



Lean 6-Sigma Program



State Water Resources Control Board Division of Water Quality

Russell Norman
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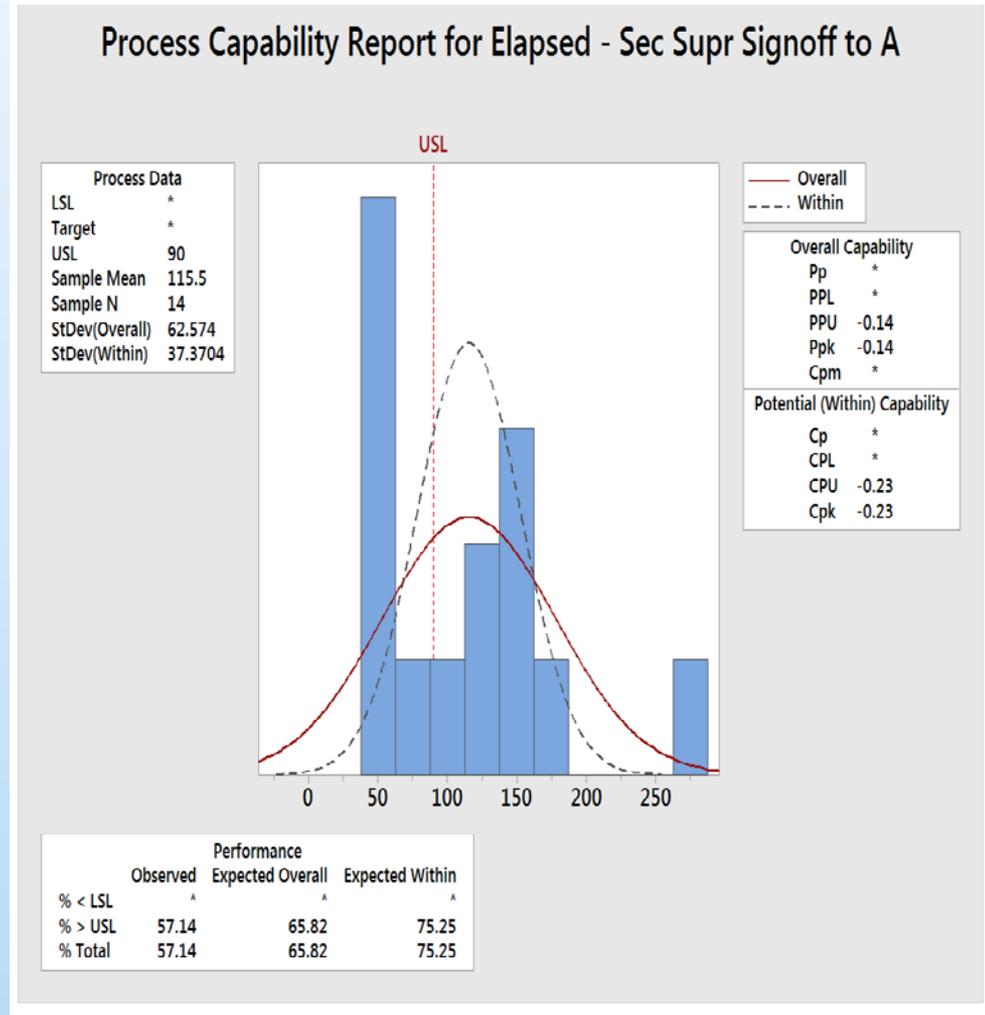
Efficient Internal Agenda Process for Statewide NPDES Permits

- ❖ **Problem Statement:** The internal agenda process to bring a new or amended general NPDES permit before the Water Resources Control Board for consideration for adoption is a time consuming and resource intensive process.
- ❖ **Objective:** To reduce the internal agenda process time such that, on average, general NPDES permits are considered for adoption by the Water Resources Control Board within 90 days of developing a draft permit.
- ❖ **Project Team:**
 - ❖ Diana Messina (Section Supervisor, Division of Water Quality)– Champion
 - ❖ Russell Norman (Engineer, Division of Water Quality) – Green Belt
 - ❖ Phil Wyels (Attorney, Office of Chief Counsel) – Team Member
 - ❖ Rachael Tadlock (Executive Assistant , Division of Water Quality) – Team Member
 - ❖ Courtney Davis (Executive Assistant to the Board Clerk) – Team Member

