



# Lean 6-Sigma Program



## ***ENCROACHMENT PERMIT PROCESS***

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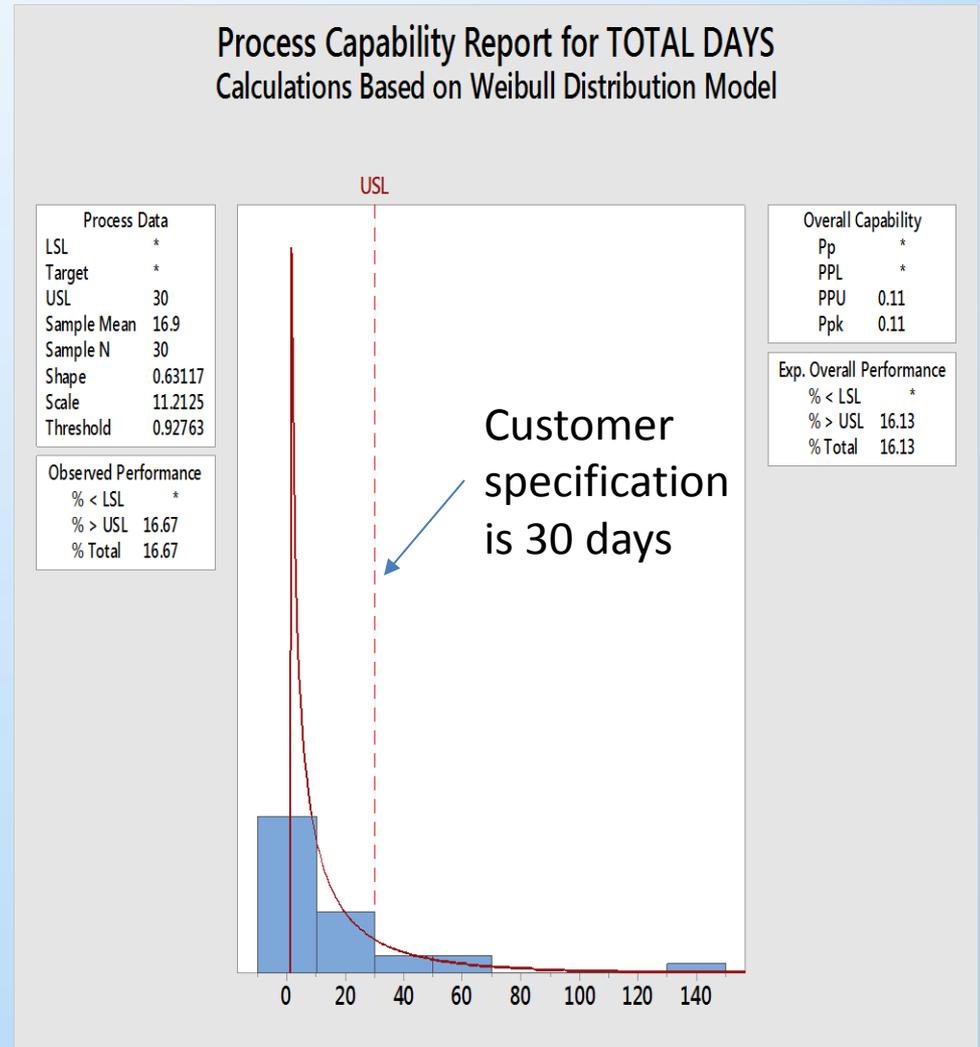


# *Encroachment Permit Process*

- ❖ **Problem Statement:** Approval or denial of encroachment permit applications takes too long to receive a determination. Incomplete applications create processing delays that cost Caltrans and applicants in terms of efficiency.
- ❖ **Objective:** To reduce the encroachment permit processing time so that 95 % of all permits are issued or denied within 30 days.
- ❖ **Project Team:**
  - Shane Gunn-Environmental*
  - David Lassiter- HQ's Permits*
  - Albert Lee- Traffic*
  - Michael Navarro – Planning*
  - Brad Cole- Landscape*
  - Michael Lim- Design*
  - Kathy Gill- Permits*
  - Karri Martin- SCE*
  - Jeff McDougal-PGE*

