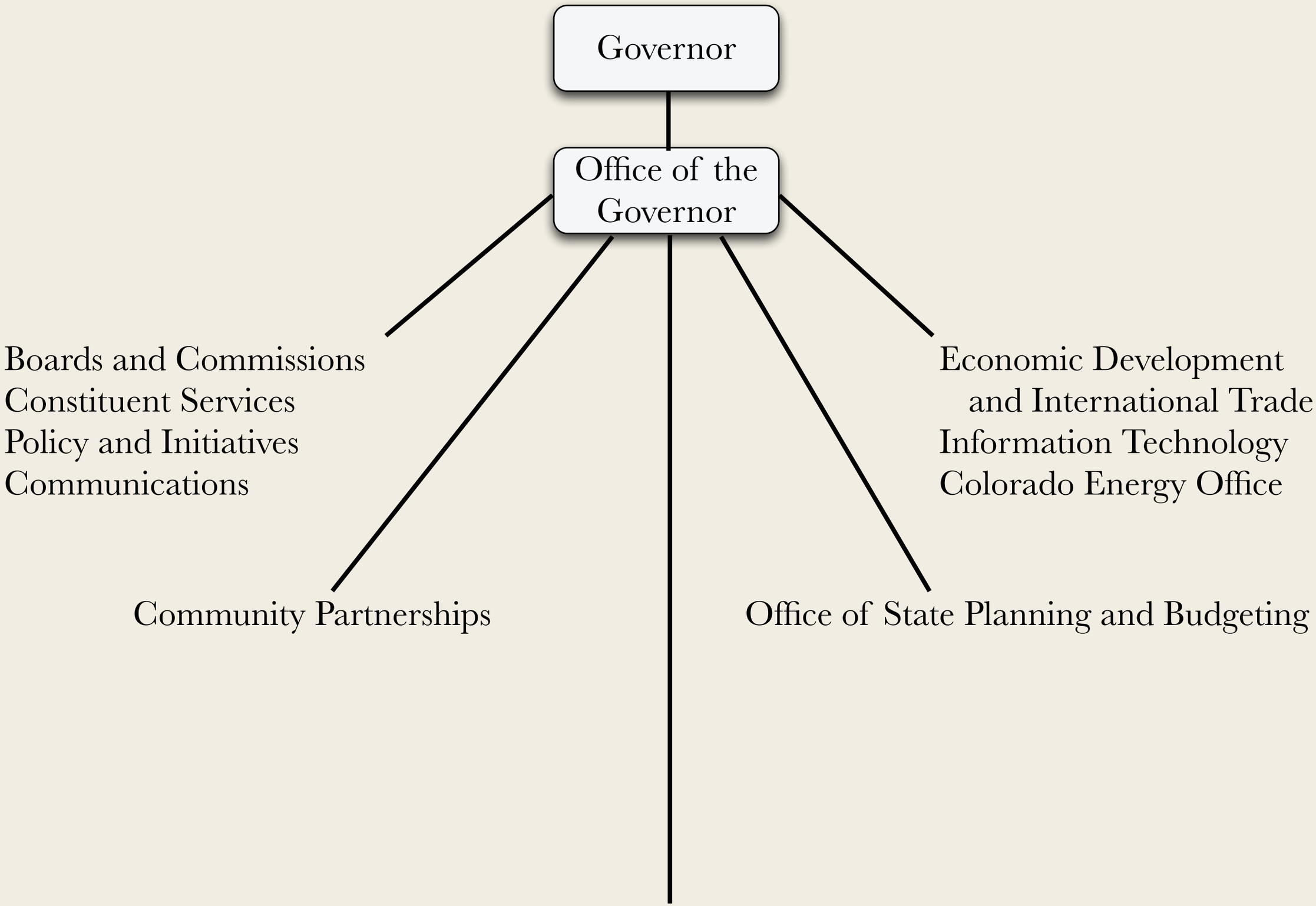
Governor
Office of the Governor
Boards and Commissions
Constituent Services
Policy and Initiatives
Communications
Community Partnerships
Economic Development and International Trade
Information Technology
Colorado Energy Office
Office of State Planning and Budgeting
Agencies Managed by Governor-Appointed Executives

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Agencies Managed by Governor-Appointed Executives (1 of 3)

Department of Agriculture
Colorado State Fair
Animal Industry
Brands
Conservation Services
Inspection and Consumer Services
Markets
Plant Industry

Department of Corrections
Inmate Programs
Inspector General
Management
Community Services
Correctional Industries
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Management and Administration
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Behavioral Health Community Programs
Medicaid and Children's Basic Health Plan
Indigent Care Program
Other Medical Services

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Colorado Commission on Higher Education
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- Community Colleges
- Local District Colleges
- Financial Aid

College Opportunity Fund Program
College in Colorado
Occupational Education
History Colorado

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Next Column

* Note: The Commissioner of Education is selected by the State Board of Education.

** Note: CCHE has coordinating authority for these institutions; each is governed by a separate board, with all community colleges under the State Board for Community Colleges and Occupational Education.

Agencies Managed by Governor-Appointed Executives (2 of 3)

Department of Human Services
Adult Assistance Programs
Child Welfare
Behavioral Health Services
Services for People with Disabilities
Child Care
Information Technology Services
County Administration
Operations
Self-Sufficiency
Youth Corrections

Department of Labor and Employment
Employment and Training
Labor
Workers' Compensation
Oil and Public Safety
Unemployment Insurance

Department of Local Affairs
Housing
Local Government
Property Taxation

Department of Military and Veterans Affairs
Army National Guard
Air National Guard
Veterans Affairs

Department of Natural Resources
Board of Land Commissioners
Reclamation, Mining and Safety
Water Resources
Parks and Wildlife
Geological Survey
Oil and Gas Conservation Commission
Water Conservation Board

Department of Personnel and Administration
Central Services
Accounts and Control
Human Resources
Administrative Courts
State Personnel Board

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Agencies Managed by Governor-Appointed Executives (3 of 3)

Department of Public Health and Environment

Chief Medical Officer
Environmental Health and Sustainability
Administration and Financial Services
Air Pollution Control
Center for Health and Environmental Information
Disease Control and Environmental Epidemiology
Emergency Preparedness and Response
Hazardous Materials and Waste Management
Health Facilities and Emergency Medical Services
Laboratory Services
Prevention Services
Water Quality Control

Department of Public Safety

Colorado Bureau of Investigation
Colorado State Patrol
Criminal Justice
Fire Prevention and Control
Homeland Security and Emergency Management

Department of Regulatory Agencies

Banking
Civil Rights
Financial Services
Insurance
Real Estate
Professions and Occupations
Securities
Consumer Counsel
Public Utilities Commission

Department of Revenue

Taxation
Enforcement
State Lottery
Motor Vehicles
Information Technology
Central Department Operations

Department of Transportation

Construction, Maintenance and Operations
High Performance Transportation Enterprise
Statewide Bridge Enterprise
Administration

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Appendix B

Training Material

PROJECT OVERVIEW:
LEAN PROCESS IMPROVEMENT SCOPING DOCUMENT - PREPARATION GUIDELINES
VERSION SEPTEMBER 2012

Hint: Convert problem to process problem and prepare a SIPOC in concert with developing the scoping document.

PROJECT NAME:	Include an **Action Verb** (What we want to do) + **Noun** (What do we want to impact or improve?) "Reduce the number of days for new employee onboarding"		
DATE SUBMITTED:			
OPPORTUNITY STATEMENT: (Why is this important to the organization?)	• What is occurring, what is happening, what "pain" are we or our customers experiencing? What is wrong or not working? • When did this problem start? How long has it been going on? • Where does it occur? • How much, or what is the extent or magnitude of the problem?		
TARGETED OUTCOMES: (What will be achieved by working this project? Outcomes are informed by visioning process and interviews.)	• What are the **specific** outcomes we expect? An example might be "Reduce number of days to process a claim by 50%" • What will be different in the future? • What metrics will this project impact? Note: Deliverables may be listed here.		
STAKEHOLDERS AND RESOURCES:	**Names and Roles**		
Executive Sponsor:	The person who is accountable for the success (results) of the project		
Lean Project Leader:	The day-to-day leader of the effort (solution)		
Steering Committee:	Leaders from along the value stream who provide oversight and guidance to project; participates in vision phase and helps remove barriers to project success		
Core Team Members:	Try to keep team to 6-9 team members; make sure all process steps are represented by people who do the work		
Extended Team Members:	Subject matter experts or stakeholders who provide expertise, data or insight. These people are typically "on-call" during the project		
Advisory Committee Members	Typically a group of middle and senior-level leaders from along the value stream convened to support large-scale Lean projects; established by the executive steering committee who will clarify their responsibilities; not all projects will require an advisory committee		
Champion/Mentor:	Lean expert who will coach and mentor the project leader		
CUSTOMER GROUPS: (Note key segments here)	Who are the customers of this project? Who will be impacted by the project?		
PROJECT METRIC(S):	**Primary**	**Secondary**	**Consequential**
(Typical metrics include impact on quality, speed, and cost)	Typically lagging metrics that measure process outcomes and performance to customer requirements	Typically input or process metrics (leading); impacts that may be the result of the project but may not be project metrics	Typically unintended and intended consequences

SCOPE LIMITATIONS: (Where are the boundaries?)	**In Scope**	**Out of Scope**
	What are the start and end steps in the process? Are there particular types of product or service included?	What is not included?
WORKPLAN STEPS:	**Typical Timeline and Activities**	
Charter Effort	Guidance: Be inclusive when clarifying scope. Seek data to confirm the project's criticality. Typical Steps May Include: • Gain approval to scope statement (PMO/sponsor) • Develop macro-map (SIPOC) with Lean project leader • Select team members (Steering, Core, Extended) • Select Lean tools/approach and develop the event plan • Confirm project timeline • Establish metric baseline (via sampling if necessary) *Week 0 - Week 2*	
Project Kickoff	Guidance: Be realistic about project kick-off timing. All project roles must be filled and confirmed available. Go slow to go fast! Typical steps may include: • Interview key stakeholders • Gather customer insights • Hold process vision session • Conduct team training • Clarify roles, boundaries, expectations, and timeline with team members • Communicate purpose to the organization, as required *Week 2 – Week 3*	
Establish Current State and Future State Opportunities; Conduct Lean Event	Guidance: If project cannot be completed within these guidelines, consider reducing initial scope or phasing into multiple projects. Typical Steps May Include: • Map current processes • Develop current and future state • Develop improvement opportunities and prioritize • Align on common, revised process • Gain leadership approval for recommendations *Week 4 or Week 5*	
Execute Improvements	Guidance: Initial improvements will be implemented immediately, but implementation plan may require some longer term action items.	

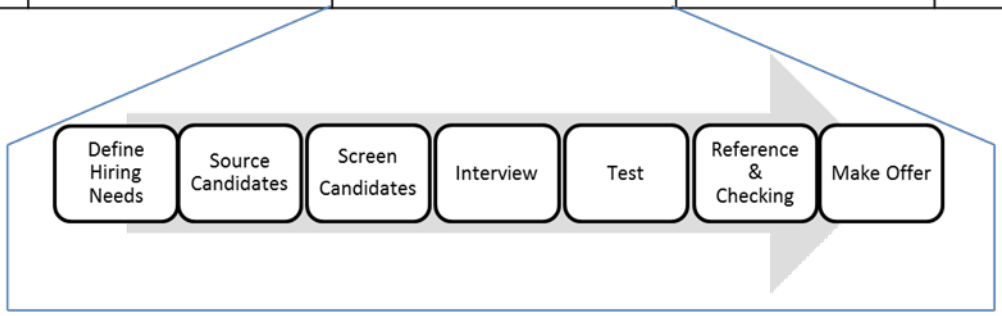
	Typical steps may include: • Develop implementation plan with ownership • Roll-out the standardized process • Test for input on key metrics *Week 6 – Week 7*
Develop Sustainment Plan	Guidance: Sustainment is usually planned within 30 days of the previous step. Typical steps may include: • Create sustainment checklist • Share event documentation for archiving • Sample requests to ensure compliance to revised process *Week 7 – Week x*

Sample SIPOC Diagram

A SIPOC is a high-level process map that provides context for a Lean process improvement project.

SIPOC: Hiring Process Example

Suppliers	Inputs	Process	Outputs	Customers
Applicants Hiring Managers Exam vendors DPA HR Specialist HR Tech Accounting	Resume Application Exams Job Evaluation Compensation Plan State and Federal Law		Job Analysis Announcement Exam Results Eligible List Background Check Referral List Position Description Offer Letter	Hiring Managers Applicants HR Reps Employees Accounting Exam vendors DPA



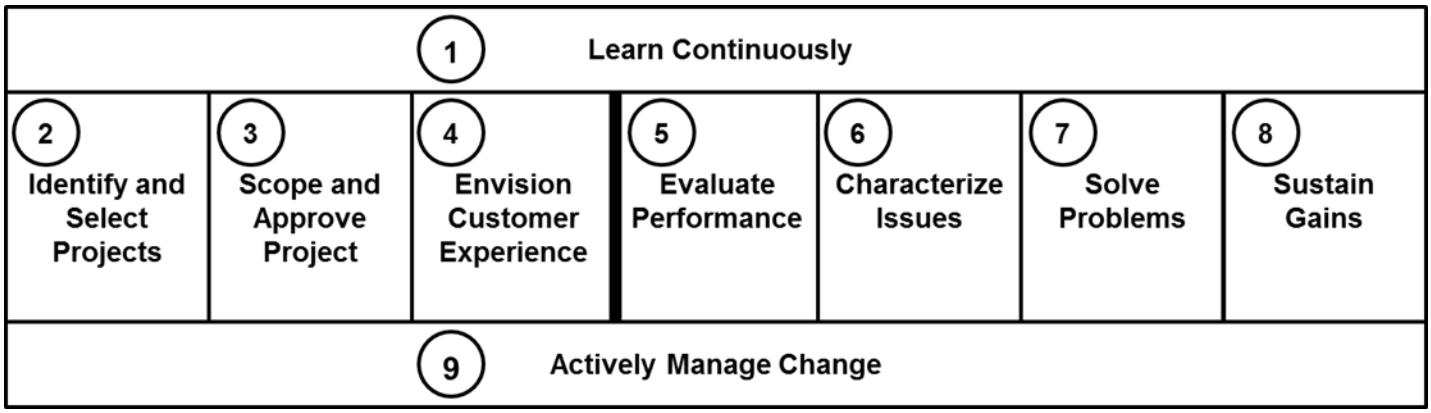
	Input	Process	Output/Outcome	
Metrics	# Days from Notice of Vacancy to Request to Fill	# Handoffs # Approvals	# Days from Vacancy Notification to Qualified Candidates	**Speed**
	Customer Evaluation Qualified Applicants	Satisfaction Survey	Survey Results	**Quality**
			% Offers Declined	**Cost**

How to Prepare:

1. The order in which you complete the SIPOC can be remembered using the phrase "**P**lease **C**ome **O**ut **I**n **S**eptember." Thus, the order is process, customers, outputs, inputs, and suppliers. Identify the high level **Process** steps that the team can agree upon, typically four to seven steps. This step establishes the boundaries of the process.
2. Identify the **Customers** for each input
3. Identify the process **Outputs** for each input
4. Identify the process **Inputs** for each input
5. Identify the **Suppliers** for each input
6. Identify Input, Process, and Output metrics that measure process outcomes related to customer expectations and performance requirements

Introduction to Lean

State of Colorado Lean Model



Introduction to Lean

Overview

Lean is a systematic approach to continuous improvement, applying principles and tools to identify and eliminate waste. While Lean was popularized in Japan, Taiichi Ohno, the father of the Toyota Production System, claimed he learned all he needed to know from three distinctly American concepts: the Indy 500, Ford's River Rouge Plant, and supermarket distribution. Toyota consolidated years of thinking into a systematic approach that is relevant not just to factories, but to business processes as well. The president of Toyota's support for the program was driven by the idea of removing waste as a result of two important beliefs that align to our goal of effective, efficient, and elegant state government:

- Waste is disrespectful of humanity because it wastes scarce resources; and
- Waste is disrespectful of individuals because it asks them to do work with no value.

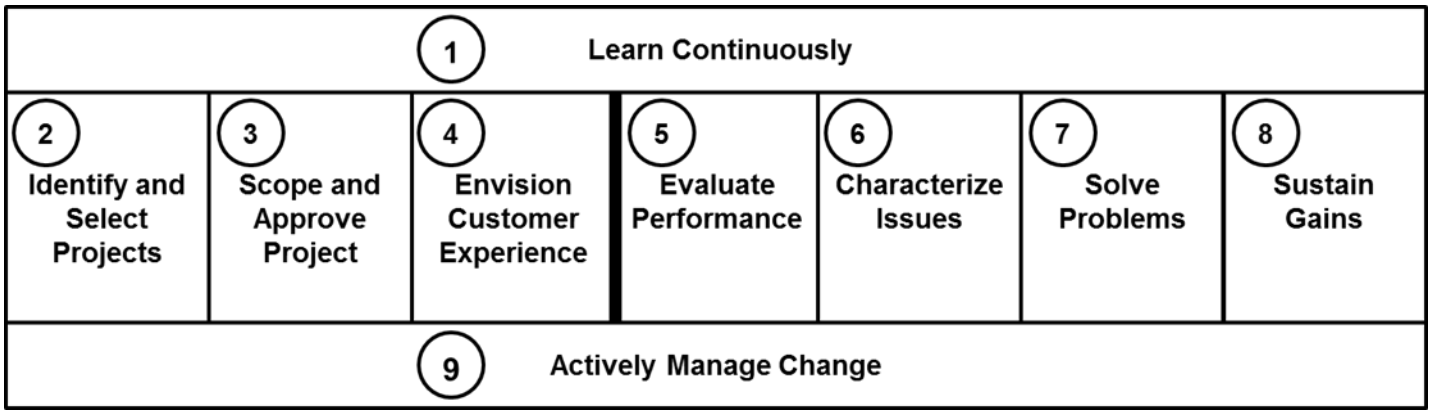
While the list of Lean tools is long, there are just five guiding principles:

1. **Define value** – *value can only be defined by the customer;*
2. **Map value steams** – *documenting information and material flow that provide the product or service citizens require;*
3. **Create continuous flow** – *internally having everything ready as needed for a symphony of service or production;*
4. **Implement pull** – *provide a product or service only when it is needed and no earlier; and*
5. **Strive for perfection** – *relentlessly chase perfection through error proofing and continuous evaluation and improvement.*

Throughout your training you will be introduced to a number of principles, methodologies, and tools. To help organize all the different components of Lean and to assist you in taking the right action at the right time, the State of Colorado has developed its own Lean Model. As you are introduced to each topic, you will also learn how to apply the information within context of this framework.

Before we dive into individual topics, please take time to review the model in greater detail.

State of Colorado Lean Model



Key Information

- ✓ Lean is a systematic approach to continuous improvement that aims to make processes more efficient, effective, and elegant by eliminating waste.
- ✓ The Lean methodology can be summarized into five key principles but is supported by numerous tools and techniques.
- ✓ The State of Colorado Lean model will help provide a framework for all Lean tools and methods.

Additional Resources

Book: Extreme Government Makeover by Ken Miller
Book: Lean Thinking: Banish Waste and Create Wealth in Your Corporation by James P. Womack, Daniel T. Jones
Article: http://www.lean.org/WhatsLean/Principles.cfm

Introduction to Lean (cont'd)

State of Colorado Lean Model

This model will help you understand how Lean components relate and work together to form a continuous improvement cycle.

1 - Learn Continuously

Lean is comprised of a multitude of principles, methodologies, and tools. While you will be armed with the basic tools you need to get started, you will need to continue to refine and deepen your knowledge. Lean cultures are based on continuous improvement and your development is no exception. Leaders in a Lean organization will be expected to continue their learning through self-guided materials or additional course work.

Operationalize Lean

Sponsors, champions, and Lean project leaders work together to operationalize Lean. Operationalizing Lean is not confined to project completion; it also includes daily management and on-going process evaluation. Sponsors and champions will assist project leaders as they execute projects by guiding the project approach, offering insight, and asking probing questions.

This process is broken into (7) main phases to help compartmentalize the tools and methodologies, but some tools may span across phases. As you continually advance your Lean knowledge and experience, you will begin to see the ways you might leverage a practice in more than one area.

2 - Identify and Select Projects	3 - Scope and Approve Projects	4 - Envision Customer Experience	5 - Evaluate Performance	6 -Characterize Issues	7 -Solve Problems	8 - Sustain Gains
▪ Identify potential value streams and service areas that could benefit from a Lean approach ▪ Prioritize these opportunities based on criteria	▪ Complete project scoping, clarifying opportunity, targeted outcomes and project boundaries ▪ Gain leadership approval for scope, resources, and schedule	▪ Specify value in the customer's eyes ▪ Articulate the intended customer experience to guide Lean teams' efforts	▪ Clarify customer and strategic needs ▪ Establish performance baseline ▪ Narrow focus to key areas that impact process performance	▪ Identify and quantify defects and errors impacting performance ▪ Isolate root causes and prioritize problems	▪ Solve problems as a group ▪ Implement new methods for executing processes ▪ Enhance efficiency through workplace organization and cooperation	▪ Change the process and workplace to retain gains ▪ Establish monitoring of improved processes ▪ Engage all levels in process ownership and improvement
Topics ▪ Project Selection	Topics ▪ Project Scoping ▪ SIPOC	Topics ▪ Gaining Customer Perspective and Feedback ▪ Envision Customer Experience	Topics ▪ Value Stream Map ▪ Lean Process Metrics ▪ Value Add v. Non-Value Add ▪ 8 Wastes ▪ 5 Government Process Pitfalls	Topics ▪ Process Flow Diagram ▪ Check Sheet ▪ Histogram / Pareto ▪ Cause & Effect / Fishbone ▪ 5 Whys ▪ Spaghetti Chart	Topics ▪ 5S ▪ Kaizen ▪ A3 ▪ Workload Balancing ▪ Product Family Matrix ▪ Cellular Flow ▪ Kanban	Topics ▪ Visual Management Techniques ▪ Mistake Proofing ▪ Lean Daily Management (QDIP) ▪ Sustainment Checklist

9 - Actively Manage Change

Lean is founded on the idea of continuous improvement, so your organization and team will be improving processes frequently. This change will be beneficial, but it can be difficult as it requires adjusting to a new way of doing things. You will need to understand your stakeholders, develop and execute a communication plan, conduct training, and prepare to manage feedback and resistance.

