

Process Improvement & the Lean Management System at EPA Region 7

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What am I
talking
about??????



HOW TO MAKE THINGS
BETTER



TURNING *BUZZ WORDS*
INTO USEFUL TOOLS



THE JOURNEY TO A
MANAGEMENT SYSTEM

Why
improve
processes?

To produce better products
in a more efficient manner

To better meet the needs
of our customers

To improve our return on
investment



Protect Human Health
and the Environment.

But...

We don't make
widgets

We don't have
customers

We're not here
to make a profit

Myth #1 “We don’t make widgets.”

Truth



Service based work is sometimes hard to define. Once we define our service-based widget (product), we can measure, manage and improve it.

Output =Widget

- The products and services provided as a direct and immediate result of program activities
 - a thing
 - a deliverable
 - can be counted
 - specific

Myth #2 “We don’t have customers.”

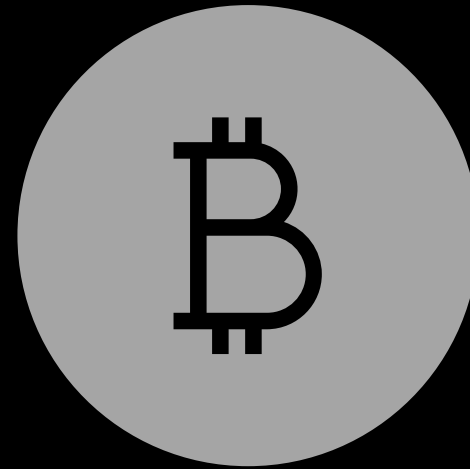


When we focus on identifying the “end-user” of our widgets, the identity of our customer will become clear

Something to Consider



CUSTOMER=THE END USER OF OUR
OUTPUTS



INVESTOR= THE PEOPLE WHO DEMAND
A RETURN ON THEIR INVESTMENT (ROI);
THE ULTIMATE BENEFICIARY

Myth # 3 “We are not here to make a profit.”

We do make a profit—but in the form of the results we produce from our service.

Profit is not measured
in dollars at the EPA.

Profit is the result of our work—

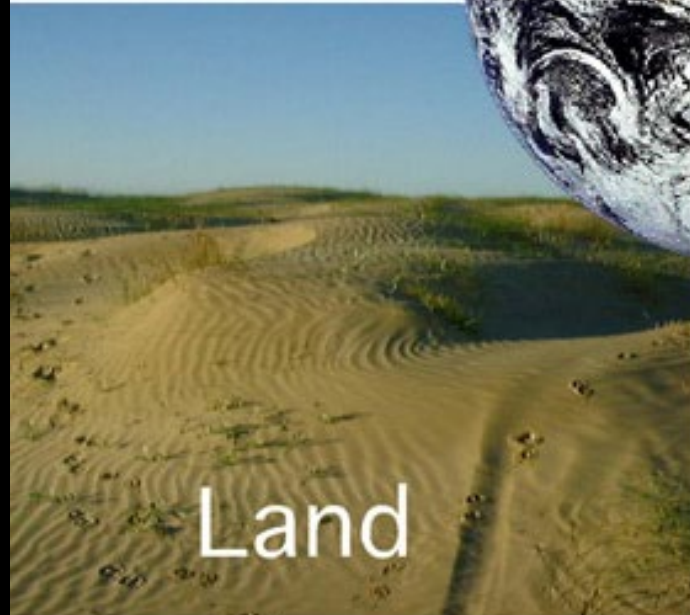
*protection of health and the
environment.*



Air



Water



Land



Life

The Earth System

IMPORTANT CONSIDERATIONS

THREE MYTHS OF GOVERNMENT¹

1. *We don't make widgets:* What we do is service-based. Therefore we can't measure it, manage it, or improve it.

We have service products (widgets); once we define them we can measure and better manage them!

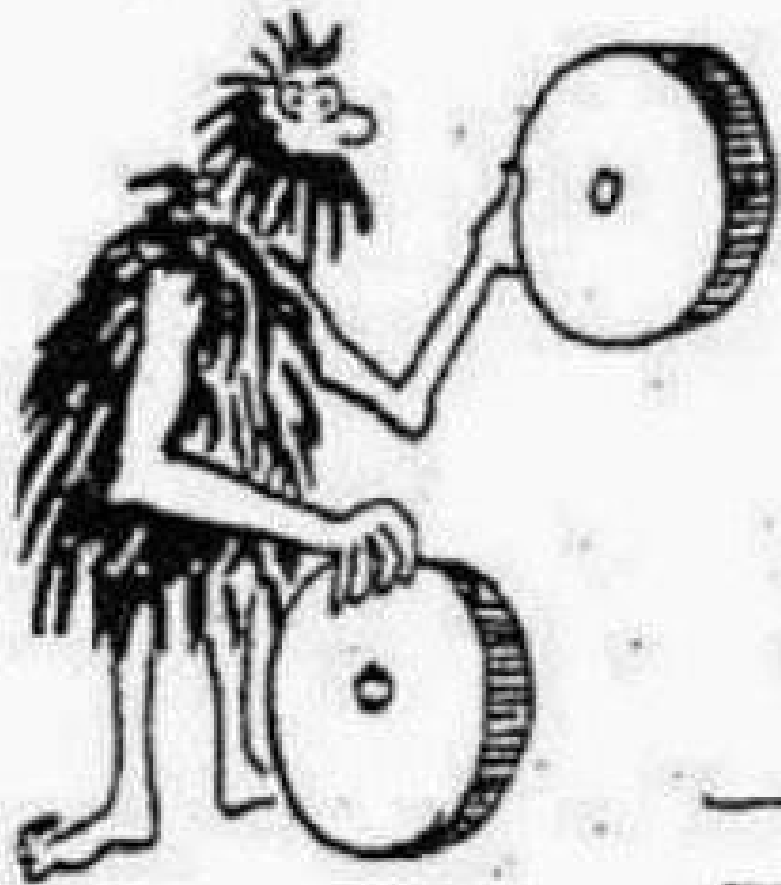
2. *We don't have customers:* We have hostages – they didn't choose us, they don't want to come back, and it doesn't really matter if they are happy or not. Also, we have multiple customers with competing interests who can never agree on what they want versus what they need.

All processes have an *end user* – the person(s) who directly use the widgets we make.

3. *We're not here to make a profit:* There is no incentive to improve, and any improvements we do make just get taken away from us anyway.

We do make a profit, but it's in the form of the RESULTS we produce from our services.

1. Ken Miller, "We Don't Make Widgets"



No thanks!



