



# Lean 6-Sigma Program



## *California Department of Transportation*

**Janet A. Newland**  
Project Greenbelt

**Katrina Pierce**  
**Nabeelah Hanif**  
Project Champions

**Karla Sutliff**  
**Tim Gubbins**  
Executive Sponsors



# *1600 Permit Acquisition Improvement Project*

## ❖ Problem Statement:

The 1600 Permit process for Caltrans projects must be met in a short window of time. This results in last-minute collaboration on the part of Caltrans and CDFW staff. Permit submittals are often deemed incomplete by CDFW. Required additions or revisions cause a review/rework cycle that causes significant project delay.

## ❖ Objective:

*95% of 1600 Permit Package are accepted upon first submittal.*



# Project Team Members - Caltrans



*Cross-functional team that included both staff and management*

- ❖ *Janet Newland – Project Greenbelt, Office Chief, Environmental, District 5, San Luis Obispo*
- ❖ *Lara Bertaina – Associate Environmental Planner, District 5, San Luis Obispo*
- ❖ *Larry Bonner – Senior Environmental Planner, Biology Branch Chief, District 5, San Luis Obispo*
- ❖ *Tami Dart – Associate Environmental Planner, District 1, Eureka*
- ❖ *Jay Haghparast - Senior Transportation Engineer, Project Manager, District 6, Fresno*
- ❖ *Sean Marquis – Associate Environmental Planner, District 3, Marysville*
- ❖ *Frank Meraz – Senior Environmental Planner, Env. Analysis, Biology & Tech. Assistance, Sacramento*
- ❖ *Robert Polyack – PID Program Manager, Senior Transportation Engineer – Specialist, Fresno*
- ❖ *Kim Smith – Senior Environmental Planner, Chief, Env. Stewardship, District 11, San Diego*
- ❖ *Fernando Velez – Senior Transportation Engineer, Environmental, District 4 Oakland*