Search Terms / Related Topics

- 5 Principles of Lean
- Toyota
- Overview
- Waste
- State of Colorado Lean Model
- Tools
- Methodologies
- Continuous Improvement

Roles and Responsibilities

Overview

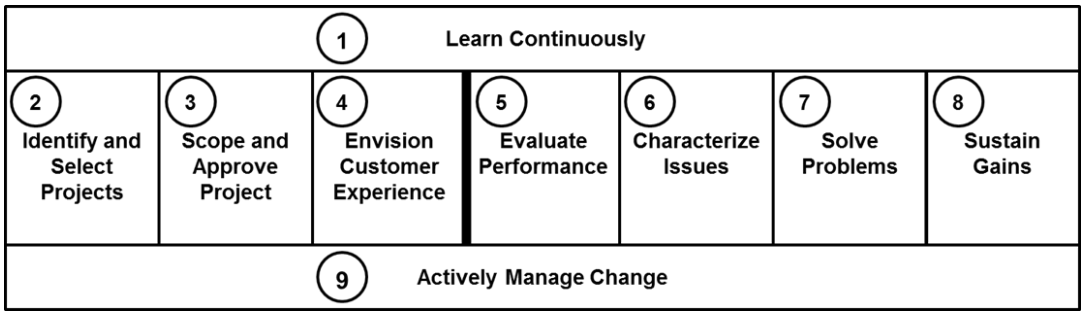
A Lean organization requires people to function in several roles. We will focus here on three main roles: sponsors, Lean champions (coaches), and Lean project leaders (LPLs).

Sponsors are business leaders who are responsible for selecting and scoping projects, selecting teams, removing obstacles, and sustaining project results. Sponsors will guide LPLs on projects by understanding progress, addressing risks, and removing obstacles as needed.

Lean champions are individuals who have a mastery of Lean tools and techniques. Champions coach, train, and mentor project leaders and may lead high-value projects themselves.

Lean project leaders will lead Lean project teams in addition to their regular duties. A team of process experts will help the LPL execute each project. LPLs must accurately report project progress and elevate risks to the sponsor.

State of Colorado Lean Model



Roles as They Relate to the Lean Model

Sponsors will need a detailed understanding of the Envision Customer Experience material since they will be leading vision sessions. Sponsors must be skilled in the philosophy discussed in the Operationalize Lean module so they can direct LPLs and ensure sustainment of project improvements. Sponsors will also need to be well versed in the Actively Manage Change module so they can effectively work and communicate with stakeholders and other people in the organization.

Champions will master all components of the Lean model to the extent that they will be able to teach and mentor all roles within a Lean organization.

LPLs will focus their efforts mastering the Operationalize Lean tools and techniques. LPLs will also be involved in Envisioning the Customer Experience and Actively Manage Change but will not be the main owner for these tasks.

Where to Begin

- Once you understand how your role fits within the Lean program, work with your colleagues to begin the Lean process.
- Embrace continual learning beyond the classroom by reading reference material and visiting the eLearning site.
- Engage with champions to test your understanding.
- Sponsors should identify key stakeholder groups and prepare for managing change in the organization.
- LPLs and sponsors should discuss opportunities, project scoping, and progress.

Key Information

- ✓ In a Lean organization, everyone has a meaningful role.
- ✓ Sponsors, Lean project leaders, and Lean champions must partner together and share knowledge to realize gains from Lean.
- ✓ The level of understanding and use of each component in the Lean model will vary by role.

Additional Resources

eLearning Module: http://www.bmgi.org/course/roles-and-responsibilities (Note: terminology differences may exist)

Roles and Responsibilities (cont'd)

Example

Title	Role	Responsibilities
Project Sponsor	Business leader who drives Lean results by directing projects and owning their success	▪ Identifies and approves projects that link to business strategy ▪ Assists with culture change at the local level through communication and Lean management principles ▪ Manages the people aspects of process changes on an ongoing basis ▪ Builds improvement infrastructure for sponsored projects ▪ Recognizes and defines projects and value stream visions ▪ Selects Lean project leaders and assigns projects to each ▪ Selects steering team and project team for each project ▪ Allocates team members to projects and removes roadblocks to project success ▪ Reviews project activity often with Lean project leaders ▪ Reports project activity to executive team ▪ Drives the implementation of the team solution ▪ Drives realization phase with finance representative assistance
Champion	Coordinates department Lean deployment	▪ Develops and continually improves Lean skills ▪ Allocates internal resources ▪ Maintains department master plan ▪ Spearheads communications and manages change ▪ Facilitates deployment of Lean within an agency to support agency strategy, working in concert with sponsors and executive leaders on strategic project identification ▪ Trains and mentors Lean project leaders to competency on the Lean methodology ▪ Coaches Lean project leaders through Lean continuous improvement projects ▪ Maintains touch with Lean culture within an agency; takes actions to improve acceptance and acceleration of Lean ▪ Develops and implements sustainment plan in collaboration with executive leaders ▪ Supports sponsors and executive leaders with strategic project identification and scoping ▪ Employs knowledge, tools and skills to create widespread commitment and manage the details of a change initiative, large or small
Lean Project Leader	Practitioner of Lean methodology who lead Lean activities	▪ Develops and continually improves Lean skills ▪ Leads Lean project teams and projects ▪ Reports progress and identifies barriers ▪ Coordinates project change management activities ▪ Identifies potential Lean projects and develops project scope for approval ▪ Develops and implements sustainment plans in collaboration with business leaders ▪ Parcels and focuses Lean efforts according to an analysis of value add vs. non-value add work in a process, as revealed through the value stream map
Team Member	Participates on teams	▪ Provides process expertise to Lean teams ▪ Actively participates in projects, collecting data, evaluating solutions and tool application ▪ Assists sponsor(s) with the implementation and long-term sustainment of the solution ▪ Learns and applies basic Lean training such as key principles and Lean methodology ▪ Learns and applies basic tools under Lean project leader's guidance

Lean Program Organizational Structure

- A Lean Program Management Office (PMO) has been established within the Governor's Office of State Planning and Budgeting that supports the development and sustainment of the Lean Program across state departments.
- The Governor's Budget and Efficiencies Committee provides guidance, strategic oversight, and makes program-level decisions.
- Each department will select Lean champions who will direct the roll-out of Lean within their department.

Search Terms / Related Topics

- Evaluate Performance
- Sponsors
- Lean Project Leaders
- Champions (Coaches)
- Program Management Office (PMO)
- State of Colorado Lean Model
- Organizational Structure

Value Stream Map (VSM)

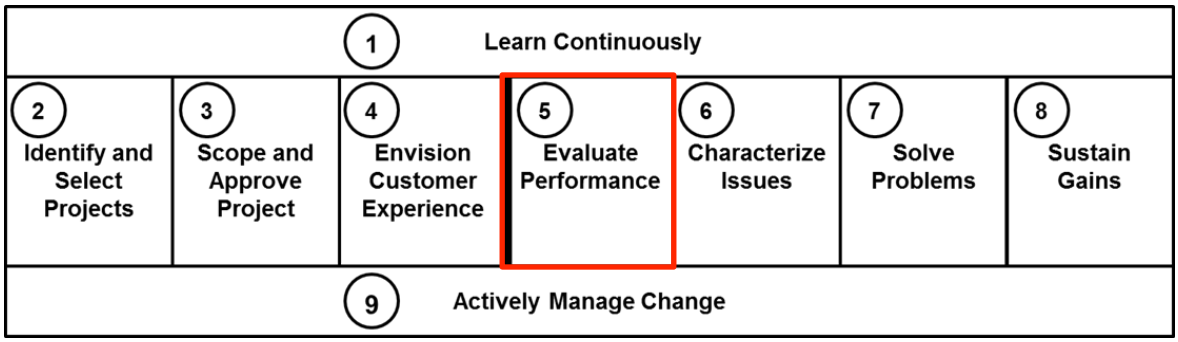
Overview

A value stream is a compilation of all actions, both value add and non-value add, that are required to deliver a product or service to the customer. A Value Stream Map (VSM) is a simple diagram that depicts the value stream from the point of view of the product or service. It is not a detailed flow chart of what people do, but a diagram of what happens to the product or service as it flows through the value stream.

Typically, a VSM is used to understand the process and identify improvement opportunities. VSMs also help identify and quantify waste, providing a foundation for a Lean future state. Creating a value stream map as a team allows all team members to get a better grasp on the full process, as opposed to focusing only on their particular specialty.

VSMs also use a series of symbols to explain how the product or service is processed without using words. A VSM differs from a process map in that it contains data such as cycle time, lead time, inventory, queue time, process yield, and number of personnel —these details will help quantify the magnitude of opportunities.

State of Colorado Lean Model



When To Use It In the Lifecycle

Development of current state value stream maps should occur when you are evaluating performance. Creation of value stream maps may also be done as part of a rapid improvement event as the tools helps a team gain a common understanding of the process and opportunities for improvement.

Current state value stream maps have also proven helpful to leaders and champions as a means to identify opportunities for projects.

Development of a future state value stream map can be done as part of problem solving stage, in which the team clearly depicts the intended future process and its performance if all improvements are implemented.

How to Apply It

Steps for developing a VSM include:

1. Determine what individual product or service to map
2. Draw the physical flow
3. Add the material flow; depict the movement of all internal and external materials
4. Add the information flow (i.e., applications, communications, scheduling, etc.)
5. Collect real process data and add it to the chart
6. Calculate process lead time and process cycle efficiency
7. Verify the map and overlay improvement opportunities
8. Consider creating a future state VSM to demonstrate improvements and intended future performance

Key Information

- ✓ A value stream map is a compilation of all actions required to bring a product or service to form.
- ✓ A value stream map is a diagram depicting a value stream from the product's point of view.
- ✓ Value stream maps are useful because they help identify and quantify waste, develop end-to-end process understanding, and provide a foundation for a future state process.

Additional Resources

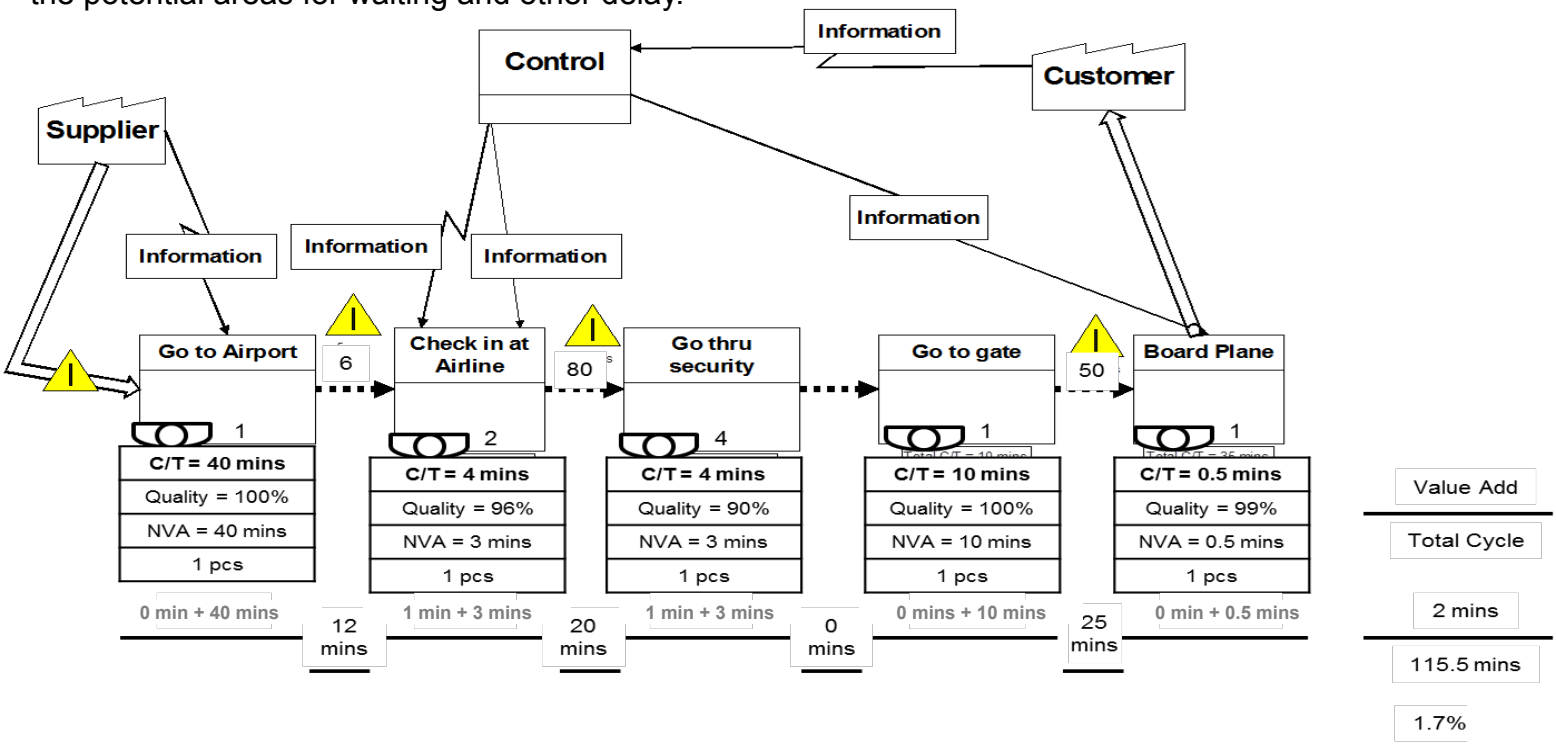
Book: Value Stream Management for the Lean Office by Tapping and Shuker
Book: Learning to See: Value Stream Mapping to Add Value and Eliminate Muda by Shook and Rother
Case Study: Lean Thinking in Corrections (available from the Colorado Lean PMO)

Value Stream Map (VSM) (cont'd)

Example

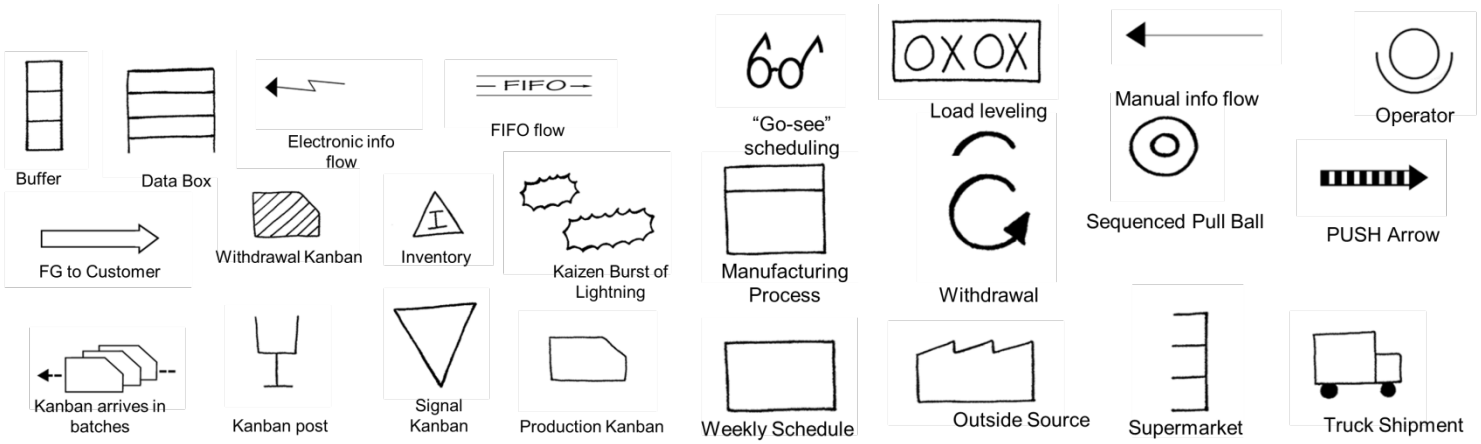
Sample VSM Diagram For Getting to Your Plane

Mapping the customer's experience from leaving their home via taxi through check in and security shows the potential areas for waiting and other delay.



Select Value Stream Mapping Symbols

Value Stream Mapping employs a set of symbols to communicate information efficiently. If you choose to use these symbols, ensure that you include a key so that those unfamiliar with the symbols are able to read the map.



Search Terms / Related Topics		
	▪ Evaluate Performance ▪ SIPOC ▪ Value	▪ Process ▪ Information Flow ▪ Process Flow ▪ Material Flow

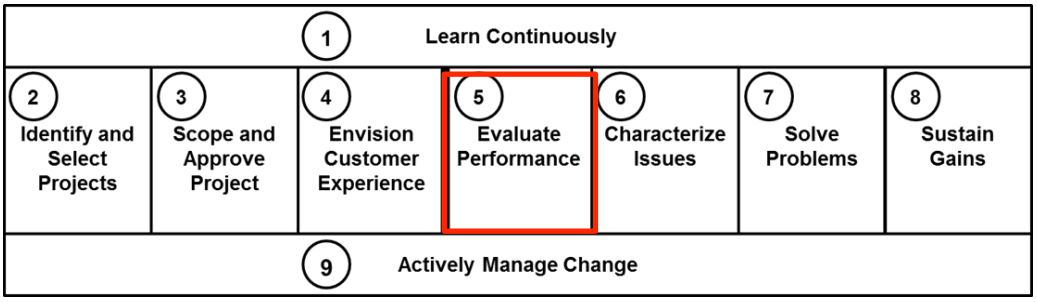
Five Government Process Pitfalls

Overview

Waste can be characterized as any activity that consumes resources but does not create value for the customer. The main goal of Lean is to improve process flow by eliminating waste. Lean projects are a systematic approach to identifying and eliminating waste in processes. When applying Lean to government, in addition to the traditional "8 Wastes of Lean" we should consider the following five common pitfalls:

- **Backlog** – Work waiting to be processed is called a backlog. This causes a cycle where customers call to find out the status of their case, forcing workers to handle requests rather than accomplish the work itself.
- **Batching –** This involves grouping items before moving the stack to the next phase of the process, causing a delay as the first item waits for the last item to be processed prior to advancing.
- **Bottleneck –** A step in the process that cannot keep up with the rest of the steps. Work piles up here.
- **Forcing One Process to Handle All Types of Work – '**One size fits all' is ineffective. Process designs should be customized to the type of work being performed.
- **Failure to Error-Proof –** Quality cannot be inspected in. Quality must be built into each step of the process, catching errors when and where they are created - or better still, preventing them altogether.

State of Colorado Lean Model



When To Use It In the Lifecycle

Similar to using the lens of eight wastes, identifying and eliminating common process pitfalls should be a constant activity. In fact, it should become a way of thinking for all members of a Lean organization. At first, you may not recognize waste in existing processes because "that's the way we've always done it," but over time all employees should be able to quickly and accurately identify these pitfalls where they exist in their process.

Identifying waste helps evaluate the current performance of the process. Once you can identify, for example, where batching is affecting your process, you can begin to understand the impact on performance. Eliminating wasteful activities is the most effective source for improvement in performance and customer service.

How to Apply It

Take a tour of the workplace and follow the process, asking yourself and your team (respectfully!):

- How can we redesign the process to avoid work piling up?
- Is this how we would do it if we handled only one?
- How can we avoid batching or get to a batch size of one?
- Can we do the entire process in one day so we don't have to track and no customers call forcing us to look for their item?
- Is some of the work holding up other work and should we handle that work in a separate process?
- Is there more we can do to: a) identify mistakes where they originally occur; and b) prevent mistakes before they occur?

Key Information

- ✓ Performance is improved by eliminating waste, not by working harder.
- ✓ Waste can be characterized as any activity that consumes resources but does not create value for the customer.
- ✓ In government we should focus on the five pitfalls that prevent us from delivering to our customers in an effective, efficient and elegant way.

