

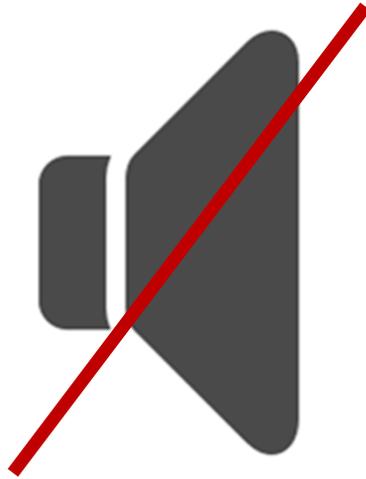


Transportation Lean Forum

October 17, 2017

please

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thank

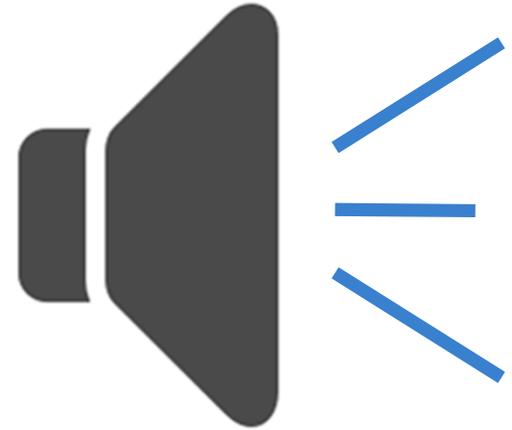
you!

Remember to

unmute

your **phone** or **microphone**

when you ask or answer **questions!**





TECHNOLOGY

challenges

Contact:

INTERN

1 chat via **Zoom**

2 send emails to:
meagan.brown@state.co.us



AGENDA

1 INTRODUCTIONS AND ROLL CALL

2 PRESENTER 1:

Kismet A. Weiss - Administrator, Office of Continuous Improvement; ADOT

3 PRESENTER 2:

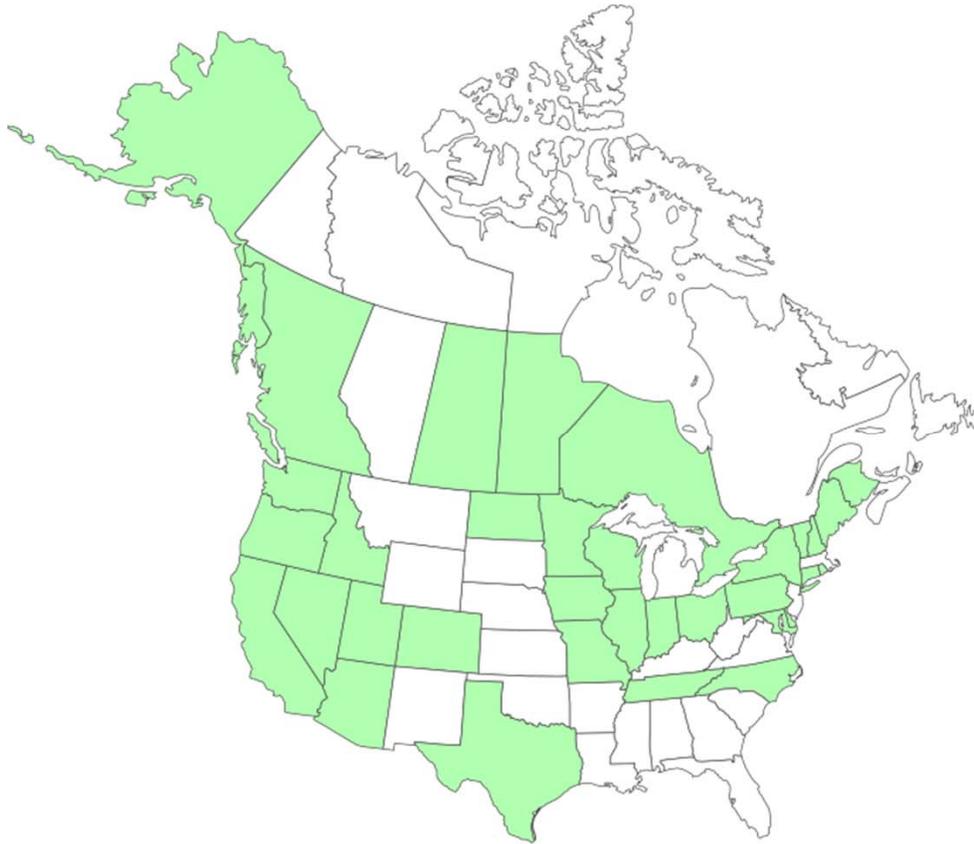
Troy Tusup - Chief, Innovative Business Solutions; CALTRANS

4 LEAN INTERCHANGE WEBSITE

5 OPEN FORUM

6 CLOSE OUT

TLF MEMBERS

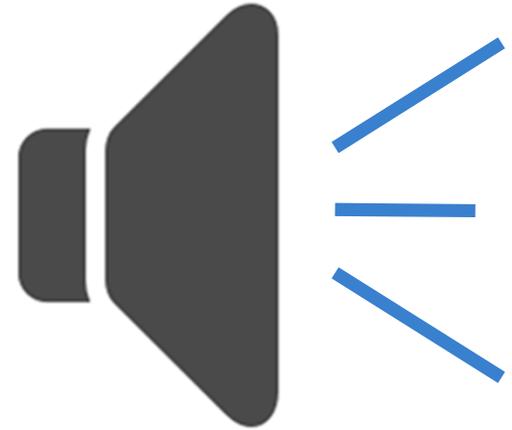


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**The ability to learn
is the most
important quality a
leader can have.**

***-- Sheryl
Sandberg, COO of
Facebook***



ADOT's
Management System:
Lean

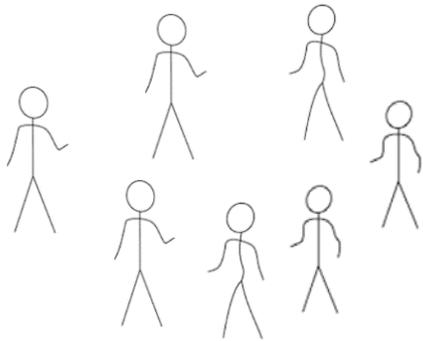
Transformation Journey
October 2017

TODAY'S TOPICS

1. **ADOT's transformation goal**
2. **ADOT's transformation roadmap**
3. **Tiered Huddle method**
4. **Tiered Huddle implementation**

ADOT's Transformation Goal

ADOT: "Everyone, everywhere solving problems, every day."



How did we do yesterday?
Where was the waste?
How can we do it better today?

3,763 problems solvers:

everyone has problem solving skills, the opportunity and expectation to make improvements, and is given the respect and tools to improve work processes

ADOT's LEAN TRANSFORMATION

ADOT's True North: Making Transportation Personal

Mission: *Moving AZ* – To become the most reliable transportation system in the nation.

