



MnDOT Project Management
Office Presents:

Schedule Baselines

Presenter: Jonathan McNatty, PSP
Senior Schedule Consultant
DRMcNatty & Associates, Inc.

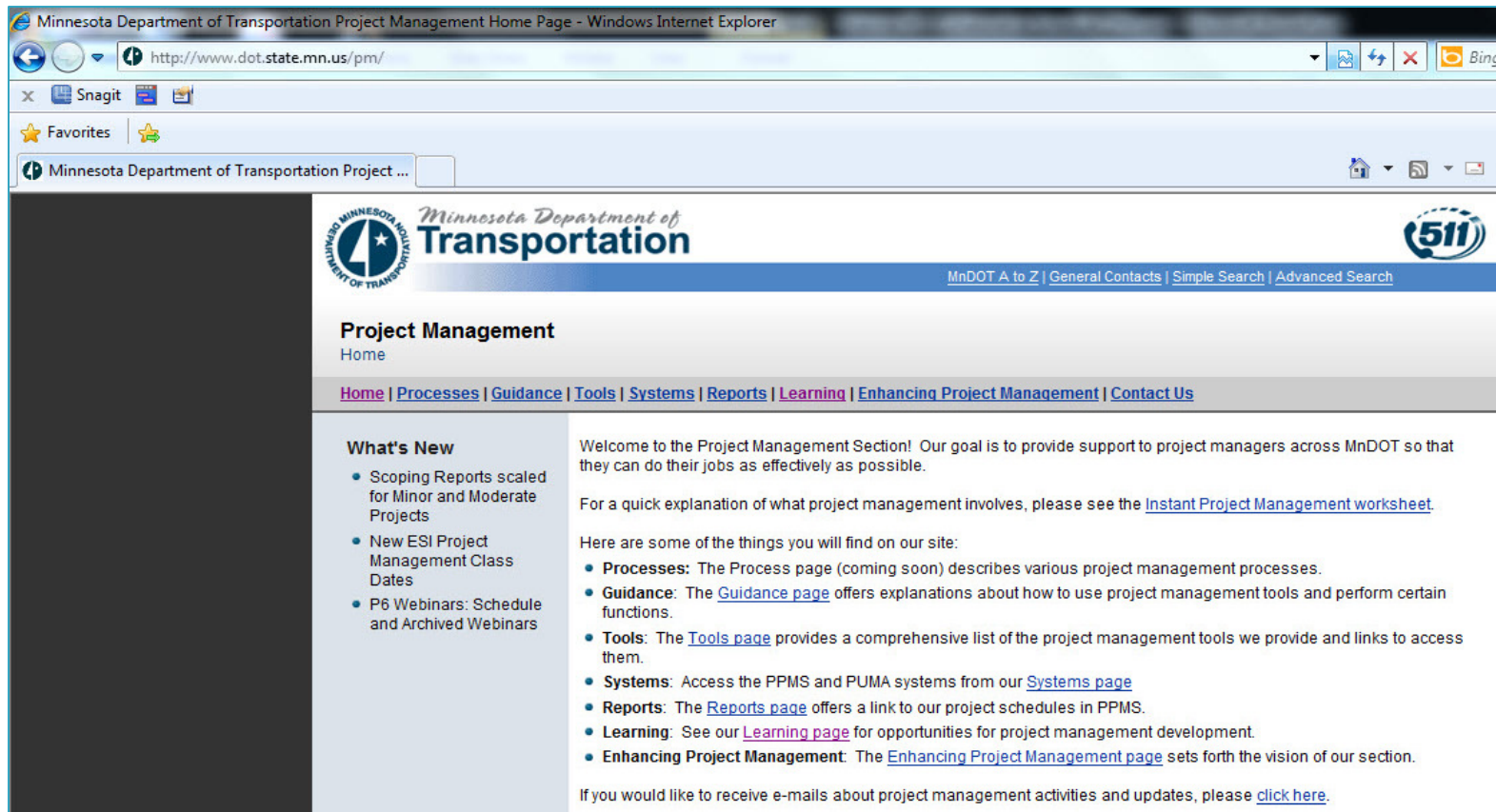
Housekeeping Items

- ❖ Lines will be muted during the webinar
- ❖ Questions can be submitted thru the GoToWebinar Questions box on right of your screen and posted on website within 5 days
- ❖ Questions will be made available “Live” for this webinar, can download pdf on how to submit live questions for next weeks webinar on the MnDOT Website
- ❖ Webinar slides available in pdf on MnDOT website within 5 days
- ❖ Webinar is being recorded and will be available on the MnDOT website within 5 days
- ❖ <http://www.dot.state.mn.us/pm/>



MnDOT Webinars

❖ <http://www.dot.state.mn.us/pm/>



The screenshot shows a Windows Internet Explorer browser window displaying the Minnesota Department of Transportation Project Management Home Page. The address bar shows the URL <http://www.dot.state.mn.us/pm/>. The page features the MnDOT logo and navigation links. The main content area is titled "Project Management" and includes a "What's New" section with a list of updates and a welcome message.

Minnesota Department of Transportation Project Management Home Page - Windows Internet Explorer

<http://www.dot.state.mn.us/pm/>

Minnesota Department of Transportation

MnDOT A to Z | General Contacts | Simple Search | Advanced Search

Project Management

Home

[Home](#) | [Processes](#) | [Guidance](#) | [Tools](#) | [Systems](#) | [Reports](#) | [Learning](#) | [Enhancing Project Management](#) | [Contact Us](#)

What's New

- Scoping Reports scaled for Minor and Moderate Projects
- New ESI Project Management Class Dates
- P6 Webinars: Schedule and Archived Webinars

Welcome to the Project Management Section! Our goal is to provide support to project managers across MnDOT so that they can do their jobs as effectively as possible.

For a quick explanation of what project management involves, please see the [Instant Project Management worksheet](#).

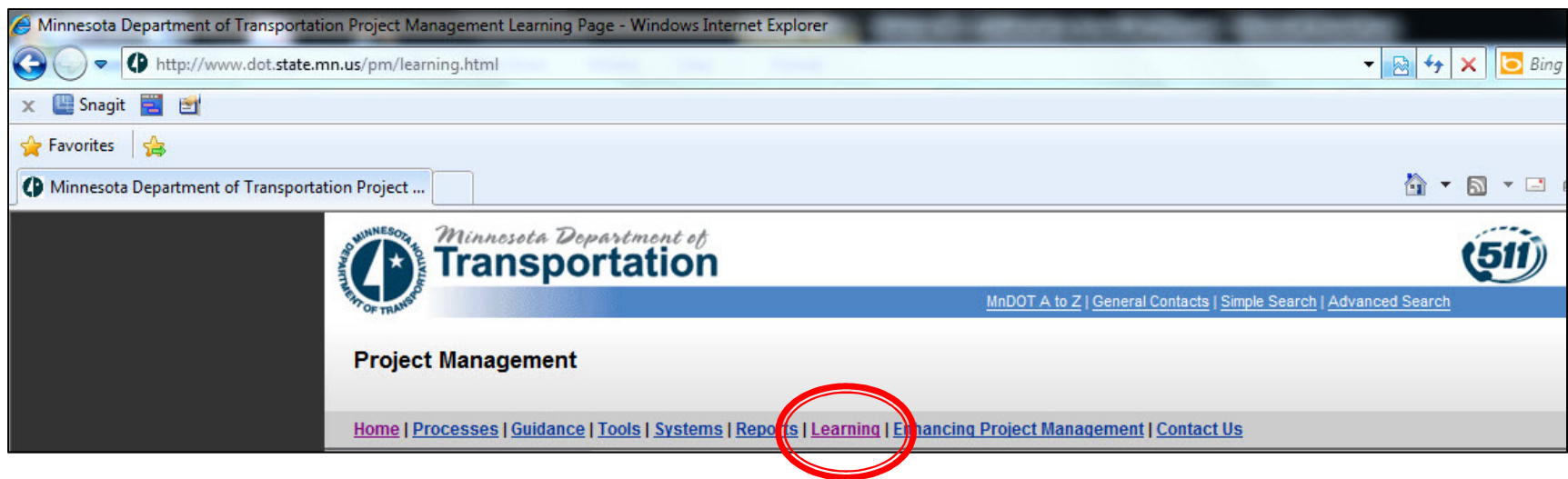
Here are some of the things you will find on our site:

- **Processes:** The Process page (coming soon) describes various project management processes.
- **Guidance:** The [Guidance page](#) offers explanations about how to use project management tools and perform certain functions.
- **Tools:** The [Tools page](#) provides a comprehensive list of the project management tools we provide and links to access them.
- **Systems:** Access the PPMS and PUMA systems from our [Systems page](#)
- **Reports:** The [Reports page](#) offers a link to our project schedules in PPMS.
- **Learning:** See our [Learning page](#) for opportunities for project management development.
- **Enhancing Project Management:** The [Enhancing Project Management page](#) sets forth the vision of our section.

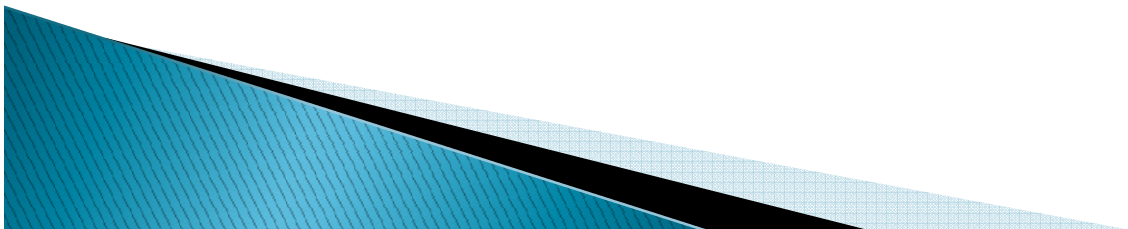
If you would like to receive e-mails about project management activities and updates, please [click here](#).