Additional Resources

Book: Extreme Government Makeover by Ken Miller

Five Government Process Pitfalls (cont'd)

Example

Pitfall	Definition	Examples
Backlog	Work that builds up in front of a process or in a process – sometimes due to increase of demand, a problem with one item, or the absence of someone involved in the process.	▪ Stacks of documents waiting for a machine or operation ▪ Inbox of files 'for review' ▪ File drawers full of incomplete work
Batching	Human nature-driven tendency to perform one task on multiple items of work. This may make an individual more efficient, but slows the overall process as the first item waits for all the other items to be processed.	▪ Documents grouped into large packs so they can be inventoried and shipped to another group or department ▪ Grouping permit applications by type and reserving time during the week to work on one stack while another stack builds ▪ Invoicing for user fees once per quarter
Bottleneck	A point in a process where capacity is constrained. If resources upstream have greater capacity, or multiple processors feed one processor, as in a review step, a bottleneck results.	▪ One step in the process takes considerably longer than the others and hence customers or documents moving through this step must wait ▪ Multiple processors create files that one supervisor must review/approve
Forcing One Process to Handle All Types of Work	Different tasks may require different 'pipes' to process. Government processes are often designed to avoid risk, which may be associated with only one type of item to be processed. Requiring all types, even low-risk items, to be processed this way is a waste of resources.	▪ One type of document takes significantly longer or requires different levels of approval or review ▪ Investigations that may result in dismissal or enforcement action are treated the same until the very end of the process, even though the outcome is known earlier in the process. ▪ Dry cleaner's permit processed the same as oil or gas well permit despite different permit requirements as well as different familiarity with the permitting process on the part of the applicant
Failure to Error-Proof	Designing processes to immediately acknowledge errors, or to prevent them all together saves time in error correction and improves customer satisfaction. If an application is received incomplete but the applicant isn't informed until much later, customers are unhappy.	▪ Multiple errors are caught much later in the process at which time correcting the error causes disruption and delay ▪ Reviewing finished reports rather than first reviewing the decisions/conclusions made before the report was written – now, if errors are found, the entire report must be re-written ▪ Financial reports written with columns of figures in a word processing program rather than a spreadsheet program where arithmetic errors can be easily avoided

Search Terms / Related Topics

- Evaluate Performance
- Value
- Defect
- Error

Value Add v. Non-Value Add Activities

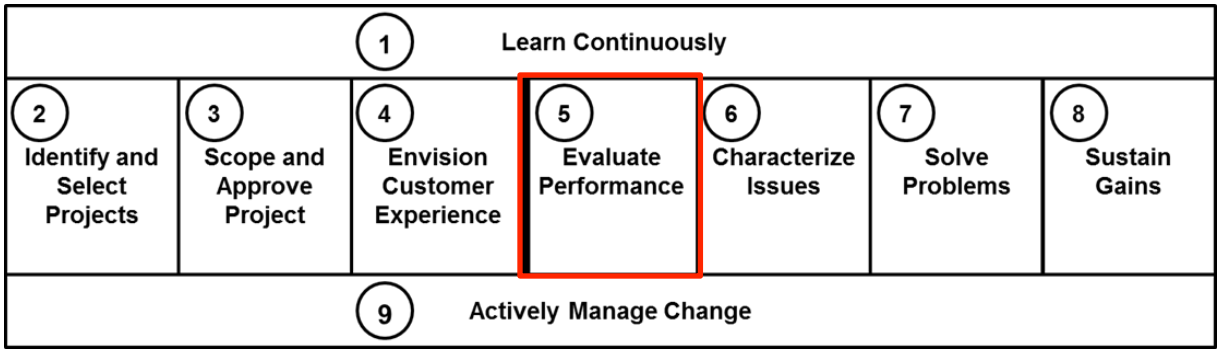
Overview

Value in a Lean system can only be defined by the customer and should not be skewed by pre-existing assumptions, technologies, and assets. It often helps to think of value-adding (VA) activities as those that change the product or service, that are executed correctly the first time, and those for which the customer (e.g. taxpayer, citizen) is willing to pay.

Non-value add (NVA) activities consume time, funding, and/or space, but do not contribute to creating value. These activities reduce the overall ability to meet customer needs. Some non-value add activities include approvals, rework, and inspection. The aim of a Lean system is to eliminate non-value add activities.

Some non-value add activities may be required by the business or by law. A business non-value add (BNVA) activity is any action required to run the business but not seen by the customer such as report development. A regulatory non-value add (RNVA) activity is an activity required by law that does not add value. Consider reducing, rationalizing, or automating these activities.

State of Colorado Lean Model



When To Use It In the Lifecycle

The ability to identify value add and non-value add activities is an essential component of executing a Lean project or running a Lean organization.

Customer value should be clarified while evaluating performance of the value stream.

Through this identification, you and your team will be able to evaluate current state performance and begin selecting processes that require work to eliminate non-value add activities.

How to Apply It

Select a process to assess and break up the process into individual steps. At each step consider the following:

- Does this step transform the product or service in terms of form, fit, or function?
- Is this a requirement of our end user?
- Is the customer willing to contribute even one cent more for this processing step?
- Can we eliminate any non-value add activities, rationalize and automate any business or regulatory non-value add activities, and innovate to link existing value add activities?

Key Information

- ✓ Value can only be defined by the end customer.
- ✓ Improvement is attained by the elimination of any non-value add activities and by reducing, rationalizing, and automating non-valued add activities that are required for the business or required by law.

Additional Resources

Video: http://www.youtube.com/watch?v=4WBvqNwGeEs&feature=youtu.be
Book: Learning to See: Value Stream Mapping to Add Value and Eliminate Muda by Shook and Rother
Book: Extreme Government Makeover by Ken Miller

Value Add v. Non-Value Add Activities (cont'd)

Example

Driver's License: Value Added vs. Non-Value Added

Analyzing an everyday situation makes clear the power of eliminating non-value added activities

DMV #1

1. *Arrive at DMV*
2. **Complete personal information form**
3. *Wait for testing station*
4. **Take written driver's test**
5. **Schedule driving exam**
6. *Depart*
7. *Return to DMV*
8. *Fill out additional form*
9. **Take driving exam**
10. *Receive exam results*
11. *Take picture*
12. *Receive temp license*
13. **Receive permanent license via mail**

Historical 4 weeks

DMV #2

1. *Arrive at DMV*
2. **Complete personal information form**
3. **Take written driver's test**
4. **Schedule driving exam**
5. *Depart*
6. *Return to DMV*
7. **Take driving exam**
8. *Receive exam results*
9. *Take picture*
10. **Receive permanent license**

Improved 1.5 weeks

DMV #3

1. *Set-up account with personal information and picture*
2. **Take written exam online**
3. **Schedule driving exam online**
4. *Arrive and sign-in via kiosk*
5. **Take driving exam; examiner confirms identity**
6. **Receive permanent license**

Improved 2 days

Legend

Italicized Activities = Non-Value Add
Bold Activities = Value Add

Search Terms / Related Topics

- Evaluate Performance
- Waste
- Value Stream Mapping
- 5 Principles of Lean

Workload Balancing

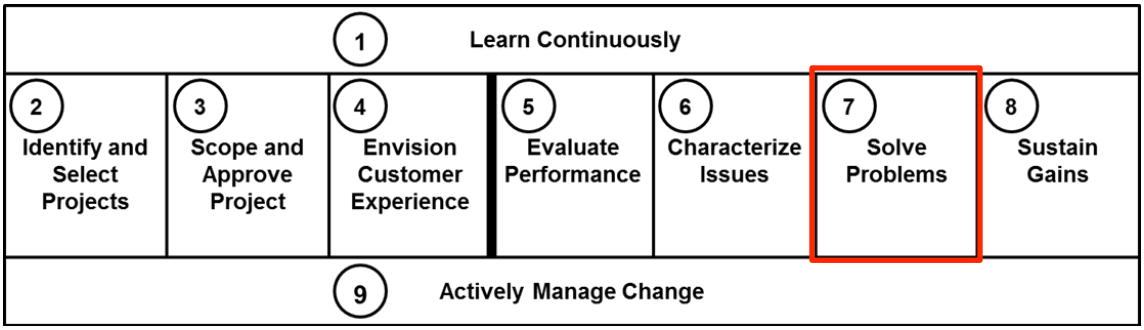
Overview

Synchronizing and balancing all operations in a service delivery value stream to the customer demand rate is a critical step in ensuring that customer needs are met. The rate at which customers request products or services is often referred to as "takt time" and is the drumbeat of a Lean environment. Takt time can be calculated as the amount of available time divided by customer demand. For example, if there are 480 minutes per working day and the call center receives 1,200 calls per day, calls would need to be answered every .4 minutes or 24 seconds (480 minutes/1,200 calls=.4 minutes per call). This means that the call center must answer 2.5 calls per minute in order to meet customer demand. When the organization cannot meet that demand, one traditional solution is for employees to work overtime. The Lean solution is to balance the work.

Workload balancing means to change the distribution and approach to a series of tasks being completed. Work balancing methods include: having one person complete more than the one task he / she is already completing, reducing the batch to only one item, and spreading a difficult or time consuming task across several steps or people.

An operator balance chart is a way to show the different work tasks being completed at each phase as compared as compared to takt time. It is a visual way to show where certain tasks may need to be redistributed across people.

State of Colorado Lean Model



When To Use It In the Lifecycle

Work balancing can be a helpful approach when you are solving problems such as: inventory accumulation between processes, inconsistent output rates, under / over utilized people or machines, cycle times that exceed the demand rate (takt time), and an imbalance in employee workloads.

How to Apply It

1. Calculate takt time by dividing the available time by the customer demand rate.
2. Work with employees to gather data on the time it takes to complete each operation. Create a bar chart of these operations and overlay a line on the chart to represent takt time.
3. Determine the number of employees required to meet the demand rate by dividing the total processing time by takt.
4. Combine operations to balance the work between employees and cross-train as possible to ensure flexibility.

Key Information

- ✓ Work balancing is an approach for ensuring that output rate matches customer demand.
- ✓ Operator balance charts compare the cycle time of each set of tasks against takt time.
- ✓ Work balancing methods include: having one person complete more than the one task he/she is already completing, reducing the batch to only one item, and spreading a difficult or time consuming task across several steps or people.

Additional Resources

Video: Line Balancing Example http://youtu.be/AHhatW3h7_c

Workload Balancing (cont'd)

Example

License Application Processing

1. Calculate Takt Time

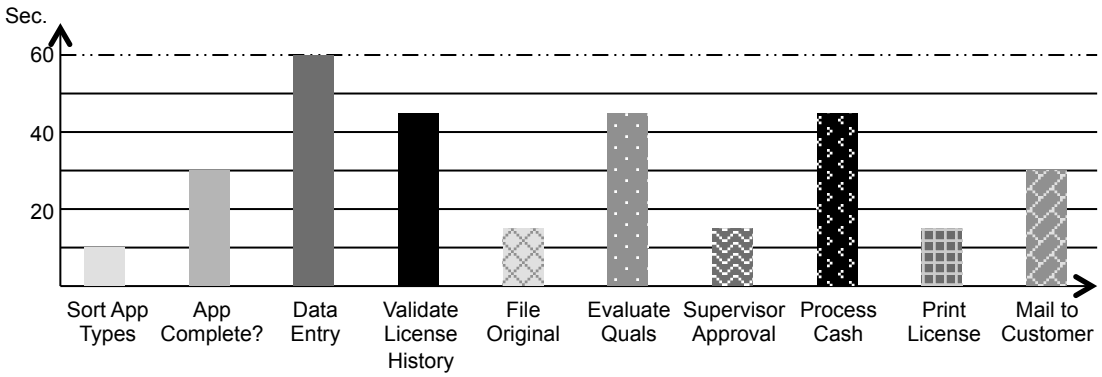
$$\text{Takt} = \frac{\text{Available Time}}{\text{Customer Demand}}$$

$$\text{Takt} = \frac{24{,}000 \text{ Seconds}}{400 \text{ Applications}}$$

Takt = 60 Seconds

Customers demand 2,000 new applications per week, or 400 per work day. Each day has roughly 400 productive minutes or 24,000 seconds. Dividing these numbers shows we must process one application every 60 seconds. This is takt.

2. Employees Determine Processing Times



Work with employees to observe the actual work performed and determine a processing time that each application requires. If there is variability, choose a time that can be met 85% of the time.

3. Determine Number of Employees Required

$$\text{Employees Required} = \frac{\text{Total Processing Time}}{\text{Takt}}$$

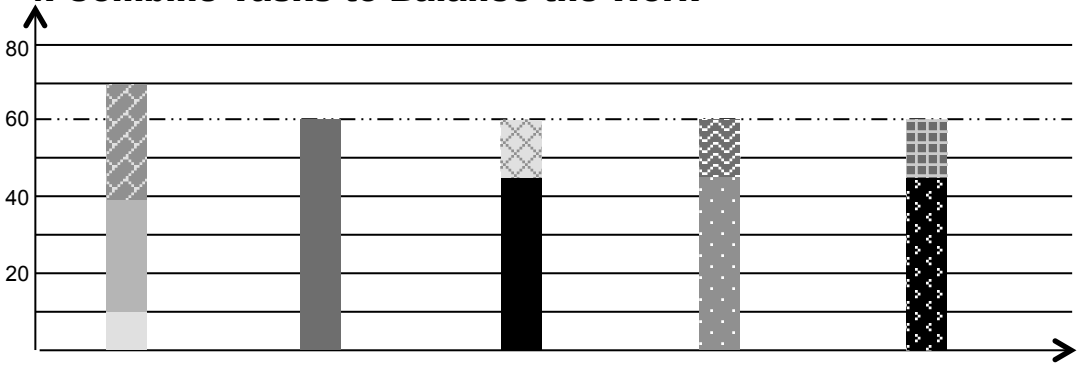
$$\text{Employees Required} = \frac{310 \text{ Seconds per App.}}{60 \text{ seconds}}$$

Employees Required = 5.2 Employees to Process Demand

Based on a total of 310 seconds of processing work for each application, and a takt time of 60 seconds, 5.2 employees are needed to operate this process in balance with demand.

Note: You will need additional employees to cover vacations, etc, but these people should be put to work on other valuable tasks.

4. Combine Tasks to Balance the Work



Operator 1	Operator 2	Operator 3	Operator 4	Operator 5
▪ Sort App. Types ▪ App Complete? ▪ Mail to Customer	▪ Data Entry	▪ Validate License History ▪ File Original	▪ Evaluate Quals ▪ Supervisor Approval	▪ Process Cash ▪ Print License

Combine tasks in such a way that each person has work equal to the takt time, and therefore equal to each other. This is not only fair, it ensures that applications will not pile up at any one station. Avoiding these queues improves quality and decreases flow time for each application. This is a recipe for delighting customers!

Note: Cross-train employees to the degree possible so that employees can flex between roles. This keeps people fresh and offers flexibility to your operations.

Search Terms / Related Topics

- Solve Problems
- Takt time
- Cycle time
- Product Family Matrix
- Cellular Flow
- Operator Balance Chart

Making the Case for Change

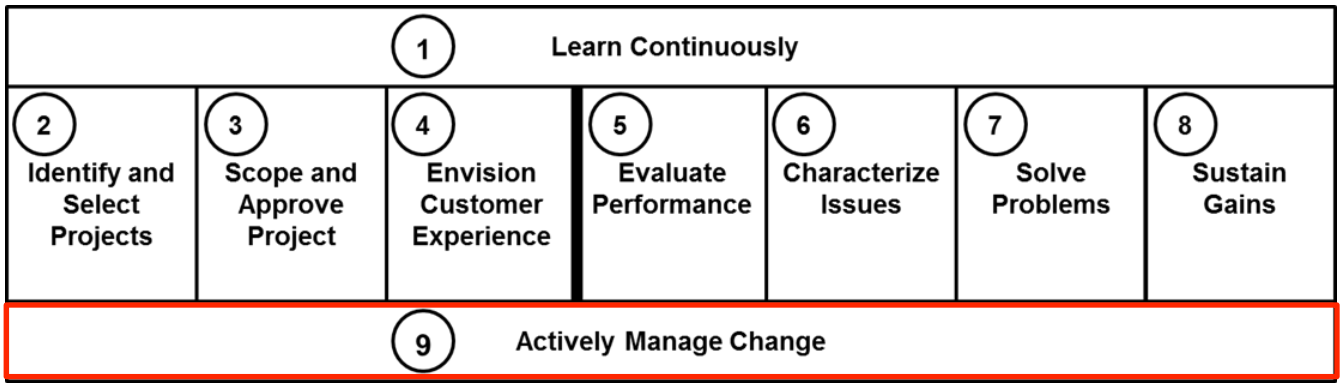
Overview

One significant but avoidable obstacle to the success of major change projects is failure to create a shared need for the change. Without an understanding of the importance of the change, the "why," all other details of the change may seem irrelevant.

Clearly defining the drivers, benefits and consequences of not changing will often be enough to fully align the teams and provide the incentive and rationale to act. However, failure to make a sound case for change causes changes to fail. If staff, middle managers, or even customers, don't see the importance of change, they simply won't give it the commitment needed for success.

This can be thought of as defining a 'Burning Platform' - why does the organization need to leave the platform it has? What will it be like when the organization has changed? Clarifying the need will instill confidence that the organization is serious about the pending changes, which will help stakeholders passionately engage their own teams to fully achieve vision.

State of Colorado Lean Model



When To Use It In the Lifecycle

It is important to continuously make the case for change throughout the Lean lifecycle, especially since you may encounter new stakeholders as you progress from selecting a project to sustaining new everyday behaviors.

You can begin developing the case for change when you are envisioning the customer experience and evaluating performance.

As you progress through problem identification, solving and sustainment, maintain and update the case, recognizing the impact of your stakeholder management actions and adding newly-impacted stakeholders to the analysis.

How to Apply It

- Identify and develop the tangible benefits to customers, partners, and the organization that are expected from the project and articulated in the vision.
- Map these benefits to stakeholders that need to make a change and those that might ally with you in bringing it about.
- Develop and execute the implementation plan together, so they have a stake in the investment and (hopefully), the outcome.
- Consider framing the change in terms of customer value and financial opportunity.

Key Information

- ✓ Creating a shared need, "the why", is necessary before discussing the details of the change or how it will occur.
- ✓ Understand and constantly communicate the key drivers and benefits of changing, as well as the consequences for not changing.
- ✓ Making the case for change is an continuous effort throughout the Lean transition.

Additional Resources

Article: http://www.rickmaurer.com/wp/making-a-case-for-change
Article: http://www.evancarmichael.com/Leadership/5162/LEADING-CHANGE--10-steps-to-success.html
Case Study: http://www.northhighland.com/results/whitepapers/pdfs/BankingIndustryLeveragesLean.pdf

Making the Case for Change (cont'd)

Example

A Case for Change

One key tool to accelerate change is an actively managed case for change. Actively supporting the business value of the project helps ensure solutions are sustainable and accepted. Here are examples of (4) different approaches to reach the same goal - an audience open to the change and the value it brings.

Approach	Details

Actively communicate, Why, then What and How	▪ Knowing why a change is important must precede the "what' and "how" that are all needed to make a project succeed. Establish the "why" in terms of tangible outcomes and benefits like:
	  ▪ Faster service
	  ▪ Less frustration
	  ▪ Standardized options for previously ad hoc processes
	  ▪ Improved ability to lower wasted time or effort
	▪ Link this change to the vision. Link the changes to the organization, the root causes, and the improvements to be made. Those challenging facts will generate the support and resources needed to resolve them.

Open Book Management	▪ Provide access to critical business information to buttress the case for change and engage in frank dialogue on these questions:
	  ▪ What are the challenges facing your department?
	  ▪ What are the opportunities?
	  ▪ What are budgetary or resource considerations?
	  ▪ What do members or customers say?
	  ▪ What other measures do you use to make strategic decisions?
	▪ Provide necessary training to help people interpret key business data.

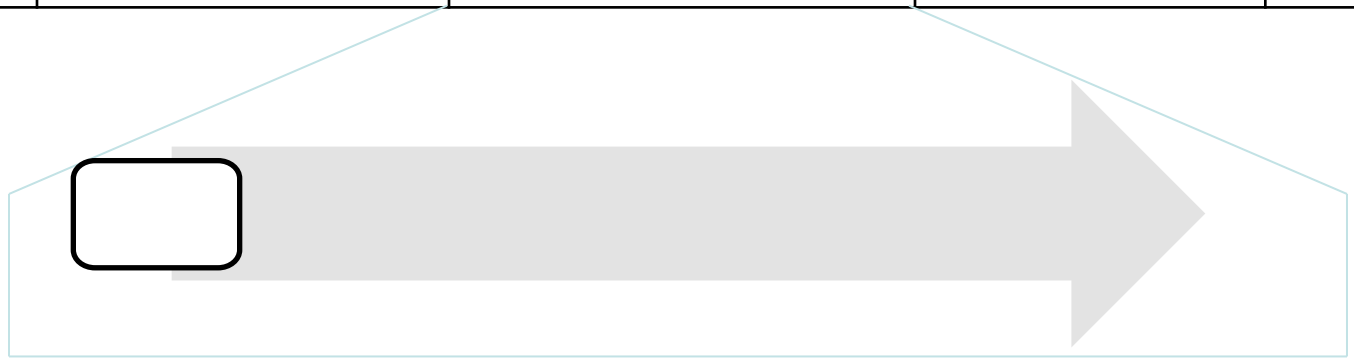
Drivers, Benefits and Consequences (DBC)	▪ Drivers for change – How is this a key contributor to the established vision? (e.g. creating a sustainable cost and delivery structure through user-friendly technologies) ▪ Benefits of change – How will customer experience be more convenient, affordable, positive, etc.? ▪ Consequences of not changing - We will continue to feel disorganized and chaotic and our customers will continue to be frustrated.
Management by Wandering Around (MBWA)	▪ In their book, The Leadership Challenge, Peters and Waterman detail the value of leaders available for people to pull them aside. "Hey Nancy! Have you heard about our new Lean project that is going to solve some big customer headaches?" ▪ Do not walk the halls with a pre-set agenda but rather share the why, then the what and how, and then listen to understand impacts these changes may create. ▪ This organic feedback and supporting detail prepares the organization.

