

Project Name: SmartPM Academic Project
 Scenario Name: Originals
 Project Location: Dunwoody, GA
 Data Date: 2015-11-30



SCHEDULE PERFORMANCE

SPI: 0.562

Planned (91%)



Actual (51%)

Critical Path Delay

61
DAYS

Future Acceleration

22
DAYS

SCHEDULE FEASIBILITY

Schedule Quality

D

Schedule Compression

44%
23%

Forecast Completion

> 3
MONTHS
N/A

MILESTONE	BASELINE	CURRENT	VARIANCE	FORECASTED	COMPRESSION
Framing Substantially Complete	2015-09-28	2015-12-09	72	2015-12-10	22
Substantial Completion	2016-02-02	2016-03-11	38	2016-05-20	64

Last Period Critical Path Delays: 21 Days

Last Period Critical Path Recoveries: 0 Days

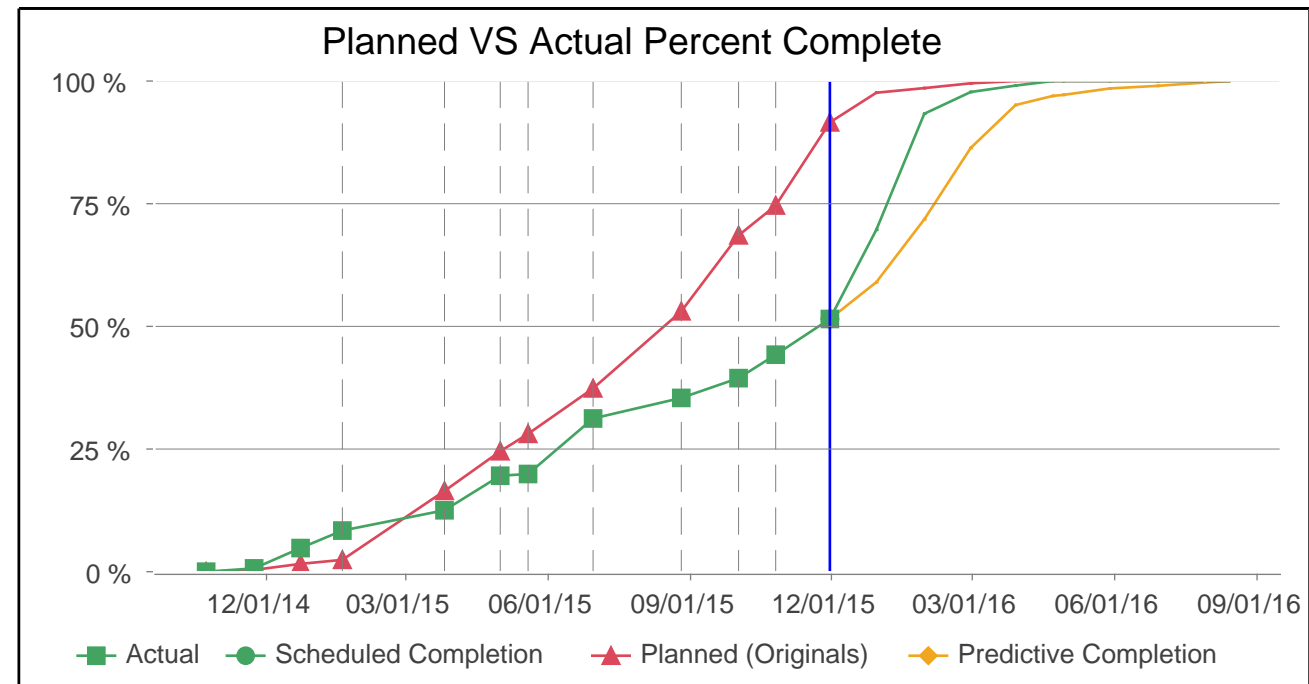
- 171327792 - Rough Electric - 2nd Floor (1 days)
- 171327793 - Install Low Voltage Pathways - 2nd Floor (1 days)
- 171327830 - Insulation Ceilings - 1st Floor (3 days)
- 171327829 - Preliminary Drywall - 1st Floor (17 days)

Last Period Schedule Changes

Total Changes: 70

Critical Path Changes: 18

Acceleration Days: 7



Project Name: SmartPM Academic Project

Scenario Name: Originals

Scenario Type: Full Analysis

Project Location: Dunwoody, GA

Schedule Data Date: 2015-11-30

Rules Applied: No rules applied for this scenario.

The SmartPM Report

Planned

91%

Actual

51%

Schedule Quality Index

Note: The quality metrics shown below reflect the schedule that is being analyzed and do not reflect the schedule from the source system. Please visit the help desk for a list of the changes that SmartPM makes in order to analyze the schedule while importing.

You have 10 critical index(s) that need attention.

QUALITY

D

Finish to Finish

A high amount of finish to finish relationships means that the schedule either lacks detail or is in a compressed state. This increases the risk of an erroneous critical path while limiting the ability to effectively identify and manage delays.

24

8.7%

Finish to Start

A low amount of finish to start relationships means that the schedule either lacks detail or is in a compressed state. This increases the risk of an erroneous critical path while limiting the ability to effectively identify and manage delays.

241

87.6%

Critical Path %

A schedule with too few activities on the critical path is a sign that the schedule does not contain enough detail and/or accurately reflect the true critical path of the job. Similarly, a schedule with a high percentage of activities on the critical path indicates either too little detail or a higher likelihood of the project being in a compressed state.

14

9.8%

Resource Loaded Activities

Schedules that contain activities with resources hours assigned increases visibility on manpower requirements while also being very useful in gauging schedule feasibility. This is considered a “best practice”.

0 0.0%

Start to Finish

Assigning Start to Finish relationships is considered a bad practice.

1 0.4%

Positive Lag

Assignment of excessive amounts of positive lag on activity relationships in a CPM schedule is considered a bad practice.

13 4.7%

Missing Logic

A schedule with a high number of activities that are missing a predecessor and/or successor increases the risk of an erroneous critical path, limits the ability to effectively identify and manage delays and increases the risk of compression.

20 14.0%

Constraints

A high amount of constraints contained in a schedule indicates that there is not enough logical detail in the schedule – making it less reactive when delays occur. This increases the likelihood of an erroneous critical path while limiting the ability to effectively identify and manage delays, increasing the likelihood of compression going unseen.

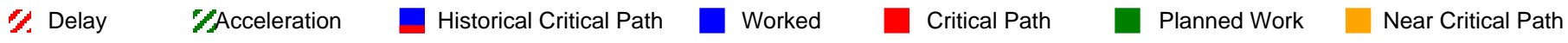
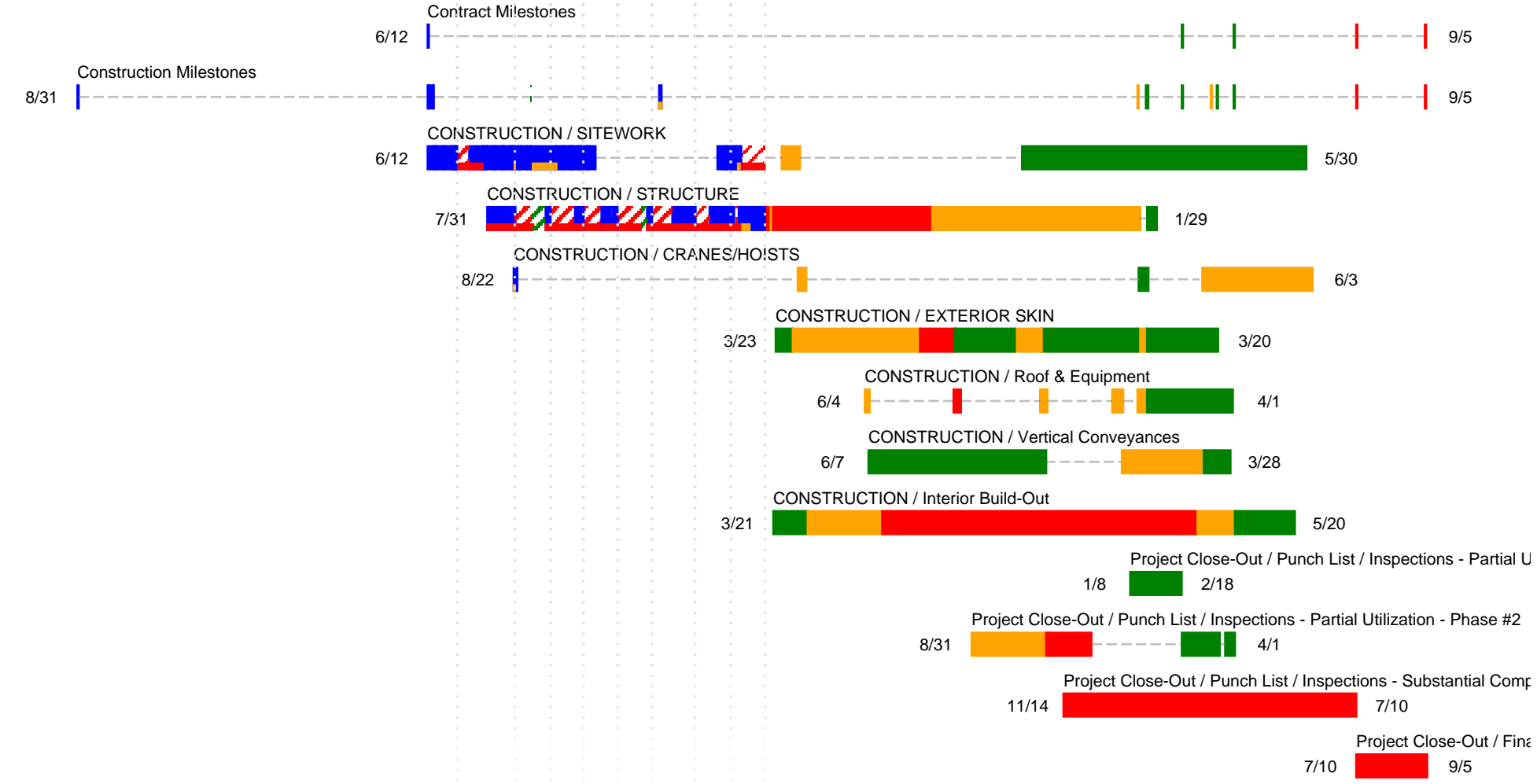
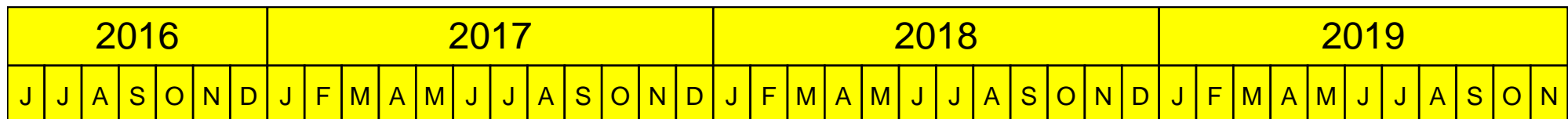
4 2.8%

