EVMS Training Snippet Library:

IMS Monthly Review

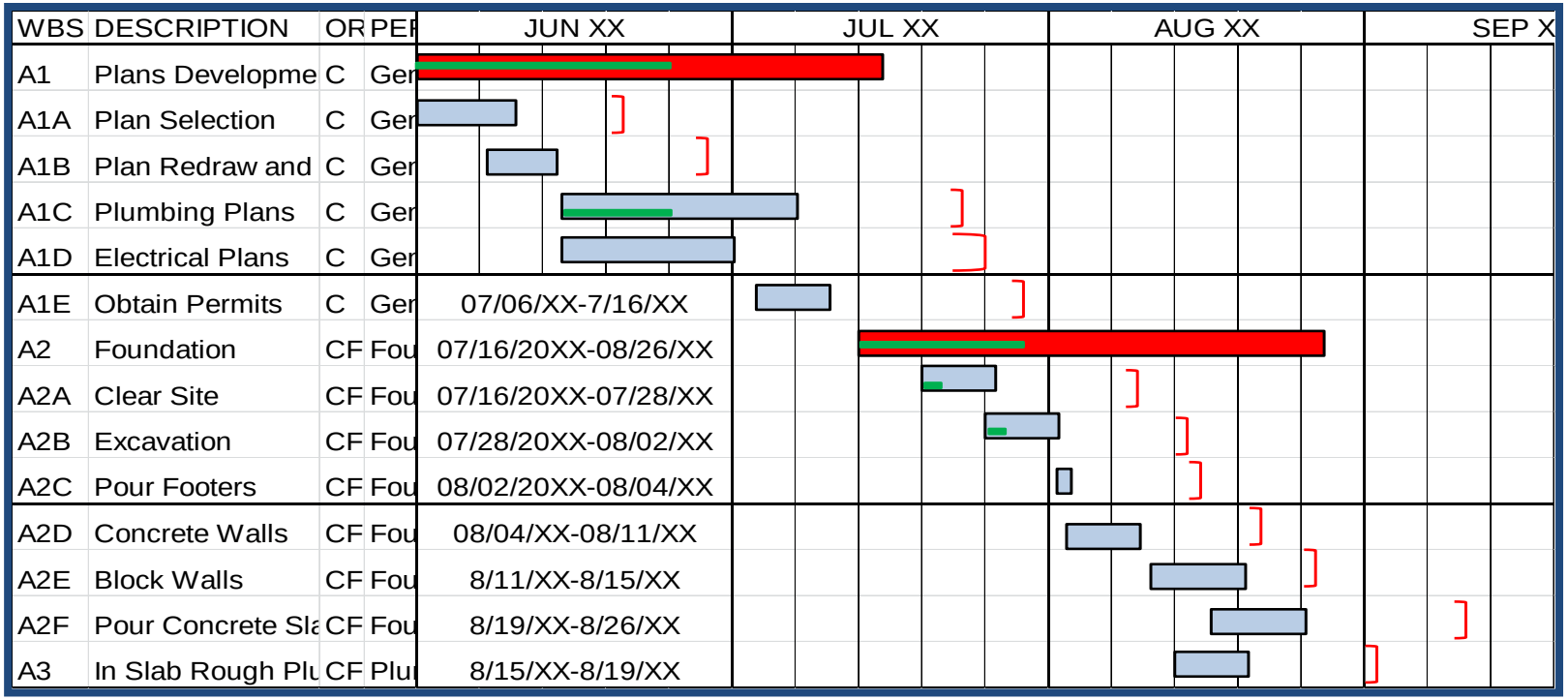
Office of Acquisition and Project Management (OAPM) MA-60
U. S. Department of Energy
July 2014

Recommended Monthly Reporting Package

- **Contract should contain the IMS deliverables**
  - IMS in native format for each reporting period
  - Reporting period Summary Report
    - Critical Path Analysis
    - Schedule Margin management
    - DOE Schedule Health Metrics
    - Risk Narrative
    - Baseline Change Summary
  - Data file of selected fields