Search Terms / Related Topics

- Actively Manage Change
- Secure Buy-In
- Benefits
- Stakeholders
- Partners
- Allies
- Resistors
- Opposition

Blank SIPOC Template

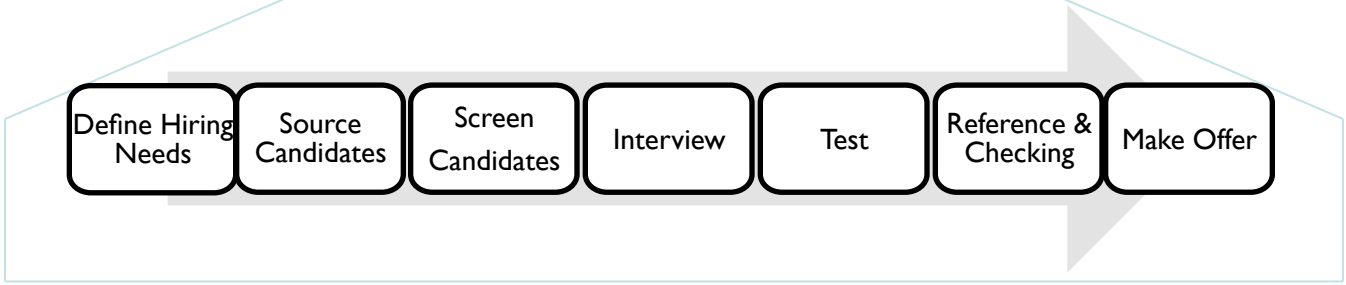
Suppliers	Inputs	Process	Outputs	Customers



Metrics	Input	Process	Output/Outcome	
				Speed
				Quality
				Cost

Hiring Project SIPOC Example

Suppliers	Inputs	Process	Outputs	Customers
Applicants Hiring Managers Exam vendors DPA HR Specialist HR Tech Accounting	Resume Application Exams Job Evaluation Compensation Plan State and Federal Law		Job Analysis Announcement Exam Results Eligible List Background Check Referral List Position Description Offer Letter	Hiring Managers Applicants HR Representatives Employees Accounting Exam vendors DPA



Metrics	Input	Process	Output/Outcome	
	No. Days from Notice of Vacancy to Request to Fill	No. Handoffs No. Approvals	No. Days from Vacancy Notification to Qualified Candidates	**Speed**
	Customer Evaluation Qualified Applicants	Satisfaction Survey	Survey Results	**Quality**
				Cost

Stakeholder Analysis Template

Stakeholder	Influence on Lean Acceptance	Power in the Organization	How will this group react?		Commitment Level		Approach to Move to Desired Commitment
			Barriers?	Enablers?	Current	Desired	

Communications Plan Template

Audience and Objective	Message Contents	Method	Owner	Timing

Communications Plan (Sample)

Audience and Objective	Message Contents	Method	Owner	Timing
Steering Committee *Awareness and commitment to join*	• Request to join as steerco member • Notify of vision session and interview	Email	Deborah	11/6
Core Team *Awareness and commitment to join*	• Purpose • Their role • Meeting details (training, event)	Email	Ken	After 11/16
Program Directors *Aware and favorably disposed to piloting the refined process*	• Recap project objectives • Share milestone plan • Solicit potential core team members from which to choose a balanced team	Short presentation	Deborah and Ken	11/16
	• Share event outcomes • Review pilot options	Short presentation	Deborah and Ken	12/21
Executive Director *Keep current on project happenings*	• Milestone plans and progress • Event results • Risks and issues	Conduct during one-on-one meetings	Deborah	

Forms Analysis Decision Matrix

Current: # Forms **Future State: # Forms** **Reduced: by xx%**

Is the form required by Law /Regulation/Policy?	Y	Verify	Retained- #
N			
Is the info required?	N	Eliminate Form	Eliminated- #
Y			
Can it be captured electronically at the source?	Y	Automate	Sample Solution: "*Automated entry at source by users for most forms*"
N			
Can it be combined with other info in multi-purpose form?	Y	Combine	Combined- #
N			
Can it be streamlined or simplified?	Y	Redesign to Streamline and Simplify	Redesign- #
N			
Can it be moved earlier in the process?	Y	Move up in process	Sample Solution: "*Data Entry at Source by Contractors*"

Course Name: Lean Sponsor Training

Targeted Users:

- Lean sponsors
- Select Lean champions

Course Learning Objective(s):

- Prepare sponsors to successfully lead the transformation of an organization to a Lean culture through consistent, convenient, and relevant training focused on application

Course Modules and Overview:

This course contains 7 modules.

Course	Topic	Presentation Time (min)	Exercise/ Discussion Time	Time
N/A	Welcome and Course Overview	15	15	30
Lean Fundamentals for Sponsors	Lean Overview, Colorado Lean Model, Sponsor Role	30	15	45
Identify and Select Project	Project Selection, Quick Wins and Just-do-its	30	30	60
Scope and Approve Project	Project, Scoping, SIPOC, Team Selection	15	30	45
Envision Customer Experience	Lean Visioning	20	25	45
N/A	Day 1 Wrap-up	5	10	15
N/A	Day 2 Intro	5	10	15
Solve Problems (Sponsor)	Scenarios Focused on Selection and Application of the Correct Tool	5	100	105
Sustain Gains	Standard Work, Mistake Proofing, Visual Management, Lean Daily Management	20	40	60

Actively Manage Change	Stakeholder Management, Communications Plan	10	30	40
N/A	Daily Wrap-up	10	10	20
	Total	**165 minutes**	**315 minutes**	**480 minutes**

Prerequisites:

- None

Module Name: Lean Fundamentals for Lean Sponsors

Module Learning Objectives:

- Recognize the importance of Lean to the State of Colorado
- Become familiar with basic Lean concepts
- Recognize the Colorado Lean Model, understand how it is used, and your role in applying it

Module Pre-work:

Read these tool and method overview sheets:

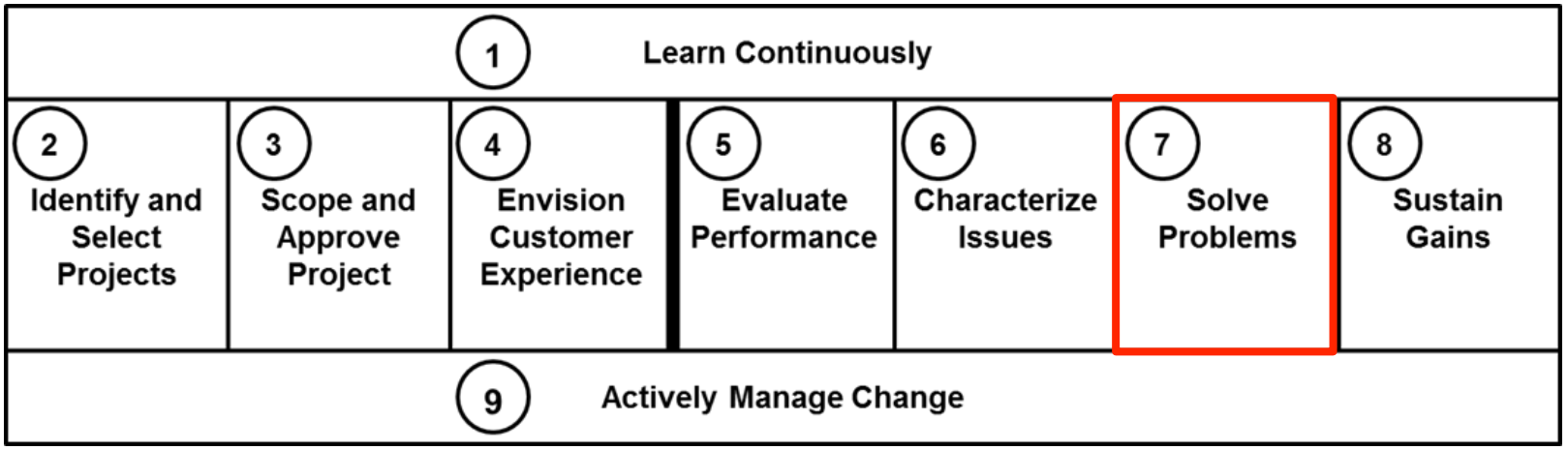
- Introduction to Lean
- Roles and Responsibilities
- Role Overviews (5)
- Five Process Pitfalls in Government
- Eight Wastes
- Value Add v. Non-Value Add Activities
- Lean Process Metrics
- Value Stream Map

Read this additional material:

- None

Solve Problems: Sponsor Edition

State of Colorado Lean Model



Version 2.0
January 2013

Module Objectives

Objectives:

- Learn through scenarios and discussion the appropriate sequence and timing of tool application
- Gain a confidence in your ability to guide your organization during your Lean transformation

Scenario 1

Over lunch a new employee approaches you in the cafeteria. After polite conversation, she confides:

"I'm new to the department and in charge of reviewing the permit applications that our customers submit. Some permits require further revisions and some require additional processing before they can be approved by my supervisor's boss.

After a week at work, I've learned that I have been delivering some of these permits to the wrong location. Since I'm not sure where these should go and what to do next, I started asking my colleagues questions so I would better understand the process. After asking three different colleagues, I have three different answers. No one seems to know 'the whole story' and there is no procedure to help me.

You're part of this Lean thing I learned about, what should I do?"

As a Lean sponsor, what action should you take?

Actions: Scenario 1

Key Questions:

- What are the characteristics of this scenario?
- What Lean actions can a sponsor take to improve the situation?

Notes:

Lessons Learned

- Listen for key words when people are discussing issues. Words like discipline, errors, and rework will tip you off to potential approaches
- Characterize the issue before solving the problems—balance a bias for action with a disciplined, inclusive approach
- Work collaboratively with your champion and Lean project leader to test different approaches—avoid getting comfortable with the few tools you've mastered
- Others?

Case Study:
Lean Thinking in Education

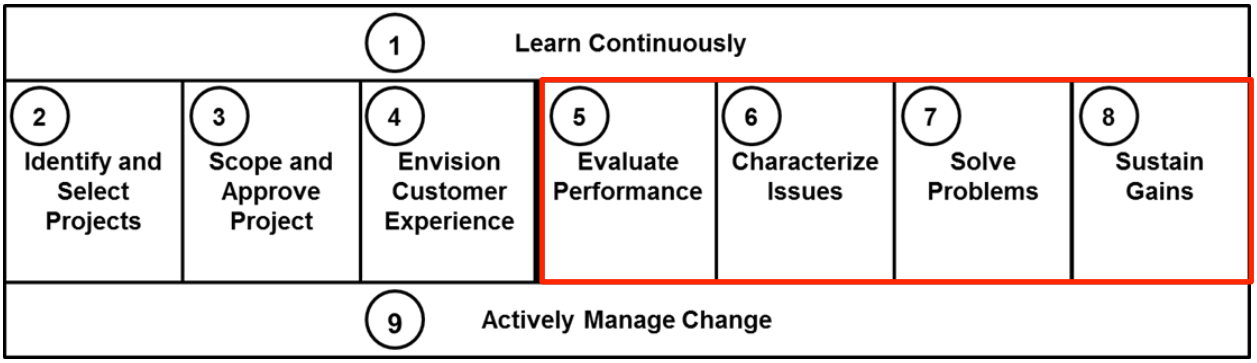
Relevance to the State of Colorado Lean Program

This case study highlights Lean tools used by the Colorado Lean Program to achieve higher First Call Resolution (FCR) across the State of Colorado Department of Education (CDE) Office of Professional Services inbound call center. This project addressed a common operational reality of using various people from different departments or teams to handle a high volume of calls across a wide variety of issues, with maximum standardization and best practice sharing.

In July 2012, CDE sought to apply Lean tools to the handling of ~3,800 inbound calls per month by a rotating team of six resources from different divisions across the Department. Across approximately 50 different issues, the team developed and implemented recommendations for a three tier First Call Resolution (FCR) strategy in conjunction with redesigned FAQ artifacts on their website. The business case behind those recommendations was developed during a Rapid Improvement Event (RIE) in August 2012. By the end of September, the vast majority of those recommendations were already operational and making a clear difference.

- Quantified agent-by-agent and call-by-call performance metrics for baseline and subsequent analysis.
- Focus on continuous improvement toward standard CDE call handling model.
- Develop scripted content/copy across all channels (phone, web, print etc.).
- Lean solutions were agreeable to the team precisely because they reduced the effort required to achieve sustainable improvements to customers' call experiences.
- The thoughtful definition and collection of operational metrics underpinned the recommendations. Lean helped CDE quickly define and adopt customer-driven changes.

In the State of Colorado Lean Model, this case progressed through each Lean phase, but this case study highlights Evaluate Performance, Characterize Issues, Solve Problems and Sustain Gains.



Key Outcomes and Learnings from the Case

This case focuses on the Lean strategy and specific tactics to fully operationalize Lean across a dispersed call center covering ~50 call types.

- A rotating team of 6 Colorado Department of Education (CDE) resources handle an average of 3,800 inbound telephone calls each month.
- Between January and May 2010, the team saw a 45% increase in call volume, with a further and sustained 18% call volume increase again from 2011 to 2012. Managing this volume without adding staff or wait times was core to the objectives of the project.
- Calls from the public, educators, school districts, and federal programs often require intelligent, thoughtful probing to ensure the calls and information are diagnosed and resolved the first time.
- The team took two months to pilot and refine two call handling models. The focus on First Call Resolution (FCR) using a broad variety of Lean tools was a decision made early in scoping and remained a common metric to align different approaches to answering calls.
- The team continuously analyzed new information (category, duration, demeanor etc.) about incoming calls, and found common answers or resources were sorely needed.
    - Analyzed their typical call volumes;
    - Developed mistake proof solutions to ensure FCR as quickly as possible; and
    - Instituted measures to make these changes sustainable.

Key Information

- ✓ Understand your customers' perceptions of your role as a call center.
- ✓ Develop First Call Resolution (FCR) paths to help customers quickly navigate through complex organizations.
- ✓ Supply skill, expertise, materials and information at a Lean rate (e.g., necessary to meet defined customer service levels).

Armed with this basic information, please read the case studies and consider answering the discussion questions on the following pages. A Lean perspective on these questions is also provided that may help engage your team.

Case Study

1. Read the following pages.

2. Consider how the experience of the Colorado Department of Education can be applied to challenges and opportunities you see in your organization.

Lean Thinking in Education

This case study highlights Lean tools used by the Colorado Lean Program to achieve higher First Call Resolution (FCR) across the State of Colorado Department of Education (CDE) Office of Professional Services inbound call center. This project addressed a common operational reality of using various people from different departments or teams to handle a high volume of calls (3,800/month) across a wide variety of issues (50), with maximum standardization and best practice sharing.

In July 2012, CDE sought to apply Lean tools to the handling of inbound calls by a rotating team of 6 resources from the Office of Professional Services. The team developed and implemented recommendations for a three tier First Call Resolution (FCR) strategy in conjunction with redesigned FAQ artifacts on their website. The business case behind those recommendations was developed during a Rapid Improvement Event in August 2012. By the end of September, the vast majority of those recommendations were already operational and making a clear difference.

This case study highlights how the team achieved these measurable and positive benefits in a dispersed call center environment.

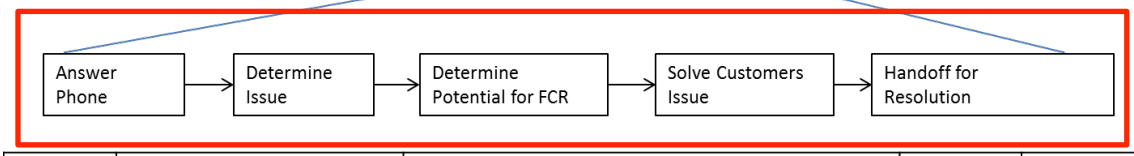
- Management sought visibility into agent-by-agent and call-by-call performance metrics so they can be continuously improved.
- Agents and customers both benefit from a standard process and standard content.
- This was achieved with the active support from both executives and the front-lines.

SIPOC

The team collectively developed this SIPOC during the vision session for use during the Rapid Improvement Event (RIE).

SIPOC: First Call Resolution

Suppliers	Inputs	Process	Outputs	Customers
Catalogs / Websites w/ CDE Phone #s IVR Phones	Catalogs Callers Messages	• Answer Phone • Determine Issue • Determine Potential for FCR • Solve • Handoff	Informed Caller Resolved Ticket	Applicants Hiring Districts HR, Administrators, Principals, Teachers/Program, Registrars, Recruiters Courts/ AG Legislators Law Enforcement (Police, CBI, FBI)



	Input	Process	Output/ Outcome	
Metrics	Callers to main #		75% TSF in 2 min	**Speed**
	Callers to main # Issue Defined Catalogs / References	Reduce Average Handling Time (AHT) to 3 minutes from current estimates of 7-8 minutes	AHT from 8 Min to 3 Min	**Speed**
	Callers to main # Issue Defined Catalogs / References	Solve or Handoff	85% FCR	**Quality**

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Vision and Rapid Improvement Event (RIE)

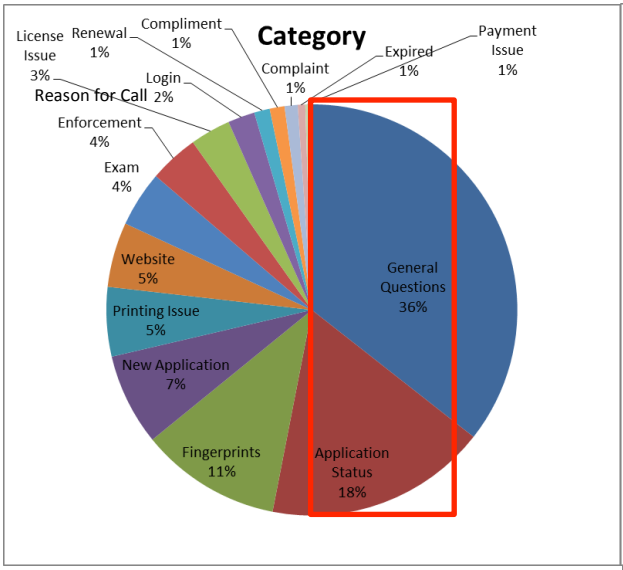
The Vision developed by the team:

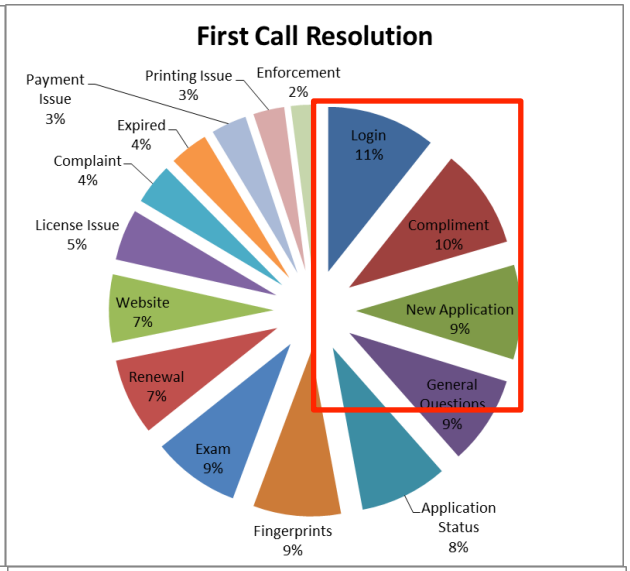
CDE's knowledgeable professionals will respectfully help customers across Colorado by quickly and efficiently ensuring First Call Resolution. We will standardize proactive steps to ensure all stakeholders get helpful outcomes and status for all questions or needs, including follow through. We will be positive and accountable to public stakeholders and customers including applicants, teachers, school districts, administrators and other government agencies.

In anticipation of the need for metrics related to the CDE Call Center Vision, CDE implemented a plan to collect the following information with a focus on variation during every call for four weeks in May, June and July 2012. The following data regarding CDE proved highly useful during the August RIE.

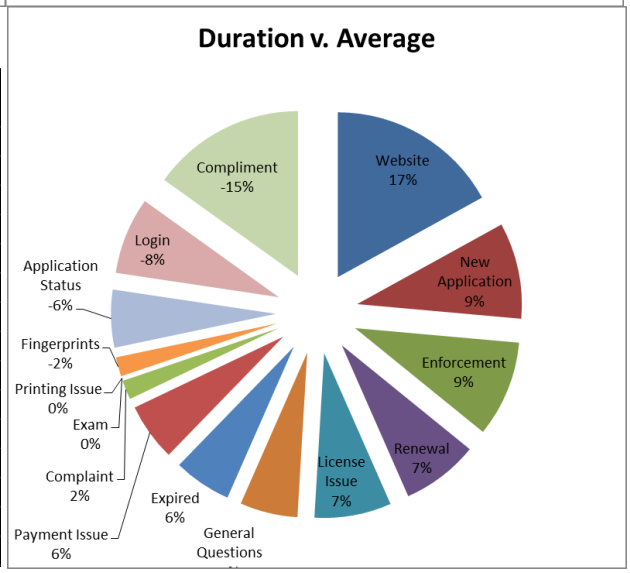
- Category
- FCR%

- Duration vs. Average.

