

Publication 615

Scheduling Manual

Procedures for PennDOT Schedules

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Prepared by:

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This manual has been prepared for the purpose of providing guidance to Department staff and their consultants and contractors on how Elecosoft Powerproject tools should be used for design, pre-bid, and construction scheduling on Department projects. Note questions with regards to Publication 615 can be directed to the Project Schedules, Specifications, and Constructability Section in the Bureau of Project Delivery.

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CHAPTER 1 - ELECSOFT POWERPROJECT AND PENNDOT

1.0- OVERVIEW

The purpose of this manual is to give Department staff and Business Partners specific direction on how the Department expects them to use the Elecosoft Powerproject Web Portal and Elecosoft Powerproject Client along with some basic knowledge of scheduling and utilizing Elecosoft Powerproject Client, Elecosoft Powerproject Web Portal, and Elecosoft Powerproject Project Comparison as a project management tool.

The Elecosoft Powerproject Web Portal is a web-based collaboration portal that allows users to create, view, and update Elecosoft Powerproject schedules over the Web. The purpose of the Elecosoft Powerproject Client software is to create the actual schedule. Elecosoft Powerproject Project Comparison allows users to compare two iterations of the same schedule and will easily determine what has changed or been modified between the two schedules and displays a report of the findings.

This manual provides insight on what is needed to create, manage and progress a PennDOT schedule using the Elecosoft Powerproject Web Portal and Elecosoft Powerproject Client. The Elecosoft Powerproject Web Portal and the Elecosoft Powerproject Client serves as the central entry point of data into the PennDOT Environment. Each user will be responsible for their individual projects within the confines of PennDOT specific requirements. It is the responsibility of all Business Partners to verify and keep up to date the Department's version of Elecosoft Powerproject that is in use.

1.1- ELECSOFT POWERPROJECT AND PENNDOT

The Pennsylvania Department of Transportation (PennDOT) uses Elecosoft Powerproject, a project management software package, to help oversee and manage its highway and bridge program. Elecosoft Powerproject plays a crucial role in the delivery of this program because it:

- Enhances the ability to plan and manage highway and bridge projects
- Supports project management and reporting at both the project and portfolio levels
- Provides Historical Data Management and Analysis

1.1.1- Design. PennDOT maintains a standard design template to be used in the creation of a project design schedule. This design template, the PennDOT Master Template, contains a master list of standard design activities and their required coding for PennDOT design projects. The PennDOT Master Template is available in the Elecosoft Powerproject Web Portal or in the template folder within the Elecosoft Powerproject Client software PennDOT version. Any design schedule created for PennDOT must use the PennDOT Master Template, or one of the district specific templates created from the PennDOT Master Template template. In this manual, PDSMASTER and or PDSMASTER template will refer to the current PennDOT Master Template design template residing in the Elecosoft Powerproject Web Portal.

The ideal time for design schedules to be created is within one month of the scoping field view. However, since the project development process may contain factors which can generate a lag in the start of the major design activities, the design schedules must be developed in a timeframe commensurate with their complexity. Minor projects should have a design schedule developed no later than two months from the approved scoping form date. Major and moderate-complexity projects should have a design schedule developed no later than six months from the approved scoping form date. In all cases, the design schedule development must be completed prior to the physical start of any schedule activities.

1.1.2- Pre-Bid. PennDOT maintains a standard pre-bid template to be used in the creation of all Pre-bid schedules. This template, the PennDOT Pre-bid Template, contains a list of pre-bid activities and also specific views. The PennDOT Pre-bid Template is available in the Elecosoft Powerproject Web Portal or in the template folder within the Elecosoft Powerproject Client software PennDOT version. Any Pre-bid schedule created for PennDOT must use the PennDOT Pre-bid Template.

1.1.3- Construction. PennDOT maintains a standard construction template to be used in the creation of all CPM Construction schedules. This template, the PennDOT Construction Template, contains a list of sample activities and also specific views pertaining to construction and monitoring. The PennDOT Construction Template is available in the Elecosoft Powerproject Web Portal or in the template folder within the Elecosoft Powerproject Client software PennDOT version. Any Construction CPM schedule created for PennDOT must use the PennDOT Construction Template.

1.2- ELECOSOFT POWERPROJECT LICENSE

All internal PennDOT staff will have access to an Elecosoft Powerproject license. If Elecosoft Powerproject is not installed on an internal PennDOT staff's computer, a request for the software must be made to the Project Schedules, Specifications, and Constructability Section in the Bureau of Project Delivery. For Business Partners who do not have a licensed copy of Elecosoft Powerproject, a license can be requested from PennDOT. This license will be good for 90 days, until the schedule is created, submitted, and accepted by the Department. The loaned license can be renewed after the expiration period if deemed necessary. See Chapter 7 for guidance on how to request and activate a loaned license.

CHAPTER 2 - SCHEDULING BASICS

2.0- INTRODUCTION TO PROJECT MANAGEMENT

The key to Project Management is to have a project be on time and within budget. Project management involves organizing and scheduling tasks in a required sequence so that a project is completed in a specified time period. Project Management also involves allocating resources to complete the project activities without exceeding a project budget.

Project Management is the coordination of a group of activities where the manager plans, organizes, staffs, directs and controls to achieve an objective within constraints on time, cost, and performance of the end product.

Managing a project includes identifying requirements, establishing clear and achievable objectives, balancing competing demands for quality, scope, time, and cost, and adapting the specifications, plans, and approaches to the different concerns and expectations of stakeholders.

2.0.1- What is a Project?

A Project is a temporary endeavor undertaken to create a unique product, service, or result. Temporary means there are definite beginning and end points. The end is reached when the project's objectives are accomplished or when it becomes apparent that they will not, or cannot, be accomplished. Unique means that the project produces a quantifiable product, either an end item or component, the capability to perform a service, or a result (such as knowledge).

2.0.2- Processes of a Project Manager

Planning is a process to prepare and organize activities to achieve the desired goal.

Reasons to undertake project planning:

- Eliminating or reducing project risk,
- Obtaining a thorough understanding of the project's objectives,
- Formulating a strategy to attain those objectives, and
- Developing a monitoring framework to measure progress.

Controlling is a process or management to achieve the desired result. It is concerned with the metrics of the project, such as scope, time, cost and resources.

Unanticipated problems can occur on any project. Having the tools to make informed adjustments for them is the key to controlling a project. A scheduling system will provide the project manager with adequate information to respond to problems in a timely manner. The CPM Process provides the manager factual information to respond in a timely manner to every impact to the schedule by using the network diagram and Monitoring Chart to identify the impact and adjust accordingly.

2.0.3- What is the need for a schedule?

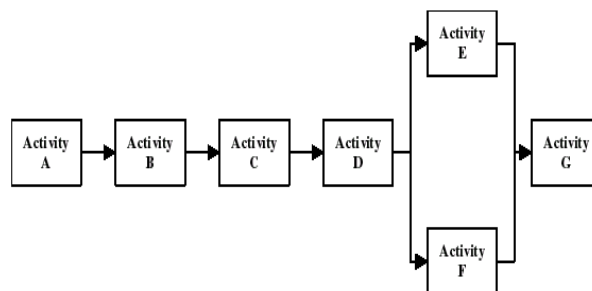
Having a good schedule will ensure adequate planning and execution of the work to be performed. The schedule should be prepared by the individuals who are going to be using the schedule. If a schedule does not involve key personnel who are going to be building the project it is less apt to be followed.

The proper preparation and use of construction schedules can reduce delays, cost overruns and disputes. Scheduling is the determination of the timing of activities. The use of CPM scheduling will help to define expectations and has proven to be effective in assessing actual vs. planned performance. CPM Scheduling and the use of a Monitoring Chart will provide factual information to identify and deal with problems as they arise and will assist managers in making timely decisions about project completion. Understanding the CPM Schedule and using it as a tool to document and track performance will enable managers to analyze project delays, impacts of work order changes, and will help avoid delay claims.

2.1- REVIEWING SCHEDULING TERMINOLOGY

Network: It is a graphical representation of a project plan, in which the project logic is the sole determination of the placements of the activities in the drawing. A network diagram shows a group of interrelated activities.

- The network diagram shows each activity and its relation to every other activity in the project, the project's critical path, and the expected end workday for the project.



2.1.1- Schedule: The addition of activity durations to a network and computation of start and finish times of activities produces a project schedule. It lists project's milestones, activities and deliverables.

2.1.2- Activity: A portion of a project which consumes resources and has a definite start and finish are incorporated in the network. Any definable or time consuming operation, task, function, or time limited condition. Establishing a time frame or duration for each task turns each into an activity.

2.1.3- Activity ID / Description: A unique alphanumeric characters to identify activities and list its description.

2.1.4- Calendar: Defines the working days and hours during which tasks can be scheduled.

With a known start date, the calendar consecutively numbers all days within a projects time span that work can be done.

2.1.5- Original Duration: Total estimated time required to complete the activity.

2.1.6- Remaining Duration: The required time for completion of an activity from a status date.

2.1.7- Milestones: A point in time to represent the beginning or end of a project phase or to communicate project deliverables. Milestones are included in schedules to mark a particular point in time for references or measurement.

A milestone has a zero (0) duration and does not consume any resources. There are three types of milestones: Start Milestone, Finish Milestone, and an Interim Milestone.

2.1.8- Relationships: Are logic ties between project activities to depict a project plan.

There are four types of relationship that can be used in a project schedule:

- **FS = Finish to Start (PennDOT Construction standard)**
- SS = Start to Start
- FF = Finish to Finish
- SF = Start to Finish

Relationships between activities generates a network logic diagram to represent activities in a project and their logical sequence.

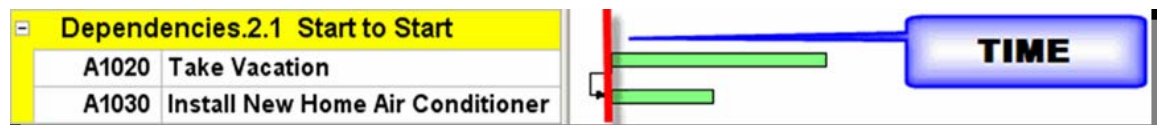
Finish to Start (FS): The successor cannot start until the predecessor is completed.

For example, it means merely that the pour can start after the Set-up Forms is complete, not that it must.



Start to Start (SS): The successor cannot start until the predecessor has started.

For example, Install New Home Air Conditioner can start when Take Vacation starts.



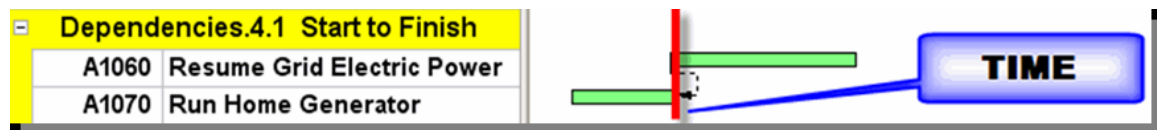
Finish to Finish (FF): The finish of the successor depends on the finish of the predecessor.

For example, I want the contractor to finish the installation of the new cooling system before I finish my vacation.



Start to Finish (SF): The successor cannot finish until the predecessor has started.

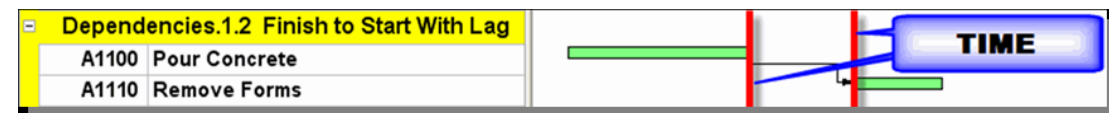
For example, the generator cannot be turned off until the predecessor, 'resume grid electric power' has started.



2.1.9- Lag: A delay between a task and its predecessor.

A finish-to-start with **lag** means that some time must pass between the completion of the predecessor and the start of the successor.

For example, after concrete is poured there is a lag time between when the forms can be removed.



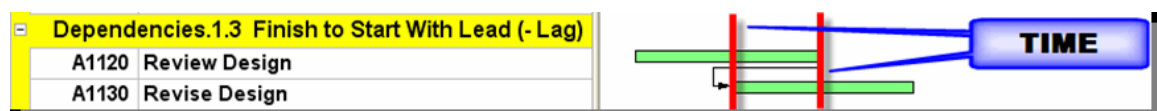
A finish-to-finish with lag means that some time must pass between the completion of the predecessor and the completion of the successor.



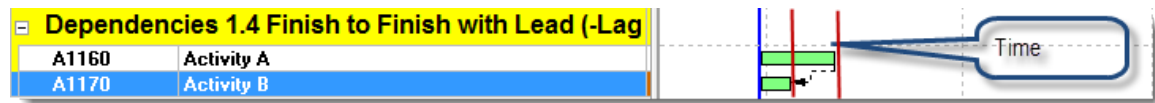
2.1.10- Lead Time: An overlap between a task and its predecessor.

A finish-to-start with **lead** (negative lag) relates the completion date of the predecessor to the start date of the successor but requires an amount of overlap or 'lead' specified in terms of how much the successor overlaps the predecessor.

For example, the start of Revise Design can overlap the completion of Review Design.



A finish-to-finish with lead (negative lag) relates the completion date of the predecessor to the finish date of the successor.



2.1.11- Early Dates: Early dates represents the earliest an activity can start/finish based on the project plan. These dates are calculated in the forward pass when a project is rescheduled.

Early Start (ES): The earliest date an activity can start.

Early Finish (EF): The earliest date activity can finish.

2.1.12- Late Dates: Late dates represent the latest dates on which an activity can start and finish without delaying the project plan. These dates are calculated in the backward pass when a project is rescheduled.

Late Start (LS): The latest date an activity must start to meet the schedule completion.

Late Finish (LF): The latest date an activity must finish to meet the schedule completion.

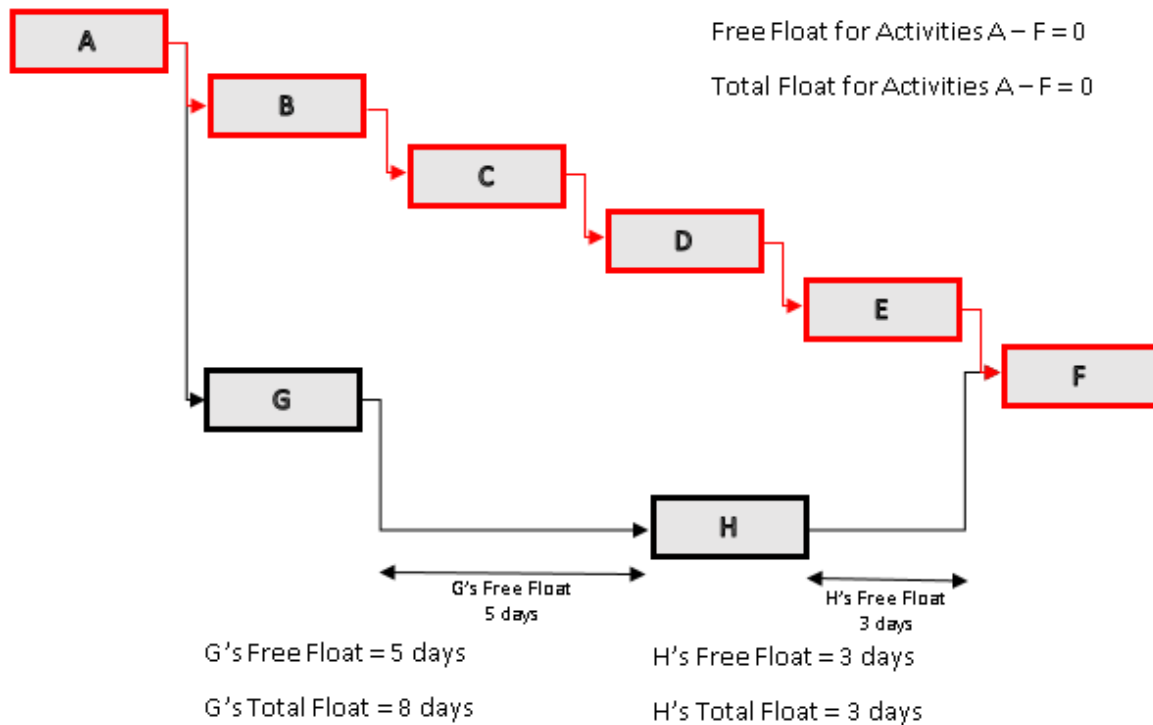
2.1.13- Total Float (Slack): The number of days an activity can be delayed without effecting the critical path.

It is the difference between early and late start or early and late finish dates of an activity. Total float is shared with the other activities along the same path through the network and does not belong to a single activity.

$$\text{Total Float} = \text{LF} - \text{EF} = \text{LS} - \text{ES}$$

2.1.14- Free Float: The number of days an activity can be delayed without affecting the subsequent activity. It is the difference between the activity's early finish time and its successor's early start time. Free float is calculated by subtracting the Early Finish date of the activity from the Early Start date of the successor activity.

$$\text{FF} = \text{ES of successor Activity} - \text{EF of current Activity}$$



2.1.15- Critical Task: A critical task must be completed on time in order to complete the project on schedule. Activity on the critical path or an activity with no float. NOTE: Might affect an interim milestone without effecting the end date.

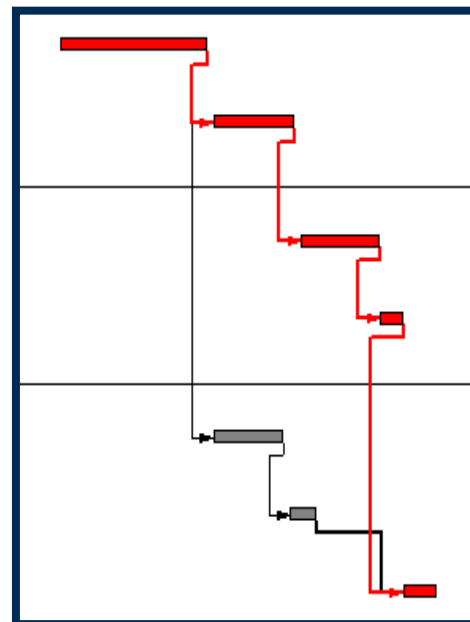
2.1.16- Critical Path: The project's critical path is the single longest chain of activities through a schedule. It determines the earliest time that the project can be completed.

Critical path activities will have equal early and late dates if no constraint dates are set on the project.

Activities with zero total float are critical activities if no constraint dates are set on the project.

If a constraint date is placed on the project, the critical path activities will have the least float (lowest positive or most negative) in the schedule.

Activities with negative float indicates that the project is delayed (behind schedule).



2.1.17- Noncritical Task: A noncritical task may be delayed to some extent without affecting the project's completion date.

A noncritical task has positive float.

2.1.18- Constraints: provide an additional functionality to project plan to reflect project situations that is dependent on specific dates.

Start On or After Constraint: An activity cannot start earlier than constraint date.

Start On Constraint: An activity will start on the constraint date.

Finish On or Before Constraint: Activity cannot finish later than constraint date.

Finish On: An activity will finish on the constraint date.

2.1.19- Progress Period: A particular time slice during which progress is reported.

2.1.20- Reschedule: The reschedule is the progress that performs critical path calculations on the project to work out the logically correct position of tasks and links.

2.1.21- Baseline: The baseline is a snapshot of the schedule for a project used for comparison purposes as actual information develops and is added to the project.

2.1.22- Redundant Relationship: A relationship representing a link between activities that is also represented in a parallel path or relationship. Redundant relationships can be removed without impacting the logic or calculations of the schedule and may add unnecessary complexity to the schedule and hinder review and analysis.

2.1.23- Resource: The labor and equipment required by an activity and needed to perform the work of the project.

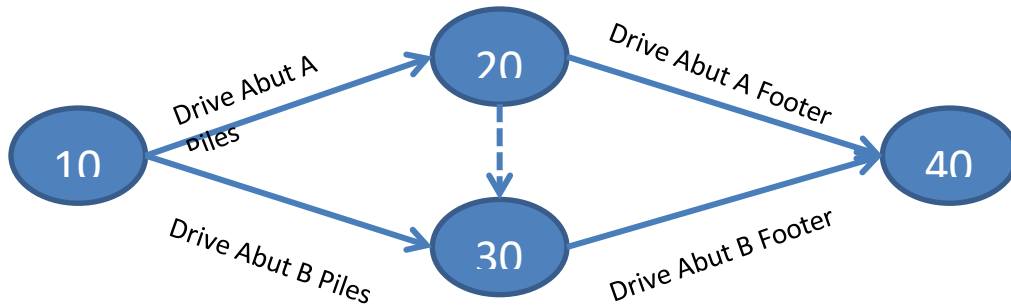
2.2- SCHEDULING TYPES AND METHODS

There are three different types of methods of scheduling:

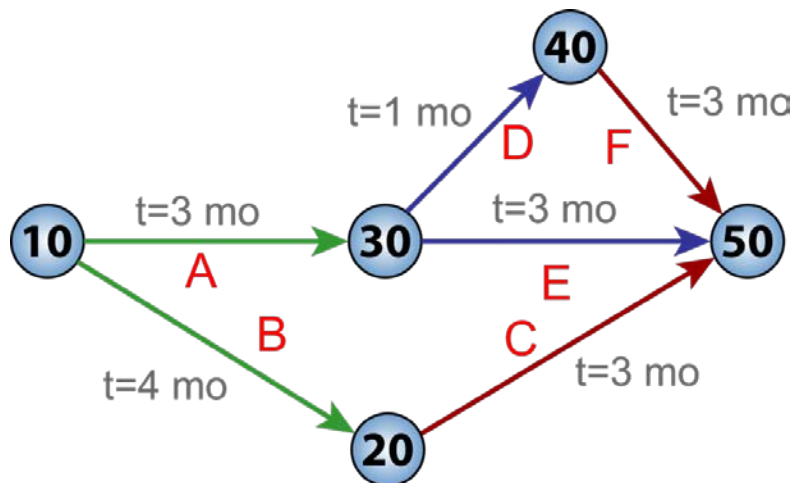
- Arrow Diagramming Method (ADM)
- Program Evaluation and Review Technique (PERT)
- Precedence Diagramming Method (PDM)
 - Critical Path Method (CPM)
 - Activity on Arrow

Depending on what method is used to represent schedules will determine how the schedule is calculated.

2.2.1- Arrow Diagramming Method (ADM): In this method, activities are represented by arrows. The ADM only indicates finish-to-start relationships. ‘Dummy tasks’ are added to represent task’s dependencies. This method is also known as Activity on Arrow (AOA) Method.

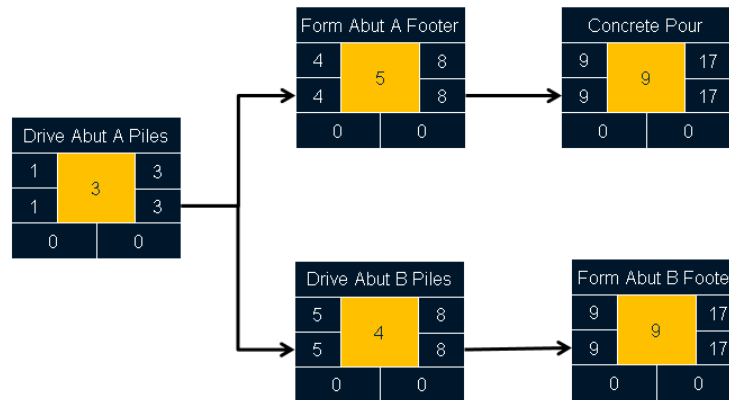


2.2.2- Program Evaluation and Review Technique (PERT): The method provides statistical analysis for duration of activities using optimistic time, pessimistic time, and most likely time. It calculates float and critical path from activities on a network. This is most often used on research and development projects.



2.2.3- Precedence Diagramming Method (PDM): In this method, activities are represented by boxes or nodes. This method identifies critical tasks, noncritical tasks, and float values. This method also allows different types of relationships between tasks. This is the most commonly used method by software programs. This method is also known as Activity on Node (AON) Method.

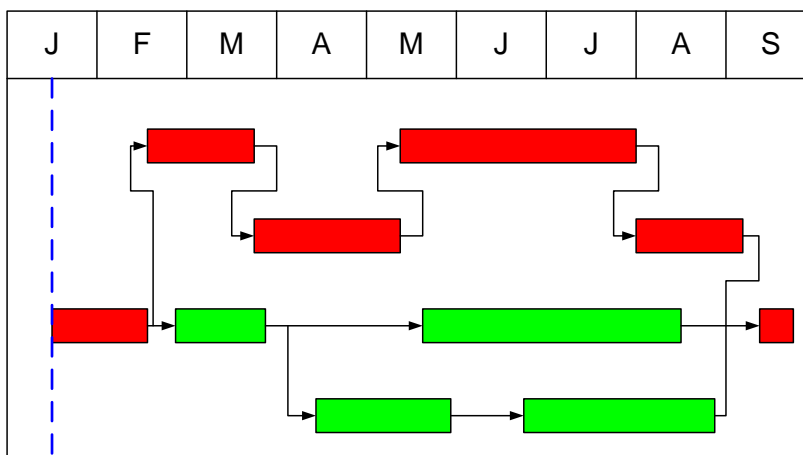
By using PDMs, users can determine the activities critical to the project schedule. This is known as the Critical Path Method (CPM).



2.2.4- Critical Path Method (CPM): The critical path method uses activity durations, relationships between activities, and an assigned calendar to calculate the schedule dates. This method determines the longest continuous path of activities through the project, aka critical path. This is the most commonly used method to calculate project schedule and determine the minimum project duration.

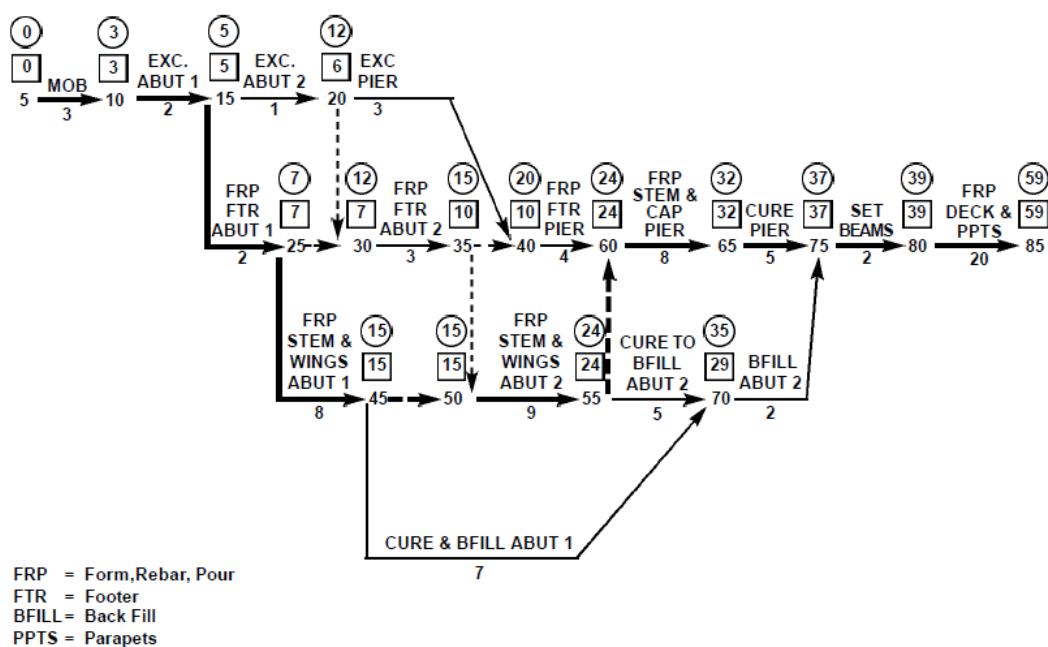
CPM Schedule components include:

- Activity ID (alpha numeric values)
- Activity Description
- Activity Duration (in calendar days)
- Calendar Assignment
- Relationships



Uses activity durations and relationships between activities to calculate schedule dates.

Activity on Arrow Diagrams can be a form of a CPM schedule that PennDOT construction personnel are used to dealing with. Below is an example of what an Activity on Arrow Diagram looks like:

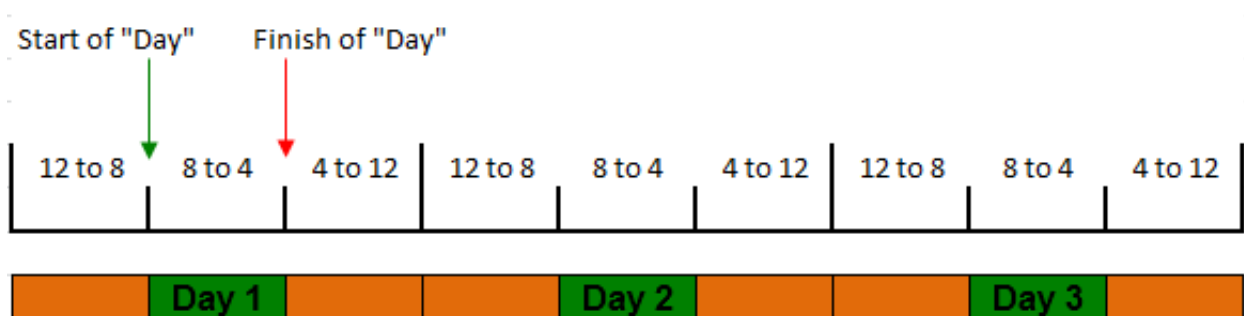


In the past, construction schedules may have been hand drawn on paper to look like this. In practice this is still acceptable to do prior to entering it into Elecosoft Powerproject or an Elecosoft Powerproject compatible software.

Calculations are done in two passes – forward and backward – through the activities in a project.

- **Forward Pass:** Sequentially adding activity durations to determine early start and early finish dates. Network schedule calculation that determines the earliest time each activity can start and finish as well as the minimum overall project duration.
- **Backward Pass:** Sequentially subtracting activity durations to determine late start and late finish dates. Network schedule calculation that determines the latest each activity can start or finish and still maintain the minimum overall duration of the project as calculated by the forward pass.

Calculations are performed using the durations assigned to activities which have assigned calendars based on a start and end time.



2.3- SCHEDULE CALCULATIONS – TIPS

When performing CPM calculations, make sure the activity relationships are identified. Take note of activities that are not finish to start relationships and also activities with lead or lag time. Activities with constraints also have to be taken into account.

Calculations should start with the forward pass on the first activity of project schedule. This means that the forward pass should progress from left to right as in start to finish of the project.

The first activity begins on Day Zero (0).

All calculations should be moving towards the right, in an up and down motion in strips (to avoid unnecessary iterations).

CHAPTER 3 - PROGRAM OVERVIEW

3.0- INTRODUCTION TO PROJECT PLANNING AND SCHEDULING

The use of Critical Path Method (CPM) scheduling and a daily update chart provides factual information that can be used to defend construction delay claims. The implementation of critical path planning and scheduling has resulted in a drastic reduction of the number and dollar value of construction claims filed against the Department.

The proper preparation and use of construction schedules can reduce delays, cost overruns and disputes. Scheduling is the determination of the timing of activities. The use of CPM scheduling will help to define expectations and has proven to be effective in assessing actual vs. planned performance. CPM Scheduling and the use of a Monitoring Chart will provide factual information to identify and deal with problems as they arise and will assist managers in making timely decisions about project completion. Understanding the CPM Schedule and using it as a tool to document and track performance will enable managers to analyze project delays, impacts of work order changes, and will help avoid delay claims.

3.0.1- Project Planning and Scheduling. Improvements to project planning and scheduling have been identified as one key area where managers can improve services, manage their operations more effectively through improved communications, and provide factual information to resolve disputes and avoid legal claims.

Project planning and scheduling involves all aspect of project development from final design up through the completion of construction. The process involves a coordinated effort between design and construction personnel to insure a timely completion of proposed improvement projects. The development of a Pre-bid construction schedule is initiated in the final design process and is completed after the plans and specifications have been finalized. The development of a Pre-bid schedule is a key element in the constructability review process and also is used to establish a realistic required completion date for the contract documents. A major benefit to the development of the Pre-bid schedule is improved communications between design and construction personnel. For more information regarding Pre-bid schedules see Chapter 5.

Implementation of these improved project management processes will result in more realistic construction completion dates through the development of a Pre-bid construction schedule as part of a constructability review process. The improved project management process will also greatly improve claim avoidance during the course of construction through the effective monitoring of the contractor's schedule.

3.0.2- Project Management Defined. Any discussion of the critical path method must start with an understanding of project management. Project management is a process of achieving a project's objectives. Its purpose is to reach the project's goals and objectives within the allotted time frame, budget constraints, and quality standards. Project management is applicable to projects with a fixed end date, and specific goals and objectives, such as highway/bridge projects.

3.0.3- Project Management Functions. Project Management is made up of four key functions: plan, schedule, monitor and control. Planning must be separated from scheduling.

3.0.3.1- Planning. A knowledgeable project team plans the execution of the project. They determine what needs to be done, by whom and how project objectives are to be met. In short, they establish a predetermined course of action to take within the given constraints. Planning is a process that establishes the interdependencies and interrelationships between each task within the project.

- **Reasons to undertake project planning:**
 - Eliminating or reducing project risk,
 - Obtaining a thorough understanding of the project's objectives,
 - Formulating a strategy to attain those objectives, and
 - Developing a monitoring framework to measure progress.

3.0.3.2- Scheduling. Scheduling means to determine when a specific activity or work must be started and completed. The tools used to accomplish this can be as simple as a narrative schedule or as complex as a CPM schedule.

3.0.3.3- Monitoring. Using the project schedule as the standard for tracking daily work ensures that the project's goals are being met. The monitoring process will document where delays take place, how long those delays may be, and what effect they may have on subsequent tasks. Monitoring means to track and document work activity, time, resources, and budget.

3.0.3.4- Controlling. A well-planned and executed project schedule gives the project manager a useful tool for making adjustments if unanticipated problems occur. The most important thing a project manager can do with any scheduling system is to use it to respond to adverse impacts. In addition, a detailed project schedule allows the project manager to anticipate and adjust for future impacts that may be caused by current project events. The Critical Path Method (CPM) allows the manager to respond to every disruption to the schedule using Elecosoft Powerproject and the Elecosoft Powerproject Web Portal along with the Monitoring Chart to identify impacts and make adjustments.

3.0.4- Project Management Objectives. The primary objective of any formal project management process is to raise the level of efficiency of each of the following project disciplines.

3.0.4.1- Time Management. Project managers must properly manage time to avoid schedule slippage and cost overruns.

3.0.4.2- Resource Management. Proper planning and scheduling of labor, material, and equipment will ensure that needed resources are at the project site at the correct time. If resources arrive too soon they will become costly to store, and if they arrive too late, they will impact the schedule. Resource management can provide a structured framework to analyze and balance resources.

3.0.4.3- Quality Management. Quality levels for the completed project must meet all the requirements called for in the project's contract documents, plans, and specifications. Proper project management will help ensure that there is enough time to perform the contracted work while meeting quality standards. It will provide sufficient time to procure materials and necessary equipment, and ensure that activities do not affect construction quality.

3.0.4.4- Risk Management. A well-defined, planned, and executed project management process can reduce uncertainty by helping to identify risks. Organized and disciplined daily updating and monitoring of the project can also provide advanced warning of potential risks.