We are too busy



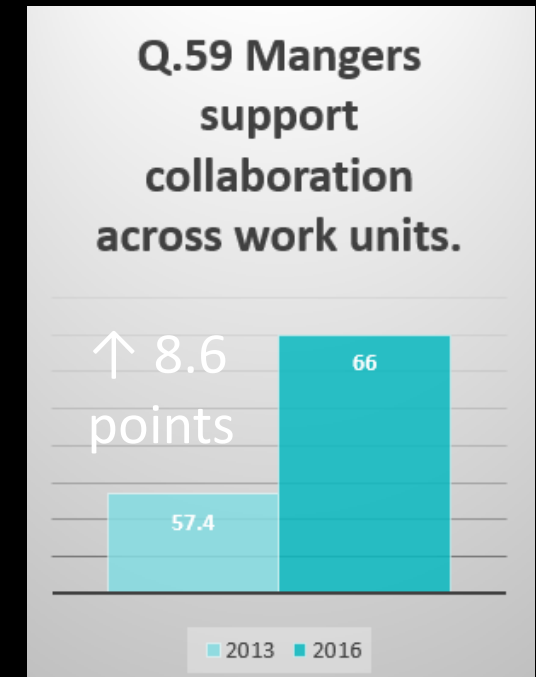
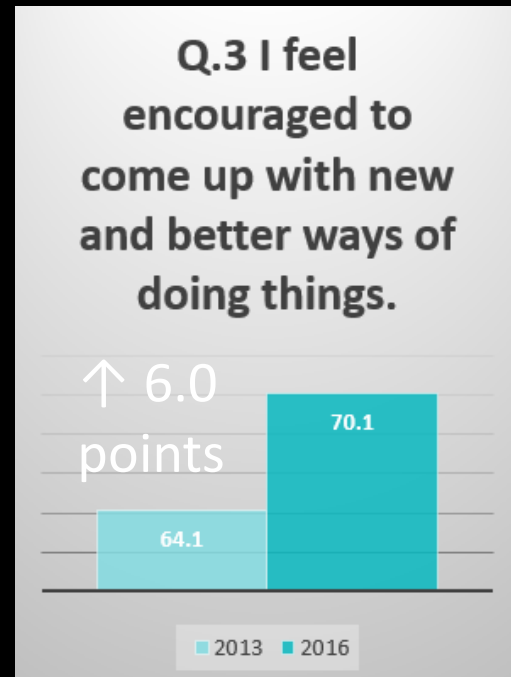
150+

employees from across the Region involved in at least one project

>30%

R7 employees trained through scheduled or just-in-time training

Engages Employees



EVS Scores as an Indicator

GEMBA
Stream Value
Appreciative
Model Flow
Visual Inquiry
Map
Six Lean
Huddle Logic Work
Management
Standard
Process Sigma
Board

What did we do

- **Types of Events**

- **Kaizen**- Means “change for the better”; usually a multi-day event that focuses on analyzing, understanding, and improving complex processes
- **5S**- An approach used to bring order and sustainability to the workplace; sort, straighten, shine, standardize, and sustain
- **A3**- A standardized method of problem-solving that is simple and visual; clearly displays everything on one piece of paper

- **Types of Mapping**

- **Value Stream**- Provides a high-level view of how work progresses through an entire system; usually developed by the supervisors of the process
- **Process**- Provides a detailed view of each step of a process; usually developed by those that do the process

- **Types of Facilitators**

- Trained Lean Six Sigma facilitators are awarded **belts** based on the level of training; white (lowest level of training), yellow, **green**, **black** (highest level of training)

What is Kaizen?



Japanese term

Kai = Change

Zen = For the better"

Kaizen is a Culture

Continuous improvement marked by certain guiding principles:

Good processes bring good results

Take action to contain and correct root causes of problems

Go see for yourself to grasp the current situation (Going to *Gemba*)

Speak with data, manage by facts

Work as a team

Kaizen is everybody's business

What are Lean & Six Sigma?

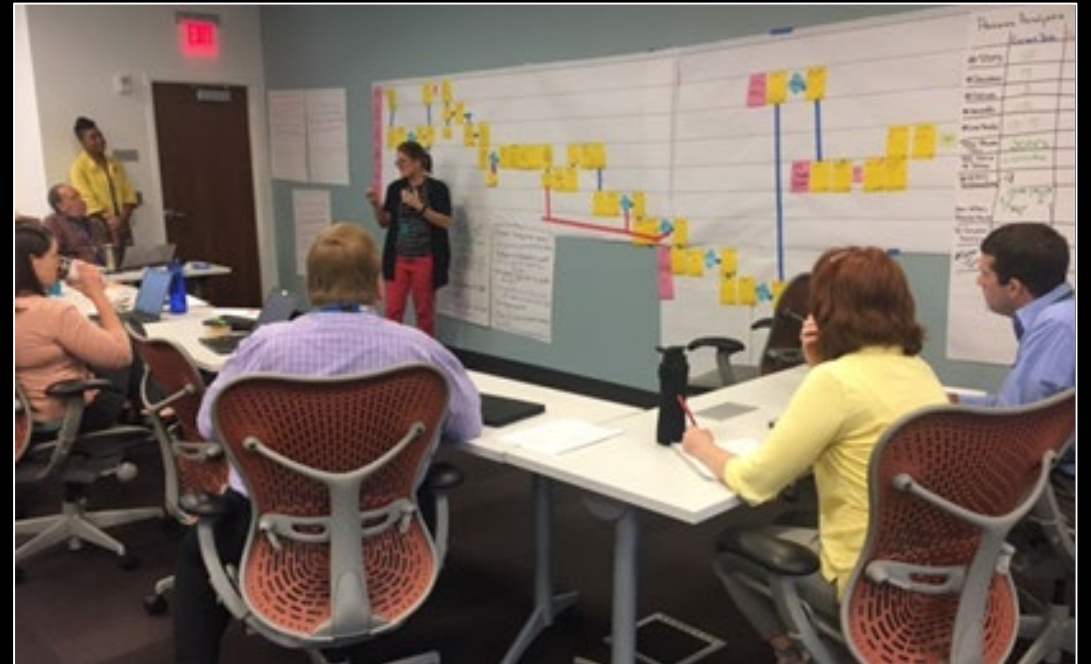
- Lean is a method for implementing Kaizen
- It focuses on increasing *value* for the *customer* by creating efficiencies; improving the speed of any process by eliminating *waste*
- It is different from Six Sigma which is a data-driven approach and methodology for eliminating *defects* to six standard deviations

Lean is a set of principles and methods for identifying and eliminating waste (non-value added activity) in any process.



Key Lean Principles

- Engage the right people to improve the process
- Create value from the customer's perspective
- Bring measureable and sustained improvement results



Why Lean?

Lean can improve EPA operations through multiple routes:

- Reduced process complexity
- Enhanced process speed
- Reduced rework
- High quality products and services
- Superior customer service
- Improved staff morale
- Increased sense of staff empowerment
- Finite resources focused on higher value activities
- Better environmental results

What Makes Lean Different?