Reading the Schedule Reports

- Float Analysis
- Critical Path Analysis
- Validity Indicators
- Metrics



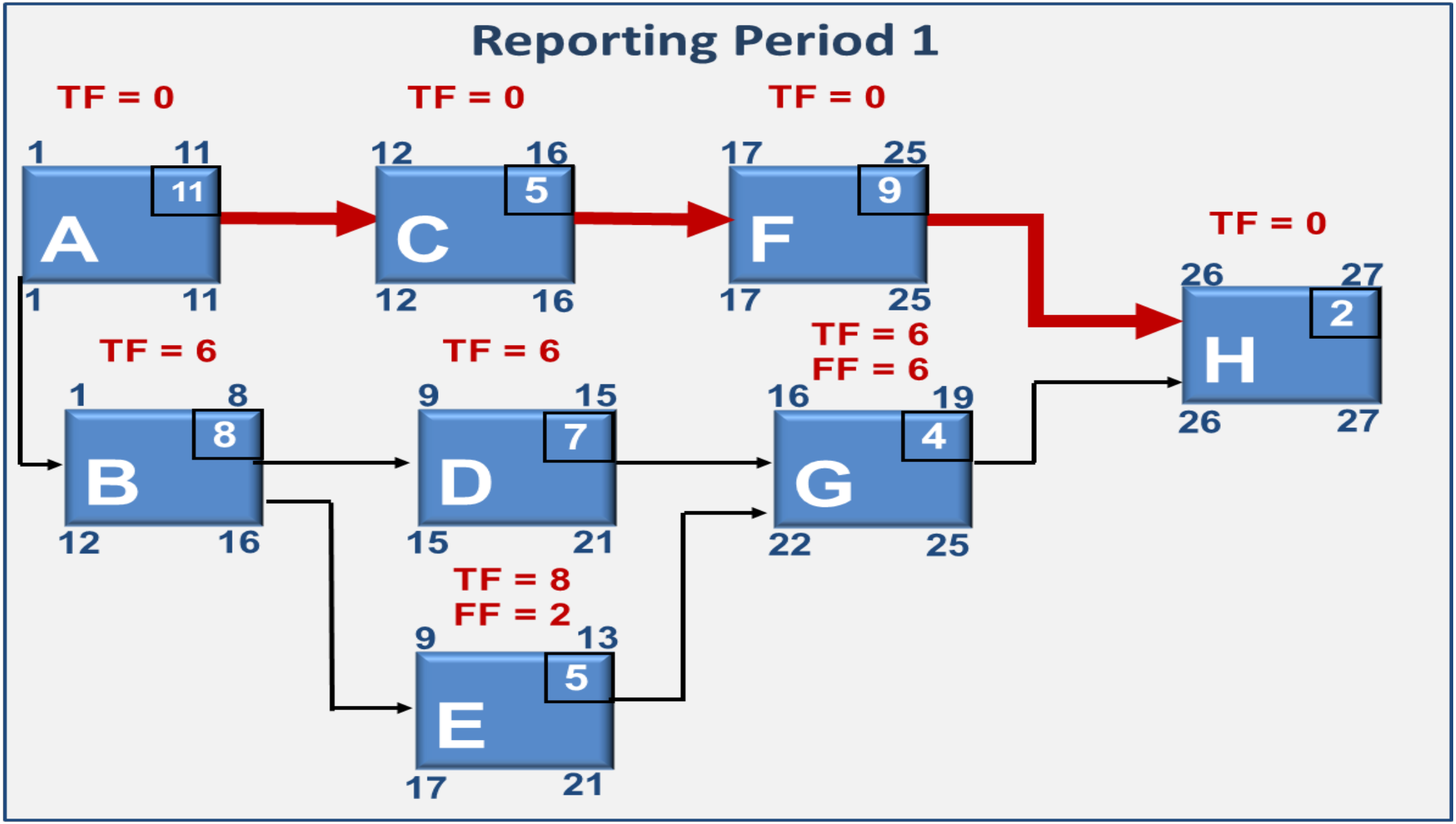
WBS	DESCRIPTION	OR	PER	JUN XX	JUL XX	AUG XX	SEP X
A1	Plans Developme	C	Ger				
A1A	Plan Selection	C	Ger				
A1B	Plan Redraw and	C	Ger				
A1C	Plumbing Plans	C	Ger				
A1D	Electrical Plans	C	Ger				
A1E	Obtain Permits	C	Ger	07/06/XX-7/16/XX			
A2	Foundation	CF	Fou	07/16/20XX-08/26/XX			
A2A	Clear Site	CF	Fou	07/16/20XX-07/28/XX			
A2B	Excavation	CF	Fou	07/28/20XX-08/02/XX			
A2C	Pour Footers	CF	Fou	08/02/20XX-08/04/XX			
A2D	Concrete Walls	CF	Fou	08/04/XX-08/11/XX			
A2E	Block Walls	CF	Fou	8/11/XX-8/15/XX			
A2F	Pour Concrete Sla	CF	Fou	8/19/XX-8/26/XX			
A3	In Slab Rough Plu	CF	Plu	8/15/XX-8/19/XX			

Assessing Schedule Position (Float Analysis)