Goal: *Everyone, everywhere, solving problems every day*

February 2016: ADOT Office of Continuous Improvement

September 2016: Honsha trains Senior Leadership

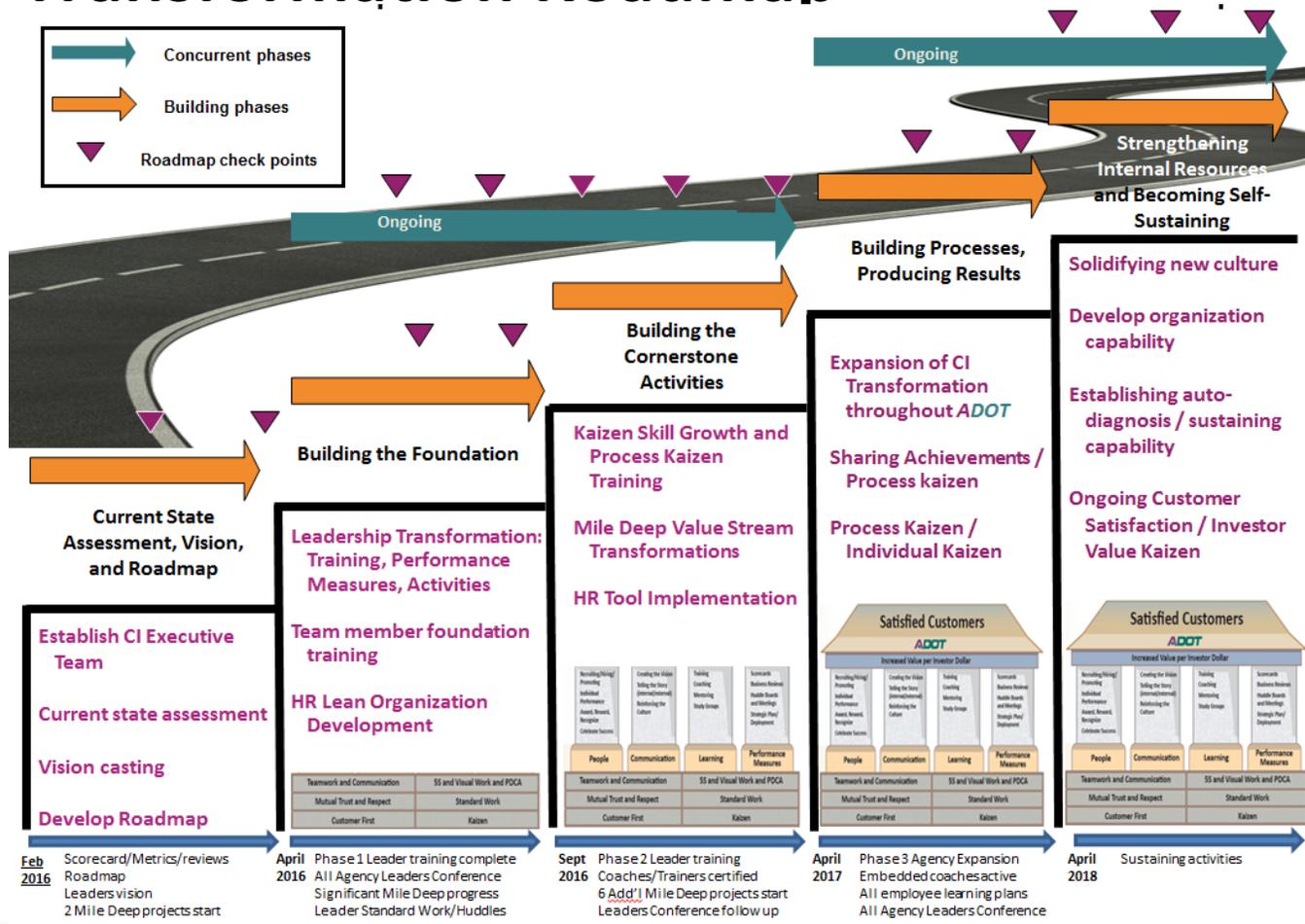
February 2017: 12 Agency level PDCA's launched

September 2017: 14 Embedded lean coaches hired

“Government at the Speed of Business”

- Arizona Governor Doug Ducey

ADOT's Transformation Roadmap



SINCE OUR ADOT UPDATE LAST YEAR...

- ▶ Strategy Deployment: Hoshin Kanri (X-matrix)
- ▶ Phase 2 training
 - 72 division leaders complete Lean Leader Learning series
 - Lean 30-minute Computer Based training for front line
 - Honsha certified 7 ADOT trainers
 - 12 hands-on PDCA learning projects
- ▶ Phase 3
 - 72 additional leaders in Lean Leader Learning series
 - Launched AMS Manager Series of classes
- ▶ Many process improvements completed or in process
 - 3,641 Kaizens implemented agency wide
 - 2 Mile Deeps completed

Manager's Role:

Develop Problem Solvers

Because our goal is to develop problem solvers everywhere, our **leaders' role changes**.

- ▶ Instead of managers working as firefighters, their new role is to continually coach to **develop critical thinking skills**

So we need to provide the managers a **favorable environment for problem solving**, including the **tools** and the **time**.

ADOT's Problem Solving System: TIERED HUDDLES

We believe that by working our tiered huddle process, with **cycles of huddles and gembas**, that we will develop problem solvers everywhere.

The Problem Solving System is made up of some standard elements and behaviors

Element 2: Process Metrics

today's date: _____

HUDDLE BOARD – TIER 1

Process Fundamentals Metrics

CELEBRATION CORNER!

2

Process Metrics

Process Metrics

Process Metrics

Process Metrics

Process Metrics

Audit Type	Number Planned	Number Completed (@ 6.28.17)
IFTA/IRP	66	63
Rental Surcharge	15	19
Aircraft Tax	93	82
Reviews	0	6
Performance	16	15
Pre-Award	110	128
Compliance	45	65
Construction	7	6
Utility & RRI	10	5
Incurred Cost	25	32
Rate Audits	10	6
Single Audit Reviews	15	4
Projects	7	7

Element 3: Problem Register

Huddle Board – TIER 1

(place Fundamentals Ma re)

LOBBY SUITE _____
 Huddle Lead: _____
 Board Refresh Date: _____

Huddle Attendance Tracker

MEMBER	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31

Huddle Agenda

Time	Topic	Owner
8:00		
8:30		
9:00		
9:30		
10:00		
10:30		
11:00		
11:30		
12:00		
12:30		
1:00		
1:30		
2:00		
2:30		
3:00		
3:30		
4:00		
4:30		
5:00		

PROBLEM SOLVING FLOW

No.	Issue or Problem Statement	Action to be Taken	Owner	Due Date	Status (RAG)	Time in Progress	Comp Date
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

