Lean 6-Sigma Program

DEPARTMENT OF GENERAL SERVICES

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ESCO Contracting Process

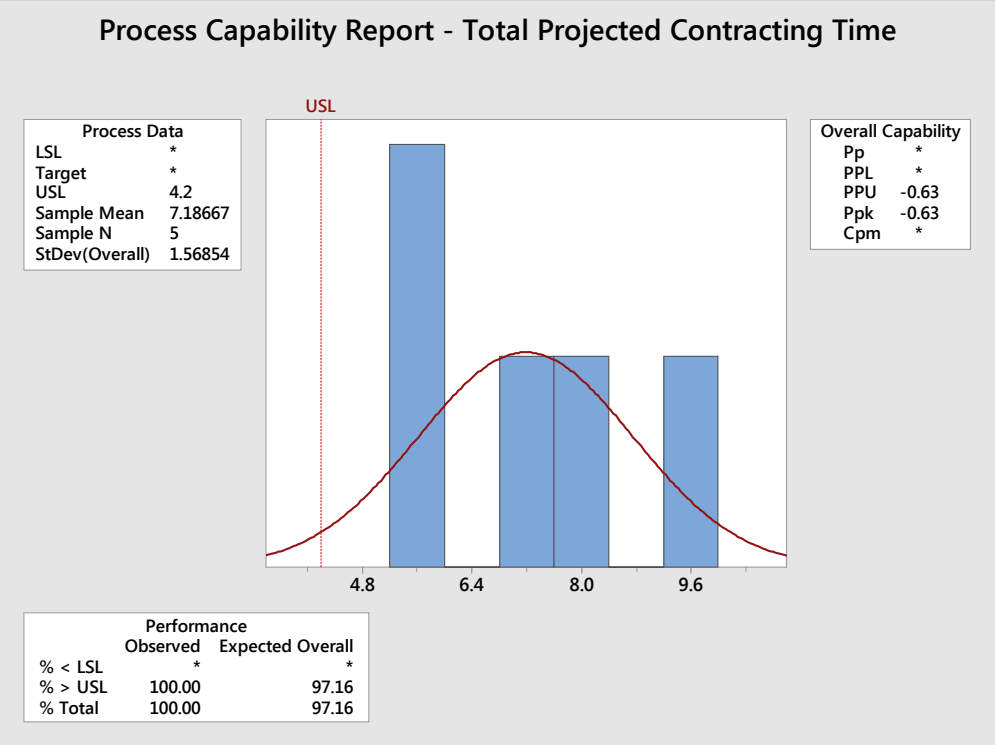
- **Problem Statement:** DGS's Statewide Energy Retrofit Program uses Energy Service Companies (ESCOs) to identify, design and implement energy conservation measures in state facilities to help agencies meet the goal established by EO B-18-12 of reducing grid-based electricity purchases by 20% by 2018. The current ESCO process takes too long and must be streamlined so more projects can be completed more quickly in order to meet the timeframe established by the EO.
- **Objective:** Original - To reduce average completion time from RFP development to start of implementation from 9 to 4 months 95% of the time.

- **Project Team:**
  - *Howard Sacks – Champion, RESD*
  - *Julie Sanchez – Greenbelt, RESD*
  - *Mark Barrett – Project Manager, RESD*
  - *Valerie Keisler – Section Manager, RESD*
  - *Bryan Kimura – Staff Counsel, OLS*
  - *Lynette McIntyre – Contract Analyst, OBAS*
  - *Anna Woodrow – Assist. Chief Counsel, OLS*
- *Advisory Members:*
  - *John Isham, Manager, OBAS*
  - *Sukhy Sahota, Manager, OBAS*
  - *Noah Valadez, Chief, OBAS*

