

15 - 16 November, Wembley Stadium, UK

Session T7 – 4:10 to 4:50

Cost & Schedule Working Together in EcoSys



Cost & Schedule Working Together in EcoSys



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Hexagon, Asset Lifecycle Intelligence





Scheduling = Cost Control
WBS = CBS
Project Planner = Cost Controller





Scheduling <> Cost Control

WBS <> CBS

Project Planner <> Cost Controller

Why Schedule matters for Project Control?



Define **Contracts and Payment Milestones** based on activities and/or activity steps. **Assign Risks and track Issues and Changes** related to Schedule activities.



Develop **Resource and Cost Plans** based on schedule dates. Accurate Cost Planning supports **effective and timely Fund Management**.



Use Resource Assignments as the **basis of Budget and Forecast**. Produce accurate **Time-Phased costs** on Resource Assignment based distribution profiles.

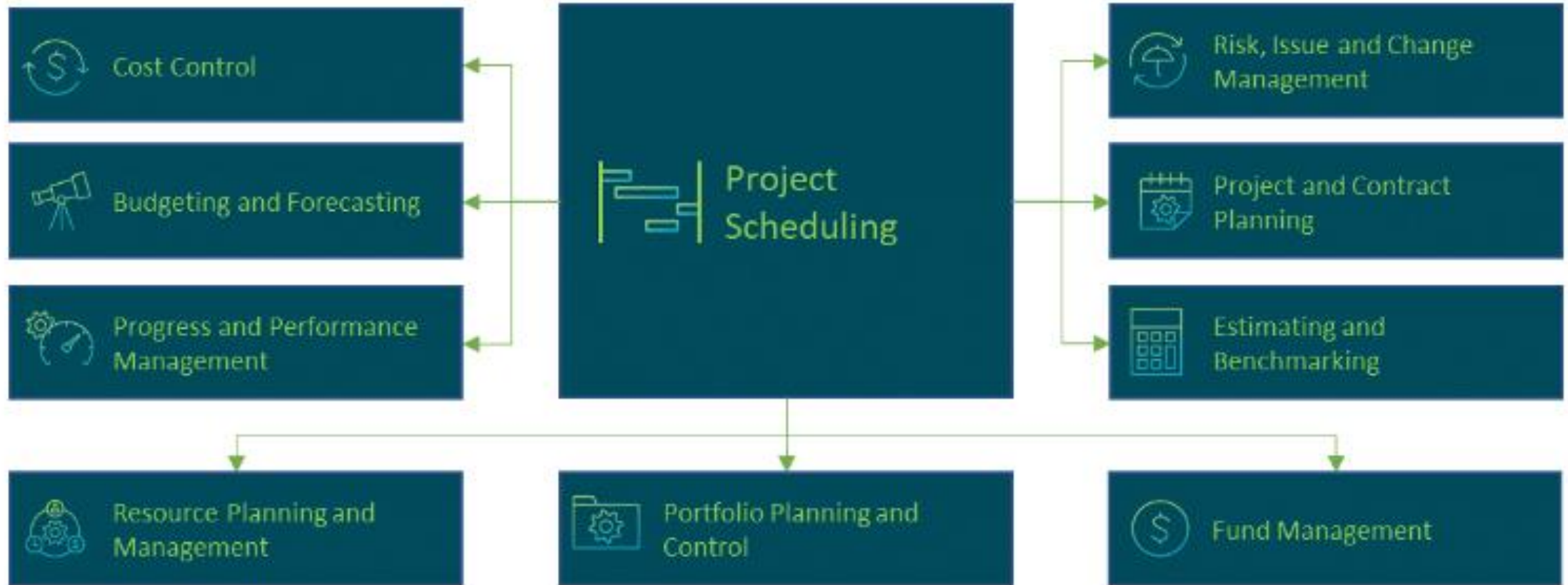


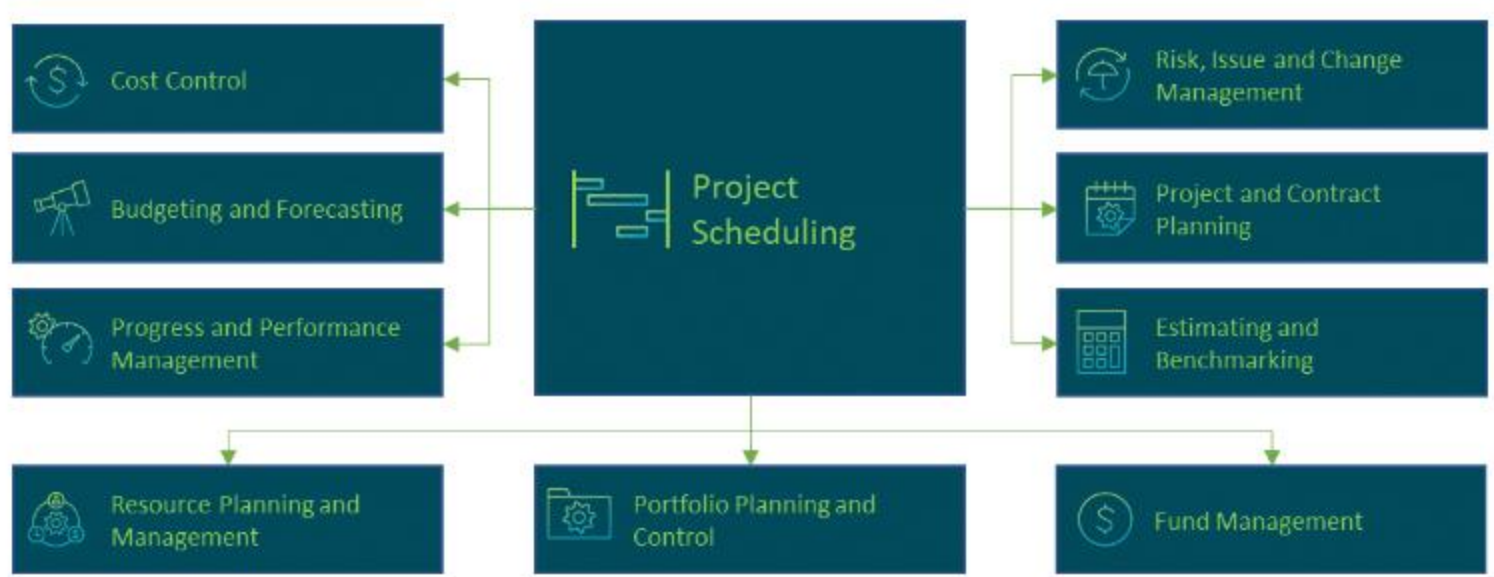
Measure Schedule Progress against the Plan to **analyze Productivity** and help **produce accurate Forecasts** based on performance



Integrate Milestone activities with **Project Development or Stage Gates**

The Schedule drive multiple Project Control processes





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Agenda

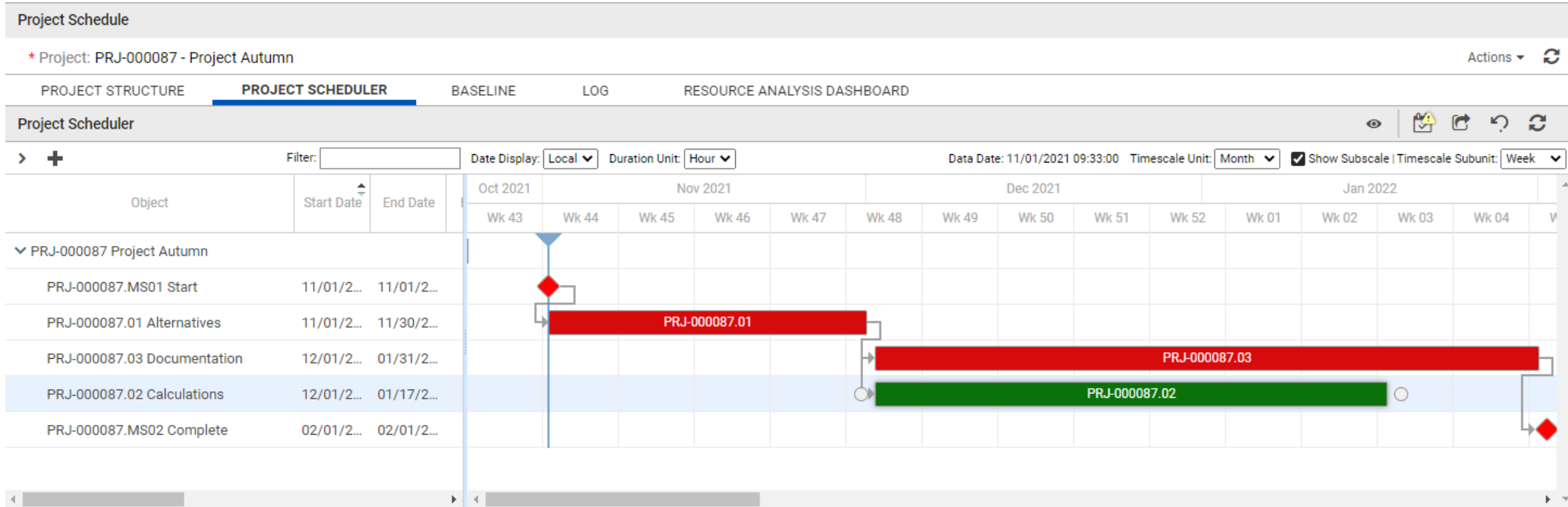
- Mapping Strategies
- Integration Approaches
- Show case in EcoSys



