



# Lean 6-Sigma Program



## *California Department of Human Resources*

**Greenbelt**

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**Champion**

Adria Jenkins-Jones

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Katie Hagen

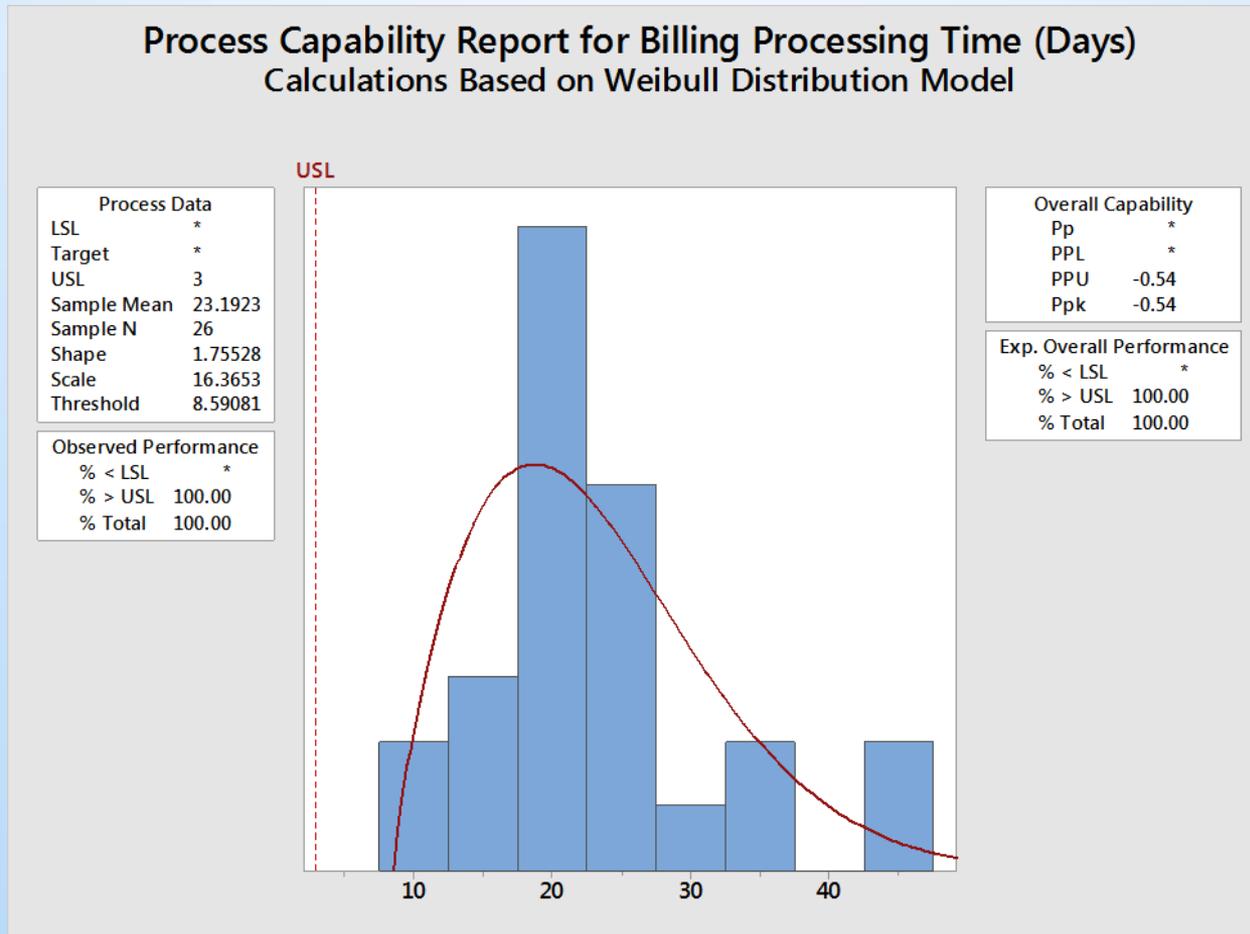


# *Streamline CalHR's Selection Division Billing Process*

- ❖ **Problem Statement:** The Selection Division billing processes need to be updated to improve efficiency and reduce costs. The new streamlined billing process must document the improved billing practices.
- ❖ **Objective:** Reduce the amount of processing time for all monthly billing related tasks from an average of 23 Days to 3 days, 95% of the time.
- ❖ **Project Team:**
  - ❖ **Katie Hagen – Project Sponsor**
  - ❖ **Adria Jenkins-Jones – Project Champion**
  - ❖ **Diana Narvaez - Project Manager**
    - ❖ **Core/Work Team:**
      - ❖ *Kendra Carrion - Test Validation & Construction*
      - ❖ *Danielle De La Cruz - Online Consult*
      - ❖ *Kristi Holst - SD Support and Training*
      - ❖ *Steve Shriver - Test Validation & Construction*
      - ❖ *Candy Zonneveld - Former CalTrans Customer and SD Exams Manager*
    - ❖ **Advisory/Resources Team:**
      - ❖ *Rick Black - IT Division*
      - ❖ *Charlene Manning – Office of Financial Mgmt & Economic Research*
      - ❖ *Joleen Martin - Budgets*
      - ❖ *Tuong Nguyen – Accounting*