Existing Process Summary

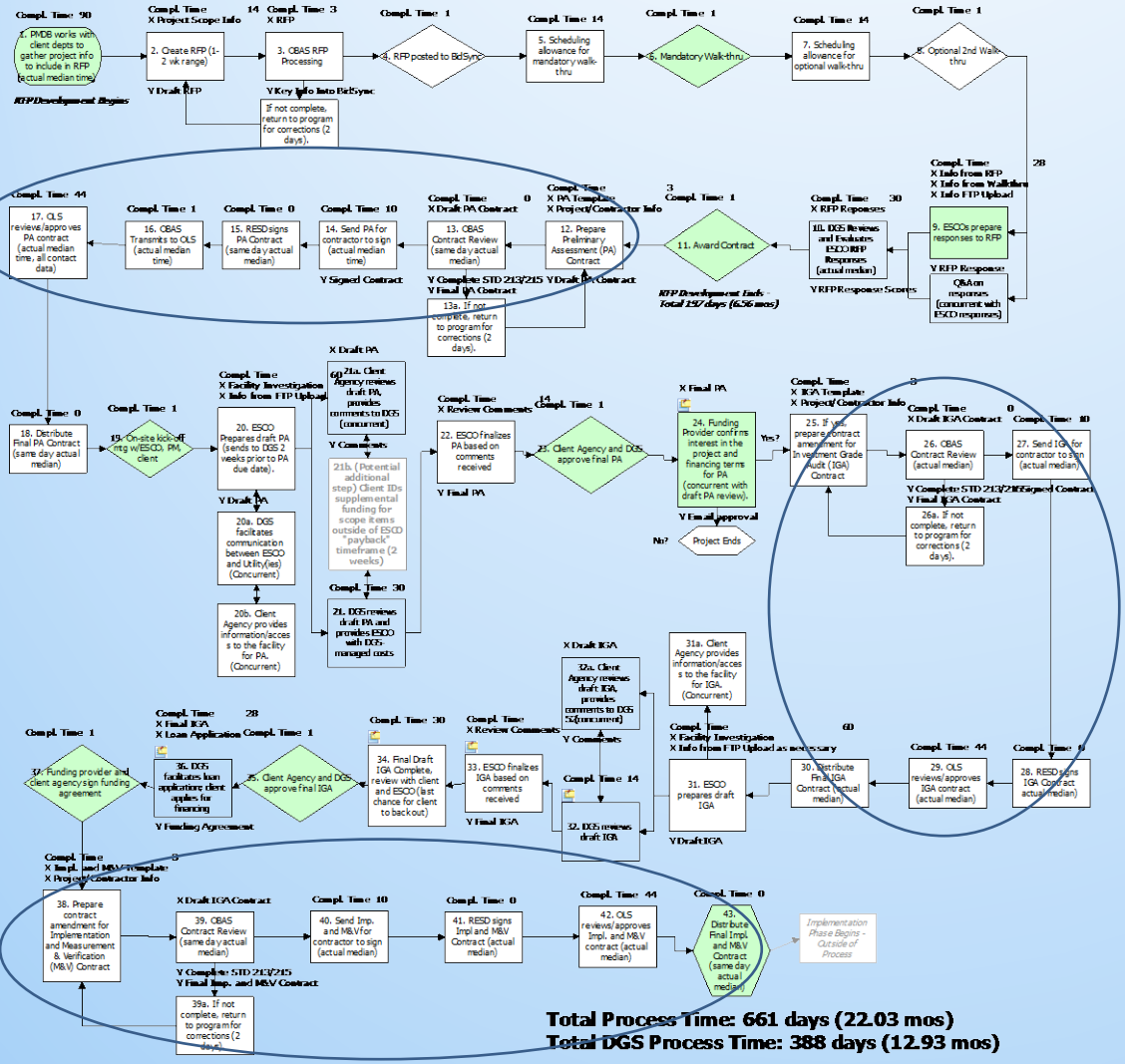
- Establish a pool of eligible ESCOs every 2 years through RFQ process.
- Work with client agencies to select facilities suitable for energy savings projects.
- Use the RFP process to select ESCOs from the pool for individual projects.
- Manage each project through 3 phases: Preliminary Assessment (PA), Investment Grade Audit (IGA), and Implementation/Measurement & Verification IM&V).
- Facilitate project financing for client agencies once energy savings and payback terms are confirmed (typically 15 years or less).