CELEBRATION CORNER

P

Process Metrics

Problem Register
Register

Division / Unit: **W. Phoenix MVD** Problem Solving Register

No.	Issue or Problem Statement (What is the Gap?)	Is it a Team POCA Project? Y/N	Owner	Start Date	Due Date	Problem Solving Stages					Comments	Escalate Y/N & Date	Complete Y/N & Date
						Plan	Do / Check	Act	Define Problem	Analyze Root Causes			
	Credit Card Machine's not updated	Y	Keith	7/21	7/31	unable to see for #	High priority	Send ACES Request	N	G		N	7/31
	71 customers in lobby @ one time	N	Ramona	7/31	7/31	High volume	High priority	Blitz to Absorb	N	G	Mike sent 1 pm 5m Kyle 2 pm av. csr	Y	7/31
	7 trainees in office	Y	Ramona	7/19	9/25	High priority	High priority	Blitz to Absorb	Y	G	OJT Program test	Y	9/25
	Minor Signature on Del. Photo	Y	Amber	8/1	8/1	Standard	Standard	Blitz to Absorb	Y	G	Send Email to Clarify Standard	N	8/1
	Kiosk Down	N	Ramona	8/28	8/28	Kiosk unresponsive	High priority	Blitz to Absorb	N	Y	Heat Ticket	N	8/28
	No Road test list	N	Sarina	8/28	8/28	One down	High priority	Blitz to Absorb	N	Y	Heat ticket	N	8/28
	Fire Alarm went off - midday	N	Ramona	8/28	8/28	Water pressure	High priority	Blitz to Absorb	N	Y	Work order submitted	N	8/28
	Camera line needs adjustment	Y	Keith	8/29	9/1	all cost sign	High priority	Blitz to Absorb	N	Y		N	8/29
	CC machine on 29 not doing PINS	N	Keith	8/31	9/1	all cost sign	High priority	Blitz to Absorb	N	Y	Bank states updated	N	9/1
	Automatic went down	N	Maria	9/1/17	9/1	all cost sign	High priority	Blitz to Absorb	N	G	Marin Reset - Down for 10 mins	N	9/1
	Blue zone - 4 lan issues / down	N	Sarina	9/1/17	9/1	all cost sign	High priority	Blitz to Absorb	N	G		Y	9/5

Element 4: Problem Solving Worksheet

Everyday Problem Solving:

Define Problem



Analyze Root
Causes



Develop & Test
Countermeasures



Adopt &
Standardize



Problem Solving Worksheet
(Use this form to document your problem solving process. Show your work.)

Owner(s)		Start Date	<input type="text"/>
<input style="width: 100%;" type="text"/>		Due Date	<input type="text"/>
Issue or Problem Statement	Target	Actual	Gap
<input style="width: 100%;" type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<p>Define Problem:</p> <p>1. Clarify the problem</p> <p>2. Breakdown the problem</p> <p>3. Set a target to close the gap in terms of the final problem selected</p>	<input style="width: 100%; height: 100%;" type="text"/>		
<p>Analyze Root Causes:</p> <p>4. Analyze Root Causes</p> <p>What is causing the problem or standing in the way of the target?</p>	<input style="width: 100%; height: 100%;" type="text"/>		
<p>Develop and Test Countermeasures (CM)</p> <p>5. Develop Countermeasures</p> <p>6. Implement Countermeasures</p> <p>7. Check Results</p> <p>What ideas do we have about eliminating or reducing these causes? Assess countermeasures: Effectiveness, Risk, Budget, Impact, Difficulty</p>	<input style="width: 100%; height: 100%;" type="text"/>		
<p>Adopt and Standardize Countermeasures:</p> <p>8. Standardize to ensure gains (capture task, create standard work and visual management)</p>	<input style="width: 100%; height: 100%;" type="text"/>		

Huddle Behaviors for Problem Solving

Work teams at every level:

- ✓ Conduct Huddle meetings: standard, recurring, brief
- ✓ Find and document problems on the Problem Register
- ✓ Follow the 8-step Problem Solving Process to solve problems at the root and prevent recurrence
- ✓ Escalate out of scope problems to the right huddle (cross-functional or up)

Managers at every level:

- ✓ Horizontal Problem Solving Gemba walks
- ✓ Vertical Problem Solving Gemba walks
- ✓ Provide scheduled problem solving time to employees
- ✓ Coach team through the problem solving process

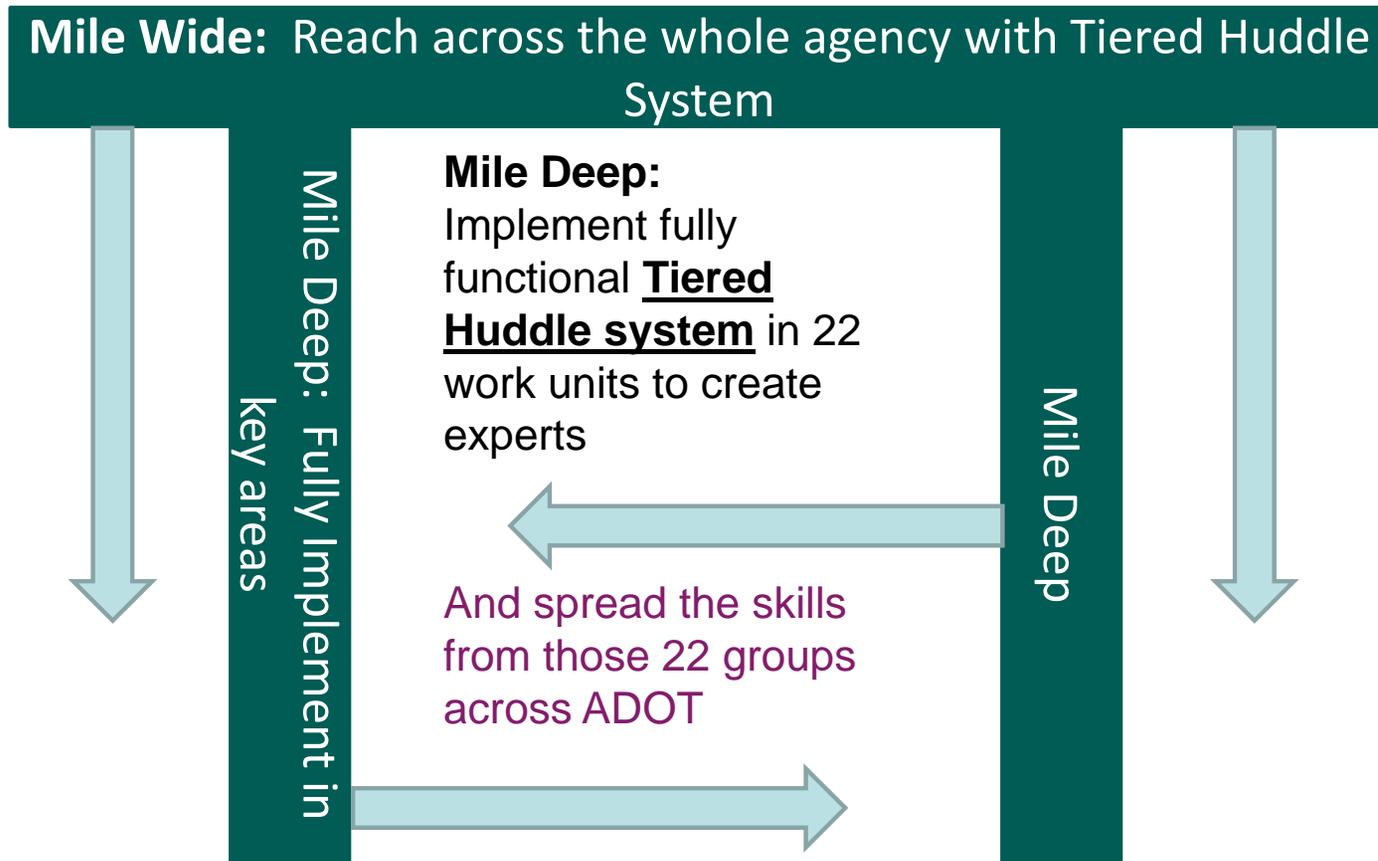
ADOT's Problem Solving System: TIERED HUDDLES

We believe that by working our tiered huddle process, with **cycles of huddles and gembas**, that we will develop problem solvers everywhere.