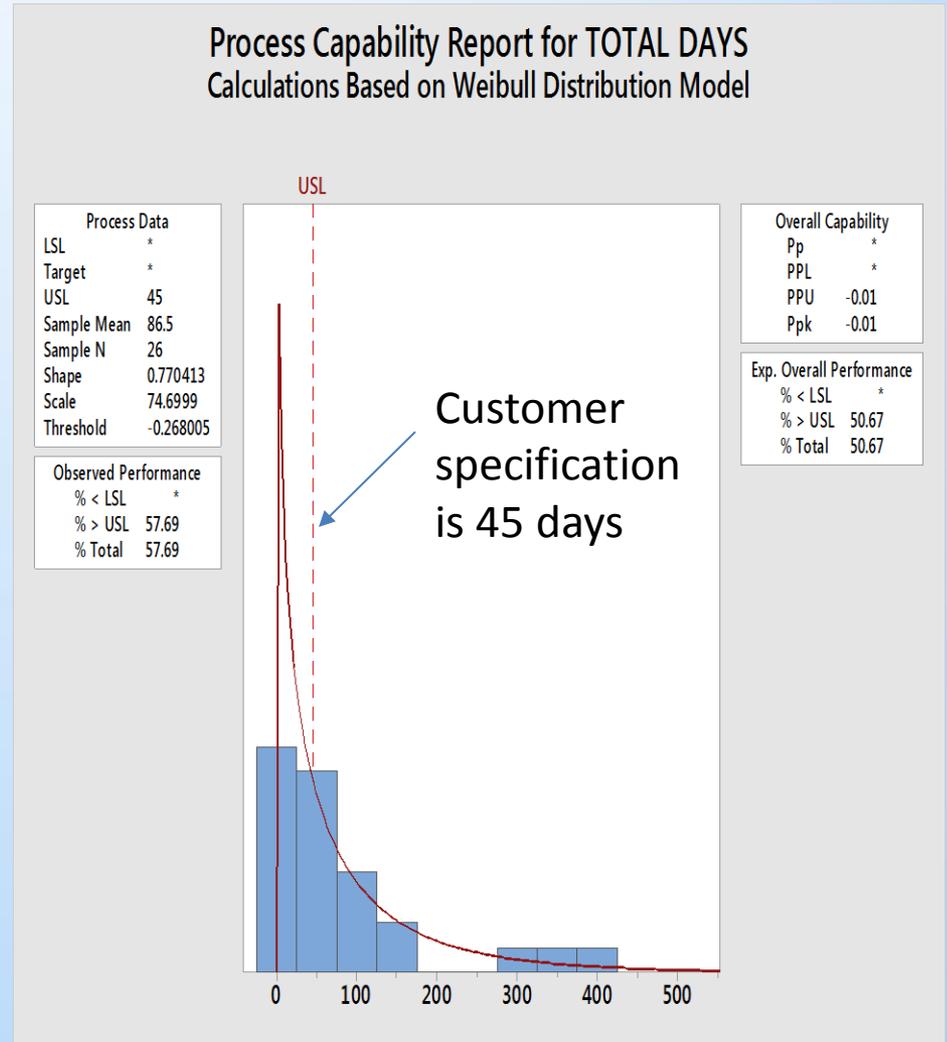
# Baseline Capability-Medium Complexity Permits

- ❖ **84 % of permits are issued or denied within 30 days**
- ❖ **On average a permit is issued or denied in 17 days**
- ❖ **16 % of permits take longer than the goal of 30 days**
- ❖ **Baseline study period is one year (July 1, 2014 - June 30, 2015)**