Baseline Capability – Contracting Process



- Data available for contracting cycles only - used that for capability analysis.
- 100% of the contracts (only 5 available for analysis) were processed outside of the upper spec limit of 4.2 months.
- Sample Average = 7.2 months; Sample Maximum = 9.4 months

Initial Process Map



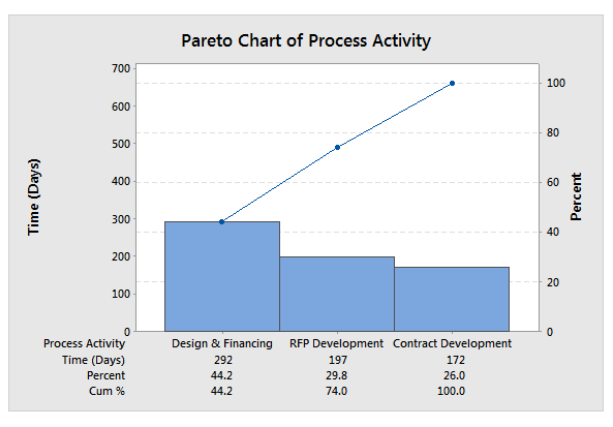
- Much longer process than estimated (22 months vs. 9 months).
- Value-added steps identified in green.
- Contract-related steps are non-value added but legally required.
- Multiple cycles of contracting & review.
- DGS-controlled steps total nearly 13 months.

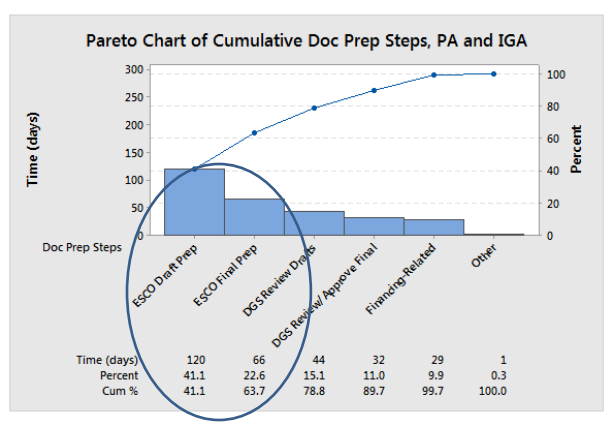
Analysis Tools

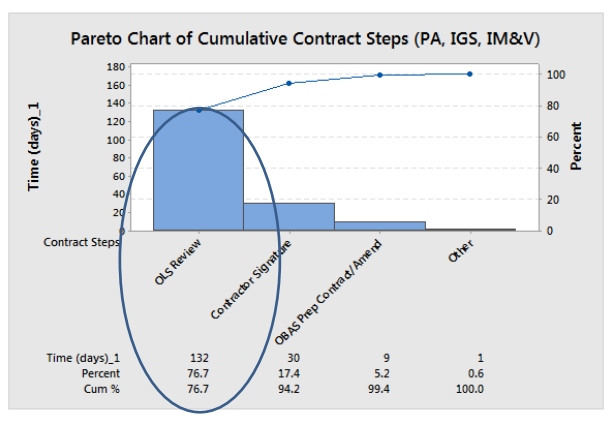
Analytical tools used to determine critical x's included:

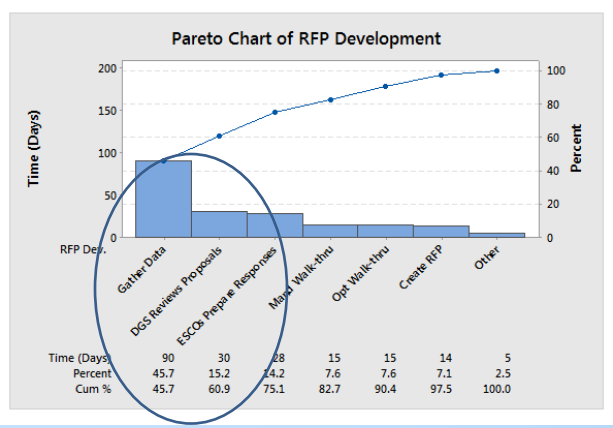
- Pareto Charts/Time Analysis
- Box/Dotplots
- FMEA
- Mood's Median Hypothesis Test