Implementation plan:

- ✓ Design (June)
- ✓ Train (July, August)
- Rollout (September - March)
- Improve through continuous cycles of use

TIERED HUDDLE IMPLEMENTATION DESIGN



TIERED HUDDLES: MILE WIDE ROLLOUT

Mile Wide: Reach across the whole agency with key elements, from the top down

Progress and plan:

- ✓ Establish an **ADOT Tiered Huddle System** (Honsha partners & OCI)
- ✓ **Trained** 70 ADOT senior leaders to **teach our system** (learn & do)
- ✓ Leaders taught a **four-hour Tiered Huddle Problem Solving Workshop** for all managers and supervisors
- ✓ **Provided** Problem Registers (large, laminated) across the state, and other **forms and resources** on the ADOT OCI website
- ❑ Create **Leader Standard Work** for Managers to Gemba walk with the purpose of developing Problem Solvers using the system

Leaders create pull for the implementation by coaching it and expecting it in the workplace, not from an agency “Center of Excellence” or training department.

TIERED HUDDLE: MILE DEEP ROLLOUT

Project: Create 22 showcase examples of functioning tiered huddle systems that successfully uncover problems and provide coaching opportunities to develop problem solvers

Project team: ADOT Lean coaches, managers, front line team and Honsha consultants

1. 4 meetings, 4 hours each, over 2 months
2. Share a checklist of what's expected
3. Help the team set up the board, and practice mock huddles and gembas

Next step, tools to sustain:

- Horizontal and vertical Problem Solving Gemba walks

Mile Deep: IDO contract times

Mile Deep:
Implement fully functional **Tiered Huddle system** in 22 work units

Tiered Huddle Check List

After each implementation meeting with the work unit, the team self-assesses their Huddle Board and the Huddle Meeting behaviors.

Tiered Huddle Implementation Checklist (22 "Showcase" Sites)			
Location:			
Session: 1 / 2 / 3 / 4 (Circle One)			
Standards	Y/N	Owner?	Due
Part I: Huddle Board Required Items			
1	Are Huddle Team Members listed (including Huddle Board Leader and backup)?		
2	Is list of related Huddles posted?		
3	Is rotating facilitator identified?		
4	Is Huddle time and date posted?		
5	Are script/agenda elements posted?		
6	Are blank Kaizen forms & Problem Solving Worksheets posted/available?		
7	Is Problem Staging Grid (PSG) posted?		
8	Does PSG contain metrics, standards, and escalation procedures for all Tiers?		
9	Are metrics posted and in graphical form with actual vs. target easily identified?		
10	Is Problem Register posted?		
11	Are Work in Progress (WIP) Problem Solving Worksheets posted and separated by the following steps? 1. Define the Problem, 2. Analyze Root Causes, 3. Develop & Test Countermeasures, 4. Adopt & Standardize.		
12	Is "vertical" Gemba schedule for Tier 2 & 3 Leaders/backups posted?		
Part II: Huddle Meeting Behaviors			
13	Does the Tiered Huddle contain at least 3 Tiers and includes the front line?		
14	Do Huddles occur as scheduled?		
15	Do Huddles follow the agenda?		
16	Are solved problems & Kaizen forms moved to "Success" section of board?		
17	Do Leaders have a plan of action for a full Problem Register?		
18	Has a mock Huddle been conducted showing evidence of problem identification, assignment, notification, escalation, &		
19	Has a vertical (up/down Tiers) Gemba walk been conducted to verify alignment?		
20	Has a horizontal (across peer Tier/system check) Gemba walk been conducted?		
21	Has the knowledge and techniques been shared/spread to additional ADOT groups/units/sections?		

OTHER WORK IN PROGRESS

- ▶ 5S at Maintenance Yards
 - Reduce overall inventory, Hub & Spoke distribution model
- ▶ AMS Manager Series of classes
 - 4 topics for all managers and supervisors
- ▶ Problem solving teams in action:
 - Reduce Traffic Fatalities: Motorcycle safety, WWD
 - Ignition Interlock process
 - Transit Grants
 - Project Close Out
 - Light Duty Fleet Management



Contact Information

Kismet A. Weiss

- ▶ Administrator
- ▶ Office of Continuous Improvement, Arizona Department of Transportation
- ▶ 206 S. 17th Avenue MD100A
Phoenix, AZ 85007
- ▶ Office: [602.712.8827](tel:602.712.8827)
- ▶ Cell: [480.825.5536](tel:480.825.5536)
- ▶ Email: kweiss@azdot.gov
- ▶ www.azdot.gov



ARIZONA MANAGEMENT SYSTEM





CALIFORNIA DEPARTMENT OF TRANSPORTATION

Innovative Business Solutions

Presented By:
Troy Tusup
Chief, Innovative Business Solutions





Transportation Lean Forum....

- ▶ Caltrans Lean Journey
- ▶ Caltrans Current State
- ▶ Innovative Business Solutions
- ▶ Challenges and Accomplishments



How It All Began....



Governor's Office of Business and Economic Development **GO-Biz**

The Governor's Office of Business and Economic Development (GO-Biz) was created by Governor Edmund G. Brown Jr. to serve as California's single point of contact for economic development and job creation efforts. GO-Biz offers a range of services to business owners including: attraction, retention and expansion services, site selection, permit streamlining, clearing of regulatory hurdles, small business assistance, international trade development, assistance with state government, and much more.