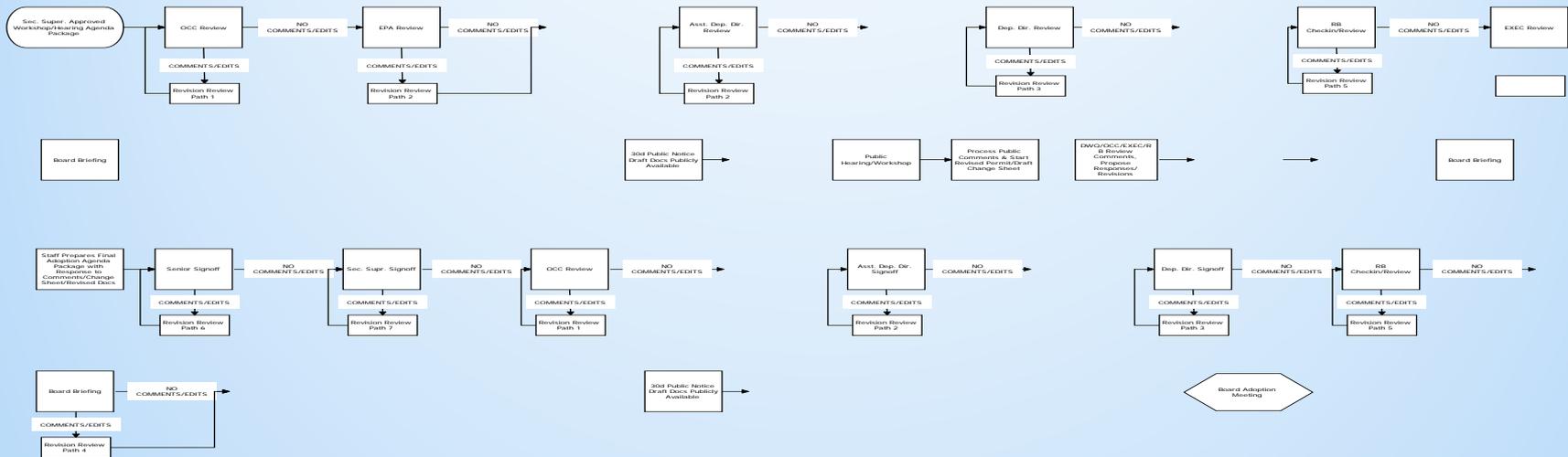


Baseline Capability

- ❖ Average Time to Bring a Permit for Board's Consideration for Adoption is 116 Days
- ❖ 43% Within Target Specification of 90 Days
- ❖ 57% Exceed Target Ranging from 102 to 272 Days
- ❖ Baseline Data → 14 Permits Processed Between 2010-2014
- ❖ Frequency = 1-6 Permits/Year
- ❖ Average Board Meetings Held Per Permit to Adopt = 2, Range = 1-3 Meetings