**Lean 6-Sigma Program**



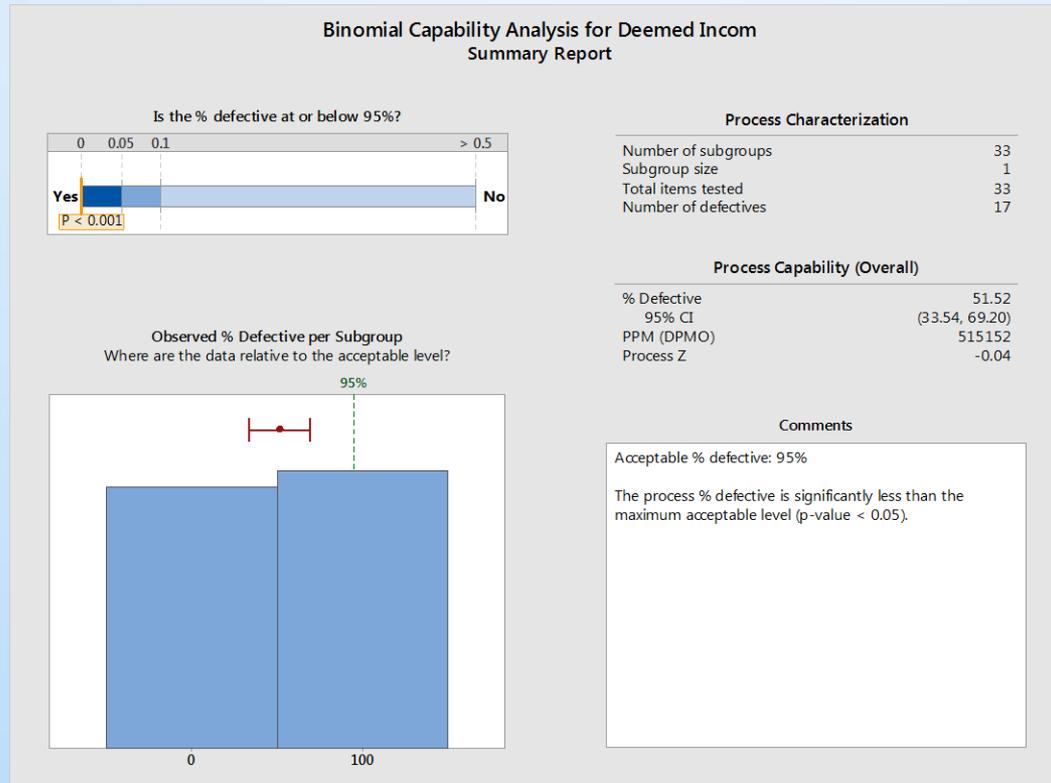
# *Project Team Members - CDFW*



- ❖ *Cathie Vouchilas, Environmental Program Manager I,  
Habitat Conservation Planning, Sacramento*
  
- ❖ *Juan Torres, Senior Environmental Scientist,  
Caltrans Liaison, Sacramento*

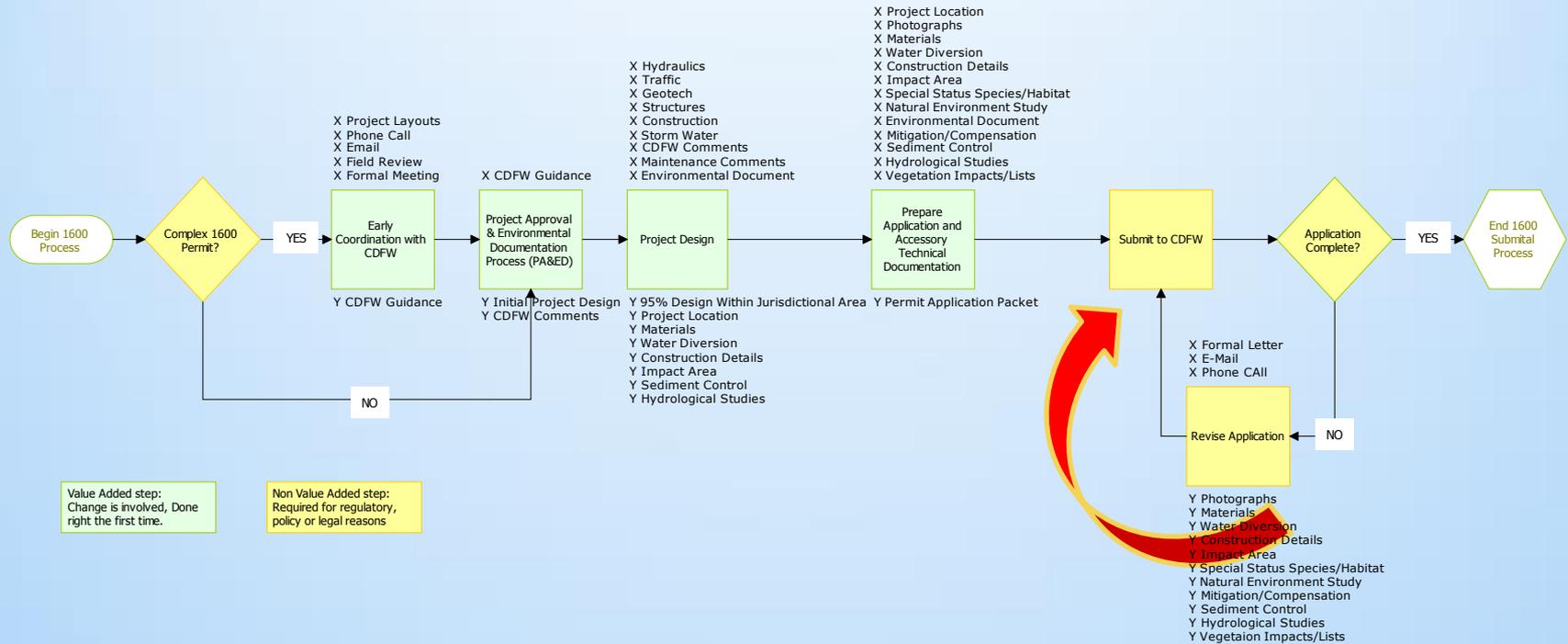


# Baseline Capability



- ❖ 51.52 % of 1600 Permit applications submitted by Caltrans are formally deemed incomplete by CDFW

# Initial Process Map



- ❖ Lack of collaboration and understanding of the required work at the onset of the process resulted in considerable rework at the end.