3 Mapping Strategies

- WBS - CBS
- WBS -> CBS
- WBS <-> CBS





Project Schedule Details

GENERAL RELATIONSHIPS CONSTRAINTS **RESOURCE ASSIGNMENT & RATES** EXPENSES PROGRESS DOCUMENTS RESOURCE ALLOCATION GRAPH

Schedule Assignments Resource Rates

* Object: 02 - Calculations

Object Path ID	Cost Account ID	Resource ID	Description	Curve	Quantity	UOM	Hours	Resource ID	Resource Name	Start Minor Period (ID)	Add	Currency	Transact Categori Region
PRJ-000087							450.0	CIVENG1	Civil Engineer 1	2020-01	Add	USD	GBL
PRJ-000087							450.0	CIVENG2	Civil Engineer 2	2020-01	Add	USD	GBL
PRJ-000087							450.0	CIVENG3	Civil Engineer 3	2020-01	Add	USD	GBL
PRJ-000087.02	LAB	CIVENG1		LIN	0.0	HOUR	200.0	ELEENG1	Electrical Engine	2020-01	Add	USD	GBL
PRJ-000087.02	LAB	MECENG1		LIN	0.0	HOUR	150.0	ELEENG2	Electrical Engine	2020-01	Add	USD	GBL
PRJ-000087.02	LAB	ELEENG1		LIN	0.0	HOUR	100.0	ELEENG3	Electrical Engine	2020-01	Add	USD	GBL
								MECENG1	Mechanical Engi	2020-01	Add	USD	GBL
								MECENG2	Mechanical Engi	2020-01	Add	USD	GBL
								MECENG3	Mechanical Engi	2020-01	Add	USD	GRI

Project Schedule

* Project: PRJ-000087 - Project Autumn

PROJECT STRUCTURE **PROJECT SCHEDULER** BASELINE LOG RESOURCE ANALYSIS DASHBOARD

Project Scheduler

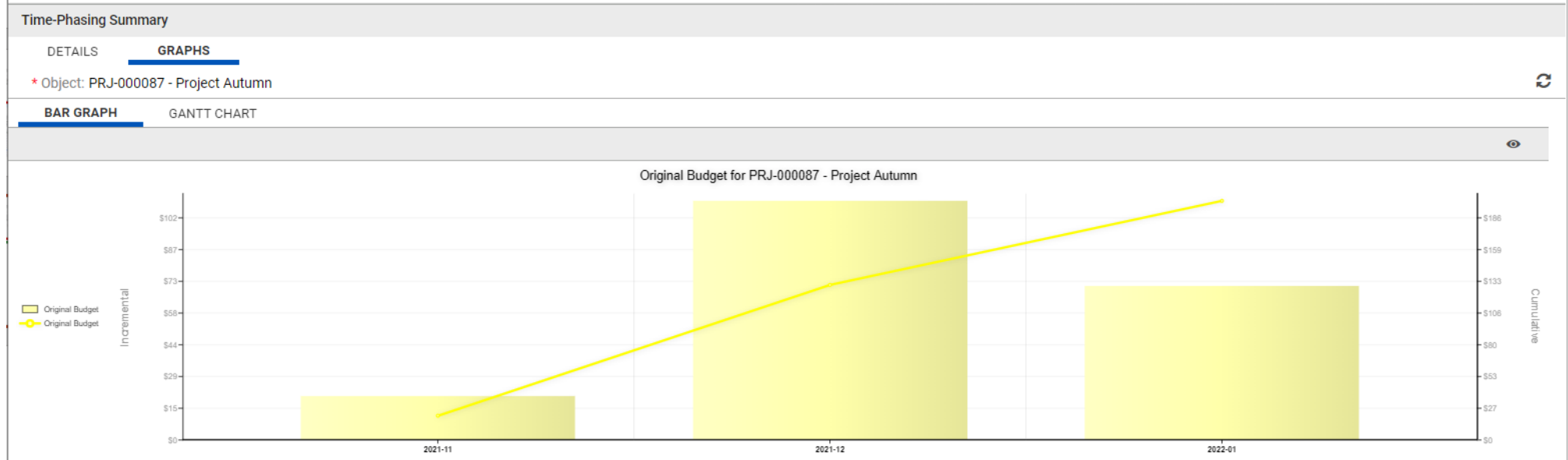
Filter: Date Display: Local Duration Unit: Hour Data Date: 11/01/2021 09:33:00 Timescale Unit: Month Show Subscale Timescale Subunit: Week

Object	Start Date	End Date
PRJ-000087 Project Autumn		
PRJ-000087.MS01 Start	11/01/2021	11/01/2021
PRJ-000087.01 Alternatives	11/01/2021	11/30/2021
PRJ-000087.03 Documentation	12/01/2021	01/31/2022
PRJ-000087.02 Calculations	12/01/2021	01/17/2022
PRJ-000087.MS02 Complete	02/01/2022	02/01/2022