High Float Activities

An increased level of high float activities indicates the schedule is lacking logic, detail and/or complexity. This increases the risk of an erroneous critical path while limiting the ability to effectively identify and manage delays, increasing the likelihood of compression going unseen leading to an increasing the risk of inefficiencies.

30 21.0%

Schedule Summary:



Delay Table:

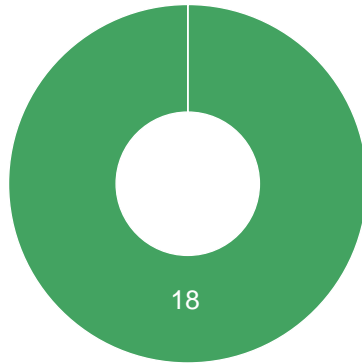
PERIOD	DATA DATE	SCHEDULE END DATE	END DATE VARIANCE		CRITICAL PATH DELAY	CRITICAL PATH ACCELERATION	NET CRITICAL PATH DELAY		DESCRIPTION OF CRITICAL PATH DELAYS AND ACCELERATIONS (IN PERIOD)	PLANNED DELAY ACCELERATION		SCHEDULE COMPRESSION INDEX
			IN PERIOD	CUMULATIVE			IN PERIOD	Cumulative		IN PERIOD	Cumulative	
0	07/06/17	08/09/19		0			0	0	0 Delays 0 Actual Acceleration		0	
1	08/23/17	08/14/19	5	5	9	4	5	5	3 Delays CC.1090 - Shoring & Excavataion @ Tower Base (5 days) CC.1170 - Balance of Site Demolition (3 days) CC.1200 - Demo Site Wall @ Peachtree Rd. (7 days) 2 Accelerations CC.1090 - Shoring & Excavataion @ Tower Base CC.1200 - Demo Site Wall @ Peachtree Rd.	0	0	2.64%
2	09/21/17	08/13/19	-1	4	14	5	9	14	1 Delays CS.0310 - Drilled Piers (Crew 1) (14 days) 1 Accelerations CS.0410 - Pile Caps and Concrete Foundations	10	10	5.64%
3	10/18/17	08/14/19	1	5	19	6	13	27	2 Delays CS.0410 - Pile Caps and Concrete Foundations (13 days) CS.0550 - Form & Place Concrete Columns (12 days) 2 Accelerations CS.0310 - Drilled Piers (Crew 1) CS.0320 - Drilled Piers (Crew 2)	12	22	7.67%
4	11/15/17	08/21/19	7	12	14	0	14	41	4 Delays CS.0410 - Pile Caps and Concrete Foundations (11 days) CS.0810 - M/E/P Underground (Lobby Level) (9 days) CS.0520 - Vertical Foundation Walls (SW 1 & 2) (4 days) CS.0540 - Vertical Foundation Walls (Perimeter, Dock, Interior) (5 days) 1 Accelerations CS.0810 - M/E/P Underground (Lobby Level)	7	29	5.28%
5	12/13/17	08/21/19	0	12	18	13	5	46	4 Delays CS.0410 - Pile Caps and Concrete Foundations (6 days) CS.0810 - M/E/P Underground (Lobby Level) (15 days) CS.0550 - Form & Place Concrete Columns (1 days) CS.0520 - Vertical Foundation Walls (SW 1 & 2) (1 days) 3 Accelerations CS.0820 - Concrete Slab-on-Grade (Lobby Level) CS.0540 - Vertical Foundation Walls (Perimeter, Dock, Interior) CS.1022 - Form / Re-Bar / MEP / Place - Level 2a	5	34	7.63%
6	01/18/18	08/28/19	7	19	16	3	13	59	2 Delays CS.1022 - Form / Re-Bar / MEP / Place - Level 2a (3 days) CS.1032 - Form / Re-Bar / MEP / Place - Level 3a (14 days) 1 Accelerations CS.1032 - Form / Re-Bar / MEP / Place - Level 3a	6	40	10.05%
7	02/15/18	08/30/19	2	21	11	5	6	65	3 Delays CS.1032 - Form / Re-Bar / MEP / Place - Level 3a (1 days) CS.1042 - Form / Re-Bar / MEP / Place - Level 4a (5 days) CS.1046 - Form / Re-Bar / MEP / Place - Level 4b (6 days) 0 Accelerations	4	44	7.31%
8	03/14/18	09/04/19	5	26	19	0	19	84	2 Delays CC.1190 - New Water Line, Tap & Vaults @ P'tree Rd. (by Owner) (18 days) CS.1052 - Form / Re-Bar / MEP / Place - Level 5a (1 days)	14	58	7.61%

PERIOD	DATA DATE	SCHEDULE END DATE	END DATE VARIANCE		CRITICAL PATH DELAY	CRITICAL PATH ACCELERATION	NET CRITICAL PATH DELAY		DESCRIPTION OF CRITICAL PATH DELAYS AND ACCELERATIONS (IN PERIOD)	PLANNED DELAY ACCELERATION		SCHEDULE COMPRESSION INDEX
			IN PERIOD	CUMULATIVE			IN PERIOD	Cumulative		IN PERIOD	Cumulative	
									0 Accelerations			

Audit Log (Critical Changes):