- Emphasis on:
 - Workforce empowerment
 - Rapid, real-time change
 - Doing over planning
 - Building and sustaining momentum
 - Tracking progress
 - Culture change



Project Results



Improved visibility
and transparency

Visualization of
processes is
important
Succession
planning



Breaks down silos

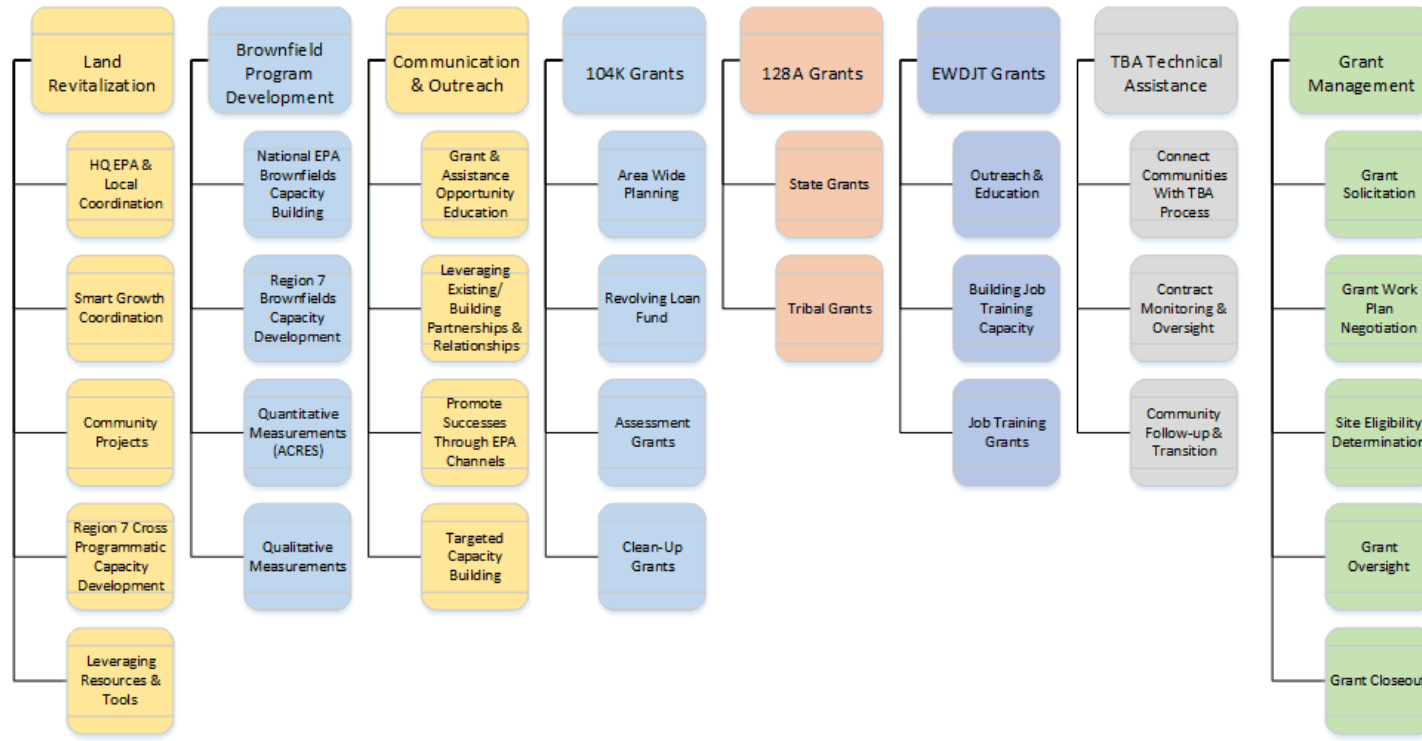
40 projects
involved more
than one division
Support of all four
State partners



Better work flow

Minimize "crisis"
management

REGION 7 SUPR/BLRB – GOVERNING LEVEL WORK LIBRARY



Governing Work Libraries

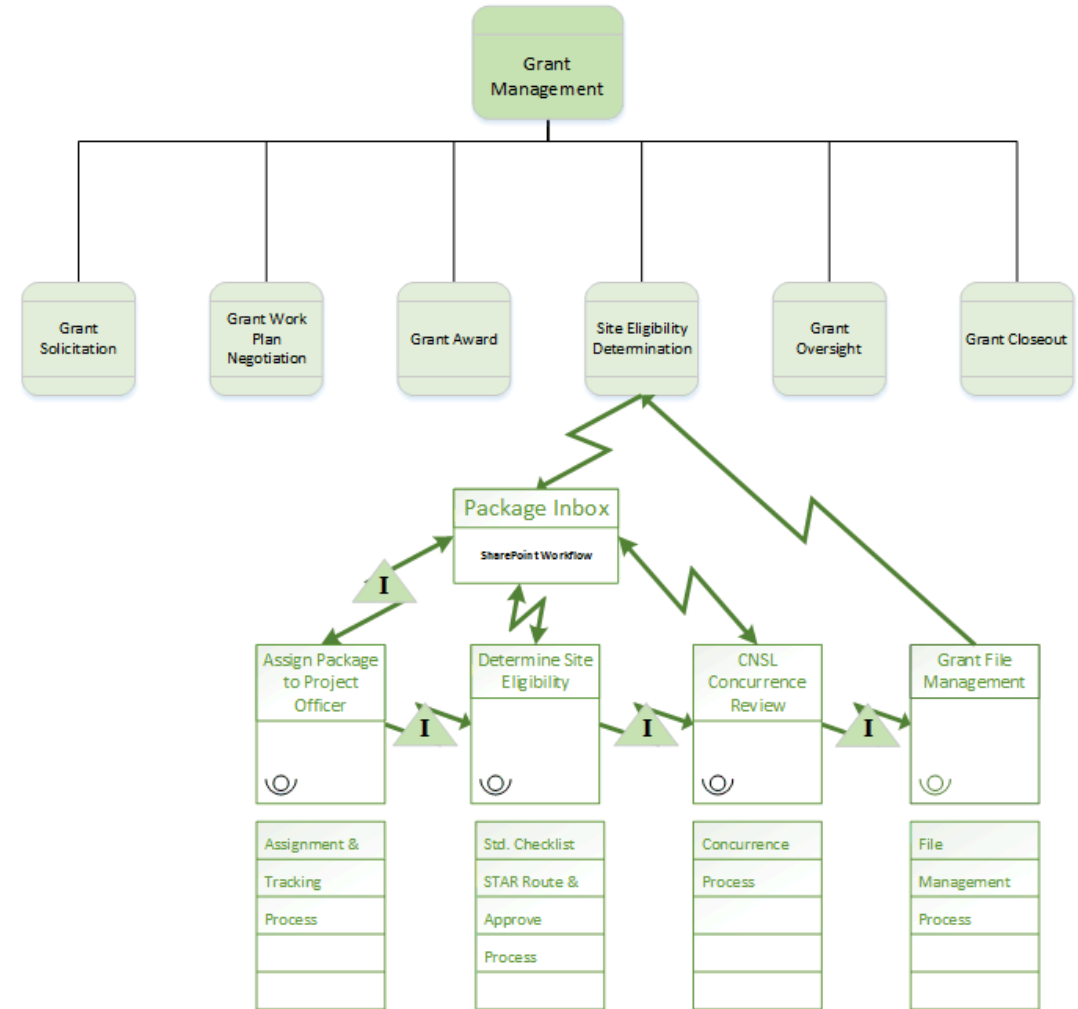
The Governing Level Work Library identifies **what** the Branch does; its high level work categories (the ones that typically define the scope of the Branch) and their intermediate level components.