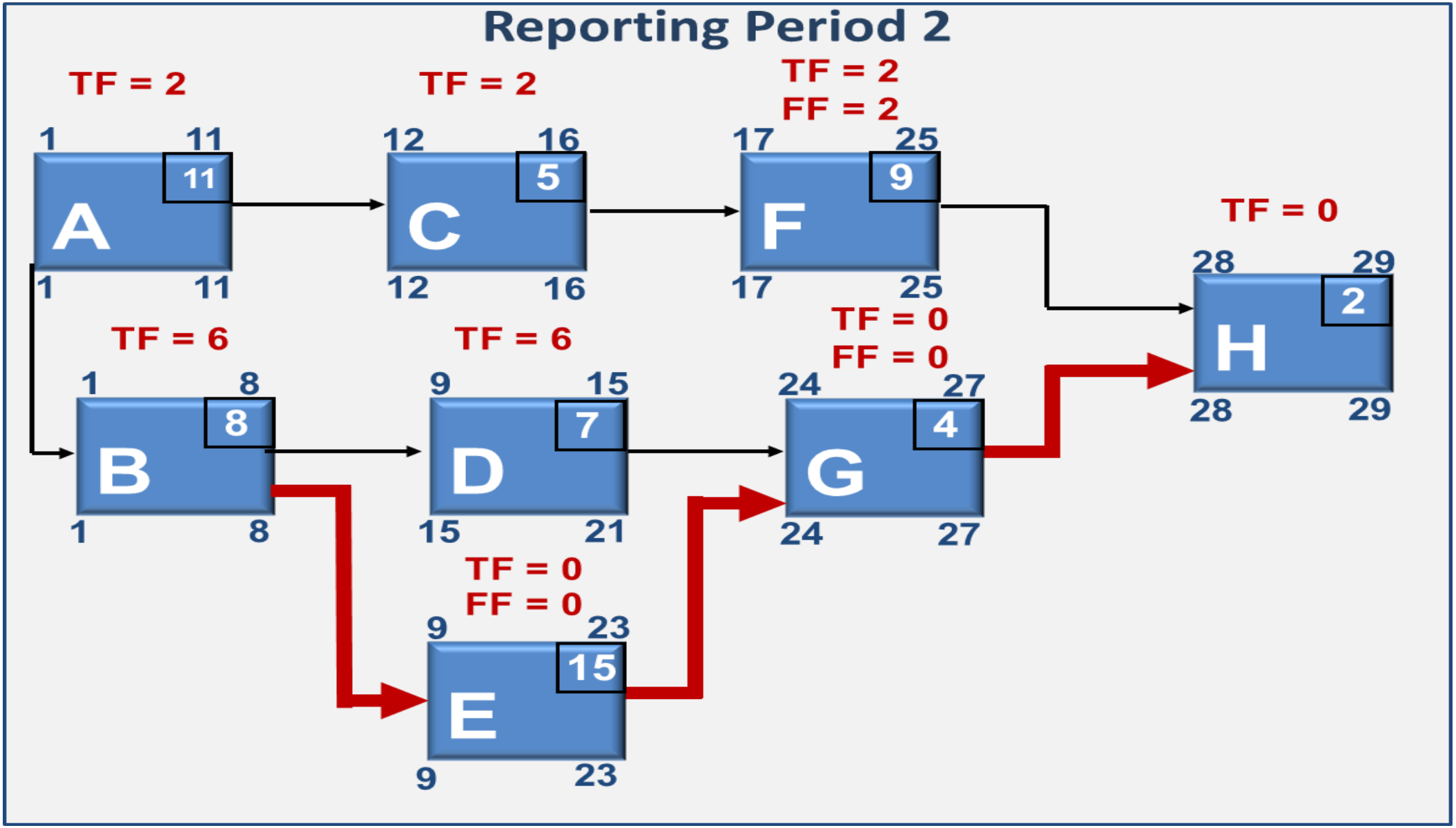
Days of Total Float

Activity Path	Reporting Period 1	Reporting Period 2	Reporting Period 3	Reporting Period 4
Path A	15	18	13	-12
Path B	14	12	13	-14
Path C	13	15	15	15
Path D	17	15	14	26
Path E	15	18	17	13
Path F	14	40	40	31
Path G	16	17	18	12
Path H	16	Complete	Complete	Complete
Path I	17	17	17	12
Path J	14	28	14	-14

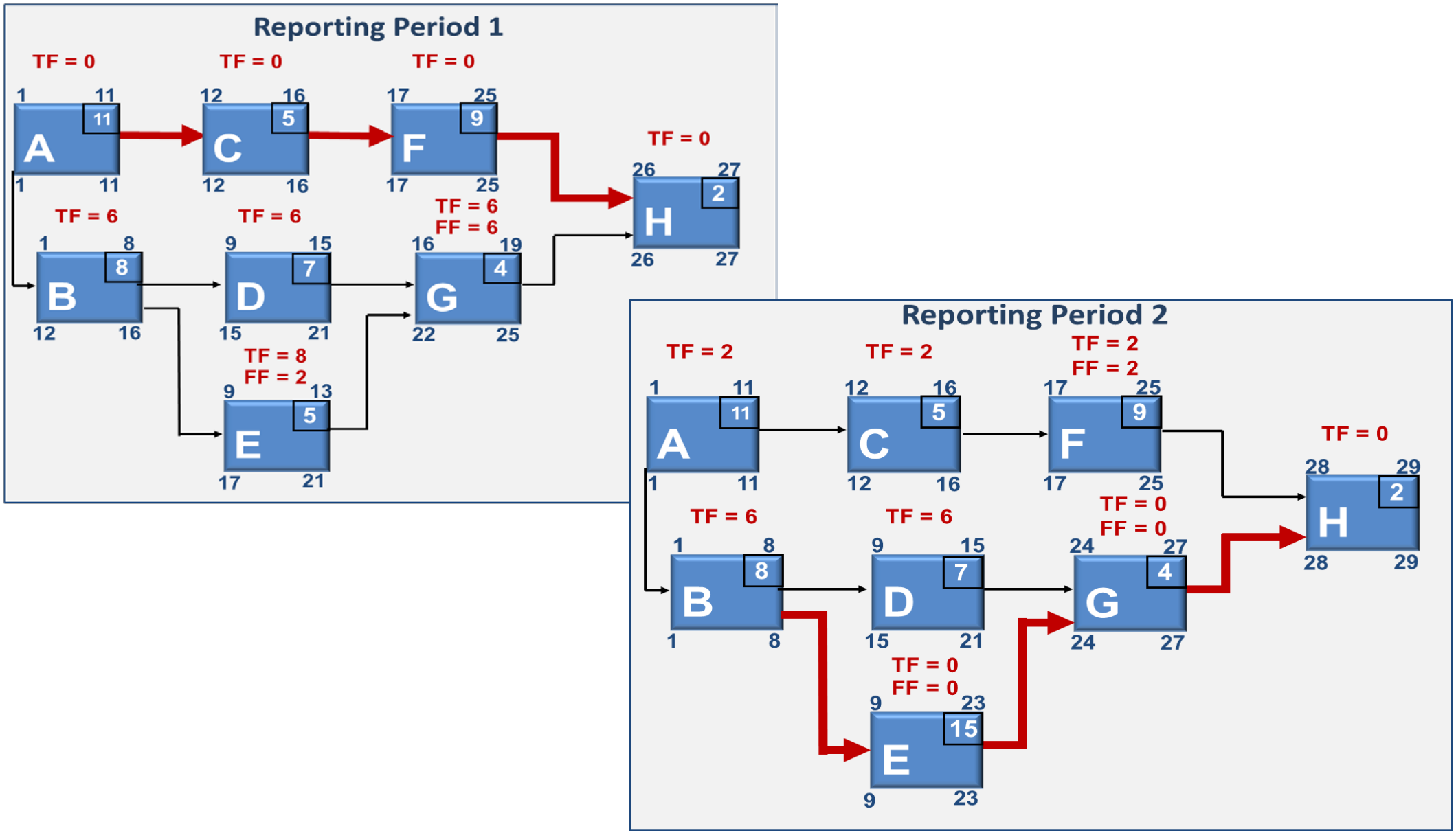
Assessing Schedule Position (Critical Path Analysis)



