Drinking Water & Pollution Control Audit Process Lean Event

February 10 – 14, 2014

Drinking Water & Pollution Control Audit Process Lean Event

- Team Sponsor: Eric Blatt
- Team Champion: Winslow Ladue
- Team Leader: Matt "sticky note" Moran
- Team Members: Bryan Redmond, Roger Bergeron, Katharine Cahoon, Mark Smith, Terry Call
- Guests Stakeholders: Bob Giroux, Joanna Pallito, Matt Chapman
- Team Observers : Carey Hengstenberg, Doug Kievit-Kylar, Dave Manning, Peter Telep

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Lean Journey - Outline

- **Program Overview**
- **Project Team Charter**
- **Current and Future States**
- **Quick Wins**
- **Key Performance Indicators (KPI)**
- **Project Implementation Plan**
- **Quick Wins**
- **What did we learn?**

DW&PC Audit Program Overview

- Program is in the Facilities Engineering Division, Financial Management Section

- Current function is to audit and close-out water supply loans and pollution control grants and loans.

- This program began in the 1960s as a state grant program – has transitioned into a state and federal loan program

Project Team Charter

Opportunities for Improvements: Large back log of projects needing audits and closeouts. Need for an innovative approach to how grant and loan audits are performed to closeout projects and build program capacity

Project Scope: Process begins when project is "ready to audit" and ends when project summary report (PSR) has been approved.

Goals (Metrics): Reduce number of days/hours to complete audit by 75%; Reduce Backlog by a minimum of 50%/year – and retire backlog in 3 years; Close Out 95% of all project audits within 3 months of end of warranty period, and the other 5% within 6 months of end of warranty period.
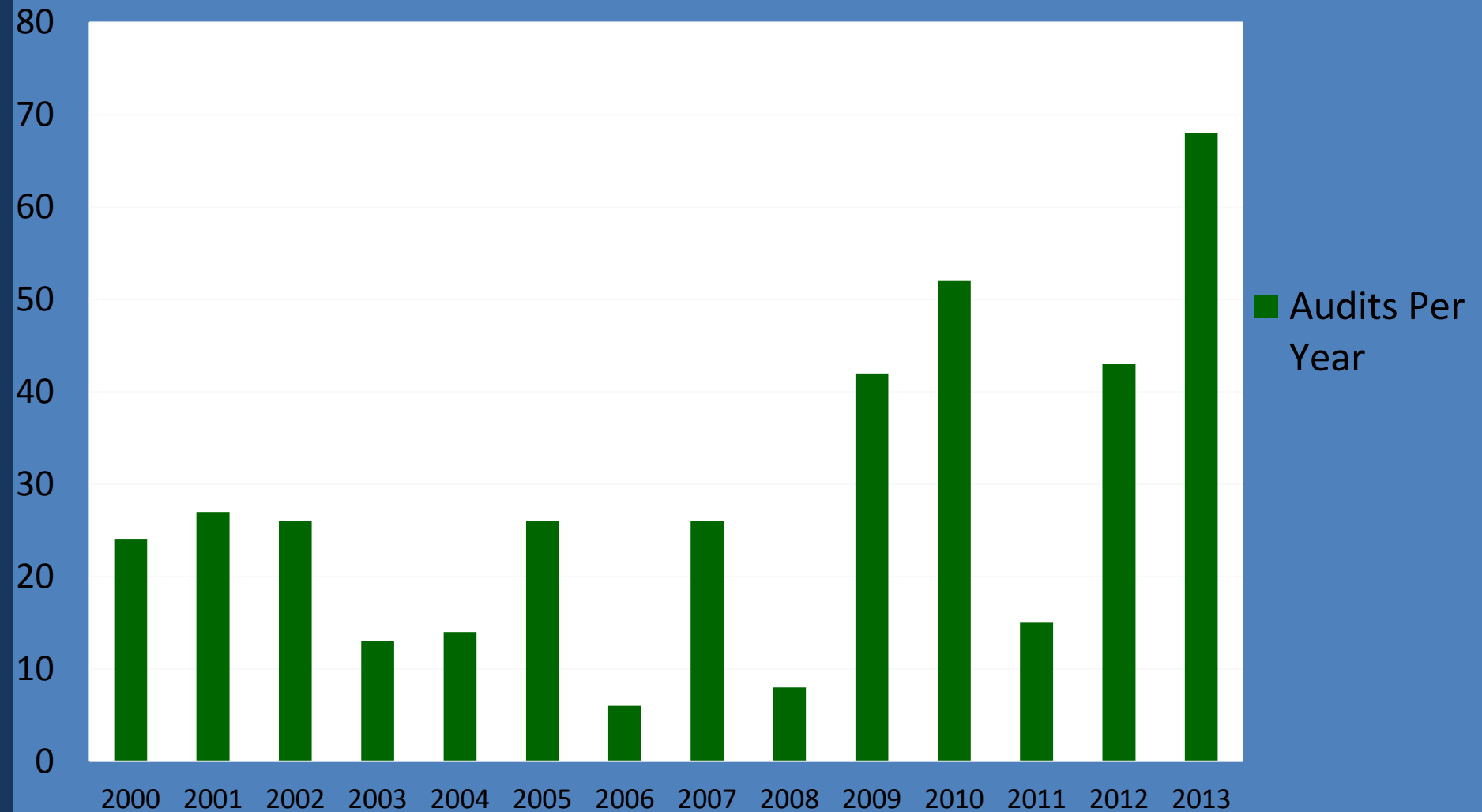
Current State Process