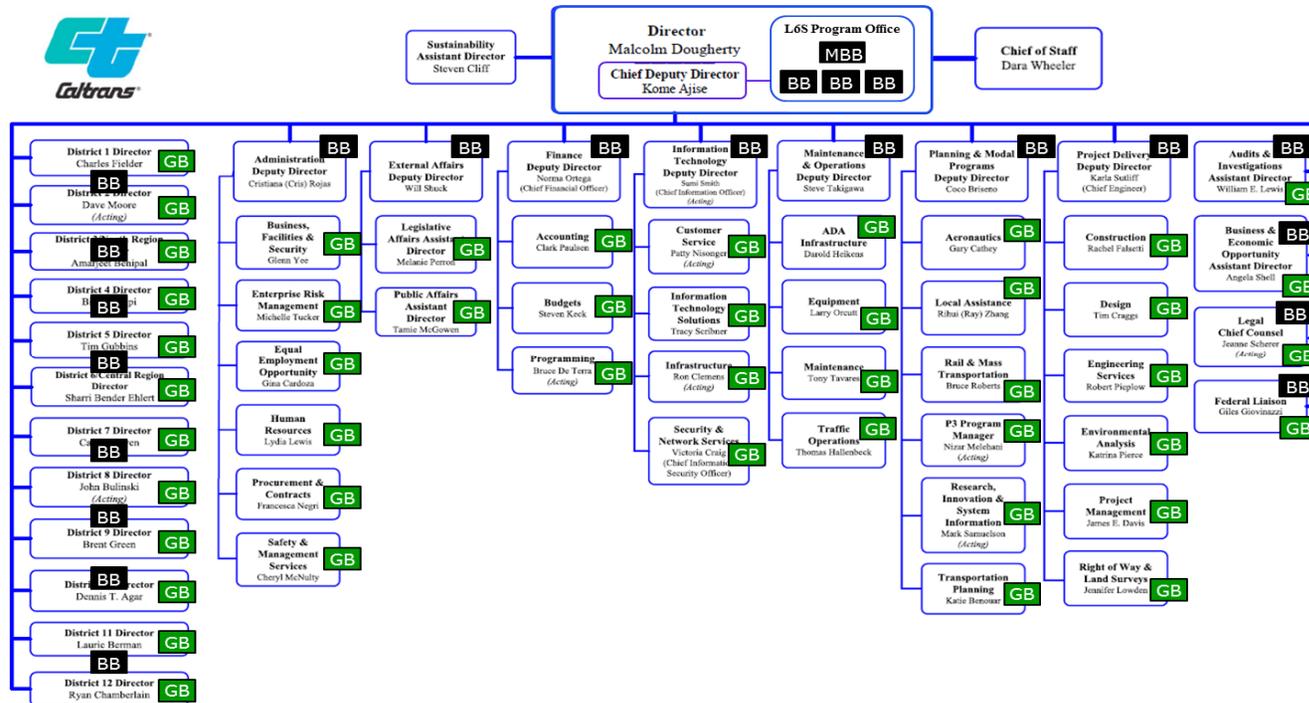


Lean 6-Sigma Program

GO-Biz has partnered with the Government Operations Agency to offer Lean 6-SIGMA Training to state agencies to pilot a Lean 6-SIGMA training program that would specifically address process-based issues within state departments that were causing delays in services to both internal and external stakeholders. Over a 6 month period, participants received training on complex analytical and statistical tools that identify waste and inefficiencies in processes.

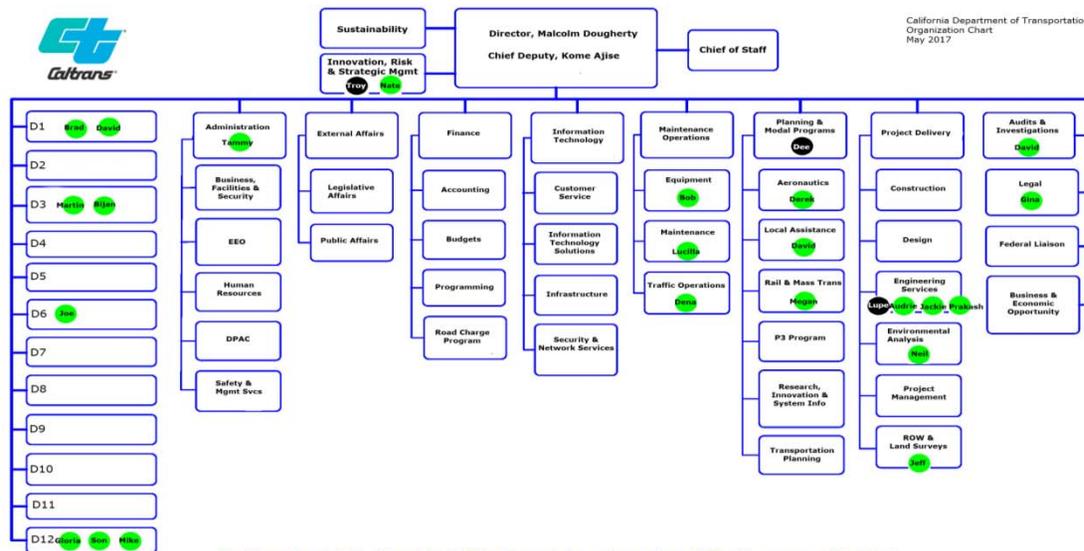
Looking To The Future...

1. Create pool of Green Belts having executed successful L6S projects
2. From pool, develop Black Belts to lead and coordinate efforts within each organizational area
3. Develop Master Black Belt to head up a Lean Six Sigma program and oversee all L6S efforts



Caltrans Current State....

- ▶ Since January 2015, Caltrans delivered 3 cohorts
- ▶ Caltrans participation with Go-Biz (4 cohorts)
- ▶ 23 Green Belts and 3 Black Belts



"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability."

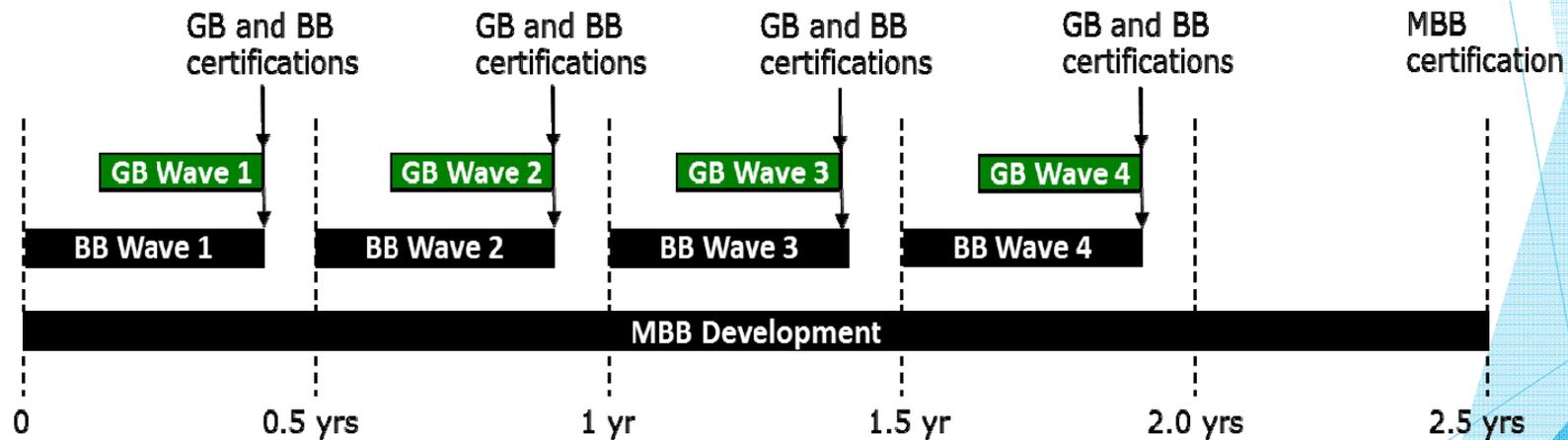
Cohort 4 - GG and BB projects

► Final Reports - April 2017 - 16 projects

Project Title/Description	Program Owner	primary metric	Baseline	Initial Report out
DOE Parts Procurement Time	Equipment	procurement time (days)	36	15
Test Methods Update Time	DES - METS	update time (days)	258	45
Methacrylate Resin Materials	DES - METS	authorization time within 5 days (percent)	14	80
Construction Support Costs	Construction	support costs (percent)	22	TBD
Audit Findings Issuance Time	Audits & Investigation	issuance time (days)	530	300
Airport Data Collection	Aeronautics	defects per data set	3.5	TBD
E-76 Processing Time	Local Assistance	processing time within 14 days (percent)	15	62
FRA Report Defects	Rail & Mass Trans.	defects per report	41	4
Traffic Census	Planning	missed count rate within scheduled time (%)	48	99
Salary Advance Collection	Acct/HR	% collected within same pay period	53	88
Director's Office Tracking System	Director's Office	processing time (days)	18	12
Unnecessary Real Estate Holds	Right of Way	percent of unnecessary hold	54	TBD
Local Development Intergovernmental Report	Planning	errors and omissions per report	3.42	0.25
Building Projects Design Time	Eng Services	design time (days)	455	91
Black Belt cohort				
Initial Project Set-up (CAS/CAM)	Accounting	Reduce approval time (days)	10	4
Asphalt Material Sample Testing	DES - METS	Reduce turnaround time (days)	48	15
Local Assistance Invoice Processing	Local Assistance	Reduce Errors in Invoices	2.18	0.2 (1 in 5)
Go-Biz Cohort				
Traffic Collision Investigation Time	Traffic - D5	investigation time (hours)	46.6	19.6

Implementation Strategy...