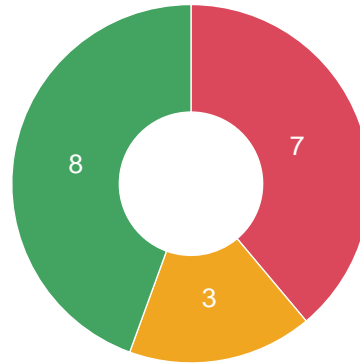
ID	CHANGE ITEM	OLD ITEM	NEW ITEM
MS.0040 (Phase #3 - Substantial Completion (Balance of Work))	Activity (constraint)	No Constraint	FinishOnOrBefore 06/25/2019 04:00 PM
MS.0050 (Final Completion)	Activity (constraint)	No Constraint	FinishOnOrBefore 08/22/2019 04:00 PM
CS.1212 (Form / Re-Bar / MEP / Place - Level 21a)	Activity (planned_duration)	6.0	5.0
CS.1076 (Form / Re-Bar / MEP / Place - Level 7b)	Activity (planned_duration)	5.0	6.0
CS.1116 (Form / Re-Bar / MEP / Place - Level 11b)	Activity (planned_duration)	6.0	5.5
CS.1122 (Form / Re-Bar / MEP / Place - Level 12a)	Activity (planned_duration)	6.0	5.5
CS.1072 (Form / Re-Bar / MEP / Place - Level 7a) - CS.1076 (Form / Re-Bar / MEP / Place - Level 7b)	Logic (lag)	3.0	4.0
CS.1072 (Form / Re-Bar / MEP / Place - Level 7a) - CS.1076 (Form / Re-Bar / MEP / Place - Level 7b)	Logic (type)	SS	FF
CS.1076 (Form / Re-Bar / MEP / Place - Level 7b) - CS.1082 (Form / Re-Bar / MEP / Place - Level 8a)	Logic (lag)	0.0	4.0
CS.1102 (Form / Re-Bar / MEP / Place - Level 10a) - CS.1106 (Form / Re-Bar / MEP / Place - Level 10b)	Logic (lag)	3.0	2.0
CS.1076 (Form / Re-Bar / MEP / Place - Level 7b) - ENV.0040 (Exterior Metal Framing - Level 4)	Logic (lag)	0.0	-2.0
CS.1132 (Form / Re-Bar / MEP / Place - Level 13a) - CS.1136 (Form / Re-Bar / MEP / Place - Level 13b)	Logic (lag)	2.0	3.0
CS.1116 (Form / Re-Bar / MEP / Place - Level 11b) - CS.1122 (Form / Re-Bar / MEP / Place - Level 12a)	Logic (lag)	5.0	4.0
CC.1190 (New Water Line, Tap & Vaults @ P'tree Rd. (by Owner)) - IB.00.0010 (Overhead M/E/P/S Rough-Ins)	Logic (lag)	30.0	5.0
CS.1096 (Form / Re-Bar / MEP / Place - Level 9b) - CS.1106 (Form / Re-Bar / MEP / Place - Level 10b)	Logic (lag)	0.0	-1.0
CS.1092 (Form / Re-Bar / MEP / Place - Level 9a) - CS.1102 (Form / Re-Bar / MEP / Place - Level 10a)	Logic (lag)	0.0	-1.0
CS.1086 (Form / Re-Bar / MEP / Place - Level 8b) - CS.0160 (Erect Pre-Cast (Sequence #1B))	Logic (DELETED)		
CS.1152 (Form / Re-Bar / MEP / Place - Level 15a) - CS.0170 (Re-Mobilize Pre-Cast Erection)	Logic (ADDED)		
CS.1086 (Form / Re-Bar / MEP / Place - Level 8b) - CR.1030 (Install Buck Hoist)	Logic (ADDED)		
CS.1076 (Form / Re-Bar / MEP / Place - Level 7b) - ENV.0010 (Exterior Metal Framing - Level 1)	Logic (ADDED)		