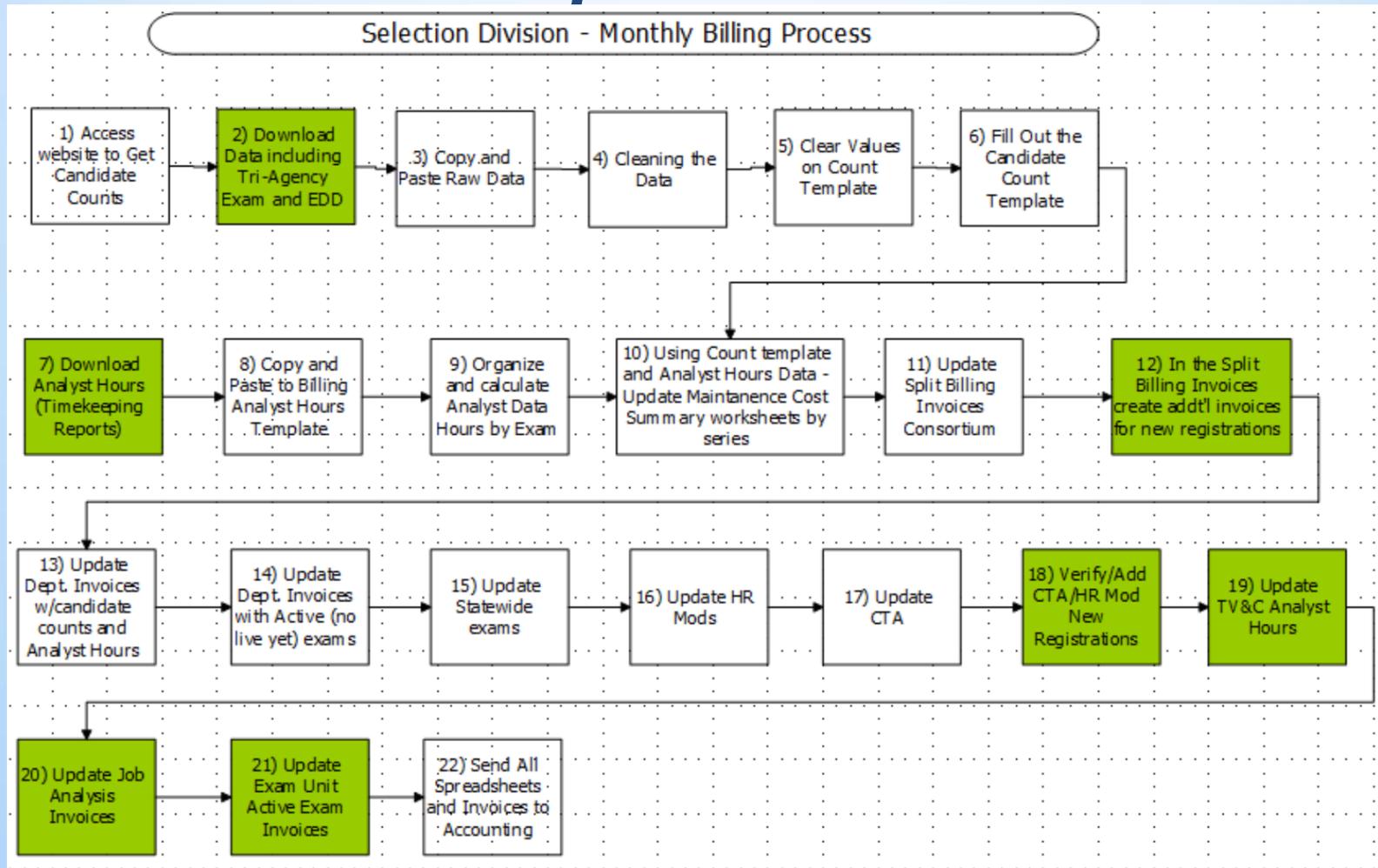


# Baseline Capability



- ❖ If we continue with the current process, we will miss our goal of processing monthly billing within 3 days, 100% of the time.

# Initial Process Map



- ❖ The Non-Value Added Process Steps include a lot of copying and pasting, using unnecessary templates, entering data manually, etc.

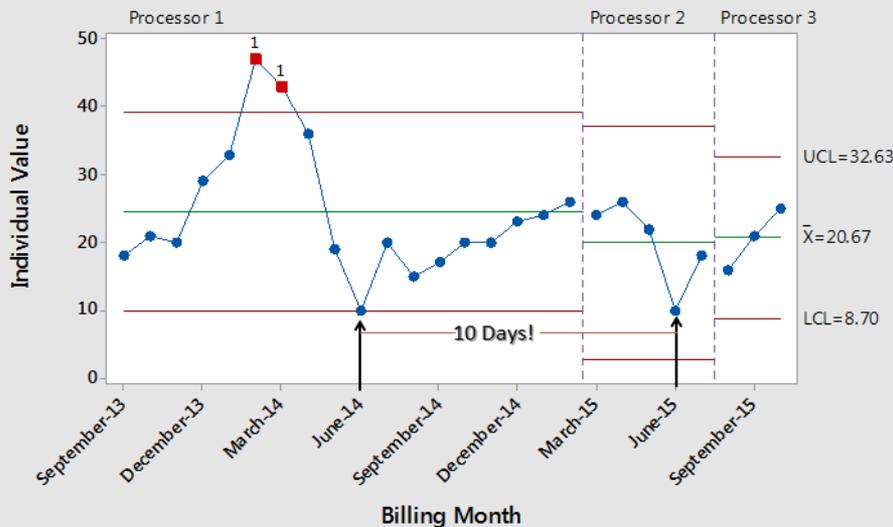
# *Analysis Tools*

- ❖ Stakeholder Analysis
- ❖ Process Map
- ❖ Fishbone Diagram
- ❖ Anderson Darling Normality Test – Graphical Summary
- ❖ Baseline Capability Sixpack Report – Non-Normal Distribution
- ❖ Baseline Capability – 3 Parameter Weibull
- ❖ FMEA
- ❖ Mood's Median Test
- ❖ Pareto of Time Value Chart Activities
- ❖ Worker Activity Chart
- ❖ I- Chart



# Is there a correlation between billing processors and why the average monthly billing process was being delayed?

I Chart of Processing Time by Processor



## Mood Median Test: Processing Time versus Processor

Mood median test for Processing Time  
 Chi-Square = 0.61    DF = 2    P = 0.739

Individual 95.0% CIs

Processor	N ≤	N >	Median	Q3-Q1	CI
Processor 1	10	8	20.5	11.3	(- * - - - - -)
Processor 2	2	3	22.0	11.0	(- - - - - * - - - - -)
Processor 3	2	1	21.0	9.0	(- - - - - * - - - - -)