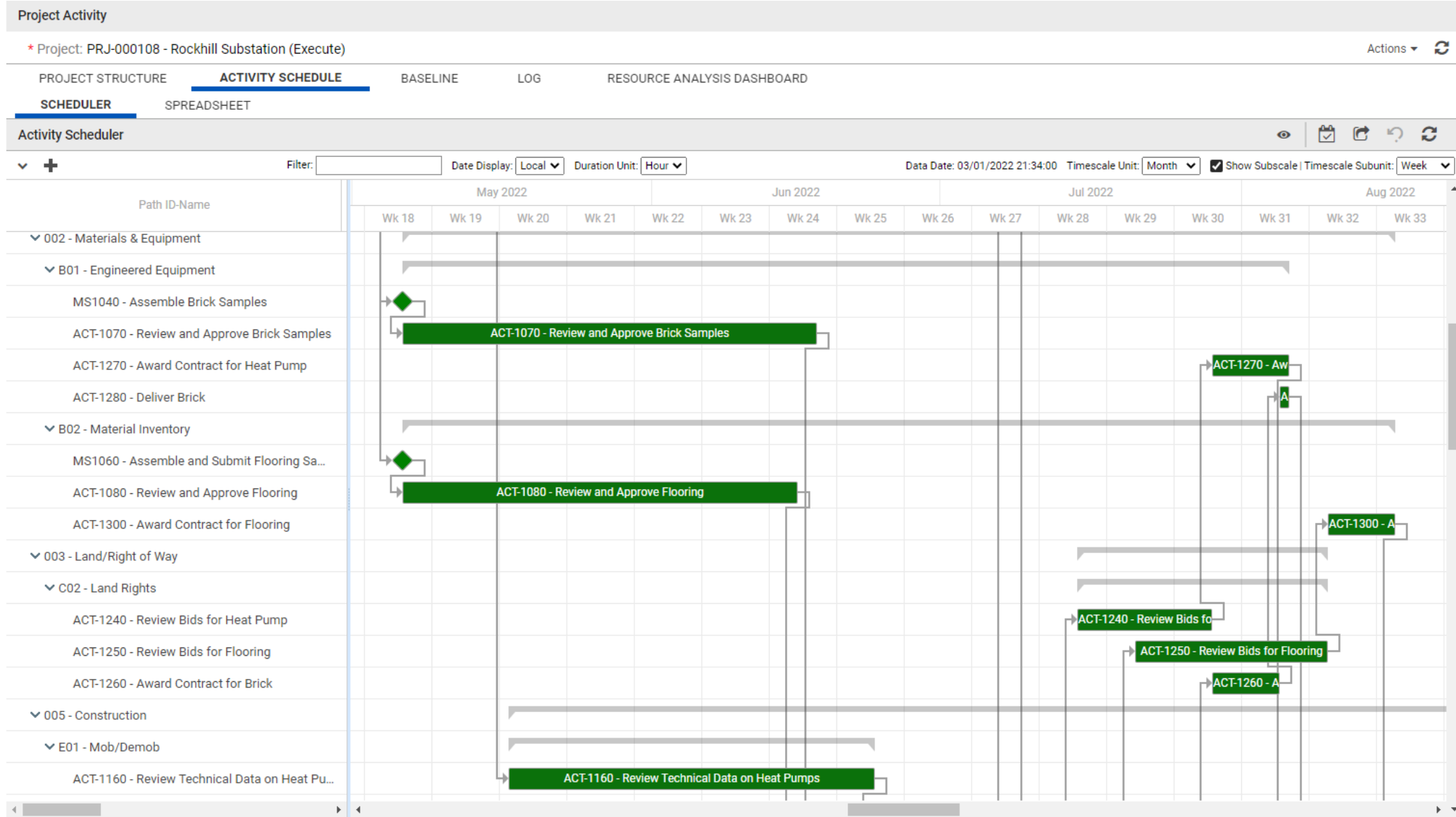
Original Budget Time-Phasing

Path ID	Name	Time-Phasing Method	Dates Method	Start Date	End Date	Scheduled Start Date	Scheduled End Date	Total Cost	Delta Cost	Time-Phased Cost	Oct 2021 Cost	Nov 2021 Cost	Dec 2021 Cost	Jan 2022 Cost	Feb 2
PRJ-000087	Project Autumn							200,000	0	200,000		20,000	109,522	70,478	
PRJ-000087.01	Alternatives	Bell Curve	Manual	11/01/2021	11/30/2021			20,000	0	20,000		20,000			
PRJ-000087.02	Calculations	Bell Curve	Project Schedule			12/01/2021	01/17/2022	100,000	0	100,000			69,522	30,478	
PRJ-000087.03	Documentation	Bell Curve	Project Schedule			12/01/2021	01/31/2022	80,000	0	80,000			40,000	40,000	
PRJ-000087.MS01	Start							0	0	0					
PRJ-000087.MS02	Complete							0	0	0					

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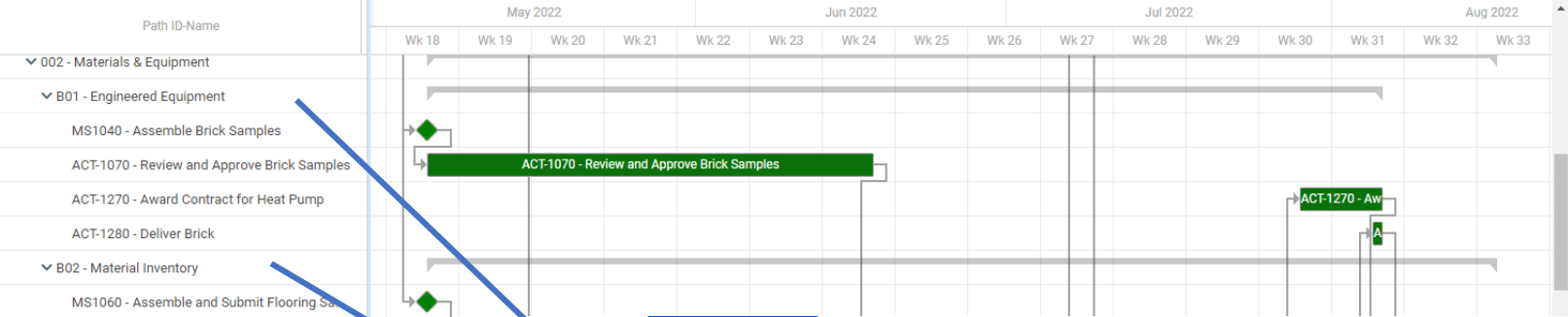