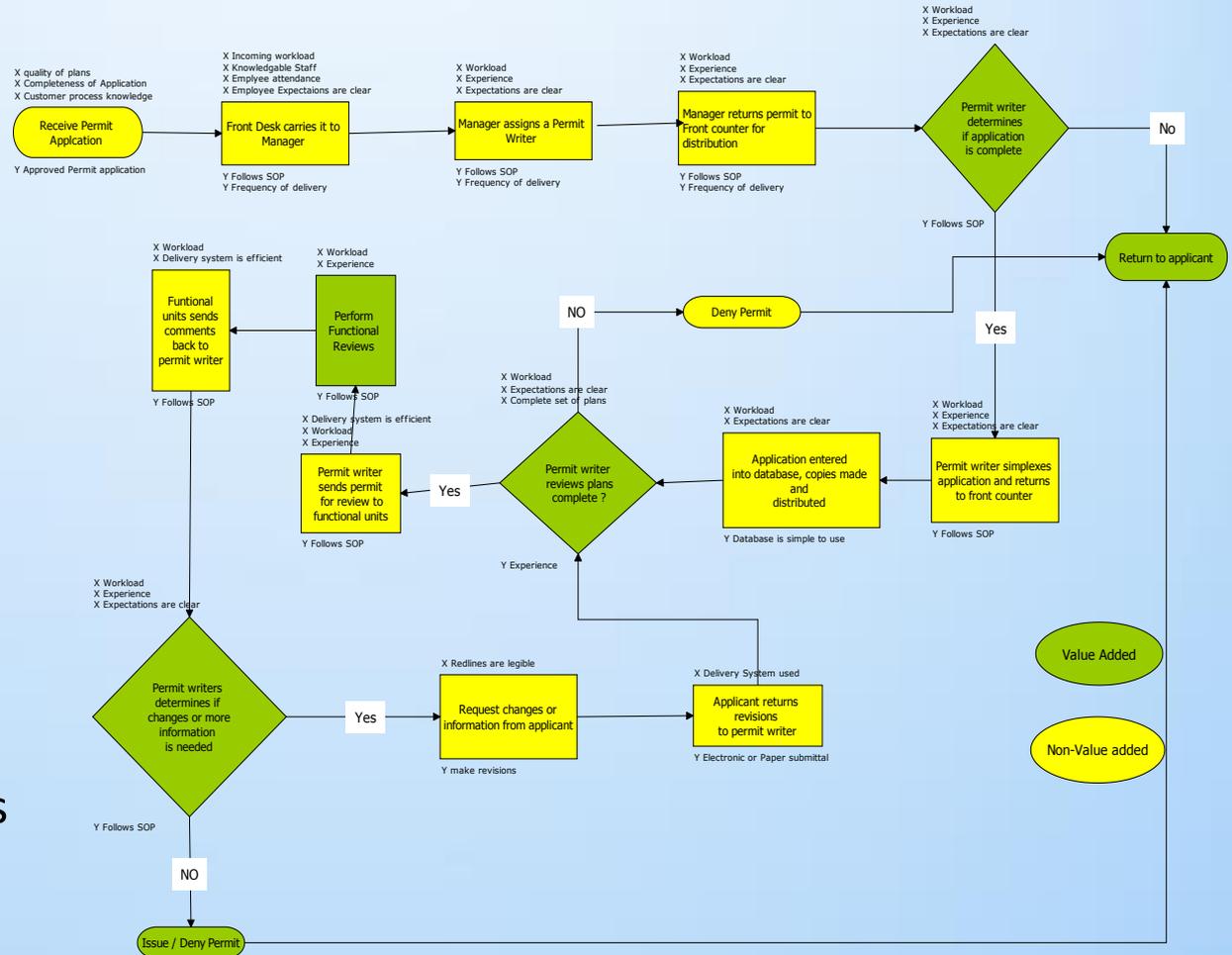
# Baseline Capability-High Complexity Permits

- ❖ 49 % of permits are issued or denied within 45 days
- ❖ On average a permit is issued or denied in 87 days
- ❖ 51 % of permits take longer than the goal of 45 days
- ❖ Baseline study period is one year (July 1, 2014 - June 30, 2015)



# Initial Process Map

- ❖ 17 Possible steps
- ❖ 7 Possible rework steps
- ❖ Multiple levels of review
- ❖ 11 Non-value added steps
- ❖ 6 Value added steps