3.0.5- Project Management Stakeholders

3.0.5.1- The Project Manager. The role of project manager can be very demanding—it's not difficult, but it requires constant attention to detail. The manager must be completely familiar with the project's contract document, plans, specifications, and standards. The manager must have knowledge of construction, work sequencing, resources, capabilities, durations, and monitoring.

The manager must establish and conduct project-scheduling meetings with the entire project team. The team will report on job progress to-date, review short-range and long-range scheduling goals, and review material delivery and approval requirements.

With the help of the project team, the manager should have the ability to recognize impacts to the schedule beforehand, reschedule around anticipated impacts, minimize costs and/or delays to the project due to unavoidable impacts, and continue to monitor and maintain the work performance history.

3.0.5.2- The Inspector. The construction inspector is the owner's authorized representative assigned to make inspections of contract performance and of material furnished for the project. The construction inspector has the responsibility of monitoring progress, and approving or disapproving each major step of the project.

3.0.5.3- The Designer. The designer is responsible to furnish all plans, specifications & estimates (PS&E) for the proposed project. The designer is also responsible for providing the project team with the information necessary to prepare a Pre-bid construction schedule to help evaluate the constructability of the project and to determine the required completion date of the project.

3.0.5.4- The Legal Department. The schedule monitoring system must provide the Legal Office with a clear documentation of any changes that have taken place and a clear audit trail of the agreed upon changes to help in the defense of construction claims.

3.0.5.5- The Contractor. The contractor is responsible for the construction of the proposed project. The contractor is also responsible for providing a realistic construction schedule that identifies the resources and work activity interdependencies necessary to complete the project by the required completion date.

3.0.5.6- The Utilities and Other Service Providers. The utility companies and service providers such as transit companies and school bus providers play an important part in the development of the Pre-bid construction schedule. Proper and timely participation and coordination with the project manager and project team is necessary to successfully complete a realistic Pre-bid construction schedule.

3.0.5.7- Consultants – Design, Management and Inspection. The Department uses consultant services for project design as well as construction management and construction inspection on many projects. Consultants are responsible for providing the same service and expertise that the Department employees provide for design, management and inspection on any specific project.

3.0.6- Relationships: Teamwork and Communication

3.0.6.1- The Owner and Builder Relationship (Teamwork). The Department is in an Owner/Builder relationship with the construction contractor. As the project's owner, the Department's responsibility in the relationship is to produce all necessary plans, specifications and estimates (PS&E) for the project. This includes but is not limited to materials, site conditions, and completeness of plans.

The builder of the facility is determined by competitive bidding, usually the contractor with the lowest responsible bid. That contractor's responsibility in the relationship is to supply all necessary resources, maintain production rates and complete the work as specified by the required completion date. The builder also has a responsibility to notify the owner in a timely manner of any and all changes to the project that impact the builder's ability to complete the project as contracted.

The owner/builder relationship must be built on teamwork and two-way communication in order to bring about a successful completion of the project. Teamwork underscores the need for all workers to understand their role in the project, and a willingness to subordinate personal prominence to overall efficiency. Uninterrupted communication, both vertical as well as horizontal, is crucial to keeping any project on track. Skillful project management requires the ability to document day-to-day performance both verbally and in writing, and the willingness to respond to problems and seek remedies as soon as they arise.

3.0.6.2- Communication. Good Communications are critical to maintaining effective relationships. Communication is a very important link to the successful completion of any project. Communication is much more than the spoken word or the skill of listening. Communication, especially in the owner/builder relationship, means writing letters, memos or Notes to document approvals, acceptance, concerns, problems, information, work performance, changes, instruction, directions, orders, etc.

3.0.7- Planning and Scheduling Process. At the beginning of most projects, all that is known is the project objectives and goals, and desired end-dates. In general terms, meeting those goals within the time allotted means establishing an effective project management process by taking the following steps.

3.0.7.1- Identify Project Activities. This step requires the aid of someone with detailed knowledge of what is required to accomplish the desired project goals. That person must be able to review the project's plans and specifications, and be able to determine what must be done at each step in the project's process to meet the goals. The result will be a list that identifies each of the individual project activities (tasks).

3.0.7.2- Estimate Activity Durations. An estimated duration based on the anticipated labor, material, and equipment, as well as expected site conditions, is assigned to each of the activities. These durations are used for scheduling and controlling day-to-day work. Historical records of projects are reliable sources of information to obtain activity durations.

3.0.7.3- Develop the Project Plan. Before the project schedule can be displayed graphically, it is necessary to establish the order that activities must occur in relationship to other activities (interdependencies). In any project, there are some activities that must be completed before other activities can begin. That is, the scheduler has to begin by identifying, what activity must be done first, what must be done next, and what can be done at the same time. The identification of the order that activities are to occur determines if the project can be constructed as designed.

3.0.7.4- Schedule Project Activities. With a project start-date and activity durations assigned, it's possible to calculate and assign the required start and end date for each activity. Those dates, combined with each activity's expected duration, will provide the project manager with an idea of where and when resources must be used. It is this schedule that will be used as a basis for controlling work and the allocation of resources during construction. This schedule will also be used to identify realistic milestone dates and the project completion date.

3.0.7.5- Monitor the Schedule. This involves monitoring and documenting all work activities including the identification of days worked and days not worked. This effort documents production delays and gains and activity start delays and gains.

3.1- CRITICAL PATH METHOD (CPM)

3.1.1- CPM – A Scheduling Tool. CPM is a complete planning and scheduling tool that uses a graphical display of the planned sequence of project activities to show their interrelationships and interdependencies.

It is a technique that requires a breakdown of the entire project into a series of individual tasks (activities) and an analysis of the time duration required to perform each task.

A project's critical path is the longest activity path through the project that establishes the overall project duration. It is composed of a continuous chain of activities with no float. All activities on the critical path must start and finish on their planned early start and finish times – delay of a critical activity will result in the overall project duration being extended.

3.1.1.1- Concept of Precedence. The concept of precedence assumes that any succeeding activity cannot start until the prerequisite or preceding activity is complete. For example, you can't pour the concrete for a wall until the footings are in place. Digging the footings is the precedent activity to pouring the concrete. Likewise, pouring the concrete is the successor to digging the footings. The combination of all the predecessor and successor relationships among the project activities forms the project network.

3.1.1.2- Concurrent. Unrelated activities can proceed concurrently and can run independent of each other.

3.1.1.3- Multiple Successors. An activity can have more than one successor.

3.1.1.4- Multiple Predecessors. An activity can have more than one predecessor.

3.1.2- CPM Monitoring and its Advantages. A Monitoring Chart is used for daily monitoring of every CPM and Resource Loaded CPM Schedule by using a bar chart format to display the progress of each activity.

The actual day-to-day progress of every activity is then plotted on the Monitoring Chart, with marks signifying each day when work is done, reasons for delays when work is not done, when the activity is actually completed, and any necessary adjustments for each succeeding activity.

Making use of the Monitoring Chart as a tracking tool to monitor project status and document delays is a very effective tool for determining the causes and responsibilities for delays and cost overruns. If the chart is faithfully updated, project managers have factual information to resolve project disputes and contractor's legal claims and it becomes a basis to make payments when they are justified.

Advantages:

- Improved organization and display for projects with large number of activities.
- Provides litigators with a graphical portrayal of the as planned comparison, to the as built project schedule, necessary for defense of claims.
- Provides a method for making time extension decisions, when the project is impacted by work orders or any unforeseen changes.
- Assist in the analysis of projects prior to letting to determine realistic milestone and project completion dates.
- Helps communicate the construction plan and lets everyone know when they are expected to start and finish their tasks.
- Establishes production goals and provides the framework for scheduling and planning the day-to-day work at the construction site.
- Monitors and measures progress and establishes the baseline against which the current status of the project can be compared to determine if it is ahead or behind schedule.
- CPM can be used to manage change by identifying the impact of an unexpected event or condition to allow the plan to be revised accordingly.

3.1.3- CPM Forensic Scheduling Overview. The use of CPM scheduling and the Monitoring Chart is an important tool that will enable managers to provide construction related support needed for defense preparation and presentation of legal claims. The monitor/daily updated chart provides a graphic schedule analysis that is very understandable to the layman and very effective in the defense of construction claims.

The forensic CPM analysis is an investigative tool that attempts to determine the who, what, when, where, and why facts concerning delays to the project completion. This information is presented in the graphic form of the Monitoring Chart and enables the manager to prepare a factual description of the comparison between the as-planned and the as-built schedule. This information can be used to defend against claims and/or as a basis to justify or reject a time extension to the required completion date and/or milestone dates.

CHAPTER 4 - DESIGN POLICY

4.0- INTRODUCTION

All project design schedules prepared for the Pennsylvania Department of Transportation (PennDOT), will be prepared and maintained using the project management software and release currently in use by PennDOT. It is the responsibility of the design firm(s) to verify the software in use.

4.1- PURPOSE

The purpose of this policy is to identify the requirements of how a design schedule will be prepared and maintained during the life of a project as to assure uniformity for PennDOT.

A design schedule is required to plan the project scope into a time sequential process that will:

- Deliver a complete project package for bidding within a defined time.
- Coordinate the various design requirements to minimize delay.
- Identify potential project issues/delays and minimize their impact.
- Account for obstacles and scope changes during the project life and any required changes
- Measure the progress and status of the design process during the life of the project.

4.1.1- Project and Schedule Requirement. PennDOT identifies projects as:

- Most Complex (Major)
- Moderately Complex
- Non-Complex (Minor)

For the purpose of this design schedule policy, any project that is defined as Most Complex (Major) or Moderately Complex is required to have a design schedule created and monitored for the life of the project. For those projects that are within the definition of Non-Complex (Minor), Table 4.1 specifies the requirements for a design schedule.

Emergency design projects, those that may result from a natural (e.g., flood) disaster or unforeseen incident (e.g., vehicle crash), will not require a design schedule due to the urgent nature of repairs or replacement.

Table 4.1 – Non-Complex (Minor) – Schedule Requirements

Project	Schedule
Bridge Replacement	Required
Bridge Rehab/Repair (TIP funded)	Required
Pavement Preservation (TIP funded)	Recommended
Betterments (no ROW/no permits/no utilities) (TIP funded)	Recommended
Betterments (ROW/permits/utilities needed) (TIP funded)	Required
Transportation Alternative Projects (excluding Transit)	Required
District-Wide Program Projects (RPMs, Guide rail, Line painting, etc.)	Not Required
Grade Crossing (when not part of a highway project)	Not Required
ITS only (camera and/or VMS/DMS installation)	Not Required
Maintenance Funded Paving Projects	Not Required
Maintenance Funded Bridge Projects	Recommended
Department Force Bridge/Boxes/Culverts	Recommended
Any project that all pre-construction phases can be completed within 4 months	Not Required
HSIP Project (no ROW/no permits/no utilities)	Not Required
HSIP Project (ROW/permits/utilities needed)	Recommended

It will be the discretion of the District to create and maintain a design schedule for any project within Table 4.1 that is tagged as Recommended or Not Required.

The District Portfolio Manager is responsible to ensure that project schedules are created and maintained as defined within this policy.

4.2- STANDARD TEMPLATE. The Pennsylvania Department of Transportation maintains a master template to be used in the development of all project design schedules. The template contains the activities that are commonly found in the process of performing analysis, studies, and other necessary work required to complete a project and prepare necessary bid documents for the project.

The organization and nomenclature of activities within the template are not to be altered. Work that is required for a project that may not be identified or contained in the template may be added following the procedure in Section B – Non-Standard Activities.

For the purpose of project design schedules, activities are defined as standard and non-standard activities.

4.2.1- Standard Activities. Standard activities are those organized and defined within the current PennDOT master template. These activities have specific and required descriptions and coding that is required and used in the preparation of reports. To maintain the integrity and consistency of report data, altering task descriptions or coding is not permitted.

4.2.2- Non-Standard Activities. Any task added to a design schedule that is not identified in the current PennDOT master template is considered a non-standard task.

Non-standard activities are to be:

- Inserted within an appropriate task structure already identified in the template
- Identified by an ID number consistent with the group it is placed within
- Assign all task level codes that are established for the project

4.3- SCHEDULE SETUP AND DOCUMENTATION

Schedules prepared for PennDOT require specific information for the purpose of project tracking and data retrieval. The following sections define those requirements.

4.3.1- Schedule Setup. PennDOT's master template contains fields that require specific data entry. These fields are either a drop down selection box or a field capable of direct data entry.

A project schedule shall contain all the activities that define the scope of work. During the development of a project schedule, all necessary parties will be consulted to identify and plan the work, the duration needed to complete the work requirements, and the interaction and sequencing of work to complete the project scope in an achievable time frame.

4.3.2- Schedule Access and Access Rights. To facilitate the review of project schedules, PennDOT staff and business partners must be provided access to the schedule. This access is accommodated and controlled by users and provides a level of access rights to the project schedule. All project schedules must identify who has access to the schedule throughout the life of the project. Chapter 7 of this document identifies the process required to identify user access to individual schedules.

4.3.3- Documentation. Schedule development and changes made to the schedule during the life of the project need to be identified and recorded. This project information is to be maintained and made available for review and archiving. The project documentation may be comprised of Notes attached to the schedule, to schedule activities, or electronic versioning of the project schedule.

4.3.4- Task Duration. Working days will be the unit of time assigned to activities for their durations.

4.3.4.1- Project Calendar. PennDOT's design template contains the standard project calendars to be used for all design projects requiring a schedule. These project calendars address non-working days. Any revision made to the standard calendars will be made and communicated to the District Offices by PennDOT's Central Office.

The standard PennDOT calendars shall be the only calendars associated with a design schedule.

4.3.5- Project Constraints. To manage the delivery of a project, date constraints shall be set for the project let date as well as select milestones within the project. Date constraints shall be coordinated with the appropriate Department(s) and the need to coordinate any intermediate target is necessary with appropriate Department or Agency. The rescheduling of any specific task constrained date must be approved before the revision is made to the project schedule. The number of date constraints will be minimal to facilitate flexibility but sufficient to provide on time delivery of the project.

4.3.5.1- Target Date. A target date will be assigned to the last task of a project schedule and may also be assigned to the first task of the project.

4.3.5.2- Intermediate Target Dates. To facilitate the on time completion of a project, intermediate target dates may be set for document delivery or other events that are determined critical to the project delivery. The need to coordinate any intermediate target is necessary with the appropriate Department or Agency. Any change to intermediate target dates will require the approval of the impacted parties prior to revision.

Intermediate targets will be facilitated by the addition of a finish milestone task.

4.3.5.3- Delivery Date. A target delivery date will be set for the project. This date will coincide with an established let date defined by PennDOT. The target date will be assigned to the last task (finish milestone) of the project schedule (Open Bids).

4.4- PROJECT IDENTIFICATION

Project identification will be maintained at two levels; external and internal.

4.4.1- External. The external project identification shall be the project MPMS number and will be the identification method for tracking the project with the various accounting and tracking systems that PennDOT uses.

4.4.2- Internal. For the purpose of project identification, each project will be identified by a type and category. Project type and category are codes associated with the PennDOT's design schedule template(s). The project type and category will be selected from the values available.

4.5- LOCAL PROJECTS

A local project shall be defined as:

- A municipality or agency owned/lead project that may include roadway, bridge, or roadway facility construction, reconstruction or maintenance.
- A transportation alternative project.

All requirements set for the preparation and updating of a project schedule apply to local projects. Responsibility for developing the project scope of work will be a joint effort of any local agency and PennDOT.

PennDOT will provide support and guidance in the preparation of the design schedule so that the schedule requirements are achieved.

The project schedule shall be progressed as defined in Section 4.12 - Schedule Monitoring, of this document so that the status of the project can be tracked. Any scope change identified during the life of the project will be immediately addressed so that any impact to the project let date can be determined.

A baseline schedule shall be set for local projects. PennDOT should take into consideration the delivery of previous local projects when setting a baseline schedule. Any baseline schedule adjustments shall follow the guidance as provided in Section 4.8 - Project Baseline, of this document.

4.6- TASK CODING

Activities contained in the PennDOT master template are assigned codes that associate the task with specific PennDOT identifiers corresponding to the PennDOT:

- Work Breakdown Structure
- Organizational Breakdown Structure
- Cost Structure

Codes assigned to standard activities should not be changed. Any revision to task code assignments shall obtain prior approval from the Portfolio Manager. All activities within a design schedule shall have all code fields occupied with the appropriate code value.

4.7- LEVEL OF DETAIL – WORK/ACTIVITIES

Work that is required to be performed pertaining to the design process in order for the project to be let should be tracked in the project schedule. Deletion of any work / activities from the PennDOT master template for a project means that the work / task does not pertain to the delivery of the project; this is the only instance when a task is to be deleted from the project schedule. Refer to Section 4.13.B – Decrease Scope of Work for further information.

4.7.1- Project Scope Requirements. Any time that there is a change in scope the project schedule will be updated to reflect the change.

4.7.2- Submissions/Reviews. All submissions, reviews, re-submittals, and time for addressing comments are required to be included within the project schedule. Reviews from different agencies and PennDOT's Central Office require a standardized review time which is allocated in the templates. These durations cannot be lessened unless prior approval is given by the appropriate party responsible for the review.

4.7.3- Project Reporting Activities. To support project status reporting for various PennDOT Departments, specific task descriptions are required and shall be used in all design schedules. These specific task descriptions are provided within Appendix A – Standard Report Activities. These descriptions are not to be altered.

4.8- PROJECT BASELINE

All design project schedules require a baseline schedule to be set.

4.8.1- Baseline Creation. Once all of the appropriate parties have reviewed, and concurrence is reached of the project schedule, an initial baseline schedule shall be created for comparison purposes. This initial baseline schedule should always be set prior to any progress being entered into the schedule. For PennDOT reporting purposes, the initial baseline should not be deleted.

4.8.2- Baseline Types. A baseline shall be identified either as initial, committed, or bench mark.

4.8.2.1- Initial. An initial baseline shall be established to track the progress of a design project. Initial baselines should be created prior to any progress being entered into the schedule.

4.8.2.2- Committed. A committed baseline shall be established prior to the end of the calendar year preceding the project let date. Projects that contain a committed baseline are those that are part of PennDOT's committed program and have a locked down let date.

4.8.2.3- Benchmark. A benchmark baseline or snap shot can be created at any time throughout the project life cycle. These baselines may be used as a documentation of task status at a particular time or phase of a project. When a project is selected to be a part of PennDOT's yearly committed program, a committed baseline is established.

4.8.3- Baseline Target Completion Date. In the process of establishing a baseline schedule, a target date shall be set. This target date shall coincide with the date recorded in PennDOT's ECMS system.

4.9- LEAD/GROUPED PROJECT

When there are several small like projects (e.g., roadway striping, guide rail replacement) which will be occurring county or district wide, these small projects may be combined into a single project. The following shall define, as it pertains to design projects, what a lead project is and what comprises a grouped project.

4.9.1- Lead Project. A lead project is described as one ECMS number that encompasses multiple MPMS numbers. The schedule of the lead project is required to have the detail and work requirements associated with the entire project scope of work. This project scope of work will include the individual scope of work required to execute all the individual MPMS work requirements.

4.9.2- Grouped Projects. A grouped project does not require its own project schedule; they will be encompassed under the lead project schedule. Grouped projects must be called out and identified for reporting purposes so that the accurate project information is pulled from the lead project.

4.9.3- Breakout Project. When an individual project is pulled out from the group and is to be let on its own, a stand-alone project schedule now must to be created. The stand-alone project can no longer be tracked under the lead project schedule. All activities that are associated with the stand-alone project must be included in the breakout project schedule.

4.10- PROJECT TYPES

Each project schedule will be identified by a project type (Table 4.2)

Table 4.2 - Project Type

<u>Code Description</u>	<u>Code ID</u>
Bridge Alignment	ALI.BRG
Environmental Assessment Project	ALIEA
Environmental Impact Study Project	ALIEIS
Roadway Alignment	ALI.RDW
Bridge Preservation / Design-Build	BRG.PRE.DB
Bridge Preservation / Design-Bid-Build	BRG.PRE.DBB
Bridge Rehabilitation / Design-Build	BRG.REH.DB
Bridge Rehabilitation / Design-Bid-Build	BRG.REH.DBB
Bridge Replacement / Design-Build	BRG.REP.DB
Bridge Replacement / Design-Bid-Build	BRG.REP.DBB
Interstate Maintenance	MAT.IM
Maintenance Betterment	MAT.MB
Intersection Improvement	RDW.INT
Roadway Reconstruction	RDW.REC
Roadway Rehabilitation	RDW.REH
Roadway Resurfacing	RDW.RES
Other	OTR
Information Transportation System	OTR.ITS
Culvert	OTR.CVT
Traffic Signals	OTR.TFS
Transportation Alternative Project	OTR.TAP

To coincide with the project type, a second level of type is used. This will identify the project as Design-Bid-Build or Design-Build.

4.10.1- Design-Bid-Build Project. A Design-Bid-Build project is the customary design project type where all documents required for the construction of a project are complete prior to the advertisement and letting of the project.

4.10.2- Design-Build Project. A design-build (D-B) project is a project where the design requirements are partially completed by either PennDOT or a consultant design team and the continuation of design work and final construction will be awarded to a contractor. The design-build project will transfer the responsibility of design work to a design and construction team (D-B team) which may include but are not limited to the following items:

- Design of Highway Item(s)
- Design of Structure Item(s)

When a design-build project is executed (let), PennDOT will retain responsibility for specific approvals and/or the transfer of information for review and approval before certain construction activities may commence or continue. The specific work that PennDOT will facilitate coordination of will be defined within the design-build special provision included in the bid documents of the design-build contract.

Work that a D-B team will be required to perform, that PennDOT will coordinate and or approve, will be included in the D-B team's design-build schedule and will identify a duration that is considered appropriate for the work to be complete.

To accommodate the PennDOT coordination of work, the design-build schedule will contain the task descriptions that are contained in the current PennDOT template.

4.11- PROJECT COMPLEXITY

Each project schedule will be identified by complexity, Table 4.3 - Project Complexity will coincide with PennDOT's definitions:

Table 4.3 - Project Complexity

<u>Code Description</u>	<u>Code ID</u>
Most Complex (Major)	PLX.MAJ
Moderately Complex	PLX.MOD
Non-Complex (Minor)	PLX.MIN

4.12- SCHEDULE MONITORING

PennDOT requires that all schedules are updated a minimum of once every month with a progress period (data date) of the first of the month. The progress period is defined as the day that project work will continue after recording progress.

4.12.1- Task Progress. Progress is to be entered monthly and is to document the status or amount of work realized on or before the progress period. All progress must be entered by the tenth of every month.

For reporting purposes, work shall be progressed in increments of 5% and not to exceed 95% complete until the work is actually complete and any necessary documentation is transferred to the responsible party.

4.12.2- Project Delay. As part of project schedule documentation, if a delay is identified in scheduled work, information as to the reason or purpose of delay should be recorded. Refer to Section 4.3.C - Documentation.

4.12.3- Project Time Recovery. If a delay in a project task results in the project being forecasted as being delivered greater than 15 working days beyond the scheduled delivery date, a plan to recover this lost time must be identified and implemented. The course of action will be defined as the schedule recovery plan.

4.13- PROJECT SCOPE CHANGE

Any change in scope of work will be applied to the current schedule status prior to the next scheduled update so that the effect of the change in scope can be relayed to the project team.

4.13.1- Increased Scope of Work. When the scope of work is increased in a project, the project schedule will be updated to reflect the change in scope and the increase in scope of work will be documented.

PennDOT's master template contains activities commonly found in a design project. When additional work is required to be inserted into a schedule, the master template shall be the source of identifying the additional work. When the additional work is not identified in the master template, Central Office shall be contacted for guidance.

4.13.2- Decreased Scope of Work. During the life of the project, when the scope of work is decreased, the project schedule will be updated to reflect the change in scope and the decrease in scope of work will be documented. Activities that pertain to the scope reduction should not be deleted from the schedule. These activities may be closed out as follows:

Record the date of task modification by inputting Actual Start and Actual Finish dates from the task.

Record the reason of task modification within the task Note field.

The reason shall contain persons contacted, date of contact, and other relative information. Project logic shall be addressed as necessary to retain the schedule's integrity.

If a task must be deleted from the project schedule, documentation is required as per Section 4.3.C – Documentation. The reason as to why it was deleted shall contain persons contacted, date of contact, and other relative information.

PennDOT's Central Office shall be contacted for guidance in updating the project schedule to reflect the scope change.

The decrease in scope of work will be documented as required.

4.14- YEARLY COMMITTED AND POTENTIAL PROJECTS

Each year the Districts are responsible for submitting a list of committed and potential projects. Each project shall have a project schedule planning the scope of work and identifying when the project can be delivered.

4.14.1- Committed Projects. A committed project is defined as a project that the District obligates to letting during the calendar year and gives a forecasted completion date and open bid date. The open bid date that is provided by the District is placed in the Committed Date field of ECMS and is then locked.

4.14.2- Potential Projects. A potential project is defined as a project that the District anticipates to completing within the calendar year. Potential projects require a target finish date and a baseline schedule as previously defined.

The District provides a list of projects that it believes can be delivered during the calendar year. For these projects a forecasted let date is in ECMS.

4.15- PROJECT SCHEDULE CLOSEOUT

Once a project is let, the project schedule shall be updated to reflect the overall project status of complete.

4.15.1- Project Closeout. A project schedule shall be considered complete when all activities in the schedule record actual start and finish dates. No task shall be deleted from the schedule. Refer to Section 4.13.2.

4.16- PROJECT SUSPENSION OR CANCELLATION

The following sections define the procedure to follow when a project is suspended or cancelled.

4.16.1- Project Suspension. A project suspension may occur for various reasons including, but not limited to, the following events:

- Loss or lack of funding
- A delay in work execution by a project sponsor

In the event of a project suspension the project schedule will be retained. The project schedule shall contain information as to the date of suspension as well as factors or events that result in the suspension. A milestone task will be added to the schedule within the project management group with the description *Project Suspension*. The task will provide the date of suspension.

If the project is part of a yearly program, Central Office shall be made aware of the suspension so that any necessary action can be taken.

Upon the startup of a suspended project, the original schedule shall be updated at the resumption of work. The update shall follow the policy set for a change in scope, in that activities may be required to be added or removed.

4.16.2- Project Cancellation. In the event of a project cancellation, the project schedule shall contain information as to the date of cancellation as well as factors or events that result in the cancellation. A milestone task will be added to the schedule within the project management group with the description *Project Cancelled*. The task will provide the date of cancellation.

Cancellation of the project shall be communicated to Central Office so that necessary action may take place.

The project schedule will be archived.

4.17- PROJECT RE-BID

When PennDOT determines that a project award will not occur and a repackaging or re-advertising of a project will occur, the project schedule will be updated to account for the project re-bid. Activities addressing the repackaging or other work required to be performed before a re-advertising will be included in the project schedule and monitored and progressed as defined in Section 4.12 Schedule Monitoring.

4.18- SCHEDULING ARCHIVING

Once a project is let and the overall status of the project schedule shows complete, the project schedule should be archived. Central Office staff and the Server Farm will be responsible for schedule archiving. For the purpose of project reporting, project archiving will not be performed until the month of February after the end of the previous calendar year.

CHAPTER 5 - PRE-BID POLICY

5.0- INTRODUCTION

The duration required to complete a construction job is dependent upon many factors. These factors may include size, location, type of construction, as well as the season(s) that the job will span. The Constructability, or Pre-bid, Schedule is the initial schedule developed by the Department. The purpose of the Pre-bid schedule is to show that the project can be constructed by a reasonably competent contractor within the time frame when utilizing standard construction practices and production rates. The Pre-bid schedule will be used to identify both the Contract Completion Date (CCD) and any milestone dates that will be included in the contract along with serving as a baseline against which the Contractor's actual construction schedule is measured. Also Note that any milestone date that is not contractually enforceable (i.e., road user liquidated damages) should not be used. Construction activities, linked in a logical sequence (CPM), form a "picture" of the way a project can be accomplished.

The development of a Pre-bid schedule starts with Design Field View Approval and moves to the Project Manager (PM), who develops a tentative list of activities. At this point the PM creates the first, rough-cut version of a Pre-bid schedule and if necessary coordinates the first review with Design, Traffic, Maintenance, Construction and Utilities personnel. Taken into consideration at those stages are type, size and location (TS&L) of any structures, letting date, initial quantity estimates, agreed upon method of construction, and any initial design changes. Periodic constructability reviews continue until plans and specifications are complete and the project designer creates a schedule. Next, a team from Design and Construction develops a Pre-bid schedule. Pre-bid schedules are required to be created in Elecosoft Powerproject utilizing the PennDOT Pre-bid Template.

At this point District Contract Management incorporates milestones and a contract completion date into the bid package. A plans, specifications and estimates (PS&E) package is submitted to the Contract Management Unit for review. The Department advertises for bids and requires contractors to submit their schedule if they are awarded the project.

After a project is awarded the contractor has the opportunity to propose design changes. The PM and the constructability team are responsible for assessing any potential impacts of design changes on the schedule and contract completion date.

Implementing Pre-bid construction scheduling statewide will have some impacts on the Department's traditional methods. Here are some of those impacts.

- All projects will be completion date contracts and the completion date will be determined by a Pre-bid construction schedule.
- The Project Manager is responsible for the Pre-bid construction schedule.
- The development of a Pre-bid construction schedule is undertaken as part of the constructability review.
- The Pre-bid construction schedule will provide the Department with a realistic completion date for each project.
- The development of a Pre-bid construction schedule requires a joint effort by Design and Construction to complete.

- The development of Pre-bid construction schedules require management support of the required staff effort and training.

The tools and techniques included in this manual should be utilized in order to produce reasonable, realistic, and supportable Pre-bid schedules. Pre-bid schedules should follow the same format that is required for Construction Schedule submissions including activity numbers and logic ties. The Pre-bid schedule is available for the contractor to review as part of the bidding process and will be provided in a PDF format at the time of advertisement.

5.0.1- Pre-bid Schedule Considerations. Throughout the design and scheduling process, communication among the design team, estimator, specification writer, and scheduler is required to reduce the omission of important information. Construction personnel should also become involved to provide valuable input regarding the standard processes, production rates, and material availability. For construction projects, the best way to create a Pre-bid schedule is to use the team approach. Designer(s), PennDOT personnel, Construction personnel, Assistant Construction Engineer (ACE), Inspector-in-Charge (IIC), Utilities, and other stakeholders in the project (municipalities, railroads, ROW parties, etc.) can improve the project by participating in the process. Each district must develop a condensed reference to key frequently used dates from Publication 408, *Specifications* as well as district restrictive dates.

5.0.1.1- Calendar Days. Quantities derived from plan takeoffs will determine the duration of the activities based on production rates. The unit for activity durations is working days that will require conversion to calendar days for the schedule development. Work quantities may be reported as the total quantity required for a project. The schedule, though, will require the calculation of total quantity "required" to be transformed to total quantity "required per location," stage, etc. before setting duration requirements.

A standard work week can be used when creating a Pre-bid schedule and any activities that span calendar days (i.e., concrete curing or submission approvals) can be converted to work week schedule for presentation purpose. Consideration must also be given to the occurrence of leap years, holidays, as well as the actual number of calendar days in a given month.

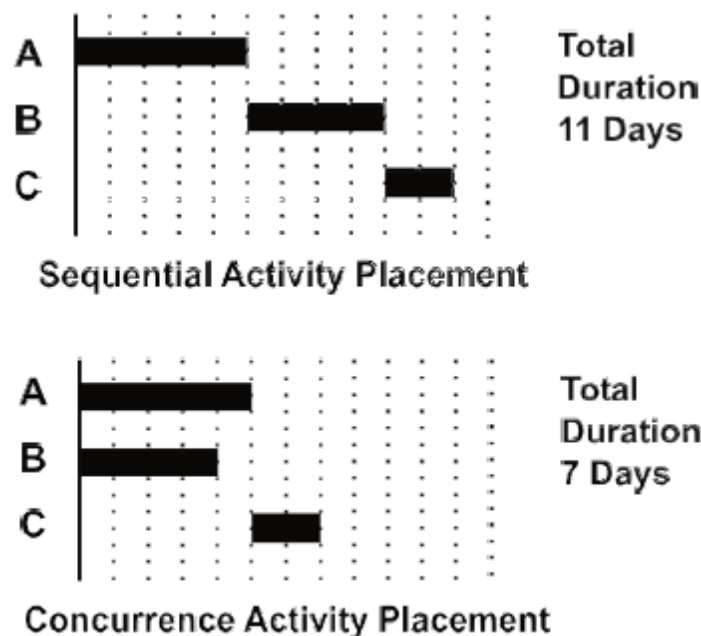
5.0.1.2- Activities and Task Pools. Activities are the building blocks of the schedule. An activity will be an item of work that will require a time assignment (duration), and dependent on what is required to track, may also include resources such as labor, equipment and cost (budget). Activities should be assigned duration based on common construction production rates. As with estimating construction cost, activity task pools can simplify schedule development in reducing the number of items or groups to track, adjust or update.

The use of task pools will decrease the time required to develop a project schedule by allowing the scheduler to repeat repetitive activity groups or copy them into a new schedule. The three activities (set forms, set reinforcing, and pour concrete) is a simple repetitive activity group that may be put together as a task pool and repeated several times in a schedule. Minor adjustments can be made to the separate activity durations to accommodate site conditions or length, but the logic (i.e., sequencing) will not change.

5.0.1.3- Concurrency. When establishing the logic of a project's schedule, the scheduler will investigate the concurrence of activities to determine whether activities can be performed independent of one another or need to be performed sequentially. Concurrency allows two or more activities to be worked on simultaneously.

If a scheduler arbitrarily places activities end to end and does not consider concurrency, the project is needlessly extended. In other words, if Activity B does not depend on the completion of Activity A before it may begin and it is reasonable to assume that Activities A and B can be worked on at the same time (Activities A and B do not require the same resource, work area, etc.), then to compress the project schedule, Activity A and Activity B may be concurrent. The figure below illustrates the time effect of activity concurrence with respect to Activity C which depends on the completion of both Activities A and B.

Example of Overlap/Concurrency



A project's site condition and scope of work will dictate concurrence of groups and activities. When obtaining the global picture of a project, concurrence should be investigated to determine if a time saving opportunity exists.

5.0.1.4- Level of Detail. A level of detail must be established for each project. This level may be set by the following considerations.

- Project size or complexity
- Expected duration
- Project reporting requirements
- Project oversight budget
- Project funding sources

5.0.1.5- Coordination. Project coordination must be maintained during the development of the project schedule. All too often, last minute changes in design can affect the approach that can be taken in the construction process. Thus, continuous communication among the project design team, estimator, specifications writer and scheduler is required.

The scheduler should pay particular attention to the specifications to identify any of the following project requirements:

- Phasing
- Intermediate completion targets (milestones)
- Limits of work
- Critical utility interfaces
- Work restrictions

Additional concern should be given to other construction projects within the vicinity of the Department's project. Site access and material hauling can be greatly affected if a concurrent road or commercial project is underway.