MnDOT Webinars

❖ <http://www.dot.state.mn.us/pm/learning.html>



❖ Click on the “Learning” link



MnDOT Webinars

Primavera P6 Webinars: Each webinar will start at 1:00 p.m. and last 1/2 hour. Click the links below to register for a session. After each webinar, a recording will be made available from this page.

To request ASL or a foreign language interpreter or other reasonable accommodations for the live webinars, call Janet Miller at 651-336-4720 or 1-800-657-3774 (Greater Minnesota). You may send an email to janet.rae.miller@state.mn.us (please request at least one week in advance).

The Future of MnDOT Project Controls

March 13, 2013

- [View this Presentation](#) (13:51, WMV 17 MB)
- [View Slides](#) (PDF 2MB)

Primavera P6 in the Project Management Process

March 20, 2013

- [View this Presentation](#) (28:39, WMV 40 MB)
- [View Slides](#) (PDF 8MB)
- [View Q&A](#) (PDF 17KB)
- [View Script](#) (Word 23KB)

Collaborative Scheduling using the CPM Method

March 27, 2013

- [View this Presentation](#) (32:57, WMV 34MB)
- [View Slides](#) (PDF 15MB)
- [View Script](#) (Word 5MB)

Work Breakdown Structures

April 3, 2013

- [View this Presentation](#) (31:11, WMV 23MB)
- [View Slides](#) (PDF 10 MB)

Scheduling Float

April 10, 2013

[Reserve your Webinar seat now](#)

Schedule Baselines

April 17, 2013

[Reserve your Webinar seat now](#)

Schedule Updates

April 24, 2013

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Project Reporting

May 1, 2013

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Impact Schedules

May 8, 2013

[Reserve your Webinar seat now](#)

MnDOT use of Calendars in Primavera P6

May 15, 2013

[Reserve your Webinar seat now](#)

Roles and Resource Management

May 22, 2013

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Risk Management

May 29, 2013

[Reserve your Webinar seat now](#)

Views and Layouts for Program Management

June 5, 2013

[Reserve your Webinar seat now](#)

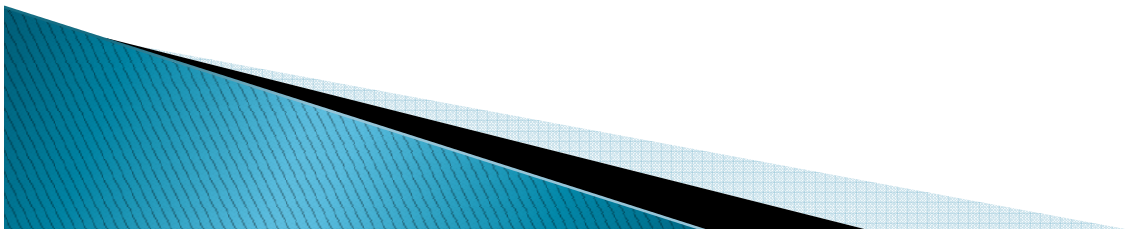
Dashboards and Reporting for Program Management

June 12, 2013

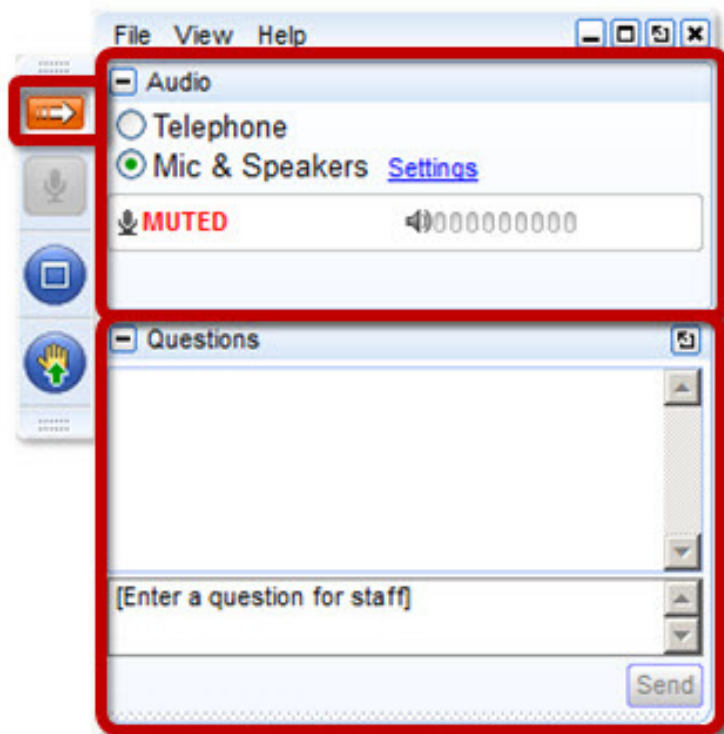
[Reserve your Webinar seat now](#)

Webinar “Live” Questions

- ❖ Live questions will now be available for MnDOT weekly webinars
- ❖ Live questions can be submitted during the webinar and will be answered in the final 10 minutes of the webinar
- ❖ Use the “Questions” box in the GoToMeeting dialog box during the webinar
- ❖ Use the “Raise Hands” to ask a “Live” questions during the questions and answer session, the lines will be un-muted



MnDOT Webinars



Your Participation

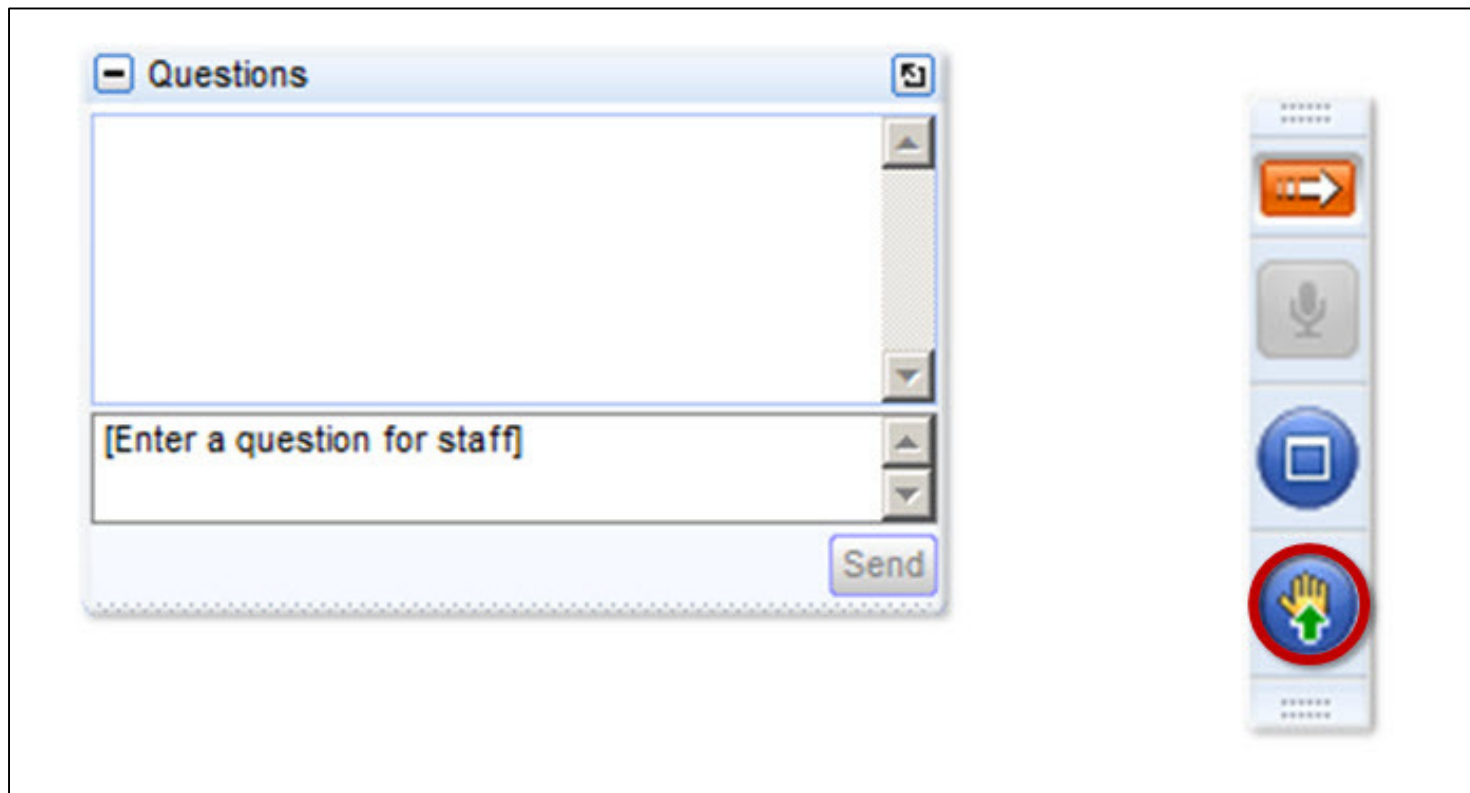
Open and hide your control panel

Join audio:

- Choose "Mic & Speakers" to use VoIP
- Choose "Telephone" and dial using the information provided