Prior to Lean event:

- Conduct a complete audit for every loan and grant project at project completion

- ~6 audits per month at 60-80 per year

- Over 600 projects in the back log to be audited and closed out

Current State

Graph of Audits Completed per Year

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Developing the Current State

Analysis of the Current State per VSM

- Minimal legal requirements or needs of outside stakeholders.

- 5 levels of review and sign-off for administrative accountability only.

- Duplication of work

- Input > Output = No Value

- No capacity to address back log
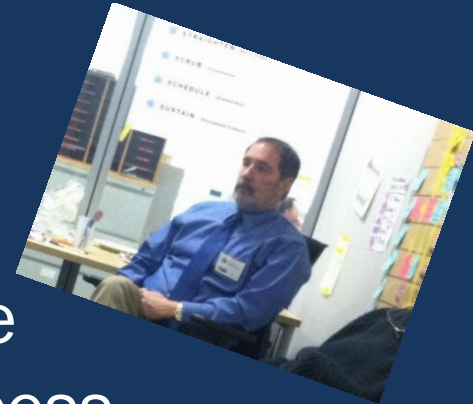
Stakeholders' Comments

General Comments:

- Impressed that we took the time to review/streamline the process.

- Surprised that we did as much as we do.

- Confirmed that what we do is not an "audit" in their concept.

Stakeholders' Comments

Bob Giroux (Vermont Municipal Bond Bank):

- – Current MOU has requirements but...NO policy requiring an audit
  - Can consider revising MOU to reflect future state

- – Robust reimbursement process can be considered equivalent of an audit process

- – VMBB considers our current payment process an audit function. Invoices vetted and "proofed," and thus eligible for payment

Stakeholders' Comments

Joanna Pallito (DEC)

- Validated future state payment process and use of audit as a best practice rather than legal requirement

- Address back log - put the burden on recipient to respond and pursue.

Matt Chapman (DEC).

- Current state appears to be a complete re-review of all projects.

- Statute and/or MOU do not require a complete review of all projects.

"Ah- ha" moments (yes.yes.oui.oui)

- Project Summary Reports (PSR)/Final Completion Audits have limited value to our customers (state, banks, recipients)

- Data analysis indicates very low financial benefit to state and recipients from PSR/Final Completion Audit.