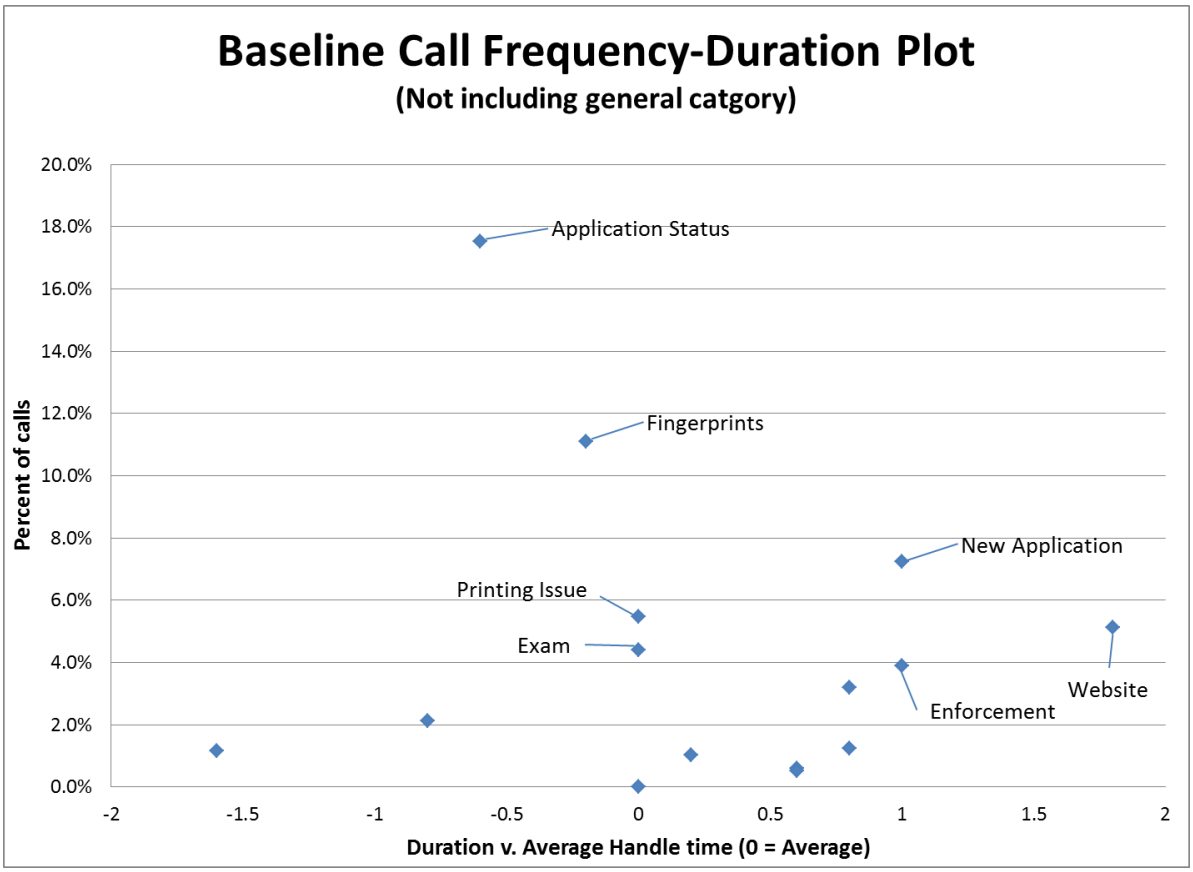




	Category	First Call Resolution	Duration v. Average
Website	5.1%	61%	1.8
New Application	7.2%	85%	1
Enforcement	3.9%	19%	1
Renewal	1.2%	69%	0.8
License Issue	3.2%	46%	0.8
General Questions	35.7%	80%	0.6
Expired	0.6%	35%	0.6
Payment Issue	0.5%	32%	0.6
Complaint	1.0%	37%	0.2
Exam	4.4%	79%	0
Printing Issue	5.5%	28%	0
Fingerprints	11.1%	79%	-0.2
Application Status	17.5%	79%	-0.6
Login	2.1%	98%	-0.8
Compliment	1.2%	90%	-1.6



Of immediate notice to the team was the outsized challenge that navigating the website (17%) and new applications (9%) have on the CDE resources that answer the general line. As a result, the team agreed to develop new scenarios and content to intuitively educate the public on the ways to navigate CDE online.



In short, the healthy sample of call data proved essential to understanding the current challenges and provided clarity for Subject Matter Expertise and the development of the future state for the three tier call handling model.

Subject Matter Expertise

A Call Center Subject Matter Expert (SME) engaged during the RIE highlighted a variety of well-tested techniques to improve customer service on the phones. These included the following:

- Offering choices to customers demonstrates respect
  - Do you want to hold for X minutes or call back later?
  - Do you want to interact with us via phone, web, email, fax, etc?
- Menus and greetings should be short and sweet
  - Rule of 5s and 3s—avoid menus with more than 5 initial options and 3 subsequent ones
  - Utilizing queue time for important messages avoids long menus
  - Pace and tone should match geographical preferences
- Teaching leads to satisfaction
  - Providing a few additional details of context demonstrates respect for customers
  - Customers who report learning something on the call are twice as likely to be "extremely satisfied" as those who do not report being taught.
- Confidence is key
  - Agents should take charge of each interaction within the first 30 seconds

- Statements like “I can help you with that” reduce customer stress levels.

Additional SME attention was brought to bear on the particular capabilities that are necessary to effectively prepare to meet the expectations of the general public in high-volume centers.

Capabilities	Sub-Capability and Description
Service Assurance	• **Service Level Agreements (SLAs):** Clear articulation of performance targets for customer-facing processes (e.g. resolution w/in X hours or Y days; hold times less than X seconds, etc); tracked via performance management
Performance Management	• **Metric Development:** Selection and maintenance of a balanced set of measures including handle time, first call resolution, customer satisfaction, SLA achievement; consider moving these measures into the workplace and gathering agent feedback on how to achieve these
Knowledge Management	• **Call Handling Model:** Consistent protocol for agents to follow when conducting a call/email, ensuring that each contact goes through the necessary phases/stages in its lifecycle; also called “the anatomy of a call” • **Collective Intelligence:** Codification of content knowledge and solving approaches for each type of call; can be designed to mirror the call handling model in support of seamless delivery
Talent Acquisition & Development	• **Skills Profiling:** Developing and maintaining a detailed skills inventory for each agent; offers the opportunity to measure continual growth and for junior agents to seek assistance from experienced agents • **Coaching:** Regular call monitoring and coaching of ALL agents in terms of technical accuracy and service delivery; coaching check sheets mirror the call handling model; coaching can be done by peers, as well, a central goal is self-directed improvement • **On-boarding:** Documented approach for competency-based on-boarding; allows progression at different paces; can be used in concert with skills profiling to determine minimum criteria for “release to phones”
Continuous Improvement	• **Root Cause Analysis:** Rigorous root cause analysis on trends and reasons for calls; take actions reduce the number of calls, move contacts to self-service, and to streamline handling • **Special Projects:** Process for continually brainstorming, selecting, and testing opportunities to improve; effects gauged in metrics

The team really appreciated the big picture approach brought to the RIE because it enabled them to clearly connect the vast majority of seemingly random reasons for call-handling.

The following Current State and Future State models were developed and enhanced with the SME to visually demonstrate the impacts callers to CDE. The following assessment of their current operation provided a baseline for a future model that would be modified for CDE purposes.

Current CSC Care Model

Customer facing			Demand Management		
	Question or Problem ⇨	Customer Self Help: • "Help" within eLicensing • Website – some searches hit common keywords • eLicensing training		**Tier 0** Triage **Tier 1** (CSC)	**Tier 2** (Hand-off)

Internal Functions	**Capabilities**	**Sub-capabilities**		
	Customer Experience:	Satisfaction Surveying	Proactive/Reactive Services	Customer Advocacy
	Strategy Development:	Voice of Customer	Service Definition	
	Service Assurance:	Quality	Call Monitoring	SLAs
	Performance Management:	Metric Development	Tracking & Reporting	Incentive Compensation
	Knowledge Management:	Call Handling Model	Documentation	Sharing
	Talent Acquisition & Development:	Talent Acquisition	On-boarding	Skills Profiling
		Training Development	Training Delivery	Coaching
	Continuous Improvement:	Root Cause Analysis	Demand Management	Special Projects
	Tool Management:	New Tool Development	Technology Support	
	Bus. Continuity/Risk Management:	Plan Development	Plan Testing	Regulatory Compliance
	Administration:	Demand Forecasting	Labor Scheduling	Budgeting

Initial agreement on artifacts as a leverage point for internal CDE specialized knowledge was established during the initial framework of the current state. Subsequent analyses and discussions would introduce clarity around resolution and the right level of Tier 1 and 2 skills versus the escalation to a Tier 3 Subject Matter Expert. Although easy to assume initial gains will become systemic, experience and history both show that sustaining high-performance often requires a cultural shift to the broader model as well.

Future State Model

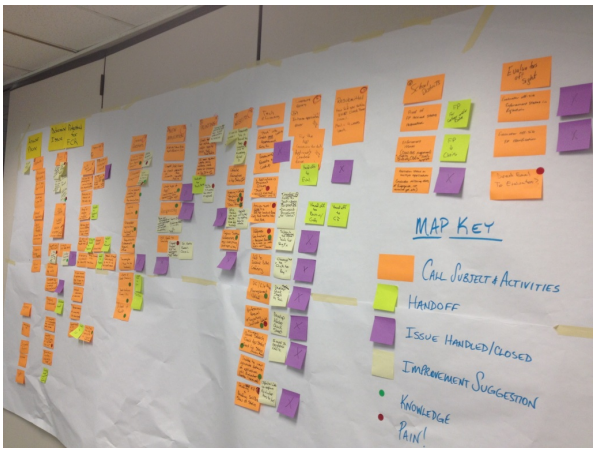
Customer facing			Demand Management			
	Questions or Problems ⇨	Customer Self Help (Call Avoidance) • Intuitive Website Artifacts & FAQs • "Help" within eLicensing • "Teacher & District License" for viewing eLicensing" • Web & class training opportunities		**Tier 0** (Triage) **Tier 1 Resolution** (CSC)	**Tier 2 Resolution** (CSC sends approved artifact, link or email template)	**Tier 3 Resolution** (CSC hand-off to Evaluation, Enforcement, Prints, Tech, etc)

Internal Functions	**Capabilities**	**Sub-capabilities**		
	Customer Experience:	Satisfaction Surveying	Proactive/Reactive Services	Customer Advocacy
	Strategy Development:	Voice of Customer	Service Definition	
	Service Assurance:	Quality	Call Monitoring	SLAs
	Performance Management:	Metric Development	Tracking & Reporting	Incentive Compensation
	Knowledge Management:	Call Handling Model	Documentation	Sharing
	Talent Acquisition & Development:	Talent Acquisition	On-boarding	Skills Profiling
		Training Development	Training Delivery	Coaching
	Continuous Improvement:	Root Cause Analysis	Demand Management	Special Projects
	Tool Management:	New Tool Development	Technology Support	
	Bus. Continuity/Risk Management:	Plan Development	Plan Testing	Regulatory Compliance
	Administration:	Demand Forecasting	Labor Scheduling	Budgeting

Attention focused on 3 Tiers but not initially on the cultural shift. After a few weeks, a sense of urgency among the team had set in regarding transparency of their organizational performance. As highlighted by

shading in the figures above, the expansion of the scope for call center integration to operational process is justified.

The following pictures from the August 2012 event highlight the visual nature of the Value Stream flows for Current State (left) and Future State (right).



The full future state reflected a need for a 3 Tier escalation Model, updated artifacts, web content and supporting processes.

Key Change	Tangible Benefit
Institute a 3 Tier Model *	• Tier 0 – Call avoidance - Immediate reuse of self-directed keyword searchable artifacts on CDE external website • Tier 1 – Inbound calls triaged by CSC to Tier 1,2 or 3. Resolved 1 immediately • Tier 2 - Immediate reuse of internal artifacts for 2nd tier support (email pdf or links to website for high frequency issues that have medium duration issues • Tier 3 - Maximum cross training from specialist resources (fingerprints, enforcement, evaluation, tech, for high duration low frequency issues,
Develop suite of knowledge artifacts *	• 20 + issues (reciprocity, refunds, upload instructions etc) in response to 3 months of data. • Clear resolution path (tier 1,2&3) defined by the project team & subject matter experts • Prioritized and newly developed artifacts to be reused on the phones, web, email, and ultimately eLicensing guidelines. • Call avoidance where licensee reviews website and finds answer on their own
Pilot functional tracking ticket for internal service requests *	• Sample baseline performance metrics from customer perspective • Establish goals for turnaround time of internal hand-offs • Evaluate progress against lean goals.
Update website *with latest glossary terms	• Call avoidance where licensee reviews website and finds answer on their own
Eliminate batching of Evaluator of the Day Sheets	• JDI – Do not wait until 4p to refer sheets to Evaluator team

Implementation Plan

The implementation plan was developed by the team to distill the minimum necessary tasks required to achieve the future state, including improved First Call Resolution.

Task Group	Task	Who	When	Done
3 Tier Model	High-level analysis of easy to acquire and use call center systems capabilities	Tommy	Aug 18	Aug 16
3 Tier Model	Obtain Dr. Goetz approval to proceed with 3 tier, artifact and website planning	CML	Aug 18	Aug 6
3 Tier Model	Develop synopsis of planned changes put in written form with at least one sample artifact (3 tiers, website, artifacts, EVOD batching, tracking system research vendor systems)	CML	Oct 1	Ongoing
3 Tier Model	Finalize stakeholder list for this project's changes (CSC, Eval, Phones & Enf). + document the remaining CDE areas.	CML	Oct 1	Sept 29
3 Tier Model	Raise awareness to solicit feedback at unit monthly meeting (Huddles, CSC Meetings & Monthly Meetings)	CML	Oct 17	Aug 9 Aug 13
3 Tier Model	Approval from Wendy & Jill H to broaden scope	CML	Oct 17	Oct 9
3 Tier Model	Request a cross-unit (eval, CSC, ops etc) meeting to introduce and get feedback	CDE Cabinet	Oct 31	Oct 9
Tracking Ticket	Review and edit updated draft of ticket.	Rebecca	Aug 11	Aug 11
Tracking Ticket	Pilot new ticket & process for 2 weeks.	Educator Licensing	Sep 19	Sept 17

The implementation plan was characterized by the minimum necessary tasks required to achieve the customer-driven vision for First Call Resolution.

Task Group	Task	Who	When	Done
Tracking Ticket	Review and revamp ticket format & process	Chris	Oct 1	Sept 28
Tracking Ticket	Pull pilot or full implementation	Educator Licensing	Oct 10	Oct 3
Website Updates	Review current definitions, approach and author base for current artifacts & content on web	Brandy + Authors	Oct 15	Sept 24
Website Updates	Analyze gaps and recommend solutions	Dept Heads + Authors	Nov 30	
Website Updates	Present updated glossary	Supervisors + EL	Dec 3	
Website Updates	Solicit and integrate feedback	Marcus / Comms	Jan 5	
Website Updates	Finalize 3 tier & artifact process	Supervisors + EL + Comm + HR	Feb 5	
Website Updates	Finalize solutions	Brandy + Subs	Mar 10	
Website Updates	Release updated web	Marcus	TBD	

Sustainment

A quick word of caution, without sustained commitment, even compelling efficiencies can be fleeting in the months that follow initial success. To that end, the team leveraged the following Sustainment Checklist to use as a clear indicator of the level of adoption that has been sustained since the implementation of the changes was completed.

Sustainment Checklist

Project Name: CDE FCR
Project Sponsor: Chris
Checklist Completed By: Chris
Date Completed: Target Nov 11

Item Number	Desired Outcome - Description	Rating 1: No evidence 2: Used inconsistently 3: Always used	Notes
1.	85% First Call Resolution (FCR) - Disambiguation of all requests through handoff to appropriate customer service resource who can close the ticket	3	FCR percentage for September and October 2012 is 61% with 33% of categories over a 70% FCR and 2 of the 15 categories above 80% FCR.
2	70% Time Service Factor (TSF): Percentage of calls answered within first 2 minutes	3	The average answering speed for calls is 6.05 minutes since September 2012. Working on trying to pull appropriate data from the system to get the TSF.
3	Reduce Average Handling Time (AHT) to 3 minutes from current estimates of 7-8 minutes	3	60% of Customer Support Center employees are at an AHT of 3.05 minutes or less. The other 40% are at an AHT of 4.5 minutes or less.

The +60 day review of actual performance by Chris determined that solid progress was in fact being made. Specifically, as the ratings of 3 – Always Used above indicate, the team is implementing the specific changes and measuring the impacts on First Call Resolution (FCR), Time Service Factor (TSF) and Average Handling Time (AHT).

Aside from the very positive results in FCR and AHT, one important note about the unexpected increase in TSF, is that two of the six resources in the call center left the team in August. This unexpected reduction in the number of available resources concentrated calls on the remaining four agents in September and October. This resulted in the TSF remaining around six minutes and preventing progress toward two minutes. Importantly, the most recent data (from early November) suggest TSF is starting to recover as the standard content helps agents resolve calls quickly and be available to pick up the next call from the queue.

Discussion Questions

After reading the case study, consider jotting down your answers to the following questions. If appropriate, engage your team in a group discussion as well. The four sections that follow include individual questions, team discussion questions and finally some Lean perspectives on both.

Individual Questions:

- What does this case demonstrate about First Call Resolution (FCR)?

- Why is a 3 Tier Model more appropriate for CDE? What efforts were made for improving the gathering of data? What data would help your organization institutionalize Lean?

- What would your customers ask your organization if they had a chance to survey you? What can you learn from that change in perspective?

Team Discussion Questions:

- How could your team learn from the case study's focus on FCR?

- Where does the FCR Model need to be enhanced? How could email/chat/social media be incorporated into this model?

- What proactive steps might be taken to help avoid more calls to the main number?

Lean Perspective on Discussion Questions

The following Lean perspectives may be of use to you as you take action.

Individual Questions and Lean Perspective

Discussion Question	Lean Perspective
What does this case demonstrate about FCR?	• Organizations and customers develop entrenched behaviors and processes over time. FCR helps by assuming the customer's perspective through which the team viewed handling calls. • They now know it takes broader-than-usual agreement on both problems and solutions, including shared understanding of their tradeoffs.
Why is a 3 Tier Model more appropriate for the CDE? What efforts were made for improving the gathering of data? What data would help your organization develop similar tiers?	• High volume and low duration calls can be addressed by new content, scripting or other repeatable content and processes. • Low volume and high duration calls addressed by funneling to experts who can quickly disambiguate subtle factors driving the long talk times. • Customer call category, FCR rate, resolution time are all key to discerning where to invest time and effort into additional training for call center resources

What would your customers ask your organization if they had a chance to survey you?
 	
What can you learn from that change in perspective?
	• Ineffective process leads to customer complaints and often exceptions that distract staff and decision makers.
	• This leads to backlogs in daily operations, ultimately driving more complaints, more exceptions and so on.
	• Lean tools and tactics can be used to help break this cycle.
	• If you haven't collected metrics like these recently, consider doing so:
	  ○ Sample 5-10% of calls to develop an initial baseline.
	  ○ Draft a Checklist and Control Chart to provide context about progress through benchmarks.
	  ○ Draw lessons from the Checklist responses. Implement them where feasible and request feedback from customers again.
	  ○ What are the daily/weekly changes? Where can you reverse unfavorable trends?

Team Discussion Questions and Lean Perspective

Discussion Question	Lean Perspective
How could your team learn from the case study's focus on FCR?	• For many centers, variation in FCR results in having to staff less agents (at overall lower costs) to handle the variability and still meet FCR service levels. Tools to optimize this include: o Call Frequency vs Duration Analysis o Average Handling Time o Average Talk Time • Excess agents serve a similar purpose as excess inventory does in a manufacturing operation – an unnecessary buffer against process variation. This masks the real productivity potential of the team, preventing a Lean process from efficiently handling the call.
How could your team learn from the case study's focus on silence during a call as an opportunity to increase FCR?	• Once you have identified reasons calls cannot be resolved, work with SMEs or other authors to identify Non-Value Added (NVA) steps that might occur. These might include o Down time (or silence) o Hand-offs o Hold-times during search for contact or content o Messages or other information that does not reach the right SME • Evaluate the larger context and develop some options as to what could be done to "script" or standardize interactions through the downtime so the customer is continually involved and receiving value.
What proactive steps could be taken to help avoid more calls to the main number?	• CDE defined their operating model, set a global expectation to accelerate improvement, and developed an ability to accurately assess their current state in order to identify and close gaps in performance. o Artifacts or other self-service options on the web o Established SMEs and call flows o Integrated channel information to identify what issues can be answered via application or website, versus call center • Leaders can more easily communicate call handling challenges, both formally and informally, by learning with each other. At the organizational level, this collaborative learning relationship has proven to be powerful, if challenging. Largely because it requires sustained alignment among leaders at different levels within the organization.

Appendix C

Customer Experience Visions Statements

Agriculture License Consolidation

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Envision Customer Experience

The Colorado Department of Agriculture is comprised of dedicated professionals who strive to provide licensing and registration in an efficient and effective manner. CDA customers can determine requirements for licenses and registrations, calculate fees and apply using a web-based system that provides one stop - one transaction functionality. The applicant will have available a current license or registration when the transaction is completed. The CDA system will accommodate all necessary licensing/registration conditions including verification of legal status of applicant, bonding, testing, experience needed, etc. The public will have access to licensing and registration status for all entities. CDA will use the web based system to provide pro-active communication with all customers.