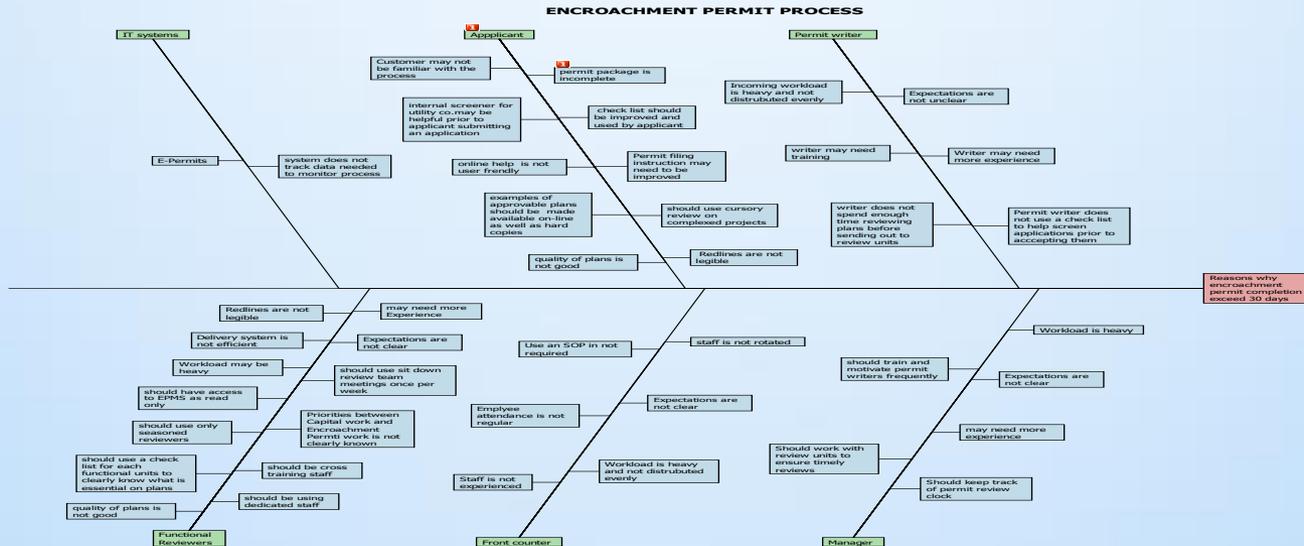


# *Analysis Tools*

- ❖ Fishbone diagram
- ❖ Failure Mode Effect Analysis (FMEA)
- ❖ Multi-Vari analysis
- ❖ Hypothesis testing – One Way Anova
- ❖ Variable gauge



# Key Analytical Finding 1



❖ Fishbone diagram identified three of the primary root causes for permit delays.

1. Applicant not familiar with our process
2. Incomplete permit application
3. Quality of Plans –plans are incomplete or need improvement

# Key Analytical Finding 2

Step #	Process Map - Activity	Key Process Input	Potential Failure Mode	Potential Failure Effects	SEV	Potential Causes	OCC	Current Controls	DET	RPN
1	Manager assigns Permit Writer	Permit package to manager	permit package gets lost	permit issuance is delayed , applicant has to resubmit	7	Permit package is lost during transferring from one office to another	4	none	9	252
2	Process Map 1 - Permit writer determines if application is complete	Completeness of Application	incomplete application	delays permit since the application sent back to the applicant	8	Need better instructions	8	permit instructions	10	640
3	Process Map 1 - Return to applicant	Permit Writer reviews engineering plans	poor quality of plans/ incomplete plans	delays permit issuance since we have to request new plans or more information	8	Lack of experience working with State Department of Transportation	6	Pre-permit check list	10	480
4	Process Map 1 - Functional units reviews and sends comments back to permit writer	quality of plans	plans are difficult to review due to lacking pertinent data/poor quality of plans or incomplete plans	delays permit issuance since we have to request new plans or additional information	8	Lack of experience working State Department of Transportation	8	Pre-permit check list	10	640
		Work Priorities	work load	Delays permit issuance	8	priority of workload	5	we allocate PY'S	3	120
5	Process Map 1 - Request changes or information from applicant	quality of plans	poor quality of plans/ incomplete plans	Delays permit issuance since we have to request new plans or additional information	8	Lack of experience working with State Department of Transportation	6	Permit and design Manuals	3	144

❖ Failure Mode & Effect Analysis (FMEA) prioritizes the key process inputs that need to be addressed in order to meet the primary metric



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

- ❖ Incomplete permit plans
- ❖ Incomplete permit applications /missing attachments
- ❖ Poor quality and incomplete permit package sent to functional reviewers



# *Improvement Techniques*

- ❖ Clear process for staff accompanied by Standard Operating Procedures (SOPs)
- ❖ Training to internal staff and stakeholders on permit application requirements.
- ❖ Mistake proofing application (No Blanks Fields)
- ❖ Visual management tools at front counter to mistake proof permit package (Plan Check List), (High Complexity project codes list)
- ❖ Track permit defects and use the defect list for training purposes, control and continuous improvement



