Preconstruction Conference 2018

Engineering Project Scheduler
Engineering Project Scheduler
How to make it work for YOU!
**Introductions**

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- Christie McOmber, Great Falls District Projects Engineer
- Craig Nelson, Engineering Information Systems Support Specialist
- Andy Erion, Engineering Information Systems Analyst
Presentation Outline

• Basics of EPS – purpose, function, and key concepts
• Functional Management – EPS horsepower
• Project Management – proactive steps for project delivery
• Beyond the Basics – make EPS work for you
• The Future – utilizing the power of EPS
• Q/A session and Demonstration
What is EPS?

- Software Tool for Complex Systems
- Strategic – Program Delivery
- Operational – Project Delivery
- Multi-purpose - Various Users/Needs
Purpose of EPS

• Agency-wide strategy
• Program Delivery
• Project Management
• Progress Reporting
• Risk Identification
• Workload Management
Operation of EPS

- Flowchart
- Manhour/Duration
- Statusing
- Critical path
- Float

Start

Activity 1: Hours, Duration
Activity 2: Hours, Duration
Activity 3: Hours, Duration
Activity 4: Hours, Duration
Activity 5: Hours, Duration
Activity 6: Hours, Duration
Activity 7: Hours, Duration

Critical Path

Finish

Bid Advertising

(Activity Float)

(Project Float)
EISS Intranet Help Pages

- Flowcharts
- Activity Descriptions
- Training Guides
- Contact Information

http://mdtinfo.mdt.mt.gov/eiss/flowcharts.shtml
Overrides = Estimation and Planning Process

Start → Activity 1 (Hours Duration) → Activity 2 (Hours Duration) → Activity 3 (Hours Duration) → Activity 4 (Hours Duration) → Activity 5 (Hours Duration) → Activity 6 (Hours Duration) → Activity 7 (Hours Duration) → Finish

Functional manager input: Manhours Duration

Advertising Date
Manhours = Effort

Project PE Budget based on total Manhours:
MH=5+5+5+10+5+10+10
Total MH=50

Start
Activity 1 MH=5
Activity 2 MH=5
Activity 3 MH=5
Activity 4 MH=10
Activity 5 MH=5
Activity 6 MH=10
Activity 7 MH=10
Finish
Advertising
Duration = Time

Project Duration is longest path time
Finish = Start Date + Project Duration
Ready Date = Target Completion
Advertising = Ready Date + Prep Time

30 days
35 days
50 days
**Critical Path** = longest duration to completion

<table>
<thead>
<tr>
<th>Activity</th>
<th>MH</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 1</td>
<td>5</td>
<td>15d</td>
</tr>
<tr>
<td>Activity 2</td>
<td>5</td>
<td>15d</td>
</tr>
<tr>
<td>Activity 3</td>
<td>5</td>
<td>15d</td>
</tr>
<tr>
<td>Activity 4</td>
<td>10</td>
<td>15d</td>
</tr>
<tr>
<td>Activity 5</td>
<td>5</td>
<td>20d</td>
</tr>
<tr>
<td>Activity 6</td>
<td>10</td>
<td>15d</td>
</tr>
<tr>
<td>Activity 7</td>
<td>10</td>
<td>20d</td>
</tr>
</tbody>
</table>

45 days
35 days
50 days

Advertising
Not statusing can affect the calculation of critical path
Indicating realistic project health and delivery
Prevent surprises to subsequent FMs
Progress Reports = Change

Activity 1: MH=5, D=15d
Activity 2: MH=5, D=15d, 25d
Activity 3: MH=5, D=15d
Activity 4: MH=10, D=15d
Activity 5: MH=5, D=20d
Activity 6: MH=10, D=15d
Activity 7: MH=10, D=20d

Finish: 55 days
Advertising: 35 days

Start: 50 days
Float = slack in path or system

Task float is for all activities on path:
- Path 1: 50d - 45d = 5d
- Path 2: 50d - 15d - 20d = 15 days
- Path 3: 50d - 50d (critical path)

Project: Ready Date - Finish Date
- 50 days

Advertising
Negative task float: activity not statused!