Community Corrections Utilization

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Envision Customer Experience

The Community Corrections (CC) Utilization Team envisions an improved CC system that embraces offender success through a community re-entry step down process. An effective step down process progresses offenders from facilities through community corrections to parole while reducing risk for offenders and communities. There is predictability for offenders' admission and release from CC centers. CC referrals contain relevant information. Stakeholder decision-making is more congruent. CC funds are fully utilized to provide the right services to offenders at the right time. Through collaboration, offenders are better prepared for the next level of transition from prison to discharge, and there is efficient use of intermediate steps to stabilize offenders struggling with CC or parole supervision. Stakeholder collaboration results in improved communication, training, and mutual understanding of each others' roles.

Identification Issuance for Offenders

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Envision Customer Experience

The Department of Corrections and Department of Revenue are committed to collaborating on the improvement of the Offender ID process, creating a more effective and efficient process to ensure more offenders will receive an ID upon release. Issuing IDs to a higher percentage of Offenders will lead to improved public safety, reduced recidivism and lower costs. It will be easier for ex-Offenders to find employment, housing and support services, allowing an ex-Offender to become less of a burden on their community, their family, and the organizations that provide services to them. The process of obtaining an ID will be easier and more efficient to use, making Case Managers and Parole Officers more productive, and making it easier for Offenders to take more responsibility for their integration into society.

Parole Board Hearings

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Envision Customer Experience

The Colorado Board of Parole and the Department of Corrections Lean Parole Board Hearing Scheduling Team is comprised of dedicated professionals who strive to ensure statutory compliance and provide exceptional customer service in the process of scheduling and conducting offender parole hearings. The team is committed to effective, systematic collaboration during the various operations necessary in scheduling and facilitating all forms of parole hearings. We will utilize employee expertise, creativity and customer feedback to integrate innovative ways to employ teamwork, education and improve communications. Customers will be equipped with the required tools to efficiently coordinate and facilitate positive hearing experiences.

Offender Movement Value Stream Analysis & Offender Movement Standard Placement Criteria

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Envision Customer Experience

The Department of Corrections is committed to improving the Offender Movement Value Stream network by collaborating with all stakeholders in order to meet the objectives of the Department and the State of Colorado. The new process will ensure that Offenders are moved in a safe and efficient manner to the most appropriate location. The decision to move an Offender will take into account the Offenders' program needs and be balanced with our mission to provide a safer Colorado.

Educator Licensure Enforcement & Educator Licensure Evaluations

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Envision Customer Experience

The Colorado Department of Education's dedicated licensure professionals will preserve integrity of the State's education system by ensuring only fully qualified educators receive and retain teaching licenses in Colorado. CDE is committed to providing all of our stakeholders with a clear process and transparency of both licensure requirements and the status of their individual requests. CDE will ensure that all required qualifications are met, that customer feedback is integrated quickly to better educate our customers, and improve our communications. We will equip our customer-facing staff with the time and tools needed to administer the process promptly and consistently for our customers.

Call Center

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Envision Customer Experience

The Colorado Department of Education's knowledgeable professionals will respectfully help customers across Colorado by quickly and efficiently ensuring first call resolution.

We will standardize proactive steps to ensure all stakeholders get helpful outcomes and status for all questions or needs, including follow through. We will be positive and accountable to public stakeholders and customers including applicants, teachers, school districts, administrators and other government agencies.

Accreditation - School and District Performance Frameworks and Improvement Plans

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Envision Customer Experience

The Colorado Department of Education accreditation process will serve all stakeholders, including districts, schools and students with accurate, fair and useful information. The results will be clear and timely enough to inform planning and improve student outcomes.

Long Term Care Case Management

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Envision Customer Experience

The Department of Health Care Policy and Financing is committed to providing clients a fair, transparent and uniform case management review process that accommodates client's individual needs. We treat the Case Management Agencies (CMAs) as respected partners who are empowered to make decisions based upon the standardized guidelines we provide. We utilize the knowledge, experience, and available data to simplify the process for the customers, to integrate innovative methods to educate and inform the customers, and to improve customer satisfaction. Over time, we will take advantage of available technology to deliver an improved customer experience, move to an electronic process and achieve a green "paperless" process. We will equip staff and CMAs with the guidelines, training, tools and technology necessary to improve efficiency and the overall customer experience.

Customer Care Center

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Envision Customer Experience

The Department of Health Care Policy and Financing values knowledgeable and empathetic professionals engaging Medicaid stakeholders to provide prompt, effective resolutions and collaborating on a world-class service experience.

Time to Hire

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Envision Customer Experience

The Department of Health Care Policy and Financing has an effective hiring and onboarding process that is fair, fast and user-friendly.

- Effective: timely hire of quality candidate who is the best fit
- Fair: integrity and compliance with federal and state rules
- Fast: streamlined process that eliminates duplicative and non value-added steps
- User-friendly: consistent, proactive communications and partnership between Human Resources, hiring managers, applicants and employees

Colorado Mental Health Institute at Pueblo - Hospital Admissions

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Envision Customer Experience

The Department of Human Services envisions a new and improved admissions process which will ensure that in-custody patients are admitted quickly and safely into the Colorado Mental Health Institute in Pueblo. Defense attorneys, District attorneys and the courts will experience timely and comprehensive communication regarding the patient's status, and patients will have a better understanding of what to expect from the process. There will be less of a burden on County jails due to reduced wait times for admission for competency evaluation or restoration treatment.

Colorado Mental Health Institute at Pueblo - Arrival Administration

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Envision Customer Experience

The Department of Human Services envisions an improved Arrival Processing process that will ensure that newly arrived inpatients are admitted quickly and safely to the appropriate unit. Patients will spend less time waiting in Admissions and will have a healthy experience with all staff members, their environment and other patients. Patients will receive the attention and knowledge that they need in order to be admitted without fear, confusion, mistrust or additional trauma. Unit Staff will receive comprehensive patient information at the appropriate time, and will have sufficient time to prepare for the patients and the patients' needs. The improved process will further ensure the safety and efficiency of Staff members by ensuring that patients are without contraband and are appropriately medicated.

Fort Logan Mental Health Hospital - Medication Errors

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Envision Customer Experience

The delivery of pharmaceutical services to the patients of CMHI-FL is a critical process in the treatment paradigm of mental illnesses and their co-morbid disease states. In an effort to reduce the medication variance rate at this facility, we will strive to improve the cooperation between medicine, nursing and pharmacy. This will be done to reduce the potential for human errors, as well as the improve processes involved in error detection and prevention. This will be realized by fostering a clear communication during the medication order and entry process, especially when clarifications are necessary, so that pharmacy and nursing processes serve to cross-check one another in areas of medication delivery, documentation in patient records, and ultimately the standard of care. In addition, processes involved in procurement and delivery of the medications from pharmacy will be streamlined and made more uniform between the four active treatment units. Standardization of procedures and simplification of documentation will reduce paperwork for nursing and pharmacy staff, and assure a timely, reliable, accurate and secure method of drug delivery to the patient. The medical, pharmacy and nursing administration will provide more education and informational services to the nursing staff. This will be done in hopes of improving compliance and treatment success for both pharmaceutical and non-drug therapies provided to our patients.

Group Home Facilities

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Envision Customer Experience

The Department of Human Services Division of Regional Center Operations are professional, creative caregivers who work together to:

- Mitigate complexity
- Achieve measurable results, and
- Continuously improve

We strive to create a safe and efficient working environment for group home staff and pooled resources so that they, in turn, can create the best living environment possible for our residents.

To achieve this, we will create effective standards that optimize the time of our staff so that they can concentrate on care and safety.

Time to Hire

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Envision Customer Experience

Our vision is to be the leader of HR best practice, to provide the Colorado Department of Human Services (CDHS) with recognized recruitment experts, and to elegantly market and proactively recruit, hire, and retain the most qualified candidates through a timely, user-friendly, and efficient selection process. By defining roles and responsibilities and committing to learn and teach each other's business, CDHS can create effective partnerships between applicants, hiring managers and recruiters enabling:

- Partners to develop a mutually agreeable time to fill and measurement of performance outcomes to encourage accountability and forge Lean improvements;
- Recruitment materials that are published in a manner that provides clear and succinct descriptions of the work environment and transparency of a constructive selection process to allow candidates to match themselves with the best career path; and
- Development and use of a wide range of valid test instruments to predict success on the job, reduce bad hires, increase retention, and provide consistent delivery of the best employees at the right time.

Unemployment Insurance Fact Finding Process

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Envision Customer Experience

Unemployment Insurance processes should provide a helpful customer experience and should be transparent and available via multiple ways to access information. We will seek ways to:

- Execute quality processes and outcomes in a timely manner
- Improve staff training and tools to deliver an easy, intuitive and helpful customer experience
- Meet all federal core measures

Unemployment Insurance Customer Service Center

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Envision Customer Experience

Vision:
- Quality and excellence in all we do.

Mission:
- To protect and promote the integrity and vitality of Colorado's employment environment

Our Commitment:
- Outstanding customer service.
- Inclusive culture.
- Knowledgeable employees who drive our success.
- Be a strategic and trusted partner.
- Continuous process improvement.

Our Values:
- Excellence
- Accountability
- Integrity
- Adaptability
- Respect
- Collaboration
- Teamwork

The team's guiding statement is:
"Increase the number of customers helped correctly"

Workers' Compensation Dispute Resolution

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Envision Customer Experience

We are… a team of professionals who demonstrate respect, educate our customers and create clear expectations

We will…provide prompt solutions through a fair, transparent process

Our leaders will…inspire staff and equip them with training, procedures and resources to consistently deliver this experience

Petroleum Storage Tank Fund Reimbursement

Department of:
Agriculture
Corrections
Education
Health Care Policy and Financing
Human Services
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Local Affairs
Military and Veterans Affairs
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Personnel and Administration
Public Health and Environment
Public Safety
Regulatory Agencies
Revenue
Transportation

Governor's Office

Envision Customer Experience

The vision of the Division of Oil and Public Safety's (OPS) Fund Section is to provide superior customer service to applicants seeking reimbursement from the Petroleum Storage Tank Fund (PTSF) by ensuring the application process is simple, and that applications are processed efficiently and accurately, enabling fiscally responsible cleanup of the environment.

By identifying and eliminating unnecessary steps, OPS will streamline processes that maintain accuracy while supporting faster turnaround times for reimbursing costs. This will lead to better cash flow for businesses that have incurred cleanup costs, while improving quality and reducing OPS application processing costs.

The goal of the Fund Section is to reduce reimbursement turnaround time and to reduce staff processing time without compromising quality.

Hiring Process

Department of:
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Governor's Office

Envision Customer Experience

The Department of Labor and Employment has an effective hiring process that is fair, fast and user friendly.

- Effective: timely hire of the best fit candidate
- Fair: integrity/compliance with rules
- Fast: streamlined process that eliminates duplication and non-value added steps
- User-Friendly: Consistent, proactive communications regarding expectations of the hiring process & partnership with HR managers hiring applicants & employees

Housing Choice Voucher Program

Department of:
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Local Affairs
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Governor's Office

Envision Customer Experience

Our vision is to create a Housing Choice Voucher delivery system for the Department of Local Affairs that is easily accessible and encourages participation of stakeholders. Through our utilization of technology, this system aims to empower employees and contractors to complete essential tasks in a concise and efficient manner. Further, by simplifying and streamlining our processes and our dedication to ongoing knowledge management, we aim to eliminate barriers, redundancy, and waste while maintaining a high standard of quality and accountability.

Grant Contracting Process

Department of:
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Governor's Office

Envision Customer Experience

The Department of Local Affairs will provide effective, efficient and elegant grant contracting to the customer by delivering correct, complete and concise documents; providing pathways for expedient modifications and conveyance of grants and grants funding; while striving to become paperless. This service shall be accomplished through department wide teamwork and training, collaboration with the state controller and employing a culture of continuing process improvement.

Water Quality Projects Loan Application Process

Department of:
Agriculture
Corrections
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Public Health and Environment
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Governor's Office

Envision Customer Experience

Our vision is to create a streamlined and transparent SRF Loan Application process for local governments that will assist them with funding to address their high priority drinking water and water quality infrastructure needs. We are committed to providing local governments with clearly defined procedures and timelines for applying and receiving approval of an SRF loan while improving:

- The application process,
- Roles of the three partner agencies, and
- Status of the local government's application.

Colorado Veterans Claims Processes

Department of:
Agriculture
Corrections
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Human Services
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Local Affairs
Military and Veterans Affairs
Natural Resources
Personnel and Administration
Public Health and Environment
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Governor's Office

Envision Customer Experience

The Department of Military and Veterans Affairs, Division of Veterans Affairs is an organization of professional advocates who assist in promoting the voices of veterans throughout the state

We help veterans navigate the claims process through the myriad forms, policies and procedures required by the federal VA.

We execute a consistent claims process that provides the veteran with an entitlement claim that is:

- Complete
- Submitted timely
- Allows the federal VA to make a favorable decision in the most expedient manner

Contract Process

Department of:
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Governor's Office

Envision Customer Experience

The Department of Military and Veteran Affairs will strive to provide an integrated contracting process that is fair, consistent, timely and transparent. This process will be executed by knowledgeable and customer-focused employees, fully supported by their leadership.

Procurement Processes

Department of:
Agriculture
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Governor's Office

Envision Customer Experience

In the Department of Natural Resources, we are skilled procurement professionals consulting with customers to support them through the complexities of the procurement process.

We engage our customers to create shared expectations, delivering solutions that enable them to fulfill the agency's mission.

Travel Approval Process

Department of:
Agriculture
Corrections
Education
Health Care Policy and Financing
Human Services
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Local Affairs
Military and Veterans Affairs
Natural Resources
Personnel and Administration
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Governor's Office

Envision Customer Experience

The Department of Natural Resources out-of-state travel approval process vision is to provide to all trusted and respected staff involved in the Value Stream a process that has clear and understandable guidelines that adhere to regulatory requirements.

Process should be timely, simple, standardize and transparent, assigning appropriate responsibilities and leveraging from automation in order to assure that all out-of-state travel is done appropriately for the benefit of both the State and the Department of Natural Resources.

State Archives

Department of:
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Military and Veterans Affairs
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Governor's Office

Envision Customer Experience

In the Department of Personnel and Administration, we consistently provide our customers guidance and timely solutions with patience and professionalism. We will accomplish this vision through respectful collaboration and innovation.

Statewide Selections Process Improvement

Department of:
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Corrections
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Human Services
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Governor's Office

Envision Customer Experience

Customers of the State of Colorado's Recruitment and Selection Process will work in partnership with statewide Human Resource professionals committed to hiring the best candidate for each position posted at the right time.

This team will use a variety of recruitment methods designed to assist applicants through the selection process, delivering an unsurpassed customer experience to candidates and hiring managers.

This process will result in meaningful job placement and ultimately bestow state employees with a sense of value and purpose.

Air Permitting Value Stream Analysis

Department of:
Agriculture
Corrections
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Governor's Office

Envision Customer Experience

The Air Pollution Control Division's Stationary Sources Program works with permitting sources, regulatory agencies, citizen groups and other stakeholders to provide an efficient, effective method to permit, track and enforce.

We strive to fairly and transparently process permitting applications and changes, inspect existing permits, and enforce compliance where necessary in order to foster an equitable, healthful and vibrant marketplace.

We work together to combat complexity, achieve measurable results, and continuously improve. We maintain a work environment that respects individuals' time, intellect, and dedication to quality.

Air Pollution Permit Modeling

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Governor's Office

Envision Customer Experience

The Air Pollution Control Division's Stationary Sources Program is a team of passionate and dedicated professionals that works with diverse stakeholders to provide an efficient, effective and elegant means to protect and improve the air quality of Colorado and, thus, protect public health.

We provide high quality outreach to the public and regulated community. We transparently process permit applications, inspect existing sources, and drive compliance where necessary in order to maintain and improve air quality while balancing the need for an equitable, healthful and vibrant marketplace.

We work collaboratively to reduce complexity, achieve measurable results, and continuously improve. We maintain a work environment that respects individuals' time, intellect, and dedication to quality.

Laboratory Services Storeroom

Department of:
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Governor's Office

Envision Customer Experience

The Colorado Department of Public Health and Environment Central Services staff is committed to enhance the inventory control process to achieve higher customer satisfaction and improve the ease of the end of fiscal year audit process. The ultimate goals are to provide excellent internal and external customer service, reduce waste and duplication with continual process improvement.

Fiscal Processes Standardization

Department of:
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Personnel and Administration
Public Health and Environment
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Governor's Office

Envision Customer Experience

The Colorado Department of Public Health and Environment is committed to being good stewards of public resources by providing fiscal services that are consistent, adaptable, timely, accurate and responsive to internal and external customers.

We will accomplish this by:

- Having highly trained, knowledgeable and empowered staff
- Designing processes that are compliant, yet streamlined, easy to understand and customer-friendly
- Implementing written guidelines, standards and metrics to ensure accountability

Accounts Payable

Department of:
Agriculture
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Governor's Office

Envision Customer Experience

The Colorado Department of Public Health and Environment's committed fiscal and program staff will develop an efficient and standardized Year-End Accounts Payable Accrual Process to meet standard accounting and state fiscal requirements. The enhanced process takes advantage of available technology, meaningful reporting tools and multi-format training opportunities.

New Employee Onboarding

Department of:
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Local Affairs
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Governor's Office

Envision Customer Experience

The Lean Onboarding team at the Colorado Department of Public Health and Environment will help to build a culture of valued and valuable employees by designing a professional, streamlined and consistent process to orient new employees to the Department.

We will work together as a Department to meet the expectations and needs of new employees and hiring managers from job offer acceptance through orientation to the Department environment.

Public School Building and Fire Code Permit Process

Department of:
Agriculture
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Education
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Human Services
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Military and Veterans Affairs
Natural Resources
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Governor's Office

Envision Customer Experience

The Division of Fire Prevention and Control Public School and Junior College Construction Permitting and Inspection Program in the Colorado Department of Public Safety is committed to providing quality customer service throughout the permit process including ease of application, clear permitting requirements, "one stop shopping", proactive communications, and a user friendly website. We will utilize the knowledge, experience, and creativity of the staff to simplify the process for the customers, to integrate innovative methods to educate and inform the customers, and to increase customer pull. We will take advantage of available technology over time to deliver an improved customer experience, move to electronic plan review and achieve a green, paperless permitting process. The schools program will equip the staff with the training, tools, and technology necessary to improve efficiency and we will take a teamwork approach to improve the overall customer experience.

Onboarding New Employees

Department of:
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Education
Health Care Policy and Financing
Human Services
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Local Affairs
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Governor's Office

Envision Customer Experience

The Lean Onboarding team at the Department of Public Safety will help to build a culture of valued and valuable employees by designing a professional, streamlined, fair and consistent process to introduce new employees to the Department. We will work together as a Department to meet the expectations and needs of applicants, new employees and hiring managers from conditional offer through orientation. This successful first Lean project will also serve to initiate the desired culture of Lean management to the Department.

Investigations Process

Department of:
Agriculture
Corrections
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Human Services
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Governor's Office

Envision Customer Experience

The Division of Real Estate in the Department of Regulatory Agencies is committed to conducting fair, timely, and transparent investigations to ensure real estate professionals maintain standards of practice that foster a healthy Colorado real estate market. This Division will accomplish this by:

- Utilizing internal guidelines and metrics that establish and reinforce effective, efficient and elegant processes;
- Keeping all relevant parties informed of the investigative process;
- Maintaining a highly trained, experienced, and dedicated staff;
- Striving to educate as we enforce standards of good conduct; and
- Consistently producing a balanced, accurate, and thoroughly investigated product.

Expedited Settlement Procedure

Department of:
Agriculture
Corrections
Education
Health Care Policy and Financing
Human Services
Labor and Employment
Local Affairs
Military and Veterans Affairs
Natural Resources
Personnel and Administration
Public Health and Environment
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Governor's Office

Envision Customer Experience

The Department of Regulatory Agencies is committed to conducting efficient, consistent and timely settlement procedures to ensure appropriate outcomes for all stakeholders including licensees and Colorado consumers.

As such, the Expedited Settlement Process will foster a higher level of professional practice within Colorado industries that we regulate and increase public trust in the regulatory process.

DORA will accomplish this by;

- Allocating appropriate resources based on the level of significances of the violation;
- Keeping accurate records and efficient organization;
- Continuing to foster a harmonious and resourceful relationship with the Attorney General's office; and
- Striving to maintain settlements that continue to serve as a deterrent to violators of license law.

Division of Real Estate Forms Design

Department of:
Agriculture
Corrections
Education
Health Care Policy and Financing
Human Services
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Governor's Office

Envision Customer Experience

The Division of Real Estate, the Department of Regulatory Agencies and the Colorado Real Estate Commission are committed to improving the process in which the Forms Committee makes changes to the real estate forms. The improved process will result in minimal changes and will make the forms easier to use and understand. The Real Estate Commission, Division staff and Committee volunteers will have defined responsibilities to make the process more transparent and efficient.

Tax Document and Remittance Processing Pipeline

Department of:
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Governor's Office

Envision Customer Experience

The Departments of Personnel and Administration and Revenue will work together so that the customers will experience fast, accurate, secure processing of their tax documents through efficient, cost effective, seamless, automated processes that are intuitive.

-- Delivered by a collaborative, inter-departmental team where the work supports the process.

-- Driving towards a paperless, customer-oriented tax solution.