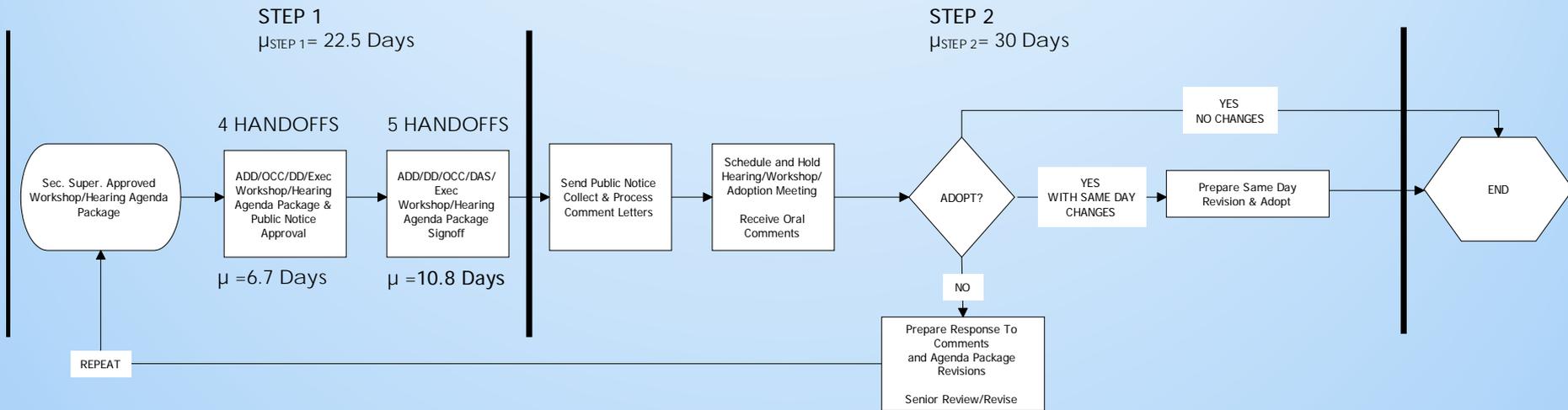
Initial Process Map



- ❖ Existing Process Consists Primarily of Multiple Review and Sign-Off Steps and Rework Loops to Respond to Revisions from Reviewers
- ❖ All Process Steps are “Non-Value Added” by Definition Unless the Permit is adopted Without Any Changes, In Which Case the Adoption Hearing is “Value Added”
- ❖ Several Steps are Legally Required → 39 Days per Board Meeting are Utilized for Legally Required Public Noticing and Holding Board Workshops or Adoption Hearings

Analysis Tools

- ❖ Process Map
- ❖ Fishbone Diagram
- ❖ Capability Analysis
- ❖ Interval Plots
- ❖ Hypothesis Testing
- ❖ Failure Modes Effect Analysis (FMEA)
- ❖ Lean Analysis Tools



CYCLE 1, 2 ...n
 $\mu_{\text{CYCLE}} = 60$ Days
 Average # Cycles to Adopt = 2
 Average Time to Adopt = 116 Days; w/No Board Meeting Schedule Delays = 93 Days

Key Analytical Finding 1

❖ Board Workshop and Adoption Hearing Scheduling Delays Significantly Impact Total Completion Time

❖ Delays Due to Meeting Rescheduling =

- ❖ 8 - 48% of Actual Completion Time
- ❖ 16 - 132% of 90 Day Target Completion Time