Submit questions and comments via the Questions panel

Submit Webinar Questions

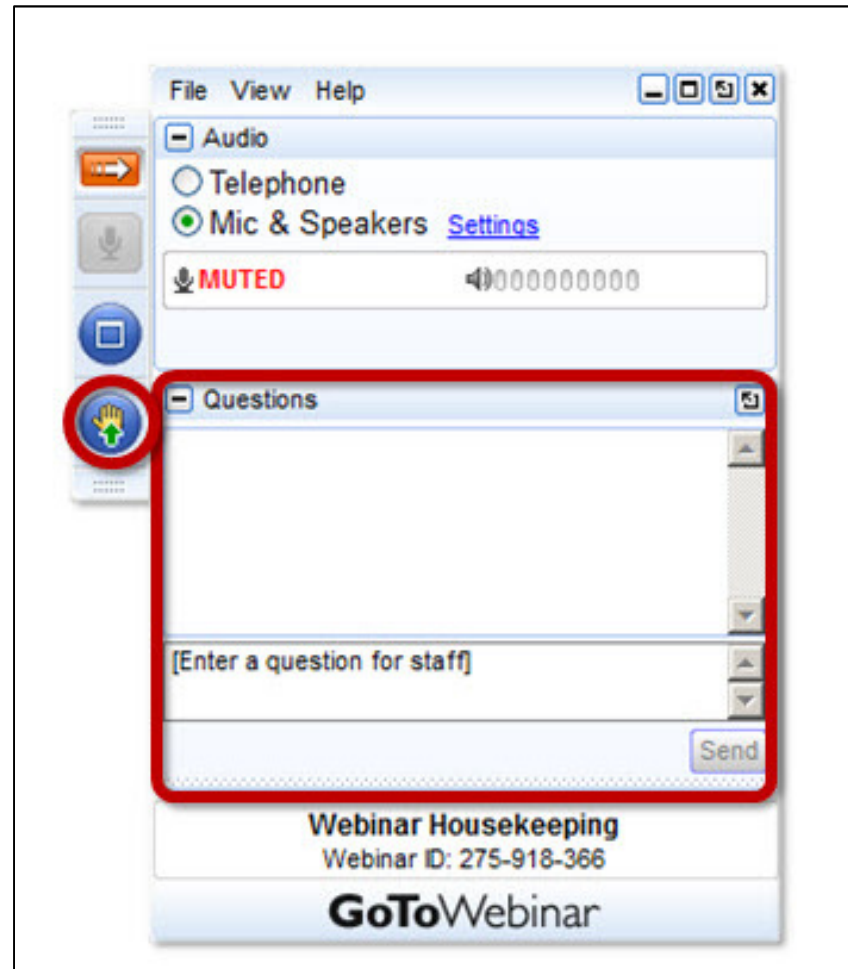


The image shows a user interface for submitting webinar questions. It consists of a main window titled "Questions" and a vertical toolbar on the right.

The "Questions" window has a title bar with a minus sign, the text "Questions", and a maximize button. Below the title bar is a large text area for entering a question. At the bottom of this text area is a smaller input field containing the placeholder text "[Enter a question for staff]". To the right of the input field are two small up and down arrow buttons. At the bottom right of the window is a "Send" button.

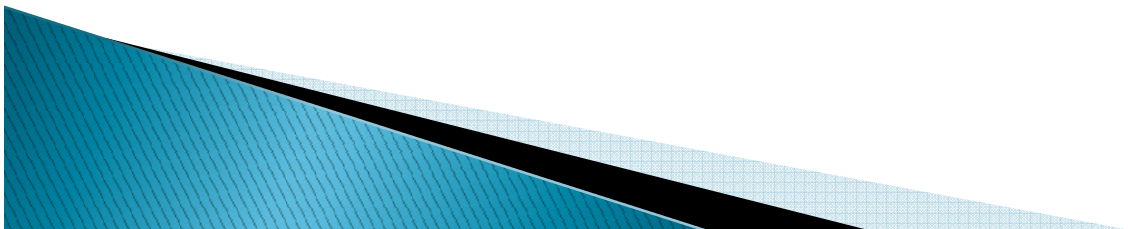
The vertical toolbar on the right contains four icons: an orange button with a right-pointing arrow, a microphone icon, a blue square button, and a red circle button with a yellow hand icon pointing up. The toolbar has a light blue gradient and is flanked by two sets of five small squares.

Raise Hand for Question



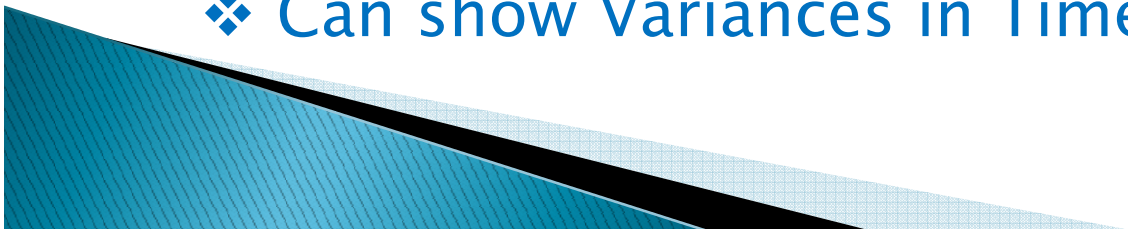
Introduction to Webinar

Learn how a baseline is a copy of a project that you can compare to the current project to evaluate progress. Baselines provide a "target" against which you can track a project's cost, schedule, and resource performance.



What is a Schedule Baseline

- ❖ A baseline is a copy of a project that you can compare to the current project to evaluate progress. Create a baseline plan before updating a schedule for the first time
- ❖ Baselines provide a target against which you can track a project's cost, schedule, and resource performance
- ❖ Also referred to as the “Target” schedule
- ❖ Can show Variances in Time and Cost



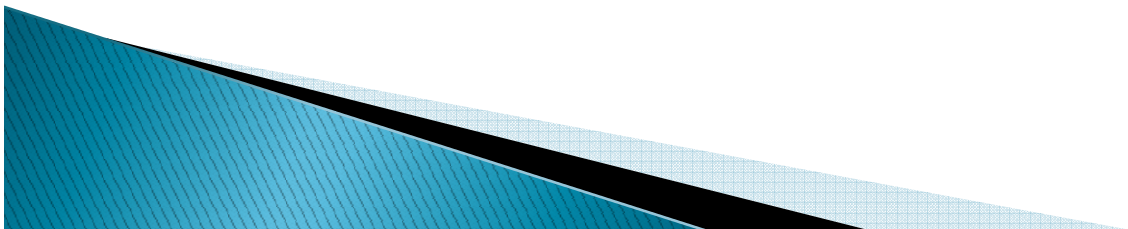
Definitions of a Schedule Baseline

- ❖ Schedule Baseline is an “approved” version of the project schedule
- ❖ The Project Schedule is a “living” document, whereas the Schedule Baseline is “frozen”
- ❖ The Project Schedule is the “actual”, whereas the Schedule Baseline is the “plan”
- ❖ The Project Schedule is a “project document”, whereas Schedule Baseline is a part of the Project Management Plan



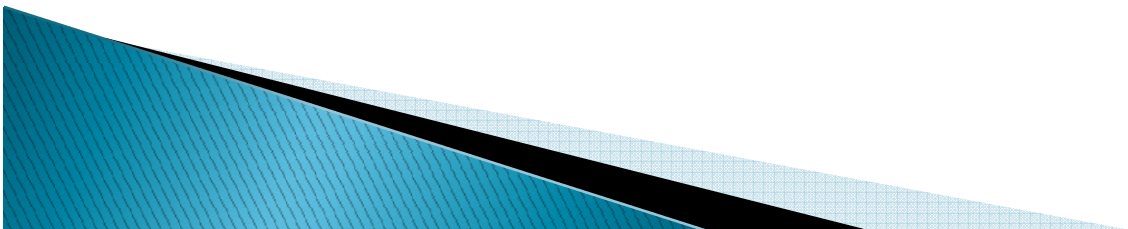
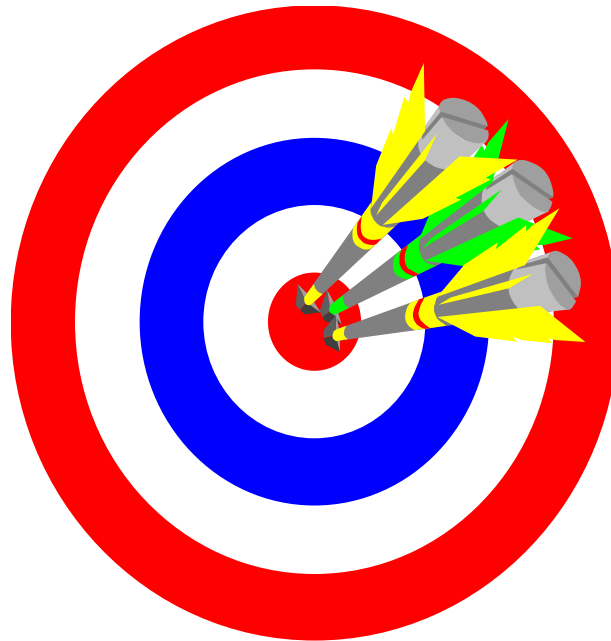
Definitions of a Schedule Baseline