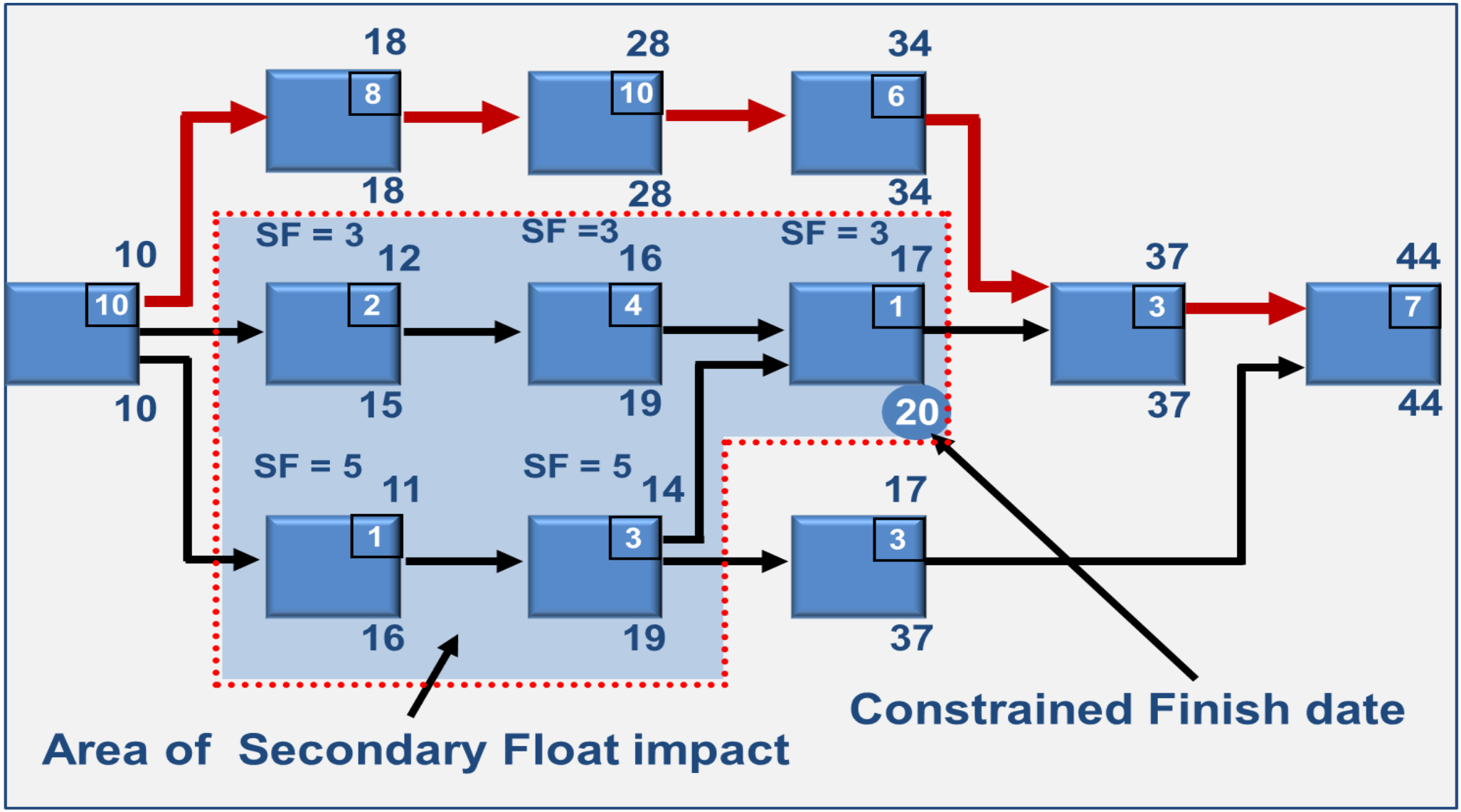
Assessing Schedule Position (Critical Path Analysis)



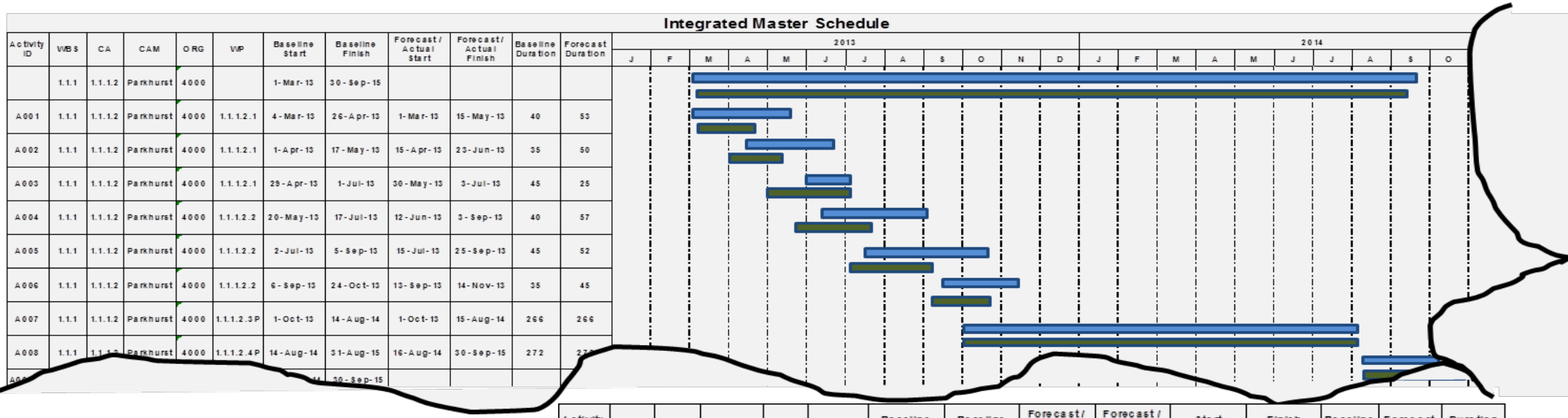
Assessing Schedule Position (Critical Path Analysis)