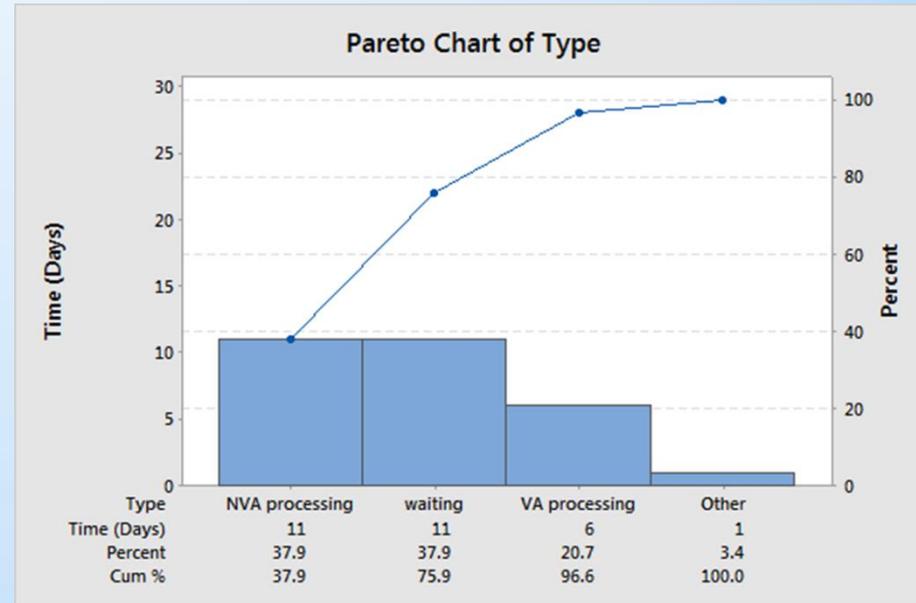
10.0    15.0    20.0    25.0

❖ There is no statistical relationship between the billing processors and the monthly billing being delayed.

# Majority of the Monthly Billing is composed of Non-Value Activities (NVAs)

step	activity	type	time (days)
1	Access website to Get Data	waiting	7
2	Copy & Paste Clean Raw Data in clear count template	VA processing	3
3	Download Analyst Hours	VA processing	1
4	Clean Analyst Hours Data	VA processing	1
5	Update Maintenance Cost Summary	NVA processing	3
6	Update Split Invoices	NVA processing	2
7	Creating Addtl Split Invoices (New Reg)	NVA processing	3
8	Update Dept Invoices	NVA processing	2
9	Update Dept Shared Exams	NVA processing	1
10	Verify/Add Dept Shared (New Reg)_	waiting	4
11	Update Exam Development Invoices	VA processing	1
12	Send SS to Accounting	transport	1

waiting	11	37.9%
transport	1	3.4%
VA processing	6	20.7%
NVA processing	11	37.9%
<b>total:</b>	<b>29</b>	



- ❖ Majority of this process involves non-value added activities and “waiting.” Although data is available the first of the month, the process usually started a week later due to other urgent tasks that needed to be completed. If these NVAs are reduced or eliminated and the process would start on the first day of the month, the processing time would improve significantly.