WBS -> CBS



Activity Scheduler

Filter: Date Display: **Local** Duration Unit: **Hour** Data Date: 03/01/2022 21:34:00 Timescale Unit: **Month** Show Subscale | Timescale Subunit: **Week**



Original Budget Time-Phasing

Path ID	Name	Time-Phasing Method	Dates Method	Start Date	End Date	Scheduled Start Date	Scheduled End Date	Total Cost	Delta Cost	Time-Phased Cost	Jan 2022 Cost	Feb 2022 Cost	Mar 2022 Cost	Apr 2022 Cost	May 2022 Cost	Jun 2022 Cost
PRJ-000108	Rockhill Substation (Execute)							25,482,196	0	25,482,196	198,212	158,417	323,961	573,081	667,391	425,196
PRJ-000108.001	Engineering & Design							326,825	0	326,825	118,748	71,896	69,564	59,808	6,808	
PRJ-000108.002	Materials & Equipment							575,464	0	575,464	0	0	95,844	218,114	219,694	41,812
PRJ-000108.002.B01	Engineered Equipment	Bell Curve	Schedule	03/09/2021	06/07/2021	03/09/2021	06/07/2021	421,000	0	421,000	0	0	78,868	179,080	145,864	17,288
PRJ-000108.002.B02	Material Inventory	Bell Curve	Schedule	03/09/2021	06/16/2021	03/09/2021	06/16/2021	103,455	0	103,455	0	0	16,975	39,034	37,051	10,401
PRJ-000108.002.B03	Contractor Materials	Bell Curve	Schedule	05/14/2021	06/09/2021	05/14/2021	06/09/2021	51,009	0	51,009	0	0	0	0	36,780	14,229
PRJ-000108.003	Land/Right of Way							96,000	0	96,000	0	0	0	0	69,220	26,780
PRJ-000108.003.C01	Land Purchase	Bell Curve	Manual	05/14/2021	06/09/2021	05/14/2021	06/09/2021	94,500	0	94,500	0	0	0	0	68,139	26,361
PRJ-000108.003.C02	Land Rights	Bell Curve	Manual	05/14/2021	06/09/2021	05/14/2021	06/09/2021	0	0	0	0	0	0	0	0	
PRJ-000108.003.C03	Survey	Bell Curve	Manual	05/14/2021	06/09/2021	05/14/2021	06/09/2021	1,500	0	1,500	0	0	0	0	1,082	418
PRJ-000108.004	Permitting							75,600	0	75,600	0	0	0	0	54,511	21,089

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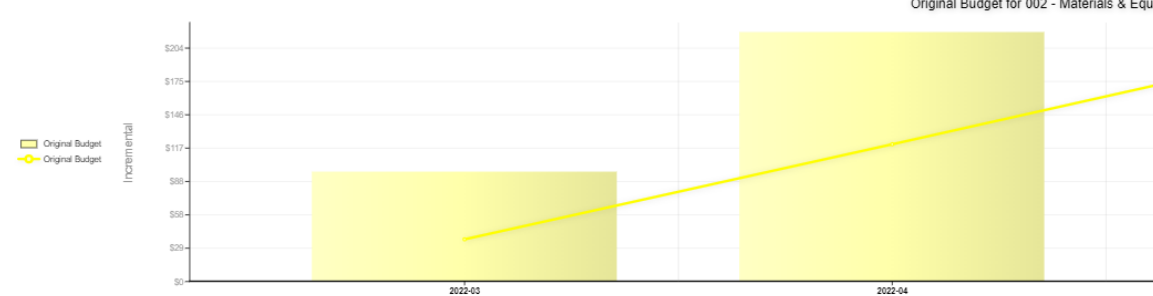
Time-Phasing Summary