# *Analysis Tools*

- ❖ Measurement System Analysis:  
**Attribute Gauge Repeatability Study**
- ❖ Pareto Charts
- ❖ Fishbone Diagram
- ❖ Failure Mode Effects Analysis

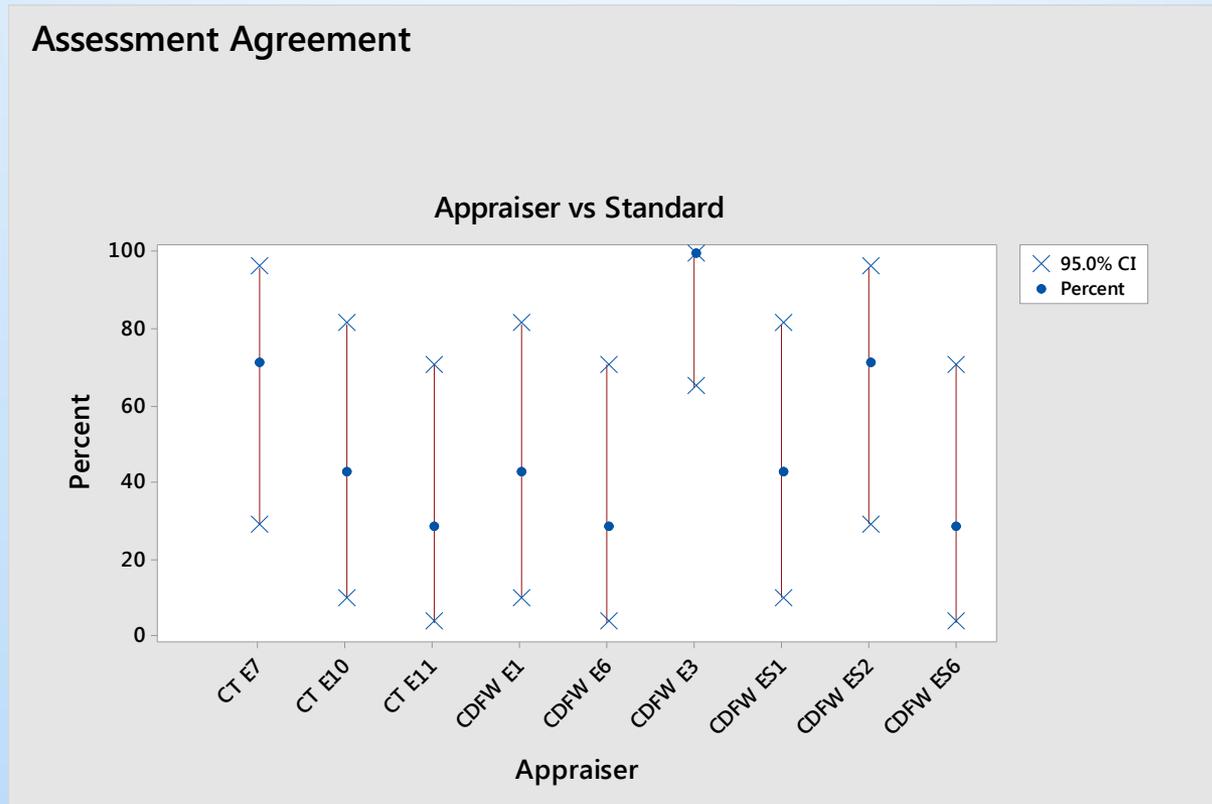


# *Attribute Gauge Repeatability Study*

- ❖ Sample permit packets were evaluated by:
  - ❖ California Department of Fish & Wildlife/Caltrans Liaisons
  - ❖ Their supervisors
  - ❖ Caltrans Biologists
- ❖ It was requested that the evaluators review the samples and indicate whether or not the supporting documentation was sufficient
- ❖ Reviews were completed within the same time frame