Assessing Schedule Position (Secondary Path Analysis)



Assessing Schedule Performance Against the Baseline

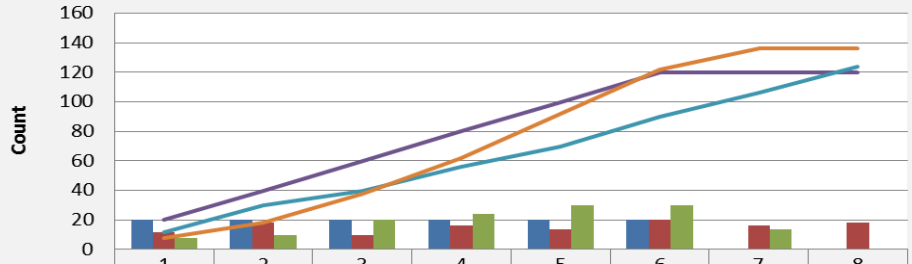


Activity ID	WBS	CA	CAM	ORG	WP	Baseline Start	Baseline Finish	Forecast / Actual Start	Forecast / Actual Finish	Baseline Duration	Forecast Duration
	1.1.1	1.1.1.2	Parkhurst	4000		1-Mar-13	30-Sep-15				
A001	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.1	4-Mar-13	26-Apr-13	1-Mar-13	15-May-13	40	53
A002	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.1	1-Apr-13	17-May-13	15-Apr-13	23-Jun-13	35	50
A003	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.1	29-Apr-13	1-Jul-13	30-May-13	3-Jul-13	45	25
A004	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.2	20-May-13	17-Jul-13	12-Jun-13	3-Sep-13	40	57
A005	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.2	2-Jul-13	5-Sep-13	15-Jul-13	25-Sep-13	45	52
A006	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.2	6-Sep-13	24-Oct-13	13-Sep-13	14-Nov-13	35	45
A007	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.3P	1-Oct-13	14-Aug-14	1-Oct-13	15-Aug-14	266	266
A008	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.4P	14-Aug-14	31-Aug-15	16-Aug-14	30-Sep-15	272	272
							30-Sep-15				

Activity ID	WBS	CA	CAM	ORG	WP	Baseline Start	Baseline Finish	Forecast / Actual Start	Forecast / Actual Finish	Start Variance	Finish Variance	Baseline Duration	Forecast Duration	Duration Variance
	1.1.1	1.1.1.2	Parkhurst	4000		1-Mar-13	30-Sep-15							
A001	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.1	4-Mar-13	26-Apr-13	1-Mar-13	15-May-13	3	-17	40	53	-13
A002	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.1	1-Apr-13	17-May-13	15-Apr-13	23-Jun-13	-10	-24	35	50	-15
A003	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.1	29-Apr-13	1-Jul-13	30-May-13	3-Jul-13	-23	-2	45	25	20
A004	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.2	20-May-13	17-Jul-13	12-Jun-13	3-Sep-13	-18	-30	40	57	-17
A005	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.2	2-Jul-13	5-Sep-13	15-Jul-13	25-Sep-13	-9	-12	45	52	-7
A006	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.2	6-Sep-13	24-Oct-13	13-Sep-13	14-Nov-13	-6	-15	35	45	-10
A007	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.3P	1-Oct-13	14-Aug-14	1-Oct-13	14-Aug-14	0	0	266	266	0
A008	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.4P	14-Aug-14	31-Aug-15	14-Aug-14	31-Aug-15	0	0	272	272	0
A009	1.1.1	1.1.1.2	Parkhurst	4000	1.1.1.2.5		30-Sep-15							

Use of Schedule Trend Data to Validate Schedule Forecast

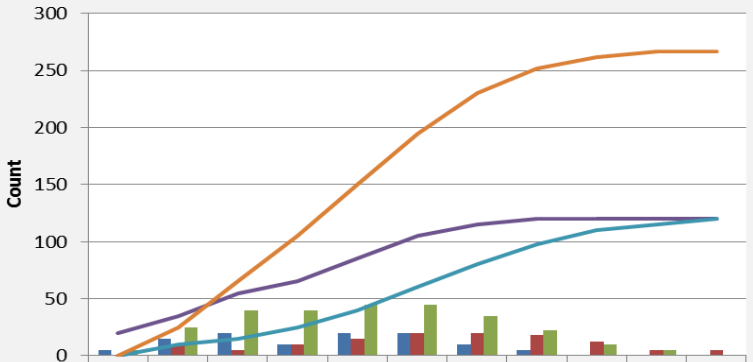
Missed Forecast Starts



	1	2	3	4	5	6	7	8
Period Forecast Starts	20	20	20	20	20	20	0	0
Period Actual Starts	12	18	10	16	14	20	16	18
Period Re-Planned	8	10	20	24	30	30	14	0
Cummulative Forcast Starts	20	40	60	80	100	120	120	120
Cummulative Actual Starts	12	30	40	56	70	90	106	124
Cumulative Replan	8	18	38	62	92	122	136	136