DETAILS **GRAPHS**

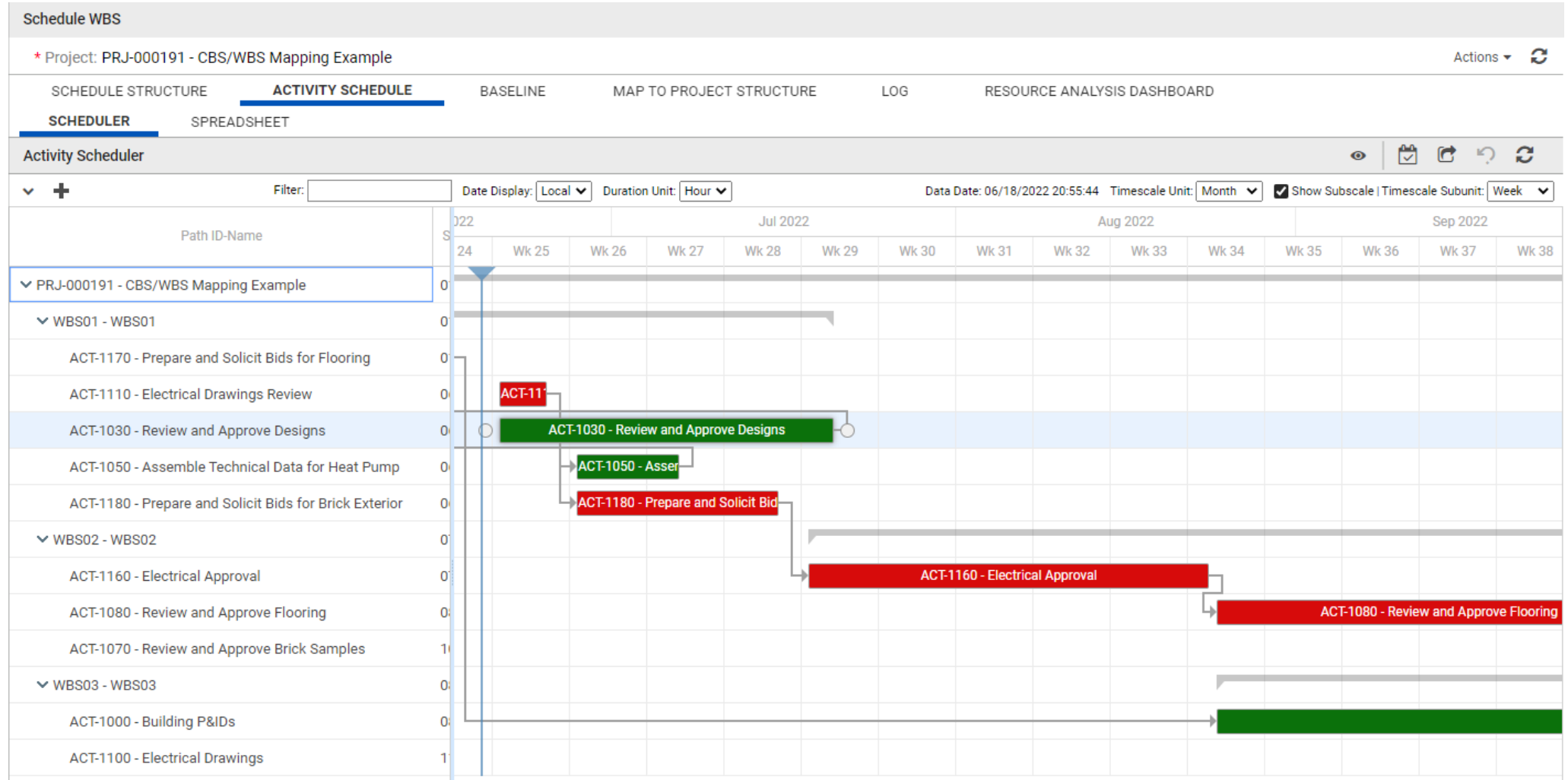
* Object: 002 - Materials & Equipment

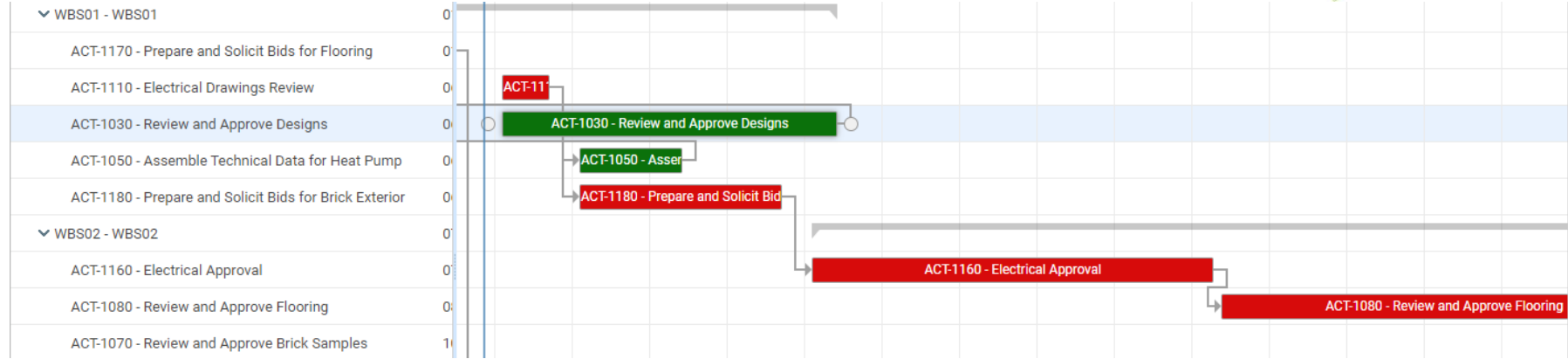
BAR GRAPH GANTT CHART

Original Budget for 002 - Materials & Equipment



WBS <-> CBS





Map Schedule Structure to P...							Project Structure Element				
Object Name	Link	Count of Mapping Rules	Hours	Cost	Activity Count	Path ID	ID	Name	Type	Preview Project Cost	
CBS/WBS Mapping Example			1,043.0	156,787.00	10	PRJ-000191	PRJ-000191	CBS/WBS Mapping Example	Projects	Preview	
WBS01	Link	3	900.0	132,620.00	5	PRJ-000191.CBS-AA	CBS-AA	CBS-AA	WBS		
WBS02	Link				3	PRJ-000191.CBS-BB	CBS-BB	CBS-BB	WBS		
WBS03	Link		143.0	24,167.00	2	PRJ-000191.CBS-CC	CBS-CC	CBS-CC	WBS		
WBS04	Link					PRJ-000191.CBS-DD	CBS-DD	CBS-DD	WBS		
WBS05	Link					PRJ-000191.CBS-EE	CBS-EE	CBS-EE	WBS		