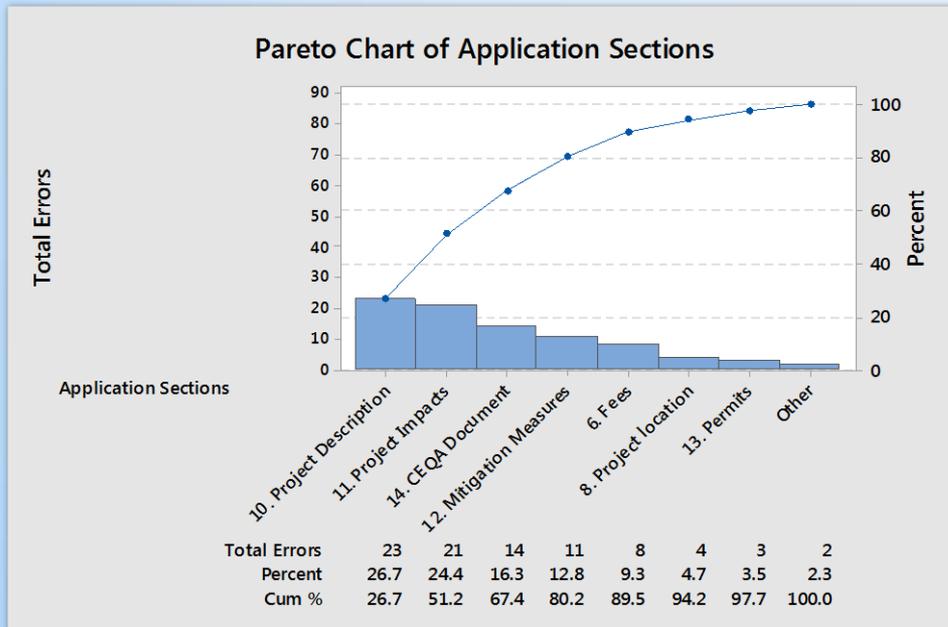


# Key Finding 1: Lack of Consistency Between Evaluators



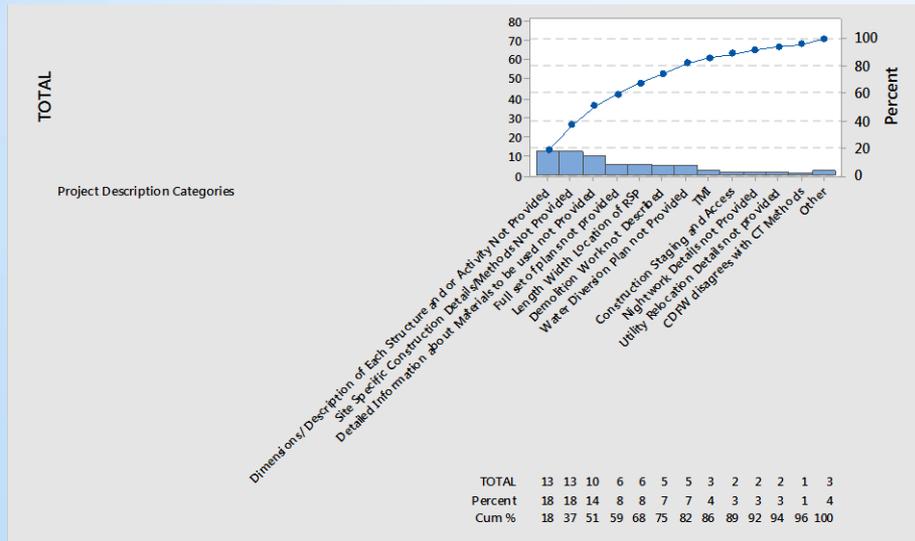
- ❖ Evaluators disagreed on what constitutes a complete permit application
- ❖ Evaluators matched a standard between 29% and 71% of the time

# Key Finding 2: Project Description & Project Impact Descriptions Caused Most Failures



- ❖ 26.7% Project Description
- ❖ 24.4% Project Impacts
- ❖ 16.3% CEQA Document
- ❖ 12.8% Mitigation Measures
- ❖ 9.3% Fees
- ❖ 4.7% Project Location
- ❖ 3.5% Other Permits