- "Auditing" does not need to occur on every project but needs to happen to check that our processes are working
  - There are currently no audit on current internal processes

- Current payment process and technical approval is already serving an audit function
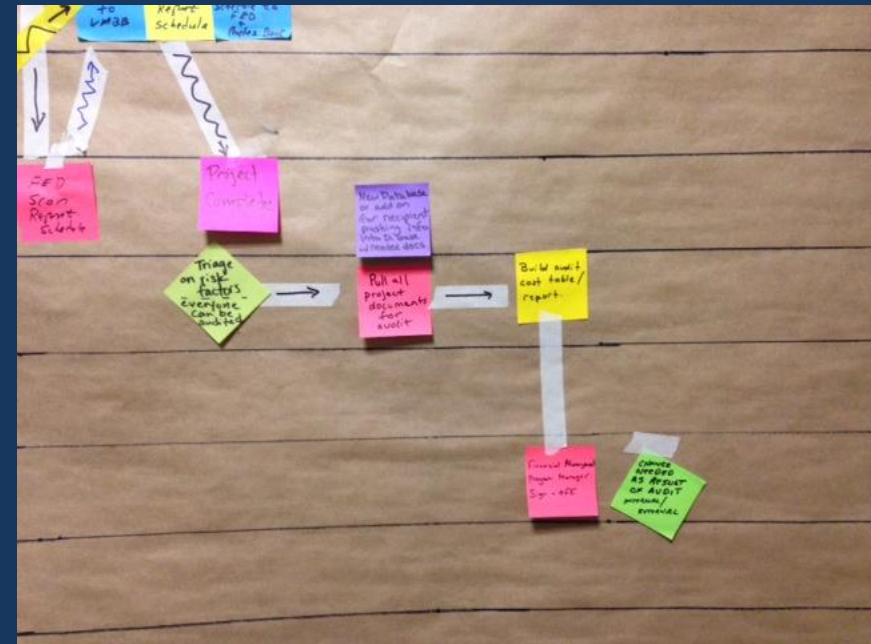
Developing a Future State per VSM