Process Time Analysis



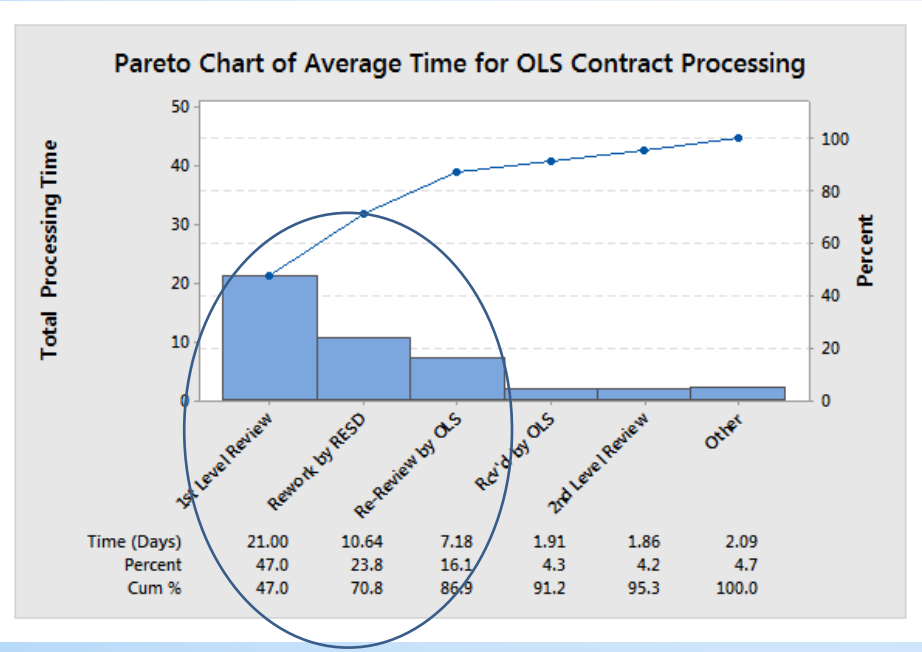






- Three major activities
- Design activity owned primarily by ESCOs - time needs linked to scope
- Balance of analysis focused on DGS portion of the activities (multiple contracting and reviews)

Legal Review Time & Program Rework



Summary Report for Time (Months) (Process Activity = Contract Times Not Needing RESD)

Mood Median Test: Time (Months) versus Process Activity

Mood median test for Time (Months)
Chi−Square = 4.41 DF = 1 P = 0.036

Process Activity	N≤	N>	Median	Individual 95.0% CIs Q3−Q1
Contract Times Needing RESD Re−	1	4	66.0	34.0
Contract Times Not Needing RESD	5	1	20.0	20.5

Overall median = 44.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Contract Times Needing RESD Re−) − median(Contract Times Not Needing RESD): (10.3,66.0)

- There is a statistically significant increase in processing time for contracts requiring rework with RESD program staff.
  - Median time without Rework = 20 days
  - Median time with Rework = 66 days (230% increase)
  - Overall Median time = 44 days
- Primary reason for rework = Scope questions