❖ Process Capability with No Delays

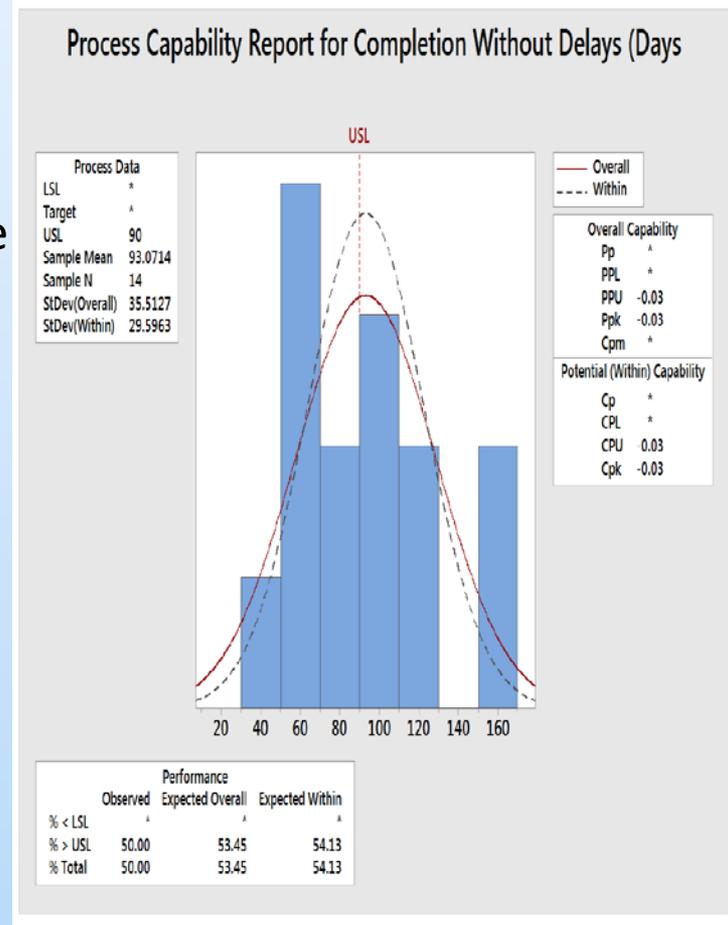
❖ Sample Mean = 93 Days

❖ Controllable Scheduling Delays

❖ Draft Permit Not Ready ~ 40% of Delays

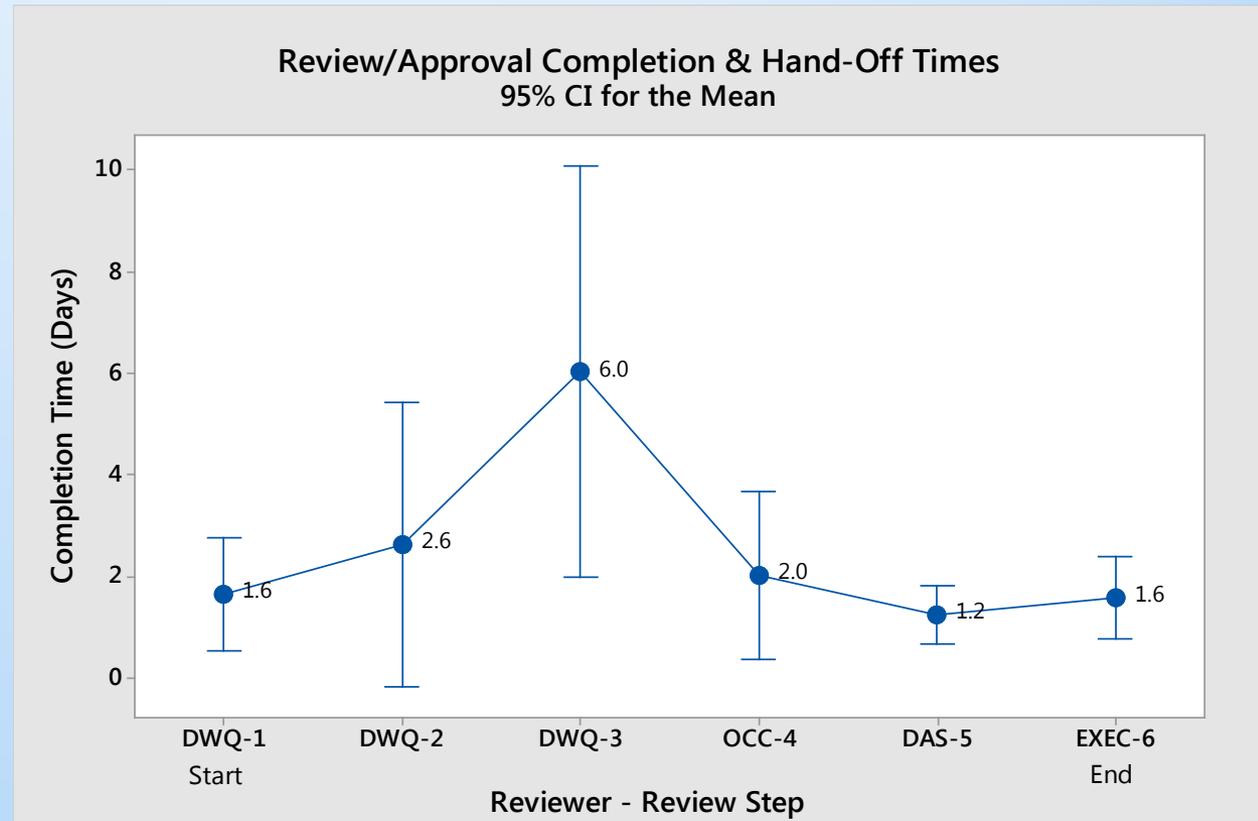
❖ Non-Controllable Scheduling Delays

- ❖ Board Meeting Cancelled or Item Bumped Due to Other Priorities ~ 40% of Delays
- ❖ External Requests to Delay ~ 20% of Delays



Key Analytical Finding 2

- ❖ Division of Water Quality (DWQ) Level 2 & 3 Review and Approval Steps Have High Variability and Significantly Impact Completion Time
- ❖ DWQ Level 2
0.5 - 16 Days Review and Approval Time Per Board Meeting
- ❖ DWQ Level 3
0.5 - 33 Days Review and Approval Time Per Board Meeting
- ❖ Review and Approval Steps for Levels 3, 4 and 6 Conducted Twice Per Board Meeting in Current Process



Critical X's

❖ Controllable:

- ❖ Re-Scheduling Delays
- ❖ Number of Handoffs
- ❖ Sitting Time
- ❖ Number of Revisions
- ❖ Clearly Defined & Understood Project Scope
- ❖ Number of Unforeseen Issues Commented On

❖ Non-Controllable:

- ❖ Complexity
- ❖ Contentiousness
- ❖ External Requests for more time
- ❖ Board Prioritization
- ❖ Executive Management Prioritization