# Critical X's (Root Causes of Problems)

❖ The team conducted a Failure Modes and Effects Analysis (FMEA) and the identified critical X's were:

- ✗ Erroneous Data
- ✗ Incomplete Billing
- ✗ Incorrect Invoices
- ✗ Unnecessary Rework

❖ This has resulted in:

- ✗ Delayed Billing
- ✗ Customers' Escalations
- ✗ Lost of Revenue



# *Improvement Techniques*

## ❖ Updated Process Map

## ❖ Automated Process

- ✓ **Step 1** - Created Master Spreadsheet to show all invoice totals
- ✓ **Step 2** - Used Advance Excel Formulas in the Master Spreadsheet to Import Data and Eliminate Copying and Pasting
- ✓ **Step 3** - Linked all of the 400 + invoices to the master spreadsheet
- ✓ **Step 4** - Created a Template Master Folder with all Linked Template Invoices
- ✓ **Step 5** - Used Windows PowerShell to Automatically Rename 60+ Invoice Excel Files Simultaneously

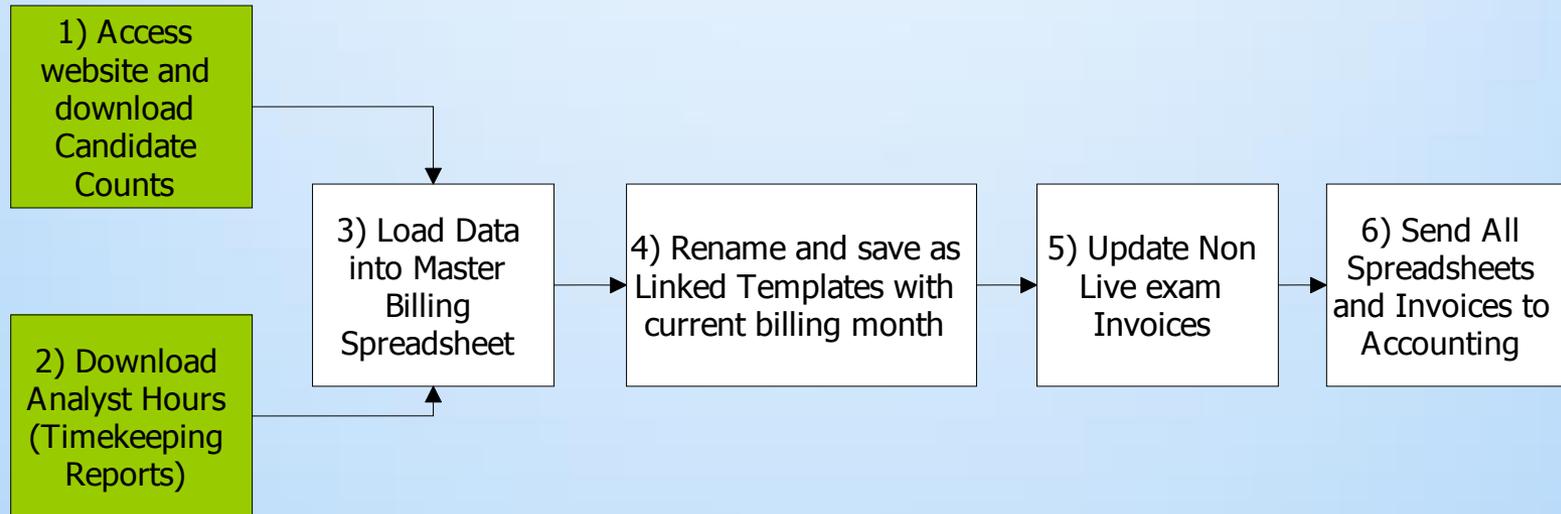
## ❖ Updated the Failure Modes and Effects Analysis (FMEA) on the new process to mitigate risks