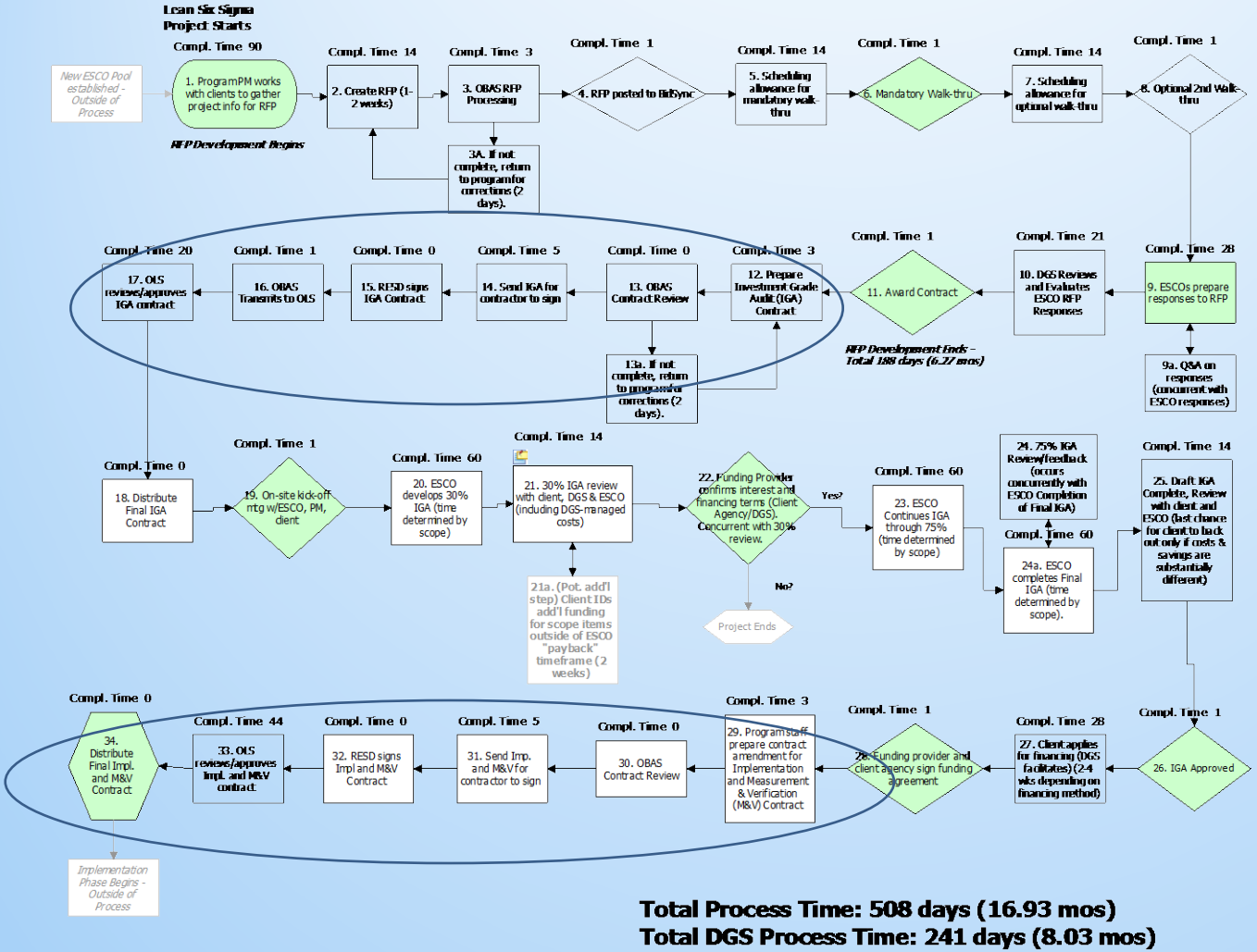
Critical X's

- Multiple contracting cycles and review steps – add time to process and are technically non value-added.
- Scope – questions lead to rework and lengthy review times.
- Constraints within the design and contracting processes:
  - RFP steps legally required in current process - adds up to 6.5 months
  - ESCOs require detail, effort, and time to define if energy savings measures meet financing requirements (payback within 15 years).
- Lack of robust process controls/standard operating procedures – allows for schedule creep and variation.