Total Activities



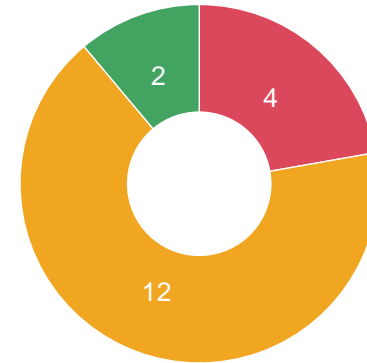
● Total

Started



● Did Not Start ● Late ● On-Time

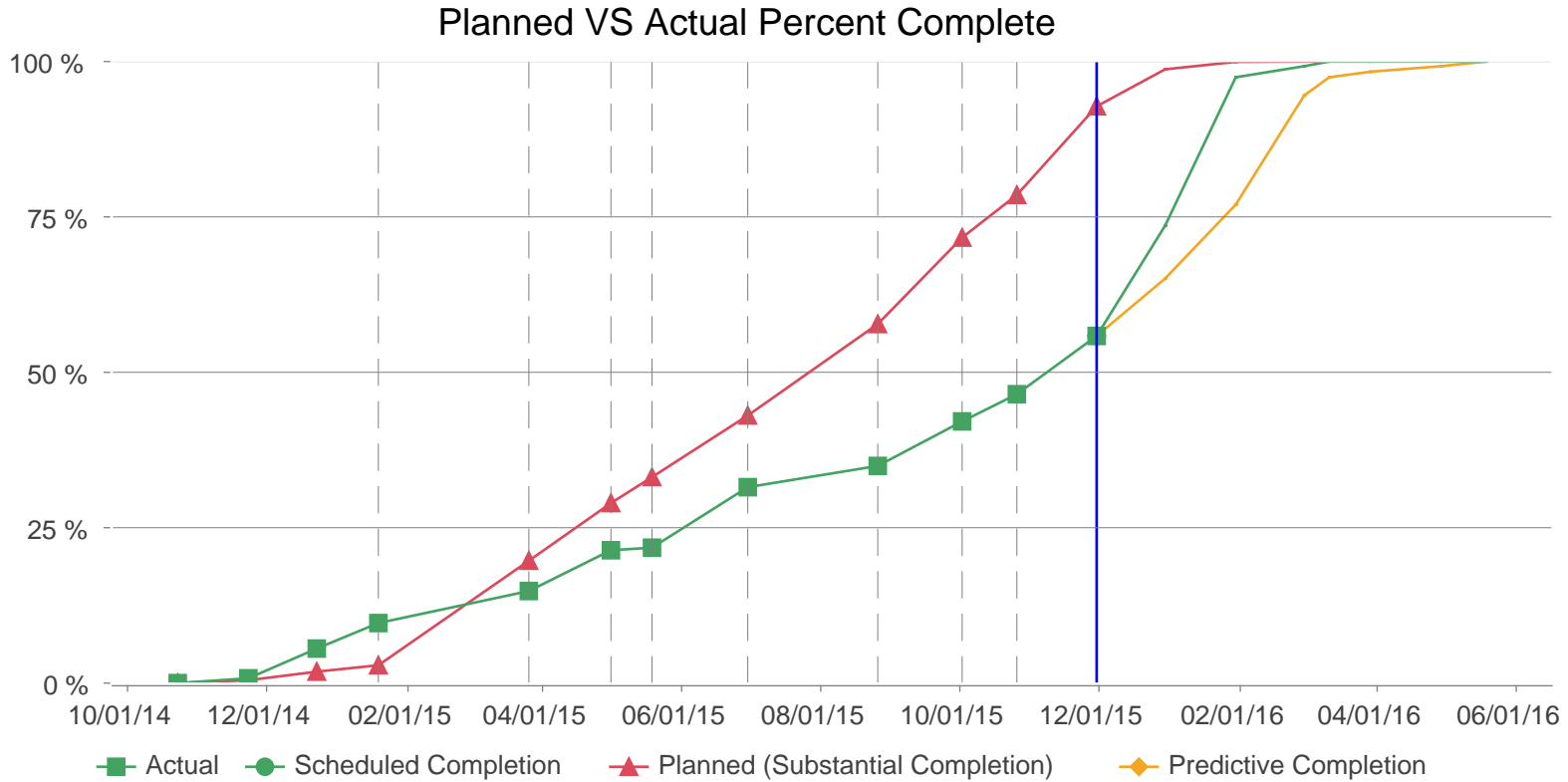
Finished

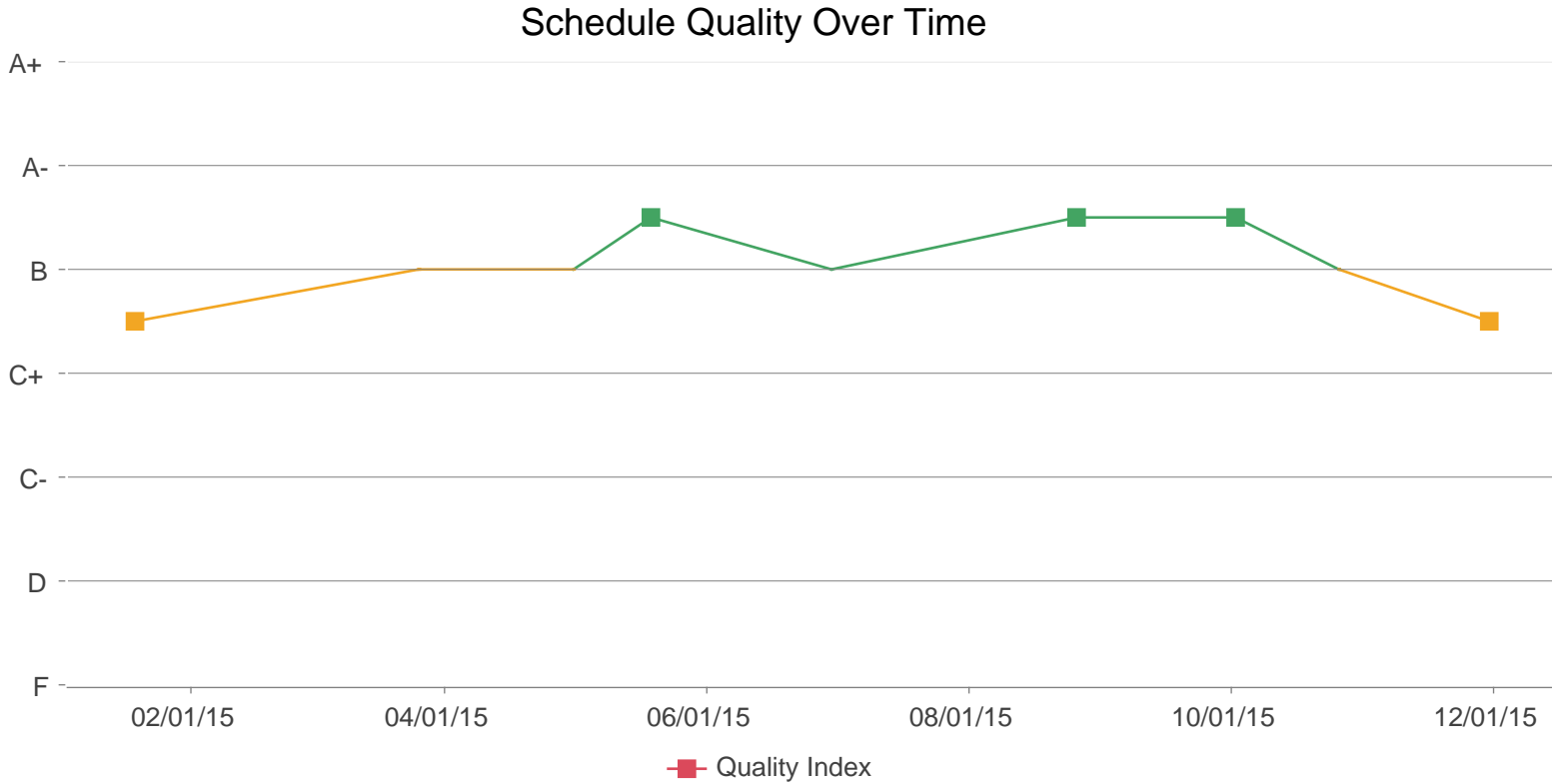


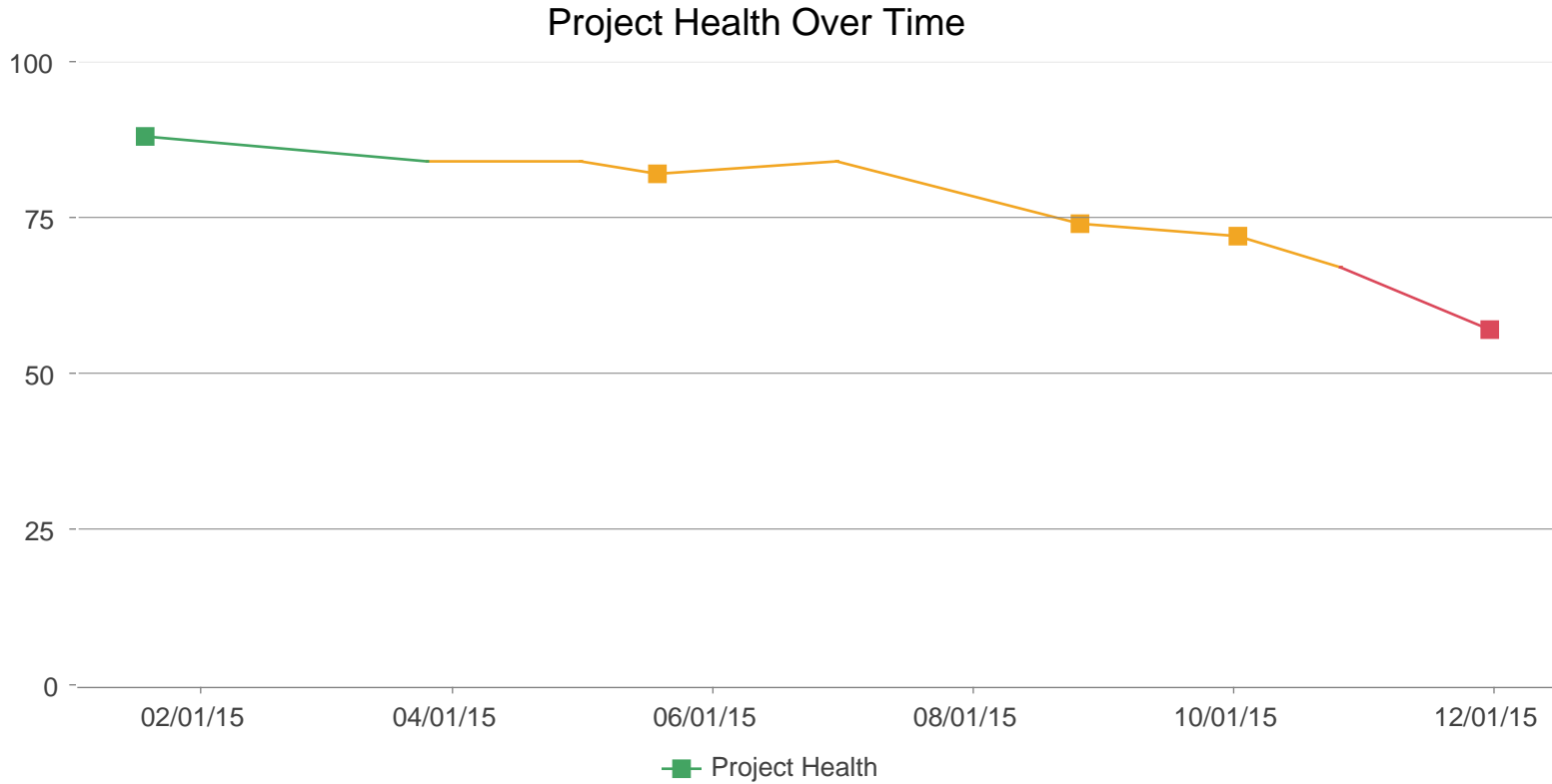
● Did Not Finish ● Late ● On-Time

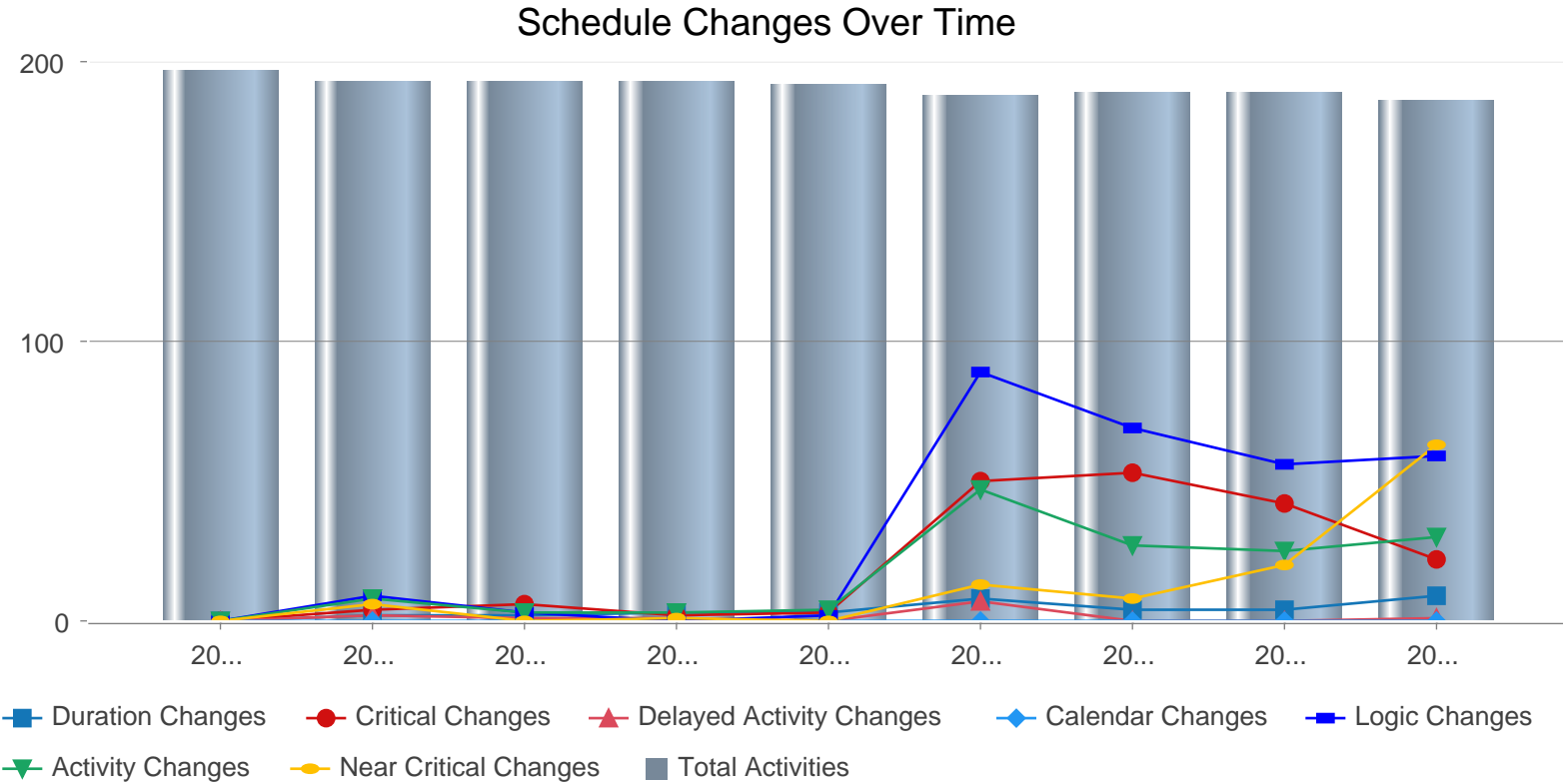
NAME	START OF WINDOW (2015-03-26)				END OF WINDOW (2015-05-01)				VARIANCE			
	Start Date	Finish Date	Progress	Total Float	Start Date	Finish Date	Progress	Total Float	Start Date	Finish Date	Progress	Total Float
15 - Elevator - Shop Drawings	2015-03-03A	2015-04-24	53.33%	47	2015-03-03A	2015-05-14	77.78%	45	0 days	20 days	24.45%	-2
16 - Fire Sprinkler - Shop Drawings Prepare/ Review	2015-03-09A	2015-05-29	1%	73	2015-03-09A	2015-04-30A	100%		0 days	-29 days	99%	
21 - Elevator - Procure	2015-04-27	2015-08-31	0%	47	2015-05-15	2015-09-21	0%	45	18 days	21 days	0%	-2
22 - Switchgear & Transformers - Procure	2015-02-20	2015-08-03	0%	58	2015-02-20	2015-09-04	0%	45	0 days	32 days	0%	-13
23 - I-Joists - Procure	2015-02-20	2015-06-19	0%	24	2015-02-20	2015-07-27	0%	11	0 days	38 days	0%	-13
24 - Glulam - Procure	2015-02-20	2015-06-19	0%	20	2015-02-20	2015-07-27	0%	7	0 days	38 days	0%	-13
19 - Mechanical Units - Shop Drawings	2015-03-23A	2015-05-29	1%	64	2015-03-23A	2015-04-30A	100%		0 days	-29 days	99%	
S80 - Excavation and Grading	2015-03-18A	2015-04-02	50%	0	2015-03-18A	2015-04-10A	100%		0 days	8 days	50%	
