هيئة كفاءة الإنفاق والمشروعات الحكومية
Expenditure Efficiency & Projects Authority

EXPRO National Manual for Projects Management

Volume 7, Chapter 4

Project Schedule Look-ahead Procedure

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1.0 PURPOSE

Schedule Look-ahead is a sub-process of the overall planning and scheduling methodology to effectively provide for medium and short term planning and scheduling utilizing a 90 day and a 3 Week Look-ahead Schedule (3WLA) (also known as 4-Week Rolling Schedule). In order to prepare a consistently achievable Weekly Work Plan, the project team needs to look ahead at Control Schedule (CS) requirements of availability of design, equipment and materials, and labor and to identify medium and short term needs to be addressed the project team to meet or exceed the plan

This procedure applies to works performed under all Government construction projects executed throughout the Kingdom of Saudi Arabia.

2.0 SCOPE

Once a plan and schedule for a project is established, project team focus needs to be placed on medium and short term planning and scheduling.

For medium term schedule analysis, 90 day look-ahead sessions need to be established to evaluate readiness to achieve plan for the next 90 days. In most cases it is simply a 90 day look-ahead filter of the control schedule that gets reviewed with the team, restraints get identified and logged, and pre-emptive mitigation actions are taken.

For the short term plan analysis (3Weeks), a standalone activity tracking system is to be implemented for use directly by construction management, superintendents and/or Field Engineers to plan and track their work. The project team should hold weekly sessions to identify restraints and take immediate action.

3.0 DEFINITIONS

Definitions	Description
3 WLA	Three Week Look-ahead
90D	90 Day
Activity ID	Activity Identification
CS	Control Schedule
Work Package	A defined and small volume of work that is a subset of larger Work Breakdown Structure (WBS) items.

Please see document “EPM-KPP-PR-000001 Project Planning and Scheduling Definitions and Concepts Procedure ” for general definitions.

4.0 REFERENCES

1. EPM-KPP-PR-000001 - Project Planning and Scheduling Definitions and Concepts Procedure

5.0 RESPONSIBILITIES

Please refer to the responsibilities sections under the 90d Look-ahead and 3 Week Look-ahead processes.

6.0 PROCESS

6.1 90 day (90d) Look-ahead

For the medium term, the main tool to use is a 90 day look-ahead straight out of the Control Schedule, and pertains to all departments.

6.1.1 Key Features of a 90d Look-ahead

- Bar chart format
- Extracted straight out of Current Control Schedule using a 90 day look-ahead filter
- Include all departments
- Shown against either current baseline, or against previous period forecast, or both
- Logic links shown in order to follow paths

6.1.2 Approach

A project planning meeting is held by the Lead planner on a at least monthly basis to:

- Review all activities, verify forecasts and logic links.
- Explain delays, provide mitigating ideas
- Discuss risks
- Determine improvement opportunities
- Assign actions with due date to further address issues, and to implement agreed mitigating actions. The resulting action items need to be logged and tracked through resolution. .

6.1.3 Responsibilities

6.1.3.1 Engineering

- Ensure Engineering activities are updated and forecasted correctly
- Ensure technical information and design drawings are available to support planned work
- Identify and resolve known design issues

6.1.3.2 Procurement

- Ensure material and permanent equipment delivery status is properly reflected in the look-ahead
- Notify timely any current or impending shortfalls of material, take mitigating actions if possible, or suggest mitigating actions for Project Management action.

6.1.3.3 Contracts

- Work with contractors to either have them actively participate in the project's 90d look-ahead meetings, or have them hold their own 90 day look-ahead meetings.
- Monitor contractor performance, and advise of issues and possible mitigating actions

6.1.3.4 Construction

- Ensure construction execution plan is properly reflected in the look-ahead
- Ensure proper construction forecasts are provided, confirmed though production, productivity and resource analysis
- Provide mitigation solutions to either engineering, procurement or construction issues

6.1.3.5 Planning

- Check the allocation of assigned resources to activities to confirm resource allocations are correct and sufficient to achieve the plan.
- Identify and highlight schedule critical activities
- Provide projection information in the quantity curves.
- Verify that the compiled projected quantity installations exceed quantity curve requirements, or show significant (and realistic) recovery from past delays.
- Ensure progress restrictions are being identified in the discussions, are logged, and action is being taken to resolve timely with correct priority.