Tax Resource Alignment

Department of:
Agriculture
Corrections
Education
Health Care Policy and Financing
Human Services
Labor and Employment
Local Affairs
Military and Veterans Affairs
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Personnel and Administration
Public Health and Environment
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Transportation

Governor's Office

Envision Customer Experience

The Department of Revenue will leverage the GenTax system and department resources to promote voluntary taxpayer compliance in the administration of taxes.

We will use proactive communications, multiple service options, and fair, diligent and consistent enforcement delivered by knowledgeable, well-trained and courteous employees to create a process that is timely, accurate and easily understood.

Rules Management

Department of:
Agriculture
Corrections
Education
Health Care Policy and Financing
Human Services
Labor and Employment
Local Affairs
Military and Veterans Affairs
Natural Resources
Personnel and Administration
Public Health and Environment
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Governor's Office

Envision Customer Experience

The Department of Revenue will proactively engage customers, stakeholders, and partners in a consistent, transparent, and collaborative rule-making and review process.

This continuous process will result in rules that are easily understood, well-reasoned, protect the public, and promote responsible business practices.

Access Permits

Department of:
Agriculture
Corrections
Education
Health Care Policy and Financing
Human Services
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Local Affairs
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Governor's Office

Envision Customer Experience

The Colorado Department of Transportation's (CDOT) access permits team is comprised of dedicated professionals who strive to preserve integrity of the State roadway system by balancing mobility, safety, and economic development when assessing potential access to the state highway system. CDOT is committed to providing our customers with a consultative experience, and to providing them with clear visibility of both the permitting process and the status of their individual permits. CDOT will harness employee creativity and customer feedback to integrate innovative ways to educate our customers, employ teamwork, and improve our communications. We will equip our customer-facing staff with the time and tools needed to administer the process promptly and consistently for our customers.

Local Agency Project Delivery Value Stream Analysis

Department of:
Agriculture
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Governor's Office

Envision Customer Experience

The Local Agency process in the Department of Transportation should be efficient, flexible, and transparent, incorporating simplified and electronic data gathering and retrieval to meet laws and regulations. It should use education and risk assessment to assign appropriate delegation of authority and accountability to empower Local Agencies to effectively construct their desired projects with federal matching funds.

Oversized Overweight Truck Limits

Department of:
Agriculture
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Governor's Office

Envision Customer Experience

At the Colorado Department of Transportation, our vision is of a standard and user-friendly process that protects the safety of the traveling public; the integrity of the infrastructure; minimizes errors in the permit process; provides efficiencies for the drivers; and gets the permit into the hands of our customers as soon as practical. The permit process will include updated and current maps for our customers. Restrictions will be automatically uploaded to CDOT network service. Truckers will have the ability to logon to a network interface that automatically calculates the route to the final destination and provides alternative routes.

Colorado Energy Office Procurement

Department of:
Agriculture
Corrections
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Public Health and Environment
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Governor's Office

Envision Customer Experience

The Colorado Energy Office in the Governor's Office will promote economic development in Colorado by managing an effective procurement process that is easy for stakeholders to use, and responsibly invests energy funds into our community in a timely fashion.

We will accurately adhere to state and federal requirements while remaining committed to fair, transparent and consistent procurement processes.

We will be good stewards of public and private resources by communicating with and being accountable to all funders, vendors and recipients.

Office of Economic Development and International Trade Best Practices in Grant Management

Department of:
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Governor's Office

Envision Customer Experience

The Business Finance and Incentives' knowledgeable and diligent professionals will partner and effectively engage with stakeholders to provide consistent, credible, and business-friendly financial assistance to further economic development across the state of Colorado.

Through effective communications we will create a transparent and responsive process that will continually meet our stakeholders' business needs.

Governor's Office Elegant Accounting, Governor's Office Expenditure and Accounts Payable & Governor's Office Revenue and Cash Receipts

Department of:
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Governor's Office

Envision Customer Experience

Where we are allowed, customers will experience a simple, flexible, one-stop shop. Consistently prepared to exceed customer needs as a team of listeners by being proficient, knowledgeable, trained, approachable, using efficient, reliable, standard practices to develop resources, share knowledge and create an atmosphere of transparency and accountability.

Office of Information and Technology Procurement

Department of:
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Transportation

Governor's Office

Envision Customer Experience

Streamline processes wherever possible

Automate workflow to reduce manual handoffs

Track progress of resource throughout lifecycles

Gather and analyze metrics to improve performance

Office of Information and Technology
Service Lifecycle Model for Voice and Data Services

Department of:
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Governor's Office

Envision Customer Experience

Office of Information and Technology professionals will partner with customers and vendors to deliver cost-effective, accurate, responsive and helpful voice and data solutions.

Envision Customer Experience

Department of:
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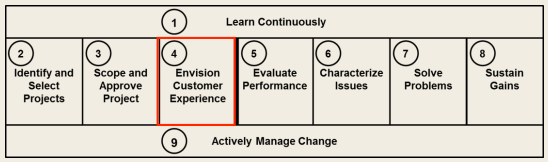
Envision Customer Experience

State of Colorado Lean Model



Definition of a Vision

Department of:
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Governor's Office

Envision Customer Experience

Visions have power when they change the decisions, choices and actions of all of the people in the group, not just the few leaders.

Fundamentally, visions provide a "proof of correctness" for individual and group choices, i.e., "I know this choice is good because it supports the vision."

Another way to package the above elements is to see a "vision" as a way to encapsulate what it means to be part of a specific community - its aspirations, values, roles and goals.

Characteristics of Powerful Visions

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Governor's Office

Envision Customer Experience

Engage the imagination with powerful images of target outcomes.

Employ images that are clear, concise and compelling.

Express strong values and beliefs about the future.

Provide guidance for actions that must and must not be done.

Focus discussions and shape choices about consequences.

Challenge the organization to continually stretch beyond current performance.

Apply to each and every member of the community
(i.e., "I see what it means to me").

Importance of a Customer Experience Vision for the Lean Process

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Envision Customer Experience

The first 2 of the 5 Lean principles are:

- Define value in the eyes of the customer.
- Clarify the value stream, the set of actions that transform materials and information into customer value.

The Lean visioning exercise comprises a method for ensuring that:

- The customer's perception of value is clarified.
- There is a common vision of the customer experience along the value stream.
- The vision provides an aspirational goal to guide improvement efforts over time.
- The Lean team is exposed to the outside world, discovers best practices and prepares to move beyond existing mindsets.
- Lean teams' efforts are aligned with the customer's experience.

Identify Key Issues, Team Background and Knowledge and Customer Feedback

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Governor's Office

Envision Customer Experience

Use one-on-one discussions with stakeholders to understand key issues.

Use one-on-one discussions with team members to identify team knowledge about:

- The customer and other stakeholders
- Best practice
- Technology
- Laws, rules and regulations
- Other areas as appropriate

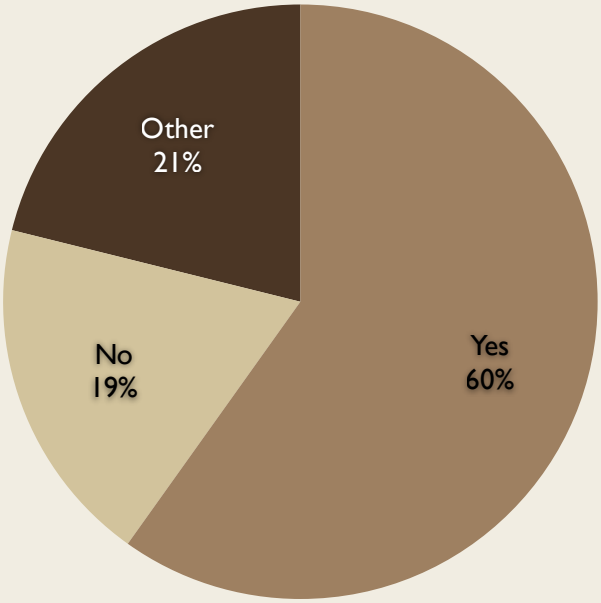
Identify gaps and subject matter experts to provide missing knowledge, skills and experience.

Solicit customer feedback to incorporate in the vision.

Appendix D

OSPB National Survey

Q1. Is your state currently implementing a Lean improvement plan?



Q2. The primary leader of Lean transformation is part of the/an:

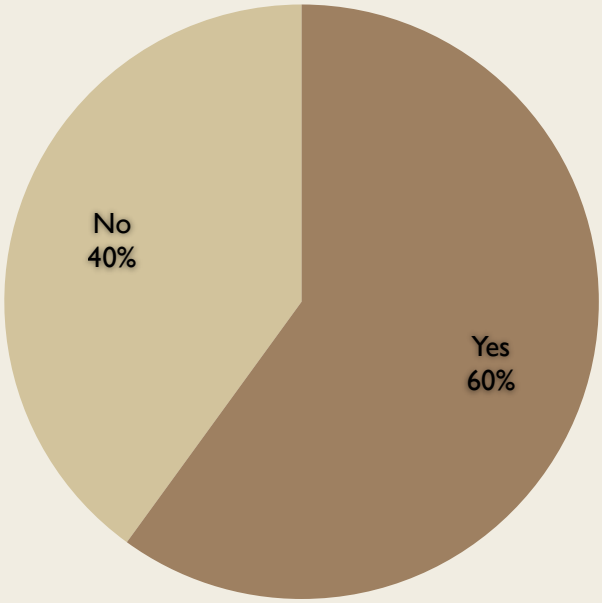
Governor's Office - 49%

Individual Departments or Agencies - 45%

Other - 15%

Note: more than one answer possible

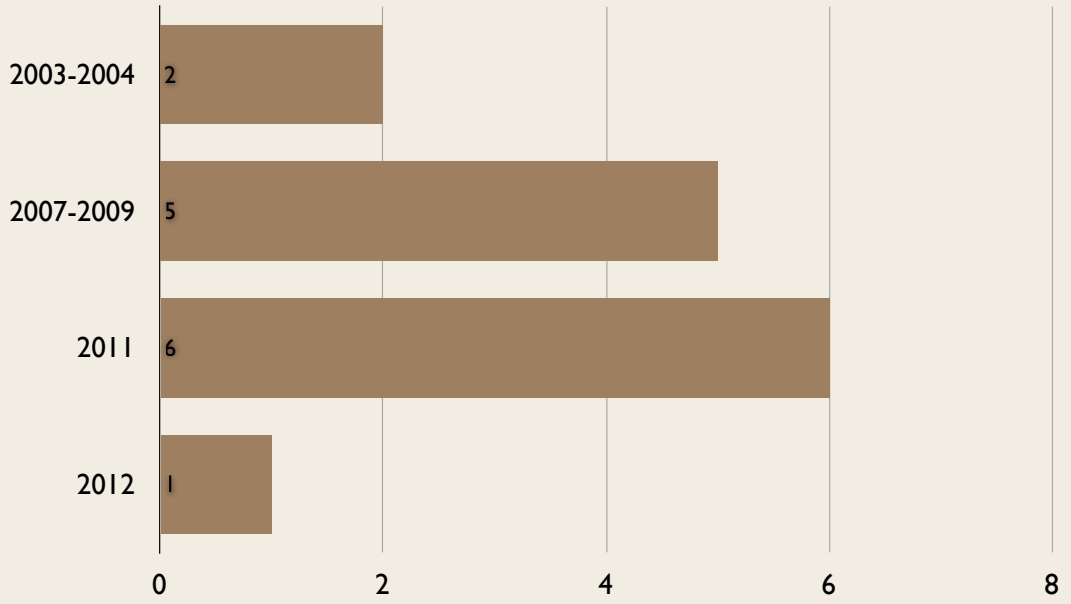
Q3. Is there a central Lean office or unit?



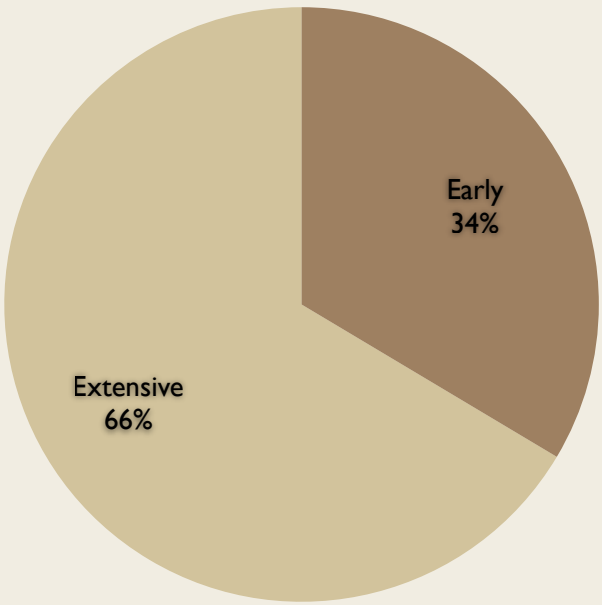
Q4. Where is the central Lean management office or unit located?

Office/Unit	Full Time	Part Time
Executive (Governor's Office)	2	
Individual Department /Agency	7	5
Finance, Administration, and/or Budget		6
Health and Human Services		2
Created Office of Government Transformation		1
Fish and Wildlife		1

Q5. When did you start implementing the Lean program?

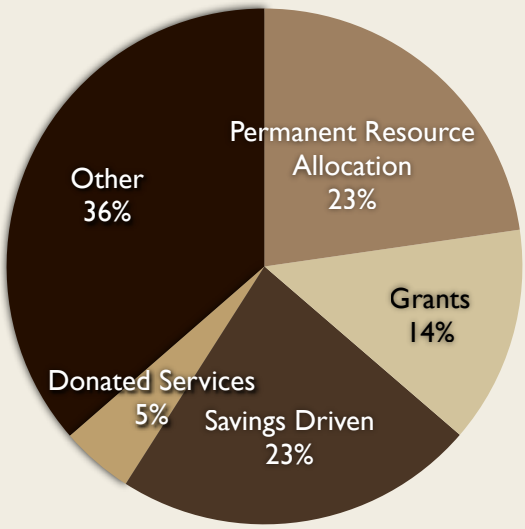


Q6. Your State Government is at what stage of Lean transformation?



Early: Starting to initiate in pilot areas. Some progress being made.
Extensive: Activity underway. Application of Lean tools and solid progress being made in many areas.

Q7. What are the primary funding sources that support Lean activities? (check all that apply)

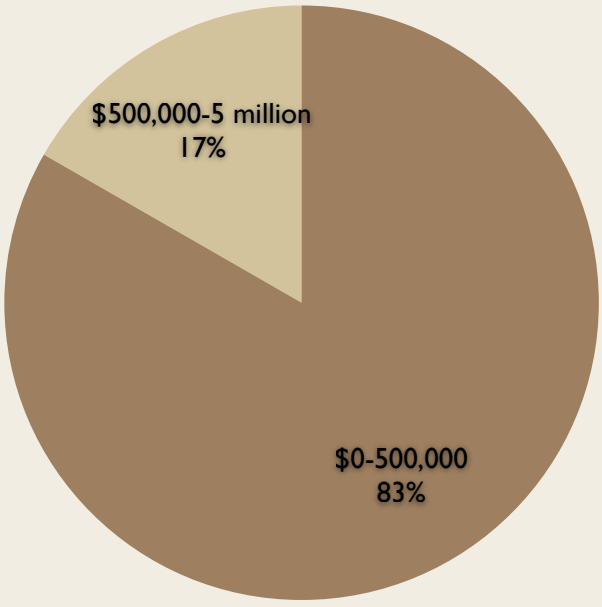


Other:

Reallocation and ad-hoc assignment of existing resources

Existing agency personnel have taken on the role of Lean practitioners in addition to regular duties

Q8. What is your current annual budget for Lean?



Q9. What is the total spent on Lean to date?

	Total Spent		
When Did You Start Implementing Lean?	0 - $500,000 66.7%	$500,000 - $1 million 0%	$1 million - $5 million 33.3%
2003	x		
2004			x
2007			x
2008	x		
2009	x		
2010			
2011	x		x
2012	x		

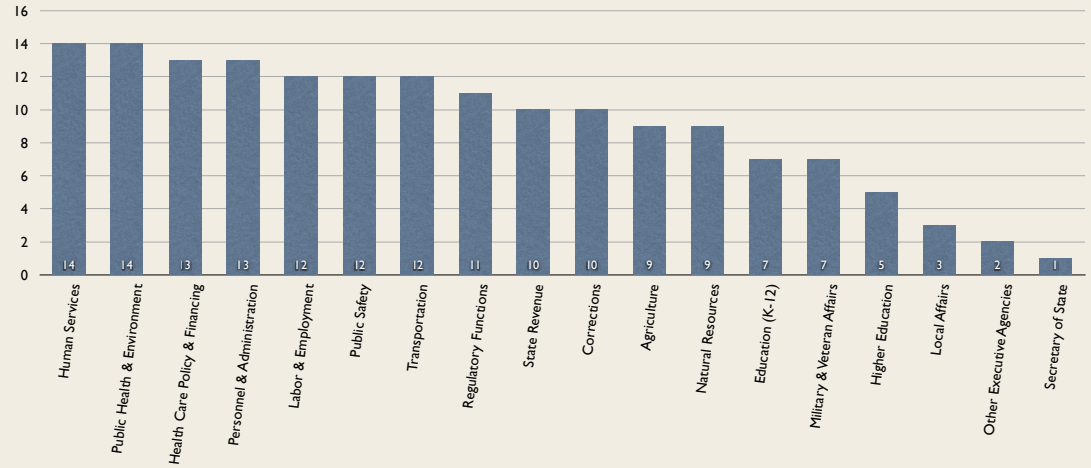
Q10. At the present time, Lean is being applied/pursued in which areas of the government?

Executive Branch - 14

Legislative - 0

Judicial - 2

Q11. Which agencies of state government participate? (check all that apply)



Q12. To date, what is the total number of projects/events that have been completed?

	Number of Completed Projects/Events			
	0-30	31-50	51-100	100+
Start Dates	38.8%	22.4%	16.6%	22.2%
Unknown	x			x
2003	x			
2004			x	
2007				x
2008		x		
2009	x	x		
2010				
2011	x	x	x	
2012	x			

Q13. How many of these projects/events have been completed in the past 12 months?

	Number of Projects/Events Completed in Past 12 Months			
Start Dates	0-30 66.7%	31-50 27.8%	51-100 5.5%	100+ 0.0%
Unknown	x	x		
2003	x			
2004	x		x	
2007				
2008	x			
2009	x			
2010				
2011	x	x		
2012	x			

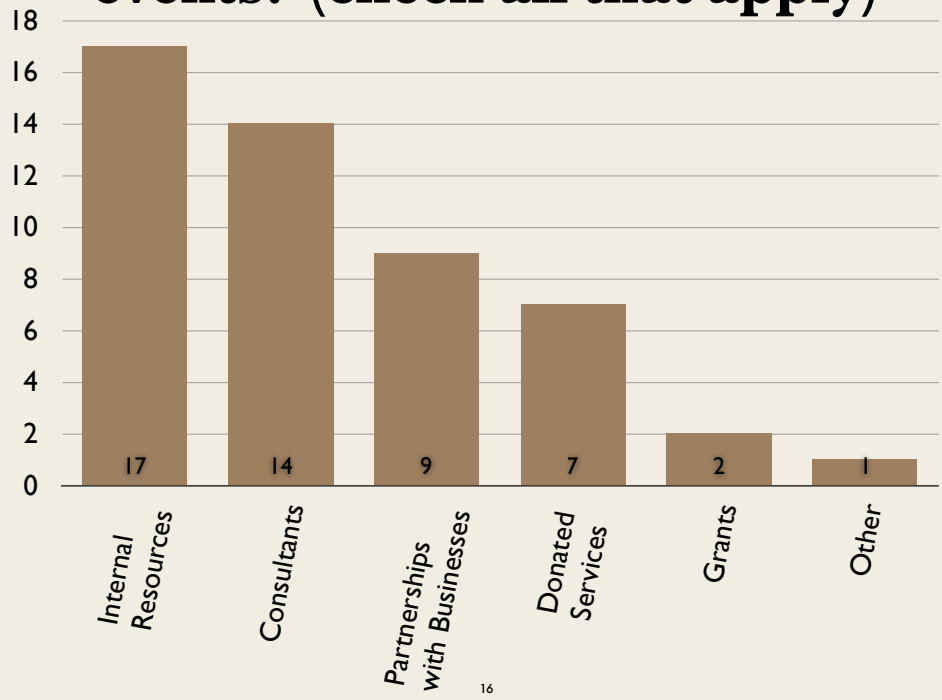
Q14. How many of these projects/events have had recommendations implemented?

	Number of Projects/Events Completed in Past 12 Months			
Start Dates	0-30 61.1%	31-50 16.7%	51-100 11.1%	100+ 11.1%
Unknown	x	x		x
2003			x	
2004			x	
2007			x	
2008	x			
2009	x		x	
2010				
2011	x	x		
2012	x			

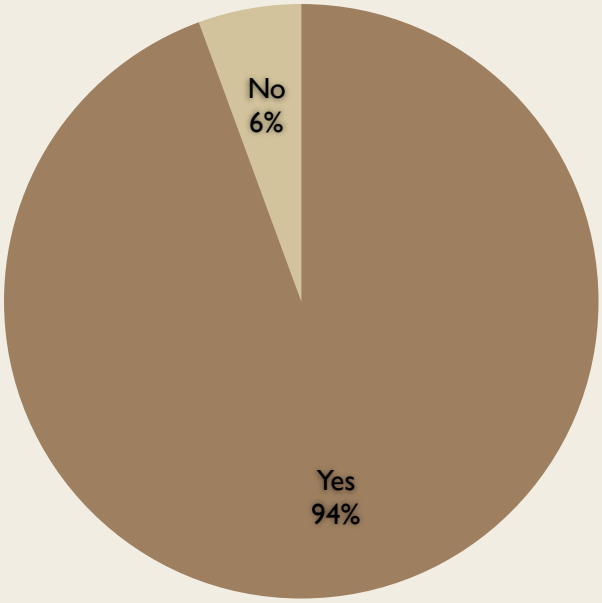
Q15. Since initiating the Lean program how many state employees have participated in projects/events?