S140 - Site Power	2015-04-03	2015-04-10	0%	242	2015-04-08A	2015-04-24A	100%		5 days	14 days	100%	
S90 - Site Water - Install, Test & Backfill	2015-04-03	2015-04-08	0%	105	2015-04-01A	2015-04-17A	100%		-2 days	9 days	100%	

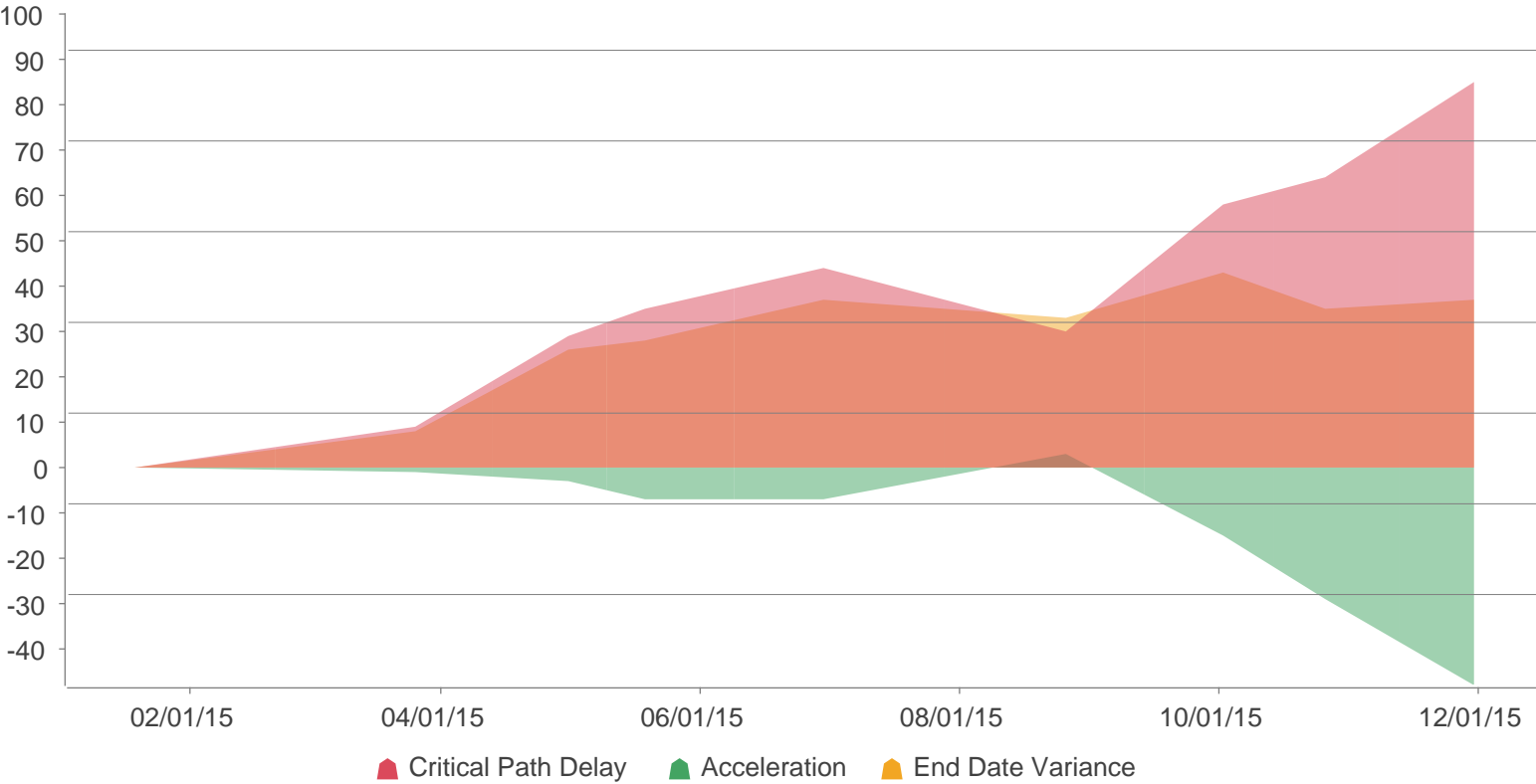
NAME	START OF WINDOW (2015-03-26)				END OF WINDOW (2015-05-01)				VARIANCE			
	Start Date	Finish Date	Progress	Total Float	Start Date	Finish Date	Progress	Total Float	Start Date	Finish Date	Progress	Total Float
S110 - Site Fire Line - Exc. Install, Test & Backfill	2015-04-09	2015-04-16	0%	105	2015-04-01A	2015-04-17A	100%		-8 days	1 days	100%	
S100 - Site Storm Drain- Exc. Install, Test & Backfill	2015-04-03	2015-04-17	0%	108	2015-04-01A	2015-04-24A	100%		-2 days	7 days	100%	
S120 - Site Sewer- Exc. Install, Test & Backfill	2015-04-03	2015-04-13	0%	108	2015-04-01A	2015-04-17A	100%		-2 days	4 days	100%	
FS20 - Excavate Footing Pads and Grade Beams	2015-04-09	2015-04-17	0%	0	2015-04-29A	2015-05-07	28.57%	0	20 days	20 days	28.57%	0
FS10 - Concrete Survey and Layout	2015-04-03	2015-04-08	0%	0	2015-04-27A	2015-04-28A	100%		24 days	20 days	100%	
FS30 - Bottom of Pad Inspection and Sign-off	2015-04-20	2015-04-20	0%	0	2015-05-08	2015-05-08	0%	0	18 days	18 days	0%	0
FS50 - Install Rebar at Elevator Pit, Pads and Grade Beams	2015-04-30	2015-05-06	0%	0	2015-05-20	2015-05-22	0%	0	20 days	16 days	0%	0
FS40 - Form Elevator Pit, Curbs Pads and Grade Beams	2015-04-21	2015-04-29	0%	0	2015-05-11	2015-05-19	0%	0	20 days	20 days	0%	0