Completing the Library allows the Branch to better understand both the breadth and depth of what they do. It can make it easier to identify concurrent and sequential work areas – important considerations for ensuring changes are properly implemented across the Branch. Finally, the visibility of the Governing Level Work Library helps the Branch look within the work to identify **where** it is or is not being done efficiently and effectively.

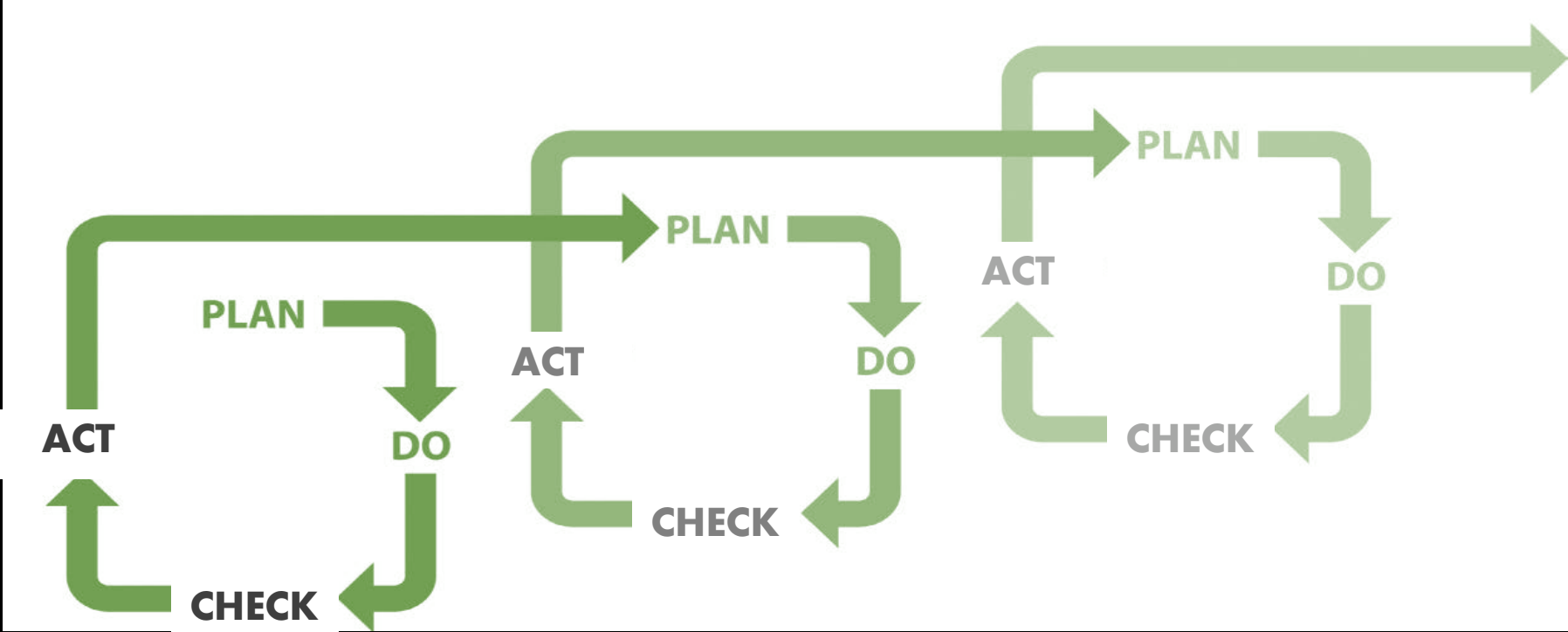
Value Stream Maps

- The visibility of the Governing Work Library also helps the Branch look within the work to identify Value Streams and Processes that define how the work is being done. This brings together the people, systems, governing documents and directives, and the timeline for the work in an easily understood format. Knowing all of these attributes of the work then allows the Branch to better focus Process Improvements to specific areas, while ensuring both the upstream and downstream work is not adversely impacted.

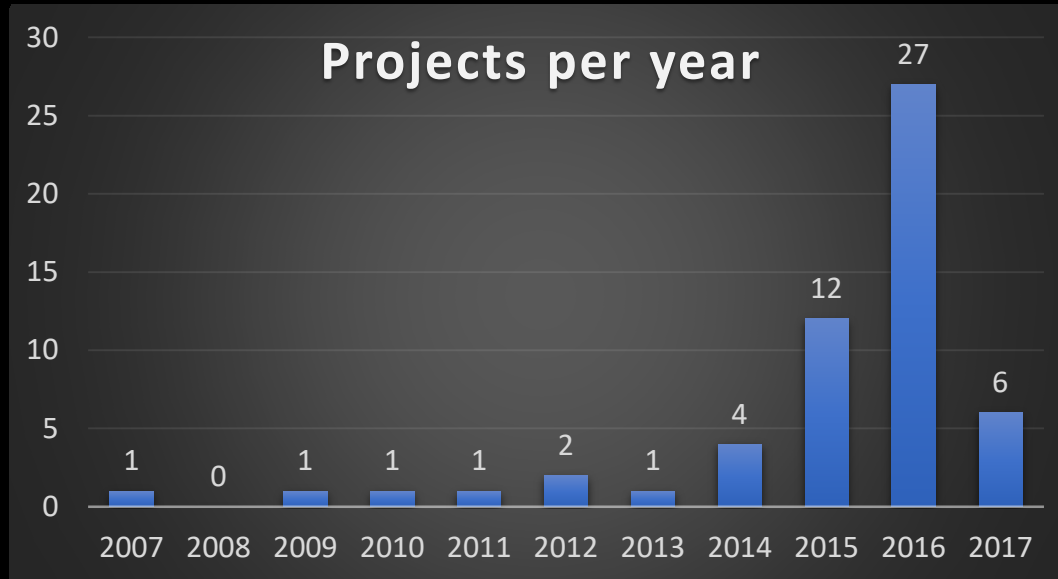
REGION 7 SUPR/BLRB – SITE ELIGIBILITY DETERMINATION VALUE STREAM MAP



Continuous Improvement



Our Progress



- Soft launch in 2007; seven projects completed by 2013
- Formally launched in Fall 2013
 - Nine staff members selected for LSS Green Belt training
 - Initiate 49 new projects between 2014 and 2017
 - Training five new Green Belts; three Team members are Black Belts