Current State
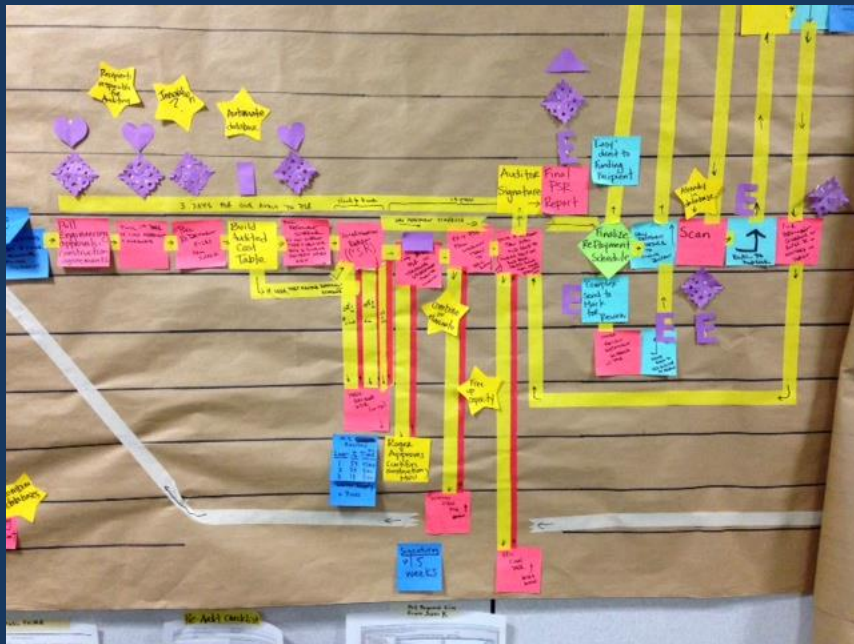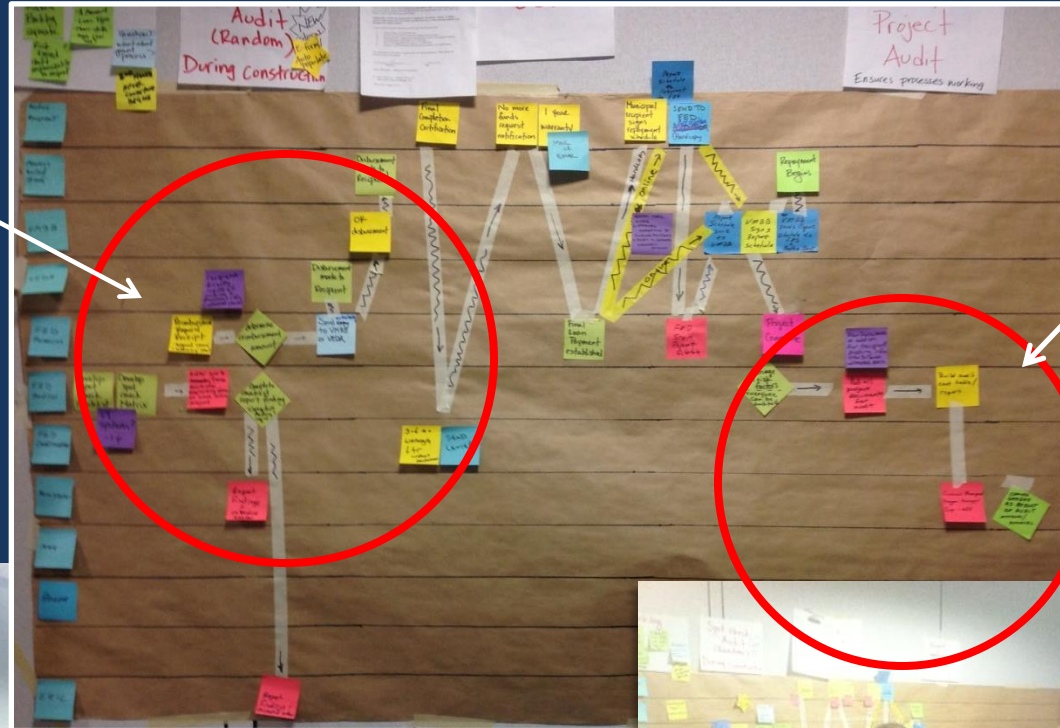

Total project audit steps from ….
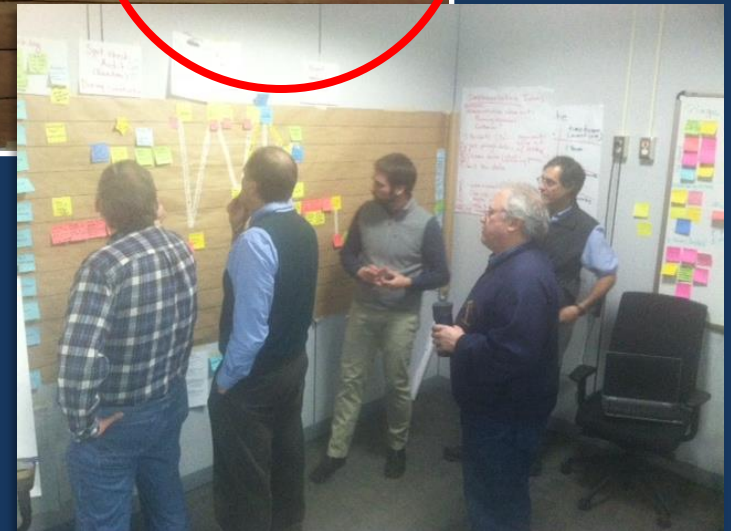
Future State

To streamlined process

Developing a Future State per VSM

"spot check" audit concurrent with payment process

Total Project Completion Audit

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Developing a Future State per VSM

Increasing Capacity By :

1) Stop doing 100% complete project completion audits and move audit function upstream to payment process. (Move from reactive to proactive "real-time")

2) Address Backlog as separate process from current projects.