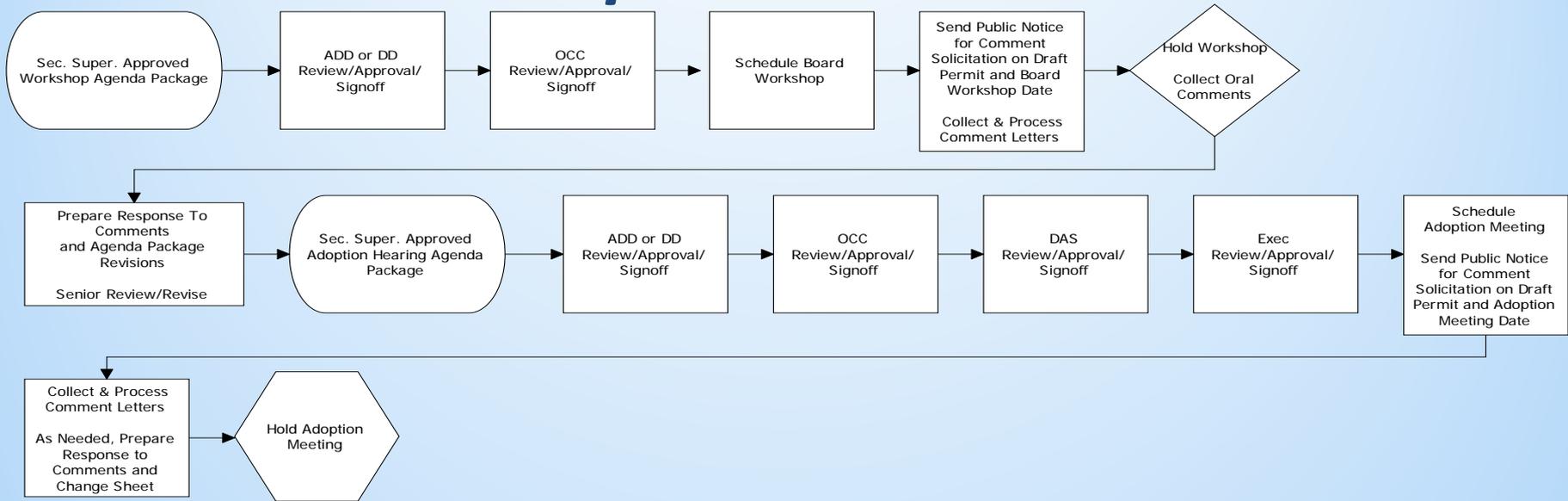
FMEA#											
1 - NPDES AGENDA ITEM											
Step#	Process Map - Activity	Key Process Input	Potential Failure Mode	Potential Failure Effects	SLV	Prevention Controls	OCC	Current Controls	DEI	WPI	Actions Recommended
2	Workshop/Hearing	Re-scheduling Delays	Delayed Board Meeting	Delayed Adoption Meeting	4	External Requests for More Time	8	None	8	3	Better Scoping & Stakeholder Outreach during Permit Development
2		Contentiousness	Delayed Adoption Meeting	Additional Meetings Request	4	Previously Unpublished Permit/Discharge	7	Exec. Dec. Exec. - Feedback/Action	8	10	Conduct Outreach on Basis of Priority
2					4	Far Reaching Proposed Regulatory Action	7	Exec. Dec. Exec. - Feedback/Action	8	10	Take Smaller Steps
2					4	Insufficient Stakeholder Outreach	7	Board/Exec. Decision to Staff	8	10	Conduct Early Outreach
1	Review/Revise	Exec. Management Prioritization	Delayed Permit Adoption	Delayed Permit Adoption	4	Executive Management Decision for Permit Adoption	8	None	7	3	Better Sub/Staff Scheduling
2	Workshop/Hearing	External Requests for more time	Delayed Board Meeting	Additional Meetings Request	4	Insufficient Stakeholder Outreach	8	Board/Exec. Decision to Staff	8	4	Better Scoping & Stakeholder Outreach during Permit Development
2					4	Insufficient Stakeholder Outreach	8	Board/Exec. Decision to Staff	8	4	Better Scoping & Stakeholder Outreach during Permit Development
1	Review/Revise	Number of Handoffs	Delayed Signoff	Delayed Adoption Meeting	4	Excessive Number of Revisions	10	None	5	4	Reduce Number of Revisions
1					4	Redundant Revisions by Reviewers	10	None	5	4	Eliminate Redundant Review Steps
2	Workshop/Hearing	Complexity	Delayed Adoption Meeting	Additional Meetings Request	4	Previously Unpublished Permit/Discharge	7	Public Outreach	7	4	Better Scoping & Stakeholder Outreach during Permit Development
2					4	Far Reaching Proposed Regulatory Action	7	Public/Stakeholder Outreach	7	4	Better Scoping & Stakeholder Outreach during Permit Development
2		Re-scheduling Delays	Delayed Board Meeting	Delayed Permit Adoption	4	Item not ready for Meeting	6	None	8	10	Better Sub/Staff Scheduling