# Project Description and Project Impacts

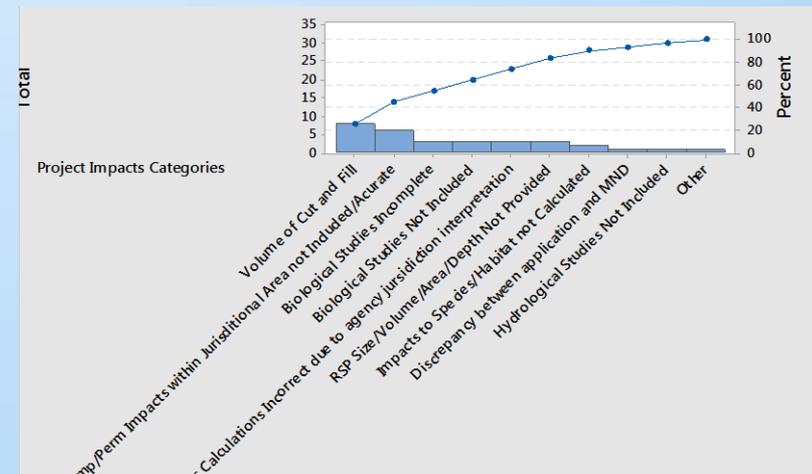


## PROJECT DESCRIPTION FAILURES

- ❖ Dimensions/Description of each Structure or Activity not Provided
- ❖ Construction Details not Provided
- ❖ Materials Details not Provided
- ❖ Full Set of Plans not Provided
- ❖ Length/Width RSP not Provided
- ❖ Demolition Work not Described
- ❖ Water Diversion not Described
- ❖ Too Much Information Provided
- ❖ Construction Staging not Provided
- ❖ Night Work Details not Provided
- ❖ Utility Relocation Details not Provided

## PROJECT IMPACTS FAILURES

- ❖ Volume of Cut and Fill
- ❖ Impacts within Jurisdictional Area
- ❖ Biological Studies Incomplete
- ❖ Biological Studies Not Included
- ❖ Calculations Incorrect
- ❖ RSP Size/Volume/Area Not Provided
- ❖ Impacts to Species/Habitat Not Calculated
- ❖ Discrepancy Between Application & Environmental Document
- ❖ Hydrological Studies Not Included



# *Critical X's (root causes of problems)*

- ❖ Inadequate description of construction methods & impacts provided
- ❖ Design information incomplete / uncertain
- ❖ Design information received by biologist late in process
- ❖ Incorrect fee amount submitted
- ❖ Lack of pre-coordination
- ❖ CEQA document & supporting documentation not submitted
- ❖ CDFW disagreement with level of CEQA document



# *Improvement Techniques*

- ❖ **Checklist** - Standardized checklist to address all sections of the 1600 Permit application
- ❖ **Mandatory Peer Review** – Peer review of 1600 Permit Application
- ❖ **Permit Coordinators** – Reduction in the number of Biologists coordinating with California Department of Fish & Wildlife
- ❖ **Pre-Consultation with CDFW** – Required meeting between Caltrans & CDFW
- ❖ **Caltrans Internal Permit Coordination** - New project task
- ❖ **CDFW Office Hours** - Quarterly Caltrans District face-to-face meetings on project specifics