5.0.1.6- Schedule Restrictions, Submittals, and Approvals. The scheduler must also consider activities that involve the use of materials with specification restrictions governing their usage. For example, bituminous paving operations should not be shown being performed outside of the specified time frames. Additionally, seeding and planting operations should be scheduled such that specified grass and/or plant establishment periods fall within the growing season. The scheduler must also consider the time necessary for submittals and approvals when required as part of an activity. Additional examples of typical schedule restrictions, submittals, and approvals include, but are not limited to, the following:

- Stream encroachment restrictions
- Construction sequencing restrictions
- Utility relocations/coordinated work
- Traffic control
- Commitments to school districts

- Commitments to municipalities
- Special events
- Time needed for Contractor to obtain permits for non-designated waste / borrow areas
- Railroad involvement
- Environmental and archeological restrictions
- Traffic signal system testing periods

5.0.1.7- Project Parameters. The development of a schedule is a combination of many factors that are the parameters of the project in question. The following provides some insight to the various parameters of a project schedule and how they may impact the final project schedule:

- **Location.** For the same type of project the schedule may be impacted by specification restrictions for placing materials such as hot-mix asphalt paving.

Beyond county related location, specific physical accessibility to the work site can be a major factor in work productivity that equates to duration. If a temporary road is required to provide an access to a job site, the construction and maintenance of this road will set limitations on work progress. Limitations will include the delivery of material to the construction site and the actual start date of construction on the specific project (e.g., bridge structure).
- **Type.** A project's type will affect production and job duration. New construction verses rehabilitation work affects a project's schedule. When the contract requires maintenance and protection of traffic on a highway or bridge during rehabilitation, this situation usually translates into longer construction time. Tolerance of existing structures and right-of-way places direct restraints on space availability that equates to material storage space availability and material delivery and handling requirements.

For highway projects, more flexibility is apparent when a project encompasses several miles of highway because several types of work may be concurrent. Excavation and subbase preparation may be in progress at an extreme location of the roadway while paving operations may begin staging at the other extreme.

In viewing a bridge project, an approach must be taken that is step sensitive. Superstructure work activities cannot begin until the bridge's substructure is complete.

5.0.1.8- Documentation and Reporting Requirements. During the production of a Pre-bid schedule, assumptions and rationale for activity groupings and duration assignments shall be documented including any assumption that does not use standard construction practices or production rates (i.e., 6-day work week rather than a 5-day work week, multiple structure crews) should be documented and attached to the Pre-bid schedule. This documentation will facilitate comparison while the project is active and a source of data for development of other similar project schedules. The degree of documentation is dependent on the project size and general project requirements.

5.1- PRE-BID SCHEDULE MEETING

A Pre-bid schedule meeting should be held for every project regardless of size. Factors that come into play include:

5.1.1- Attendees. The following positions must attend the Pre-bid schedule meeting:

- Scheduler/Facilitator
- Roadway/Bridge PMs
- Consultant PM (if applicable)
- Assistant Construction Engineer and/or a representative (i.e., Inspector-in-Charge)

The following positions may attend the Pre-bid schedule meeting (or should attend as needed):

- Contract Management Representative
- Environmental Personnel
- Traffic Personnel
- Structural Control Engineer
- Utility Coordinator
- Right-of-Way Administrator
- Railroad Grade Crossing Engineer
- Permits Administrator

5.1.2- Timeframe. All projects shall have the following guidelines:

- **Timeframe for the meeting:** A Pre-bid schedule meeting should be held no less than 1 month prior to the PS&E submission date. For more complex projects, an initial Pre-bid meeting should be held by the PM more than one month prior to the PS&E submission date. If a Final Design Office Meeting (FDOM) is warranted, schedule the Pre-bid schedule meeting prior to the FDOM and submit the preliminary Pre-bid schedule with the FDOM submission. Additional, follow-up Pre-bid schedule meetings may be necessary.

5.1.3- Meeting Agenda. The following topics should be discussed during the Pre-bid scheduling meetings:

- Roadway/Bridge PM should review scope of work.
- Scheduler should review the Schedule Setup Checklist ([Appendix B](#)).
- Development of Pre-bid schedule.
- Scheduler will review to determine if all items on the Schedule Setup Checklist ([Appendix B](#)) have been addressed and meet Publication 408, *Specifications*.
- Determine all restrictive and milestone dates from the developed Pre-bid schedule.
- All restrictive dates and restrictions should be compiled by the Contract Management representative and placed in the contract proposal.

5.2- CONSTRUCTION SCHEDULE ITEM

Every proposal is to include a bid item for a Narrative, CPM with Updates, CPM without Updates, or Resource Loaded CPM Construction Schedule associated with it in the contract.

PennDOT identifies projects as:

- Most Complex (Major)
- Moderately Complex
- Non-Complex (Minor)

For the purpose of this construction schedule item, any project that is defined as Most Complex (Major) or Moderately Complex is required to have a CPM with Updates, CPM without Updates or Resource Loaded CPM Schedule created and monitored for the life of the project. For those projects that are within the definition of Non-Complex (Minor), Table 5.1 specifies the requirements for a construction schedule.

Table 5.1 – Non-Complex (Minor) – Construction Schedule Requirements

Project	Schedule
Bridge Replacement	CPM with Updates
Bridge Rehab/Repair	CPM with Updates
Micro-Surfacing Projects	Narrative or CPM without Updates
Betterments (no ROW/no permits/no utilities)	Narrative or CPM without Updates
Betterments (ROW/permits/utilities needed)	CPM with Updates
Transportation Alternative Projects (excluding Transit)	CPM with Updates
District-Wide Program Projects (RPMs, Guide rail, Line painting, etc.)	Narrative Schedule
Grade Crossing (when not part of a highway project)	Narrative Schedule
ITS only (camera and/or VMS/DMS installation)	Narrative Schedule
Maintenance Funded Paving or Pavement Preservation Projects	Narrative Schedule
Department Force Bridge/Boxes/Culverts	Narrative or CPM without Updates
Any project that all construction phases can be completed within one construction season	CPM without Updates

The ACE is responsible to ensure that project schedules are created and maintained as defined within this policy.

A listing of the scheduling assumptions (work days per week, utility impacts, restrictions, etc.) used in the development of the Pre-bid Schedule will also be provided. CPM and Resource Loaded CPM construction Pre-bid schedules are required to be created in Elecosoft Powerproject with a pdf provided at time of advertisement.

The CPM schedule format requires the contractor to provide the construction schedule in the precedence format and the schedule must be developed using Elecosoft Powerproject or an Elecosoft Powerproject compatible format, but must be submitted as an Elecosoft Powerproject (.pp) file electronically. The contractor is responsible for uploading and submitting the Elecosoft Powerproject (.pp) schedule thru the PPCC. The Department will then review the Contractor's submitted schedule and will either accept, accept as noted, or reject the schedule. Once the schedule is accepted by the Department, the Elecosoft

Powerproject (.pp) file will be the governing schedule on record. After the schedule is accepted, the Department will upload the accepted schedule to the Elecosoft Powerproject Web Portal and a baseline must be created. Any subsequent changes to the baseline schedule through the submission of any updates, revisions or recovery schedules through PPCC shall also be uploaded to the project within the Elecosoft Powerproject Web Portal in the same way in order to maintain a record of schedule versions.

CHAPTER 6 - CONSTRUCTION POLICY

6.0- CONTRACTOR'S POLICY

6.0.1- The CPM schedule and Network Diagram – Project Planning and Scheduling.

It is the discretion of the contractor as to which scheduling software the construction CPM schedule is developed in, as long as it is compatible with Elecosoft Powerproject and submitted to the Department in Elecosoft Powerproject. The development of the schedule must adhere to all scheduling specifications outlined in Publication 408. The following information will give the contractor a brief outline of how to put a CPM schedule together.

6.0.1.1- Project Planning and Scheduling. A network diagram within the CPM schedule is a graphical view of all the project's activities presented in such a way as to show the logical and necessary sequence of activities from beginning to end. This will reflect the experience and judgment of those who are responsible for executing the work.

6.0.1.2- Steps to Construct a CPM schedule. To construct a CPM schedule, complete the following steps:

Step 1: Determine the project start date. The project start date should be the anticipated Notice to Proceed Date.

Step 2. Determine the workday calendar/calendars. At a minimum one calendar has to be created for the project, but there are instances that more than one calendar may be used on one project. Within the scheduling software, create all applicable calendars for the project (such as 5 day, 6 day, 7 day, etc). In the created calendars, make sure to assign exceptions to any day that is a non-working day (such as weekends, holidays, etc. and identify them as such). Ensure all exceptions are created to span the life of the project or thereafter. There are standard calendars already created with the Elecosoft Powerproject PennDOT Construction Template.

Step 3. Obtain the engineering work plans. Develop a list of tasks and their durations. Gather this information by reviewing historical records from similar projects and interviewing knowledgeable personnel who can be relied on to give accurate and useful estimates of the work involved. Input all of the activities and durations into the scheduling software and make sure to assign the appropriate work day calendar to each activity.

Step 4. Determine activity logic. Determine what must be done first (predecessor), what must be done next (successor), and what can be done at the same time (concurrent). To begin the process of determining interdependencies between activities, define the logical flow of the activities. Determine predecessor logic by asking what must be done before this activity can begin. Determine successor logic by asking what must be done after this activity finishes. Determine concurrence logic by asking if any other activities can occur at the same time. Enter all activity logic into the schedule. Every activity should have a predecessor and a successor; the exceptions being the first activity will not have a predecessor and the last activity will not have a successor.

Step 5. Input any date constraints. To manage the completion of a project, date constraints shall be set for the required completion date as well as any specified milestone date(s). Date constraints shall be set based on the project specifications. The number of date constraints will be minimal to facilitate flexibility but sufficient to provide on time completion of the project.

Step 6. Calculate the Forward Pass, Backward Pass, and Critical Path. The scheduling software will calculate the forward pass, backward pass, and critical path for you. All calculations shall be based off of the anticipated notice to proceed date. These calculations will determine early and late dates along with float and the critical path.

Float is defined as the amount of time that a non-critical activity has before its completion affects the successor activity. The Forward and Backward Passes define total float and free float.

Total float exist for a non-critical network path and does not belong to any single activity along that path. Total float represents the amount of time along a non-critical network path that the starts and finishes of the activities on that path can be delayed without affecting the overall duration. Total float is then calculated for each activity.

Total Float (TF) = $LS - ES$ or $LF - EF$ or $LF - ES - \text{Duration}$

Float Note: There is no float in any activities on the Critical Path.

Free Float is expressed as the amount of time an activity's start can be delayed without affecting the early start date of its successor. It is also referred to as activity float, because it is a property of an activity.

Free Float (FF) = Time available before effecting the Early Start of any Successor Activity

The critical path is the longest string or route of interdependent or connected activities that establishes the overall project duration. It is only on the critical path that savings in project time units can be made. An activity is critical when the early dates equal the late dates, meaning there is no float.

6.0.1.3- Logic errors. The completed CPM schedule is a construction manager's technique that reflects the experience and judgment of those who are responsible for executing the work. Even the best-laid plans can suffer if the scheduler has not taken into account the following potential pitfalls:

- **Incorrect logic.** Activity logic must be correct to accurately reflect the construction process. Linking unrelated activities may extend the project duration and reduce the effectiveness of the CPM schedule as a planning and management tool.

- **Redundant logic.** Make sure that all activity relationships are necessary to move the project toward completion. Redundancy unnecessarily complicates the project schedule.

6.0.1.4- Contractor's Schedule Submission. The contractor's schedule submission must meet all Publication 408 Specifications and contract documents.

It is the contractor's responsibility to convert the native compatible schedule format to Elecosoft Powerproject. Depending on which compatible file format the contractor is using will depend on the steps necessary to convert that native format to Elecosoft Powerproject. See Chapter 8, Section 2.3 of this manual with detailed guidance on How to Convert a Compatible Format to Elecosoft Powerproject.

After the contractor reviews the Elecosoft Powerproject file, the schedule can then be submitted to PennDOT. The Elecosoft Powerproject Project (.pp) schedules will always be submitted through the PennDOT Project Collaboration Center (PPCC).

6.1- CONSTRUCTION SCHEDULE ACCEPTANCE POLICY

6.1.1- Overview. Once the contractor has submitted the schedule through the PPCC, it is now up to the ACE to review and accept or reject the contractor's schedule. If a contractor's schedule meets the necessary criteria – including all milestones and Contract Completion Date (CCD), as well as all other aspects of the Publication 408 Specifications and contract documents, it must be deemed acceptable. Even when the schedule is accepted, it is possible – and reasonable to document and express concern over any questionable items. Detailed policy and checklists for accepting the contractor's schedule is available in the Project Office Manual (POM).

The following chart lists differences between schedule types and what is required for each type of schedule.

SUBMISSION REQUIREMENTS	NARRATIVE	CPM
Activity Number		X
Activity Description	X	X
Duration of each activity (in working days)	X	X
Start and Finish calendar dates of each activity	X	X
A Workday Calendar containing: Work days Non-work days Number of shifts per day Number of hours per shift	X	X
Earliest start date of each activity by: Calendar date Work day		X
Earliest finish date of each activity by: Calendar date Work day		X
Interdependence of Activities	X	X
Latest start date of each activity by: Calendar date Work day		X
Latest finish date of each activity by: Calendar date Work day		X
Activity float		X
Written Narrative	X	
Electronic .pp file		X

Schedule activities must satisfy the CCD, milestone dates, all Specifications, Publication 408, and contract documents, including restrictions such as paving blackout dates, environmental restrictions, etc. “Acceptance of the Contractor’s Schedule or any revision(s) thereto, by the Department, will not constitute the Department’s approval of or agreement with the sequence of operations, the durations of activities, the adequacy or propriety of resources, the identity of controlling operations, nor the feasibility or any other characteristics of the Schedule or its revisions.” (Publication 408, 108.03(b))

6.1.2- Analyzing a Construction Schedule. When analyzing the construction schedule, it is important to be proactive. Prepare for potential delays and claims by looking ahead and thinking ahead. You are not looking for reasons to reject the schedule (if it contains all the required elements), but you are looking for ways to ensure that the schedule makes sense and can be followed during construction.

The items listed below should be analyzed throughout the construction process. By identifying potential problem areas promptly by analyzing the schedule, you can avoid many long-term problems.

- Durations that are too short, too long, or concurrent with incompatible activities
- Activities that seem out of sequence
- Redundant activities
- Anticipated completion date sooner or later than Contract Completion Date
- Anticipated milestone dates that indicate accelerated or lagging activities
- Adequately addressing long-lead items
- Adequately addressing PennDOT review and turn-around times
- Negative float
- Start or finish date that is not schedule-driven (may be contractor-imposed date)
- “Floating” activities (Activities not linked to schedule by logic)

Acceleration on a schedule is sometimes overlooked as a potential problem. A contractor who accelerates may expect compensation for the acceleration. Failing to alert the contractor to an accelerated schedule may imply PennDOT complicity with the acceleration.

- If the contractor submits an initial schedule with a completion date that is earlier than the CCD, notify the contractor in writing immediately.
- Ask how he wants to proceed; there are several options.
 - He could add float to extend the schedule to meet the CCD.
 - He could submit a new schedule with the correct CCD.
 - He could ask to have the CCD amended. (This requires the District Executive’s approval.)
- Reinforce to him that he is not being accelerated and that the expected completion date is the Contract Completion Date.

6.2- MONITORING POLICY

6.2.1- Monitoring Chart. With the CPM schedule complete, the contractor must submit the Elecosoft Powerproject (.pp) file to the Department. Once the Department accepts the contractor’s CPM schedule, the Department can prepare a method to monitor and document the actual progress of the project as daily work is completed. All projects that require a CPM or CPM with Resource Loaded Schedule must be monitored. Before the monitoring chart can be plotted, a baseline should be created within the Elecosoft Powerproject file.

The Monitoring Chart is a modified bar chart that displays the network logic. The monitoring chart is a tool for monitoring construction projects on a daily basis. The monitoring chart is a view that is already created within the PennDOT Construction Template.

6.2.1.1- Project Monitoring and Documenting using the Monitoring Chart. With the contractor’s schedule completed and accepted, the monitoring chart can now be plotted and it

can be used to document periods of work and non-work. This method of monitoring will take place on a hard copy of the plotted out Monitoring Chart that shall be placed in the field office. The documentation should be documented daily.

6.2.1.2- Keys to Monitoring Contractor's Schedule. The most important thing is to monitor the schedule. Since the Contractors have to justify and support any Time Extension request that they submit, it is important that the Inspector-In-Charge and/or ACE know whether the request is accurate or not. Project Schedules are dynamic and during the course of the project, issues can affect work such that one or more Activities that were not critical at the beginning of the project become the most critical Activities in the schedule. Knowing what caused these changes, no matter how minor, can be important when trying to resolve disputes or working with FHWA.

Collect important information regarding Activities. The information that is most important to collect for an Activity is what date it was started, any issues or events that affected the progress (such as rain, equipment breakdowns, equipment/labor changes, changes made by the Department, removal and replacement of material, etc.) and the date that it was finished.

Constantly document progress. Don't wait until there is a need to review the schedule.

Once the need arises, the Department has a limited period in which to respond to requests by the Contractor. The schedule should never be more than a week behind in being documented against. It is also very helpful when documenting the progress of an Activity, that once it has started, it be monitored daily until it is completed. This maintains continuity in the documentation and minimizes the questions that may arise later.

Keep schedule information daily. Whether you are using a monitoring chart or another means to monitor the schedule, it is inevitable that there will be times that keeping information up to date will fall behind. That is why it is a good idea to assign someone to keep the data on a daily basis and in a consistent manner. For instance, if one of the project staff is assigned to document the schedule in their PSA, they should:

- List each Activity that is in progress that day
- Whether the Activity started that day
- Whether there was work done on that Activity that day
- Any issues that may have arisen
- Whether the work was completed
- It may also be helpful to list any Pay Items associated with the Activity

It's not as much work as it may seem. It may seem like a lot of work and effort to monitor a schedule, but it really isn't. Even on the largest project, there should only be a handful of Activities progressing at any one time. There are already inspectors covering the operations to document against pay items. Even marking up the chart should only take a minute or two each day if the data is collected in one or two PSAs in a clear and consistent format.

6.2.1.3- Actual vs. Planned. The start of every activity should be marked on the day when it started, and for every subsequent day as that activity progresses. Likewise, if no work is performed during a day that should also be indicated on the chart, but only if that activity has already started. Finally, a separate mark should be indicated on the time unit that the activity completes.

Most importantly, any project delay must also be documented, stating the reason for the delay. Having a simple graphical representation of project delay allows the project manager to more quickly respond to possible impacts on the schedule.

Impacts cause changes to the plan, altering the contractor's ability to follow the original schedule. Impacts may shorten or lengthen activity durations, and the lengthened durations may or may not change the critical path. Impacts may include delays to the Notice to Proceed, awards, submissions, approvals, rejections, and production. Delays could also be caused by incomplete plans and drawings, changed conditions, and additional or unforeseen work.

The Monitoring Chart will document any production delays and gains throughout the project, as well as start delays and gains. A production delay occurs when an activity takes longer than scheduled, possibly pushing any successor activities past their scheduled starts. A start delay occurs when an activity can start on its scheduled start, but for some reason does not. This assumes that its predecessor activities have been completed. Gains occur when production takes less time than scheduled, or when an activity starts earlier than scheduled.

Note: A start delay can only occur when the delay is not attributed to the finish of its predecessor.

Documenting the who, what, when, where, why, and how the impact occurred on the Monitoring Chart will bring attention to delays before they can be allowed to start a chain reaction. This will help determine what must be done to get the project back on schedule.

6.2.1.4- Recommended Notations for Use on the Monitoring Chart:

Start of Activity

End of Activity



Standard Work Day



Rain Day (No Work)



No Work (No Limitation)



Out of Sequence Activity



Make-Up Day (Sat/Sun)

If no work was done, make sure to Note the following information directly onto the monitoring chart or as an activity Note as to any Notes associated with the activity and references to PSAs.

6.2.1.5- Monitoring Guidelines and Tips. Below are some basic pieces of information that you should gather at the beginning of each project. Then, keep them in mind as you review and monitor progress daily.

- Read the contract thoroughly.
- What are all the submission requirements, timelines, application due dates, and start dates?
- What has the Department agreed to, in terms of a turn-around time for items such as design approval? Check that the schedule accurately reflects those dates.
- Do any overlapping activities require adjustment? For example, does a review time overlap with an activity's construction schedule?
- Do any items require exceptionally short or long lead times?
- Scour the schedule for unreasonable durations. Note where the contractor may have shortened or lengthened standard durations.
- Does any concurrent work seem questionable?
- Are all specs being met in order to ensure good work and a safe project for employees and travelers?
- Always ask yourself, and know the answer to, these three questions:
 - What activity is first?
 - What activity is next?
 - What activities are concurrent?
- Use the chart and its Notes to support quick decision making based on timely and factual data.
- Does the schedule include time for shop drawing review?

6.2.2- Monitoring Progress

6.2.2.1- Progress Tracking. Progress tracking is the process of using the monitoring chart to determine what activities were delayed and why they were delayed.

Monitoring occurs on the **activity** level and the **project** level.

- Was the project started on the planned project start date?
- Was the activity started on the planned start date?
- Was the planned progress for the activity met?

By monitoring these elements, you will identify any delays in the process

6.2.2.2- What to Monitor on the Project Level. The following dates matter most at the project level.

- Notice to Proceed (NTP)

- There are two NTP dates involved in a construction project—Planned and Actual dates.
- However, the project you are monitoring reflects the schedule by which the project operates. This schedule is based on the Actual NTP date.
- For the purpose of monitoring, the Actual Notice to Proceed date is the only one of concern.
- Actual Start Date
- Contract Completion Date (CCD)
- Milestones

6.2.2.3- What to Monitor on the Activity Level. Every schedule is comprised of various construction activities; in turn, the activities are comprised of various payment items, or contract items. All the activities, when placed in a logical manner, form the basis of a CPM schedule from which a monitoring chart is developed.

- On the schedule, each of the activities is listed separately.
- Monitor each day that the activity was worked or not worked.
- Mark notations on the chart to indicate all worked activities or reasons for not working on each activity.
- Start date and end date of activity.

6.2.2.4- Critical vs. Non-Critical Activities

- A delay in a critical activity will delay the entire project.
- A non-critical activity has float.
- A delay in a non-critical activity may not delay the project until its float is used.

6.2.2.5- Delays. Delays to an activity can occur for two reasons.

- The activity did not start on time.
- The production rate for that activity was not achieved.

If a delay occurs in a critical activity, the delay will impact the project.

If a delay occurs in a non-critical activity, available float time may be used and, if not exceeded, it is possible that the project will not be delayed.

CHAPTER 7 - ELECOSOFT POWERPROJECT WEB PORTAL

7.0- ELECOSOFT POWERPROJECT WEB PORTAL OVERVIEW

The Elecosoft Powerproject Web Portal is a web-based collaboration portal that allows users to create, view, and update Elecosoft Powerproject schedules over the Web. The primary benefit of the Elecosoft Powerproject Web Portal for PennDOT is the ability to allow business partners to submit and update project schedules in Elecosoft Powerproject without having to send in a schedule via electronic or paper means. The purpose of this chapter is to provide users with the information to quickly get started in the Elecosoft Powerproject Web Portal and start taking advantage of the benefits of the tool.

7.1- PURPOSE

The Web Portal serves several functions within the PennDOT environment:

- Provides user level security to projects
- Allows users to manage multiple projects
- Allows check in / check out of projects
- Allows progression of activities via a simple web interface
- Allows submission of projects into the PennDOT environment
- Allows Department staff to accept / reject inputs to their projects
- Allows easy reporting at both a project and portfolio level
- Allows users to view the schedule via the Gantt Chart
- Provides Electronic Record Retention of schedule changes throughout the life of the project
- Handles loaned Elecosoft Powerproject licenses to Business Partners

7.2- LOGGING INTO THE ELECOSOFT POWERPROJECT WEB PORTAL

This section will explain how to log into the Elecosoft Powerproject Web Portal. To access the Elecosoft Powerproject Web Portal, a user must have access to the Pennsylvania Project Collaboration Center (PPCC) website. To access PPCC, PennDOT users must have a CWOPA Username and Password; Business partners must have an ECMS Username and Password.

7.2.1- To Log on to the Pennsylvania Project Collaboration Center Website (PPCC)

1. Go to <https://ppcc.penndot.gov/>

pennsylvania
DEPARTMENT OF TRANSPORTATION
Project Collaboration Center

Sign In for Business Partner

Username:
Password:

Sign In for PennDOT Employees **

[PennDOT Employees Click here to login](#)

**** Note:**
If you are prompted for a userid and password, please use your CWOPA credentials.

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2. If you are a Business Partner, sign in under the Business Partner section with your *ECMS Username* and *Password*.

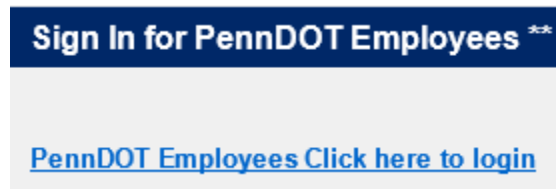
Sign In for Business Partner

Username:
Password:

3. Select *Login*.

-Or-

1. If you are a PennDOT employee, or anyone acting on behalf of the Department, sign in under the PennDOT Employees section, by clicking ***PennDOT Employees Click here to login.***



If you are on the PennDOT network, it will take you right into the PPCC, if you are off the PennDOT network a login page will appear where you will have to enter your CWOPA Username and Password.

7.2.2- To Log on to the Elecosoft Powerproject Web Portal

Once you are logged into PPCC:

1. Under the Useful Links Area, select either ***ELECOSOFT POWERPROJECT for Business Partners*** or ***ELECOSOFT POWERPROJECT for PennDOT Users***, depending on how you logged onto PPCC.

Under the Useful Links Area, if a user cannot access the Elecosoft Powerproject Web Portal, there is a form they can fill out by selecting the **ELECOSOFT POWERPROJECT ACCESS REQUEST FORM**. This form will be used for internal personnel who do not have Elecosoft Powerproject installed on their computer or who do not have access to the Elecosoft Powerproject Web Portal. For external personnel, this form is only used to gain access to the Elecosoft Powerproject Web Portal if they already have an ECMS User ID and Password.

Announcements

Show 10 entries Search:

ECMS#	Title	Body	Created
	Prime Contractor Administrator Guide	The newly created Prime Contractor Administrator guide has been posted in the All PPCC Training folder, under the Reference Tab, of the PPCC Portal. The guide will provide the Prime Contractor Administrators instruction on how to add users to the Prime Contractor and Sub Contractor roles.	10/14/2016 2:12:50 PM
	Force Account Revision Videos	Refer to References tab- Central Office folder - Force Account Revisions subfolder for videos	12/3/2016 9:55:45 AM
	Release 5.1 Enhancements	Refer the All PPCC Training folder, found in the References tab, for the PPCC Whats New in Release 5.1 document.	8/15/2016 7:17:02 AM

Showing 1 to 3 of 3 entries First Previous 1 Next Last

Support Contacts

Contacts for reporting a PPCC issue

Useful Links

Pennsylvania Department of Transportation Website

PennDOT Home Page

Asta Web Portal

[Asta Account Request Form](#)

[Asta for Business Partners](#)

[Asta for PennDOT Users](#)

Engineering and Construction Management System (ECMS)

Internal Users

External Users

PennDOT Training Calendar

Training Calendar

Standards and Publications

BC Standards

BD Standards

Construction and Design: Forms and Publication

Publication 408 Specifications

RC Standards

Traffic Standards

Click Here

Once the link is selected, the Elecosoft Powerproject Web Portal Login Page will appear.

ASTA Web Portal

Please Login

Username:


Password:

Login

2. If you are a Business Partner, log in with your **ECMS Username** and **Password**.

-Or-


2. If you are a PennDOT employee, or anyone acting on behalf of the Department, log in with your **CWOPA Username** and **Password**.
3. Select **Login**.



pennsylvania
DEPARTMENT OF TRANSPORTATION


[PennDOT Portal](#)
[Projects](#)
[Users](#)
[Business Partners](#)
[Reporting](#)
[Service Status](#)
[About](#)

Logged in as pdfstatastest1 | pdfstatastest1 | Log off


[Edit Portal Message](#)

Admin Portal

[Projects Summary](#)
[View Logs](#)
[Service Status](#)




Projects

[Show All Projects](#)

2758 Projects

3 Projects Awaiting Acceptance

2 Projects Checked Out




Progress

[Show In-Progress Projects](#)

715 Projects Awaiting Progress Entry

1 Projects Awaiting Progress Acceptance



Users

[Manage Users](#)

36801 Total Users

78 Portfolio Managers


614 Project Managers

35752 Business Partner Users

20 Team Members

4 Project ACE Users


3 Inspector In Charge Users



Business Partners

[Manage Business Partners](#)

10300 Total Business Partner Companies




License Information

[Manage Licenses](#)

1 Total Allocated Licenses

2 Total Reserved Licenses



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7.3- ELECOSOFT POWERPROJECT WEB PORTAL HOMEPAGE

Please Note that all screen shots shown are based on the highest level of security. A user may not see the exact screen that is shown throughout this section for that reason. Some options will not be available based on what type of user you are.

Admin Portal

Projects Summary | View Logs | Service Status

Projects Show All Projects	2753 Projects 3 Projects Awaiting Acceptance 2 Projects Checked Out
Progress Show In-Progress Projects	715 Projects Awaiting Progress Entry 1 Projects Awaiting Progress Acceptance
Users Manage Users	36801 Total Users 78 Portfolio Managers 614 Project Managers 35752 Business Partner Users 39 Team Members 4 Project ACE Users 3 Inspector In Charge Users
Business Partners Manage Business Partners	10300 Total Business Partner Companies
License Information Manage Licenses	1 Total Allocated Licenses 2 Total Reserved Licenses

Asta Powerproject

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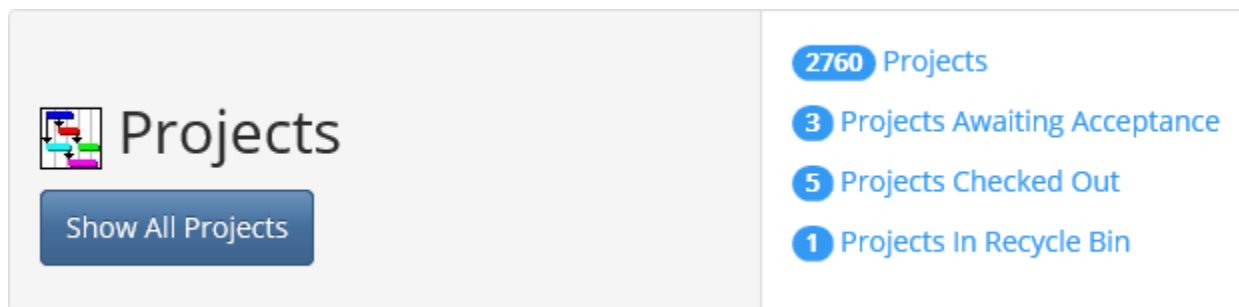
7.3.1- Title Bar. All windows of the Web Portal contain the Title Bar, the purpose of which is to provide continuity throughout the portal. Depending on permissions, users may or may not see all available items.



The Title Bar contains the following menu items:

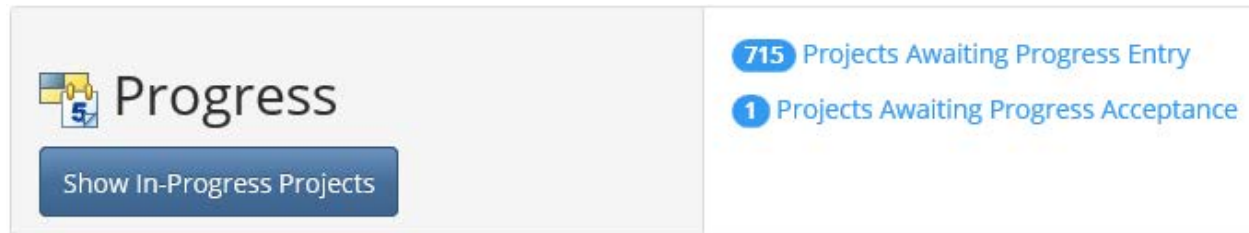
- **PennDOT Portal** – will return a user back to the Home Page
- **Projects** – Takes a user to “Show All Projects” which is a listing of all projects within the tool. Users will only be able to view projects that they have access to.
- **Users** – Users is a link to the section of the Web Portal for adding / removing portal users.
- **Business Partners** – is a link to the section of the Web Portal for adding / removing Business partners/contractors. This is only available to Portal Administrators.
- **Reporting** – is a link to the section of the Web Portal for creating / editing / running reports.
- **Service Status** – is a link to determine Server level services are running
- **About** – versioning of the tool

7.3.2- Projects. *Show All Projects* is a way for users to view all projects whether they have progress or not. Users can create, progress, and remove projects.



For convenience, Projects lists the number of projects a user is associated with, how many projects are awaiting approval, how many projects are currently checked out, and how many projects are in the Recycle Bin. The title to the right of the number is a hyperlink that will take users to the Projects page with a pre-defined filter applied to the list of All Projects.

7.3.3- Progress. *Show In-Progress Projects* is a way for users to view projects that have been submitted and accepted by PennDOT.



For convenience, the Progress window gives counts of projects awaiting progress entry and projects awaiting progress acceptance. The title to the right of the number is a hyperlink that will take users to the Progress page with a pre-defined filter applied to the list of all In-Progress Projects.

7.3.4- Manage Users. *Manage Users* gives administrators the ability to add, modify and remove Web Portal users.



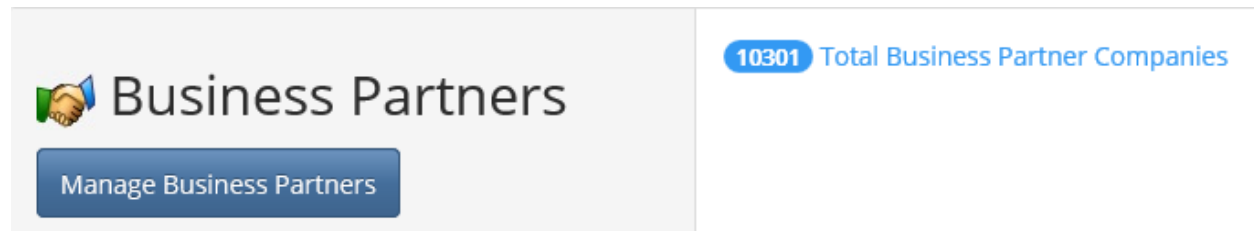
For convenience, the Users window gives counts of total users, Portfolio Managers, Project Managers, Business Partners, Team Members, Project ACE Users, and Inspector In Charge Users. The title to the right of the number is a hyperlink that will take users to the Users page with a pre-defined filter applied to the list of all Users.

User Types. When creating users, the following security types may be used:

- **Admin** – Highest level of access within the PennDOT Environment. These users have complete access to all functionality within the Web Portal.
- **Portfolio Manager** – Administrative access at the District level to all Design and Construction with Design project areas. These users have administrative full access at their district level.

