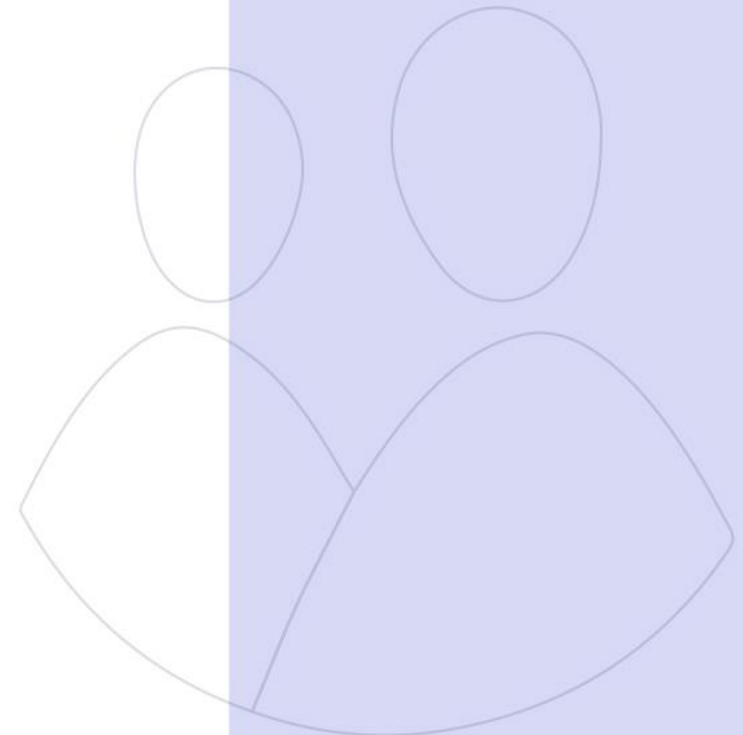


# Building Schedule Dashboard

## SCHEDULE VALIDATOR



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# About the Audience



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# What We'll Cover in Today's Session

- Why Schedule Dashboards Are Important
- Challenges to Creating Quality Dashboards
- Identifying Key performance indicators (KPIs)
- Steps for Implementing Dashboards



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# Why Schedule Dashboards?