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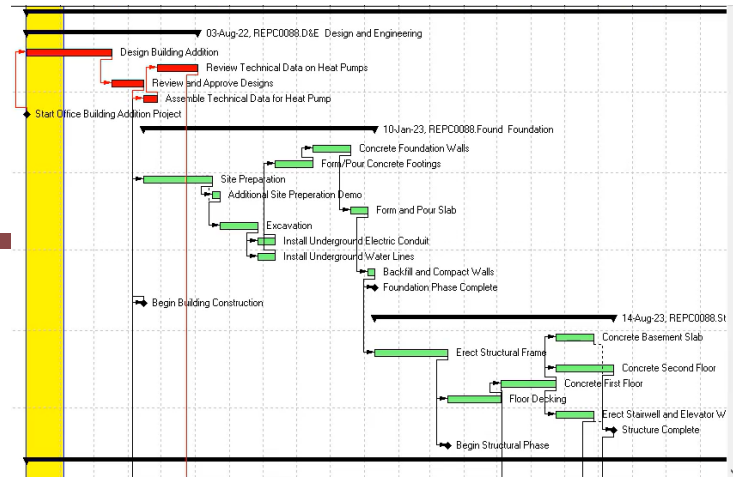
Mapping Rules									
Object: PRJ-000191 - CBS/WBS Mapping Example									
Mapping Sequence	Source Path ID	Activity ID	Cost Account ID	Resource ID	Target Object Path ID	Update Target Object	Mapping ID	Create Date	
3	PRJ-000191.WBS01		-		PRJ-000191.CBS-AA	Update Target	6527444	05/19/2022 19:37:27	
2	PRJ-000191.WBS01	ACT-1180	-		PRJ-000191.CBS-BB	Update Target	6527445	05/19/2022 19:38:00	
1	PRJ-000191.WBS01	ACT-1180	LAB	RBS.01.CIV.CIVENG1	PRJ-000191.CBS-CC	Update Target	6527446	05/19/2022 19:38:51	

3 Integration Approaches

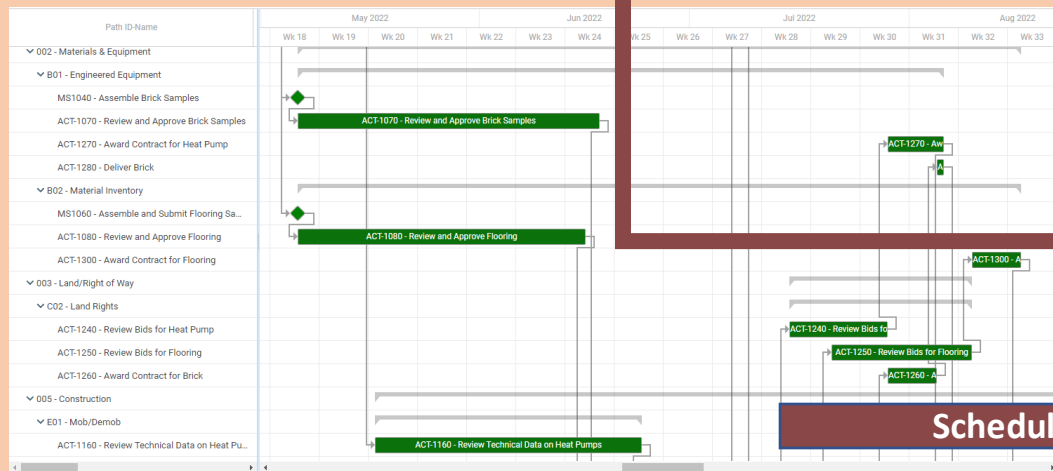
- Schedule -> Cost
- External Schedule -> Cost
- External Schedule
 - > Schedule
 - > Cost