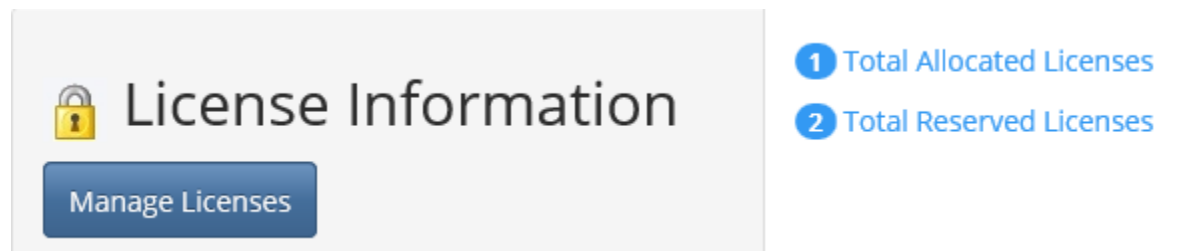
- **Project Manager** – Used to give project access to an individual Project Manager. These users are able to create projects, accept/reject changes and progress as needed. Project Managers will only have access to projects they are assigned to.
- **Project ACE** – Administrative access at the District level to all Construction and Construction with Design project areas. These users have administrative full access at their district level.
- **Inspector in Charge (IIC)** – Used to give project access to an individual Inspector in Charge. These users are able to create projects, accept/reject changes and progress as needed. IICs will only have access to projects they are assigned to.
- **Business Partner** – Allows for the updating of projects via the portal. This is limited access security.
- **Team Member** – Allows access to all projects, but in read-only mode. This access only allows download capabilities of the projects.

7.3.5- Manage Business Partners. Available to Web Portal Admins, *Manage Business Partners* gives administrators the ability to add, remove and edit Business partners/contractors.




For convenience, the Business Partners window gives counts of Total Business Partner Companies. The title to the right of the number is a hyperlink that will take users to the Manager Business Partners page.

7.3.6- Manage Licenses. Available to Web Portal Admins, *Manage Licenses* gives administrators the ability manage license keys, view currently assigned licenses and to reserve licenses.



For convenience, the Manage Licenses window gives counts of Total Allocated Licenses and Total Reserved Licenses. The title to the right of the number is a hyperlink that will take users to the Manage License page with a pre-defined filter applied to the list of all Licenses.

7.3.7- Elecosoft Powerproject Executables. The  icon will direct users to another site where a zip file is located. This zip file will contain Elecosoft Powerproject, Elecosoft Powerproject Project Comparison, Elecosoft Powerproject Project Viewer, PennDOT Templates and border files, and a PDF file that has step by step instructions on how to download all of the files within the zip file. These executable files are for external users only, internal PennDOT users should not be downloading these files.

7.3.8- Projects Summary. At a high level, Admins, Portfolio Managers, and ACEs are able to view their entire portfolio of projects at a glance. The Projects Summary will give a summary of all the projects at a high level. The following information is provided:

- Total number of projects
- The number of projects that have been submitted
- The number of projects that are ‘checked out’
- The number of projects that are ‘in progress’
- The number of projects ‘awaiting acceptance’

To View the Projects Summary:

1. Go to the Portal Homepage within the Elecosoft Powerproject Web Portal.
2. Select **Projects Summary**.

The screenshot displays the PennDOT Portal Admin Portal. The top navigation bar includes links for PennDOT Portal, Projects, Users, Business Partners, Reporting, Service Status, and About. A user is logged in as pdtstatestest1. The main content area is titled 'Admin Portal' and features a sidebar with 'Projects Summary' highlighted in a red box, along with 'View Logs' and 'Service Status' links. The main content area is divided into five sections: Projects, Progress, Users, Business Partners, and License Information. Each section has a 'Show All' or 'Manage' button and a list of statistics.

Section	Statistics
Projects	<ul style="list-style-type: none">2377 Projects1 Projects Awaiting Acceptance8 Projects Checked Out2 Projects In Recycle Bin
Progress	<ul style="list-style-type: none">753 Projects Awaiting Progress Entry7 Projects Awaiting Progress Acceptance
Users	<ul style="list-style-type: none">36481 Total Users79 Portfolio Managers615 Project Managers35749 Business Partner Users20 Team Members2 Project ACE Users2 Inspector In Charge Users
Business Partners	<ul style="list-style-type: none">9703 Total Business Partner Companies
License Information	<ul style="list-style-type: none">3 Total Allocated Licenses1 Total Reserved Licenses

The Asta Powerproject logo is located at the bottom left of the page.

The high level summary box will appear for the district the user is associated with. Admins are the only people whom will see all districts.

District 1	
Total projects	467
Submitted	3
Checked out	18
In progress	113
Awaiting acceptance	6

7.4- ELECOSOFT POWERPROJECT WEB PORTAL PROJECTS PAGE

All projects are created and maintained via the Elecosoft Powerproject Web Portal. As projects are created, progressed, and ultimately completed, they are kept in a flat file system much like what is seen in Windows Explorer. When a project is created, it is placed into a folder as revision one. As the projects are progressed, each progression equals one revision so projects are never overwritten.

Note that users will only be able to see projects they have access to within the confines of their security level.

To get to the Elecosoft Powerproject Web Portal Projects Page:

1. Select *Show All Projects* Under Projects or select one of the hyperlinks to the right.

The Projects Homepage will appear.

Projects

Create New	Showing Projects : All ▾	Showing District : Any ▾	Project Type : Any ▾	Project Area : Any ▾	Filter For Manager...	
Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
PDSMASTER	Checked In	8/16/2013	10/28/2014	0.0d		Select Operation ▾
018	Checked In	5/5/2008	7/29/2008	0.0d		Select Operation ▾
100006C	Checked In	3/30/2015	5/2/2016	0.0d		Select Operation ▾
100191 preconst	Checked In	5/27/2014	7/8/2014	0.0d		Select Operation ▾

This page will have all the projects that a user has access to based on the users security permissions.

7.4.1- Menus . Across the top, there are several options available to users:

Create New Showing Projects : All▼ Showing District : Any▼ Project Type : Any▼ Project Area : Any▼ Filter For Manager...

- **Create New** – used to create a new Project.
- **Showing Projects** – A selection criteria to view projects by Status (All, In-Progress Projects, Awaiting Acceptance, Checked Out, Awaiting Progress Entry, or Awaiting Progress Acceptance).
- **Showing District** – A selection criteria to view projects by District (Any, Central Office, District 1, District 2, District 3, District 4, District 5, District 6, District 8, District 9, District 10, District 11, or District 12).
- **Project Type** – A selection criteria to either view projects by Project Type (Any, Bridge Alignment, Bridge Preservation / Design-Bid-Build, Bridge Preservation / Design-Build, Bridge Rehabilitation / Design-Bid-Build, Bridge Rehabilitation / Design-Build, Bridge Replacement / Design-Bid-Build, Bridge Replacement / Design-Build, Culvert, Environmental Assessment Project, Environmental Impact Study Project, Information Transportation System, Intersection Improvement, Interstate Maintenance, Maintenance Betterment, Other, Roadway Alignment, Roadway Reconstruction, Roadway Rehabilitation, Roadway Resurfacing, or Traffic Signals, Transportation Alternative Project..
- **Project Area** – A selection criteria to view projects by Project Area (Any, Design, Construction, Construction with Design).
- **Filter For Manager** – A filter to view projects by Manager

7.4.2- Available Columns. The following columns headings will appear on the Elecosoft Powerproject Web Portal Projects Homepage:

Project Name ▼ Status ▼ Project Start ▼ Project Finish ▼ Float ▼ Required Attention Available Operations

- **Project Name** – the list of Project Names. Clicking on the column heading will sort the Project Names either ascending or descending. The filter icon will also allow a user to filter on the Project Names.
- **Status** – Shows the status of all the projects listed. Clicking on the column heading will sort the Project Status either ascending or descending. The filter icon will also allow a user to filter on the Project Status. The following is a list of the available statuses:

- **New** – When a project is first created prior to the Projects Page being refreshed, the project will show a status of New. Once F5 is selected to refresh the page, the status will change to Checked In.
 - **Checked In** – The project is Checked In and is currently not being updated.
 - **Checked Out** – The project is Checked Out and is currently being updated.
 - **Submitted** – The project has been submitted.
 - **Editing Progress** – The project is currently being progressed.
 - **Awaiting Acceptance** - Progress has been submitted and is now awaiting acceptance from PennDOT.
 - **Accepted** – The progress has been accepted by PennDOT.
 - **Completed** – All tasks on the project have been completed.
 - **Archived** – The project no longer needs to be monitored.
 - **On Hold** – Delays have put the project on hold and it is assumed the project will restart at a later date.
- **Project Start** – The start date of the Project. Clicking on the column heading will sort the Project Start Date either ascending or descending. The filter icon will also allow a user to filter on the Project Start Date.
 - **Project Finish** – The finish date of the Project. Clicking on the column heading will sort the Project Finish Date either ascending or descending. The filter icon will also allow a user to filter on the Project Finish Date.
 - **Float** – The Total Float of the Project on the longest path. Clicking on the column heading will sort the Float either ascending or descending. The filter icon will also allow a user to filter on the Float.
 - **Required Attention** – This column will notify a user what type of attention is required for the Project. The following is a list of the available types of Required Attention:
 - **Accept Project** – This allows PennDOT to Accept, Accept as NNoted or Reject a project that was submitted.
 - **Enter Progress** – Allows a user to enter progress for the project.
 - **Accept Progress** – Allows PennDOT to Accept, Accept as NNoted or Reject the progress that was submitted.
 - **Resolve Error** – Allows the user to Recreate, Upload, or View the Logs for the project.
 - **Recreate** – Attempts to recreate the project when an error occurs.
 - **Upload** – Allows the user to try to re-upload the project.
 - **View Logs** – Shows a log of errors.
 - **Available Operations** – This column will allow a user to Select Operation. The following is a list of available operations:

- **Check Out** – Allows the user to check out the project in order to make revisions.
- **Check In** – Allows the user to upload a ‘checked out’ project back into the Elecosoft Powerproject Web Portal.
- **Cancel Check Out** – This will override the checked out status to allow the user to re-checkout the projects. If this action is performed, the previously checked out version of the project will no longer be allowed to be checked in.
- **Submit** – Allows the user to submit the project for review.
- **Download Latest** – This option will download the latest version of the project. This version cannot be checked back into the Elecosoft Powerproject Web Portal.
- **Download...** – This allows the user to choose which version of the project to download and which baseline to download with it. Just like **Download Latest**, the downloaded project cannot be checked back into the Elecosoft Powerproject Web Portal.
- **Change Status** – This is an Admin function which allows the user to forcibly overwrite the status of a project to one of the following:
 - **Checked in** – Project is checked in / not being updated
 - **Editing Progress** – The project is currently checked out and progress is being edited
 - **Completed** – All activities on the project have been completed
 - **Archived** – The project no longer needs to be monitored
 - **On Hold** – Delays have put the project on hold and it is assumed the project will restart
- **Delete Project** – Allows the user to delete the project from the Elecosoft Powerproject Web Portal if the user has permissions to do so.
- **Failed to Create** – This is a warning to the user that the project failed to create.

7.4.3- Using Filters. There are filters available using the filter icon throughout the Web Portal. For projects, users can filter on the following:

- **Project Name** – users can select a value equal to, contains, starts with, or ends with a specific value.
- **Status** - Users can select a Value of New, Checked In, Checked Out, Submitted, Editing Progress, Awaiting Acceptance, Accepted, Accepted as Noted, Completed, Archived, or On Hold for the project status.
- **Project Start** – users can select equals, greater than, less than, greater than or equals, or less than or equals to and an exact date.

- **Project Finish**– users can select equals, greater than, less than, greater than or equals, or less than or equals to and an exact date.
- **Float** – users can select equals, greater than, or less than to a specific value.

Any column that has the filter icon on the right hand side of the column can be filtered on.

1. **To Apply a Filter on the Projects Homepage:**Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Select the **Filter** icon next to the column that the filter will be run against.

Projects

Create New Showing Projects : All Showing Dis

Project Name	Status
Q PDSMASTER	d In
Q 018	d In
Q 10006C	d In
Q 100191 preconstr	d In

Type:

Equals

Value:



Apply

3. Select the **Filter Criteria**.

Depending on which column the user is filtering on, will depend on what filter options are available. In some cases, the user may have to click **Apply**.

Once the filter is applied, the filter will bring back all the projects that meet the filter criteria.

To Cancel a Filter:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Select the **Filter** icon next to the column that the filter was applied to (notice the icon is now red to let the user know a filter has been applied). 
3. Select **Clear Filter** 

7.4.4- Creating a New Project

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Select **Create New**.

Projects

Create New

Showing Projects : All

Showing District : Any

Project Type : Any

Project Area : Any

Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q PDSMASTER	Checked In	8/16/2013	10/28/2014	0.0d		Select Operation

The Create Project page will appear.

Create Project

Name	<input type="text"/>
District	Central Office <input type="button" value="v"/>
Project Area	Design <input type="button" value="v"/>
Business Partner Company	None <input type="button" value="Change"/>
Business Partner Project Manager(s)	None
Additional Business Partner Project Manager(s)	None
Progress Method	Site Progress <input type="button" value="v"/>
Project Manager(s)	None
	Add Manager
Template	Construction Template <input type="button" value="v"/>
Notes	<div></div>

Create

3. Fill out the following fields:

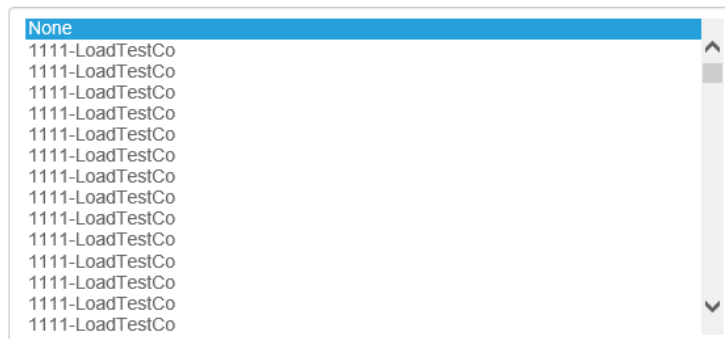

- **Name** – The name of the project in the Web Portal
 - For Design projects, this should be the MPMS Number (for example, 99999).
 - For Pre-bid schedules, this should be the MPMS Number followed by prebid (for example, 99999 prebid).
 - For Construction projects, this should be the MPMS Number followed by CON (for example, 99999 CON).
 - For internal monitoring of Construction projects, this should be the MPMS Number followed by MON (for example, 99999 MON).

- **District** – Select a *District* from the dropdown box that the project is located in.
 - This option is only available with a security level of Admin. Users creating new projects, other than Admins, will not have this option, the project will automatically be tied to the district they are set up in.
- **Project Area** – Select which project area the project pertains to (Design, Construction with Design, or Construction)
- **Business Partner Company or Prime Contractor** – Depending on what Project Area was selected above will depend on whether the user sees Business Partner Company (Design) or Prime Contractor (Construction with Design or Construction). Select a *Business Partner Company or Prime Contractor* that should be associated with the project from the list by selecting **Change**. This will be the *Business Partner Firm or Prime Contractor* that is working on the project. Only one *Business Partner Company or Prime Contractor* can be selected, once selected, select **OK**. The default is *None*, if it is an in-house job, leave as is.

Select a Business Partner Company for the project :

Business Partner Company

To more easily find what you are looking for, click anywhere in the below field and start typing

- **Business Partner Project Manager(s) or Prime Contractor Project Manager(s)** – All the Business Partner Project Managers from the selected Business Partner Firm will be within the drop down box. Multiple people can be selected at one time by holding down the CTRL key.
- **Additional Business Partner Project Manager(s) or Subcontractor Project Manager(s)** - Depending on what Project Area was selected above will depend

on whether the user sees Additional Business Partner Project Manager(s) (Design) or Subcontractor Project Manager(s) (Construction with Design or Construction). Select an ***Additional Business Partner Project Manager or Subcontractor Project Manager*** that should be associated with the project from the list by selecting ***Add Manager***. A Dialogue box will pop up to select the ***Company*** or ***Subcontractor*** then select the individual to add from the populated list. Multiple people from the same company can be selected by holding down the ***CTRL*** key.

Add Additional Project Manager : ✕

Company

Alex Company 2 ▼

Project Manager(s)

To more easily find what you are looking for, click anywhere in the below field and start typing

pdtestatest15 pdtestatest15

pdtestatest7 pdtestatest7

Add Cancel

- **Progress Method** – Select how the schedule will be progressed, either through Elecosoft Powerproject Client or Site Progress using the Elecosoft Powerproject Web Portal. If you selected a Business Partner it will automatically default to Site Progress. If it is an in-house project you have the ability to choose either.
 - For **Design schedules**, if a Business Partner is selected, Site Progress is selected. If it is an in-house project (meaning None was selected under Business Partner Company) the user can choose either Site Progress or Elecosoft Powerproject Client.
 - For **Construction with Design schedules**, the user selects Elecosoft Powerproject Client even if a Prime Contractor was selected.
 - For **Construction schedules**, the user selects Elecosoft Powerproject Client even if a Prime Contractor was selected.

- **Project Manager** – List of the Department Project Managers. Select **Add Manager** to add Project Managers to the project. A dialog box will pop up to select Project Managers based off of their district. Multiple Project Managers can be added at one time by holding down the CTRL key and selecting the Project Managers, then select **Add**. Additional Project managers can be added by reselecting **Add Manager**.

Add Manager :

District

Central Office

Manager

To more easily find what you are looking for, click anywhere in the below field and start typing

OliverAA Reid
 OliverAC Paterson
 OliviaAA Rampling
 OwenAA Bailey
 OwenAC Bailey
 Patricia Kiehl
 Patricia Willis
 Paul Chalecki
 pdtstastatest8 pdtstastatest8
 PeterAA Peake
 PhilAA Campbell
 PhilAA Chapman
 PhilAA Mills
 PhilAB Chapman
 PhilAC Chapman

Add

Cancel

- **Template** – List of the all PennDOT and District specific templates along with the standard Elecosoft Powerproject Templates.
- **Notes** – Any comments or Notes about the project can be entered here.

4. Click **Create**.

Create Project

Name	<input type="text" value="99999"/>
District	<input type="text" value="Central Office"/> ▼
Project Area	<input type="text" value="Design"/> ▼
Business Partner Company	<input type="text" value="test"/> <input type="button" value="Change"/>
Business Partner Project Manager(s)	<input type="text" value="BP Admin"/> <input type="button" value="Remove"/> Add Manager
Additional Business Partner Project Manager(s)	<input type="text" value="pdtstastatest15 pdtstastatest15 (Alex Company 2)"/> <input type="button" value="Remove"/> Add Manager
Progress Method	<input type="text" value="Site Progress"/> ▼
Project Manager(s)	<input type="text" value="pdtstastatest8 pdtstastatest8"/> <input type="button" value="Remove"/> Add Manager
Template	<input type="text" value="PennDOT Master Template"/> ▼
Notes	<div></div>
	<input type="button" value="Create"/>

Once the project is created within the Elecosoft Powerproject Web Portal, this is just the ‘shell’ of a project. The actual schedule still has to be created within the Elecosoft Powerproject Client software in order to add tasks, durations, logic, coding, and constraint dates. In order to do that, the newly created project has to be ‘checked out’.

Note: There are instances where the project will not be created immediately. If the status reads **NOT CREATED YET**, refresh the screen (F5) and the project should now be created.

7.4.5- Checking Out a Project

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to ‘check out’ from the Project List.

3. Select **Select Operation** button.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Checked In	12/28/2016	11/2/2018	0.0d		Select Operation

4. Select **Check Out**.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Checked In	12/28/2016	11/2/2018	0.0d		Select Operation Check Out Submit Download Latest Download... Change Status Delete Project

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Once a project is 'Checked Out', the user that checked out the project is the only person that has the ability to make changes to the schedule.

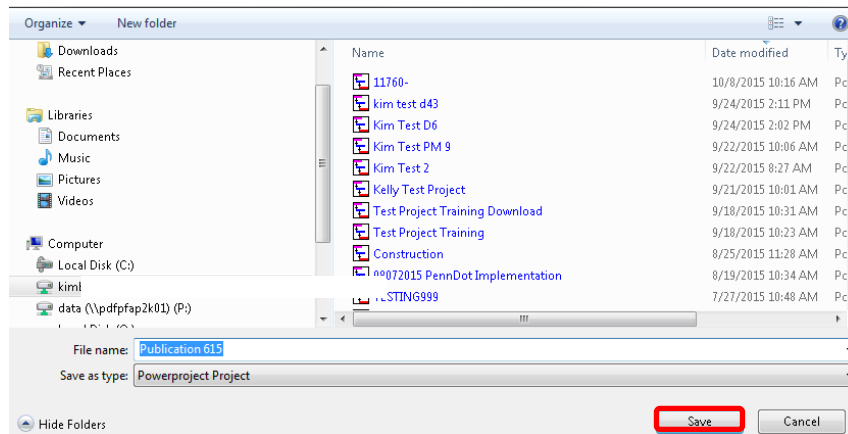
5. Once 'Check Out' is selected, a ribbon will appear at the bottom of the screen. Select the **down arrow** on the **icon**.


Do you want to open or save **Publication 615.pp** (4.81 MB) from **astaportalsyst.dot.pa.gov**? Open Save ▼ Cancel ×

6. Select **Save As**.

Do you want to open or save **Publication 615.pp** (4.81 MB) from **astaportalsyst.dot.pa.gov**? Open Save ▼ Save Save as Save and open

7. Browse to where the .pp file should be saved.

8. Select **Save**.

9. The ribbon at the bottom should now say the download has completed. If the user is ready to work on the schedule right  away, select **Open**, if not click the icon.



If 'Open' was selected, Elecosoft Powerproject Client will open and the schedule can start to be developed. Depending on which template that was selected during the creation of the project in the Elecosoft Powerproject Web Portal will depend on which task pools are listed, which predefined calendars, codes, resources, progress periods, views, filters, sorts, etc will already be created. The task pools can be a starting point to develop the schedule by dragging and dropping tasks into the schedule. See Chapter 8 – Elecosoft Powerproject Client on how to use the software.

Note: Once modifications are made to the project, save the project, do not do a 'Save As'. The location of the .pp file should never be moved from the folder that it originally was saved to during the checkout process. Doing a 'Save As' or moving the .pp file will break the connection between the .pp file and the Elecosoft Powerproject Web Portal.

7.4.6- Checking In a Project. Once a project has been 'checked out' and the schedule has been created and finalized in Elecosoft Powerproject Client, the project needs to be uploaded (Checked In) into the Elecosoft Powerproject Web Portal.

To Check In a Project:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to 'check in' from the Project List.

3. Select **Select Operation** button.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Checked In	12/28/2016	11/2/2018	0.0d		Select Operation

4. Select **Check In**.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Checked Out	12/28/2016	11/2/2018	0.0d		Select Operation Check In Cancel Check Out Download Latest Download... Delete Project

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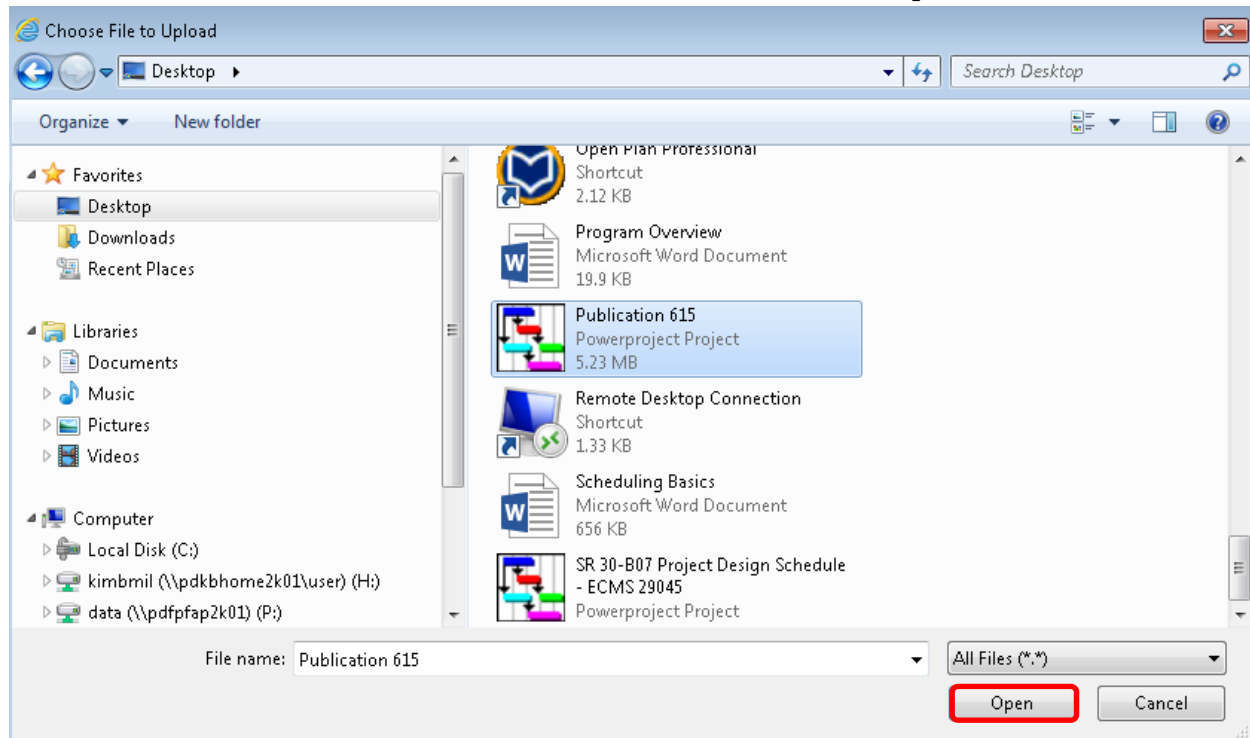
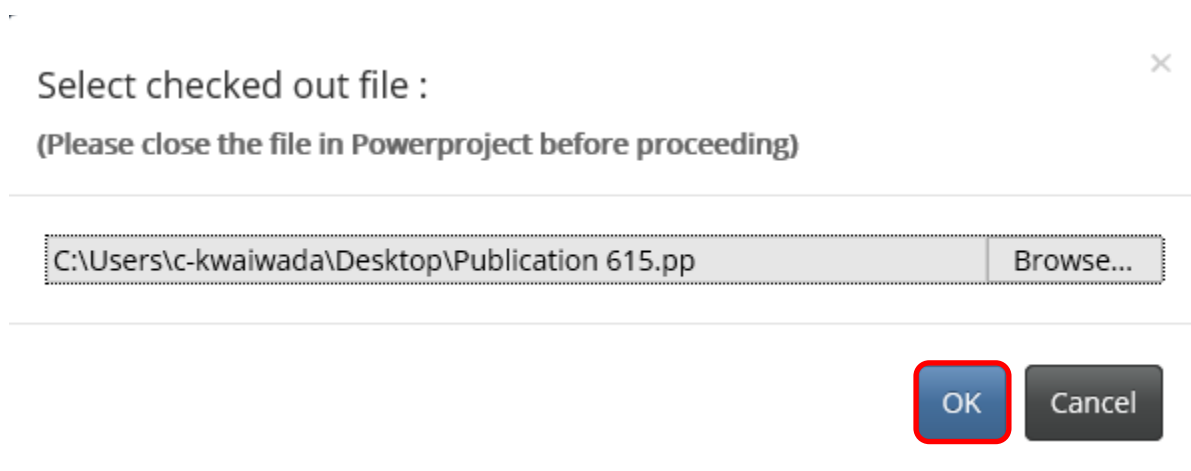
5. Select **Browse** to go to the file location of the .pp file to be Checked In.

Select checked out file :

(Please close the file in Powerproject before proceeding)

Browse...

OK Cancel

6. Browse to the file location and select the file and click **Open**7. Select **OK**.

The project is now checked back into the Elecosoft Powerproject Web Portal.

7.4.7- Submitting a Project. Once the project is checked back into the Elecosoft Powerproject Web Portal, it must be submitted to PennDOT.

To Submit a Project:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to ‘submit’ from the Project List.
3. Select **Select Operation** button.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q Publication 615	Checked In	12/28/2016	11/2/2018	0.0d		Select Operation

4. Select **Submit**.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q Publication 615	Checked In	12/28/2016	12/10/2018	0.0d		Select Operation Check Out Submit Download Latest Download... Change Status Delete Project

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7.4.8- Accepting/Accepting As Noted/Rejecting a Project. The project still is not ‘live’ until it is accepted by PennDOT. Even if it is PennDOT that submits a project, the project still needs to be accepted. Prior to accepting the schedule a review of the submitted schedule should be done. Construction with Design and Construction projects have the option to be Accepted, Accepted as Noted or Rejected. Design projects can only be Accepted or Rejected, Accepted as Noted is not an option for Design.

To Accept a Submitted Project:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to ‘accept’ from the Project List.

3. Select **Accept Project** button.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Submitted	12/28/2016	12/10/2018	0.0d	Accept Project	Select Operation

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4. Select **Accept**.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Submitted	2/22/2017	2/22/2017		Accept Project	Select Operation

Back to portal

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Once 'Accept' is selected, a dialog box will pop up.

5. Provide a Baseline Name, and a Baseline Description then select **OK**.

Please enter in details about this project acceptance

Baseline Name

Baseline Description

OK

Cancel

If a project is using Site Progress (the Elecosoft Powerproject Web Portal) to progress a schedule, after that project is accepted, the ability to ‘check out’ or ‘check in’ the project will be gone, unless the status of the project is changed backed to ‘checked in’. If changes need to be made to that schedule (other than progress) this needs to be coordinated with PennDOT in order for the status of the project to be changed to ‘checked in’ to allow access for the project to be ‘checked out’ and changes to be made.

Once the project has been accepted, a copy is placed into the flat file system and “Version 2” will be created. This will be the initial baseline of the project. Now that the project is accepted, progress can now be input into the schedule via the Elecosoft Powerproject Client or Site Progress (Elecosoft Powerproject Web Portal) depending on how the project was originally set up during the creation of the project. As progress is entered throughout the lifecycle of the project, matching versions are created as well.

Note: If a project is setup to use Elecosoft Powerproject Client to progress the schedule, every month the project will need to be Checked Out, progressed via Elecosoft Powerproject Client, saved, Checked In, Submitted, and Accepted.

To Accept a Submitted Project as Noted:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to reject from the Project List.
3. Select **Accept Project** button.

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q Publication 615	Submitted	12/28/2016	12/10/2018	0.0d	Accept Project	Select Operation

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4. Select **Accept as Noted**

Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q Publication 615	Submitted	2/22/2017	2/22/2017		Accept Project	Select Operation

Back to portal

Accept
 Accept as Noted
 Reject

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5. Enter a reason for *Accepted As Noted*, supply a *BaselineName* and *Baseline Description*, and then select *OK*.

Please enter in details about this project acceptance ×

Accepted As Noted

Baseline Name

Baseline Description

OK

Cancel

To Reject a Submitted Project:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to reject from the Project List.
3. Select *Accept Project* button.

Projects

Create New	Showing Projects : All ▾	Showing District : Any ▾	Project Type : Any ▾	Project Area : Any ▾	Filter For Manager...		
Project Name	▼ Status	▼ Project Start	▼ Project Finish	▼ Float	▼ Required Attention	Available Operations	
🔍 Publication 615	Submitted	12/28/2016	12/10/2018	0.0d		<div style="border: 2px solid red; padding: 2px 10px;">Accept Project ▾</div>	<div style="background-color: #555; color: white; padding: 2px 10px;">Select Operation ▾</div>

4. Select **Reject**.

Projects

Create New Showing Projects : All ▾ Showing District : Any ▾ Project Type : Any ▾ Project Area : Any ▾ Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Submitted	2/22/2017	2/22/2017			<div>Accept Project ▾</div> <div>Select Operation ▾</div> <div> Accept Accept as Noted Reject </div>

Back to portal

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5. Enter a reason for rejection and then select **OK**.

Reason for rejection ×

OK

Cancel

Once a project is rejected, it must be 'checked out' again, reconfigured in Elecosoft Powerproject Client, 'checked in' and resubmitted.

7.4.9- Downloading a Project. A project schedule can be downloaded at any time. When a project is downloaded, it creates a copy of the project that is stored in the Elecosoft Powerproject Web Portal. A downloaded copy cannot be directly checked back into the Elecosoft Powerproject Web Portal.

The difference between Downloading and Checkout a schedule is.

- **Downloading** a schedule can be used while running what if scenarios or for the review of the schedule.
- **Checkout** of a schedule should be done while updating or modifying the actual schedule to be accepted within the Web Portal.

There are two options to downloading a project:

- **Download Latest** – This option will download the latest version of the project.
- **Download...** – This option allows the user to choose which version of the project to download and which baseline to download with it.

To Download the Latest of a Project:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to 'Download Latest' from the Project List.
3. Select *Select Operation* button.

Projects

Create New

Showing Projects : All

Showing District : Any

Project Type : Any

Project Area : Any

Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Submitted	12/28/2016	12/10/2018	0.0d	Accept Project	Select Operation

4. Select *Download Latest*.

Projects

Create New

Showing Projects : All

Showing District : Any

Project Type : Any

Project Area : Any

Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
<div> <div>Q</div> <div>Publication 615</div> </div>	Checked In	12/28/2016	12/10/2018	0.0d		<div>Select Operation</div> <div>Check Out</div> <div>Submit</div> <div>Download Latest</div> <div>Download...</div> <div>Change Status</div> <div>Delete Project</div>

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5. A ribbon will appear at the bottom of the screen. Select either *Open*, *Save*, or *Cancel*.

Do you want to open or save Publication 615.pp (5.55 MB) from astaportalsyst.dot.pa.gov ?	Open	Save ▾	Cancel	✕
---	------	--------	--------	---

If 'Open' is selected, the project will automatically open in Elecosoft Powerproject Client.

Note: As a business partner, if you do not have a licensed copy of Elecosoft Powerproject, a project can still be downloaded and viewed in Elecosoft Powerproject Viewer as a read only copy.

To Download a Project:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to 'Download ' from the Project List.
3. Select **Select Operation** button.

Projects

Create New Showing Projects : All▼ Showing District : Any▼ Project Type : Any▼ Project Area : Any▼ Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q Publication 615	Submitted	12/28/2016	12/10/2018	0.0d	Accept Project▼	Select Operation▼

4. Select **Download....**

Projects

Create New Showing Projects : All▼ Showing District : Any▼ Project Type : Any▼ Project Area : Any▼ Filter For Manager...



Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q Publication 615	Checked In	12/28/2016	12/10/2018	0.0d		Select Operation▼ Check Out Submit Download Latest Download... Change Status Delete Project

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The Download Project Screen will appear.

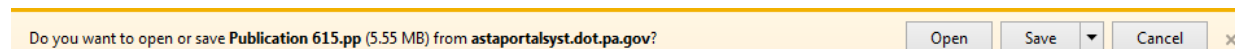
5. Select the **Download Version** from the dropdown box, select **With Baseline** from the dropdown box, then click **Download**.

Download Project

Name	Publication 615
District	Central Office
Project Managers	pdtestatest1 pdtestatest1
Download Version	1 - Initial Baseline - 2/23/2017 7:05 / 
With Baseline	none 
Baseline Description	
Download	

[Back to Projects](#)

6. A ribbon will appear at the bottom of the screen. Select either **Open**, **Save**, or **Cancel**.




7. If 'Open' is selected, a zip file will open. **Double-Click** the name of the file to open and the project will open in Elecosoft Powerproject Client.