## SCHEDULING DASHBOARDS

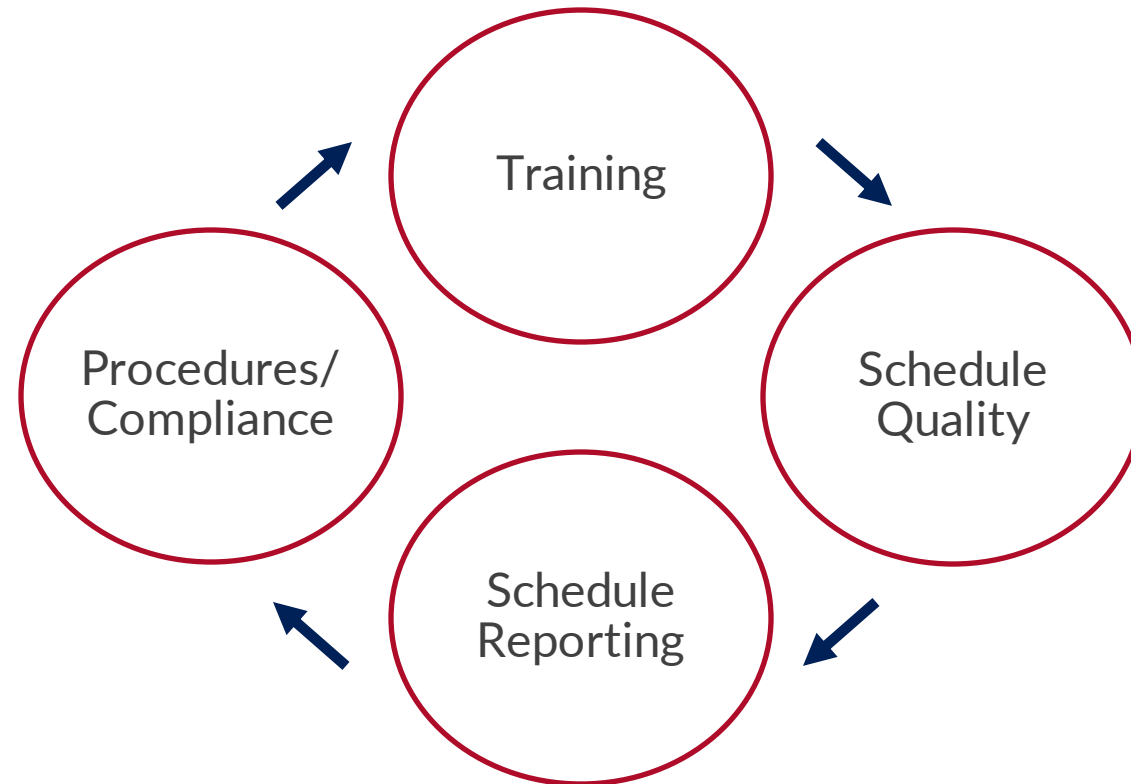


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# The Four Components of a Scheduling Program

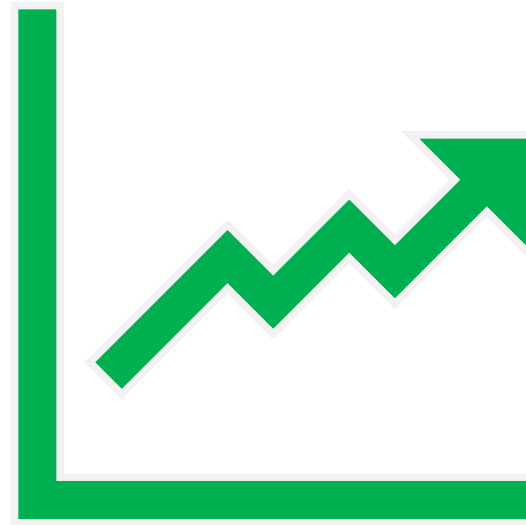


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# Background for Dashboards



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# What Difference Does it Make?

## SCHEDULING DASHBOARDS



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# What Makes a Quality Dashboard?

- Actionable
- Easy to Generate
- Easy to Access
- Easy to Read



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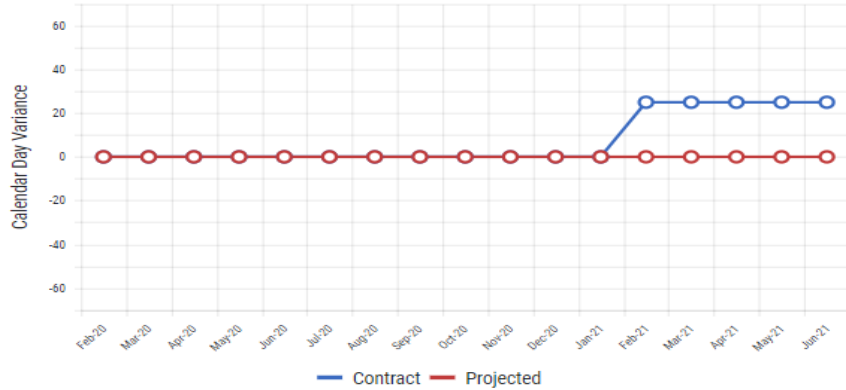


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**Projected Completion**



Contract Substantial Completion	05/02/2021	Monthly Variance	0
Projected Completion	04/07/2021	Cumulative Variance	0

**Project Notes**

**Rationale**

Submittals for architectural finishes slipped this period (managed by trade partner Henry Carlson). Team is assisting with critical items and will add detail for separate submittals where needed by the next update. Aeration basin diffuser system procurement slipped, team broke out items to be delivered in time for AB 6 install; 2nd revised submittal and support calculations are critical. Yard pipe was re-sequenced due to availability of material onsite. PLI line to Headworks moved up, and install of RAS 24" at FC6 and FC8 moved back due to procurement.