Negative project float: project finish > ready date

65 days

Negative task float Solution...
status.: remaining duration
end date
SNE date

Negative project float Causes are:

• Duration longer than expected
• Start No Earlier dates
• Not statusing
Functional Management

- FMs provide the EPS horsepower!
- You are part of a team of FMs
- Make EPS work for YOU
1. Planisware Menu
2. Home Module
3. Workpackages Module
   a. Used for overrides and statusing
4. Search
   a. Search the currently displayed data
5. Save
6. List View
7. Gantt View
   a. Viewable after opening tasks from the list view
8. Project Data View
   a. Viewable after opening tasks from the list view
9. Portfolio
   a. Select what projects/tasks to look at
10. Styles/Shortcuts
    a. Select how the data is displayed
11. Column Headings
12. Rows
    a. Tasks or Projects
Status Regularly!

• Every 2 weeks minimum
• Weekly statusing is encouraged
• Important Issues/Events
Create Custom Styles
Task Priority = Action Decision Matrix

Priority 1: Immediate Attention
Priority 2: Assign
Priority 3: Evaluate
Priority 4: Plan

Impact on Project Delivery

1. Preds Finished + Task Critical + RED/BLUE
   Or
   Preds Finished + RED

2. Preds Finished + BLUE
   Or
   Preds Not Finished + RED + Planned Start < 20 days

3. Preds Not Finished + Task Critical + BLUE
   Or
   Preds Not Finished + Task Critical + RED + Planned Start > 20 days

4. GREEN (project float > 74 days)
   Or
   Preds Not Finished + Not on Critical Path + Planned Start > 20 days

Eisenhower decision matrix
Urgent / Important
**Functional Management**

- FM provide the EPS horsepower!
- Overrides and Statusing
- You are part of a team
- Critical Path and Float
- Make EPS work for YOU
  - Understand EPS function & terms
  - Create custom styles
  - Use task priority reports
Project Management

• Why do we need project management?
• Proactive Change Management
  • Align task and project priorities
  • Increase efficiency and effectiveness
  • Proactively manage resource limitations & delays
  • Scope, Schedule, & Budget
• Enhanced Communication
Overrides and the Estimation and Planning Process

- Preliminary Engineering Costs (manhours)
  - New Activity 925 - Define Project
  - New Activity 954 - Evaluate Scope, Schedule & Budget
  - Monitor Percent PE expended

- Schedule (durations)
  - Accurate estimates of activity durations
  - Proper links between activities
  - Realistic Ready Dates
  - Custom styles to manage activities
Project Manager Roles and Responsibilities

- Reconcile schedule with time constraints
  - Weather
  - Performance ability
  - Risks
- Reconcile schedule with resource constraints
  - Staffing and capacity
  - Statewide priorities
  - Workflow and status updates
- Monitor, review, modify...repeat
Bottlenecks Analysis

[Graph and Table]
• Overloaded in July & Aug 2018
• Need additional project work starting Fall 2018
Resource Conflicts

- Too much work
- Too little work
- Shift some work ahead?
- About the right level
- Re-assign work to other staff

Shift some work ahead?
Beyond the Basics - Craig

- Reports and styles
- Schedule customization
  - Changing activities links
  - Adding activities
    - Reactivating activities
    - Inserting activities (has to be a defined activity)
- Resources for customization

How to Change or Create Activity links:
Select the activity you want to link to another.
Then while holding the “Control” key select the activity you want to follow or “link” it to.
Click the “Link” tool. This creates a Finish/Start relationship.

Drag and Drop method:
Using the Gantt chart move your curser over the activity you want to link to another when a hand appears.
Left “Click” and hold down, A “Link” appears
Drag and Drop the link on the activity you want to follow. This creates a Finish/Start relationship.