	Number of State Employees that have Participated in Lean			
Start Dates	21-100 29.4%	101-200 5.9%	201-500 35.3%	500+ 29.4%
Unknown	x		x	
2003				x
2004				x
2007				x
2008				x
2009	x		x	
2010				
2011	x	x	x	x
2012			x	

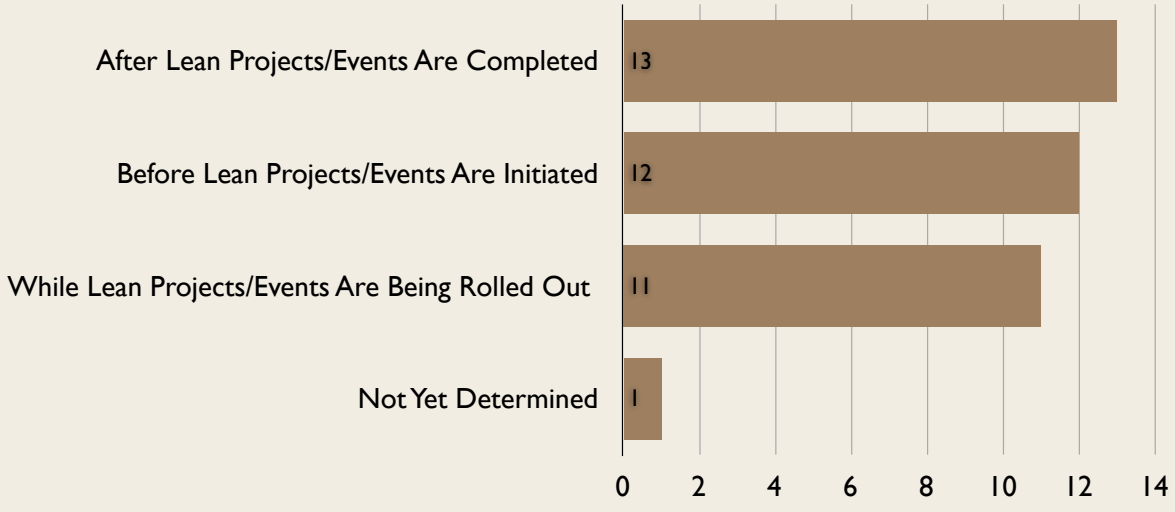
Q16. Does your Lean program utilize any of the following for leading projects and events? (check all that apply)



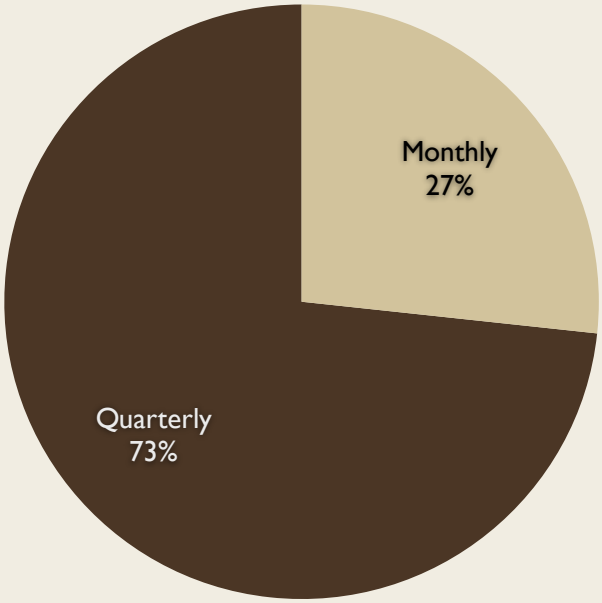
Q17. Does your Lean program collect information on improvement or implementation results?



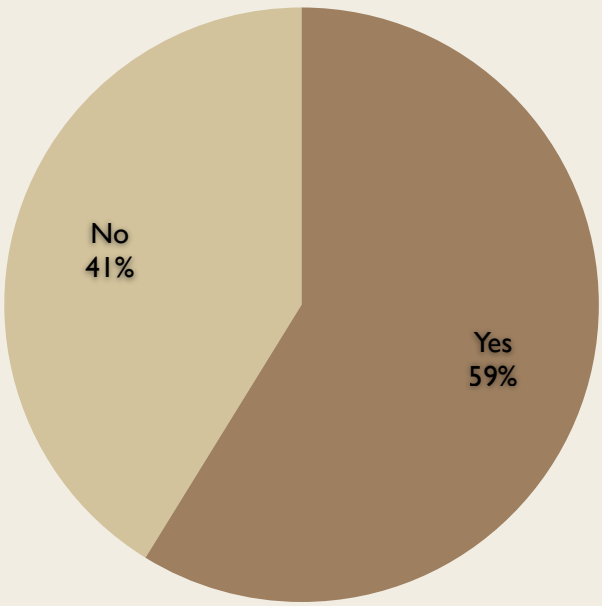
Q18. Does your Lean program collect information on improvement or implementation results?



Q19. How often are improvements or results reported?



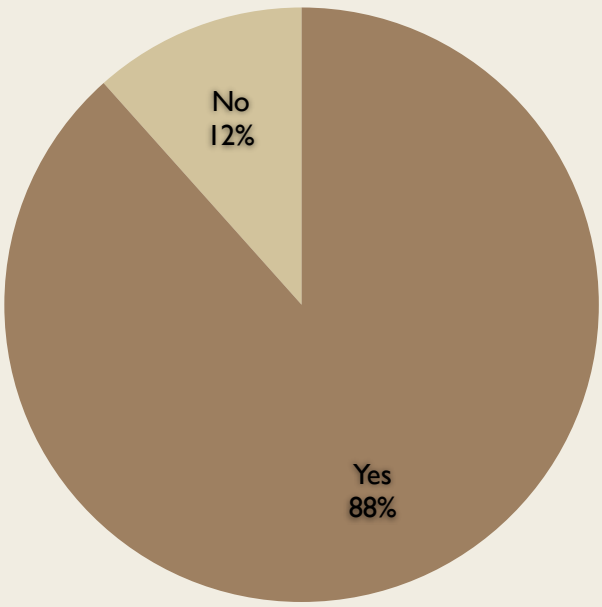
Q20. Do you collect feedback on process improvement?



Q21. The primary outcomes achieved by implementing Lean recommendations are: (check all that apply)

Outcomes	# of Responses
Process time has been reduced	17
Effort hours have decreased in processing	15
Cost saved	15
Throughput has increased	15
Error rate has been reduced	13
Staff spends more time on high priority work	12
Increased customer satisfaction from direct services provided	11
Improved staff morale & teamwork; more ideas generated	1
# of community partnerships has increased	1

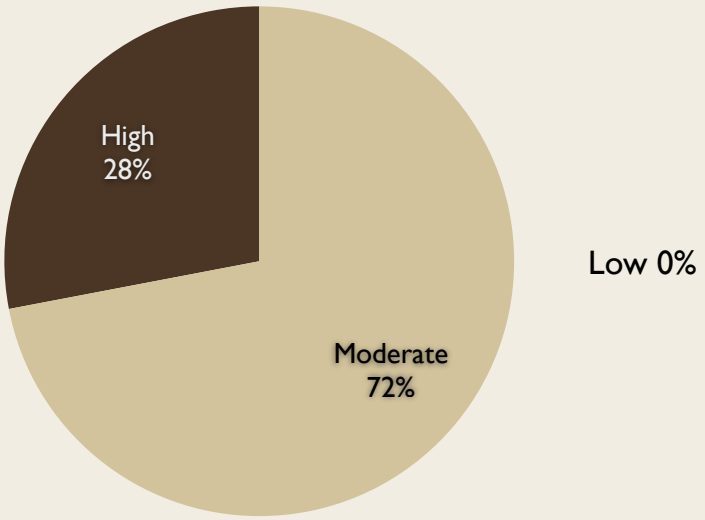
Q22. Have improvements met expectations?



Q23. Please indicate the reason why improvements didn't meet expectations: (check all that apply)

Reasons Why Improvement Didn't Meet Expectations	# of Responses
Management not trained sufficiently	2
Lack of communication with the agency	1
Management did not approve recommendations	1
Lack of accountability by managers	1
Management did not follow through & implement recommendations	1
Lack of leadership	0
Employees not trained sufficiently	0
Time frame for transformation not appropriate	0

Q24. Employee involvement has been:

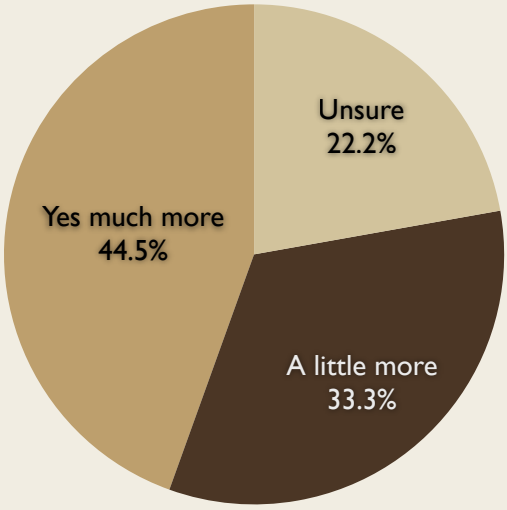


Low: staff not willing to attend events and make time for Lean implementation unless made mandatory from upper management

Moderate: staff is participating in the events and beginning to take action toward sustaining Lean practices

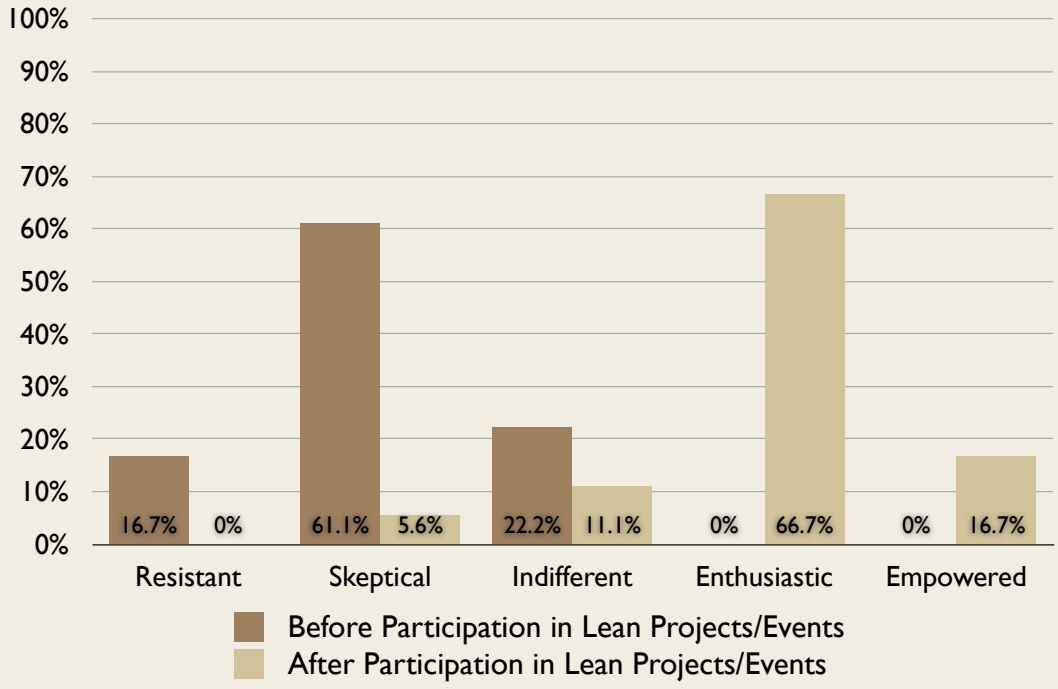
High: staff is leading activities and working toward a culture change

Q25. Do you feel that employees are more focused on efficiently delivering services through their engagement in the Lean program?



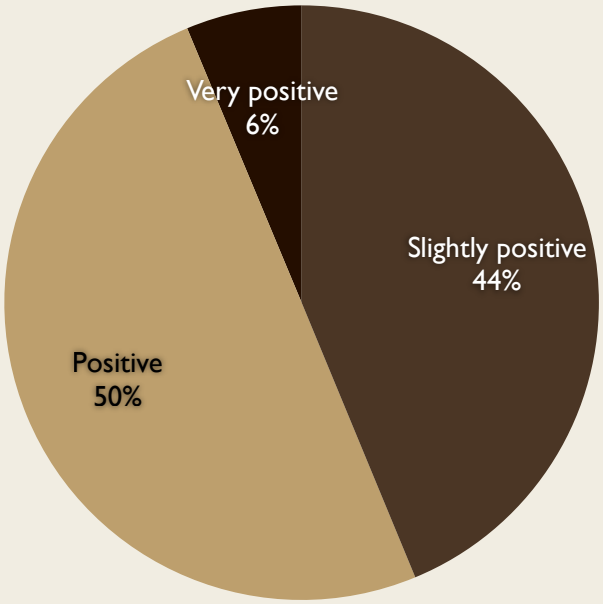
No, not at all 0%

Q26. Employee impressions of Lean have been:



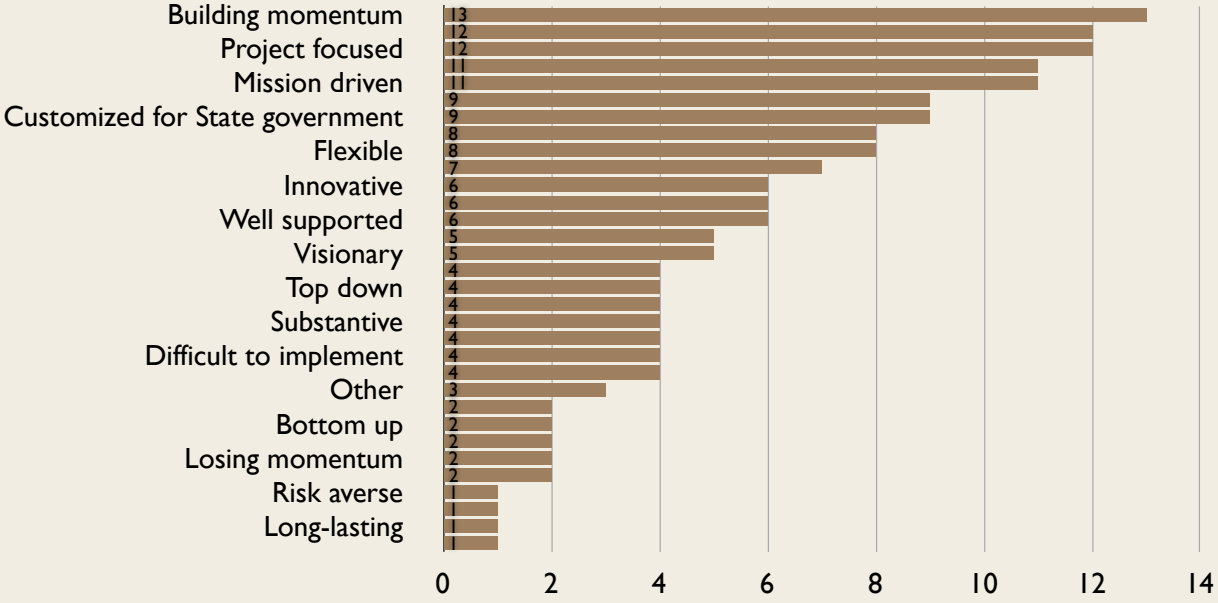
Q27. What are the biggest obstacles to rolling out Lean methodology in your state government? (check all that apply)

Q28. The impact of Lean on work culture has been:

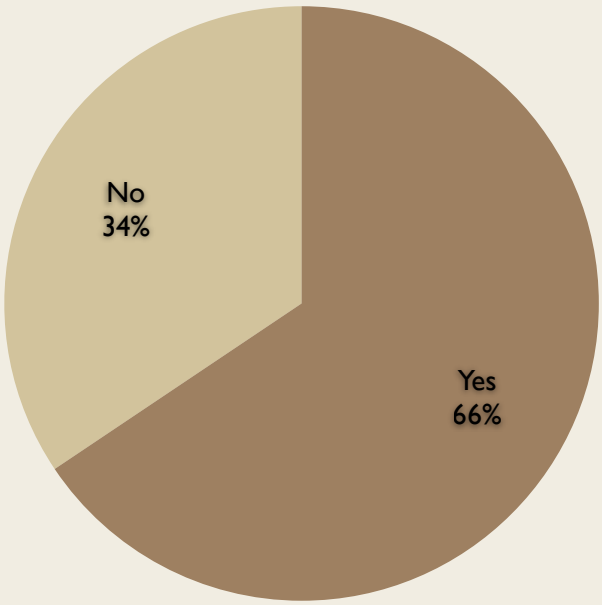


Negative 0%
No impact 0%

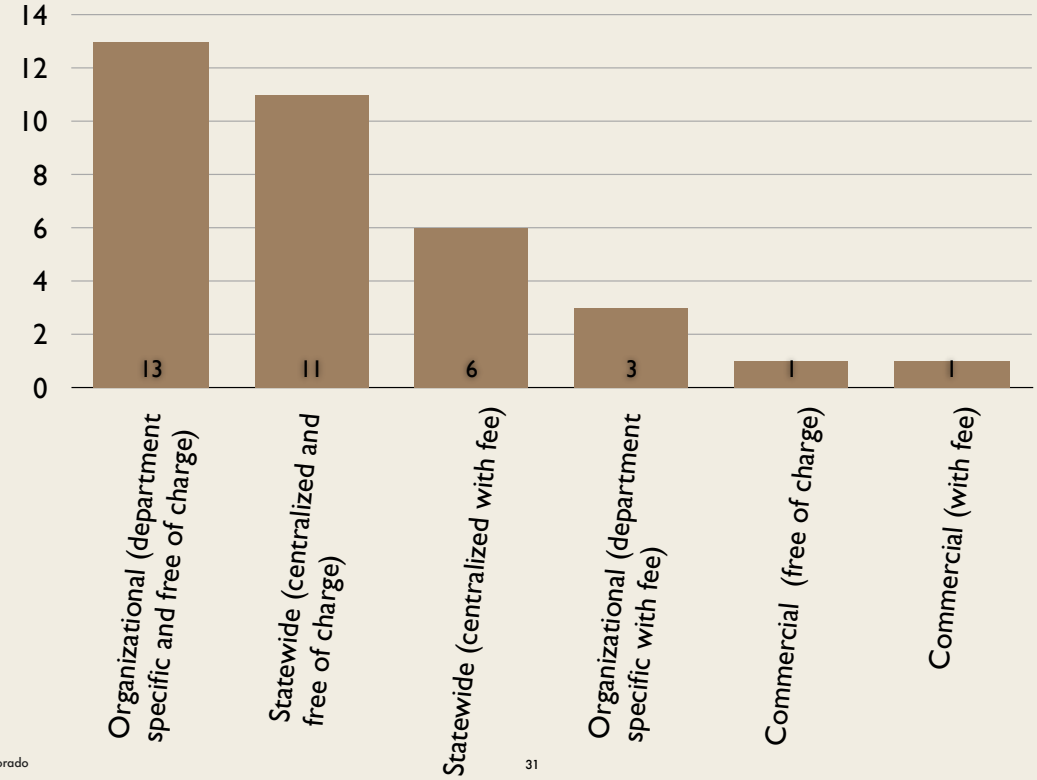
Q29. What attributes best describe your Lean program? (check all that apply) In order of frequency



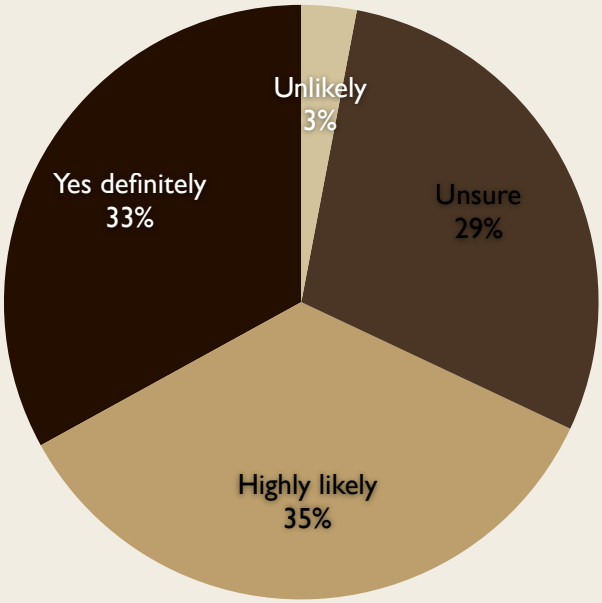
Q30. Are training opportunities specific to Lean or other improvement initiatives available for state employees?



Q31. Are training opportunities:



Q32. Are there plans to incorporate Lean or other process of improvement initiatives into state operations permanently?



No 0%