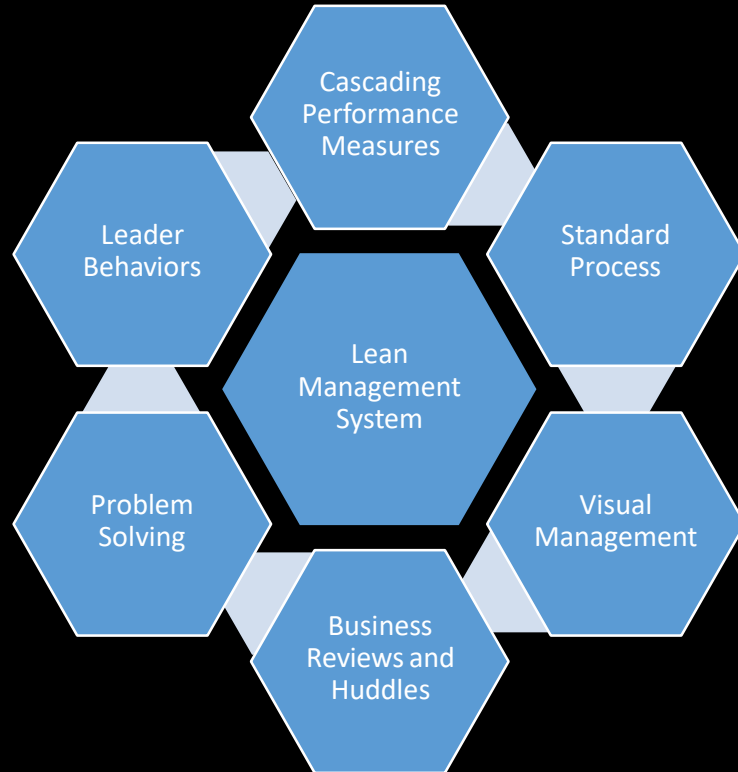


What is ELMS?

A system that uses **Lean principles and tools**, paired with **routine monitoring, measurement and engagement** to **identify problems, solve problems and sustain improvements**.

EPA Lean Management System (ELMS)

THE DEFINITION OF ELMS



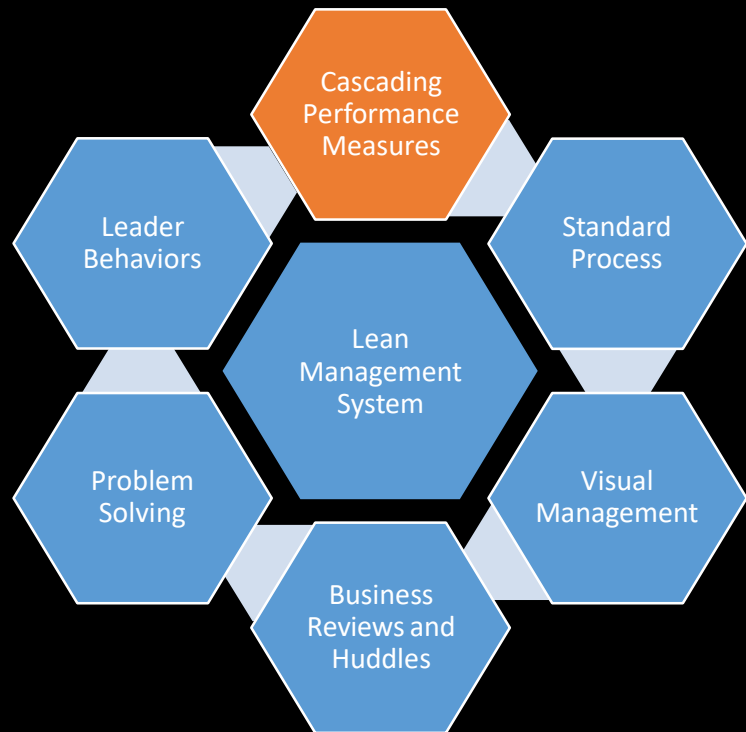
*When properly established,
ELMS allows you to...*

See Problems Fast

Solve Problems Fast

Sustain Improvements

ELMS – BASIC TERMS

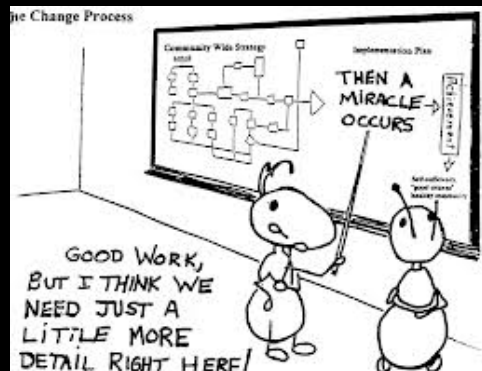
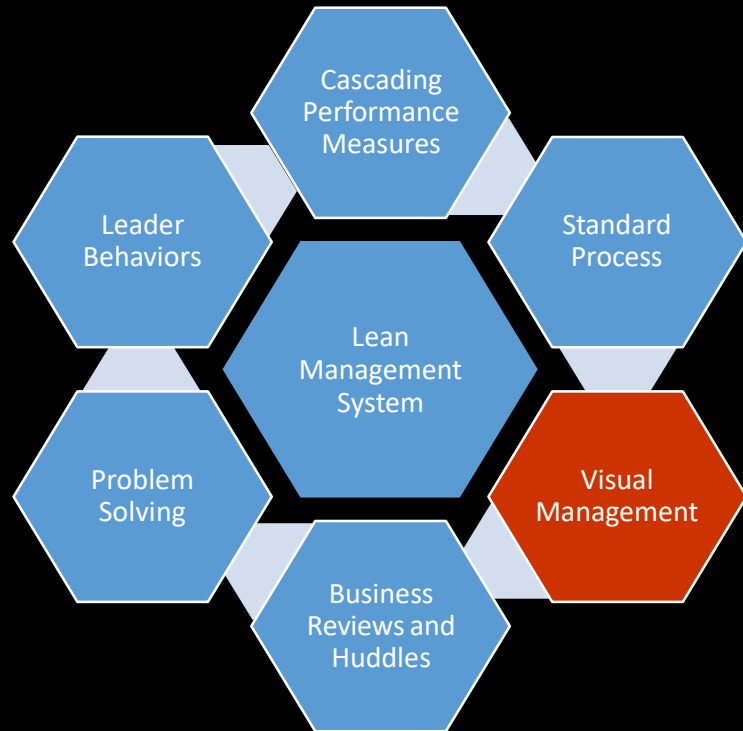


Cascading Performance Measures

- EPA Strategic Plan
 - *Strategic Measures; Agency Priority Goals*
- National Bowling Chart
 - *Agencywide and Regional Performance Metrics*
- Region 7 Bowling Chart
 - *Operational & Sustainment Metrics*
- Division Performance Board
 - *Pertinent Branch Metrics*
- Branch Performance Board
 - *Mission Measures*