- ❖ The Project Schedule is updated as the project is being executed, whereas Schedule Baseline is only modified as a result of an approved change
- ❖ Schedule Performance is measured by the actual (Project Schedule) vs the Baseline (Schedule Baseline)
- ❖ At the beginning of project execution, the Project Schedule is the same as the Schedule Baseline. As work is done on the project, the actual progress is updated on the Project Schedule

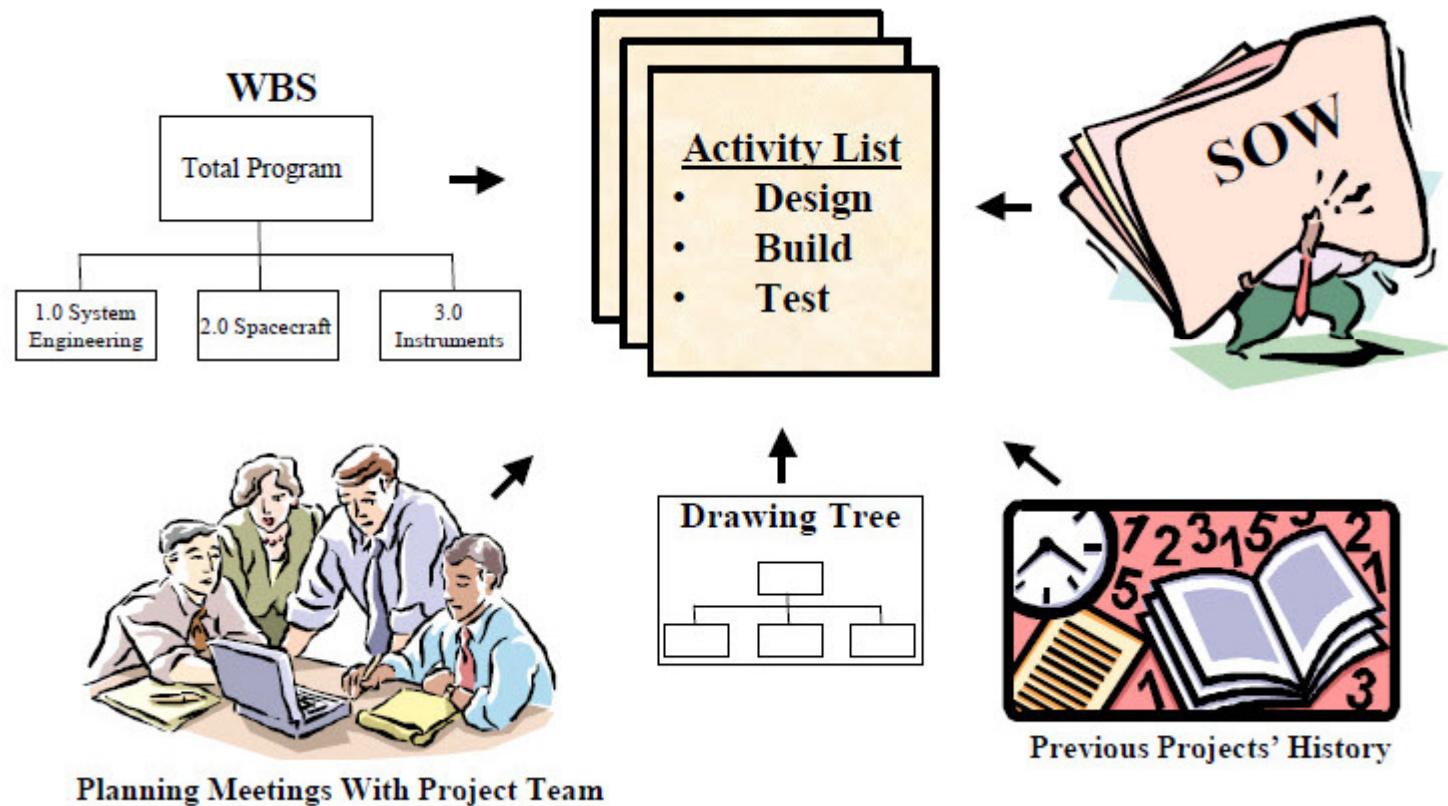


Developing a Schedule Baseline

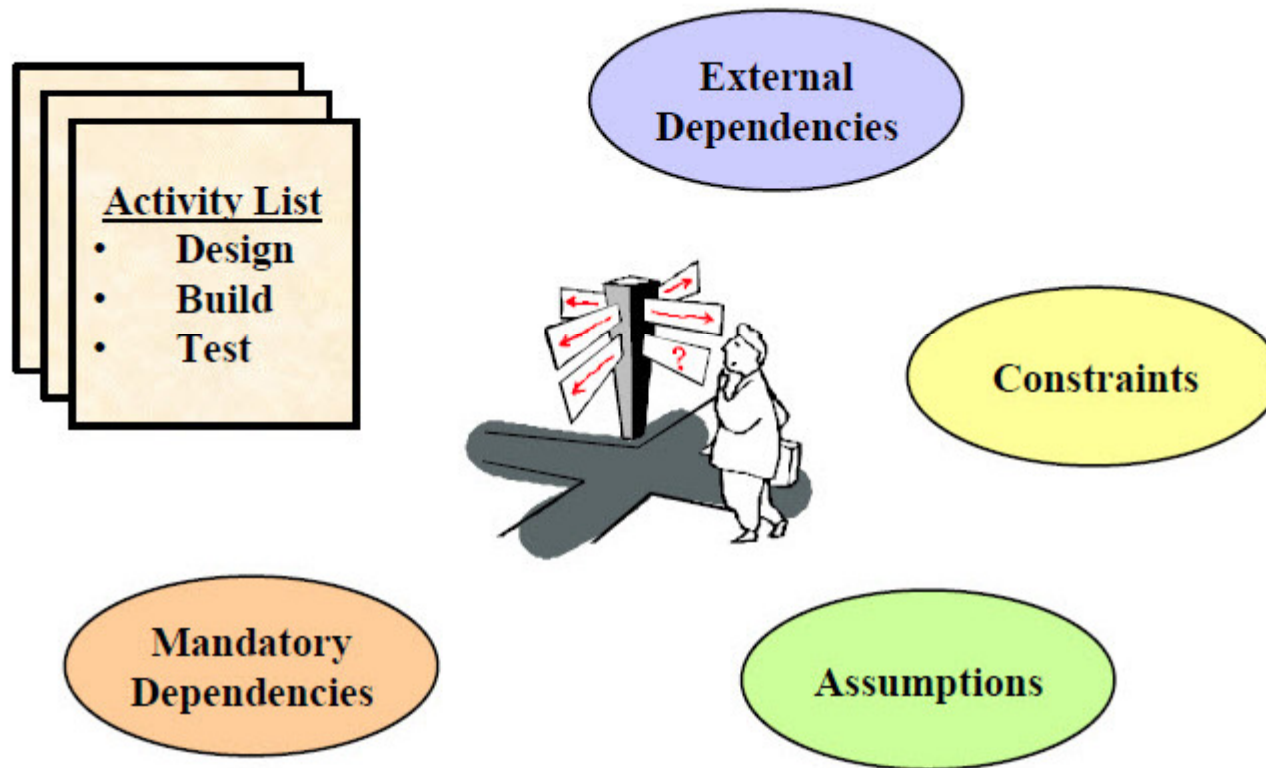
- ❖ Also referred to as the “Target” Schedule