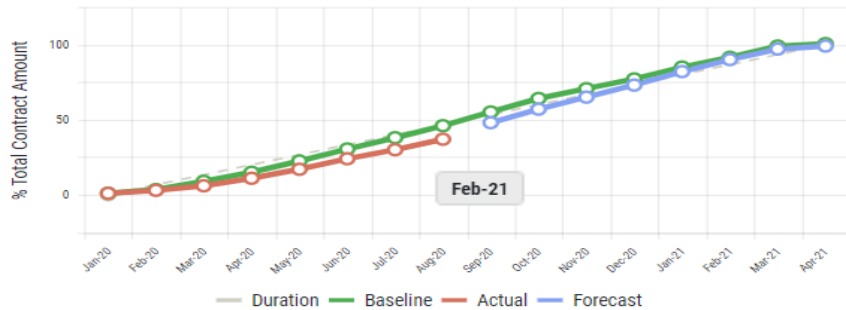
**Justification**

Evaluate electrician's plan for temporary power to Blowers since LV service entrance automatic transfer switchgear fabrication lead will not accommodate start-up deadlines. Finalize design and coordination for Switchgear Bldg utility relocations

**Objectives**

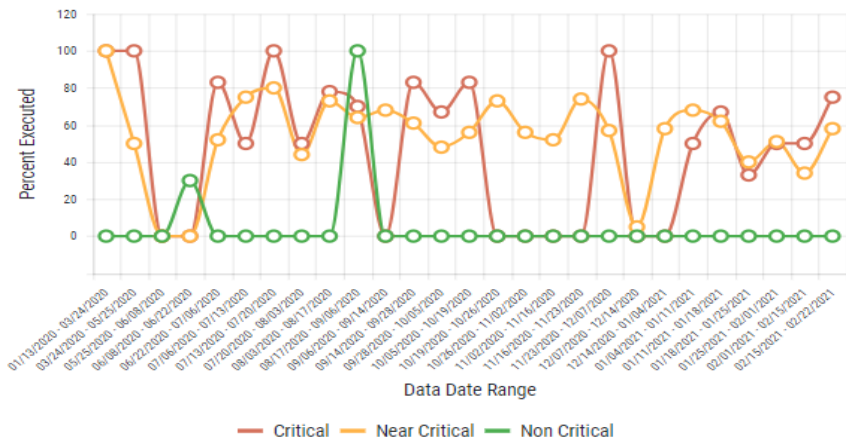
Project Architect Session Date: 29-Nov-12 User: jduncan Project: SDS Water

**Financials**



<b>Budget Information</b>		<b>Billing Information</b>	
Original Contract	\$65,000,000	Billed to Date	\$23,894,000
Approved Change Orders	\$250,000	Avg. Remaining Monthly Billing	\$2,986,750
Revised Contract	\$65,250,000	Balance to Complete	\$41,106,000
Projected Final Contract	\$65,250,000	Planned vs. Actual Billings (Cumulative)	(\$22,658,000)

**Execution Trends**



# Roadblocks

## SCHEDULING DASHBOARDS



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# Roadblocks #1: VARYING SYSTEMS



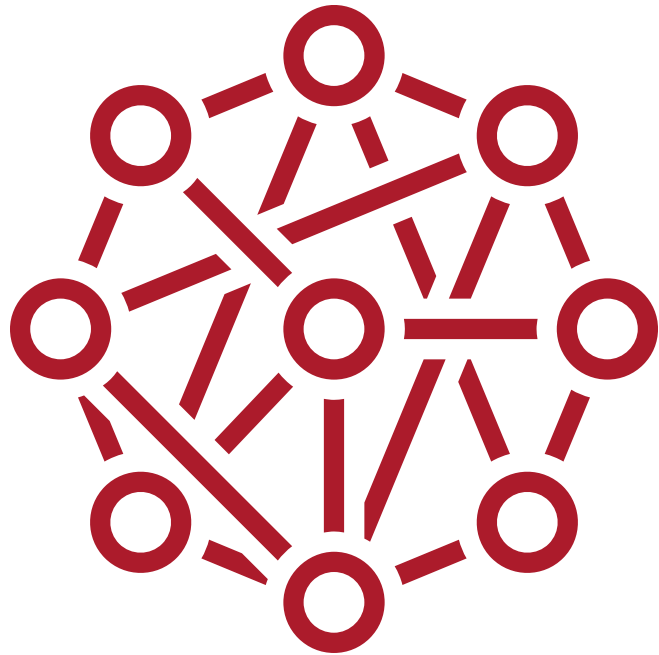
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# Roadblocks #2:

## VARYING PROCESSES



- File Management
- Version Management
- Update Frequency
- Update Preferences
- Schedule Documentation



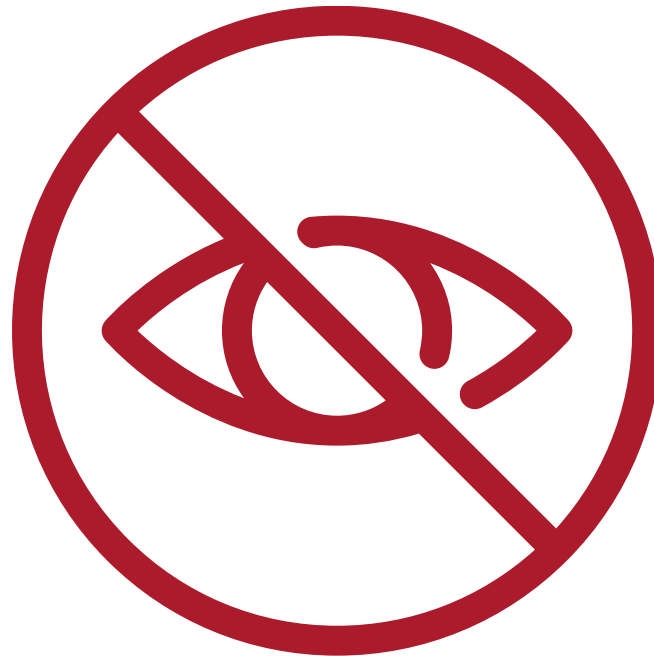
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# Roadblocks #3:

## LACK OF SCHEDULE VISIBILITY



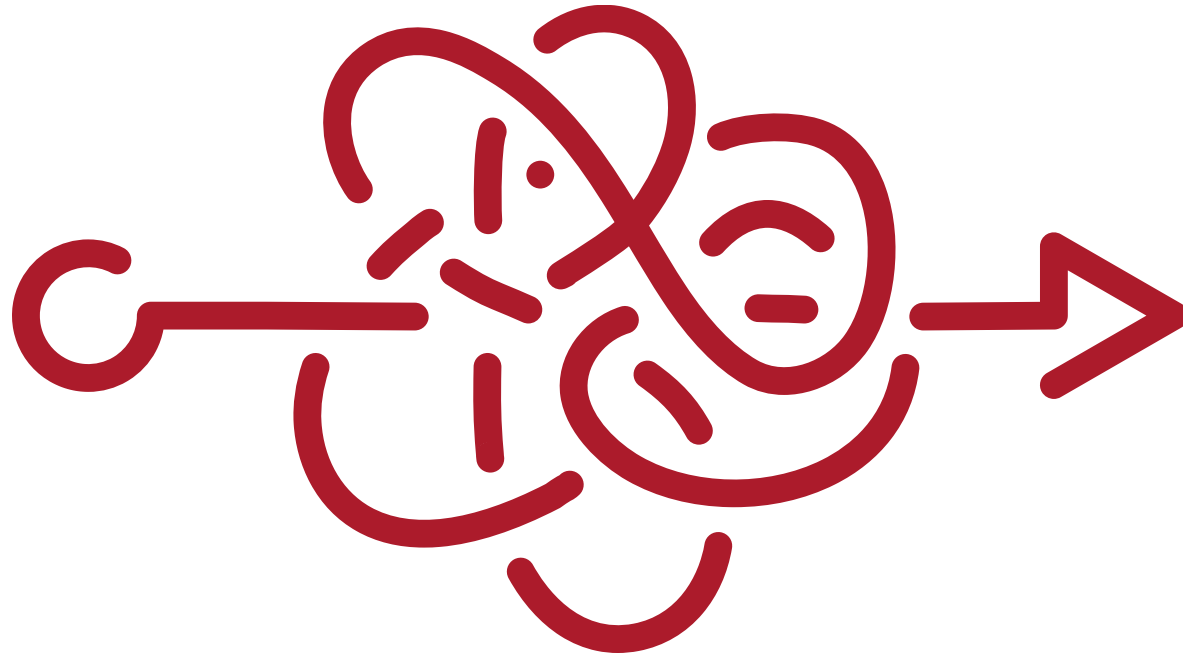
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# Roadblocks #3:

## LACK OF SCHEDULE VISIBILITY



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# 8 Key Performance Indicators (KPIs)

## SCHEDULING DASHBOARDS



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# KPI #1

## QUALITY ASSESSMENT



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No.	Criteria	Condition being evaluated	Threshold
1	Logic	Number of incomplete tasks without predecessors and/or successors	Less than 5%
2	Leads	Number of logic links with a lead (negative lag) in predecessor relationships for incomplete tasks	0
3	Lags	Number of lags in predecessor logic relationships for incomplete tasks	Less than 5%
4	Relationship types	Number of relationships for incomplete tasks	Minimum 90% Finish-to-Start (FS) relationships
5	Hard Constraints	Number of incomplete tasks with hard constraints in use	Less than 5%
6	High Float	Number of incomplete tasks with total float greater than 44 working days	Less than 5%
7	Negative Float	Number of incomplete tasks with total float less than 0 working day	0
8	High Duration	Number of incomplete tasks with a duration greater than 44 working days	Less than 5%
9	Invalid Dates	Number of incomplete tasks with forecast start/finish dates prior to the status date or with actual start/finish dates beyond the status date	0
10	Resources	Number of incomplete tasks with durations greater than zero that have dollars or hours assigned	100%
11	Missed Tasks	Number of tasks that have been completed or will finish later than planned in the baseline	Less than 5%
12	Critical Path Test	Measures the slippage of the project completion date (or other milestone) when an intentional slip is introduced in the network	Should be proportional with the intentional slip applied
13	Critical Path Length Index (CPLI)	Measures the critical path "realism" relative to the baselined finish date	Not less than 0.95
14	Baseline Execution Index (BEI)	Cumulative number of tasks completed compared to cumulative tasks with baseline finish date on or before the status date	Not less than 0.95



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# Developing a Scoring Method

- Manually performed in a spreadsheet
- Sophisticated Scheduling Software Configurations
- Automated Process – Schedule Validation Score



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# Keys to a Successful Scoring System