Reporting Period

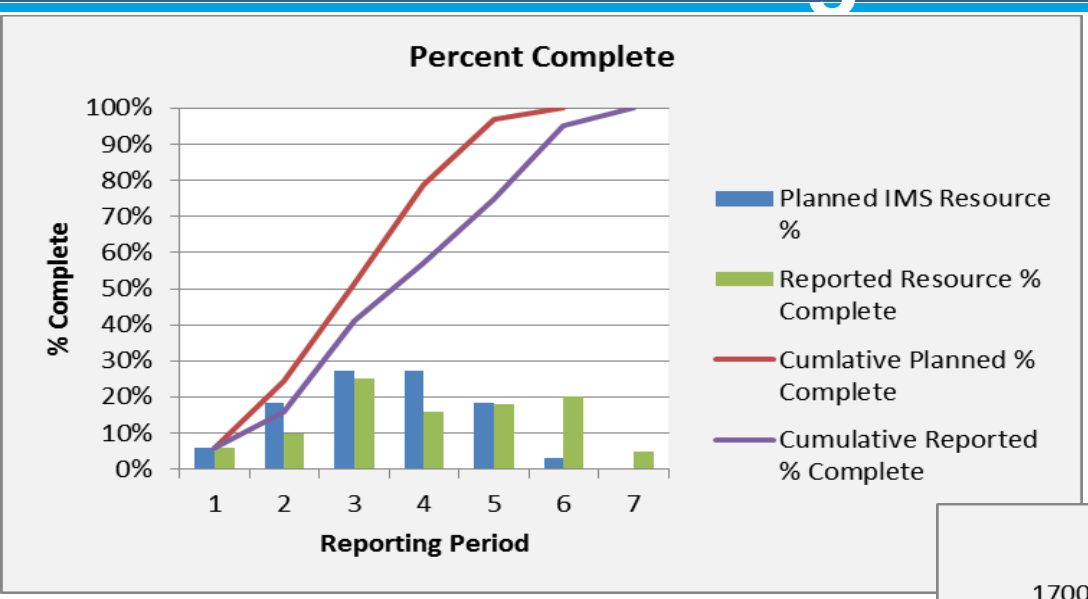
Forecast Finishes

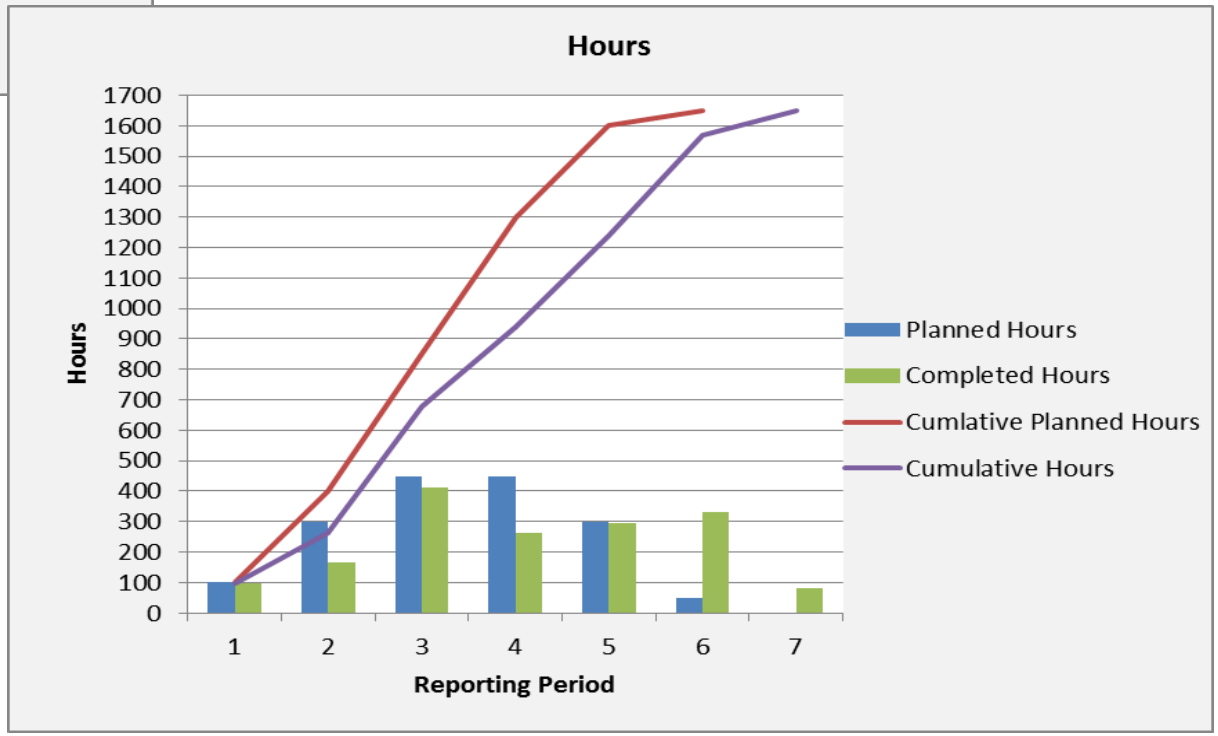


	1	2	3	4	5	6	7	8	9	10	11
Period Forecast Finishs	5	15	20	10	20	20	10	5	0	0	0
Period Actual Finishs	0	10	5	10	15	20	20	18	12	5	5
Period Re-Planned	5	25	40	40	45	45	35	22	10	5	0
Cummulative Forcast Finishs	20	35	55	65	85	105	115	120	120	120	120
Cummulative Actual Finishs	0	10	15	25	40	60	80	98	110	115	120
Cumulative Replan	0	25	65	105	150	195	230	252	262	267	267