ELMS – BASIC TERMS



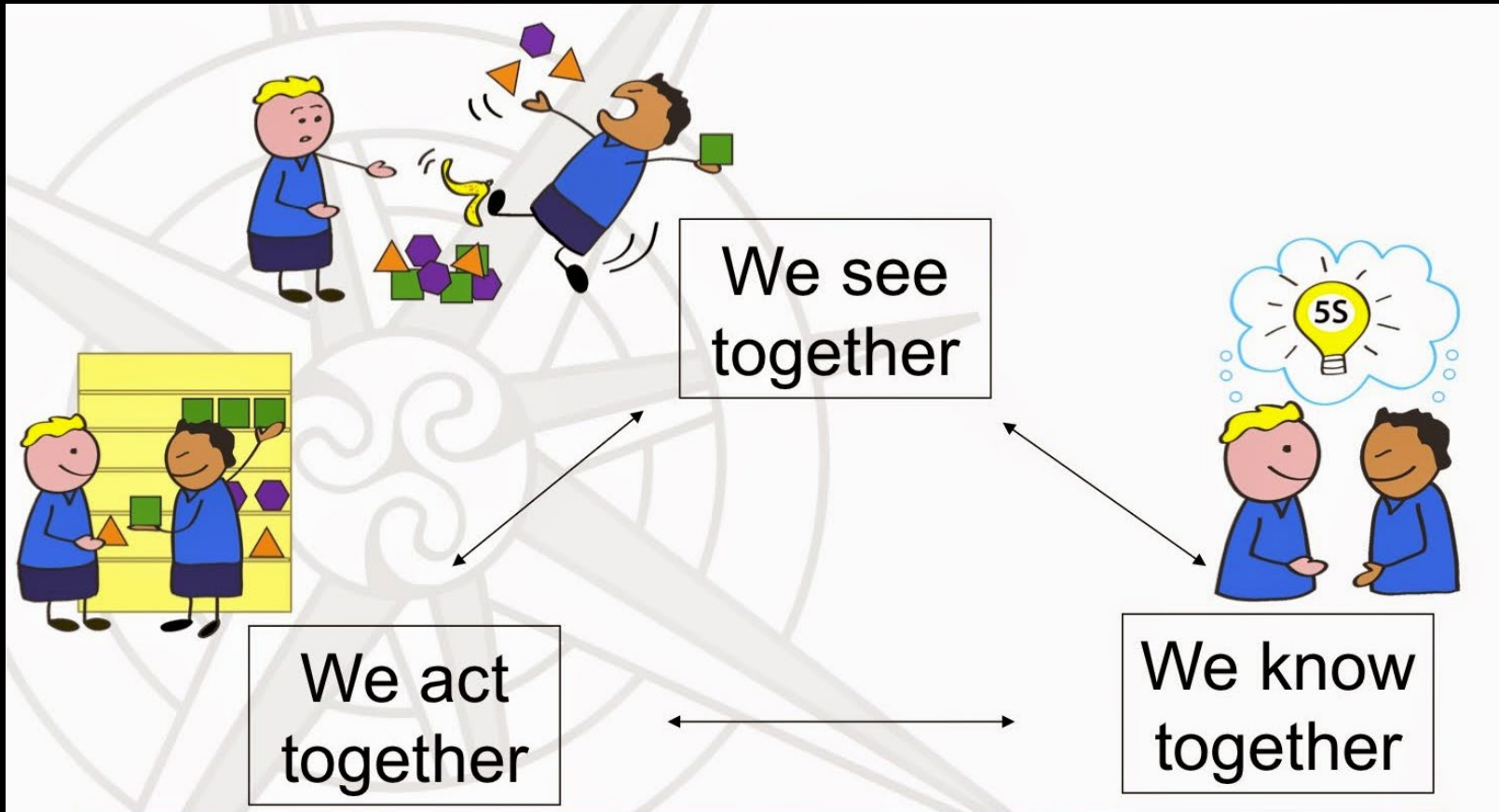
Visual Management

- Collection of “boards” placed on the wall to allow the group to see (visualize) their work; three types
 - Performance Board – Demonstrates how well the division/branch is doing overall
 - Flow Board – Tracks the timeliness (progress) and quality of a single process
 - Other Visual Management – Tracks the progress of work where process flow does not occur or isn’t relevant
- Huddle – Regularly held, disciplined discussions of performance to create *accountability without blame*

THE DEFINITION OF ELMS

VISUALIZATION – THE KEY TO ELMS

ELMS is about making our work & progress *visual*



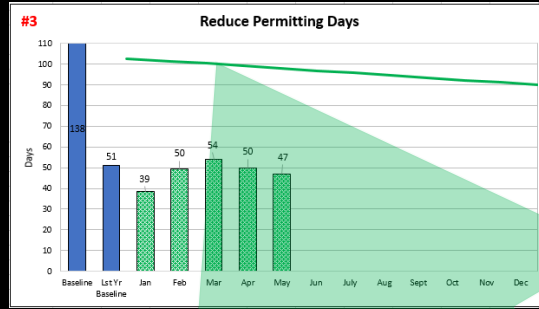
Bowling Chart



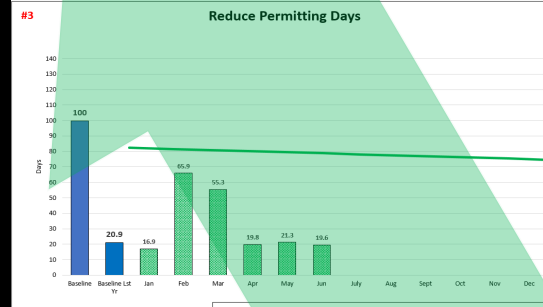
- Visual Management: provides ease of communication and roll-up
- Actual results will be collected monthly
- Tells us
 - Priorities and how they are being measured
 - Targets and progress
 - Areas that need attention
- Contains Mission Measures (Metrics)

Cascading Metrics

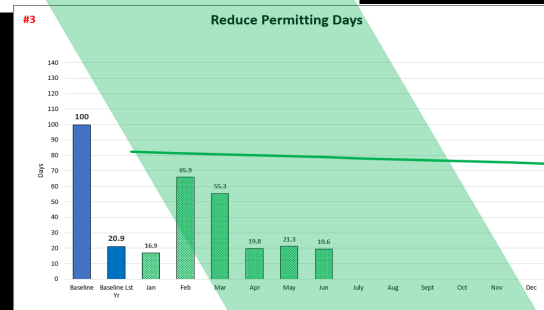
Tier IV Agency Board
 Board
 “Mission Outcome”



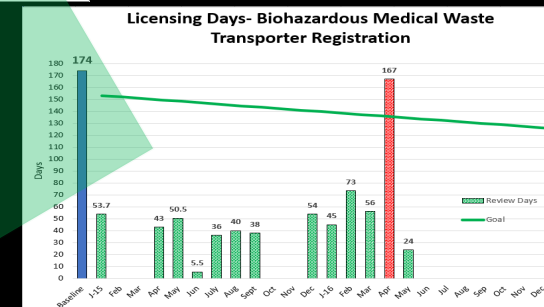
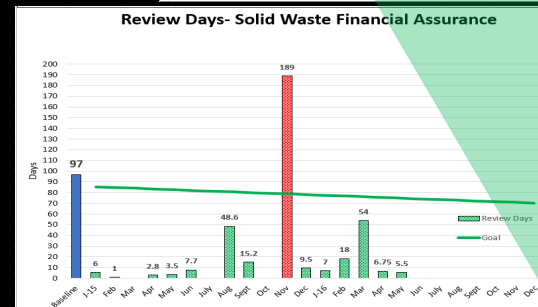
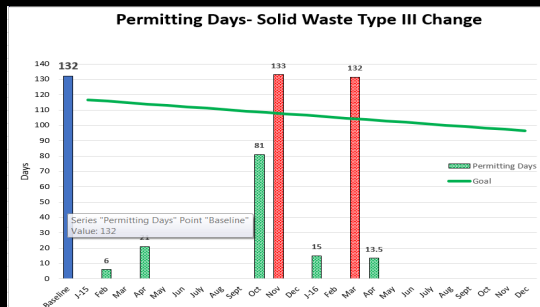
Tier III Division Board