1	Review/Revise	Clearly Defined & Understood Project Scope	Delayed Signoff	Delayed Adoption Meeting	4	Delayed Getting Decision on Newly Identified Issues	6	None	7	3	Better Sub/Staff Scheduling
1					4	Defective Project Scoping	6	None	7	3	Better Scoping & Stakeholder Outreach during Permit Development
2	Workshop/Hearing	Number of Unforeseen Issues Commented On	Delayed Board Meeting	Additional Meetings Request	4	Insufficient Stakeholder Outreach	5	Public/Stakeholder Outreach	8	10	Better Scoping & Stakeholder Outreach during Permit Development
2					4	Insufficient Stakeholder Outreach	5	Public/Stakeholder Outreach	8	10	Better Scoping & Stakeholder Outreach during Permit Development
2		Board Prioritization	Delayed Board Meeting	Delayed Permit Adoption	4	Excessive Workload	7	None	5	10	Better Sub/Staff Scheduling
1	Review/Revise	Sitting Time	Delayed Signoff	Delayed Adoption Meeting	4	Not a Priority Project	7	None	6	3	Better Tracking of Items in Progress
1					4	Excessive Number of Revisions	7	None	5	10	Reduce Number of Revisions
1					4	Too Many Revisions	7	None	5	10	Better Sub/Staff Scheduling
1		Number of Revisions	Delayed Signoff	Delayed Adoption Meeting	4	Poor Quality of Comments or Submittal	9	Management Review/Revise	9	10	Early Briefing and Feedback from Management and OCC during Permit Development
1					4	Changes in Management Direction	9	None	6	10	Early Briefing and Feedback from Management and OCC during Permit Development
1					4	Legal Deficiencies	9	OCC Review/Revise	9	10	Early Briefing and Feedback from Management and OCC during Permit Development
1					4	Item Out of Scope	9	Exec. Decision - Feedback/Action	9	10	Early Briefing and Feedback from Management and OCC during Permit Development
1					4	Incomplete Items	9	Management Review/Revise	9	10	Better Sub/Staff Scheduling
1					4	Technical Deficiencies	9	Management Review/Revise	9	10	Early Briefing and Feedback from Management and OCC during Permit Development
1					4	Operational and Billing Errors	9	Management Review/Revise	9	10	Better Sub/Staff Scheduling