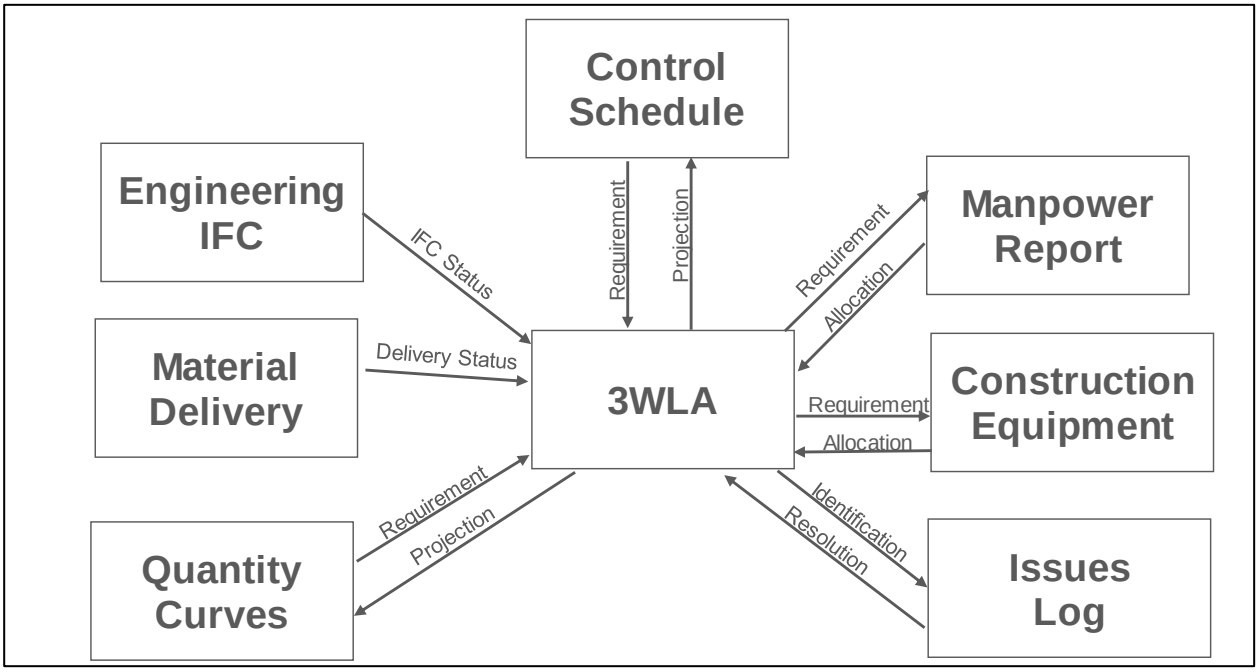
- Make sure resulting action items are logged, and tracked through completion.

6.2 3 Week Look-ahead (3WLA)

For the short term, the primary construction planning and scheduling tool is the 3 week look-ahead (3WLA). It needs to be based on the Control Schedule and provide a short-term construction plan and schedule for use by the team, including the foremen. It is a daily detailed work schedule for a 4-week period (1 week past, 3 weeks future). It can be organized by discipline, facility/area, commodity, work package, and/or work operation.

6.2.1 Key features of the 3WLA

- Scope: Daily work plan for superintendents and subcontractors
- Plan: Determined by Construction management, FEs, and superintendents
- Schedule: Based on Control Schedule priorities and sequence, with work volumes geared to meet or exceed Control Schedule and Quantity Curve requirements
- Content: Work for which design, materials (field procurement), labor, equipment, access, etc. are available
- Status: Measured from material tracking, quantity tracking and department inputs.
- Schedule Performance: Work scheduled and performed, vs. previous week's 3WLA, for both quantity installation and resource utilization.



6.2.2 Approach:

The 3WLA is developed from the beginning of the construction phase and includes 4 weeks:

- Past week activities with a means to compare planned against actuals in timing, quantity installed and resources.
- Current week activities which foreman are executing.
- Next week activities which superintendents are confirming that labor, construction equipment, construction material (scaffolding, formwork, …) and access is ready
- Week after activities which Field Engineering is confirming that work packages are issued and materials are staged per the work packages.

The aim of the 3WLA is to meet or exceed expectations of Quantity Curves and Control Schedule, or to aggressively recover delays.

As construction progress reaches 80% to 90%, focus shifts from mass quantity installation to systems quantity installation.

6.2.3 3WLA Content:

The 3WLA is based on the control schedule for determination of criticality and sequence of activities, availability of design engineering and main equipment and material purchase order deliveries.
Construction will further detail and adjust activities to accommodate field engineering input, construction material availability and deliveries, work front access, construction equipment availability, management, manual labor availability and the like.