Tier II Value Stream Board



Tier I Front Line



Looking at Measures During Business Reviews & Huddles

Ask

- Are we meeting the target?
 - **Sustaining level or gaining further improvement?**
 - **Not sustaining improvement?**
- Are we not meeting the target?
 - **Making progress toward meeting target?**
 - **Trending away?**

Visual Management

Collectively called “huddle boards” because teams meet around them for discussion

Performance Boards

- How the division/office or branch/section is doing with all its work
- An organizational unit will have one performance board

Flow Boards

- How a single process is doing
- An organizational unit may have multiple flow boards

Agency Goals

Owner, Meeting Date/Time, SW

Bowling Chart

People

Who is in the group
Areas of expertise
Governing Work Library
Other

Celebrations

Successes – can be big ones or small ones

Continuous Improvement Activities

Improvement Actions									
#	Assigned Date	Action to be Taken	Action Owner	Due Date	Percent Complete				Date Complete
1					25	50	75	100	
2					25	50	75	100	
3					25	50	75	100	
4					25	50	75	100	
5					25	50	75	100	
6					25	50	75	100	

Ideas

Quality

Bar charts for metrics dealing with quality

Service Level

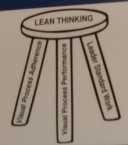
Bar charts for metrics dealing with time

Agenda

Roles & Rules

Attendance

WASTE PROGRAMS DIVISION

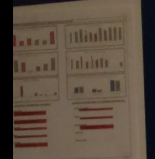


OUR TEAM

ADEQ
The mission of the Waste Programs Division is to protect and enhance public health and the environment by increasing the rate of recycling, waste management, environmental education and regulatory compliance.

Waste Programs Division's Eight Value Streams:

- 1. Municipal Solid Waste (MSW) Management
- 2. Hazardous Waste Management
- 3. Air Quality Management
- 4. Environmental Remediation
- 5. Environmental Compliance
- 6. Environmental Education
- 7. Environmental Enforcement
- 8. Environmental Policy Development



WPD POSITIONS

Position	Count
Director	1
Assistant Director	2
Manager	15
Supervisor	10
Senior Analyst	5
Analyst	20
Staff	30

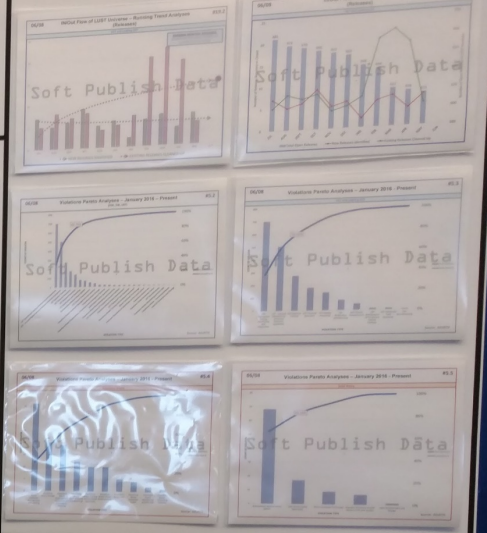
EVISON
MCBURD
Q-SHIRT
SPOTLIGHT

Tina LaPage: 520-770-3127

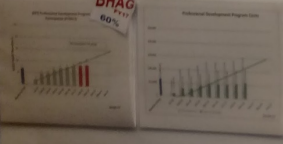
MISSION OUTCOMES



QUALITY



COST



CONTINUOUS IMPROVEMENT

McBens

NEW IDEAS & CM

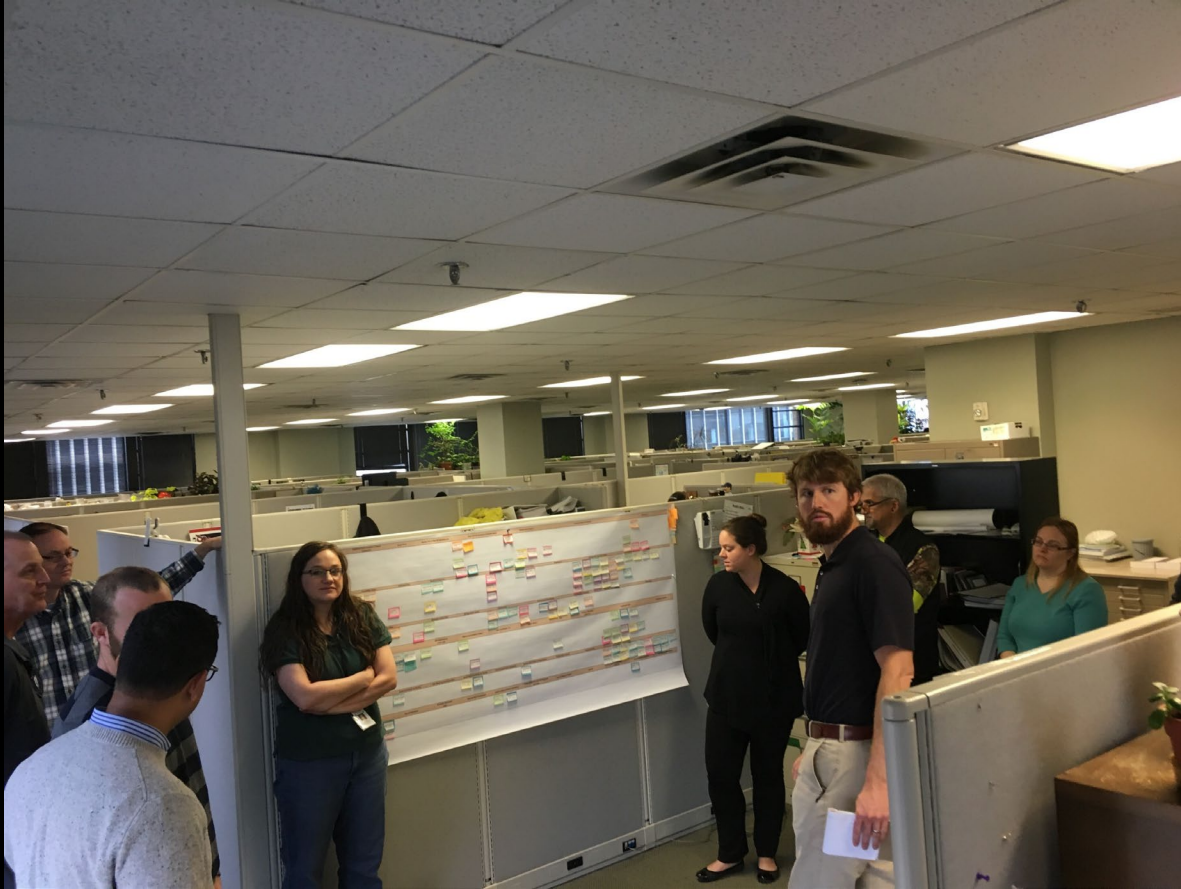
WIP

COMPLETE

DELIVERY

WPD Priority Projects for FY17

Huddles



- Short, regular meetings to discuss problems that arose, solutions, and areas of concern
- Set agenda
- No need to share if work is proceeding on target, but may share celebrations

Problems: Something to Consider

- Problems are opportunities to improve
- Problems should be discussed openly and not hidden
- Identify and resolve small problems before they become big problems



What is a Problem?