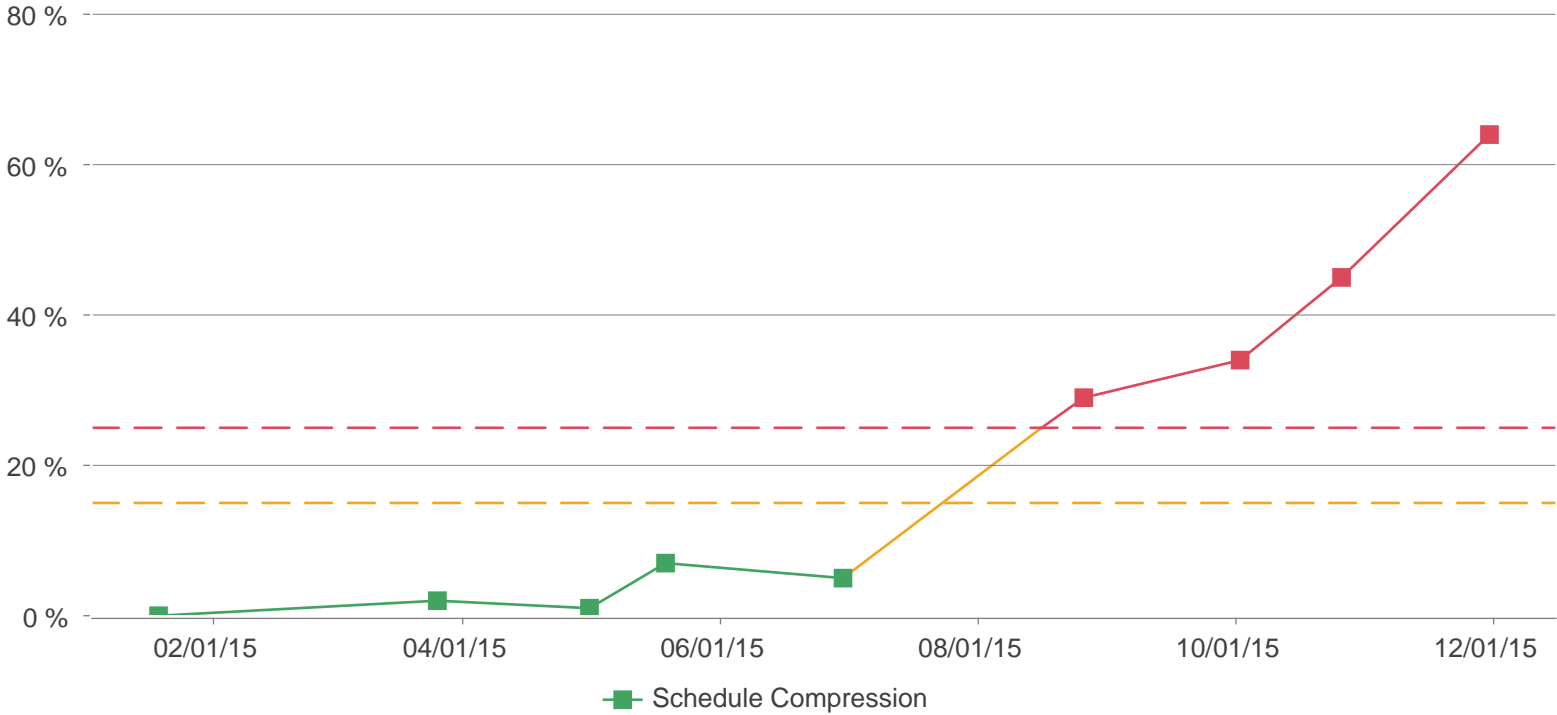


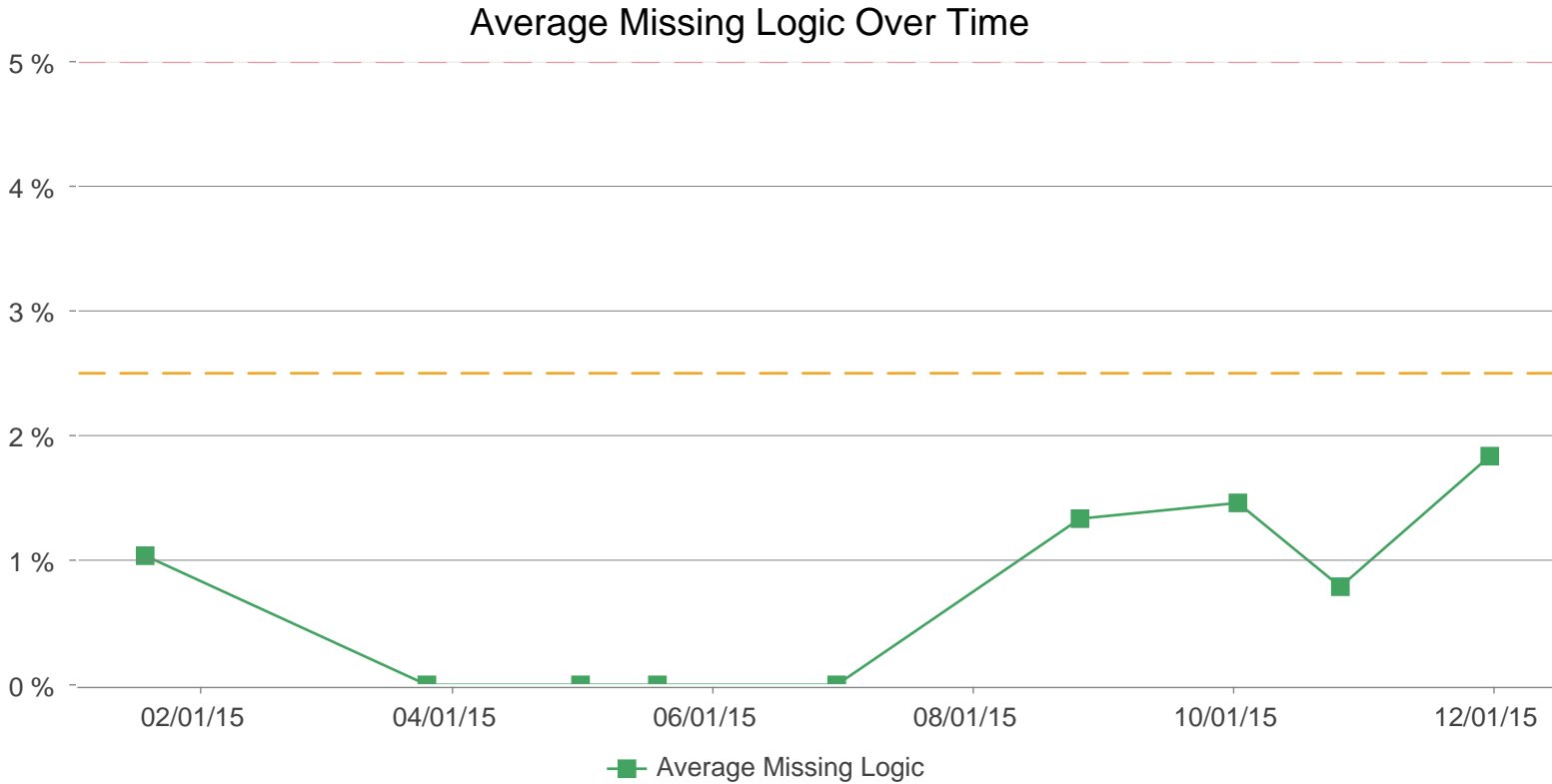


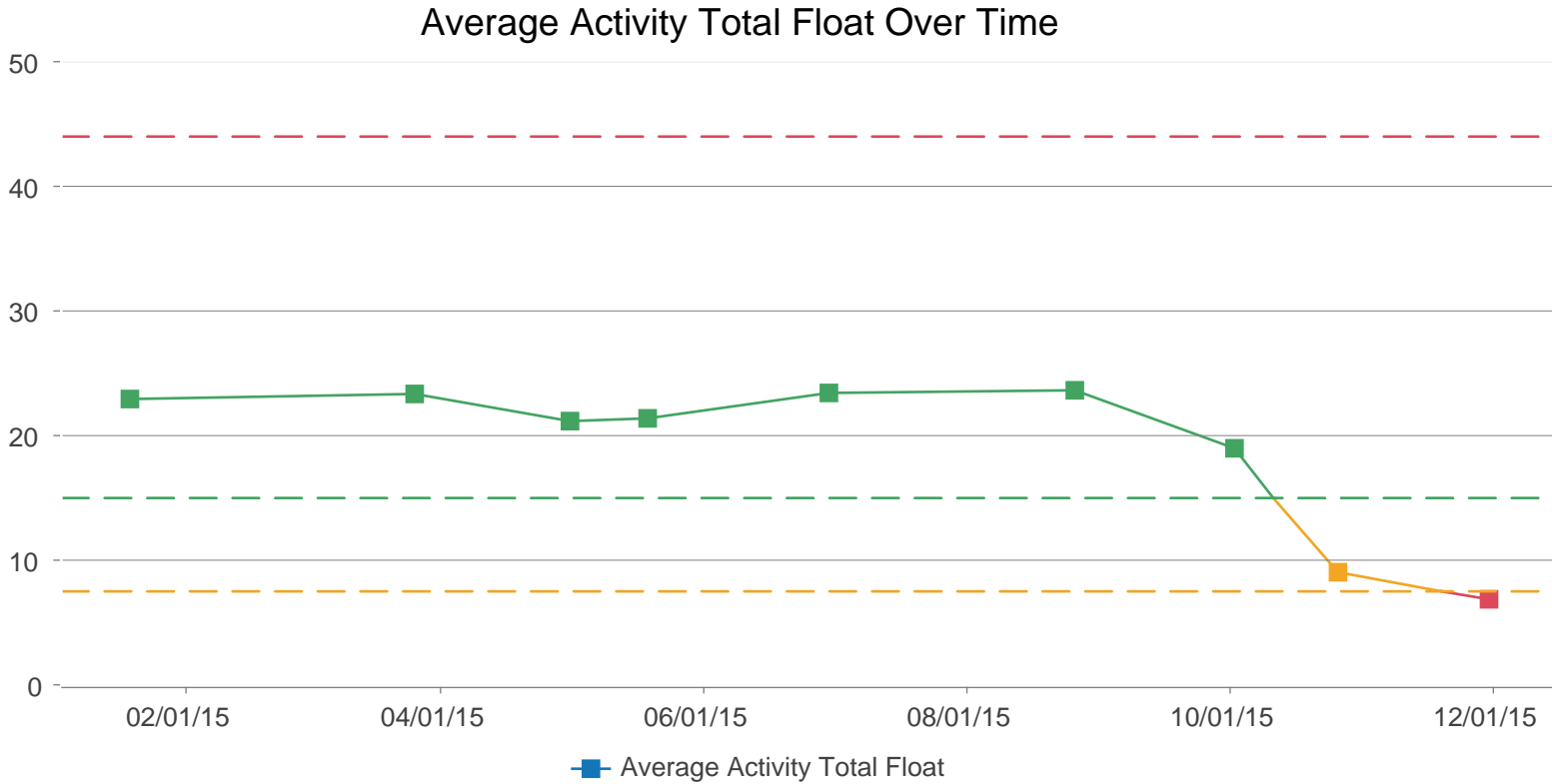




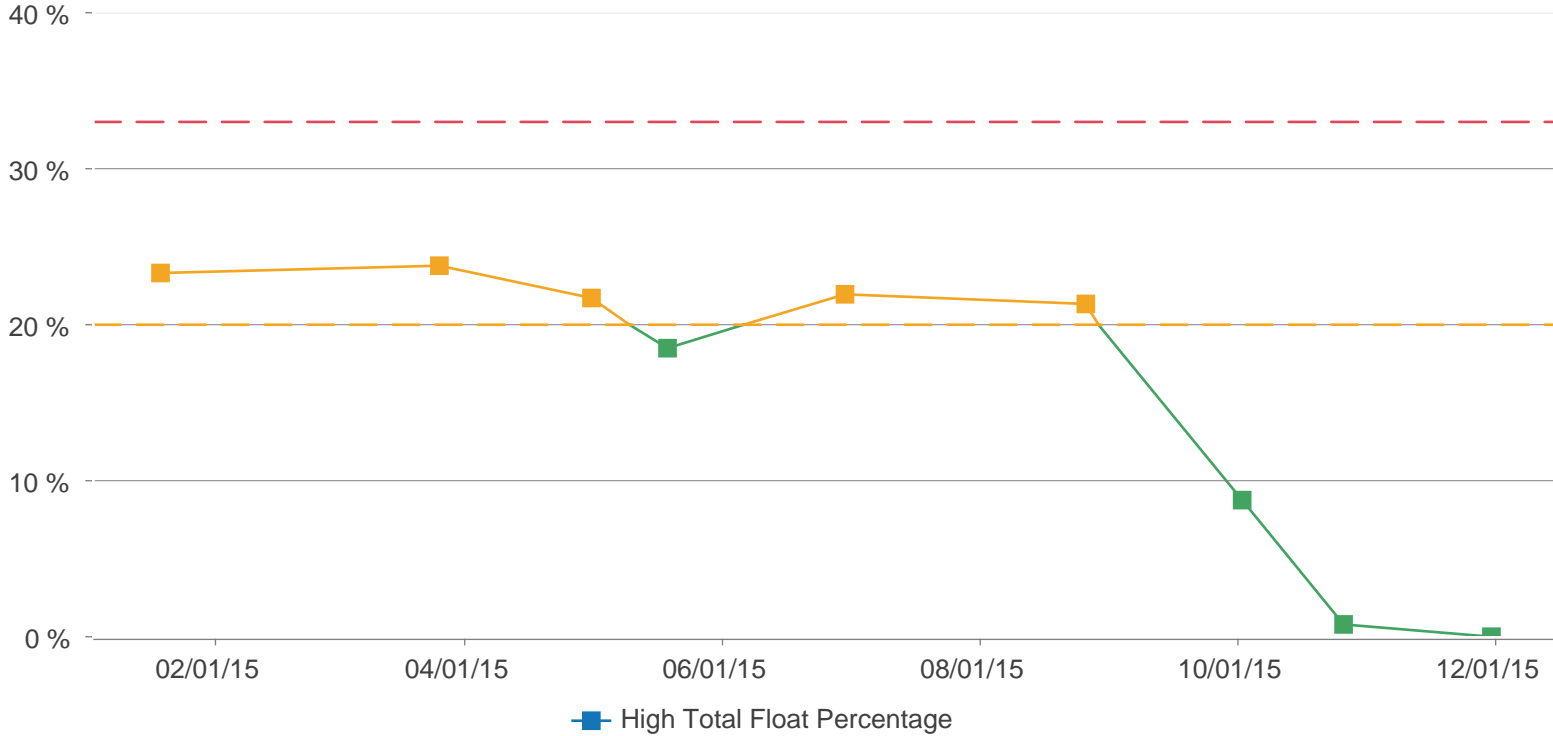
Schedule Compression Over Time

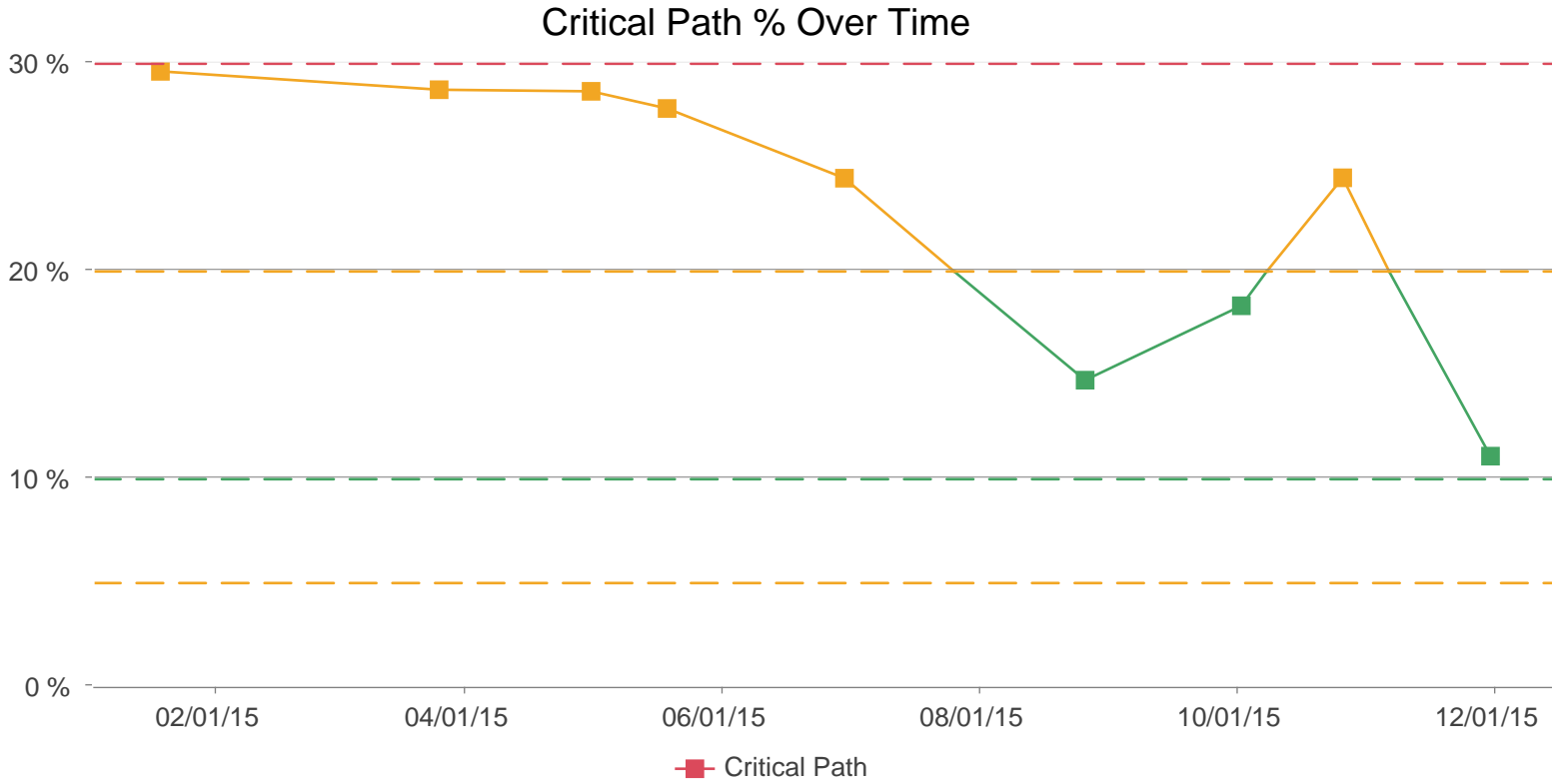






High Total Float Activity Percentage Over Time





Project Name: SmartPM Academic Project

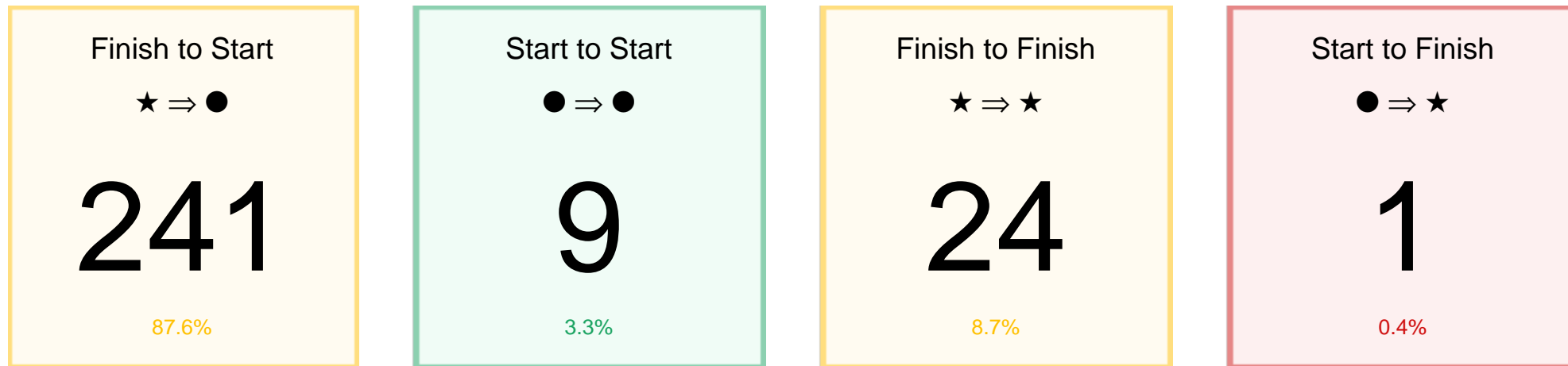
Scenario Name: Originals

Scenario Type: Full Analysis

Schedule Data Date: 2015-11-30



275 Total Relationships



It is considered industry best practices to maximize the usage of "Finish to Start" (FS) logic ties, minimize the usage of "Start to Start" (SS) and "Finish to Finish" (FF) logic ties, and to never use "Start to Finish" (SF) logic ties. The overuse of SS and FF logic ties is an indicator of a schedule that lacks detail or is at a risk of being too compressed. Both of these items increase the risk of inefficiencies due to trade stacking, resource mismanagement or erroneous critical and near critical path(s).

You have 138 Activities and 5 Milestones with 10 critical index(s) that need attention.

Resource Loaded Activities

Schedules that contain activities with resources hours assigned increases visibility on manpower requirements while also being very useful in gauging schedule feasibility. This is considered a “best practice”.

0 0.0%

Missing Logic

A schedule with a high number of activities that are missing a predecessor and/or successor increases the risk of an erroneous critical path, limits the ability to effectively identify and manage delays and increases the risk of compression.

20 14.0%

Negative Lag

Assignment of excessive amounts of negative lag on activity relationships in a CPM schedule is considered a bad practice.

23 8.4%

Critical Path %

A schedule with too few activities on the critical path is a sign that the schedule does not contain enough detail and/or accurately reflect the true critical path of the job. Similarly, a schedule with a high percentage of activities on the critical path indicates either too little detail or a higher likelihood of the project being in a compressed state.

14 9.8%

Positive Lag