- Parameters
- Thresholds
- Weighting



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# KPIs #2 & 3

## FINISH KPIs

- Project Finish
- Contract Completion

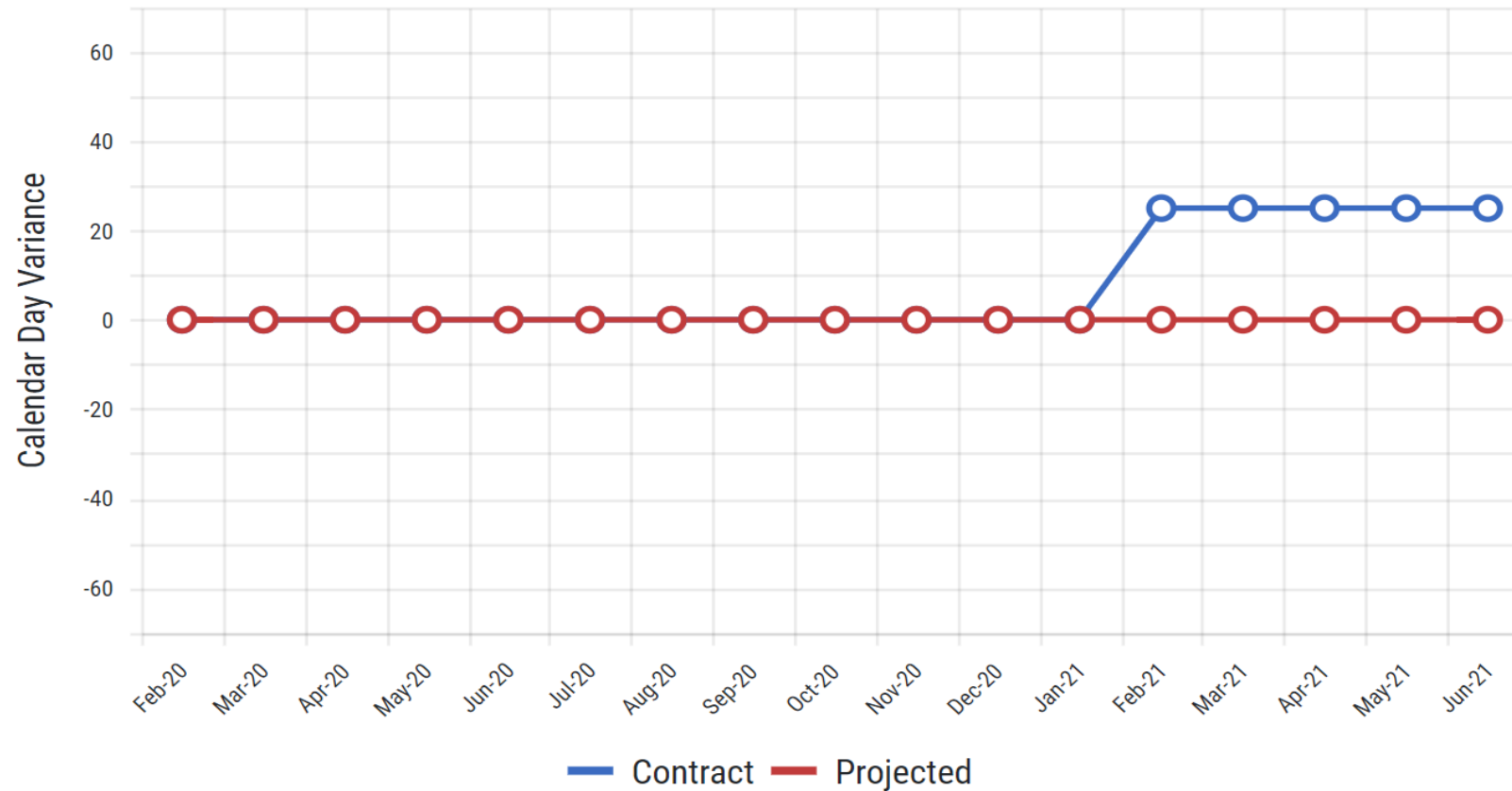


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## Projected Completion



Contract Substantial Completion 05/02/2021

Projected Completion 04/07/2021

Monthly Variance 0

Cumulative Variance 0



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# KPIs # 4, 5, 6 & 7

## PROGRESS KPIs

- Critical Path Progress (Window Analysis)
- Critical Path Compression
- Execution Score (Window Analysis)
- Remaining Compression



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# Critical Path Progress and Compression

## CRITICAL BASE ACTIVITY MILESTONE

ACTIVITY	FINISH A	FINISH B	CHANGE	VAR
A3790: Switch Traffic to Paving Completed in Phase 2A	04/01/2017	04/14/2017	Lost	13

CRITICAL BASE ACTIVITY **LOST 13**

Comparing the status of the finish date and the status of the critical path during the selected window indicates that the remaining duration of the critical path was compressed by 14%. This value is determined by subtracting the critical path slippage from the finish date slippage and dividing that value by the remaining duration. A positive compression generally indicates that future activity durations were reduced and/or resequenced. A negative compression generally indicates durations were increased and/or resequencing resulting in a new critical path.