Reporting Period

Assessing Schedule Position Based on Resource Usage





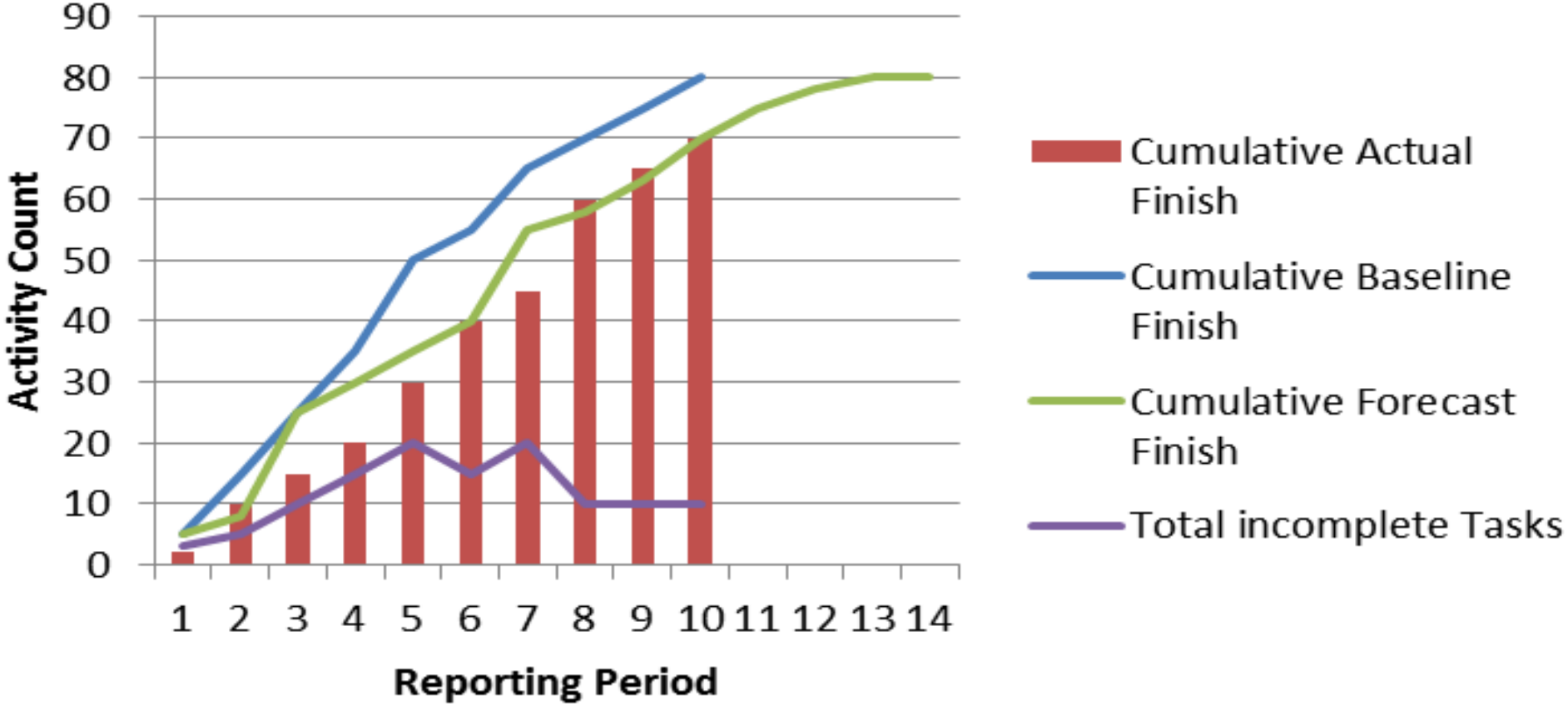
Other Schedule Trend Data (Durations, Lags)

Activity	Baseline Duration	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Baseline Lag	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6
A0100	10	10	10	5	5	5	5	5	5	5	0	0	0	0
A0105	20	20	20	18	18	18	18	10	10	10	0	0	0	0
A0110	40	40	40	40	35	35	30	5	5	5	5	0	0	0
A0115	15	15	15	15	15	15	15	0	0	0	0	0	0	0
A0120	20	20	20	20	15	15	15	0	0	0	0	0	0	0
A0125	45	45	45	45	40	40	35	5	5	5	0	0	0	0
A0130	40	40	40	40	40	40	40	2	2	2	2	2	2	2
A0135	266	266	266	260	260	255	250	0	0	0	0	0	0	0
A0140	272	272	272	272	267	267	267	0	0	0	0	0	0	0
A0145	260	260	260	260	255	250	250	0	0	0	0	0	0	0