# Improvement Techniques

## Other improvements techniques

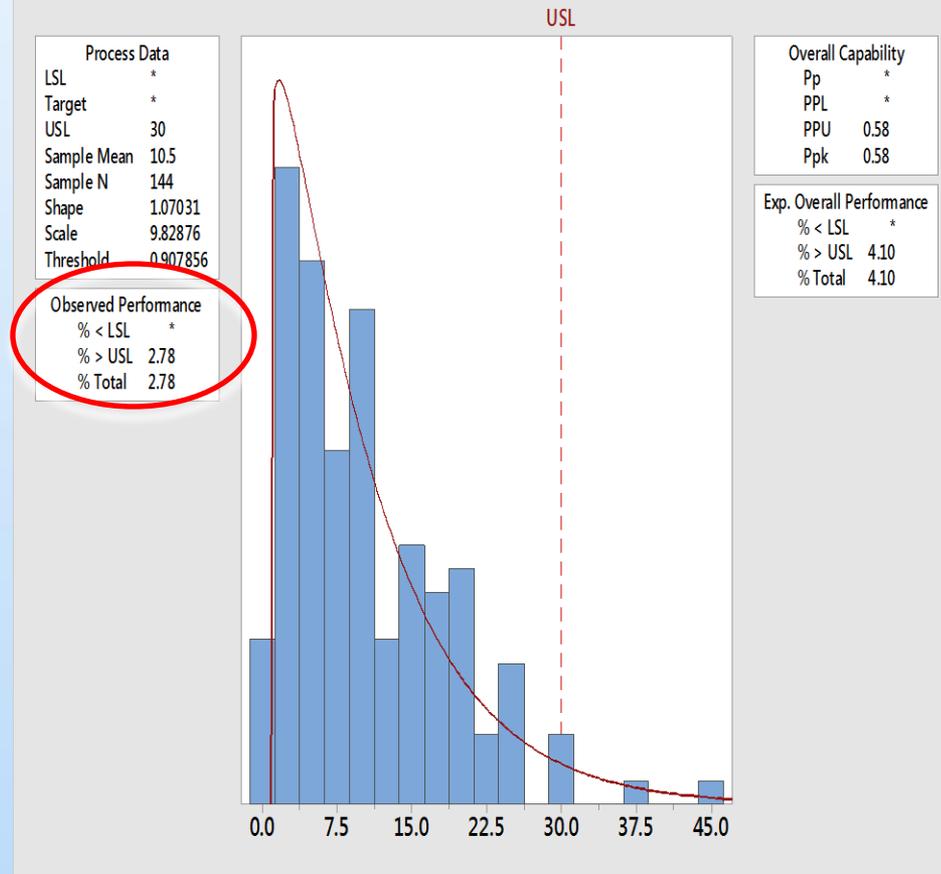
- ❖ Require pre-permit application conference meeting for High Complexity Permits (CD,CS, DD,LC,LF,RC,RP,SN)
- ❖ Recommend and condition High Complexity Permits to have a pre-permit conference meeting ideally during the IGR phase.
- ❖ Reduce the time given to applicants to provide missing documents or corrections from 45 to 10 days



# New Capability-Medium Complexity Permits

- ❖ Improvement from 84% to 97% of permits are issued or denied within 30 days
- ❖ On average a permit is issued or denied in 11 days
- ❖ 3 % of permits take longer than the goal of 30 days
- ❖ Study period is approx. 1 ½-months (May 1, 2016 - June 22, 2016)
- ❖ Excludes CS,CD,DD,LC,LF,RC,RP,SN permit code

Process Capability Report for TOTAL DAYS  
Calculations Based on Weibull Distribution Model