Perform the activities concurrently to achieve full implementation within a 2.5 year plan



Lessons Learned & Critical Factors...

1. Set the Tone At The Top ~ Executive Management Buy-In & Support
2. Proper Scoping & Metrics/Measurements - Smaller is better
3. Proper Alignment of Project and Sponsors - Distribution
4. Better Planning and Slower steps - team development
5. Middle Management pushback - expectations

New Office - Innovative Business Solutions



- ▶ One Stop Shop for Help?
 - ▶ Process Improvement Type
 - ▶ Lean, L6S, Value Analysis
 - ▶ Benefits to Managers
 - ▶ Benefits to Employees
 - ▶ Custom Toolbox

The screenshot shows the website for Innovative Business Solutions. At the top, there is a navigation bar with the Caltrans logo and the word "Innovation". Below the navigation bar, there is a main content area with a header "Innovative Business Solutions" and a sub-header "What's in It for You?". The main content area contains a paragraph about the IBS team and their services, followed by a section titled "How Can We Help? Start Here!" with a "START HERE" button. Below this, there is a section titled "Resources" with a link to "Resources". On the right side, there is a profile picture of Troy Tusup, Chief of Innovative Business Solutions, with his contact information: TTusup@dot.ca.gov and (916) 653-3538. On the left side, there is a sidebar with "Important Links" including Home, FAQs, Help, About, Guidelines, Past Innovations, Performance Metrics, Innovative Business Solutions, DRISI, and User Guide. At the bottom right, there is a "Quick Links" section with links to Home, Planning & Budgeting, Process Mapping, VA Tools, and VA Planning & Budgeting.

What's in it for You?

▶ How Can We Help?

- ▶ Productivity
- ▶ Timeliness
- ▶ Quality
- ▶ Employee Engagement
- ▶ Staff Retention
- ▶ Succession Planning
- ▶ SB1 - \$100M/year savings

The screenshot shows the Caltrans Innovation website. The header includes the Caltrans logo, the word 'Innovation', and navigation links for 'Director's Corner', 'Caltrans Internet', and 'Jobs'. A search bar and accessibility icons are also present. The main navigation bar lists: Onramp, Districts, Internal Programs/Divisions, Employee Resources, Supervisor Resources, CEFS Forms, CTPass, and CT Internet. The main content area features a sidebar with links to 'DOIRSM Home', 'Innovation Home', 'Enterprise Risk Management', 'Strategic Management', 'Innovative Business Solutions', 'Ethics', and 'Director's Office'. The central article is titled 'What's In It For You?' and discusses process improvement with five key areas: Productivity, Timeliness, Quality, Employee Engagement, Staff Retention, and Succession Planning. A 'Quick Links' section on the right includes 'Home (IBS)', 'Start Here', 'Planning and Budgeting', 'Projects', and 'Resources'. A profile for Troy Tusup, Chief of Innovative Business Solutions, is also displayed.

Director's Corner | Caltrans Internet | Jobs

Caltrans Innovation

Onramp

Onramp Districts Internal Programs/Divisions Employee Resources Supervisor Resources CEFS Forms CTPass CT Internet

DOIRSM Home
Innovation Home
Enterprise Risk Management
Strategic Management
Innovative Business Solutions
Ethics
Director's Office

▶ What's In It For You?

Why should you consider implementing a process improvement?

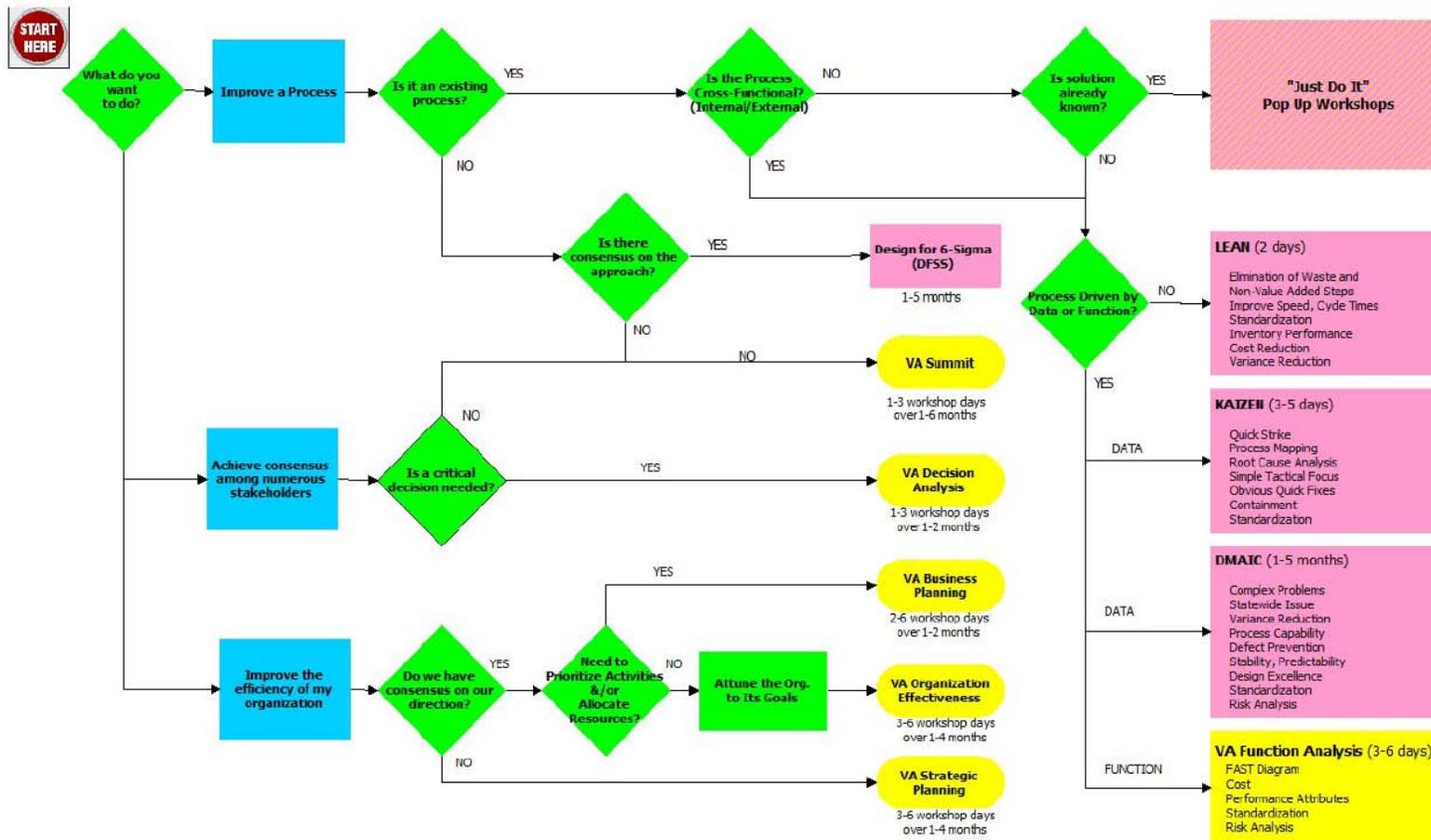
- ▶ **Productivity**—Increase productivity without additional resources
- ▶ **Timeliness**—Improve customer service
- ▶ **Quality**—Drive down defects and errors
- ▶ **Employee Engagement**—We all want work that reflects our individual contribution. We want to see our fingerprints on our work. The improvement process engages the people who actually do the work. Staff become the owners and drivers of the process. They are part of the solution and have a vested interest in its success.
- ▶ **Staff Retention**—Good employees leave bad processes. Broken and bloated processes are difficult and troublesome to work with. You lose staff—often good staff—by ignoring a broken process.
- ▶ **Succession Planning**—Our processes need to outlive our staff. We have a lot of attrition and turnover in the department. Documented processes help ensure that organizational knowledge is current, accessible, and preserved.
- ▶ **Compliance**—We are being asked to identify \$100 million in efficiencies for the department. This is your opportunity to get ahead of the curve.