Improvement Techniques

- ❖ Minimize Controllable Board Meeting Re-Scheduling Delays
 - ❖ Conduct More Thorough Outreach During Permit Development to Minimize Comments on Formally Noticed Permits
 - ❖ Schedule Board Meetings Only When there is High Confidence Permit Will Be Ready
 - ❖ Revised Standard Operating Procedures for Public Noticing, Public Notice Timing, and Board Meeting Scheduling
- ❖ Streamline Review and Approval Process Steps
 - ❖ Reduce DWQ Level 3 Review and Approval Steps, Delegate Down to Levels 2 and 1 for Select Non-Controversial and Low Complexity Permits
 - ❖ Reduce DWQ Level 2 Review and Approval Steps, Delegate Down to Level 1 and Unit Senior for Select Non-Controversial and Low Complexity Permits
 - ❖ Eliminate Redundant Review and Approval Steps at Levels 3, 4 and 6 by Combining Division and Agency Level Route Slips
 - ❖ Proactively Track Permits in Review and Approval Process Steps to Minimize Sitting Times and Expedite Completion of Reviews and Approvals
 - ❖ Audit Future Permit Revisions Made by Reviewers to Inform Reviewers How to Minimize “Non-Value Added” Activities in the Review and Approval Steps by Focusing Revisions to Only Spelling, Grammar and Technically Based Edits