Identify the Project Activities



Determine the Activity Sequence

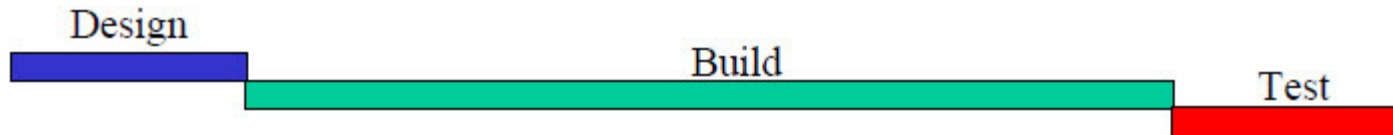


Estimate Activity Durations

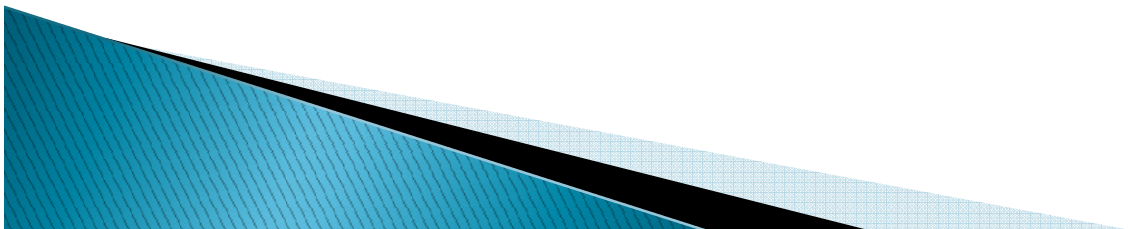
The Schedule According to Engineering



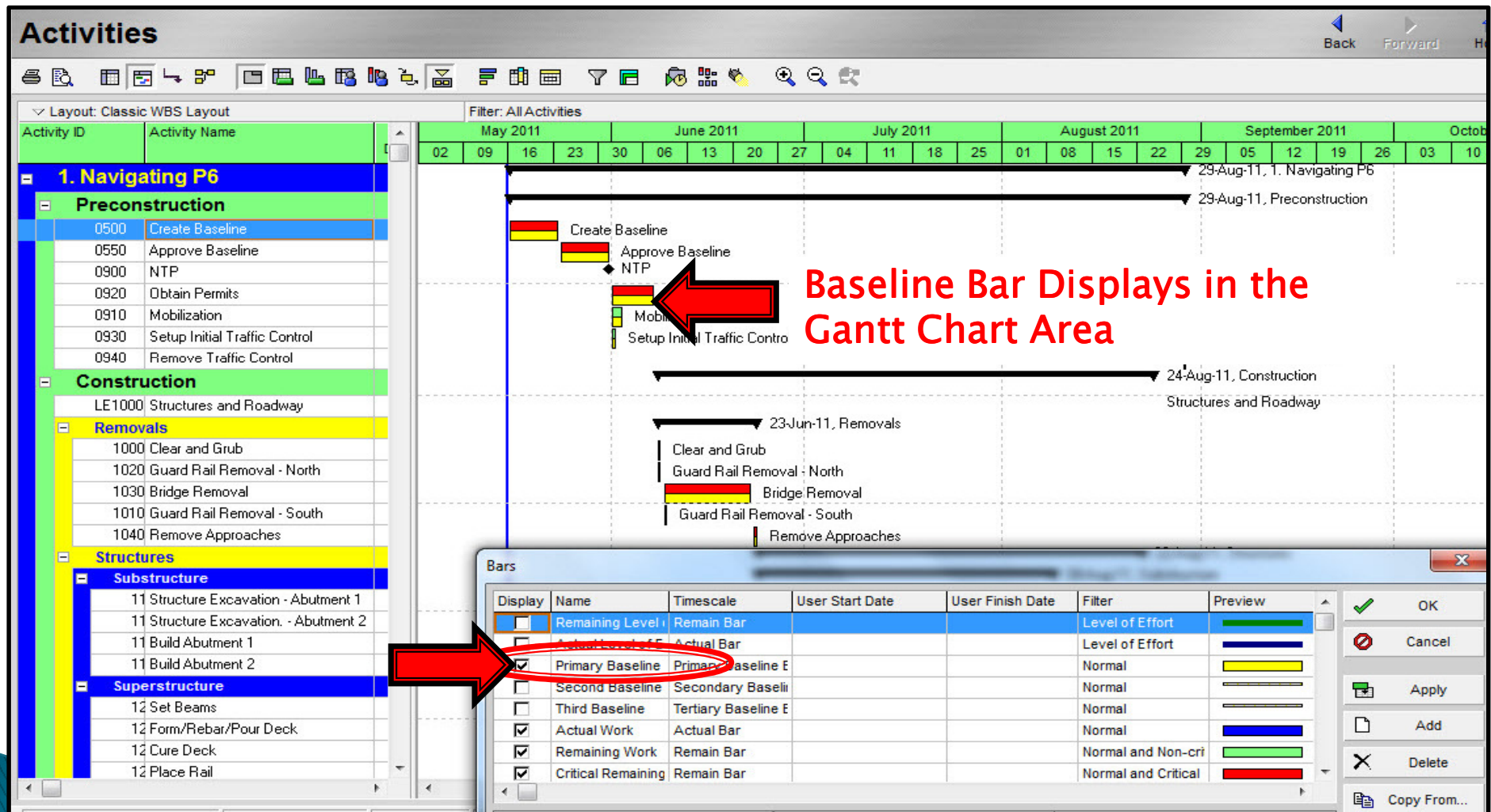
The Schedule According to Manufacturing



The Schedule According to System Test

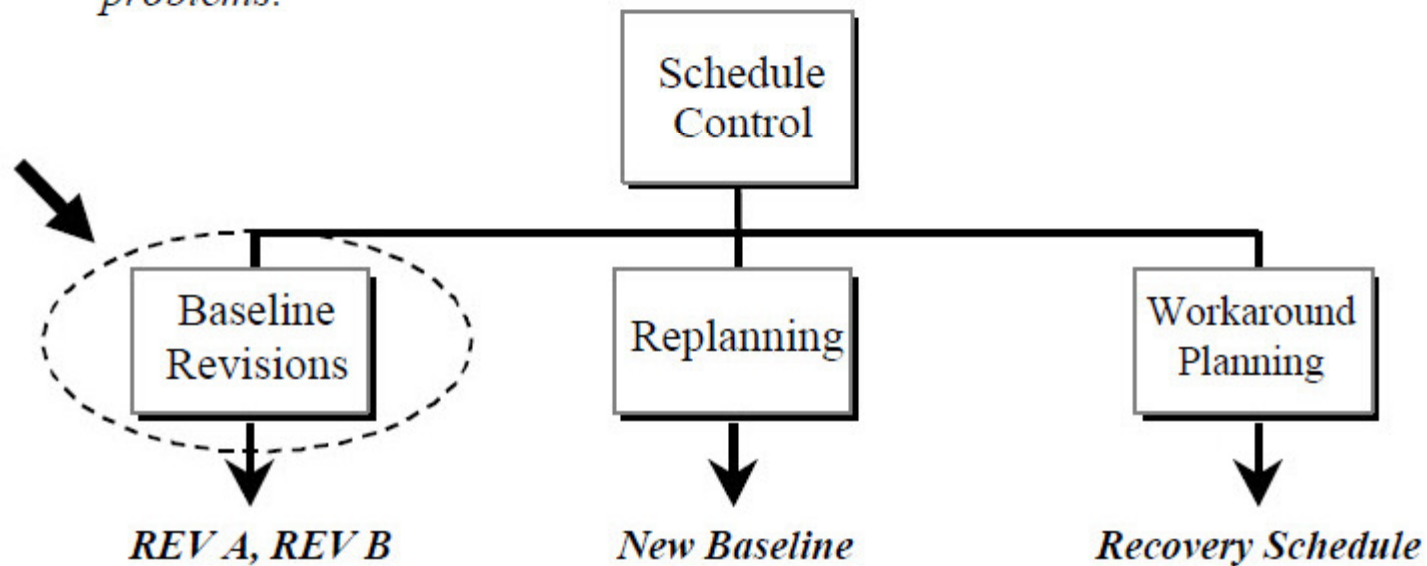


“Freeze” The Schedule Baseline



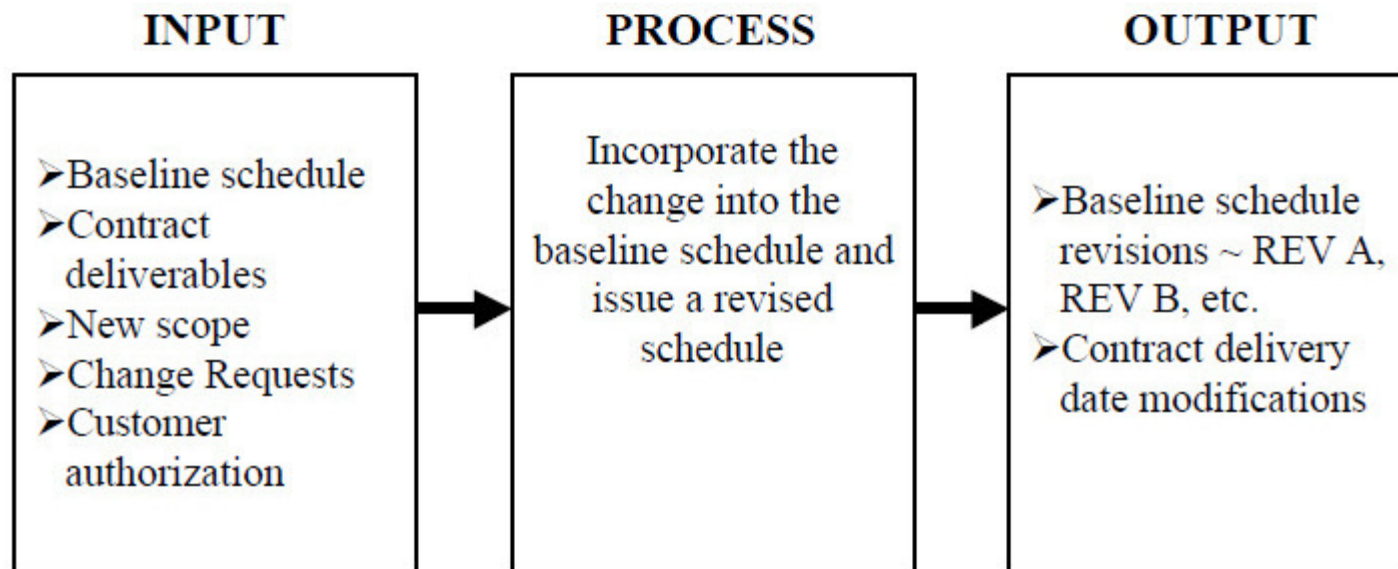
Controlling The Schedule Baseline

Schedule Control is the process of changing the project schedule in a timely, disciplined manner in response to a) new work scope, b) the need for a new schedule baseline, and c) recovery from actual project problems.



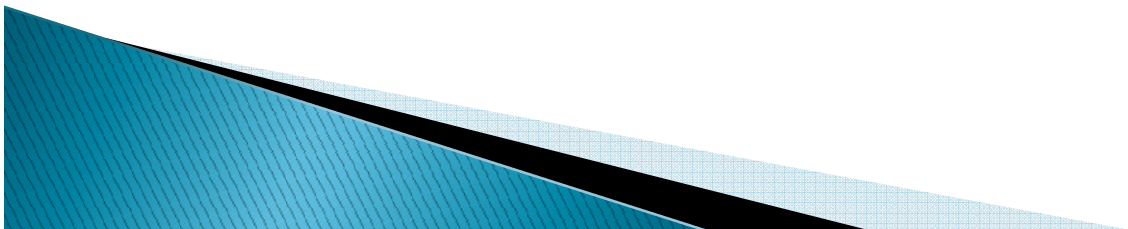
Schedule Baseline Revisions

The revision process consists of modifying the baseline schedule with the incorporation of new authorized work scope.