Troy Tusup
Chief, Innovative Business Solutions
TTusup@dot.ca.gov
(916) 653-3538

Quick Links

- Home (IBS)
- Start Here
- Planning and Budgeting
- Projects
- Resources

Decision Tree





Task Order Intake

- ▶ Problem Statement
- ▶ Objective
- ▶ Scope

- ▶ Consultation

Innovative Business Solutions Task Order

Instructions: Please complete only this page (Page 1) and then schedule a one-hour consultation with Troy Tusup. TTusup@dot.ca.gov or (916) 653-3538.

I. Project Overview

Tell us concisely about the current state of your process. Why is it a problem? What are the issues? What do you hope to achieve?

Provide short problem statement:

Improvement project objective(s):

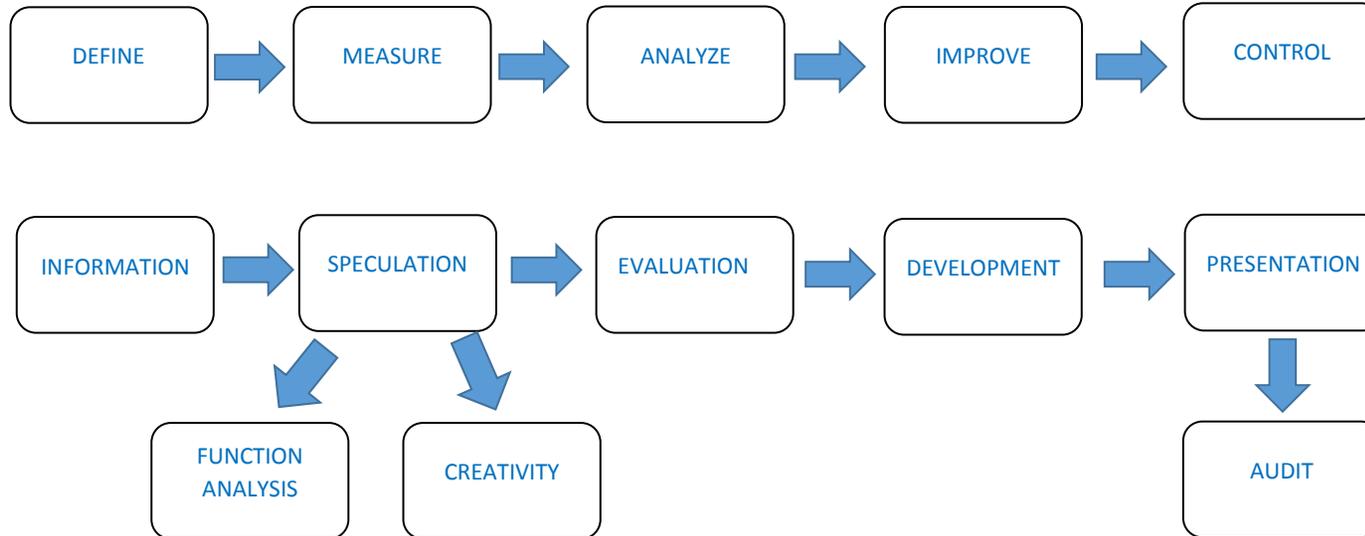
II. Scope of Project

Your scope should have a definite beginning and ending point. We will review your scope with you at the pre-meeting and help to "right-size" your project.

At this point, please save and send to TTusup@dot.ca.gov and schedule a one-hour consultation with Troy Tusup. TTusup@dot.ca.gov or (916) 653-3538

LEAN SIX SIGMA VS VALUE ANALYSIS

LEAN SIX SIGMA (DMAIC)



VALUE ANALYSIS

APPLYING VALUE ANALYSIS

- ▶ Caltrans has performed over 40 VA studies under this program which has achieved outstanding results. Example VA Study efforts include:
 - ▶ Storm Water Management Program
 - ▶ California Bridges and Structures Strategic Direction
 - ▶ Division of Engineering Services Organization Effectiveness and Delegated Authority
 - ▶ Division of Engineering Services Unbalanced Bid Process

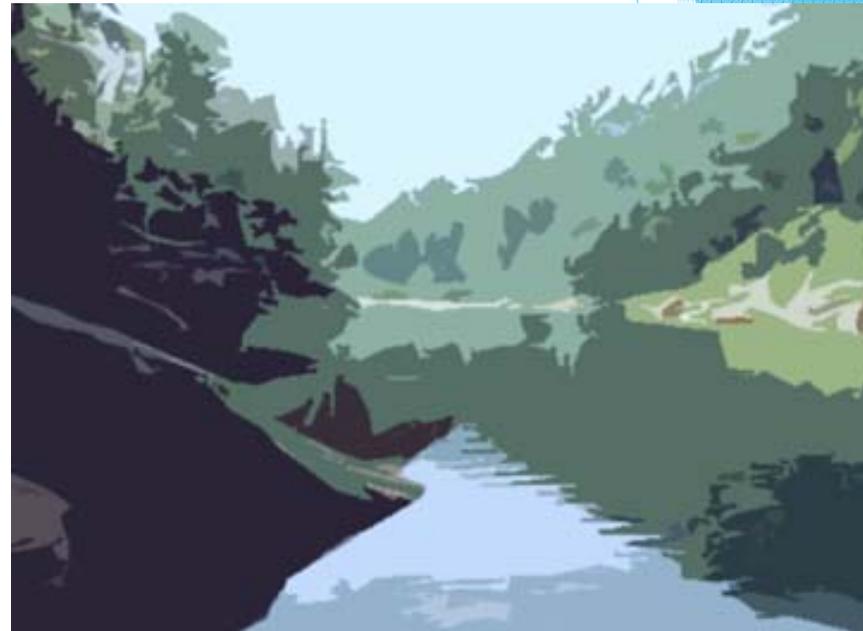
STORM WATER MANAGEMENT PROGRAM

VA STUDY OBJECTIVES

- ▶ Improve department-wide consistency and compliance with the Caltrans Storm water Permit, and statewide program implementation effectiveness.
- ▶ Define appropriate storm water management roles and responsibilities for program.
- ▶ Improve communication, decision making, related guidance, and conflict resolution.

OUTCOMES

- ▶ Created action plan with 11 recommendations for change, focusing on: clarifying authority; improving communication; improving succession planning; improving integration, structure, knowledge retention and changing perceptions; improving engagement and knowledge retention; and streamlining guidance.