- Unwanted deviation from a standard
- Gap between actual and desired condition
- Failure to meet customer needs
- Failure to meet a target



A3 Problem Solving Tool

A3 Project		Project Name:	Program:		Report Date:																																																																																																																									
Box 1: PROJECT DEFINITION (Plan)		Box 3: Action Registry (Do)			Box 6: Team																																																																																																																									
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Box 10: Executive Sponsor Signature		Box 5: STANDARD PROCESS & VISUAL MANAGEMENT (Act)			Box 8: Project Management																																																																																																																									
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The A3 - Background

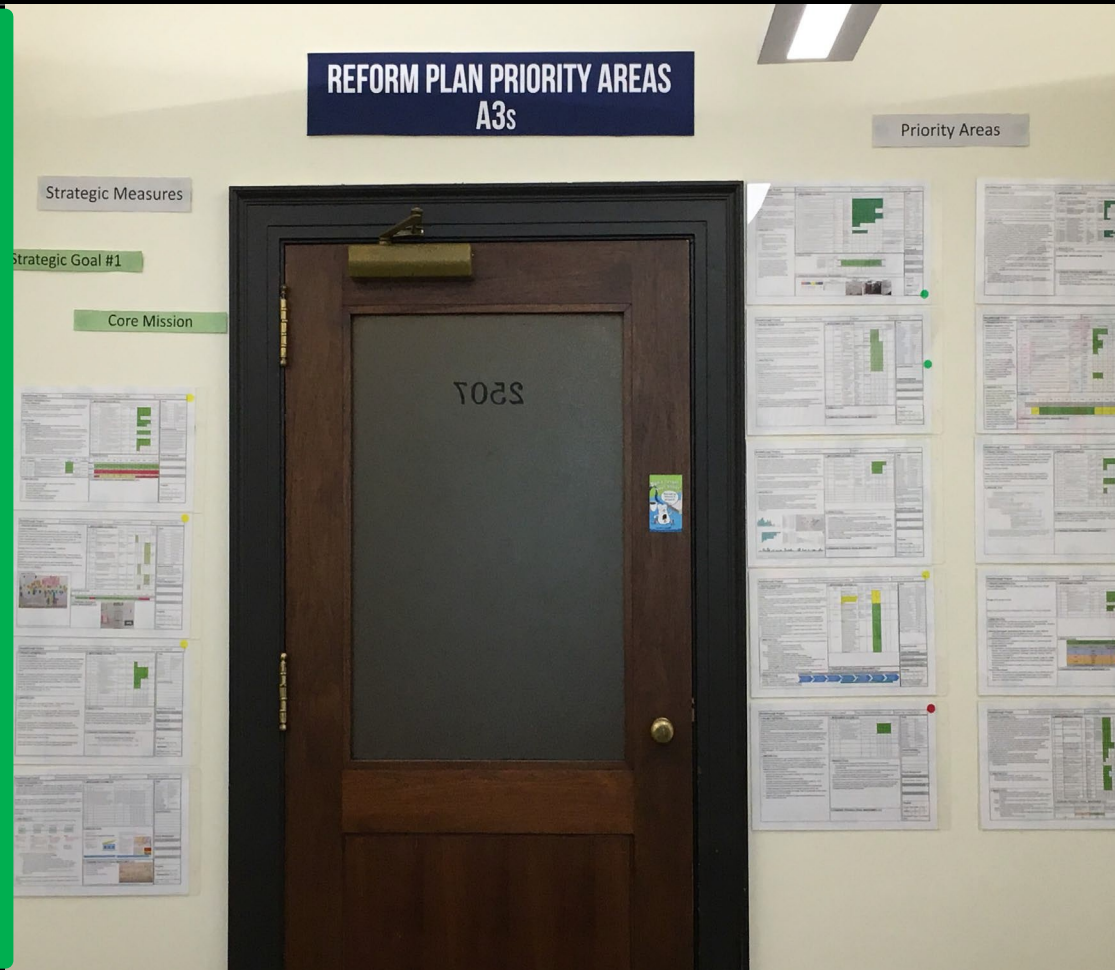
- Named after European A3 paper size (11 by 17)
- Pertinent information with visual impact
- Based on Deming's PDCA cycle



Go-To Tool

What it is

- Executive summary
- Progress report
- CliffsNote version of story
 - connect the dots from one section to the next.



What it isn't

- Just a form
- An independent effort
- A solution
- Magic

Box 1: PROJECT DEFINITION (Plan)

1a. Improvement Opportunity:

1b. Goal:

1c. Scope:

Approval: _____
Henry Darwin, Chief Operations Officer

Box 2: ANALYSIS (Plan)

50% of Total Project Time

Plan

Box 3: Action Registry (Do)

#	Assigned Date	Action to be Taken	Action Owner	Due Date
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Do

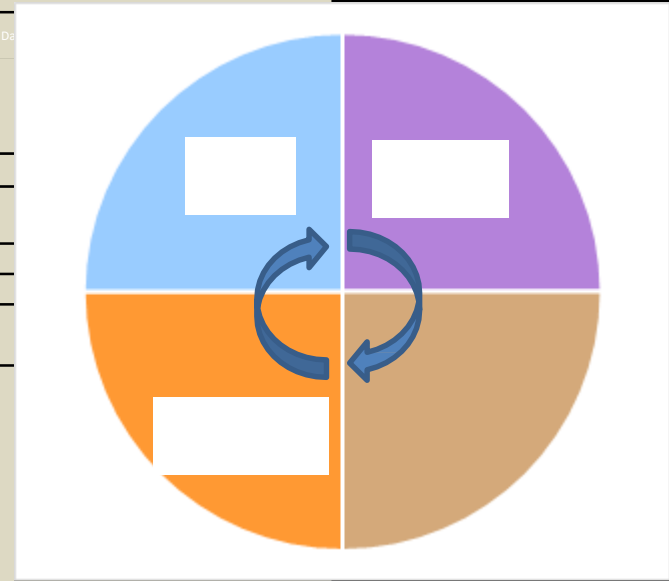
Box 4: RESULTS (Check)

Check

Box 5: STANDARD PROCESS & VISUAL MANAGEMENT (Act)

Act

Box 6: Team



Box 8: Project Management

Day and time for regular update meeting:

Regular updates due to project lead by:

External Cost for this project (if any):

Box 9: Progress

Project Start Date:



Estimated Project Completed Date:

Box 10: Executive Sponsor Signature:

What do you want to get better at?

- Processes are overwhelming
- Bite off small pieces and make a big difference
- Celebrate successes

The journey continues.....