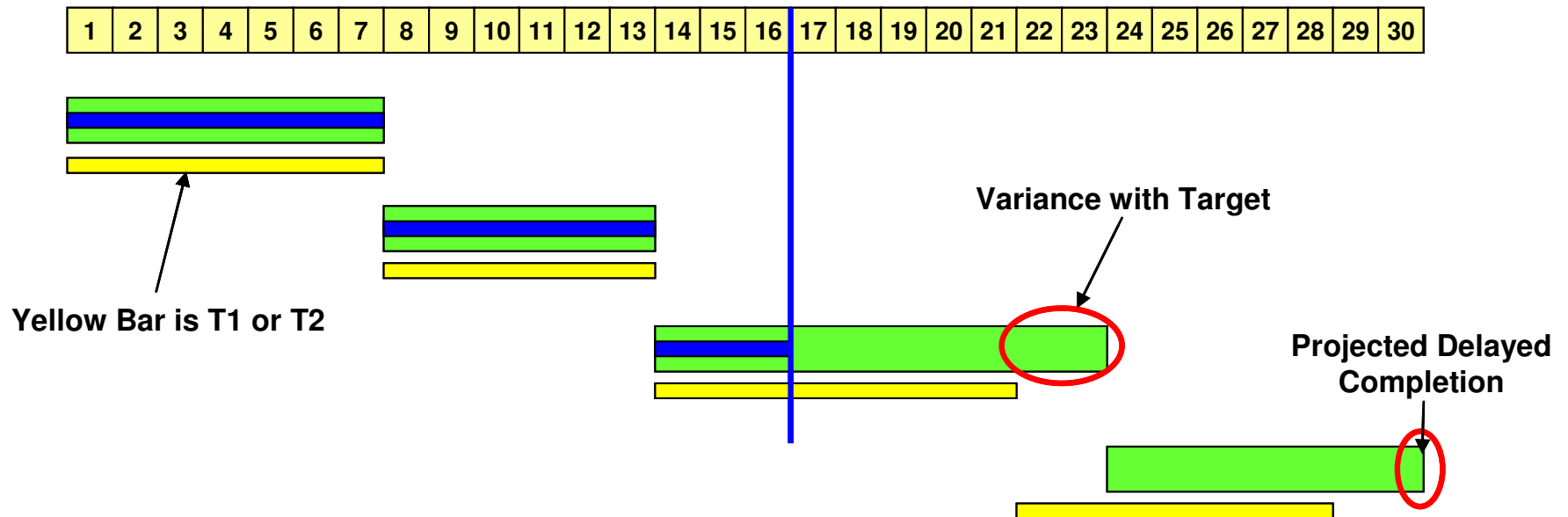


Schedule Baseline Comparison

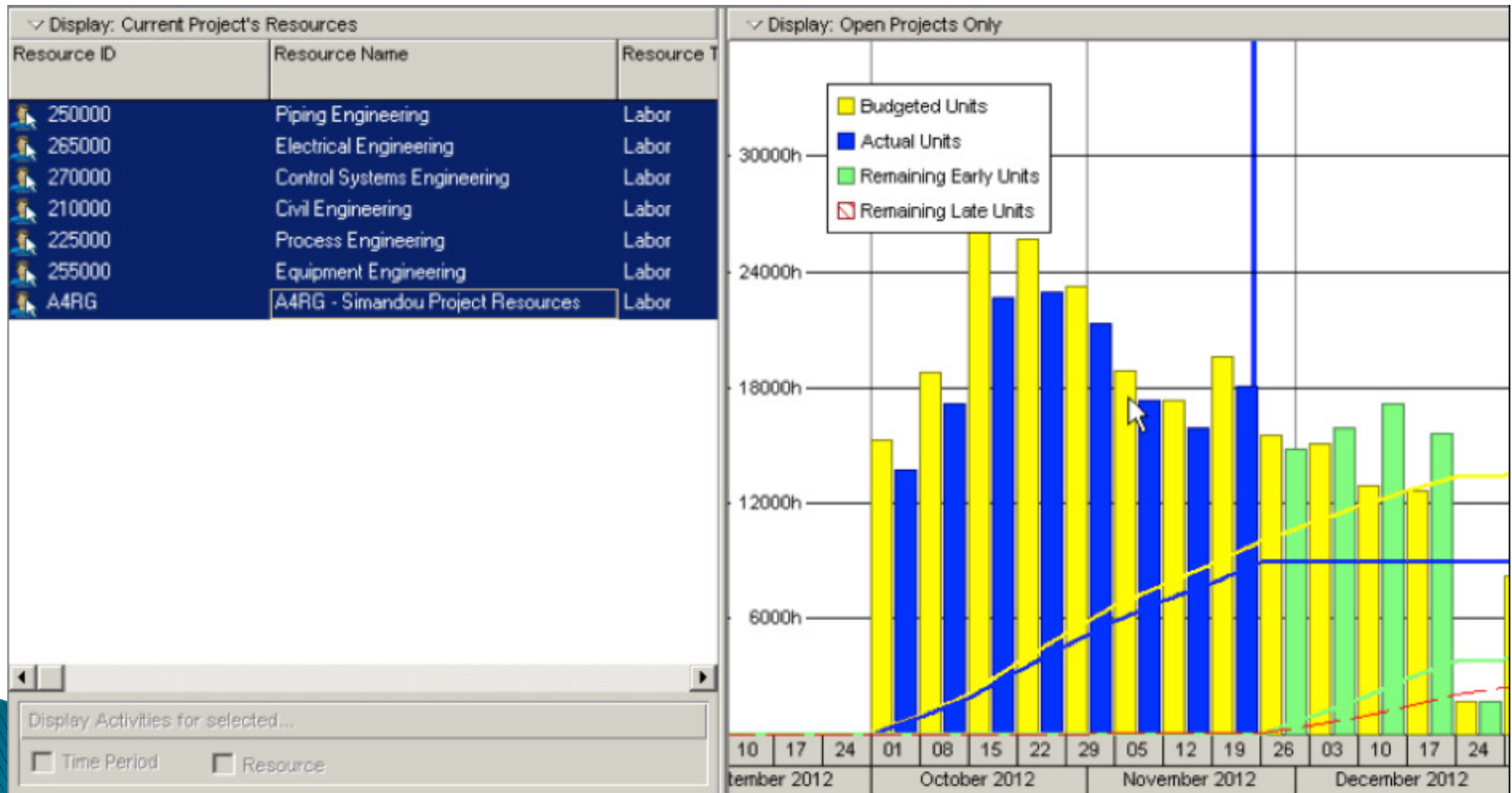
	<u>Baseline</u>	<u>REV A</u>
Planned Delivery	3-26-02	4-9-02
Contract Delivery	5-1-02	5-15-02
Total Float	+26 days	+26 days