CRITICAL PATH COMPRESSION **14 %**



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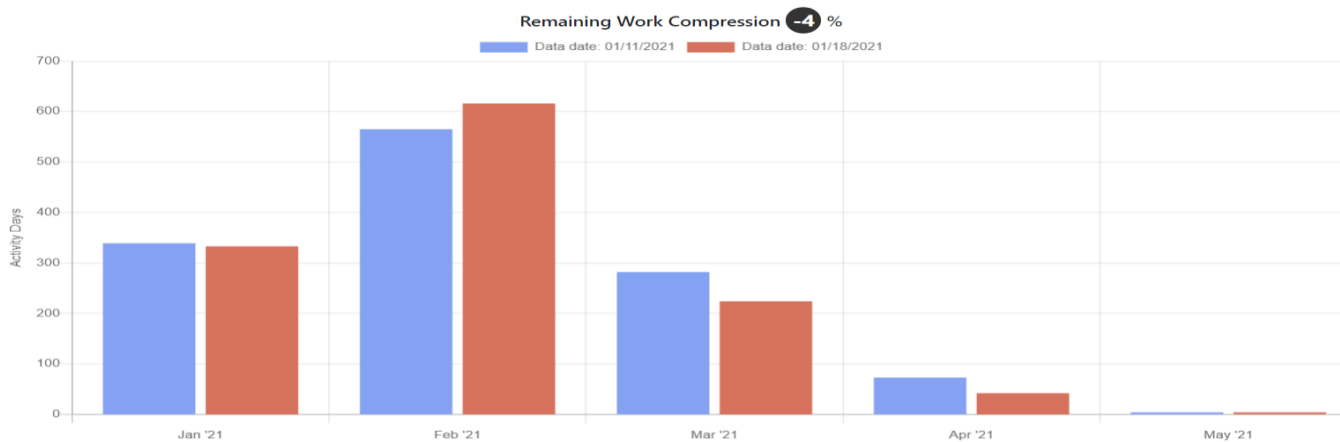
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# Execution & Remaining Work Compression

Execution Score **62**

The following statistics are the basis for the Schedule Execution Score. These represent the number of tasks that were scheduled to start and finish in the schedule window followed by the actual number of starts and finishes. Details are in subsequent tables.

TASK EXECUTION		
TASKS	SCHEDULED	EXECUTED
To Start	34	21 (62%)
Critical	2	1 (50%)
Non-Critical	32	20 (62%)
To Finish	27	17 (63%)
Critical	0	0 (100%)
Non-Critical	27	17 (63%)



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# KPIs # 8

## CHANGES KPIs

- Added / Deleted Activities
- Added / Deleted Relationships
- Duration Changes
- Float Changes
- Critical Path Changes



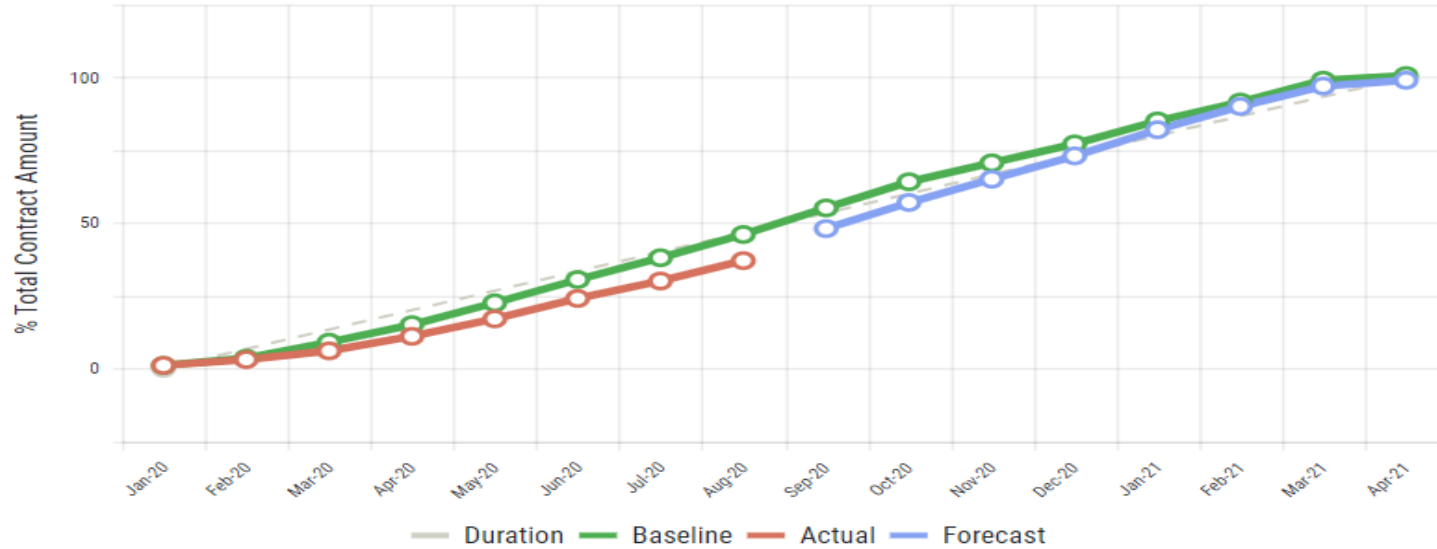
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# Additional KPIs