The content of the 3WLA needs to be at least:

- Reference number to the work package and/or control schedule activity identification (activity ID)
- Detailed description of the work activity, with tag and stock code numbers if applicable
- Quantities to be installed.
- Start and finish dates
- Cost Code for the activity, to help the crews identifying the time charge codes to use.
- Identification of criticality of activities (in first instance by control schedule)
- Responsible person to assure activity gets executed and reports status (Superintendent)
- Number of craft per trade per day
- Material delivery status (design material and construction material)
- Type and quantity of major construction equipment (minor equipment or tools if critical)
- Safety comments
- Superintendent signature

6.2.4 Review and Approval:

The 3WLA is developed by superintendents, and moved forward one week every week. After update by the construction or area superintendents, it is reviewed by the discipline superintendents who have to assess each area 3WLA for project level achievability.

A coordination meeting is held weekly. During the meeting, the team 1) discusses last week performance to draw lessons learned and trigger mitigation actions if required; 2) perform a full review of the next 3 week activities to address recent developments, on ongoing activities, and discuss 3rd week “new” activities to understand restrictions and take action to address them.

Finally, the 3WLA schedules get formally approved for execution by the area superintendents.

6.2.5 Responsibilities

6.2.5.1 General and/or Area Superintendents

- Develop 3WLA including manpower allocations
- Provide direction to the field team
- Ensure that all construction equipment, craft resources and tools are available to support planned work
- Base the 3WLA plan on his control schedule

6.2.5.2 Discipline Superintendents

- Participation in the area’s 3WLA preparation and discussion
- Ensure overall compliance of all 3WLA requirements form a discipline standpoint

6.2.5.3 Field Engineering

- Ensure technical information and design drawings are organized into work-packages to support planned work
- Identify and resolve known design issues and construction material constraints to planned work
- Prepare and issue all required construction work packages
- Verify available material is correct in specification and quantity and staged by work package

6.2.5.4 Field Procurement

- Ensure all material is physically available to support identified work
- Notify timely any current or impending shortfalls of material, take mitigating actions if possible, or suggest mitigating actions to construction superintendents.

6.2.5.5 Field Subcontracts

- Work with subcontractors to either have them actively participate in the project's 3WLA coordination meetings, or have them prepare their own 3WLA in support of project requirements.
- Monitor subcontractor performance

6.2.5.6 Field Planning

- Provide superintendents with the control schedule look-aheads for superintendents to be able have primary basis of 3WLA development
- Check correctness of Schedule Activity IDs on the 3WLA
- Include past week actual quantities and resources (from project's quantity tracking systems) into the 3WLA in perform a past week performance analysis
- Check assigned resources to quantity installation to confirm resource allocations
- Identify and mark schedule critical activities on the 3WLA
- Work with Field engineering in the identification, timing and development of work packages
- Provide projection information to the quantity curves.
- Compile all 3WLA to provide project level quantity installations, resource requirements (by trade), construction equipment requirements, etc. for a weekly review with the site manager.
- Verify that the compiled projected quantity installations exceed quantity curve requirements, or show significant (and realistic) recovery from past delays.
- Ensure progress restrictions are being identified in the 3WLA discussions, are logged, and are being worked off timely with correct priority.

7.0 ATTACHMENTS

1. EPM-KPP-TP-000001 - 3-Week Look-ahead Plan Template

Attachment 1 EPM-KPP-TP-000001 – 3 Week Look-ahead Plan Template

WORK AREA:
FACILITY:
G FOREMAN:

CONSTRUCTION WEEKLY WORK PLAN

Project Name: XXXXXX
Job Number: XXXXXX

WEEK NO.
ISSUE DATE: 21-Feb-18
MEETING DATE:

Line	CS ID	ACTIVITY DESCRIPTION	START	FINISH	COST		PAST WEEK							mm/dd	CURRENT WEEK							mm/dd	WEEK #2							mm/dd	WEEK #3							mm/dd	DWGS	MTRL	CRIT
No.	CWP #				CODE		S	M	T	W	TH	F	S	WK-QTY	S	M	T	W	TH	F	S	WK-QTY	S	M	T	W	TH	F	S	WK-QTY	S	M	T	W	TH	F	S	WK-QTY			
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S - SCHEDULE		Missing Material:	EQUIPMENT																																						
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			EXCAVATOR																																			Approved by:		
		Missing Drawing/Information:	JCB																																						
			MANLIFT																																			Superintendent		
			COMPRESSOR																																						
		SAFETY																																							