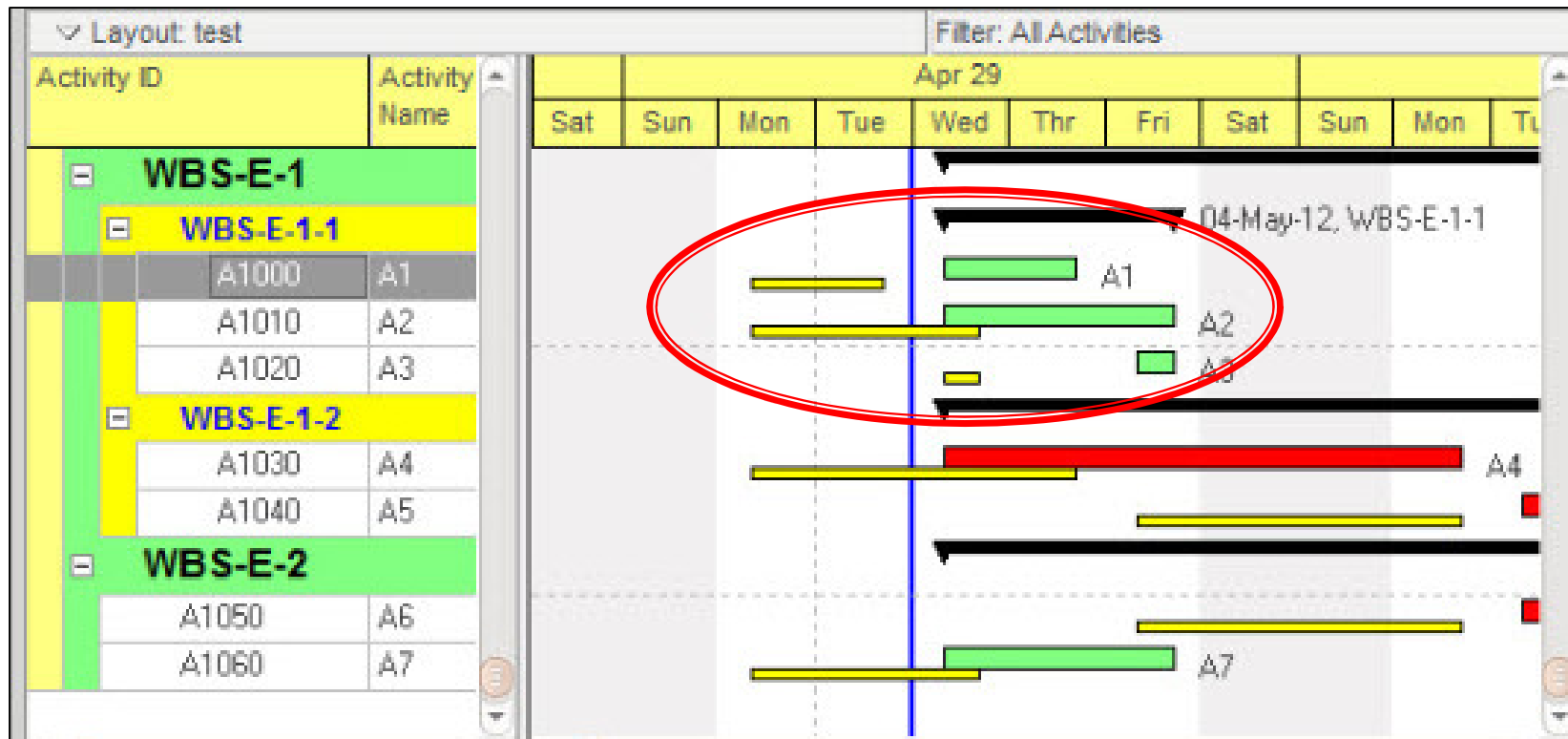
Baseline Comparison to Actual



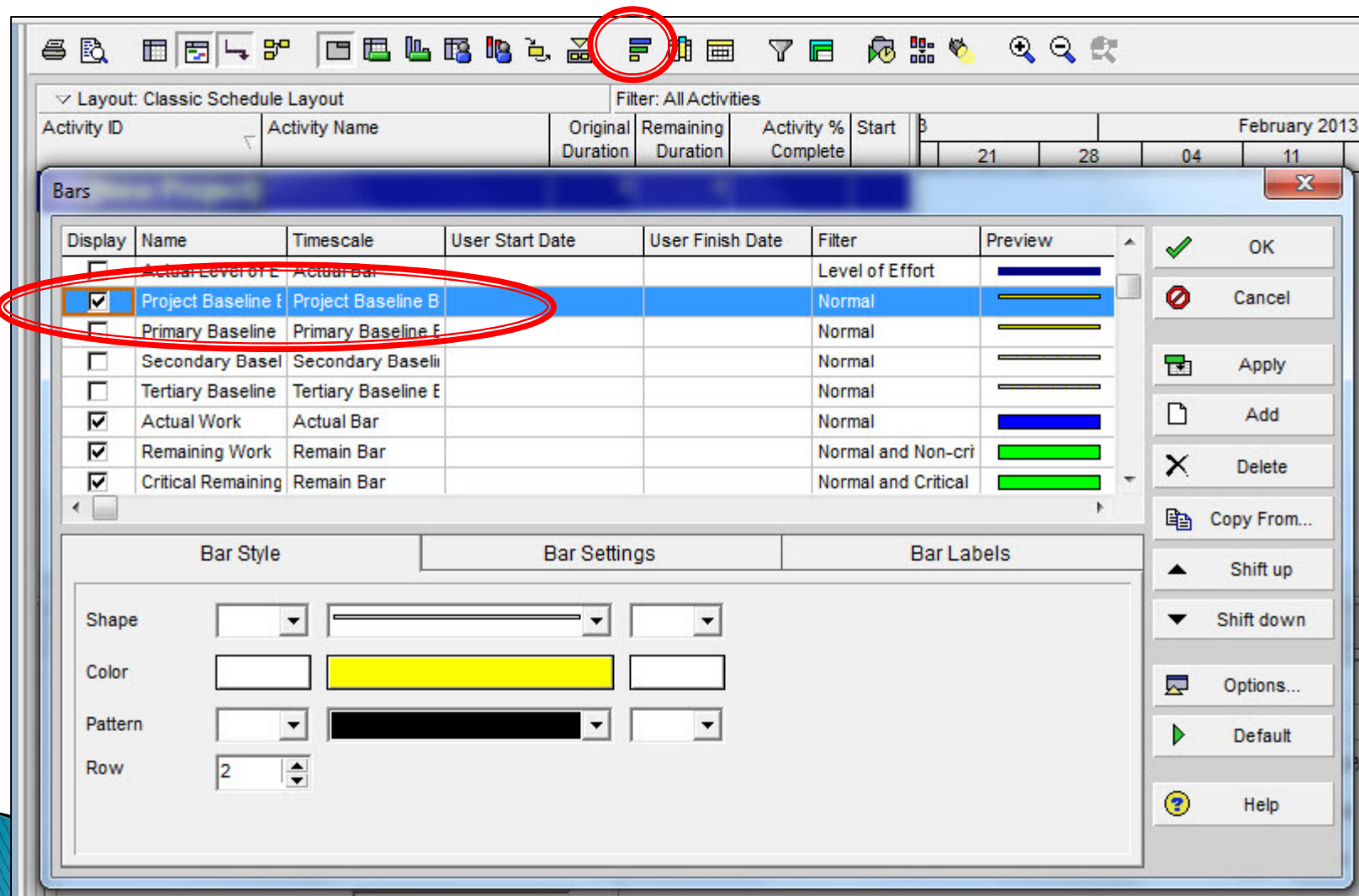
Baseline Comparison Graphs



Baseline Comparison “Bars”



Baseline Comparison “Bars”





Questions or Comments

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Peter Harff

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MnDOT Project Management Office
507-514-1095

<http://www.dot.state.mn.us/pm>

Next Webinar: Wednesday, April 17, 2013

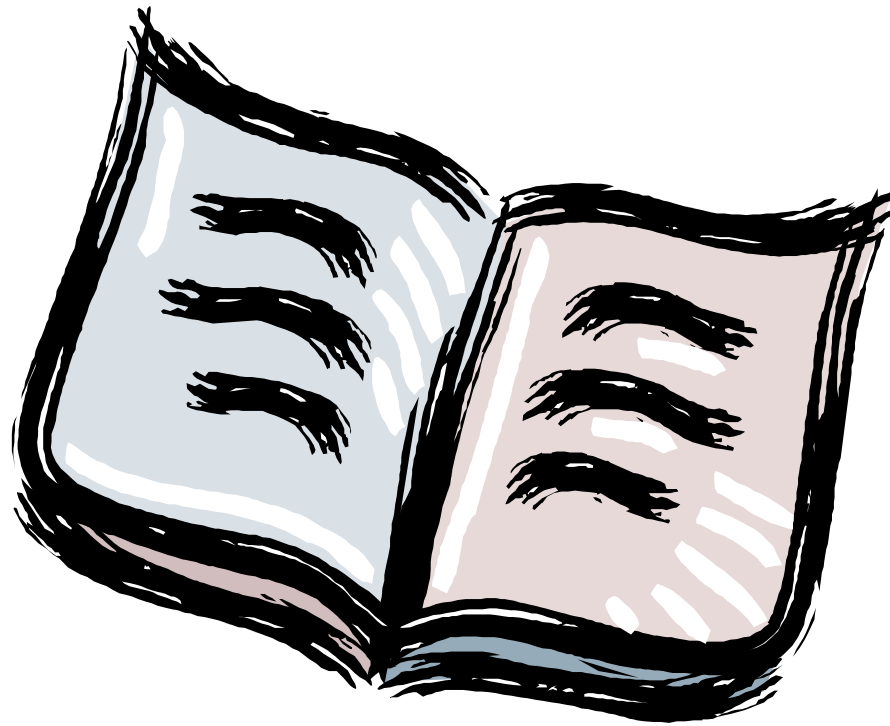
Time: 1:00 p.m.

Topic: Schedule Baselines

**Presenter: Jonathan McNatty
DRMcNatty & Associates, Inc.**



Glossary of CPM Terms



Glossary of CPM Terms

Activity - An individual work task that is the basic component of a project.

Activity Codes - Values assigned to project activities to organize them into manageable groups for updating, analyzing, reporting, plotting, and summarizing.

Actual Cost - The cost incurred to date for a resource or activity.

Actual Dates - Start (AS) and Finish (AF) dates that you record for an activity that has progress or is complete.

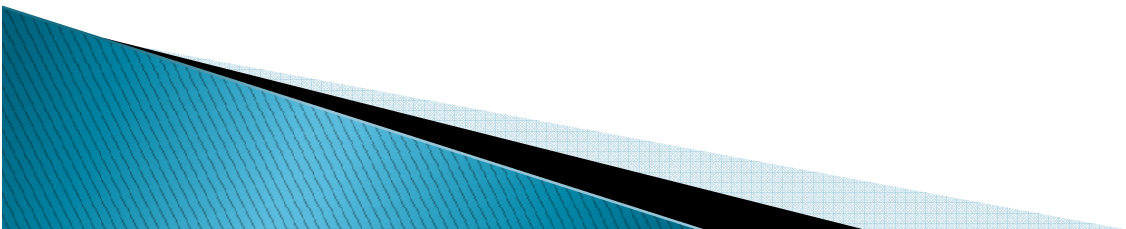
Actual Quantity - The amount of a resource used to date.

Backward Pass - The calculation of a network's late dates.

Bar Chart - The graphical display of activities according to time. Relationships between activities are not shown. A bar chart is also called a Gantt Chart.

Baseline Schedule - The original planned schedule for a project.

Budget - The estimate of the total units or costs required by a resource or cost account for an activity.



Glossary of CPM Terms

Calendar - The workdays and holidays defined for a project that determine when an activity can be scheduled.

Completion - The date on which a project is to be finished.

Constraint - A restriction imposed on the start or finish of an activity.