New Process Map

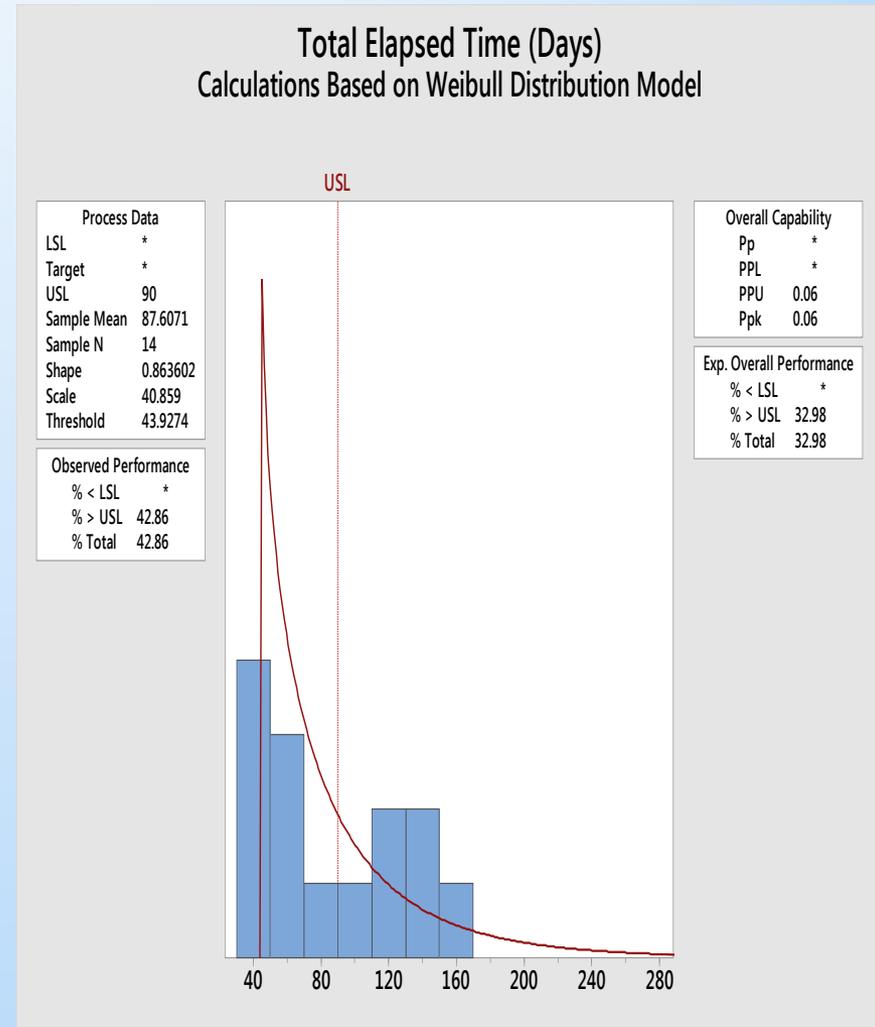


- ❖ Review and Approval Steps Reduced from 9 steps per Board meeting to 2 for a workshop and 4 for an adoption hearing
- ❖ External Stakeholder Check-In Steps Moved To Early Permit Development Stage
- ❖ For Non-Technical Edits, Reviewer Revises Permit and Moves Permit Forward Versus Routing Back Down Review Chain



Projected Capability Analysis

- ❖ Projected Mean Completion Time = 90 Days
- ❖ Current Mean Completion Time = 116 Days
- ❖ Legally Required Process Steps, on Average, = 78 Days
- ❖ Reduce Controllable Meeting Delays and Review and Approval Process Step Times, on Average, from Combined 38 Days to average of 12 Days (68% Reduction)
- ❖ By Optimizing Board Meeting Scheduling to Reduce Re-Scheduling Delays and Lag Time Between Meetings by 50% and Reducing Review and Approval Handoff Times to 2 Days per Handoff
- ❖ Projected Performance = 50% in 90 Days



Control Plan

- ❖ Tracking of Each Review and Approval Step and Due Date Using Electronic Task Assignments and Automated Reminders
- ❖ Continuous Improvement Plans Include Future Electronic Routing of Draft Permit Documents for Review and Approval and Use of Electronic Route Slips
- ❖ For Six Future Permits, Track and Categorize All Revisions Made (i.e., Spelling, Grammar, Technical versus “Writing Style Based”), Use Results to Inform and Guide Reviewers in Eliminating Revisions Not Based on Spelling, Grammar or Technical Defects
- ❖ Overall Permit Completion Time, Completion Time for Each Discrete Process Step, and Cause for any Board Meeting Re-Scheduling to be Tracked and Recorded for Each Permit Adoption
- ❖ Annual Internal Audits



Additional Benefits

- ❖ Reduction in Public Noticing Re-work Caused By Board Meeting Re-Scheduling Delays by Eliminating Re-Noticing for Re-Scheduled Meetings and Re-Processing of Revised Board Agendas
- ❖ Reduction of Handoffs, Sitting Time and Permit Revisions by Reducing Review and Approval Handoffs
- ❖ Reduction in Key Management Workload by Delegating Reviews and Approvals and Eliminating Redundant Review and Approval Steps



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