External Schedule
-> Schedule
-> Cost



External Schedule
-> Cost



Path ID	Name	Time-Phasing Method	Dates Method	Start Date	End Date	Scheduled Start Date	Scheduled End Date	Total Cost	Delta Cost	Time-Phased Cost	Jan 2022 Cost	Feb 2022 Cost	Mar 2022 Cost	Apr 2022 Cost	May 2022 Cost	Jun 2022 Cost
PRJ-000108	Roofing Substation (Exclude)							25,482,196	0	25,482,196	196,212	156,417	222,961	973,081	667,391	425,000
PRJ-000108.001	Engineering & Design							328,825	0	328,825	118,748	71,896	69,564	93,808	6,808	0
PRJ-000108.002	Materials & Equipment							575,464	0	575,464	0	0	93,844	218,114	219,694	41,000
PRJ-000108.002.801	Engineered Equipment	Bell Curve	Schedule	03/09/2021	06/07/2021	03/09/2021	06/07/2021	421,000	0	421,000	0	0	78,868	170,080	145,864	17,000
PRJ-000108.002.802	Material Inventory	Bell Curve	Schedule	03/09/2021	06/16/2021	03/09/2021	06/16/2021	103,455	0	103,455	0	0	16,975	39,034	37,051	10,000
PRJ-000108.002.803	Contractor Materials	Bell Curve	Schedule	05/14/2021	06/09/2021	05/14/2021	06/09/2021	51,009	0	51,009	0	0	0	0	33,760	14,000
PRJ-000108.003	Land Right of Way							96,000	0	96,000	0	0	0	0	69,220	26,000
PRJ-000108.003.001	Land Purchase	Bell Curve	Manual	05/14/2021	06/09/2021	05/14/2021	06/09/2021	94,500	0	94,500	0	0	0	0	68,139	26,000
PRJ-000108.003.002	Land Rights	Bell Curve	Manual	05/14/2021	06/09/2021	05/14/2021	06/09/2021	0	0	0	0	0	0	0	0	0
PRJ-000108.003.003	Survey	Bell Curve	Manual	05/14/2021	06/09/2021	05/14/2021	06/09/2021	1,500	0	1,500	0	0	0	0	1,082	0
PRJ-000108.004	Permitting							75,600	0	75,600	0	0	0	0	54,511	21,000

Schedule -> Cost



See it in EcoSys!

- Budget/Forecast Time-phasing
- Budget Changes
- Earned Value

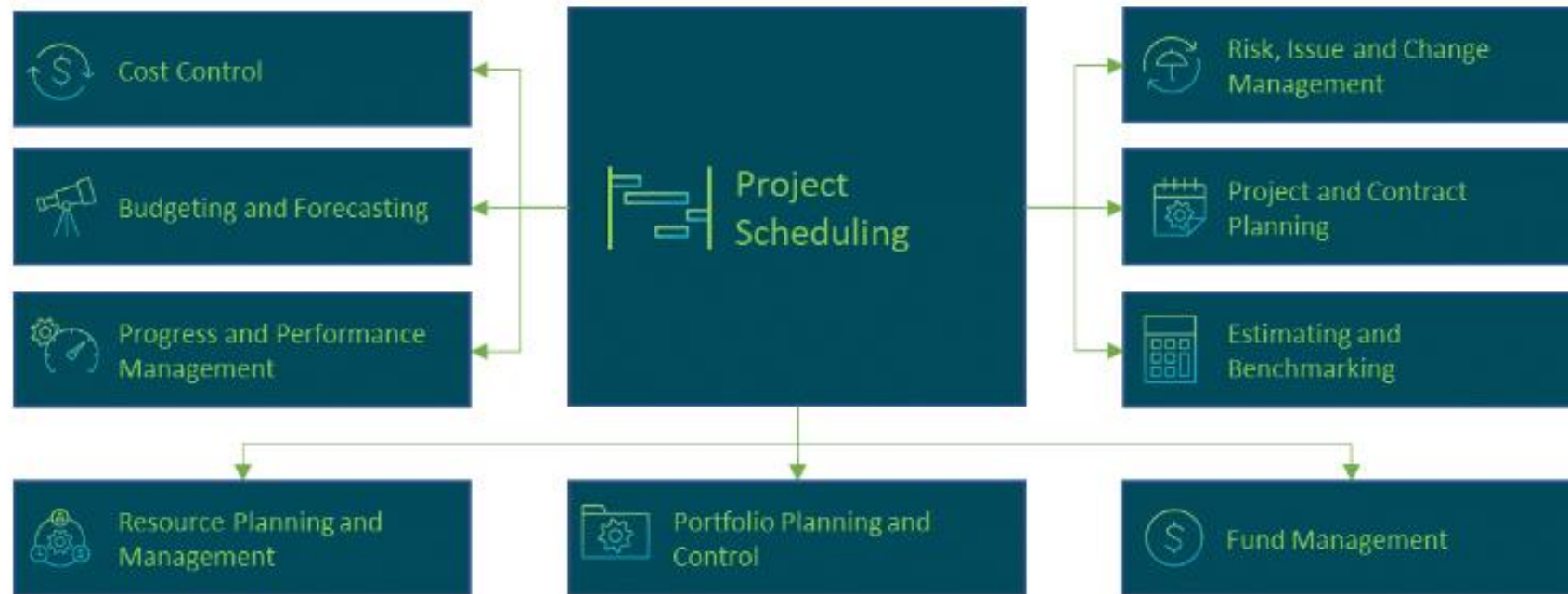
EcoSys Cost & Schedule Integration

Live Demo



Take-Away

Project Scheduling needs to be part of your Enterprise Project Performance Solution, natively integrated to feed the other Business Processes where they need schedule data, flexibly integrated with external schedules for those projects that need it.



THANK YOU

EcoSys - Enterprise Project Performance