# New Capability-High Complexity Permits

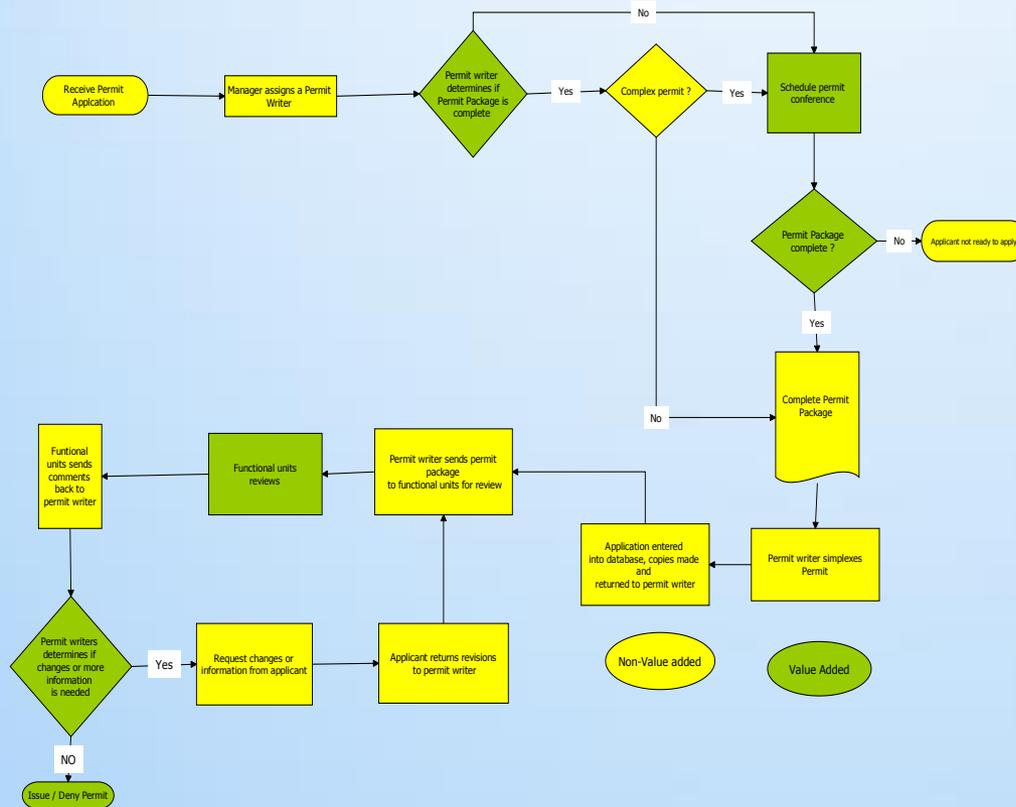
(High Complexity permits are CS,CD,DD,LC,LF,RC,RP,SN permit code)

Process Step	Baseline Completion Time (days)	<b>Estimated</b> Completion Time (days)
1. Manager assigns permit writer	2	1
2. Permit writers determines if permit package is complete	5	4
3. Permit writer schedules pre-submittal conference	0	5
4. Permit writer determines if permit package is complete	0	1
5. Permit writer sends permit package to functional units for review	3	1
4. Functional units return comments to Permit Writer	10	8
5 Permit writer determines if the permit is approvable	2	2
6 Applicant returns revisions requested	45	15
7. Permit writer determines if permit is approval	15	5
8. Draft Permit	5	3
<b>Overall Process</b>	<b>87</b>	<b>45</b>

- ❖ No High Complexity permits were received during the post evaluation period.
- ❖ This table shows how much faster it will take to complete each process step as a result of implementing improvement techniques



# New Process Map



❖ 17 Possible steps

❖ 6 Possible rework steps

❖ 11 Non-value steps

❖ 6 Value added steps

# Control Plan

- ❖ Standard Operating Procedures (SOP)- Identifies procedures for accepting, reviewing and processing permits
- ❖ Manager should periodically training existing and new staff on complete and correct application requirements
- ❖ Mistake-proofing assistance should be provide to stakeholders prior to permit submittal
- ❖ Track permit defects and use the information to improve mistake proofing by educating staff and stakeholders of the common permit deficiencies.
- ❖ Manager logs and tracks permit applications throughout the permit process to insure compliance with 30 day goal.
- ❖ Biennial Internal Audits with statistical monitoring
- ❖ Rewrite Position Duty Statement to include compliance with SOP



# *Additional Benefits*

- ❖ Faster response on permit determination
- ❖ Significant increase in efficiencies (Trend shows improvement, but requires additional data to show statistical significance)
- ❖ Substantial reduction in rework of permit defects
- ❖ Better scheduling of permitted work
- ❖ Monetary savings to all involved in the process (Trend shows improvement, but requires additional data to show statistical significance)
- ❖ Improved employee moral
- ❖ Improved customer satisfaction



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