Improvement Techniques

- Streamline Process
  - Eliminate one ESCO contracting cycle – requires revising contract templates.
  - Establish concurrent/overlapping reviews during the RFP and design development steps.
- Implement a scope verification checklist at the 30% and 75% IGA design reviews (completed by program/project manager).
- Strengthen SOPs to formalize efficiencies/checkpoints in the process.
- Future – Partially re-engineer the process to eliminate RFP phase and establish a master contract system – requires legislative change.
  - Requires changing contract documents and establishing new procedures.
  - Transfers facility and energy data-gathering from DGS to the ESCOs, creating more efficiency for this task.

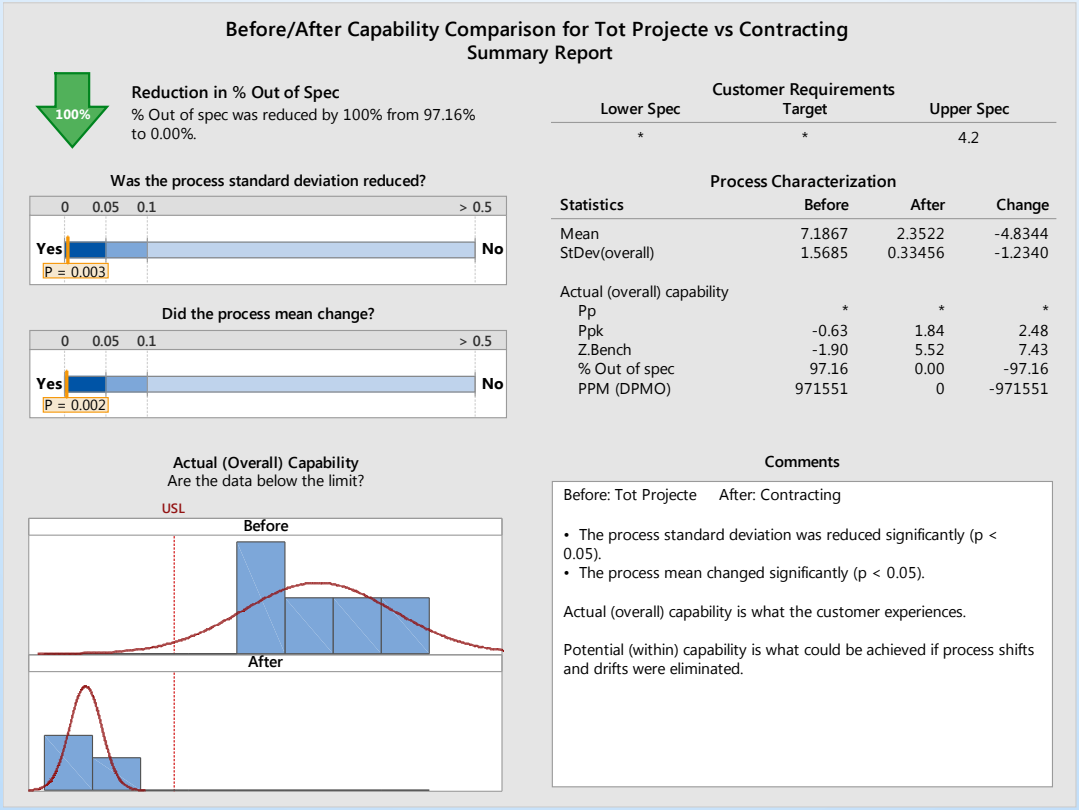
New Process Map – Interim Process



Total Process Time: 508 days (16.93 mos)
Total DGS Process Time: 241 days (8.03 mos)