Assignment of excessive amounts of positive lag on activity relationships in a CPM schedule is considered a bad practice.

13 4.7%

Constraints

A high amount of constraints contained in a schedule indicates that there is not enough logical detail in the schedule – making it less reactive when delays occur. This increases the likelihood of an erroneous critical path while limiting the ability to effectively identify and manage delays, increasing the likelihood of compression going unseen.

4 2.8%

High Float Activities

An increased level of high float activities indicates the schedule is lacking logic, detail and/or complexity. This increases the risk of an erroneous critical path while limiting the ability to effectively identify and manage delays, increasing the likelihood of compression going unseen leading to an increasing the risk of inefficiencies.

30 **21.0%**

High Duration Activities

An increased level of high duration activities indicates the schedule is lacking logic, detail and/or complexity. This increases the risk of an erroneous critical path while limiting the ability to effectively identify and manage delays.

0 **0.0%**

Avg. Activity Total Float

A high average activity total float indicates the schedule is lacking logic, detail and/or complexity. This increases the risk of an erroneous critical path while limiting the ability to effectively identify and manage delays, increasing the likelihood of compression going unseen leading to an increasing the risk of inefficiencies.

20

Total Relationships

A low ratio of relationships to schedule activities means the schedule is lacking logic, detail and/or complexity. This increases the risk of an erroneous critical path while limiting the ability to effectively identify and manage delays.

275 **1.9:1**

Activities Riding Data Date

Activities that are riding the data date are those activities who can start based on their current logic but are being pushed out due to the data date, this can be indicative of missing or erroneous logic. If the activity has not started because of another activity later in the schedule then the appropriate relationship should be added to represent this dependency.

2 **1.4%**

Dangling Activities