## ❖ Created a training reference sheet



# New Process Map

## Selection Division - Updated Monthly Billing Process

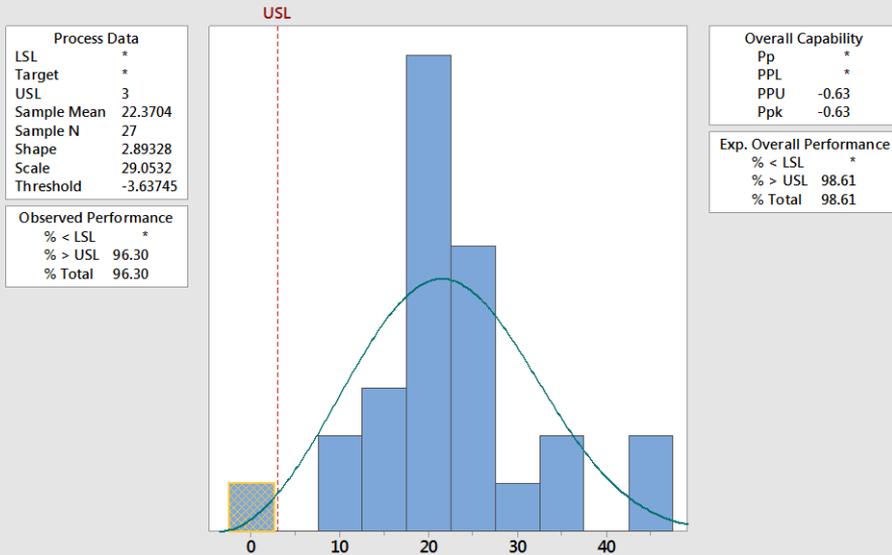


- ❖ The initial process map had **22** steps and the majority of the steps were non-value added steps; therefore, most of these steps were eliminated to streamline the process, reducing it to **6** steps.

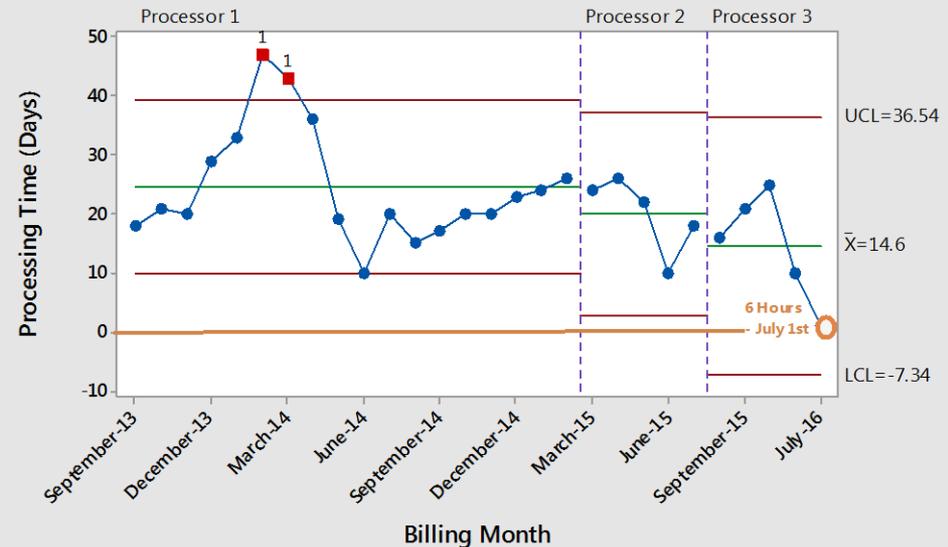
# New Capability Analysis-

## New Monthly Billing Processing time = 6 Hours!!

Process Capability Report for Billing Processing Time (Days)  
Calculations Based on Weibull Distribution Model



I Chart of Processing Time by Processor



- ❖ The initial project metric was to reduce the amount of processing time for all monthly billing related tasks from an average of **23 Days** to 3 days, 95% of the time.
- ❖ **The new capability analysis shows the new streamlined process allows monthly billing to be completed in less than 1 day, 100% of the time.**



# Control Plan

- ❖ The automation of this process is the control itself!  
The next steps are to provide training on the automation.



# *Additional Benefits*



- ✓ Eliminates delayed and inaccurate billing.
- ✓ Reduces workload for staff, allowing them to focus on the other tasks/processes that need to be streamlined.
- ✓ Departments will receive their invoices faster.
- ✓ Reduces the number of escalated calls and emails resulting in more staff time to focus on other tasks.
- ✓ Increases staff morale by working smarter and not harder.
- ✓ Improves customer service to departments.



# *Green Belt Contact Information*

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