Note: As a business partner, if you do not have a licensed copy of Elecosoft Powerproject, a project can still be downloaded and viewed in Elecosoft Powerproject Viewer as a read only copy.

The schedule can also be viewed from inside the Web Portal, which does not require Elecosoft Powerproject or Elecosoft Powerproject Viewer, it is a read-only version that displays the Gantt Chart.


7.4.10- Gantt Chart within the Web Portal. The read-only version of the schedule can be viewed within the Web Portal using the Gantt Chart. Users can customize which columns are shown within the Gantt Chart and scale the date zone to their liking.

To View the Gantt Chart:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that the user wants to view the Gantt Chart.
3. Select the  icon on the left-hand side of the Project Name.

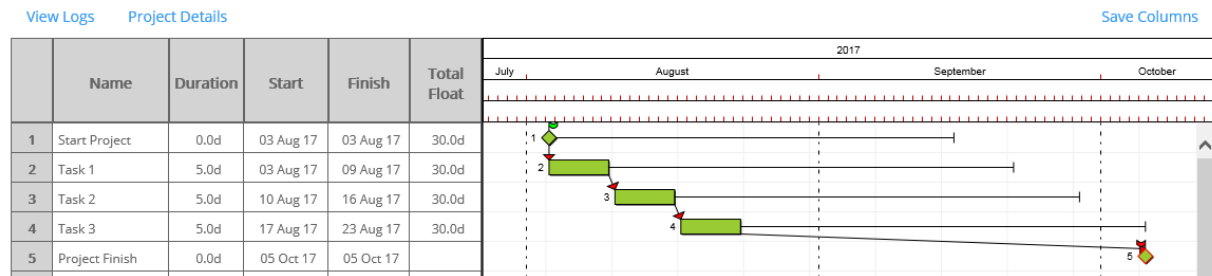
Projects

Create New Showing Projects : All Showing District : Any Project Type : Any Project Area : Any Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
 Publication 615	Submitted	12/28/2016	12/10/2018	0.0d	Accept Project	Select Operation

The Gantt Chart will display.

Show Project



Additional columns can be added by right-clicking on a column heading, select Add column,, and choose which field to display in the column. Columns can also be changed as to which field is being displayed by right-clicking on a column heading, selecting Fields, and changing the Field to display. Similarly, columns can also be removed by right-clicking on a column heading and selecting Remove column. The splitter that separates the spreadsheet and the bar chart can be moved to show more of the spreadsheet or more of the bar chart by left-clicking and dragging. The date zone can also be expanded or contracted by left-clicking and dragging on the red tick marks within the date zone. Changes to the columns and the splitter position between the spreadsheet and bar chart can be saved for the current user by pressing the Save Columns button. These settings will be used for that user for all projects when they show the Gantt Chart.

7.4.11- Changing the Status of a Project. Admin, Portfolio Managers, ACEs, and IICs have the ability to change the status of a project.

To Change the Status of a Project:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to 'Change the Status' from the Project List.
3. Select *Select Operation* button.

Projects

Create New	Showing Projects : All ▾	Showing District : Any ▾	Project Type : Any ▾	Project Area : Any ▾	Filter For Manager...	
Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q Publication 615	Submitted	12/28/2016	12/10/2018	0.0d	Accept Project ▾	Select Operation ▾

4. Select *Change Status*.

Projects

Create New	Showing Projects : All ▾	Showing District : Any ▾	Project Type : Any ▾	Project Area : Any ▾	Filter For Manager...	
Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Q Publication 615	Editing Progress	2/22/2017	2/22/2017		Enter Progress	Select Operation ▾

[Back to portal](#)

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Download Latest
 Download...
 Change Status
 Delete Project

A Status Change Dialog Box will appear.

5. Select what the **New Status** should be changed to from the dropdown box and add an **Optional Comment** if desired. Click **OK**.

Status change

New Status

Checked In

Optional Comment

OK

Cancel

The options available for the new status are as follows:

- **Checked in** – If changes to an approved schedule have to be made, the status of the project must be changed to Checked In in order for a Project Manager or Business Partner to be able to ‘check out’ the project and make modifications.
- **Editing Progress** – If progress needs to be entered into the schedule, and the Enter Progress button is not available, change the status of the project to ‘editing progress’.
- **Completed** – This should be selected when the project has been completed.
- **Archived** – This should be selected when the project no longer needs to be monitored.
- **On Hold** – This should be selected when delays have put the project on hold and it is assumed the project will restart.

7.4.12- Cancel Check Out of a Project. This will override the checked out status to allow the user to re-checkout the projects. If this action is performed, the previous checked out version of the project will no longer be allowed to be checked in.

To Cancel Check Out of a Project:

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to 'Change the Status' from the Project List.
3. Select **Select Operation** button.

Projects

Create New	Showing Projects : All ▾	Showing District : Any ▾	Project Type : Any ▾	Project Area : Any ▾	Filter For Manager...	
Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Submitted	12/28/2016	12/10/2018	0.0d	Accept Project	Select Operation

4. Select **Cancel Check Out**.

Projects

Create New	Showing Projects : All ▾	Showing District : Any ▾	Project Type : Any ▾	Project Area : Any ▾	Filter For Manager...	
Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Checked Out					Select Operation <div> Check in Cancel Check Out Download Latest Download... Delete Project </div>

[Back to portal](#)

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5. A dialog box will pop up, select **Yes** to cancel the 'check out', or **Cancel**.

Are you sure you wish to set this project back to Checked In? You will not be able to check in the project that is currently checked out

[Yes](#) [Cancel](#)

7.4.13- Deleting a Project from the Elecosoft Powerproject Web Portal

1. Go to the Projects Homepage within the Elecosoft Powerproject Web Portal.
2. Find the Project that you want to 'Delete' from the Project List.
3. Select **Select Operation** button.

Projects

Create New	Showing Projects : All	Showing District : Any	Project Type : Any	Project Area : Any	Filter For Manager...	
Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Submitted	12/28/2016	12/10/2018	0.0d	Accept Project	Select Operation

4. Select **Delete Project**.

Projects

Create New

Showing Projects : All

Showing District : Any

Project Type : Any

Project Area : Any

Filter For Manager...

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
Publication 615	Checked In					<div>Select Operation</div> <div>Check Out</div> <div>Submit</div> <div>Download Latest</div> <div>Download...</div> <div>Change Status</div> <div>Delete Project</div>

Back to portal

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5. A dialog box will pop up, select **Yes** to delete the project, or **Cancel**.

Are you sure you want to delete this project?

Yes

Cancel

If Yes is selected, the project will be removed from the project list, but will be placed in the recycle bin of the Web Portal. From the recycle bin, the project can be permanently deleted or can be restored to the project list.

7.5- ELECSOFT POWERPROJECT WEB PORTAL PROGRESS PAGE

The purpose of this section is to allow users to see their respective projects that require progressing via the Elecosoft Powerproject Web Portal. The Progress section shows projects that are in the queue to be progressed via Site Progress.

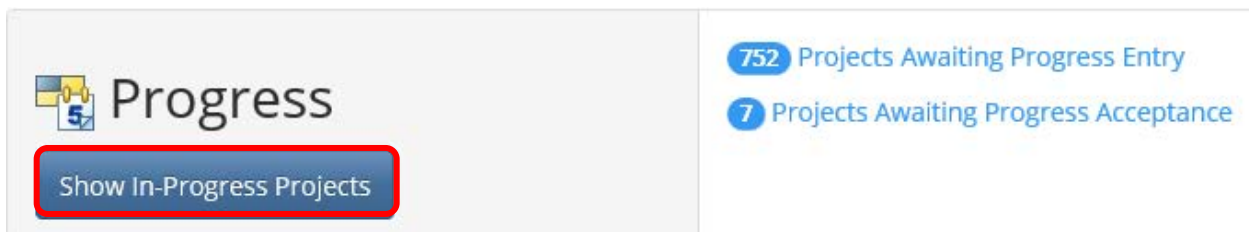
Projects can be progressed in two ways:

- By checking out the project and updating progress within the individual project file.
- By updating progress through the Elecosoft Powerproject Web Portal Site Progress.

This section will walk through the process of progressing via Site Progress. Progressing through the individual project file is explained in Chapter 8 - Elecosoft Powerproject Client.

To get to the Elecosoft Powerproject Web Portal Progress Page:

1. Select **Show In-Progress Projects** Under Progress.



The In-Progress Projects Homepage will appear.

In-Progress Projects

[Create New](#)
[Showing Projects : In-Progress](#)
[Showing District : Any](#)
[Project Type : Any](#)
[Project Area : Any](#)
[Filter For Manager...](#)

Project Name	Status	Progress Date	Project Finish	Required Attention	Available Operations
Project Finish Change	Editing Progress	2/28/2017	3/7/2017	Enter Progress	Select Operation

[Back to portal](#)

7.5.1- Entering Progress

1. On the In-Progress Projects Homepage, navigate to the Project Name that you want to enter progress for.

2. Select **Enter Progress**, under Required Attention.

In-Progress Projects

Create New Showing Projects : In-Progress▼ Showing District : Any▼ Project Type : Any▼ Project Area : Any▼ Filter For Manager...

Project Name	Status	Progress Date	Project Finish	Required Attention	Available Operations
Q KAW Generic Test 29.2	Editing Progress		10/5/2017	Enter Progress	Select Operation▼
Q KAW Generic Test 29.3	Editing Progress		10/5/2017	Enter Progress	Select Operation▼

The Turnaround Tasks Homepage will appear.

Turnaround Tasks

Look ahead : 30 days▼

Activity ID / Name	Progress (%)	Dates	Days Remaining	Notes
10 / Task 1	<div><div></div></div> 50	Actual Start: 2/16/2017 Actual Finish: Planned Start: 2/16/2017 Planned Finish: 3/1/2017	1	
20 / Task 2	<div><div></div></div> 0	Actual Start: Actual Finish: Planned Start: 3/2/2017 Planned Finish: 3/3/2017	2	
30 / Task 3	<div><div></div></div> 0	Actual Start: Actual Finish: Planned Start: 3/6/2017 Planned Finish: 3/7/2017	2	
40 / Project Finished	Milestone Complete <input type="checkbox"/>	Actual Start: Actual Finish: Planned Start: 3/1/2017 Planned Finish: 3/1/2017	0	

Save Submit

- Under **Look ahead**, select the date range of activities to view and enter progress on.
Options are 30 days, 60 days, 90 days, or All Tasks.

Turnaround Tasks

Look ahead : 30 days▼

Activity ID / Progress (%) Dates Days Remaining Notes

10 / Task 1	<div><div></div></div> 50	Actual Start: 2/16/2017 Actual Finish: Planned Start: 2/16/2017 Planned Finish: 3/1/2017	1	
20 / Task 2	<div><div></div></div> 0	Actual Start: Actual Finish: Planned Start: 3/2/2017 Planned Finish: 3/3/2017	2	
30 / Task 3	<div><div></div></div> 0	Actual Start: Actual Finish: Planned Start: 3/6/2017 Planned Finish: 3/7/2017	2	
40 / Project Finished	Milestone Complete <input type="checkbox"/>	Actual Start: Actual Finish: Planned Start: 3/1/2017 Planned Finish: 3/1/2017	0	

Save Submit

- If this is a milestone task, Enter an **Actual Start Date**.

The box beside Milestone Complete will automatically become checked and an Actual Finish Date will also automatically be input matching the Actual Start Date that was entered.

40 / Project Finished

Milestone Complete ☒

Actual Start: 3/1/2017
 Actual Finish: 3/1/2017
 Planned Start: 3/1/2017
 Planned Finish: 3/1/2017

0

-Or-

4. If this is not a milestone task, Enter an **Actual Start Date**, slide the bar across to the appropriate **Percent Complete** value or type in a **Percent Complete**. If the activity is 100% complete, an Actual Finish Date must be entered.

As the percent complete increases, the days remaining value will decrease automatically.


Turnaround Tasks

Look ahead : 30 days▼

Activity ID / Name	Progress (%)	Dates	Days Remaining	Notes
10 / Task 1	<div><div></div></div> 100	<div>Actual Start</div> 2/16/2017 <div>Actual Finish</div> 3/1/2017 <div>Planned Start</div> 2/16/2017 <div>Planned Finish</div> 3/1/2017	0.00	<div></div>
20 / Task 2	<div><div></div></div> 25	<div>Actual Start</div> 3/18/2017 <div>Actual Finish</div> <div>Planned Start</div> 3/2/2017 <div>Planned Finish</div> 3/3/2017	1.50	<div></div>
30 / Task 3	<div><div></div></div> 0	<div>Actual Start</div> <div>Actual Finish</div> <div>Planned Start</div> 3/6/2017 <div>Planned Finish</div> 3/7/2017	2	<div></div>
40 / Project Finished	Milestone Complete <input checked="" type="checkbox"/>	<div>Actual Start</div> 3/1/2017 <div>Actual Finish</div> 3/1/2017 <div>Planned Start</div> 3/1/2017 <div>Planned Finish</div> 3/1/2017	0	<div></div>

Save

Submit

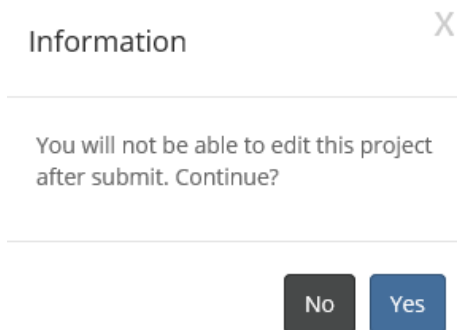
5. Notes can be added to a task by selecting the  **icon** next to the task. A dialog box will appear to *type the Note* in. Once the Note is entered click **OK**.



6. Once all progress and / or Notes are entered for the task or tasks, either select the **Save** or **Submit** button.
- **Save** should be selected if you have more progress to enter on the project.
 - **Submit** should only be selected once all progress has been entered.

Note: Once progress is submitted, users cannot enter more progress until it is accepted or rejected by PennDOT. Every time progress is submitted and accepted, a new progress date must be supplied by the user accepting the progress.

7. If additional progress needs to be entered into the schedule, *repeat steps 3, 4, and 5*.
8. Once **Submit** is selected, a dialog box will appear.



9. Select **Yes**.

7.5.2- Accepting Progress. Once a Business Partner submits their updates, PennDOT must accept /accept as noted/ reject the updates as required. Construction with Design and Construction projects have the option to be Accepted, Accepted as Noted or Rejected. Design projects can only be Accepted or Rejected, Accepted as Noted is not an option for Design. Only Project Managers and IICs or anyone above those roles may accept updates. Before accepting updates, reviewers are encouraged to download the latest version of the project so they can see what exactly has been updated.

1. On the In-Progress Projects Homepage, navigate to the Project Name that you want to accept progress for. The project will be in “Awaiting Acceptance” status.

2. Select **Accept Progress**, under Required Attention.

Projects

[Create New](#)
[Showing Projects : All](#)
[Showing District : Any](#)
[Project Type : Any](#)
[Project Area : Any](#)
[Filter For Manager...](#)

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
KAW Generic Test 39.1	Awaiting Acceptance	8/3/2017	10/5/2017	30.0d	Accept Progress	Select Operation
KAW Generic 39.2	Awaiting Acceptance	8/3/2017	10/5/2017	30.0d	Accept Progress	Select Operation

[Back to portal](#)

The Accept Progress Homepage will appear.

Accept Progress

Click an entry to reject its progress:

☐ Reject Everything

Path

Name

Old Progress

New Progress

Start Project

0%

100%

Path

Name

Old Progress

New Progress

Old Remaining Duration

Remaining Duration

Task 1

0%

50%

5 days

2.5 days

Accept All

[Back to Projects List](#)

3. Review the progress that was submitted. The Accept Progress window is set up such that the user can compare “Old” versus “New”. Review the progress.
4. If all the progress looks good, click **Accept All**.

5. A pop up window will appear to select a progress period date. A date can manually be typed in or a date can be selected from the calendar, the default date is the last day of the current month.

Progress Period Date X

Please supply a progress period date :

March 2018						
Su	Mo	Tu	We	Th	Fr	Sa
25	26	27	28	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7

OK

Cancel

New Progress

6. Once a date is selected, click **OK**.

Once PennDOT selects “Accept All”, a new version is created with the updates applied to the project. The project is now rescheduled based on the date that was selected including all the current progress that was accepted.

7.5.3- Rejecting Progress

1. On the In-Progress Projects Homepage, navigate to the Project Name that you want to accept/reject progress for. The project will be in “Awaiting Acceptance” status.
2. Select **Accept Progress**, under Required Attention.

Projects

[Create New](#)
[Showing Projects : All](#)
[Showing District : Any](#)
[Project Type : Any](#)
[Project Area : Any](#)
[Filter For Manager...](#)

Project Name	Status	Project Start	Project Finish	Float	Required Attention	Available Operations
KAW Generic Test 39.1	Awaiting Acceptance	8/3/2017	10/5/2017	30.0d	Accept Progress	Select Operation
KAW Generic 39.2	Awaiting Acceptance	8/3/2017	10/5/2017	30.0d	Accept Progress	Select Operation

[Back to portal](#)

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The Accept Progress Homepage will appear.

Accept Progress

Click an entry to reject its progress:

☐ Reject Everything

Path

Name

Start Project

Old Progress

0%

New Progress

100%

Path

Name

Task 1

Old Progress

0%

New Progress

50%

Old Remaining Duration

5 days

Remaining Duration

2.5 days

Accept All

[Back to Projects List](#)

3. Review the progress that was submitted. The Accept Progress window is set up such that the user can compare “Old” versus “New”. Review the progress.

4. If all progress needs rejected, select the ***Reject Everything*** checkbox.

Accept Progress

Click an entry to reject its progress:

☐ Reject Everything

Path			
Name	Start Project		
Old Progress	0%	New Progress	100%

Path			
Name	Task 1		
Old Progress	0%	New Progress	50%
Old Remaining Duration	5 days	Remaining Duration	2.5 days

Accept All

[Back to Projects List](#)

-Or-

4. If individual progress entries need rejected, select the task(s) progress that is rejected (the activity will be shaded in red).

Accept Progress

Click an entry to reject its progress:

☐ Reject Everything

Path			
Name	Start Project		
Old Progress	0%	New Progress	100%

Path			
Name	Task 1		
Old Progress	0%	New Progress	50%
Old Remaining Duration	5 days	Remaining Duration	2.5 days
Task Comment :			
<div></div>			

Overall Reject Comment :

Reject

- If progress is rejected (any or all), an overall reject comment must be entered. A task comment is recommended, but not required.

Accept Progress

Click an entry to reject its progress:

☐ Reject Everything

Path			
Name	Start Project		
Old Progress	0%	New Progress	100%

Path			
Name	Task 1		
Old Progress	0%	New Progress	50%
Old Remaining Duration	5 days	Remaining Duration	2.5 days

Task Comment :

Recommended Comment here, for example, Task 1 has not started yet

Overall Reject Comment :


Required Comment here, for example, see task comments above

[Back to Projects List](#) Reject

- Select **Reject**.

7.6- ELECOSOFT POWERPROJECT WEB PORTAL USERS PAGE

To get to the Elecosoft Powerproject Web Portal Users Page, select **Manage Users**, under Users.



Users

Manage Users

36474 Total Users

79 Portfolio Managers

613 Project Managers

35744 Business Partner Users

20 Team Members

2 Project ACE Users

2 Inspector In Charge Users

The Users Homepage will appear.

Users

Create User User Type : All Users ▾

Id	Name	First Name	Last Name	User Type	District	Company	Action
36470	pdtestatest1	pdtestatest1	pdtestatest1	Admin			
36471	pdtestatest2	pdtestatest2	pdtestatest2	Portfolio Manager	District 1		Delete
36472	pdtestatest3	pdtestatest3	pdtestatest3	Project ACE	District 1		Delete
36473	pdtestatest4	pdtestatest4	pdtestatest4	Project Manager	District 1		Delete

This feature allows Portal Admins to add or delete users within the Elecosoft Powerproject Web Portal. It also allows Portal Admins to change user credentials, such as first or last name, what type of user they are, which District or Business Partner they belong to, add or change their email address, and also add a description to that user.

7.6.1- Adding Users

1. On the Users Homepage, select **Create User**.

Users

Create User User Type : All Users ▾

Id	Name	First Name	Last Name	User Type	District	Company	Action
36470	pdtestatest1	pdtestatest1	pdtestatest1	Admin			
36471	pdtestatest2	pdtestatest2	pdtestatest2	Portfolio Manager	District 1		Delete
36472	pdtestatest3	pdtestatest3	pdtestatest3	Project ACE	District 1		Delete
36473	pdtestatest4	pdtestatest4	pdtestatest4	Project Manager	District 1		Delete

The Create User screen will appear.

Create User

Name	<input type="text"/>
User Type	Project Manager <input type="button" value="v"/>
District	Central Office <input type="button" value="v"/>
Business Partner Company	BP0001 XYZ Consultants ABC123 Engineering Engineering Firm 12 Business Partner 5 Firm #1
First Name	<input type="text"/>
Last Name	<input type="text"/>
Email	<input type="text"/>
Description	<input type="text"/>
<input type="button" value="Save"/>	

2. **Name** – CWOPA Username or ECMS Username.
3. **User Type** – Select which type of user this will be.
 - If Admin or Team Member is selected, the District automatically goes to Central Office, and cannot be changed. Also, the Business Partner will be grayed out.

- If Business Partner is selected, the District dropdown box gets grayed out.
4. **District** – Select which District the user is associated with.
 - This option is only available if Portfolio Manager, Project Manager, ACE, or Inspector in Charge is selected as a User Type.
 5. **Business Partner Company** – Select which Business Partner the user is associated with.
 - This option is only available if Business Partner is selected as a User Type.
 6. **First Name** – Enter the user's first name.
 7. **Last Name** – Enter the user's last name.
 8. **Email** – Enter the user's email address.
 9. **Description** – Enter a description for the user, such as phone number, but this field is not required.
 10. Click *Save*.

7.6.2- Deleting Users

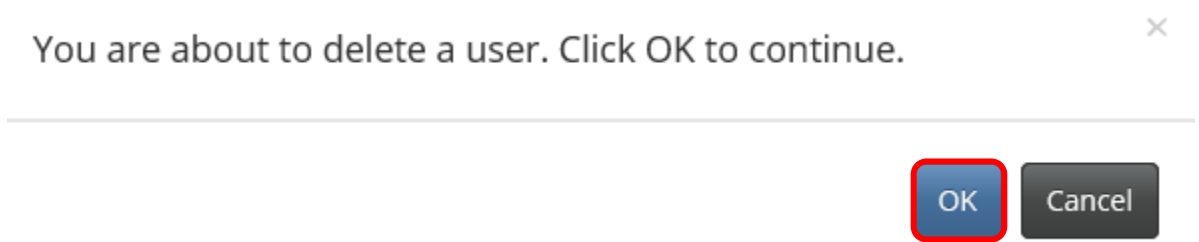
1. On the Users Homepage, find the user that needs to be deleted.
2. Select *Delete* next to the User's Name, under Action.

Users

Create User User Type : All Users ▾

Id	Name	First Name	Last Name	User Type	District	Company	Action
36470	pdtestatest1	pdtestatest1	pdtestatest1	Admin			
36471	pdtestatest2	pdtestatest2	pdtestatest2	Portfolio Manager	District 1		Delete
36472	pdtestatest3	pdtestatest3	pdtestatest3	Project ACE	District 1		Delete
36473	pdtestatest4	pdtestatest4	pdtestatest4	Project Manager	District 1		Delete

3. A dialog box will appear with a warning. Select **OK** or **Cancel**.



7.6.3- Modifying Users

1. On the Users Homepage, find the user that needs to be modified.
2. Select Name of the user, under the Name column.

Users

Create User User Type : All Users ▾

Id	Name	First Name	Last Name	User Type	District	Company	Action
36470	pdtestastatest1	pdtestastatest1	pdtestastatest1	Admin			
36471	pdtestastatest2	pdtestastatest2	pdtestastatest2	Portfolio Manager	District 1		Delete
36472	pdtestastatest3	pdtestastatest3	pdtestastatest3	Project ACE	District 1		Delete
36473	pdtestastatest4	pdtestastatest4	pdtestastatest4	Project Manager	District 1		Delete

The Edit User page will appear.

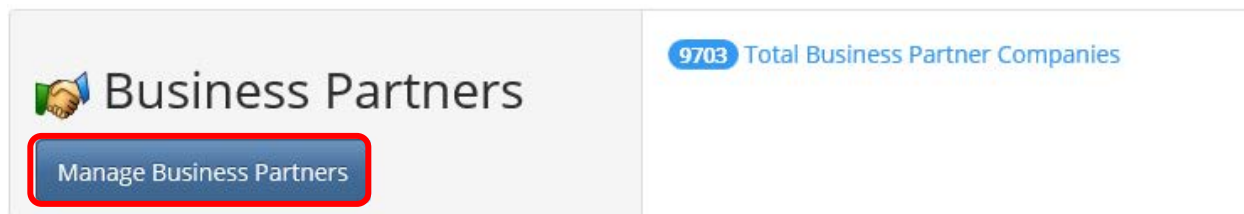
Edit User

Name	<input type="text" value="pdtstastatest2"/>
District	<input type="text" value="District 1"/> ▼
User Type	<input type="text" value="Portfolio Manager"/> ▼
Business Partner Company	<div>BP0001 XYZ Consultants ABC123 Engineering Engineering Firm 12 Business Partner 5 Firm #1</div>
First Name	<input type="text" value="pdtstastatest2"/>
Last Name	<input type="text" value="pdtstastatest2"/>
Email	<input type="text" value="xxx@pa.gov"/>
Description	<input type="text"/>
<input type="button" value="Save"/>	

3. Modify the fields that are necessary. Note that, the fields available for modification depend on the User Type (see above under Creating Users).
4. Click **Save**.

7.7- ELECOSOFT POWERPROJECT WEB PORTAL BUSINESS PARTNERS PAGE

To get to the Elecosoft Powerproject Web Portal Business Partners Page, select **Manage Business Partners**, under Business Partners.



The Business Partner Companies Homepage will appear.

Business Partner Companies

[Create New](#)

Id	Name ↓	Email	Action
9702	Alex Company	xxxx@pa.gov	<button>Delete</button>
9703	Alex Company 2	xxxx@pa.gov	<button>Delete</button>

This feature allows Portal Admins to add or delete Business Partner Companies within the Elecosoft Powerproject Web Portal. It also allows Portal Admins to change Business Partner Company credentials, such as Business Partner Company names or change their email address.

7.7.1- Adding Business Partner Company

1. On the Business Partner Companies Homepage, select **Create New**.

Business Partner Companies

[Create New](#)

Id	Name ↓	Email	Action
9702	Alex Company	xxxx@pa.gov	<button>Delete</button>
9703	Alex Company 2	xxxx@pa.gov	<button>Delete</button>

The Create Business Partner Company screen will appear.

Create Business Partner Company

Name

Email

Create

2. Enter the name of the Business Partner Company.
3. Enter the Business Partner Company's Admin's Email Address.
4. Click *Create*.

Create Business Partner Company

Name

Email

Create

7.7.2- Deleting Business Partner Company

1. On the Business Partner Companies Homepage, find the Business Partner Company that needs to be deleted.
2. Select **Delete** next to the Business Partner Company's Name, under Action.

Business Partner Companies

[Create New](#)

Id	Name ↓	Email	Action
9702	Alex Company	xxxx@pa.gov	Delete
9703	Alex Company 2	xxxx@pa.gov	Delete

3. A dialog box will appear with a warning. Select **OK** or **Cancel**.

You are about to delete a business partner company.
Click OK to continue.

[OK](#)[Cancel](#)

7.7.3- Modifying Business Partner Company

1. On the Business Partner Companies Homepage, find the Business Partner Company that needs to be modified.
2. Select Name of the Business Partner Company, under the Name column.

Business Partner Companies

[Create New](#)

Id	Name ↓	Email	Action
9702	Alex Company	xxxx@pa.gov	Delete
9703	Alex Company 2	xxxx@pa.gov	Delete

The Edit Business Partner page will appear.

Edit Business Partner Company

Name	<input type="text" value="Alex Company"/>
Email	<input type="text" value="xxxx@pa.gov"/>
	<input type="button" value="Save"/>

[Back to List](#)

3. Modify the fields that are necessary.

4. Click *Save*.

Edit Business Partner Company

Name	<input type="text" value="Alex Company"/>
Email	<input type="text" value="xxxx@pa.gov"/>
	<input type="button" value="Save"/>

[Back to List](#)

7.8- REPORTING IN THE WEB PORTAL

All users can create, save, edit and run reports directly in the Web Portal. There are two types of reports that can be created:

- Matrix reports are a series of sections, where each section represents a project. The sections are divided into several columns and rows that show information about each project and tasks within that project.

- Linear reports are a series of rows, with each single row representing a project, which will show information about each project and tasks within that project.

The reporting functionality can be accessed via the main Portal page:



Clicking on the Reporting link will take the user to the Reports Page.

Reports

[Create Linear Report](#) [Create Matrix Report](#)

ID	Name	Type	Owner	Run Report	Available Operations
1	DAM- Test Report 1	Linear	pdstastatest1 pdtstastatest1	Run	Select Operation▼
5	KAS Test Report 1	Linear	pdstastatest1 pdtstastatest1	Run	Select Operation▼

Users can create a new report by either clicking on the *Create Linear Report* or *Create Matrix Report*

Reports

[Create Linear Report](#) [Create Matrix Report](#)

ID	Name	Type	Owner	Run Report	Available Operations
1	DAM- Test Report 1	Linear	pdstastatest1 pdtstastatest1	Run	Select Operation▼
5	KAS Test Report 1	Linear	pdstastatest1 pdtstastatest1	Run	Select Operation▼

7.8.1- Creating Linear Reports

- On the Reports Page, select *Create Linear Report*

Reports

[Create Linear Report](#) [Create Matrix Report](#)

ID	Name	Type	Owner	Run Report	Available Operations
1	DAM- Test Report 1	Linear	pdstastatest1 pdtstastatest1	Run	Select Operation▼
5	KAS Test Report 1	Linear	pdstastatest1 pdtstastatest1	Run	Select Operation▼

The Create Linear Report Page will display.

Create Linear Report

Name

Project Field(s) No Project Fields Selected
[Add Project Field](#)

Filter by Task No Key Tasks Selected
[Add Key Task](#)

Filter by District(s) No District Filters
[Add District](#)

Filter by Manager(s) No Manager Filters
[Add Manager](#)

Filter by Project Type(s) No Project Type Filters
[Add Project Type](#)

Sort Field(s) No Sort Fields Selected
[Add Sort Field](#)

Shared with Role(s) No Sharing
[Add Role to Share](#)

Range Task look-ahead
Task lookahead in days

2. Give the report a *Name*
3. *OPTIONAL* Select which Project Fields to add by selecting *Add Project Field*

Project Fields No Project Fields Selected
[Add Project Field](#)

4. *OPTIONAL* Use the dropdown box to select which Project Field(s) to add.

Project Fields ::
[Add Project Field](#)

- If additional Project Fields need to be added, continue to select **Add Project Field** and select another Project Field.
 - Project Fields can be reordered :: by using the to drag and drop to new locations.
 - A Project Field can be removed by **Remove** selecting the button.
5. Select which Key Tasks to add by selecting **Add Key Task**.

Filter by Task

No Key Tasks Selected

Add Key Task

6. Use the dropdown box to select which Key Task(s) to add or manually type in a Key Task name to report on, select which attribute to show for the key task, and type in a Column name.

Filter by Task

::	Key task name	Late Start / Actual Start	Column name	Remove
----	---------------	---------------------------	-------------	--------

[Add Key Task](#)

- If additional Key Tasks need to be added, continue to select **Add Key Task** and select another Key Task from the list, or manually type in a Key Task name.
 - Project Fields can be reordered :: by using the to drag and drop to new locations.
 - A Project Field can be removed by **Remove** selecting the button.
 - If no column name is provided, the report will default to “key task name – attribute name”, for example “Advertise Project – Late Start/Actual Start”.
7. **OPTIONAL** Select which District projects to include on the report by selecting **Add District**.

Filter by District

No District Filters

Add District

8. **OPTIONAL** Use the dropdown box to select which District(s).

Filter by District

Central Office

▼

Remove

[Add District](#)

- If additional Districts need to be added, continue to select **Add District**.
- A District can be removed by

Remove

 selecting the button.
- Admins and Team Members are the only users who can filter on districts, all other users only see projects specific to their district.

9. **OPTIONAL** Select which Manager to Filter by selecting **Add Manager**.

Filter by Managers


No Manager Filters

[Add Manager](#)

10. **OPTIONAL** Use the dropdown box to select which District and select a Manager from the list.


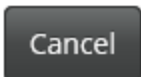
Select a district and then the manager for the report filter : ×

District

Please select a district... 


Manager

To more easily find what you are looking for, click anywhere in the below field and start typing

11. **OPTIONAL** Click *Ok*

Filter by Managers

pdtestatest4 pdtestatest4 

[Add Manager](#)

- If additional Project Managers need to be added, continue to select **add manager** and select a District and a Manager from the list.

- A Manager can be removed by selecting the **Remove** button.
- Project Managers, Inspector in Charge, and Business Partners will not be able to filter on Managers, they will only see their own project information.

12. **OPTIONAL** Select which Project Type to Filter by selecting **Add Project Type**.

Filter by Project Type

No Project Type Filters

Add Project Type

13. **OPTIONAL** Use the dropdown box to select which Project Type(s).

Filter by Project Type

Bridge Alignment



Remove

[Add Project Type](#)

- If additional Project Types need to be added, continue to select **Add Project Type**.
- A Project Type can be removed by **Remove** selecting the button.

14. **OPTIONAL** Select which Role to Share with by selecting **Add Role to Share**.

Shared with Roles

No Sharing

Add Role to Share

15. **OPTIONAL** Use the dropdown box to select which Project Type(s).

Shared with Roles

Admin



Remove

[Add Role to Share](#)

- If additional Roles to Share need to be added, continue to select **Add Role to Share**.
- A Role can be removed by **Remove** selecting the button.

16. **OPTIONAL** Select which field to Sort the report by selecting **Add Sort Field**.

Sort Field(s) No Sort Fields Selected

Add Sort Field

17. **OPTIONAL** Use the dropdown box to select which Field to Sort on and which way to sort.

Sort Field(s) :: Project Start [v] Ascending [v] Remove

Add Sort Field

- If additional Sorts need to be added, continue to select **Add Sort Field**.
- A Sort can be removed by **Remove** selecting the button.

18. **OPTIONAL** Select the **Task look-ahead** or **Project Range** by using the dropdown box next to Range. Use the dropdown box to select the **Task lookahead in days** or the **Project lookahead year** or manually type in a range.

Range Task look-ahead [v]

Task lookahead in days [v]

19. Once the report is all set up, click **Run, Run and Save, or Save**.

- **Run** will run the report right away.
- **Run and Save** will run the report right away but will also save the report so that it appears in the list of reports on the Reports Page.

- **Save** will just save the report so that it appears in the list of reports on the Reports Page, but will not run.