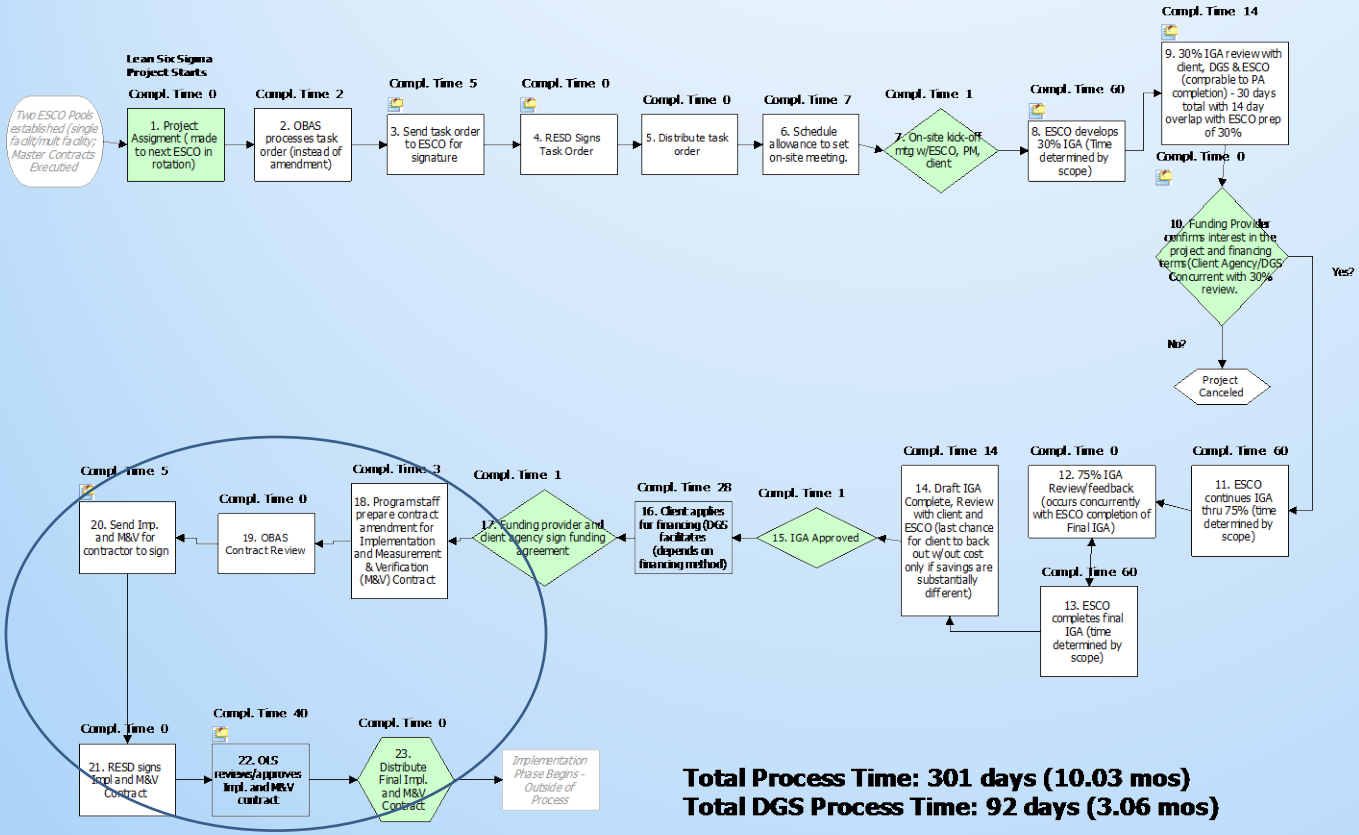
- Eliminate one ESCO contracting cycle.
- Concurrent/ overlapping reviews
- Improve SOPs to predict delays.
- DGS process time savings from original = 4.9 months (38%).

Before/After Capability Analysis – Contracting



- 100% of contracts processed within original upper spec limit of 4.2 months.
- Sample Average = 2.35 months; Sample Maximum = 2.87 months
- "After" analysis relies on **projected data** for 30 contract cycles.