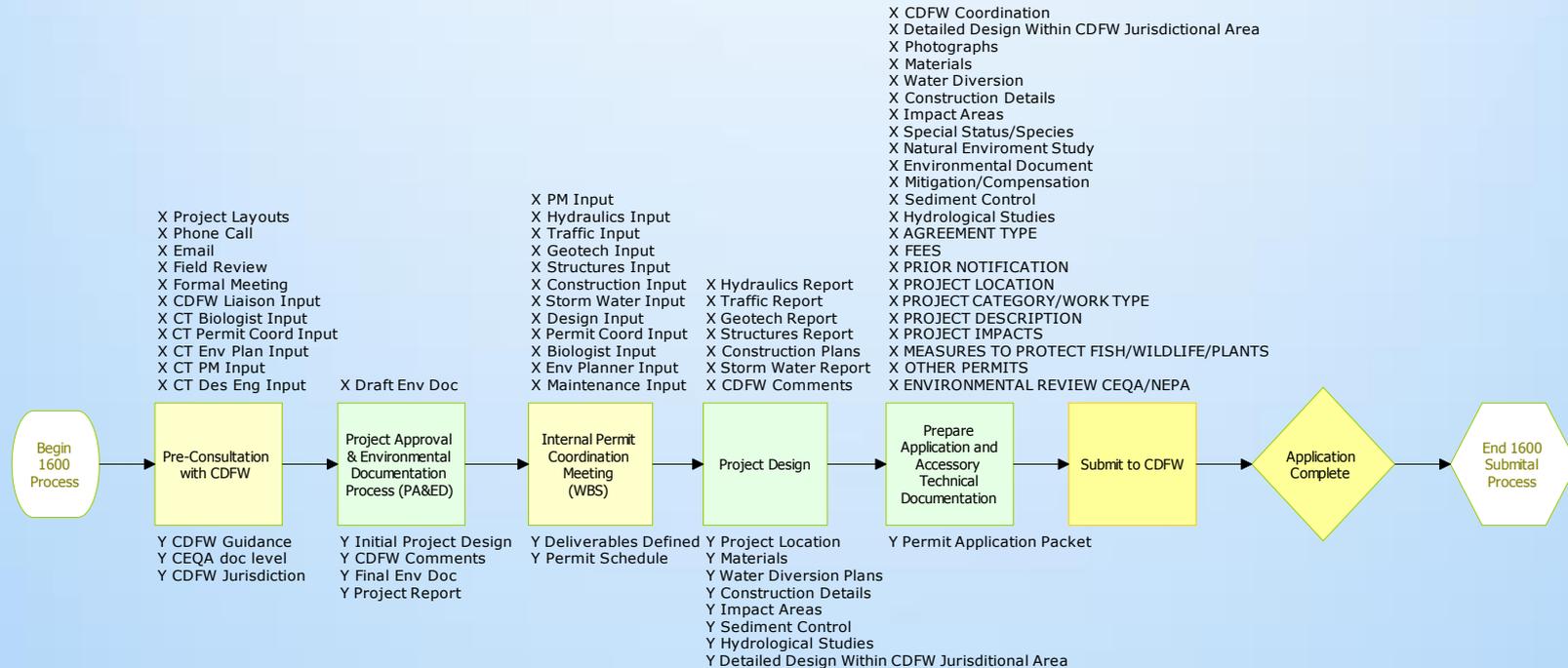
# *Additional Improvement Techniques*

**Caltrans Division of Environmental Analysis will develop three training courses. Target Date: October 31, 2016**

- ❖ **Caltrans Training** – Caltrans Division of Environmental Analysis to provide 1600 Permit Training to Caltrans Engineering Staff
- ❖ **On-Demand/ Online Training** - Completing the 1600 Permit Application (LSA Notification Form)
- ❖ **On-Demand/ Online Training** - Caltrans' Project Delivery Process To benefit all regulatory agencies, local jurisdictions, and the general public
- ❖ **CDFW Training** – CDFW Liaisons to provide basic 1600 Permit (LSA Notification) training.