## Financials



### Budget Information

Original Contract	\$65,000,000
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Projected Final Contract	\$65,250,000

### Billing Information

Billed to Date	\$23,894,000
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Balance to Complete	\$41,106,000
Planned vs. Actual Billings (Cumulative)	(\$22,658,000)
Billed %	-35%



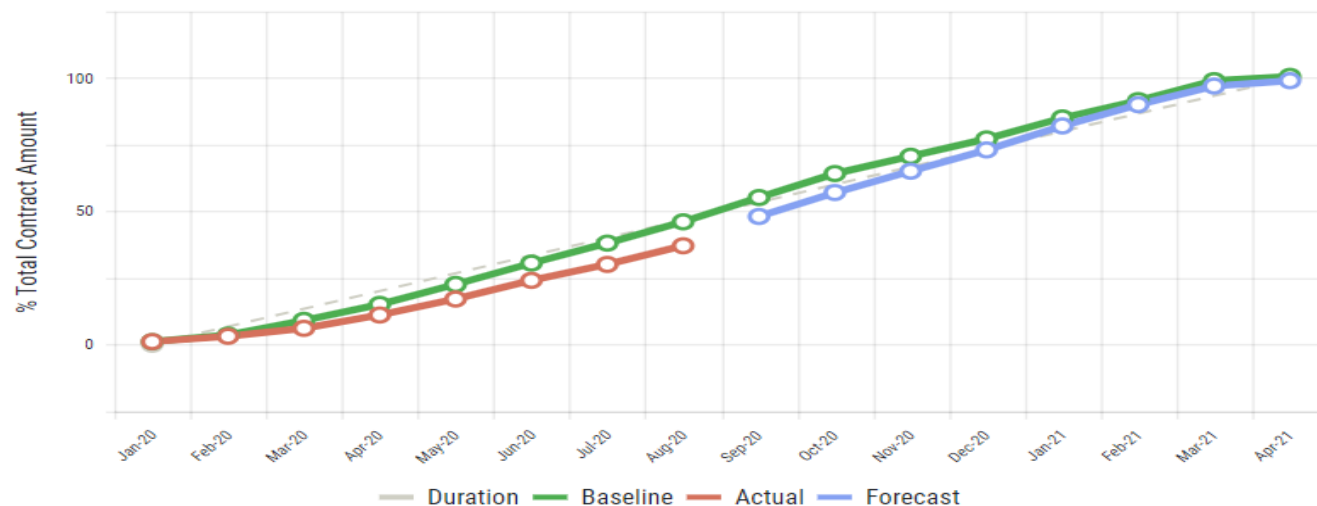
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# Steps to Enterprise Dashboards

## Financials



### Budget Information

Original Contract	\$65,000,000
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### Billing Information

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# 5 Steps to Getting There

## SCHEDULING DEPARTMENT



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# STEP 1

## DEFINE GOALS

- Engage Executive Team
- Engage Project Teams
- They Need to be Measurable
- Assign a Dollar Value if Achieved



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# STEP 2

## DISCOVER WHERE YOU ARE

- Learn what's working / not working
- What reports are currently prepared?
- What dashboards are currently being used?
- What KPIs would your team like to see?



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# STEP 3

## DESIGN YOUR DREAM

- Start looking at tools based on goals and discovery
- Layout a basic data collection plan
- Identify some basic procedures for data creators
- Design dashboards for executive teams/project teams
- Identify a dashboard deliver system



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# STEP 4

## DEVELOP YOUR SYSTEM

- Develop what you designed
- Develop Dashboard / Customization
- Training Materials / Tip Sheets
- Procedure Manual / Tip Sheets
- Quality Standards & Checking
- Timetables for Updating



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# STEP 5

## DEPLOY YOUR PROGRAM

- Start the Implementation Process
- Consistently Monitor Progress



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# Conclusion

## CONTACT

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# Conclusion

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# THANK YOU



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