Creating/Adding Activities:
First check and make sure activity does not already exist in the schedule. Check “All Tasks”
Style
If Activity exists and is carded out remove the “Actual Start” date.
To add you will need to add the “OBS Element” Column
Then scroll to the bottom of schedule and in Input Mode type in the Activity number,
Description, and assign the task to appropriate FM using the OBS Element and Delegated to. Must be a MDT activity these can be found on EPS Helpsheets under the Man Hours & Durations document http://mdtinfo.mdt.mt.gov/other/webdata/internal/eiss/eps-helpsheets/eps-mh-dur-chart.xlsx
Right Click on new activity and select “Insert”, Select “Planned hours”
input Resource (which should be FM unit)
Uncheck “Fixed Rate”
Enter “Total Load” Man hours to complete Task
Click “OK”

**Reassigning Resources:**
Using the Resources module (can be added by clicking the “+” and selecting “Resources”)
Select the RBS you want to view in the “Data” page
Using the “Bottleneck analysis” you can see, view how your resources are being tasked
Using “Resource conflicts” PMs and Department Supervisors can reassign tasks to others
resources they have available.
Resource Leveling:
With the up and coming installment of 6.2, it is important that departments have update their Resources.
The capabilities of the new version will help PMs and Section/Department Supervisors identify where their people might need help or be able to move tasks around or reassign them to other resources that might be available.

Below is a link from the new release. It is about 30 mins. long.
Just sign in as you and it will play.
https://www.planisware.com/media/planisware-demo-resource-supply-and-demand

Enhanced Communication:
The New Version is changing the way Notifications, Wall, Messages, Projects are being used.
It makes it easier to attach comments / follow a project between PM and FMs.
You can track conversations that are taking place about a project on the project.
EPS Version Upgrade (6.2.X)

- Enhanced Communication through Workboxes
- Improved Documentation (Hyperdoc)
- Improved Reporting and Dashboards

We are in the process of working with Planisware and XRiver to upgrade our EPS system to the 6.2 version of the software.

Planisware is the name of the software we call EPS and is also the name of the vendor that created the software.
XRiver is a third party that we contract with for planisware implementation help.

The new version will bring some subtle changes to the user interface and will add several new features that we will be implementing.

The Workbox and Hyperdoc are two new features that we believe will help with communication and documentation within EPS.

Once we have the new version installed on our test server, we will be evaluating the need for new documentation and training.
The workbox is a new collaboration feature that provides users with a first-stop entry point into EPS.

It enables users to see, at a glance, what they have to do in the system, in the form of points of interest, grouped into themed sections.

From this page, you can navigate to the pages you will need to fulfill certain actions, via the posts they see in their workbox.

The workbox is available as a page in both the home and projects modules.
Hyperdoc provides a contextual online help for the out-of-the-box product.

Each field, menu command, column, and so on, within the standard product, will have its own help bubble, appearing on mouse over.

The new Hyperdoc feature will also give us the ability to document MDT specific fields and features.
Reporting and Dashboards

- Dynamic Queries
  - Parameters can be dynamically updated
    - IE: Filtering By District (Currently Filtering Conflicts with Portfolio)

Reporting and Dashboards are areas that we would like to expand and version 6.2.6 will allow as to do that.

Our current EPS version does not handle Portfolios and Filters correctly. Planisware (The vendor of the software), has acknowledge there is a bug in the current system that produces incorrect data when Portfolios and Filters are both used in a Report or Dashboard. I have been told this has been fixed in the 6.2 versions of the software.

Once we verify this issue has been solved in the new version we will be able utilize the Report and Dashboard features to display data with the ability to drill down by district, functional unit, etc.
Conclusion

• Teamwork brings transportation projects to life!
• EPS promotes teamwork.
• Make EPS Work for You!