# New Process Map



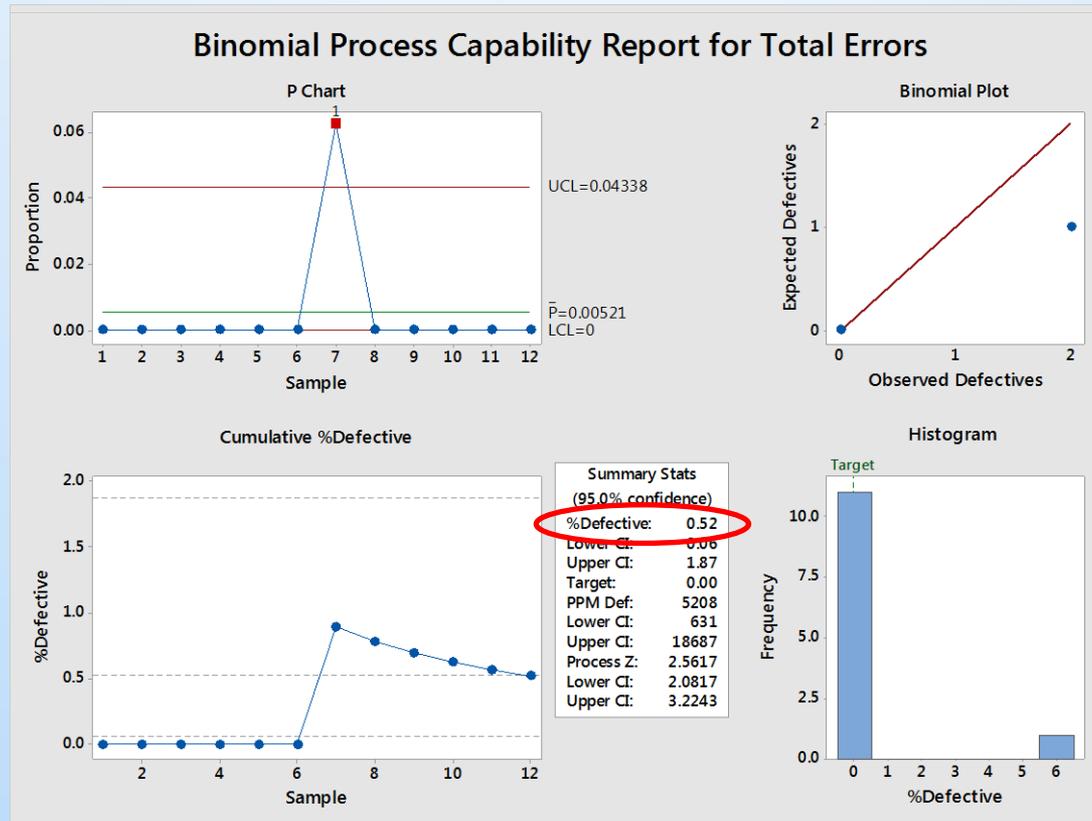
❖ Emphasis on early collaboration

❖ Rework loops are eliminated

Lean 6-Sigma Program



# New Capability Analysis: Estimated at >95%



- ❖ Analysis of all of the incomplete letters received over the past year indicates that had the new process been in place it is likely that only two of the errors would have occurred.

# Control Plan

- ❖ Policy Memo from Chief, Division of Environmental Analysis to implement various improvements.
- ❖ Bi-Annual audit of STEVE (Standard Tracking and Exchange Vehicle for Environmental) by Caltrans Division of Environmental Analysis
  - ❖ Review of Incomplete Letters (volume and content)
  - ❖ Review of standardized checklist
  - ❖ To ensure accurate tracking, CDFW Caltrans interagency contract to require Liaisons to provide formal Incomplete Letter or email rather than informal phone call
- ❖ Checklist shall be added to Caltrans online Standard Environmental Reference (SER)



# *Additional Benefits*

- ❖ Strengthened collaboration and trust between Caltrans and CDFW (Especially true of the Sacramento meeting between the two departments)
- ❖ Opportunity for critical review of our processes
- ❖ The project provided the team a vehicle to better understand each other's missions, challenges, and goals and created a safe venue for personnel to share experiences, frustrations and positive ideas
- ❖ Greater clarity among Caltrans Team members on the permit process and details required to acquire permits.



# *Additional Benefits*

- ❖ Improved morale by showing Caltrans employees that the organization is not only talking about making positive process changes but implementing them
- ❖ Time gained by eliminating rework will allow 1600 Permit Coordinators to prepare a thorough permit packet at a less frenetic pace leading to improved morale
- ❖ Laid the groundwork for future permit process improvement



# *Green Belt Contact Information*

- ❖ **Name: Janet A. Newland**
- ❖ **Phone: (805) 542-4691**
- ❖ **Email: [janet.newland@dot.ca.gov](mailto:janet.newland@dot.ca.gov)**