Create Linear Report

Name

Project Field(s) [Remove](#)

[Add Project Field](#)

Filter by Task [Remove](#)

[Add Key Task](#)

Filter by District(s) [Remove](#)

[Add District](#)

Filter by Manager(s) [Remove](#)

[Add Manager](#)

Filter by Project Type(s)

[Add Project Type](#)

Sort Field(s)

[Add Sort Field](#)

Shared with Role(s)

[Add Role to Share](#)

Range

[Run](#) [Run and Save](#) [Save](#)

7.8.2- Creating Matrix Reports

1. On the Reports Page, select **Create Matrix Report**.

Reports

[Create Linear Report](#) [Create Matrix Report](#)

Id	Name	Type	Owner	Run Report	Available Operations
1	DAM- Test Report 1	Linear	pdtstastatest1 pdtstastatest1	Run	Select Operation
5	KAS Test Report 1	Linear	pdtstastatest1 pdtstastatest1	Run	Select Operation

The Create Matrix Report Page will display.

Create Matrix Report

Name	<input type="text"/>
Project Field(s)	No Project Fields Selected
	Add Project Field
Task Fields	No Task Fields Selected
	Add Task Field
Filter by Task(s)	No Tasks Selected
	Add Task
Filter by District(s)	No District Filters
	Add District
Filter by Manager(s)	No Manager Filters
	Add Manager
Filter by Project Type(s)	No Project Type Filters
	Add Project Type
Sort Field(s)	No Sort Fields Selected
	Add Sort Field
Shared with Roles	No Sharing
	Add Role to Share
Range	<div>Task look-ahead <input type="checkbox"/></div> <div>Task lookahead in days <input type="text"/></div>
	<input type="button" value="Run"/> <input type="button" value="Run and Save"/> <input type="button" value="Save"/>

2. Give the report a **Name**.
3. **OPTIONAL** Select which Project Fields to add by selecting **Add Project Field**.

Project Fields	No Project Fields Selected
	Add Project Field

4. **OPTIONAL** Use the dropdown box to select which Project Field(s) to add.

Project Fields :: Project Start Remove

[Add Project Field](#)

- If additional Project Fields need to be added, continue to select **Add Project Field** and select another Project Field.
- Project Fields can be reordered ⋮ by using the to drag and drop to new locations.
- A Project Field can be removed by selecting the Remove button.

5. Select Task Field to add by selecting **Add Task Field**.

Task Fields

No Task Fields Selected

[Add Task Field](#)

6. Use the dropdown box to select which attribute to show for the task and type in a Field name alias.

Task Fields :: Late Start / Actual Start Field name alias Remove

[Add Task Field](#)

- If additional Task Fields need to be added, continue to select **Add Task Field** and select another attribute from the list.
- Task Fields can be reordered by using the ⋮ to drag and drop to new locations.
- A Task Field can be removed by Remove selecting the button.
- If no Field name alias is provided, the report output will default to using the text shown in the combo boxes.

7. Select which Tasks to add by selecting **Add Task**.

Filter by Task

No Tasks Selected

Add Task

8. Use the dropdown box to select which Key Task(s) to add or manually type in a Key Task name to report on and type in a Column name.

Filter by Task

⋮

▼

Remove

Add Task

- If additional Key Tasks need to be added, continue to select **Add Task** and select another Key Task from the list, or manually type in a Key Task name.
- Key Tasks can be reordered by using the ⋮ to drag and drop to new locations.
- Key Tasks be removed by selecting the Remove button.
- If no column name is provided, the report output will default to using the text shown in the combo boxes.

9. **OPTIONAL** Select which District projects to include on the report by selecting **Add District**.

Filter by District

No District Filters

Add District

10. **OPTIONAL** Use the dropdown box to select which District(s).

Filter by District

▼
Remove

Add District

- If additional Districts need to be added, continue to select **Add District**.
- A District can be removed by selecting the Remove button.

- Admins and Team Members are the only users who can filter on districts, all other users only see projects specific to their district.

11. **OPTIONAL** Select which Manager to Filter by selecting **Add Manager**.

Filter by Managers

No Manager Filters

Add Manager

12. **OPTIONAL** Use the dropdown box to select which District and select a Manager from the list.

Select a district and then the manager for the report filter : ×

District

Please select a district...



Manager

To more easily find what you are looking for, click anywhere in the below field and start typing

OK

Cancel

13. **OPTIONAL** Click **OK**.

Filter by Managers

pdstastatest4 pdtstastatest4

Remove

[Add Manager](#)

- If additional Project Managers need to be added, continue to select **Add Manager** and select a District and a Manager from the list.
- A Manager can be removed by selecting the **Remove** button.
- Project Managers, Inspector in Charge, and Business Partners will not be able to filter on Managers, they will only see their own project information.

14. **OPTIONAL** Select which Project Type to Filter by selecting **Add Project Type**.

Filter by Project Type

No Project Type Filters

[Add Project Type](#)

15. **OPTIONAL** Use the dropdown box to select which Project Type(s).

Filter by Project Type

Bridge Alignment

Remove

[Add Project Type](#)

- If additional Project Types need to be added, continue to select **Add Project Type**.
- A Project Type can be removed by selecting the **Remove** button.

16. **OPTIONAL** Select which field to Sort the report by selecting **Add Sort Field**.

Sort Field(s)

No Sort Fields Selected

[Add Sort Field](#)

17. **OPTIONAL** Use the dropdown box to select which Field to Sort on and which way to sort.


Sort Field(s)

Project Start

Ascending

Remove

[Add Sort Field](#)

- If additional Sorts need to be added, continue to select **Add Sort Field**.
- A Sort can be removed by selecting the  button.

18. **OPTIONAL** Select which Role to Share with by selecting **Add role to Share**.

Shared with Roles

No Sharing

Add Role to Share

19. **OPTIONAL** Use the dropdown box to select which Project Type(s).


Shared with Roles

Admin



Remove

Add Role to Share

- If additional Roles to Share need to be added, continue to select **Add Role to Share**.
 - A Role can be removed by selecting the  button.
20. **OPTIONAL** Select the **Task look-ahead** or **Project Range** by using the dropdown box next to Range. Use the dropdown box to select the **Task lookahead in days** or the **Project lookahead year** or manually type in a range.

Range

Task look-ahead



Task lookahead in days



21. Once the report is all set up, click **Run, Run and Save, or Save**.

- **Run** will run the report right away.
- **Run and Save** will run the report right away but will also save the report so that it appears in the list of reports on the Reports Page.
- **Save** will just save the report so that it appears in the list of reports on the Reports Page, but will not run.

Create Matrix Report

Name

Matrix Report

Project Field(s)

::

Project Finish

▼

Remove

Add Project Field

Task Fields

::

Late Start / Actual Start

▼

Field name alias

Remove

Add Task Field

Filter by Task(s)

::

Open Bids

▼

Column name

Remove

Add Task

Filter by District(s)

District 1

▼

Remove

Add District

Filter by Manager(s)

pdstastatest4 pdtstastatest4

Remove

Add Manager

Filter by Project Type(s)

No Project Type Filters

Add Project Type

Sort Field(s)

No Sort Fields Selected

Add Sort Field

Shared with Roles

No Sharing

Add Role to Share

Range

Task look-ahead

▼

Task lookahead in days

▼

Run

Run and Save

Save

7.8.3- Running Reports. Running reports can be done when the report is created, as shown above, or can be done on the Reports Page. Once a report is created and saved, it can be run at any time.

- 1. On Report Page, find the name of the report to run, and select **Run**.

Reports

Create Linear Report Create Matrix Report

<div><div>Id</div></div>	<div><div>▼</div><div>Name</div></div>	<div><div>▼</div><div>Type</div></div>	<div><div>▼</div><div>Owner</div></div>	<div><div>▼</div><div>Run Report</div></div>	<div>Available Operations</div>
13	Linear Report	Linear	pdstastatest1 pdtstastatest1	<div>Run</div>	<div>Select Operation▼</div>

Back to portal

The report will display.



Linear Report

District(s) All Districts

Project Name	Project Finish	Start Project-Late Start / Actual Start	Task 3-Late Start / Actual Start	Project Finish-Late Start / Actual Start
101483	12/28/2020	9/24/2018		
10183	1/9/2020	4/21/2016		
102961	7/8/2020	4/1/2015		
22816	6/25/2020	3/1/2011		
228standard	6/17/2020	1/4/2016		
48071new	6/1/2020	4/1/2014		
48072	12/28/2020	1/29/2019		
48172	10/15/2020	3/3/2008		
48181	1/15/2020	6/22/2015		
57773	5/7/2020	4/30/2010		
61972	4/1/2020	8/28/2014		
63353	10/20/2020	7/14/2015		
69181	12/17/2020	7/14/2015		12/17/2020
74752	1/2/2020	5/1/2019		
80797	1/2/2020	2/8/2017		

Monday, July 03, 2017

Page 1 of 3

7.8.4- Printing Reports. Once the report has been generated it can be printed, by selecting the

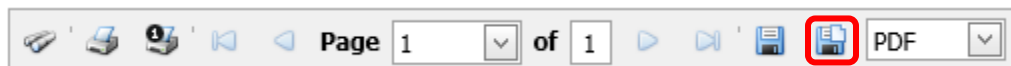
 **Print** icon.



7.8.5- Exporting Reports. A list of available export options are available, select the format to export the report to..



Once the format is selected, click the **Export Report** icon.



The report will export and open in a new window.

https://astaportalsyst.dot.pa.gov/Reporting/DocumentViewerExport?reportid=13 - Internet Explorer

Linear Report
District(s) District 9

Project Name	Project Finish	Start Project-Late Start / Actual Start	Open Bids-Late Start / Actual Start
22816	6/25/2020	3/1/2011	6/25/2020
48070	12/24/2020		12/24/2020
48071new	6/1/2020	4/1/2014	6/1/2020
48072	12/28/2020	1/29/2019	12/25/2020
48072a	12/28/2020		12/25/2020
88122	12/21/2020	11/5/2010	12/20/2020
88132	12/28/2020	2/25/2011	12/25/2020
88524	4/7/2020	5/2/2011	11/2/2017
88597	12/24/2020	12/28/2009	12/24/2020
92692	12/24/2020		12/24/2020
96336	12/28/2020	6/10/2013	
96336	12/28/2020		12/25/2020

Monday, July 03, 2017 Page 1 of 1

7.8.6- Editing an Existing Report. A report can be edited at any time depending on access rights.

1. Go to the Reports Page and select the report name.

The Edit Report Page will open.

Edit Linear Report

Name

Linear Report

Project Field(s)

::

Project Finish

▼

Remove

Add Project Field

Filter by Task

::

Open Bids

▼

Late Start / Actual Start

▼

Column name

Remove

Add Key Task

Filter by District(s)

District 1

▼

Remove

Add District

Filter by Manager(s)

pdstastatest4 pdtstastatest4

Remove

Add Manager

Filter by Project Type(s)

No Project Type Filters

Add Project Type

Sort Field(s)

No Sort Fields Selected

Add Sort Field

Shared with Role(s)

No Sharing

Add Role to Share

Range

Project range

▼

2020

▼

Run

Run and Save

Save

Back to List

2. Any of the Fields can be modified, once modifications are made, select **Run**, **Run** and **Save**, or **Save**.

7.8.7- Copying a Report. If you do not wish to overwrite an existing report, users can copy an existing report and modify the copy.

1. On the Report Page, find the report you wish to copy and modify. Under **Available Operations**, click **Select Operation**.

Reports

[Create Linear Report](#) [Create Matrix Report](#)

Id	Name	Type	Owner	Run Report	Available Operations
13	Linear Report	Linear	pdstastatest1 pdstastatest1	Run	Select Operation

[Back to portal](#)

2. Select **Copy**.

Reports

[Create Linear Report](#) [Create Matrix Report](#)

Id	Name	Type	Owner	Run Report	Available Operations
13	Linear Report	Linear	pdstastatest1 pdstastatest1	Run	Select Operation <div> Copy Report Delete Report </div>

[Back to portal](#)

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3. Once the report is copied, select the report name – copy, which will open the Edit Report Page. Modifications can then be made to the report, including changing the report name. Once all modifications are made, **Save** the report and **Run**.

7.8.8- Deleting a Report. A report can be deleted at any time, depending on access rights.

1. On the Report Page, find the report you wish to delete. Under **Available Operations**, click **Select Operation**.

Reports

[Create Linear Report](#) [Create Matrix Report](#)

Id	Name	Type	Owner	Run Report	Available Operations
13	Linear Report	Linear	pdstastatest1 pdstastatest1	Run	Select Operation

[Back to portal](#)

2. Select **Delete Report**.

Reports

[Create Linear Report](#) [Create Matrix Report](#)

Id	Name	Type	Owner	Run Report	Available Operations
13	Linear Report	Linear	pdtestatest1 pdtestatest1	Run	<div>Select Operation▼<div>Copy ReportDelete Report</div></div>

[Back to portal](#)

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3. A dialogue box pop up and warn the user that the report will be permanently deleted with **OK** and **Cancel** options.

Are you sure you want to delete this report? ×

[Yes](#) [Cancel](#)

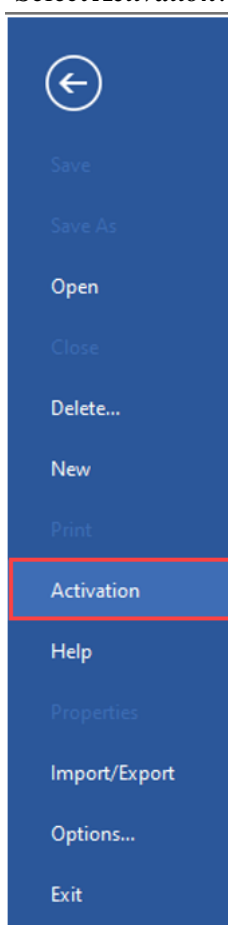
Once a report is deleted, it is permanently gone, reports do not go into the recycle bin.

7.9- REQUESTING A LICENSE

Business Partners will need to download the executable file for Elecosoft Powerproject client from the Elecosoft Powerproject Web Portal. Once the software is installed, the software will need to be activated. In order to activate the software, a license will have to be requested. Please Note a license will only be given out to a business partner that has a contract that requires a schedule. This license will only be good for 90 days until the schedule is created, submitted, and accepted. The license can be renewed after the expiration period if deemed necessary

7.9.1- To Request a License:

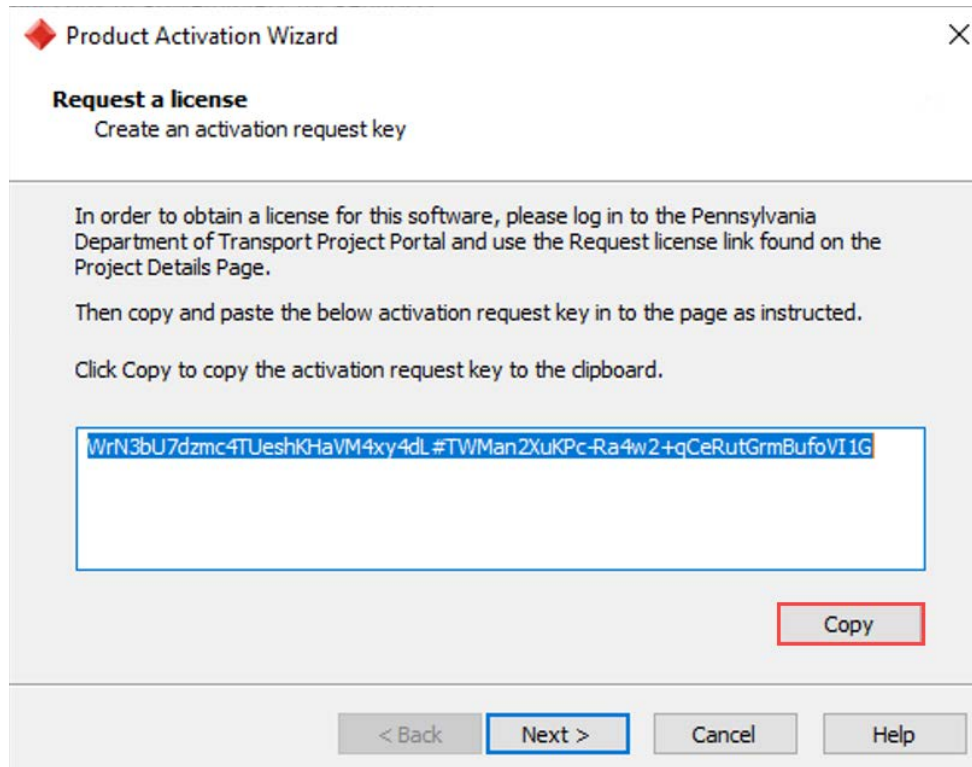
1. Open Elecosoft Powerproject.
2. Select *Activation*.



3. Select *Activate*.

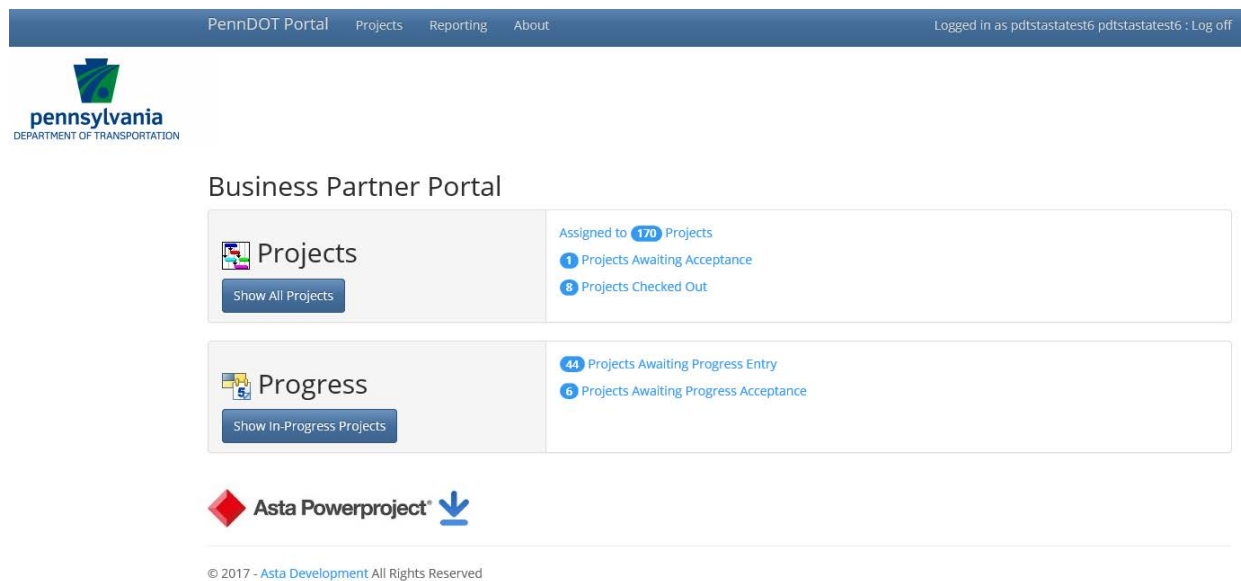


4. Select **Copy** in order to copy the Request Key.




5. Minimize Elecosoft Powerproject and log into the Elecosoft Powerproject Web Portal.

The Elecosoft Powerproject Web Portal Homepage will appear.






6. Go to the Projects Homepage by selecting **Show All Projects**.

PennDOT Portal Projects Reporting About Logged in as pdtstatastest6 pdtstatastest6 : Log off



Business Partner Portal

 Projects Show All Projects	Assigned to 170 Projects 1 Projects Awaiting Acceptance 8 Projects Checked Out
 Progress Show In-Progress Projects	44 Projects Awaiting Progress Entry 6 Projects Awaiting Progress Acceptance



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7. Find the Project to request a license for from the Project List and click on the Project Name.
8. Select **Request License**.

Project Details

[Request License](#)[Gantt Chart](#)[Download](#)

Name

APC District 6

Project Area

Construction



Request License

Please provide your activation request key from Asta Powerproject for PennDOT

If you wish to receive a copy of your activation key via email, please select 'Send Email'

Request Key

Send Email

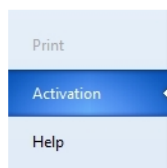
☐**Generate**

Instructions:

- Download and install Asta Powerproject:



- When starting Asta Powerproject you will be presented with the activation wizard if you do not have a license.
- If you close this wizard you can display it again by clicking the Activate button on the File / Activation page :



Activate your copy of Asta Powerproject for PennDOT.

- Enter the request key from the activation wizard on this page and then copy and paste the generated key back into the activation wizard.

[Back to Project](#)

9. Copy the Request key from the activation wizard in Elecosoft Powerproject.
10. Click **Generate**.

Request Key

Send Email

☐

Generate

11. A license code will generate.

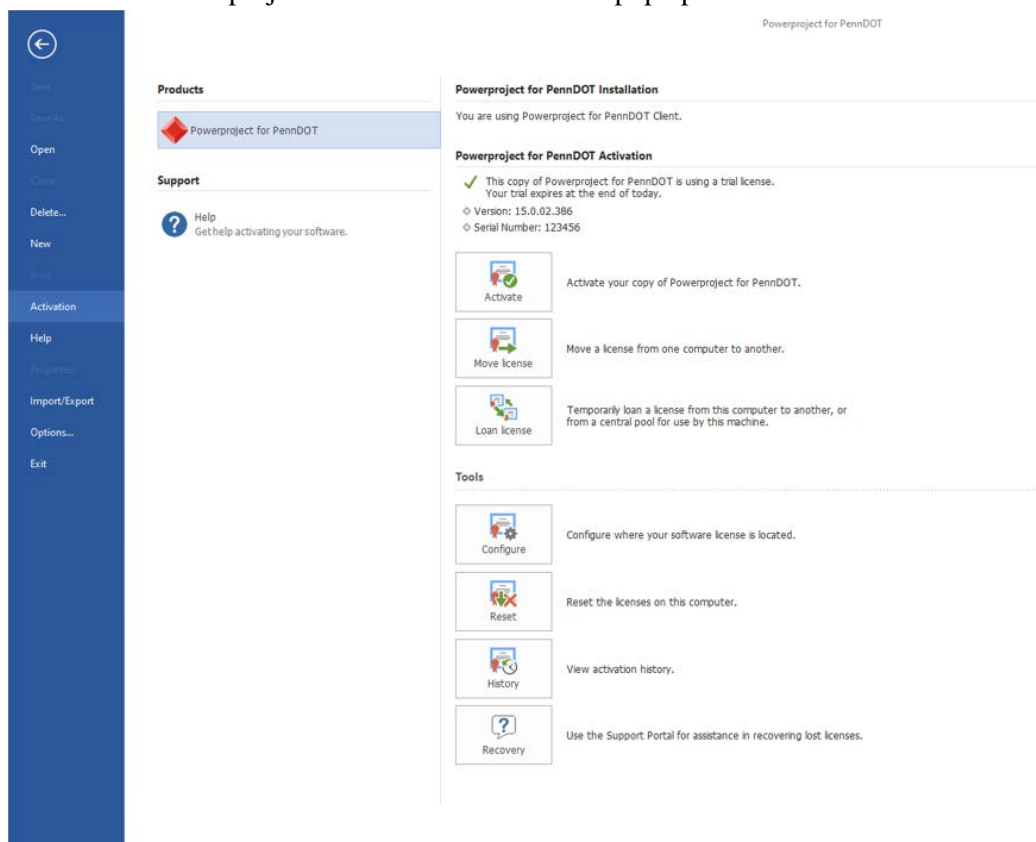
Request License

Activation Key

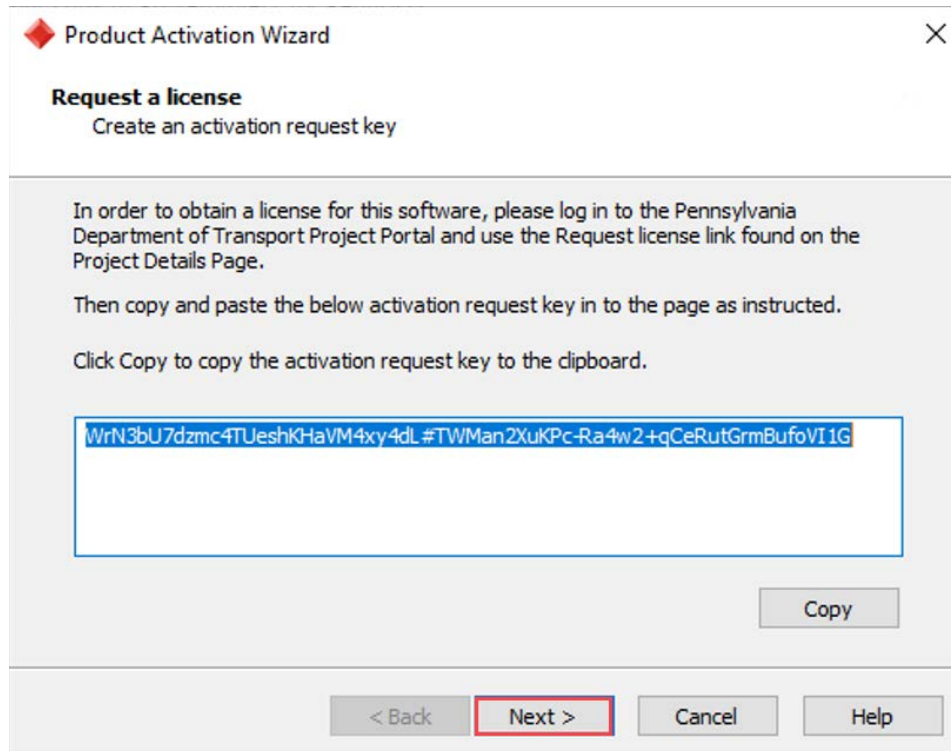
rQrUWh69mWv5D1fxZjqMTktStZfk3F7YwV1+s@cNT4jwmL9bymz8j6tv\$TF6#@hf

12. Copy the License Code.

13. Minimize the Elecosoft Powerproject Web Portal and go back into Elecosoft Powerproject and select **Activate** if the pop up window is closed.



14. Select the **Next >** button.



Product Activation Wizard [Close]

Request a license
Create an activation request key

In order to obtain a license for this software, please log in to the Pennsylvania Department of Transport Project Portal and use the Request license link found on the Project Details Page.

Then copy and paste the below activation request key in to the page as instructed.

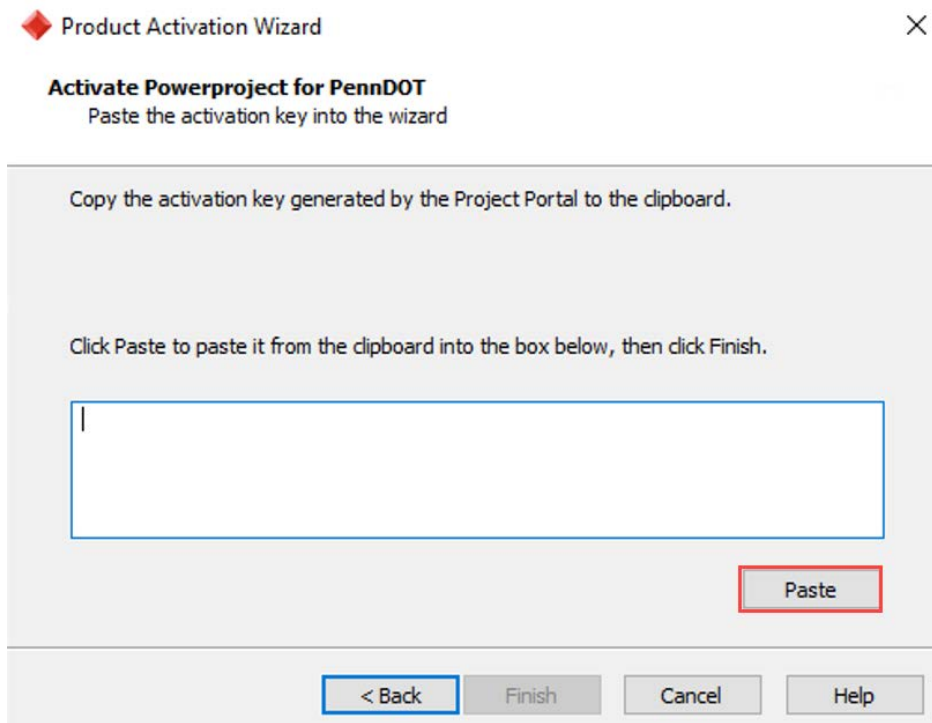
Click Copy to copy the activation request key to the clipboard.

WrN3bU7dzmc4TUeshKHavM4xy4dL #TWMan2XuKpc-Ra4w2+qCeRutGrmBufoVI1G

[Copy]

[< Back] **[Next >]** [Cancel] [Help]

15. Paste the License Code from the Elecosoft Powerproject Web Portal into Elecosoft Powerproject.



Product Activation Wizard [Close]

Activate Powerproject for PennDOT
Paste the activation key into the wizard

Copy the activation key generated by the Project Portal to the clipboard.

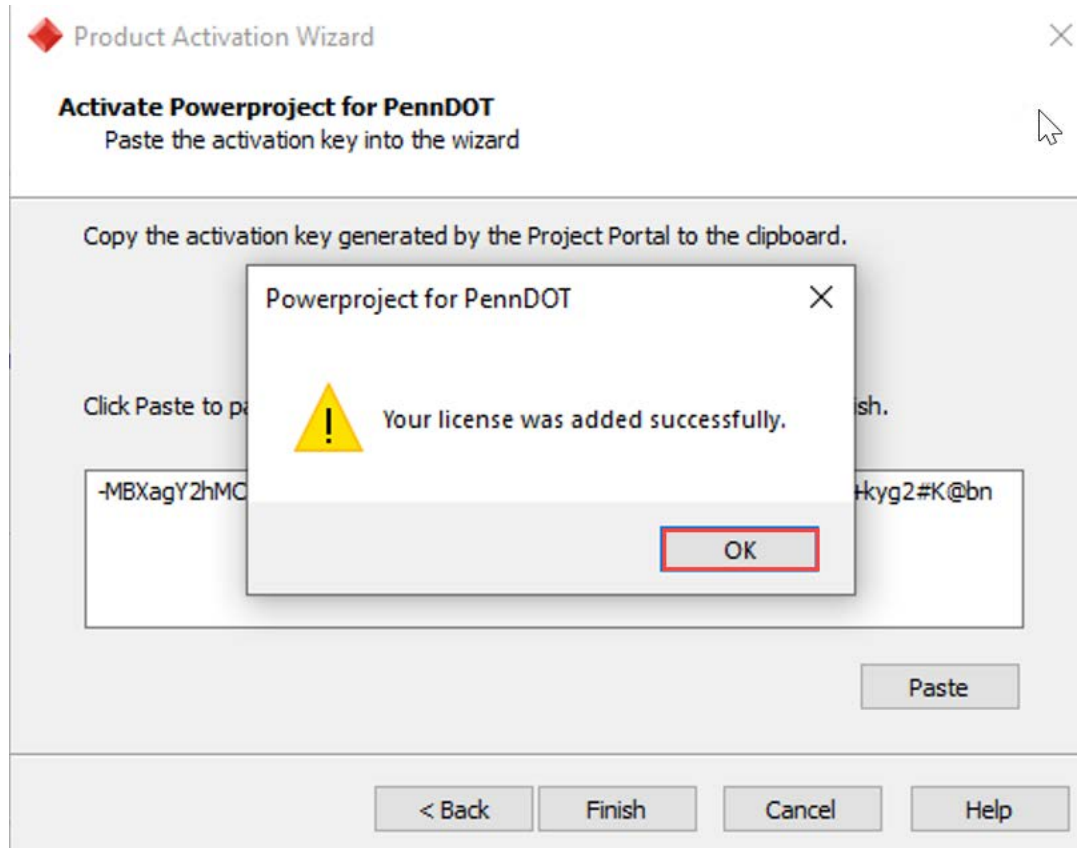
Click Paste to paste it from the clipboard into the box below, then click Finish.