CALIFORNIA BRIDGES & STRUCTURES STRATEGIC DIRECTION

VA STUDY OBJECTIVES

- ▶ Draft a Strategic Direction to improve mobility in California by delivering and managing bridges and structures that are safe, durable and cost effective through leadership, innovation and efficient delivery.

OUTCOMES

- ▶ Identified and prioritized 12 strategic objectives that directly address existing Caltrans strategic goals.
- ▶ Identified 25 strategies to achieve the stated objectives.
- ▶ Developed performance-based metrics for tracking progress towards strategic objectives.



DIVISION OF ENGINEERING SERVICES (DES) ORGANIZATION EFFECTIVENESS AND DELEGATED AUTHORITY

VA STUDY OBJECTIVES

- ▶ Review current DES organizational structure
- ▶ Identify opportunities to improve structure effectiveness
- ▶ Develop recommendations that will improve the value of the organization

OUTCOMES

- ▶ Development of 11 initiatives that could improve the effectiveness of DES (in the categories of strategy, structure, processes, metrics/rewards, and people)



DIVISION OF ENGINEERING SERVICES (DES) UNBALANCED BID ANALYSIS PROCESS

VA STUDY OBJECTIVES

- ▶ Formalize a set of analytical tools to aid districts in bid analysis
- ▶ Develop a standardized award recommendation template
- ▶ Define best practices in bid package preparation and bid analysis
- ▶ Identify ways to increase construction involvement in bid analysis

OUTCOMES

- ▶ Developed new process of transitioning from pre-bid to post-bid
- ▶ Developed 6 alternatives that offer performance/value improvement and identify specific tools to improve the bid analysis process
- ▶ 4 alternatives immediately implemented by DES/OE and rolled out via memos and guidance to each Caltrans district
- ▶ Significant DES-OE training efforts to implement tools/ guidance



Resources

- ▶ Green/Black Belt
 - ▶ Expectations
 - ▶ Catalog of Opportunities
- ▶ Presentations
 - ▶ Staff Meeting outreach
 - ▶ Webinars
- ▶ Training
 - ▶ Open University
- ▶ Help Files

▶ Resources

Caltrans Green/Black Belts

- [Organization Chart Distribution - June 2017](#)
- [Traits of a Green Belt Candidate](#)
- [Types of Opportunities for GB/BBs](#)
- [L6S Catalog of Opportunities](#) -- Check here to see what projects are currently available
- [Current GB/BB Projects](#)

Methodologies

What is:

- [Lean](#)
- [Lean 6 Sigma](#)
- [Value Analysis](#)

Forms

- [Task Order](#)

Training

- **Online Lean 6-Sigma Training** (Green and Black Belt)
 - [Benefits of Six Sigma](#)
 - [Intro to L6S Training](#)
 - [Intro to L6S Green Belt Certification Training](#)
 - [Pugh Matrix for Concept Selection](#)
 - [Voice of the Customer \(VOC\)](#)
 - [What is a Multi Vari Chart?](#)
 - [Intro to Design of Experiments \(DOE\)](#)
 - [Intro to Exploratory Data Analysis](#)



Challenges...

1. Middle Management Support
2. Follow-Up and A3 Monitoring - Control Plan
3. GB/BB - Classifications and Borrowed Time
4. Pilot Projects vs Statewide Implementation
5. Continuous Improvement



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<https://sites.google.com/a/state.co.us/lean-interchange/>

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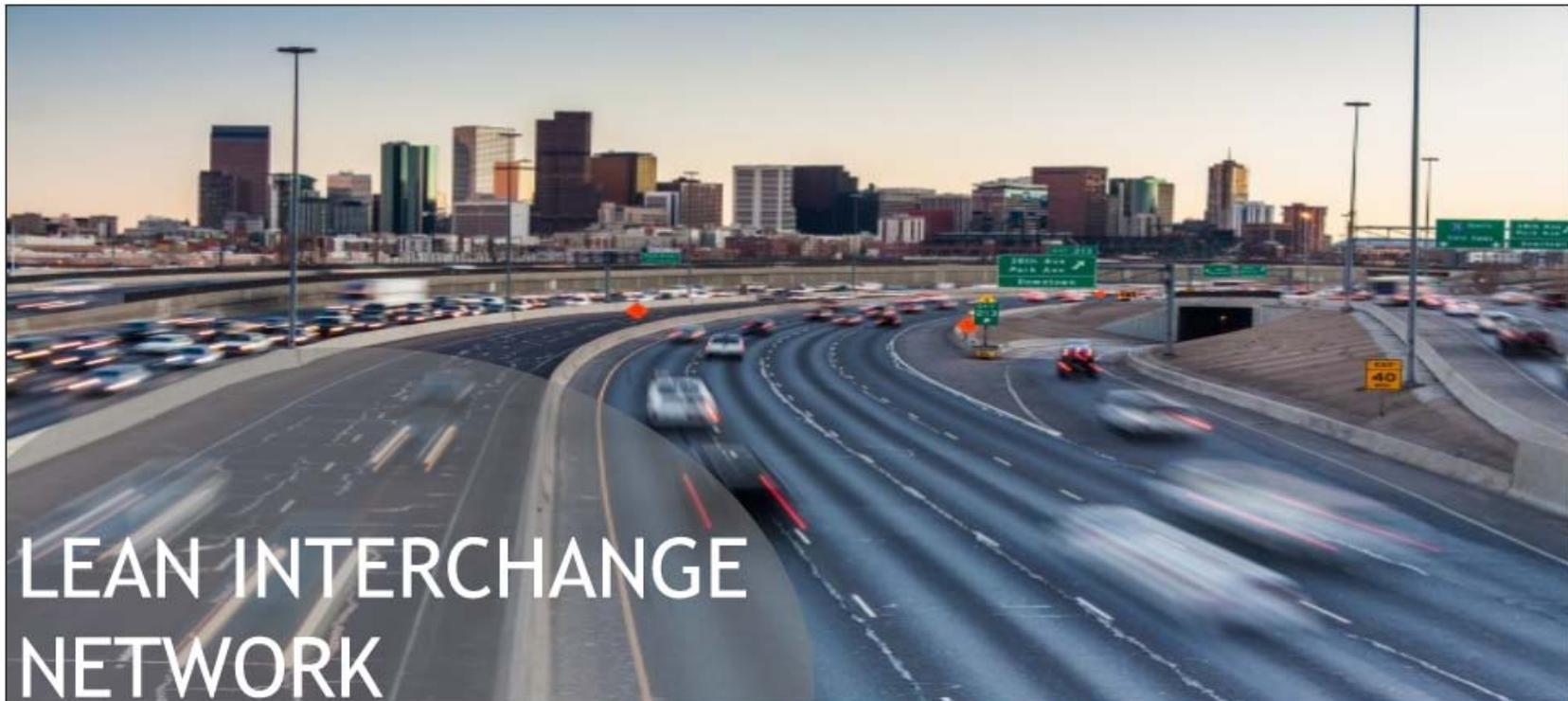
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Do you have resources and announcements to share? Please email Gary.Vansuch@state.co.us for permission.

What's on your mind?

- ❖ Share Your Successes!
- ❖ Additional Questions?
- ❖ Other Discussion Topics?

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DECEMBER

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If interested, contact:
meagan.brown@state.co.us



THANK
you !