Activities that are unbounded, missing a FS/SS predecessor and/or FS/FF successor, is considered a bad scheduling practice since this could cause a schedule not to be impacted if the unbounded activity is delayed.

7 **4.9%**

Unstated Activities

An unstated activity is defined as an incomplete activity where the start/finish date is prior to the data date. The start date may be before the data date if the activity has already started.

0

0.0%

Duplicate Relationships

A duplicate relationship is a pair of activities which have both a FS/FF or FS/SS relationship.

3

1.1%

Changed Actual Dates

Changing actual start and finish dates can result in an erroneous historical critical path and may cause discrepancies in the delay analysis. (Includes completed activities)

10

4.1%

Remaining Duration Discrepancy

Activities where the remaining duration conflicts with the remaining percent complete and planned duration.

0

0.0%

Decreased Percent Complete

Changes to an activity's percent complete often indicates that the schedule is not being properly maintained and the reliability of the progress data is questionable, this may result in an erroneous historical critical path and delay analysis discrepancies. (Includes completed activities)

0

0.0%

Started With No Progress

Activities that are marked started with no progress is considered bad practice. For example, marking a activity as started to release a start-to-start tie instead of correcting the underlying logic, or scheduling based on remaining duration changes instead of percent complete. (Includes completed activities)

0

0.0%

Future Actual Dates

Future actual start and finish dates tend to be based on approximations instead of what has actually happened, resulting in a non-responsive plan. (Includes completed activities)

0

0.0%

Missing Actual Finish Date

Activities that are marked 100% complete without setting a actual finish date often indicates bad schedule updating practices. (Includes completed activities)

0

0.0%

Note: The quality metrics shown above reflect the schedule that is being analyzed and do not reflect the schedule from the source system. Please visit the help desk for a list of the changes that SmartPM makes in order to analyze the schedule while importing.