Grants - (46)

Construction Loans – (362)

Planning Loans –(217)

Use risk based analysis that results in combination of administrative close outs and total project audits

What Does Great Look Like?

What Does Great Look Like?

- No backlog!

- Minimal manual hand-offs/sign-offs.

- Electronic document management including document routing workflow and approvals.

- Loan & Grant recipients submit forms and data online into loan and grants tracking system.

- One project tracking system for entire process (both construction and audit).

Stakeholders' Comments

Terry Call (VTRANS).

- The current audit process eliminates the risk of material errors by reviewing 100% of the project. The cost of this thoroughness is a backlog of 600+ projects and accounts, some of which have been awaiting closeout for 20+ years.

- Several individuals and units interact with contractors, engineers, municipality personnel, regulators and service providers during the project. Find out what they do, assess it, standardize it and audit that performance to provide real time feedback to address expectations and opportunities for improvement.

- Triage the backlog utilizing risk analysis of prior closed projects to expedite closures. This will reduce the need for record retention spanning 20+ years and free up valuable human assets to provide timely, insightful input to the entire project process.

Key Performance Indicators (Metrics)

Reduce time frame for project completion to final repayment schedule by 35%

Reduce Project Close out backlog by: 35 % within 3 months
75 % within 1 year
100% within 2 years

Spot check audit on all 3 internal functions (engineering, financial management and construction) at least once on every

Number of new projects added to backlog = 0

Develop new SOPs for future state with in 4 months, and track number of revisions

IT Solutions - # of databases required for process from 5 to 2

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Strategic Planning - 2014 Annual Improvement Plan

Drop-down List

Participants	Activity	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Katharine, Mark	Complete "Easy" administrative close outs - planning loans (paired with construction loans) & grants	▓	▓	▓							
Winslow, Mark, Katharine, Eric	Complete risk based analysis for total project audit (from the backlog). Generate list of projects for administrative closeout	▓	▓								
Katharine, Mark, Winslow, Roger	Close out remaining construction loan, planning loans and grants from the "backlog"			▓	▓	▓	▓	▓	▓	▓	▓
Winslow, Eric, Katharine, Bryan	Develop matrix for spot check audits	▓	▓	▓							
Katharine, Mark, Roger, Winslow, Bryan	**Develop checklists for each program process (what auditor looks at for spot check audits - financial, engineering and		▓	▓	▓						
Katharine, Mark,	** Revise SOPs based on Spot Checks, as appropriate						▓	▓	▓	▓	▓
Katharine	Implement new spot check audit procedure						▓	▓	▓	▓	▓
Katharine, Winslow, Eric, Mark, Roger, Drinking	Hold monthly meeting to communicate audit checks					▓	▓	▓	▓	▓	▓
	Initiate triage total project audit program				▓	▓					

Quick Wins

- 10 backlog projects closed out *this week* via administrative closeout

- Implement risk-based audit selection in current audit process

- Increase engineering staff capacity for construction oversight by addressing backlog

- Create electronic documents for new process.

- Reduce unnecessary project reviews (by 90%) by implementing true "audit" process

- Complete risk-based analysis

- Reduce backlog of 632 projects by 35% through administrative close outs

- Develop SOPs for new process

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6 Month Project Tasks

- Implement new process supported by Standard Operating Procedures

- Verify the new procedures are working by monthly meetings.

- Document changes made since this event.

- Conduct IT business analysis and determine new database application fit in new process

1 Year Project Tasks

- Implement information technology solution to meet document management and data management requirements.

- Reduce backlog of 632 projects by 75%
  - 100% backlog eliminated < 2 years

- 15% of completed projects have a total project audit

What Did We Learn?

- We can grow the capabilities and capacities of our organization to better serve our customers

- No one of us is as smart/creative as all of us

- The Lean process, though hard work, is fun and rewarding

- Just think what we could do to the rest of the agency (WOW!)

Thank you!