[Paste]

[< Back] [Finish] [Cancel] [Help]

16. Select **Finish**

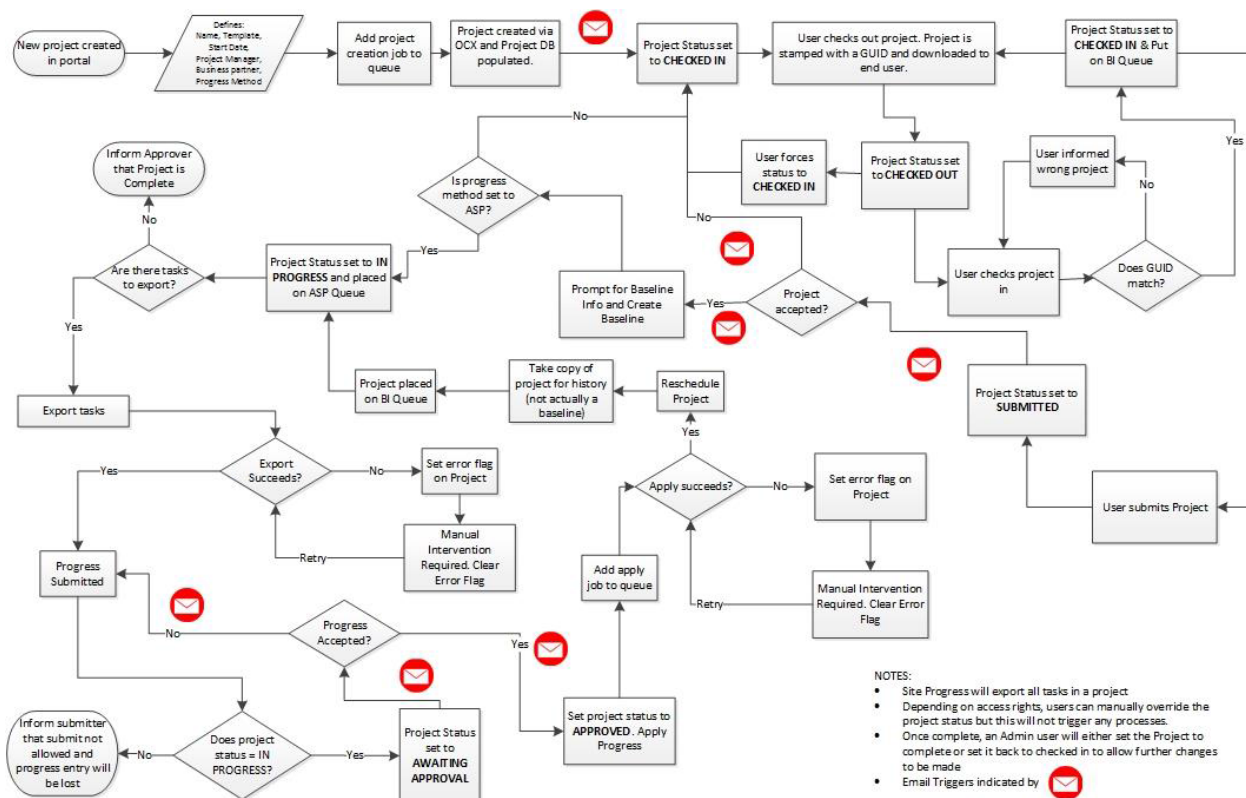
17. Select **OK**



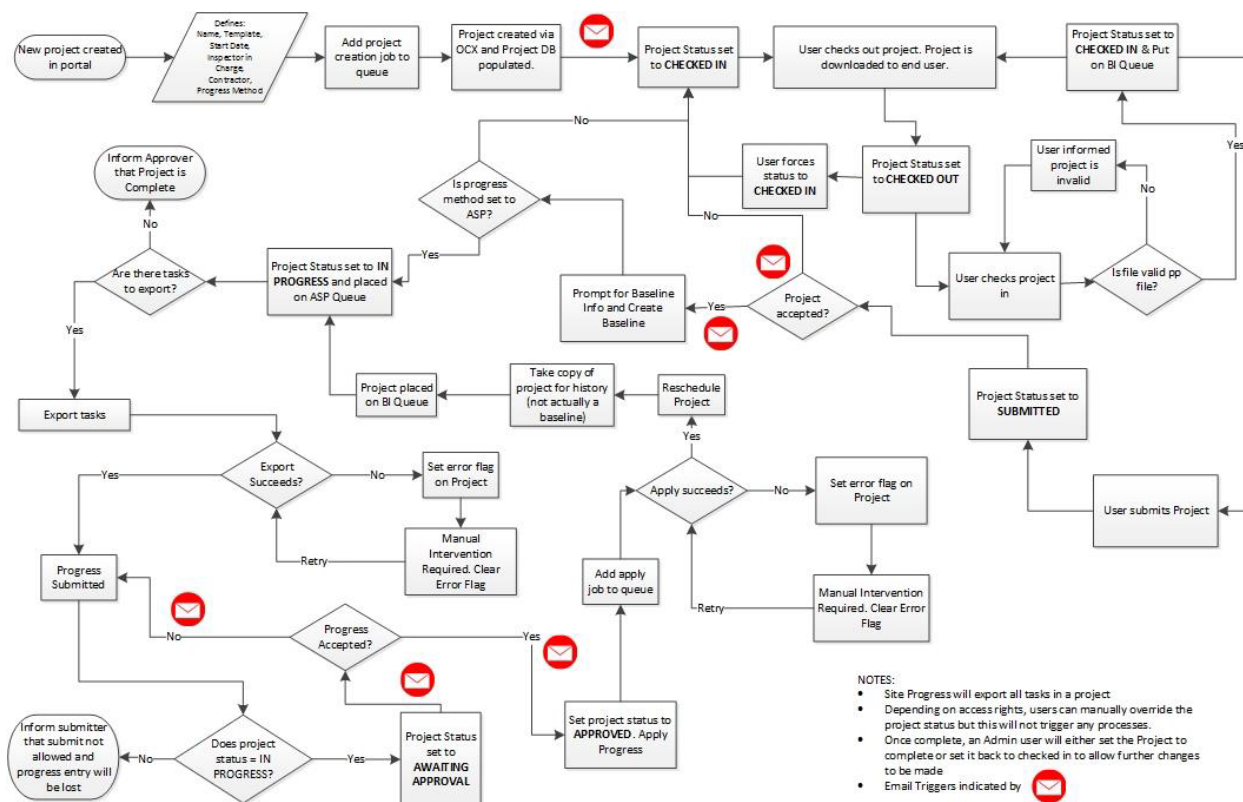
For any questions or problems please contact the Elecosoft Powerproject Helpdesk at 717-775-8140 or RA-PDASTAPWRPROJ@pa.gov

7.10- WEB PORTAL PROCESS FLOW

7.10.1- Design Process Flow. The following process map outlines the interaction and functionality for design of the portal and users:



7.10.2- Construction Process Flow. The following process map outlines the interaction and functionality for construction of the portal and users:



CHAPTER 8 - ELECOSOFT POWERPROJECT CLIENT

8.0- PURPOSE

The purpose of the Elecosoft Powerproject Client software is to create the actual schedule. The “shell” of the project will be created via the Elecosoft Web Portal. Once the “shell” is created, it will have to be checked out and opened within Elecosoft Powerproject. Elecosoft Powerproject is where the schedule will be developed. Tasks, durations and logic tying the tasks together, along with constraint dates will make up the project schedule.

This chapter will walk you through the basics of how to use the software for standalone projects. Due to the use of the Elecosoft Web Portal, some steps may not apply to PennDOT. Please Note that these instructions are for use within the Elecosoft Powerproject Client. A lot of what is contained within this chapter is additional information on the basic use of the software.

8.1- BASICS

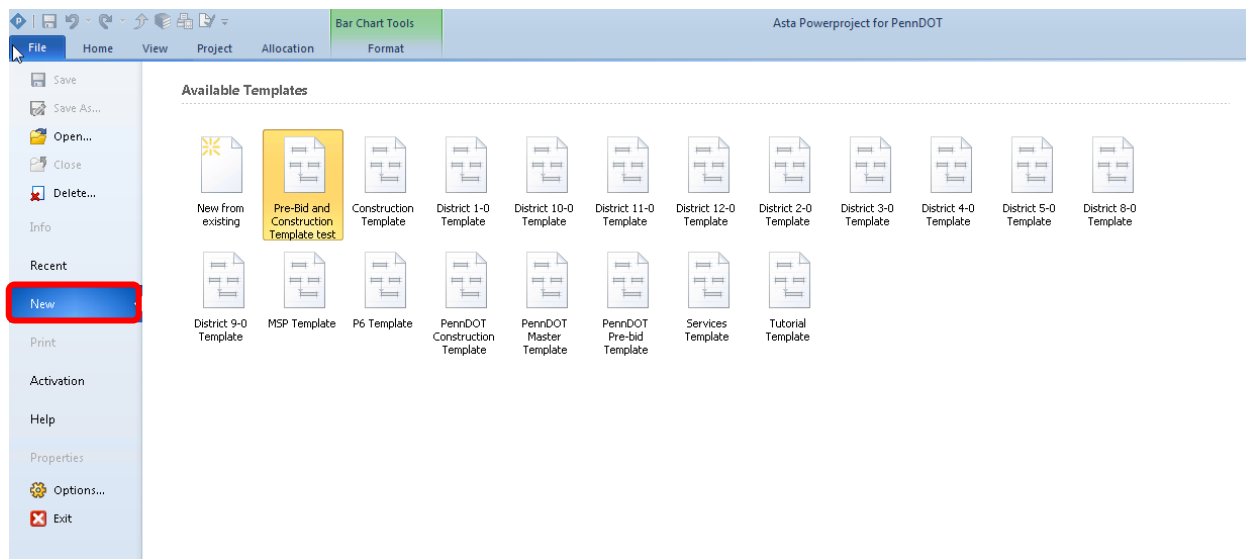
Elecosoft Powerproject is designed to provide the tools that a project manager needs to create project schedules, update project progress, and communicate the status of projects to the project team.

Elecosoft Powerproject follows many of the rules for Windows:

- **Left-click** will usually select an item.
- **Double-click** will activate it.
- **Right-click** gives you a menu to make changes.
- **Click and drag** will move an item from one part of the screen to another or will select multiple items.
- **Shift button** will allow you to select adjacent items.
- **Control button** will select non-adjacent items.

8.1.1- Starting a New Project

1. Select the **File tab**.
2. Select **New**.



3. Select a template on which to base your project.
 - For Design schedules, select either the PennDOT Master Template or a District specific Template
 - For Pre-bid schedules, select the **PennDOT Pre-bid Template**
 - For Construction schedules, select the **PennDOT Construction Template**
 - Selecting **New from Existing** allows users to select an existing project to create a new project from (similar to a save as but with the ability to delete all progress from the existing schedule)

4. Enter the details on the new project.

Construction Template

Location

File Name


C:\Users\damaliniak\Desktop\

Name

Title

For

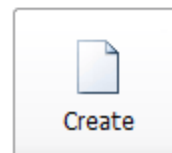
By

Start 

Login

User Name

Password



- **Filename** – The name of the project.
 - Design schedules = MPMS Number.
 - Pre-bid schedules = MPMS Number followed by PREBID (99999 PREBID)
 - Construction schedules = MPMS Number followed by CON (99999 CON)
 - Monitoring of Construction schedules = MPMS Number followed by MON (99999 MON)
- **Title** – The print title.
 - This should be the same as the Filename.
- **For** – Who the project is for.
 - Engineering District X-0 (X being the District Number).
- **By** – Who the project is by.
 - Who is creating the schedule, PennDOT (for internal projects) or the Business Partner Company Name.
- **Start** – The start date for the whole project.

- Optionally you can enter a **User Name** and **Password**, but this is not recommended for PennDOT projects.

5. Once these details have been entered, click **Create**.

Construction Template

Location

File Name


C:\Users\damaliniak\Desktop\

Name

Title

For

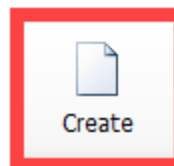
By

Start 

Login

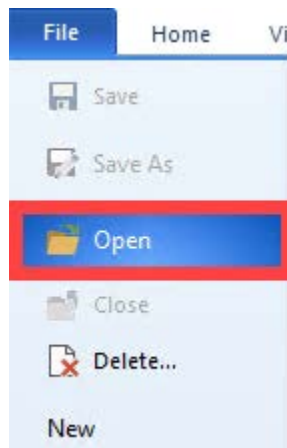
User Name

Password

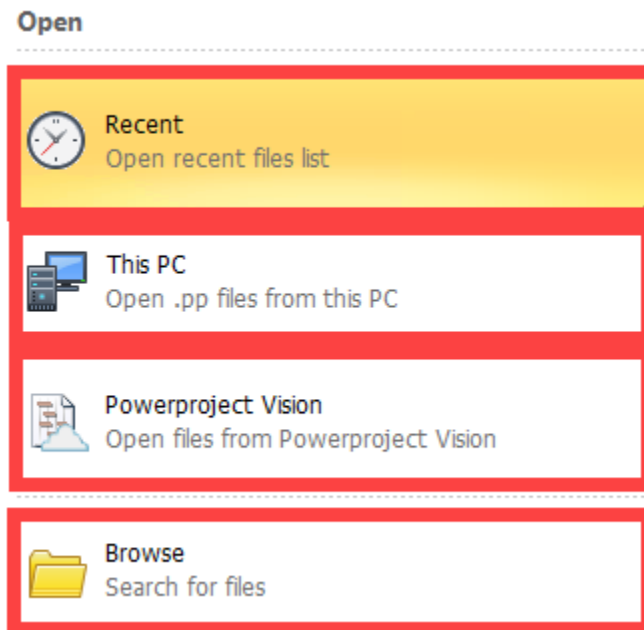


8.1.2- Opening an Existing Project

1. Select the **File tab**.
2. Select **Open**.

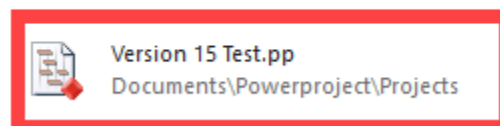


Choose the location the file is saved: **Recent**, **This PC**, **Elecosoft Powerproject Vision**, and **Browse**.

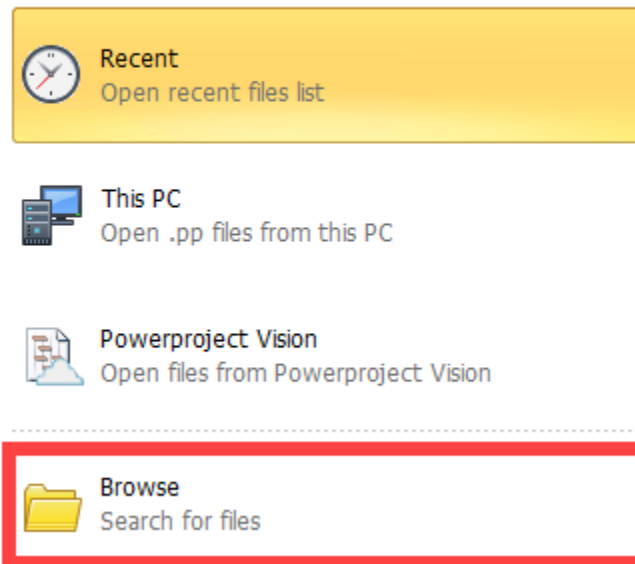


- When Recent, This PC and Elecosoft Powerproject Vision are selected schedules will be displayed to the right.

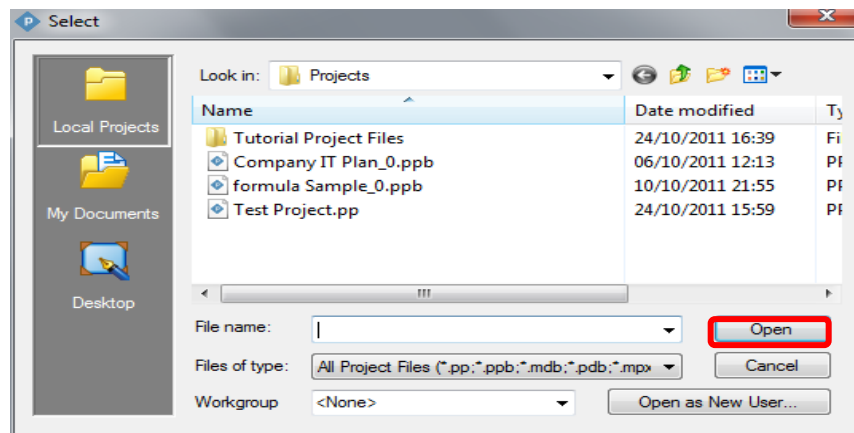
Recent Projects



- If your project has not been opened recently, select **Browse**.

Open

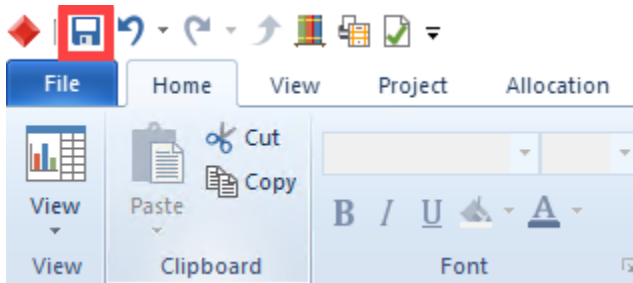
- Then select the file you wish to open.

3. Select Open.

8.1.3- Saving

To Save a Project:

1. Selecting the *Save* button on the quick access tool bar.



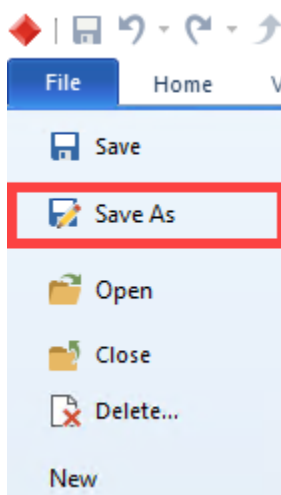
-Or-

1. Go to the *File tab* and select *Save*.

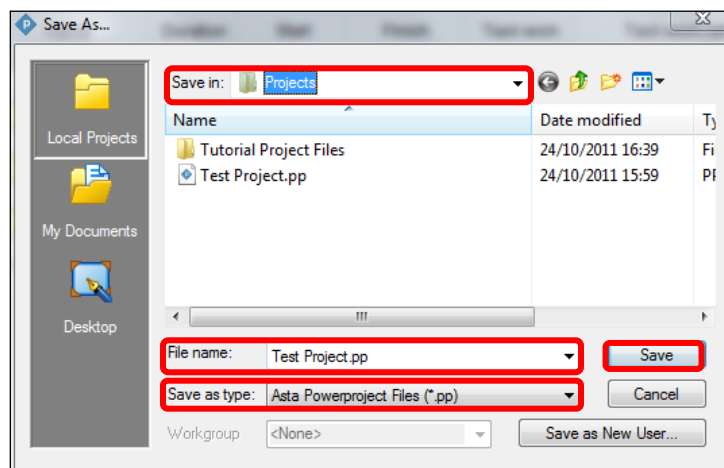


To Save a Project Under a New File Name:

1. Go to the *File tab*.and select *Save As*.



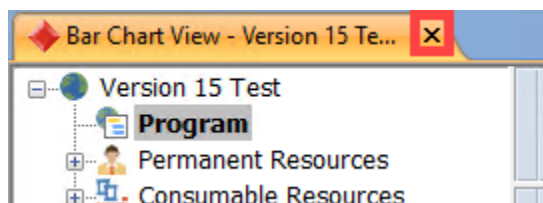
2. Select where you wish to save the project, enter a *New File Name*, choose a *File Type*, click *Save*.



Note: If a project was created in the Elecosoft Powerproject Web Portal, doing a File, Save As will break the connection and versioning of the project and will not allow the project to be 'checked in' to the Elecosoft Powerproject Web Portal.

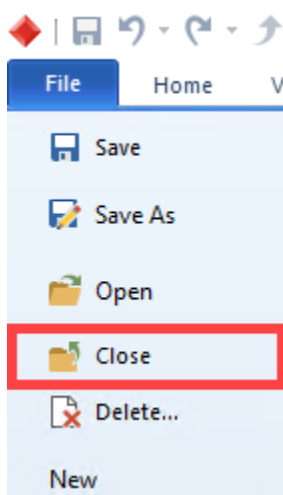
8.1.4- Closing a Project

1. Close the project tab using the 'X' next to each tab.




-Or-

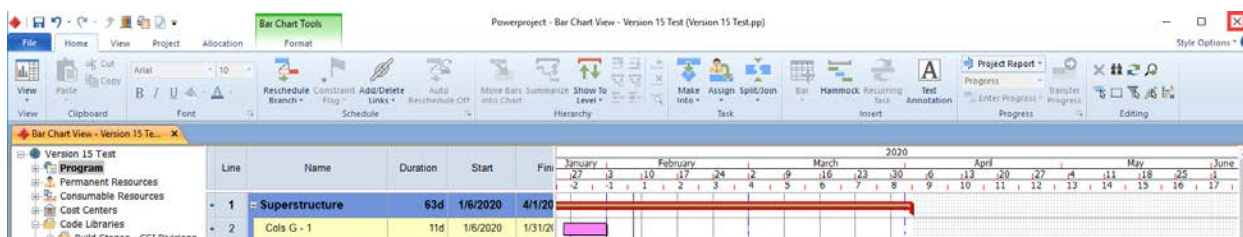
1. Go to the **File** tab and select **Close**.



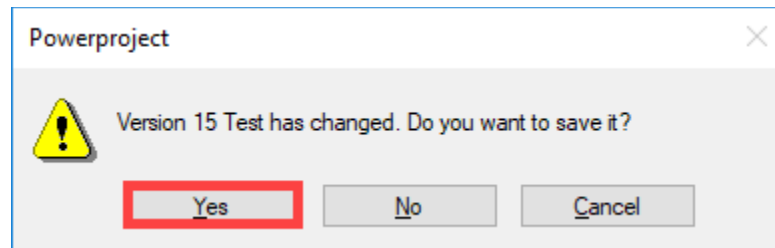
If the project has not been saved you will be prompted to do so.

8.1.5- Existing Elecosoft Powerproject

1. Click on the  at the top right of the screen.



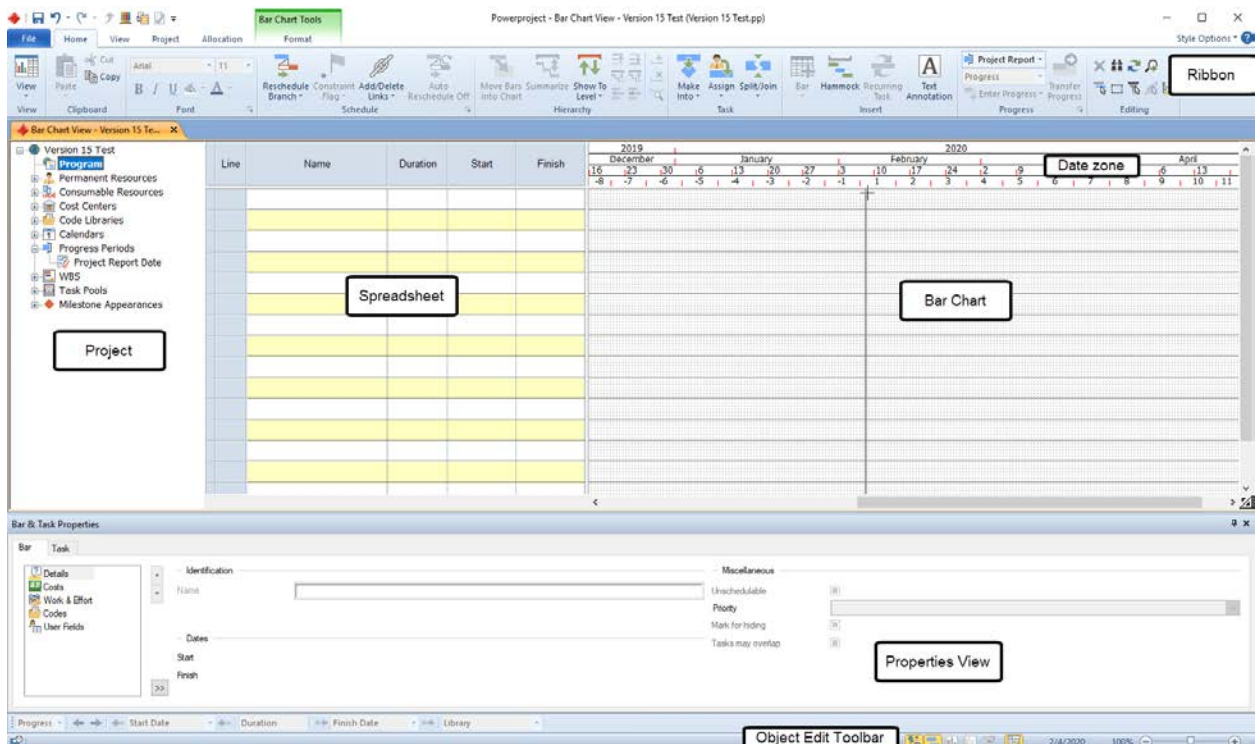
Note: If you try to close an individual project, or the Elecosoft Powerproject software altogether, without saving, Elecosoft Powerproject will ensure you do not accidentally lose changes by asking if you want to save:



8.2- ELECOSOFT POWERPROJECT SCREEN AREAS

This section covers the general layout of the Elecosoft Powerproject working area.

The Elecosoft Powerproject screen is divided into a number of areas. This may vary for existing projects where the layout has been changed to suit the needs of the user:



- **Ribbon** – Contains the commands for your project.
- **Project View** – Shows the structure of your project and shows the list of library items available.
- **Bar Chart** – Information on your project in graphic form, your Gantt Chart.
- **Date zone** – Showing dates for years, months, weeks etc.
- **Spreadsheet** – Information on your project in tabular form.
- **Properties View** – Allows you to edit the properties of a selected object.
- **Object Edit Toolbar** – Used to edit tasks and/or links in the bar chart.

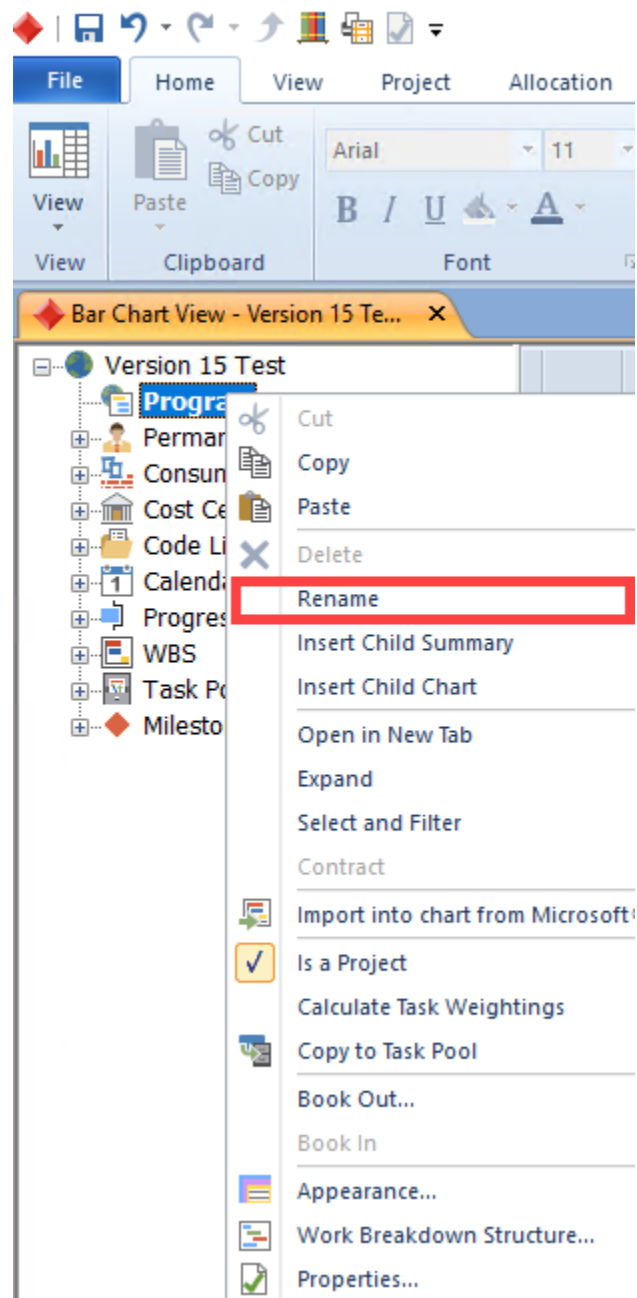
8.2.1- The Project View

The project view shows the structure of your project and shows the list of library items available.

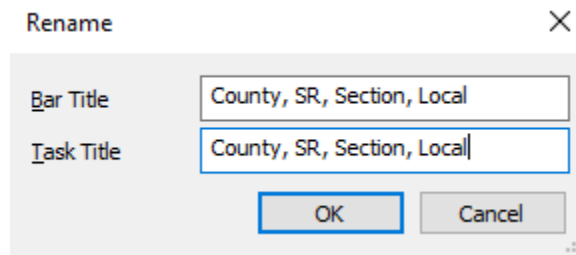
Before starting any project, whether it is a design, pre-bid, or construction project, additional details and a description of the project should be identified such as County, State Route, Section, and Local Name.

To Add Details to the Project View:

1. In the Project View, *right-click* on the globe icon identified as ***Project/Program***


2. Select **Rename**

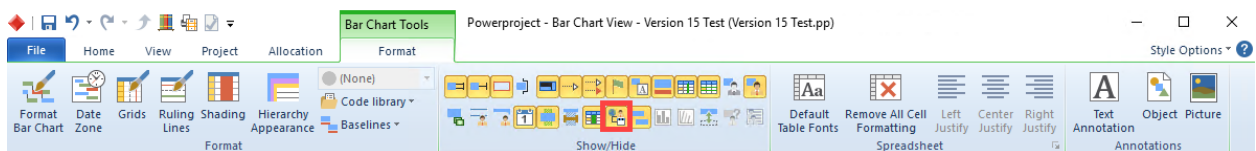
3. Rename both the **Bar Title** and **Task Title** to include **County, State Route, Section, and Local Name**




4. Click **OK**

To Hide the Project View Area:

1. Selecting the **Format tab** and clicking the  **icon**.



-Or-

1. Selecting the  **icon** on the bottom **Object Edit Toolbar**:



To Resize the Project View Area:

1. Place the cursor over the left edge of the Spreadsheet area. The cursor will become a double sided arrow. Drag this to the right of the screen.

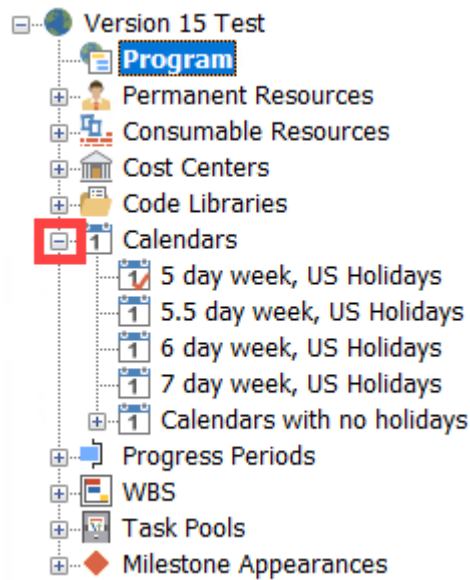
8.3- CALENDARS


Calendars define the working and non-working time within a project. The Calendar consists of a planned pattern of work to which exceptions can be added. An exception is any day which does not conform to the planned pattern of work, e.g., holidays or overtime.

The standard PennDOT Calendar Files are within all of the PennDOT templates. The standard PennDOT Calendar Files identify holidays and weekends, unless otherwise Noted. For design and pre-bid schedules, the predefined PennDOT calendars should always be used. For construction, the predefined PennDOT calendars can be used, however it is the sole discretion of the contractor; the contractor is able to use their own calendars.

8.3.1- To Display a List of Available Calendars

1. In the **Project View**, open the calendars folder using the + *symbol*.



- Sub folders are opened in the same way.
- The Default Calendar is shown with the red tick  icon.

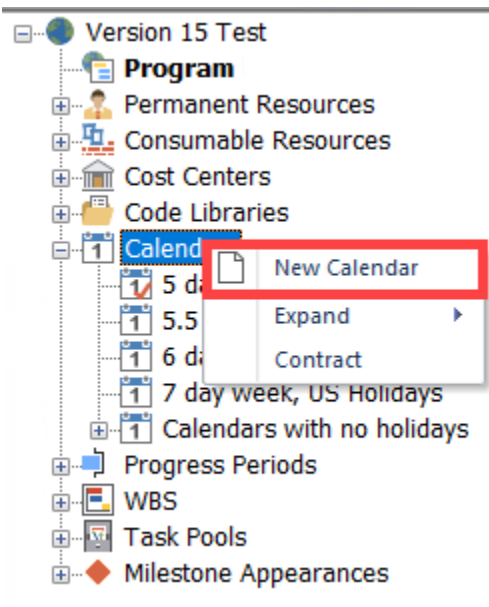
The calendar which is set as default means that any new task you create will follow that calendars work pattern.

You will need to select which calendar is the closest to your working week and set that as the default.

8.3.2- Creating a New Calendar

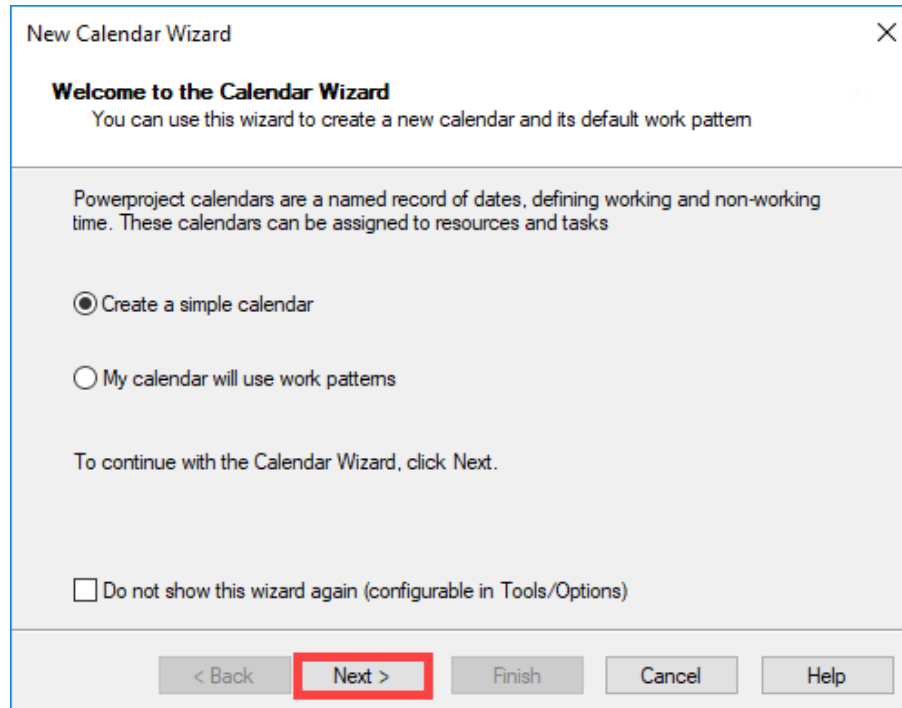
1. In the **Project View**, right-click on **Calendars**.

2. Select **New Calendar**.

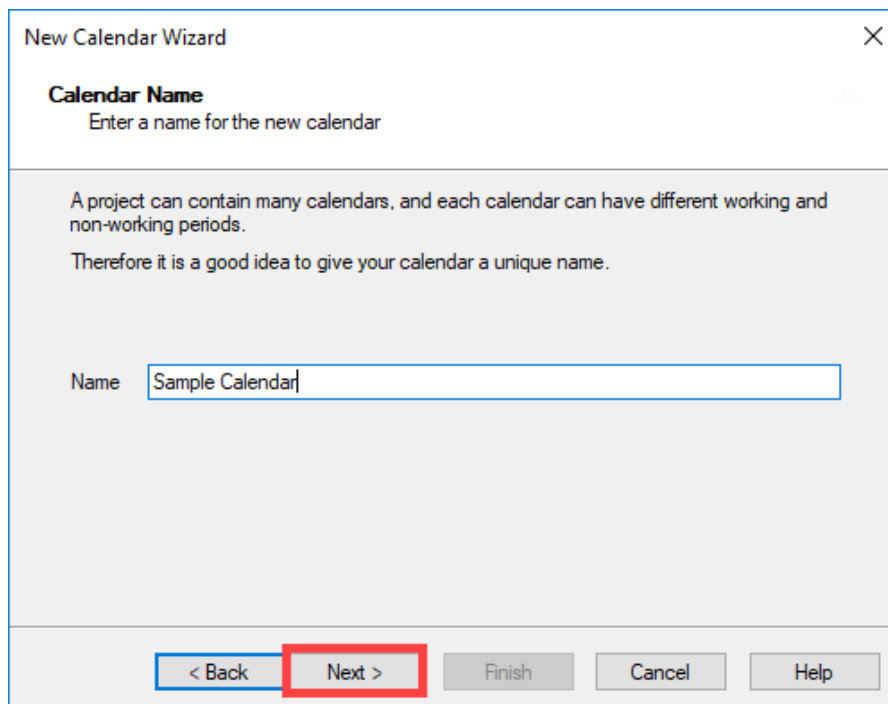


3. Select a **Calendar Type**, click **Next**.

- Use **Simple** for calendars where using a single shift.
- Use **Work Patterns** when multiple shifts are required within a given calendar day.



4. Provide a name for the calendar, click *Next*.



The screenshot shows the 'New Calendar Wizard' dialog box, step 1: 'Calendar Name'. The title bar says 'New Calendar Wizard' with a close button. The main heading is 'Calendar Name' with a subtitle 'Enter a name for the new calendar'. Below this is a text box containing 'Sample Calendar'. A paragraph of text explains that a project can contain many calendars and each can have different working and non-working periods, so it's a good idea to give the calendar a unique name. At the bottom, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'. The 'Next >' button is highlighted with a red rectangle.