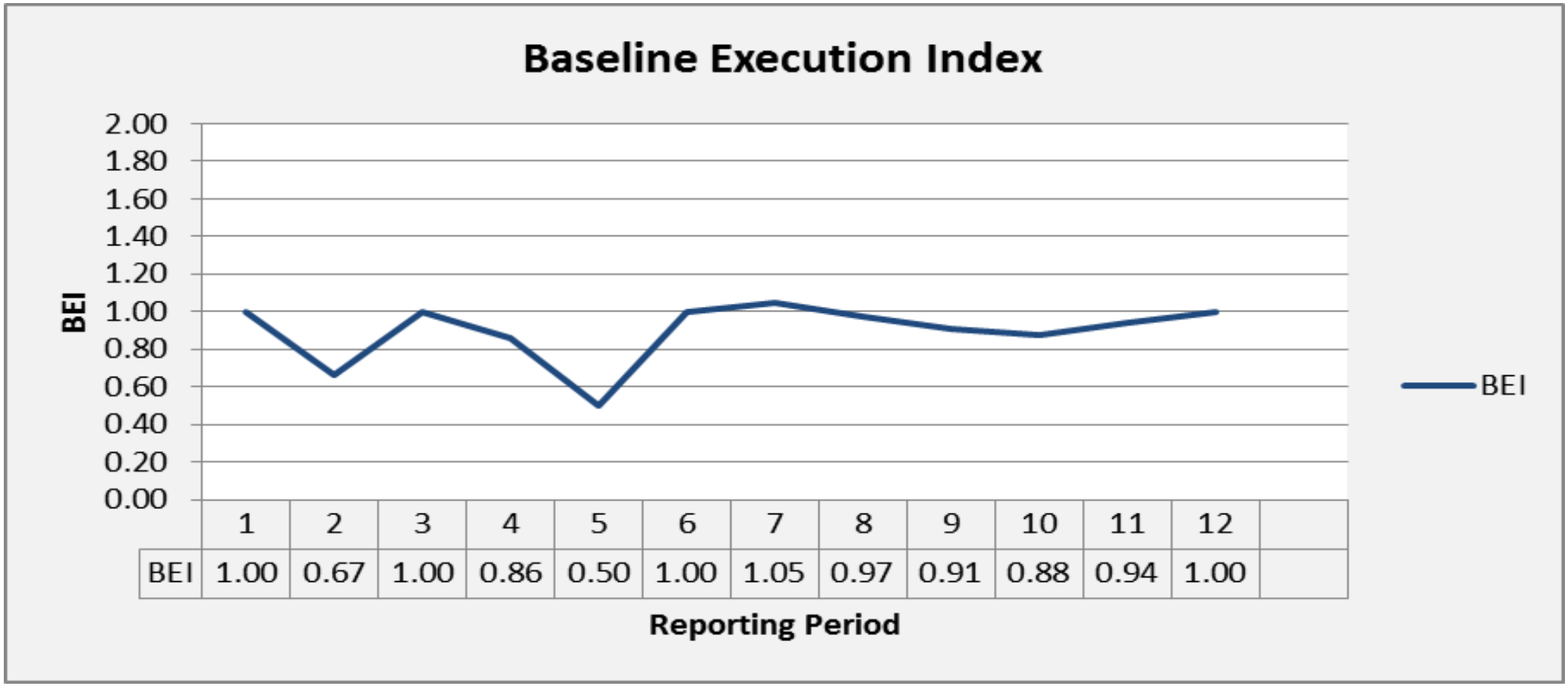
Indicates Change from Baseline Value

- **Analysis on future not started activities only**
  - **Planning Packages in particular**
- **Monitor Baseline Changes for Duration adjustments**
  - **Without Scope Reduction**
  - **Resource Increases**

Missed Tasks Metric



Baseline Execution Index (BEI)



	1	2	3	4	5	6	7	8	9	10	11	12	
BEI	1.00	0.67	1.00	0.86	0.50	1.00	1.05	0.97	0.91	0.88	0.94	1.00	

$$\text{BEI} = \frac{\text{Cumulative \# of tasks actually completed}}{\text{Cumulative \# of baseline tasks planned to be completed}}$$

Assessing Baseline Changes

- **Baseline changes should be assessed each reporting period**
  - Magnitude
    - Quantity
    - Scale
  - Timeliness of Incorporation
  - Type
    - Contract Changes
    - Internal Changes
      - Internal Replans
      - Administrative
  - Synchronization
    - Affecting both IMS and PMB

Reviewing Alignment of Performance Reported in IMS and EV Cost Subsystem

Activity ID	Period 1			Period 2			Period 3		
	Schedule Duration % complete	Schedule Physical % complete	EVM Cost Engine % Complete	Schedule Duration % complete	Schedule Physical % complete	EVM Cost Engine % Complete	Schedule Duration % complete	Schedule Physical % complete	EVM Cost Engine % Complete
A0100	10	10	10	30	20	20	50	40	40
A0105	0	0	0	0	0	25	25	25	50
A0110	50	45	30	75	60	50	100	100	75

- By activity compare IMS Physical % Complete to EV % complete
- By activity look for EV % complete with no IMS % complete
- By activity Look for IMS % completes with no EV % complete
- If there are differences, there are integration problems

Conclusion

- **For more information:**
  - Snippet 3.1A IMS Initial Baseline Review
  - Snippet 3.2 Schedule Health Metrics
  - Snippet 3.3 Scheduling Guidance and Resources
  - Snippet 5.3 PARSII Schedule Health Assessment Reports

DOE OAPM EVM Home Page

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EARNED VALUE MANAGEMENT

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- Career Development Program
- Real Estate
- History

Earned Value Management (EVM) is a systematic approach to the integration and measurement of cost, schedule, and technical (scope) accomplishments on a project or task. It provides both the government and contractors the ability to examine detailed schedule information, critical program and technical milestones, and cost data.

- EVMS Surveillance Standard Operating Procedure (ESSOP) - 26 Sep 2011 (pdf)
  - EV Guideline Assessment Templates - (MS Word)
  - DOE EVMS Cross Reference Checklist - (pdf)
  - DOE EVMS Risk Assessment Matrix - (MS Word)
- Formulas and Terminology "Gold Card" - Sep 2011 (pdf)
- Slides from the OECM Road Show: Earned Value (EV) Analysis and Project Assessment & Reporting System (PARS II) - May 2012 (pdf)
- DOE EVM Guidance

EVM TUTORIALS

Module 1 - Introduction to Earned Value (pdf 446.86 kb) July 17, 2003

This module is the introduction to a series of online tutorials designed to enhance your understanding of Earned Value Management. This module's objective is to introduce you to Earned Value and outline the blueprint for the succeeding modules. This module defines Earned Value management. It looks at the differences between Traditional management and Earned Value management, examines how Earned Value management fits into a program and project environment, and defines the framework necessary for proper Earned Value management implementation.

http://energy.gov/management/office-management/operational-management/project-management/earned-value-management