Critical Activity - An activity that has the least amount of total float.

Critical Path - The series of activities in a project that will take the longest to complete.

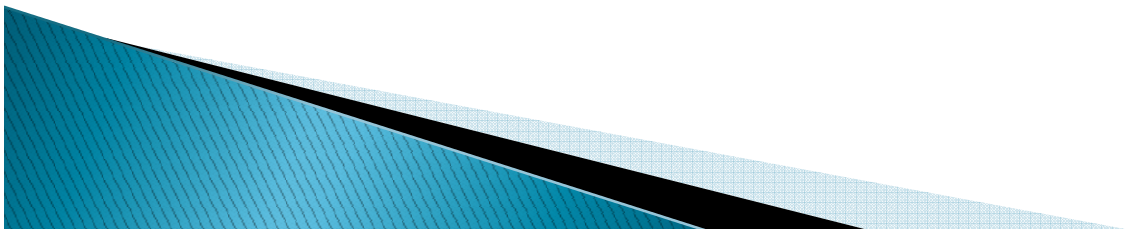
Critical Path Method (CPM) - The calculation of the earliest and latest start and finish dates of activities based on their duration and relationships to other activities.

Data Date - The date used as the starting point for schedule calculations.

Driving - A predecessor/successor relationship in which the predecessor

Relationship - Determines the successor's early dates.

Duration - The amount of time (in workdays) needed to complete an activity.



Glossary of CPM Terms

Early Start (ES) - The earliest date when an activity can begin after its predecessors have been completed.

Earned Value - The value of work performed rather than actual work performed.

Exception - A day when work must occur that was originally designated as a nonworkday.

Finish to Finish - A type of relationship in which a successor activity finish depends on its (FF) predecessor activity's finish.

Finish-to Start - A type of relationship in which a successor activity can begin only when its (FS) predecessor activity finishes.

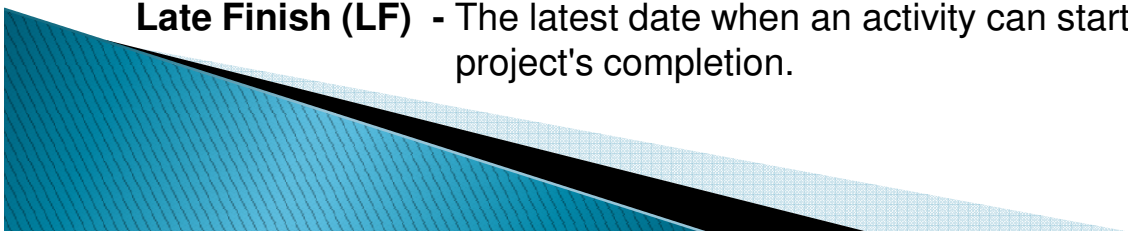
Float - The amount of time that the start or finish of an activity can be delayed without affecting the project finish date.

Forward Pass - The calculation of the network's early dates.

Free Float - The amount of time that an activity's early start can be delayed without delaying the early start of a successor activity.

Lag - An offset or delay from an activity to its successor.

Late Finish (LF) - The latest date when an activity can start without delaying the project's completion.



Glossary of CPM Terms

Late Start (LS) - The latest date when an activity can start without delaying the project's completion.

Loop - Circular logic within a network.

Milestone - An activity that represents a significant point in time, that has no duration.

Negative Float - The total number of days that the start or finish of an activity exceeds the time allowed. Negative float indicates a delay in the schedule.

Negative Lag - An offset or lead time from an activity to its successor in which the successor's start date is earlier than the predecessor's start date.

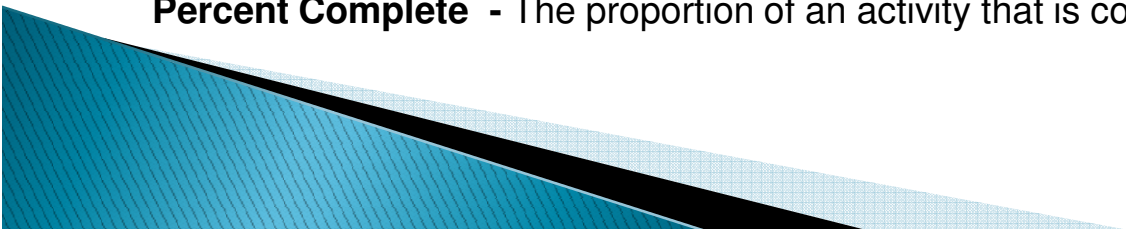
Network - The series of activities required to complete a project.

Nonworkperiod - A period of time when work may not occur.

Open End - An activity that has no successor or predecessor relationships to other activities in the network.

Out-of-Sequence Progress - Work completed for an activity before it is logically scheduled to occur.

Percent Complete - The proportion of an activity that is complete.



Glossary of CPM Terms

Performance Measurement - The comparison of the current plan to a target plan to assess whether it is progressing as intended.

Planning Unit - The increment of time used to schedule a project. The planning unit can be in hours, days, weeks, or months.

Predecessor - An activity that must logically occur before another activity.

Progress - The completion of work.

Resources - The people, materials, equipment or services required to complete a project.

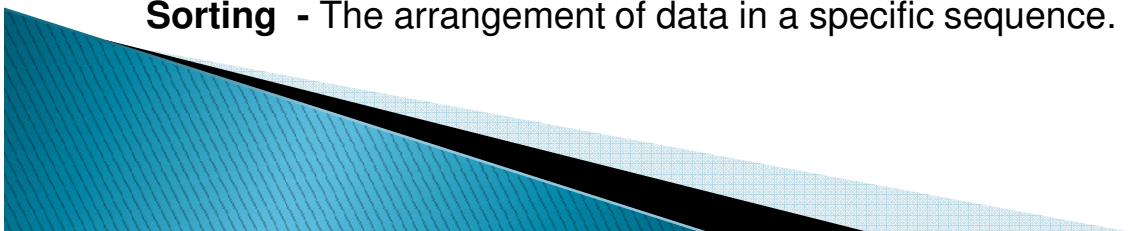
Schedule - A list of the activities needed to complete a project, along with their start and finish dates.

Schedule Calculation - The calculation of early and late dates for each activity in the project.

Slack - See Float.

Slippage - Lateness determined by measuring the target finish of an activity from its actual or current early finish.

Sorting - The arrangement of data in a specific sequence.



Glossary of CPM Terms

Start-to Start - A type of relationship in which a successor's start depends on the start of (SS) its predecessor.

Status - The process of updating a project by indicating progress at regular intervals.

Successor - An activity that must logically occur after another activity.

Target - A project plan that can be compared to the current schedule to measure progress.

Task - A unit of work. Also called an activity.

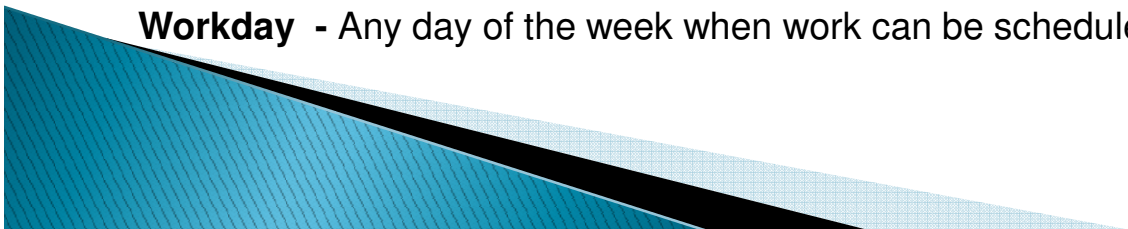
Total Float (TF) - The total number of days that the start or finish of an activity can be delayed without affecting the project finish date. Float can be negative, zero, or positive.

Updating - The process of recording progress in a project at regular intervals.

Variance - The difference between the current and target schedule dates.

Work Breakdown Structure (WBS) - The graphical depiction of the hierarchy of work needed to complete a project.

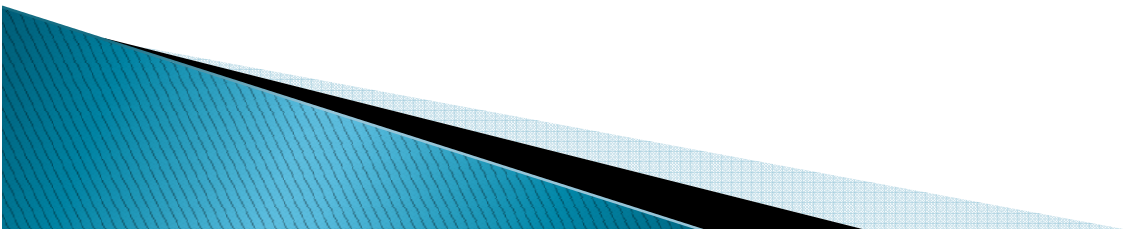
Workday - Any day of the week when work can be scheduled.



MnDOT Goals Going Forward

Projects in Construction Phase

- ❖ Contractor's Build Their Schedule in our Network 1/1/13
- ❖ Piloting Providing BIM Models and CTD Schedules to Contractors 3/1/13
- ❖ Select "Unit Rate" project– Resource and Cost Loaded 3/1/13
- ❖ Role and Resource Loaded of CE&I staff 6/1/14



MnDOT Goals Going Forward

Projects in Scoping and Design Phase

- ❖ “Active Projects” Role and Resource Loaded 6/30/13
- ❖ All planned projects Role loaded by June 30, 2014
- ❖ Taxpayer Transportation Accountability Act