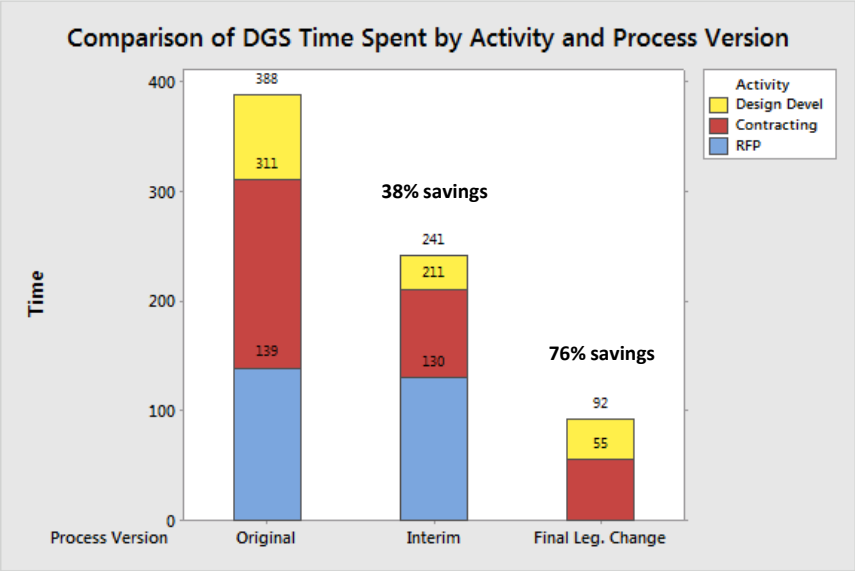
Future Process Map – Final Changes

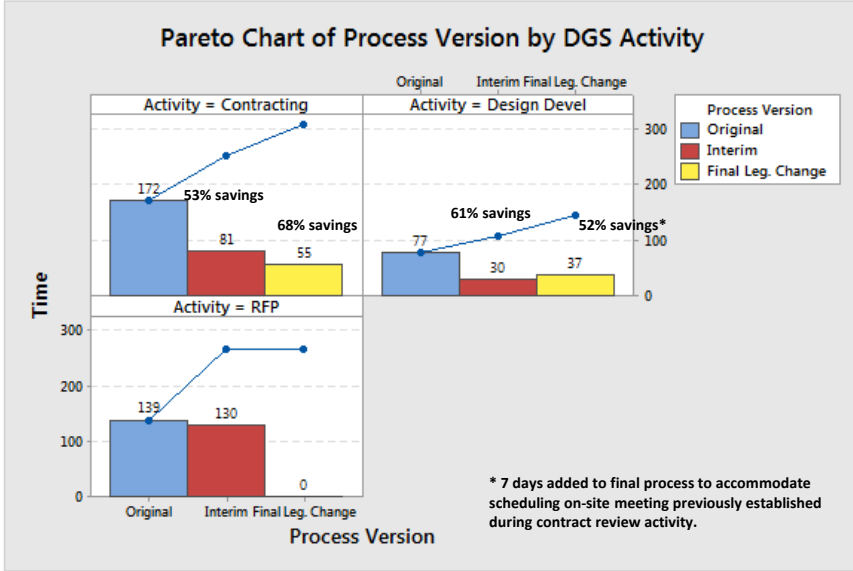


Total Process Time: 301 days (10.03 mos)
Total DGS Process Time: 92 days (3.06 mos)

- Eliminate RFP requirement.
- One remaining ESCO contracting cycle.
- Concurrent/ overlapping reviews.
- Improve SOPs to predict delays.
- DGS process time savings from original = 9.87 months (76%).

Comparative DGS Time Analysis – All Versions





- Time Charts show different view of incremental time savings in DGS process activities by process version and the three major process activities (RFP, Contracting, and Design Development).

Control Plan

- Control elements to be utilized:
  - Ensure Standard Operating Procedures are implemented.
  - Strengthen/monitor data collection process for various activities.
  - Monitor time for review of the IM&V contract amendment to ensure that improvement steps for scope definition/strengthening are effective.
  - Use I-Chart to monitor overall process time as actual data is gathered.
  - Long-term - monitor rate of change orders or cost increases.

Additional Benefits

- Better understanding across the different DGS divisions of challenges and roles.
- Team members are enthused about the prospect of the process moving more quickly and smoothly.
- A new ESCO pool must be established in the near future, and a streamlined process will generate more interest in the bidding community.
- Potential to apply some of the principles learned for this project to other DGS/RESD contracting situations.

Green Belt Contact Information

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