New Calendar Wizard

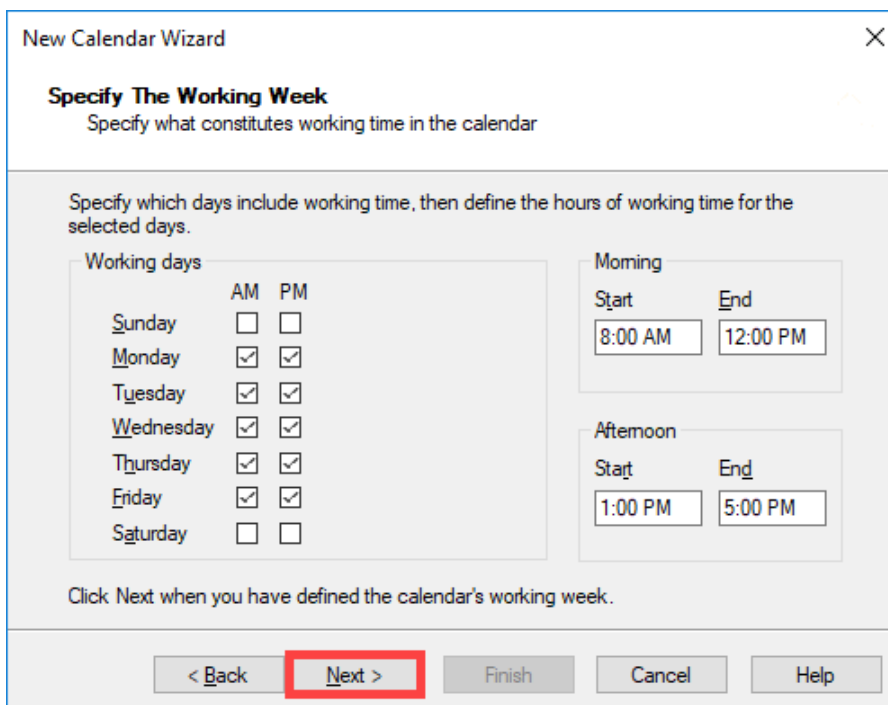
Calendar Name
Enter a name for the new calendar

A project can contain many calendars, and each calendar can have different working and non-working periods.
Therefore it is a good idea to give your calendar a unique name.

Name:

< Back **Next >** Finish Cancel Help

5. Determine the working time for the calendar, click *Next*.



The screenshot shows the 'New Calendar Wizard' dialog box, step 2: 'Specify The Working Week'. The title bar says 'New Calendar Wizard' with a close button. The main heading is 'Specify The Working Week' with a subtitle 'Specify what constitutes working time in the calendar'. Below this is a paragraph of text explaining that the user should specify which days include working time and define the hours of working time for the selected days. There are two main sections: 'Working days' and 'Moming' (Morning) and 'Afternoon'. The 'Working days' section has a table with days of the week and checkboxes for AM and PM. Monday through Friday are checked for both AM and PM. Sunday and Saturday are unchecked. The 'Moming' section has 'Start' and 'End' time pickers set to 8:00 AM and 12:00 PM. The 'Afternoon' section has 'Start' and 'End' time pickers set to 1:00 PM and 5:00 PM. At the bottom, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'. The 'Next >' button is highlighted with a red rectangle.

New Calendar Wizard

Specify The Working Week
Specify what constitutes working time in the calendar

Specify which days include working time, then define the hours of working time for the selected days.

Working days	AM	PM
Sunday	<input type="checkbox"/>	<input type="checkbox"/>
Monday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tuesday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wednesday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Thursday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Friday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Saturday	<input type="checkbox"/>	<input type="checkbox"/>

Moming
Start: End:

Afternoon
Start: End:

Click Next when you have defined the calendar's working week.


< Back **Next >** Finish Cancel Help

6. Define exceptions (Holidays, non-working time), click **Next**.

New Calendar Wizard [X]

Assign Exceptions
Define other working and non-working time such as holidays or overtime

Working through each month in turn, select the type of working or non-working time - known as exceptions - you want to define, then click on the days to which they apply.
Click on the first number of a day to assign an exception to the morning and click on the second number of a day to assign an exception to the afternoon.

Working/Non-working type: Holiday 

Previous		February 2020						Next	
Sun	Mon	Tue	Wed	Thu	Fri	Sat			
						1			
2	3	4	5	6	7	8			
9	10	11	12	13	14	15			
16	17	18	19	20	21	22			
23	24	25	26	27	28	29			

< Back **Next >** Finish Cancel Help

7. Set options, click **Finish**.

New Calendar Wizard [X]

Assign Calendar
Specify where to use this new calendar

Apply this calendar to:

☐ Each new task by default


☐ The date zone to hide non-working time in all my existing user views

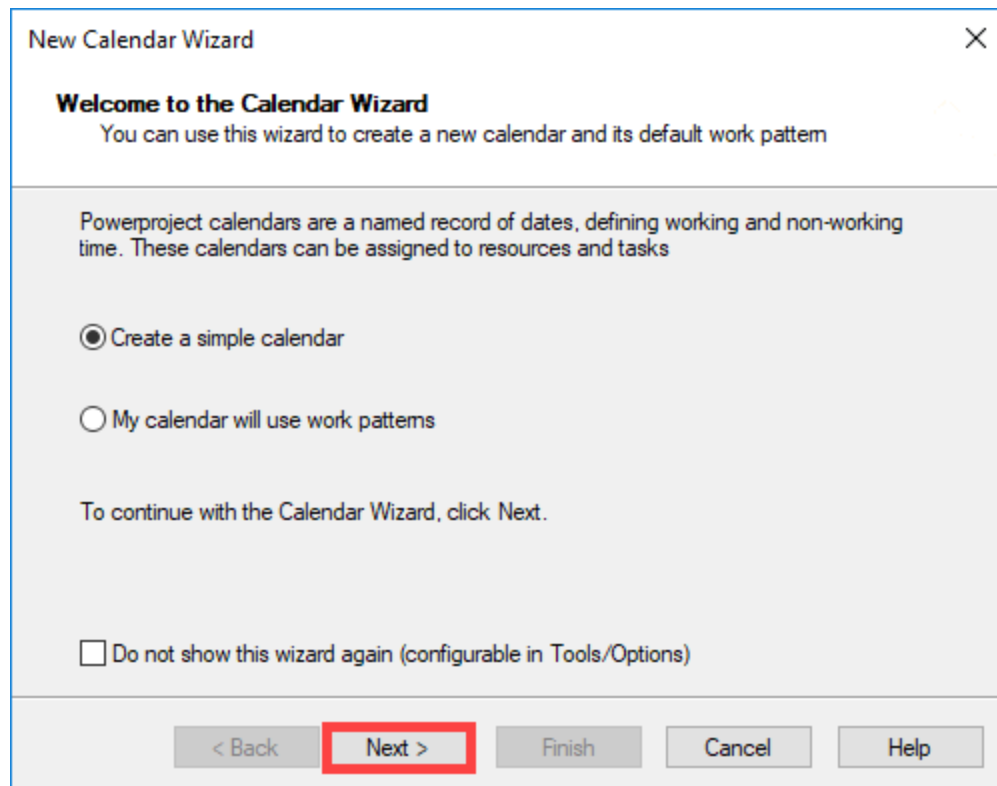
☐ Subheadings in all my existing user views

Click Finish when you have specified where to use the calendar. The calendar is created and you can now assign it to tasks and resources.

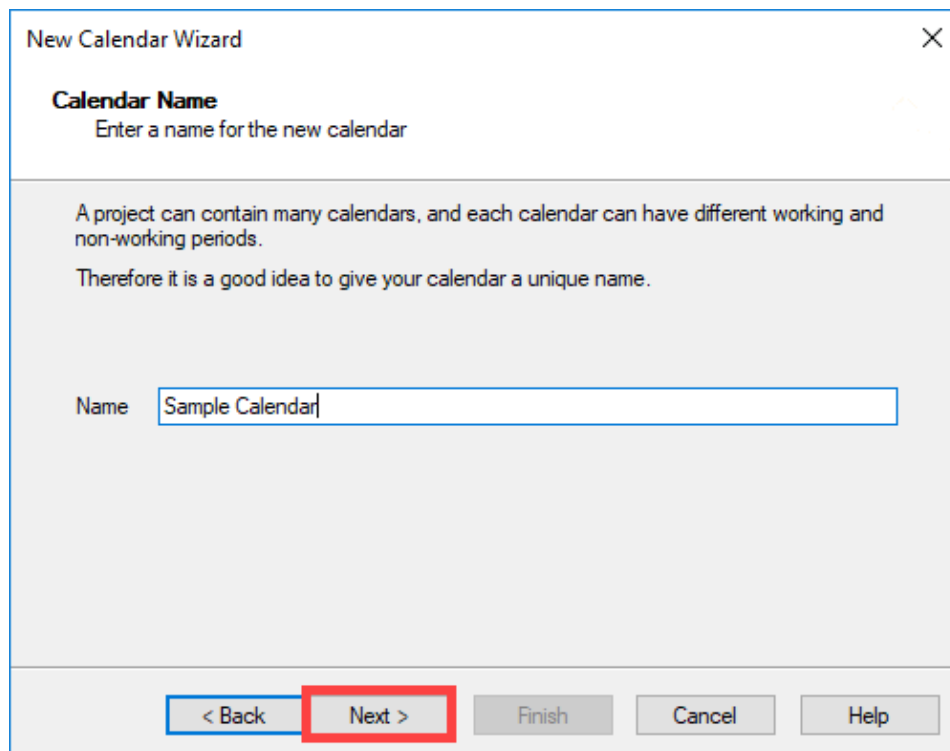
< Back Next > **Finish** Cancel Help

Or another way to create a calendar is to do so using the Library Explorer.

1. Select the **Open Library Explorer**  icon.
2. Select **Calendars**.
3. **Right-click** in the Right Pane and select **New Calendar**.
4. Select a Calendar Type, click **Next**.
 - Use **Simple** for calendars where using a single shift.
 - Use **Work Patterns** when multiple shifts are required within a given calendar day.
 - Use **Work Patterns** when multiple shifts are required within a given calendar day.



5. Provide a name for the calendar, click *Next*.



The dialog box is titled "New Calendar Wizard" and has a close button (X) in the top right corner. The main heading is "Calendar Name" with the instruction "Enter a name for the new calendar". Below this, there is explanatory text: "A project can contain many calendars, and each calendar can have different working and non-working periods. Therefore it is a good idea to give your calendar a unique name." A text input field labeled "Name" contains the text "Sample Calendar". At the bottom, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help". The "Next >" button is highlighted with a red rectangular border.

New Calendar Wizard

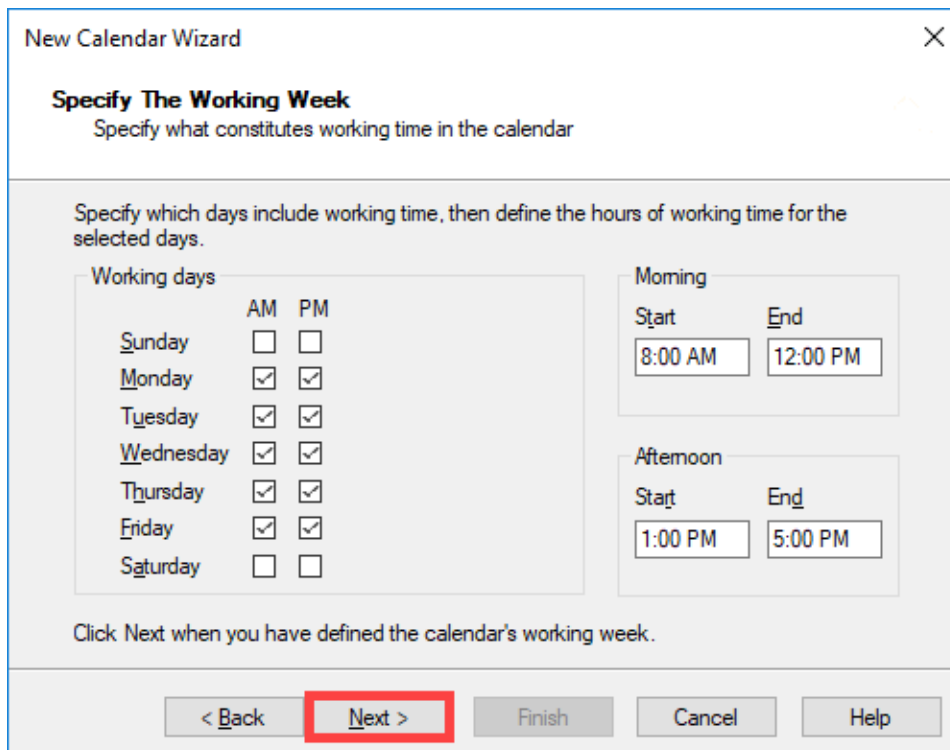
Calendar Name
Enter a name for the new calendar

A project can contain many calendars, and each calendar can have different working and non-working periods.
Therefore it is a good idea to give your calendar a unique name.

Name

< Back **Next >** Finish Cancel Help

6. Determine the working time for the calendar, click *Next*.



The dialog box is titled "New Calendar Wizard" and has a close button (X) in the top right corner. The main heading is "Specify The Working Week" with the instruction "Specify what constitutes working time in the calendar". Below this, there is explanatory text: "Specify which days include working time, then define the hours of working time for the selected days." The "Working days" section is a table with columns for the day of the week, AM, and PM. The "Moming" (Morning) section has "Start" and "End" time input fields. The "Afternoon" section also has "Start" and "End" time input fields. At the bottom, there is a note: "Click Next when you have defined the calendar's working week." and five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help". The "Next >" button is highlighted with a red rectangular border.

New Calendar Wizard

Specify The Working Week
Specify what constitutes working time in the calendar

Specify which days include working time, then define the hours of working time for the selected days.

Working days	AM	PM
Sunday	<input type="checkbox"/>	<input type="checkbox"/>
Monday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tuesday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wednesday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Thursday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Friday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Saturday	<input type="checkbox"/>	<input type="checkbox"/>

Moming
Start: End:

Afternoon
Start: End:

Click Next when you have defined the calendar's working week.

< Back **Next >** Finish Cancel Help

7. Define exceptions (Holidays, non-working time), click **Next**.

New Calendar Wizard [X]

Assign Exceptions
Define other working and non-working time such as holidays or overtime

Working through each month in turn, select the type of working or non-working time - known as exceptions - you want to define, then click on the days to which they apply.
Click on the first number of a day to assign an exception to the morning and click on the second number of a day to assign an exception to the afternoon.

Working/Non-working type: Holiday [v] [Blue square icon]

Previous		February 2020					Next
Sun	Mon	Tue	Wed	Thu	Fri	Sat	
						1	
2	3	4	5	6	7	8	
9	10	11	12	13	14	15	
16	17	18	19	20	21	22	
23	24	25	26	27	28	29	

< Back **Next >** Finish Cancel Help

8. Set options, click **Finish**.

New Calendar Wizard [X]

Assign Calendar
Specify where to use this new calendar

Apply this calendar to:

☐ Each new task by default

☐ The date zone to hide non-working time in all my existing user views

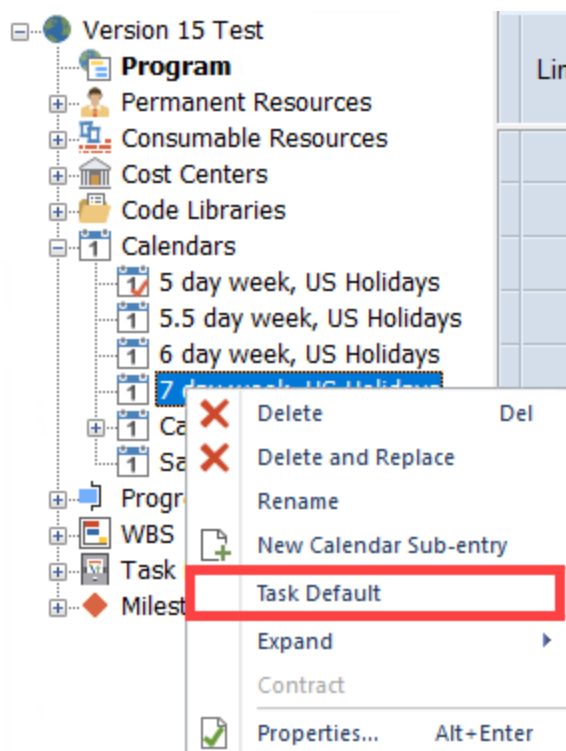
☐ Subheadings in all my existing user views

Click Finish when you have specified where to use the calendar. The calendar is created and you can now assign it to tasks and resources.

< Back Next > **Finish** Cancel Help

8.3.3- To Select Which Calendar You Wish to Use as the Default

1. **Right-click** on the calendar you wish to set as the default.
2. Select **Task Default** from the list.



3. The tick will move to the new default calendar.

Once the default calendar has been selected, you can then edit the calendars properties to the specific working patterns of this project.

8.3.4- Editing an Existing Calendar:

1. **Right-click** on the calendar you wish to edit.
2. Select **Properties**.

The Calendar Properties Dialogue Box opens.

Calendar Properties for 5 day week, US Holidays

Calendar Details Work Pattern Assignments Exception Assignments

2019 **2020** 2021

☐ No working hours ☒ 8h or more ☒ Selected dates

	January	February	March	April	May	June
Mon	6 13 20 27	3 10 17 24	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29
Tue	7 14 21 28	4 11 18 25	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30
Wed	1 8 15 22 29	5 12 19 26	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24
Thu	2 9 16 23 30	6 13 20 27	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25
Fri	3 10 17 24 31	7 14 21 28	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26
Sat	4 11 18 25	1 8 15 22 29	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27
Sun	5 12 19 26	2 9 16 23	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28

	July	August	September	October	November	December
Mon	6 13 20 27	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
Tue	7 14 21 28	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29
Wed	1 8 15 22 29	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25	2 9 16 23 30
Thu	2 9 16 23 30	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31
Fri	3 10 17 24 31	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 25
Sat	4 11 18 25	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26
Sun	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27

Add Exception... Delete Exception Print...

Less << Close

Each day in the Calendar has a working pattern assigned to it. An exception is any day which does not follow that working pattern.

Each day has a period of working and non-working time assigned.

To View Working and Non-working Times:

1. **Double-click** on the day you wish to view. The day will open in a separate pop up, showing the working and non-working time during that day.

Working Hours for 5 day week, US Holidays

Date: Thu 12/17/2020 Calendar: 5 day week, US Holidays

Period	Start Time	End Time	Duration
⌚ Non Working	0:00 AM	8:00 AM	8h
🔴 Working	8:00 AM	12:00 PM	4h
⌚ Non Working	12:00 PM	1:00 PM	1h
🔴 Working	1:00 PM	5:00 PM	4h
⌚ Non Working	5:00 PM	24:00	7h

☒ Show generic non-working periods

Add Exception... Delete Exception Close

You can add additional exceptions to the calendar to show additional holidays, shut down days or additional weekend working.

To Add an Exception:

1. **Left-click** on the date you wish to select. If you wish to select more than one date, you will need to hold the **CTRL** key and click on each date (the selected dates will be highlighted in blue).

Calendar Properties for 5 day week, US Holidays

Calendar Details Work Pattern Assignments Exception Assignments

2019 **2020** 2021

☐ No working hours ☒ 8h or more ☒ Selected dates

	January	February	March	April	May	June
Mon	6 13 20 27	3 10 17 24	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29
Tue	7 14 21 28	4 11 18 25	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30
Wed	1 8 15 22 29	5 12 19 26	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24
Thu	2 9 16 23 30	6 13 20 27	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25
Fri	3 10 17 24 31	7 14 21 28	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26
Sat	4 11 18 25	1 8 15 22 29	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27
Sun	5 12 19 26	2 9 16 23	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28

	July	August	September	October	November	December
Mon	6 13 20 27	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
Tue	7 14 21 28	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29
Wed	1 8 15 22 29	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25	2 9 16 23 30
Thu	2 9 16 23 30	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31
Fri	3 10 17 24 31	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 25
Sat	4 11 18 25	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26
Sun	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27

Add Exception... Delete Exception Print...

Less << Close

2. Click **Add Exception**.

Calendar Properties for 5 day week, US Holidays

Calendar Details Work Pattern Assignments Exception Assignments

2019 **2020** 2021

☐ No working hours ☒ 8h or more ☐ Selected dates

	January	February	March	April	May	June
Mon	6 13 20 27	3 10 17 24	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29
Tue	7 14 21 28	4 11 18 25	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30
Wed	1 8 15 22 29	5 12 19 26	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24
Thu	2 9 16 23 30	6 13 20 27	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25
Fri	3 10 17 24 31	7 14 21 28	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26
Sat	4 11 18 25	1 8 15 22 29	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27
Sun	5 12 19 26	2 9 16 23	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28

	July	August	September	October	November	December
Mon	6 13 20 27	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
Tue	7 14 21 28	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29
Wed	1 8 15 22 29	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25	2 9 16 23 30
Thu	2 9 16 23 30	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31
Fri	3 10 17 24 31	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 25
Sat	4 11 18 25	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26
Sun	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27

Add Exception... Delete Exception Print...

Less << Close

3. Choose which **Exception type** you wish to add.

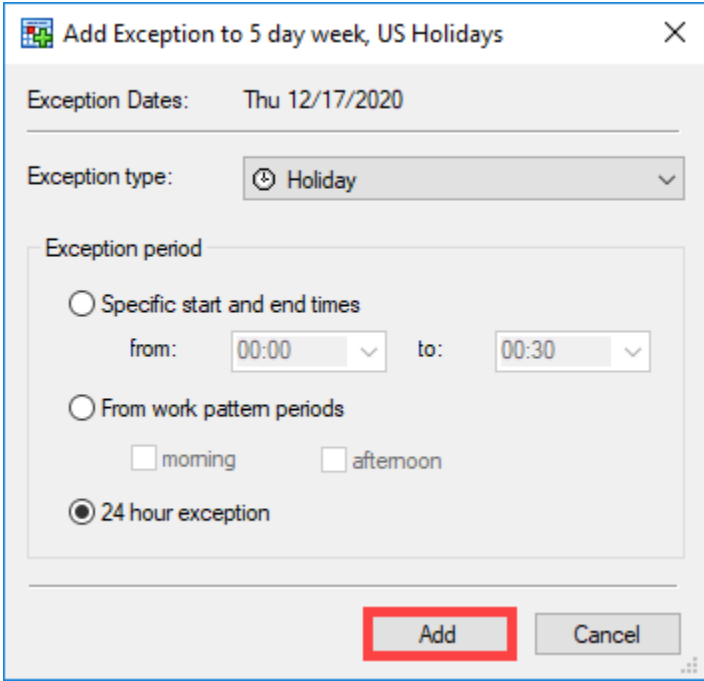
The screenshot shows a dialog box titled "Add Exception to 5 day week, US Holidays". It contains the following fields and options:

- Exception Dates:** Thu 12/17/2020
- Exception type:** Holiday (selected from a dropdown menu)
- Exception period:**
 - ☒ **Specific start and end times**
 - from: 00:00 (dropdown) to: 00:30 (dropdown)
 - ☐ **From work pattern periods**
 - ☐ morning ☐ afternoon
 - ☐ **24 hour exception**

At the bottom of the dialog are "Add" and "Cancel" buttons.

4. Choose the period of time you wish the exception to last for in the **Exception period** section.
 - Specific start and end times – allows you to set the start and finish of the time to the nearest 30 minutes.
 - From work pattern periods – matches the morning and afternoon to those already set for the calendar. (This option will produce the best results)
 - 24 hour exception – will add the selected exception for the whole 24 hours of the day.

5. Click **Add**.



Add Exception to 5 day week, US Holidays

Exception Dates: Thu 12/17/2020

Exception type: 🕒 Holiday

Exception period

☐ Specific start and end times

from: 00:00 to: 00:30

☐ From work pattern periods

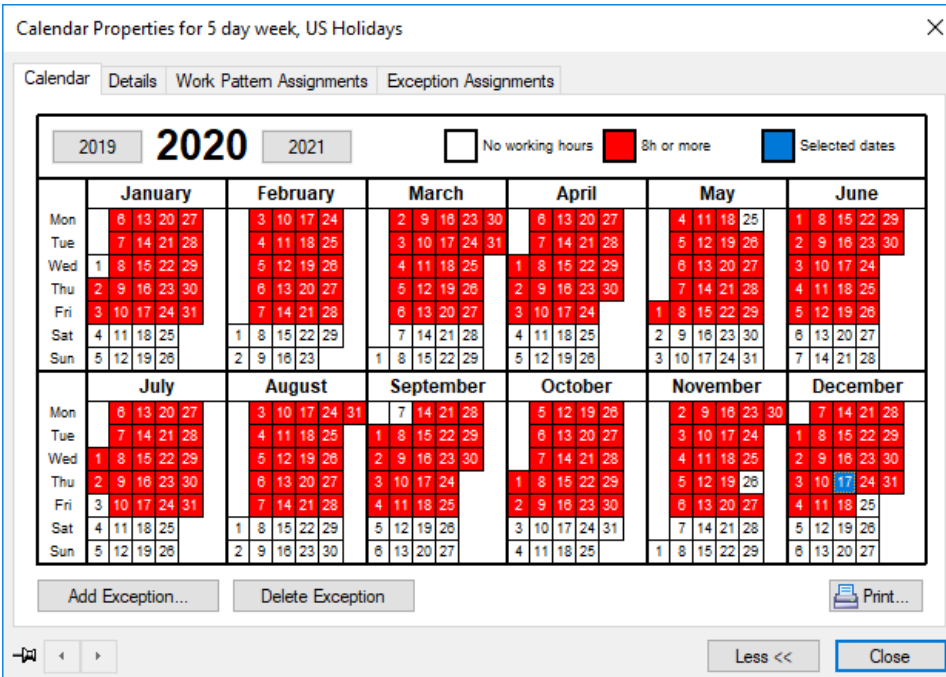
☐ morning ☐ afternoon

☒ 24 hour exception

Add **Cancel**

To Remove an Exception:

1. **Left-click** on the date you wish to select. If you wish to select more than one date, you will need to hold the **CTRL** key and click on each date (the selected dates will be highlighted in blue).



Calendar Properties for 5 day week, US Holidays

Calendar Details Work Pattern Assignments Exception Assignments

2019 **2020** 2021

☐ No working hours ☒ 8h or more ☒ Selected dates

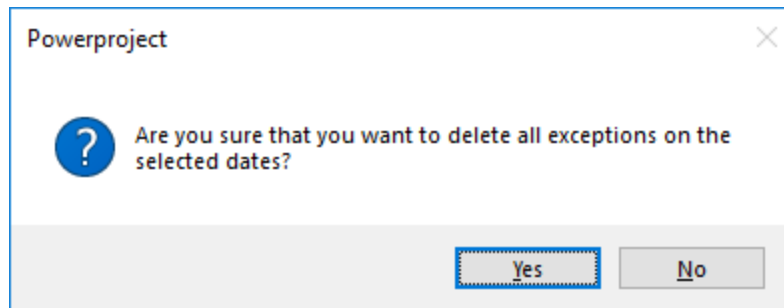
	January	February	March	April	May	June
Mon	6 13 20 27	3 10 17 24	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29
Tue	7 14 21 28	4 11 18 25	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30
Wed	1 8 15 22 29	5 12 19 26	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24
Thu	2 9 16 23 30	6 13 20 27	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25
Fri	3 10 17 24 31	7 14 21 28	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26
Sat	4 11 18 25	1 8 15 22 29	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27
Sun	5 12 19 26	2 9 16 23	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28

	July	August	September	October	November	December
Mon	6 13 20 27	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
Tue	7 14 21 28	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29
Wed	1 8 15 22 29	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25	2 9 16 23 30
Thu	2 9 16 23 30	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31
Fri	3 10 17 24 31	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 25
Sat	4 11 18 25	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26
Sun	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27

Add Exception... Delete Exception Print...

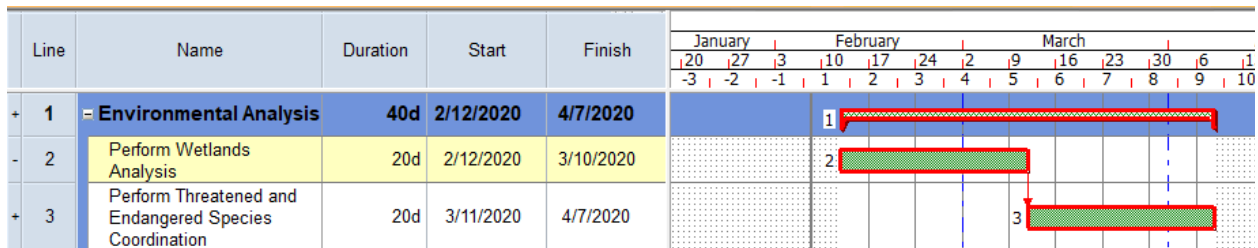
Less << Close

2. Click **Delete Exception**.
3. A pop up will appear asking if you are sure you wish to delete the exceptions. If you are, select **Yes**, if not select **No**.



8.4- CREATING A PROJECT

A project is a series of tasks which must be completed to achieve a set of objectives. The Spreadsheet displays the task information and the GANTT chart (Bar Chart) shows the tasks in their date position and duration.



A task is a unit of work with a duration. Tasks can be created on the Spreadsheet or drawn onto the GANTT chart and they can be linked to show relationships between them to create the critical path. You can create more than one task on the same bar to show repetitive or intermittent working. Task names can be used to describe the task, and should be unique, although the program does allow task names not to be unique.

8.4.1- Creating Tasks. A task can be created by either typing the duration into the column on the Spreadsheet, or by using the cursor to draw onto the Bar Chart. Once created, any aspect of the task can be edited using either the Spreadsheet or using the mouse on the task bar.

Once a schedule is created using a template, it will need to be modified to conform to the project. Any task that pertains to the project should be tracked in the schedule. Sometimes this will necessitate the use of duplicate activities. For example, if a project has multiple structures, each individual structure should be tracked separately in the schedule.

For design schedules, if the task is not listed in the PDSMASTER, a nonstandard PennDOT task can be created. Any task that is added to a schedule that is not part of the PDSMASTER template is considered a non-standard PennDOT task. The PDSSTANDARD code field is used to screen non-

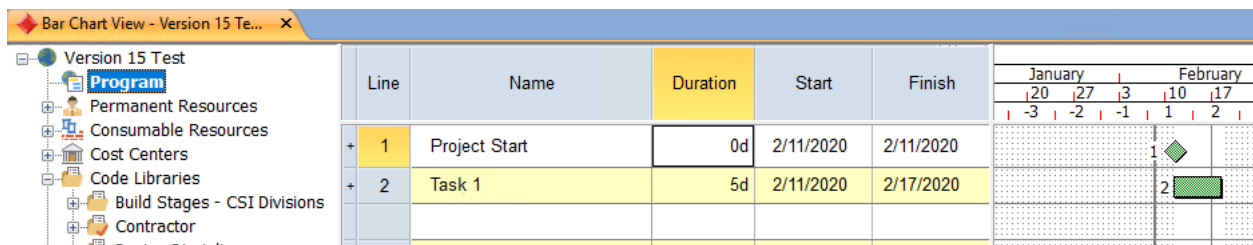
standard activities out of the Department's historical data. A "1" is assigned to all standard activities – those found in the PDSMASTER template. Any task that is added outside of these standard activities should be assigned a "2." (See Section 8.12 – Code Libraries)

To Create Tasks in the Spreadsheet

1. **Left-click** in the Name column of the first task of the table.
2. Type the name of the task and press **Enter**.
3. **Left-click** in the Duration column of the first task of the table.
4. Type the duration you wish into the column and press **Enter**.

Any duration unit can be used by adding the appropriate letter after the number, i.e. d for days and w for weeks.

A task is displayed on the Bar Chart.



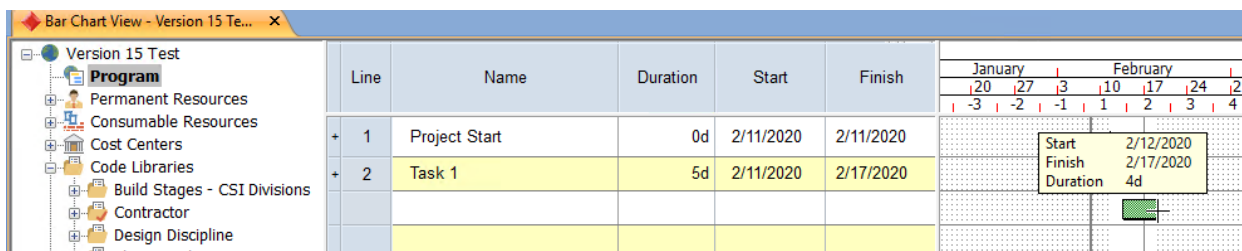
5. Continue to add activities in the spreadsheet by typing in the name and duration of each activity.

For consistency, all durations assigned to activities will be in working days. Historic durations for many activities are contained in the templates.

In regards to design schedules, for activities which are to be completed by the District, these durations may be changed provided the changes are made with a sound understanding of the project's needs and typical review times. For reviews involving Central Office staff or FHWA, the durations contained within the PDSMASTER should be considered as minimums. Generally, these review periods are 15 days for Bureau of Project Delivery reviews and 25 days for FHWA reviews.

To Create Tasks on the Bar Chart

1. Place the mouse cursor in the **Bar Chart** on the line for the task, the cursor will now be a cross.
2. **Left-click** and **drag** the mouse to the right.
 - A pop up box displays the start, finish, and duration of the task.
3. **Release** the mouse button when the task is set to the desired duration.






- After the mouse button is released, the task will remain selected (highlighted in black).
4. **Click away** from the task to deselect it & it is displayed green again.
 - A Task Name will still need to be typed in the spreadsheet.


8.4.2 Moving and Editing Tasks. Tasks can be moved and edited using either the mouse or the Object Edit Toolbar.

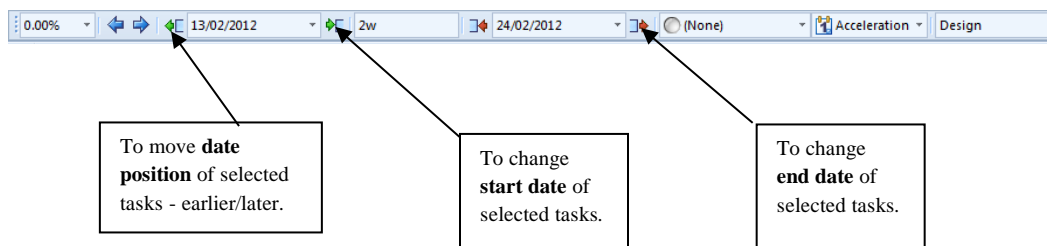
To Edit the Tasks on the Bar Chart

1. Place your cursor on the task you wish to edit.
2. Your cursor will change to one of these shapes:

	<p><u>Select /move task:</u> Place mouse cursor in the centre of a task. Left-click & drag. While this cursor shape is showing an item can be selected or moved.</p>
	<p><u>Adjust start date of task:</u> Place mouse cursor at start of a task. Left-click & drag. While this cursor shape is showing the start date of a task can be moved without affecting the end date.</p>
	<p><u>Adjust end date of task:</u> Place mouse cursor at the end of a task. Left-click & drag. While this cursor shape is showing the end date of a task can be moved without affecting the start date.</p>


To Edit Tasks on the Object Edit Toolbar:

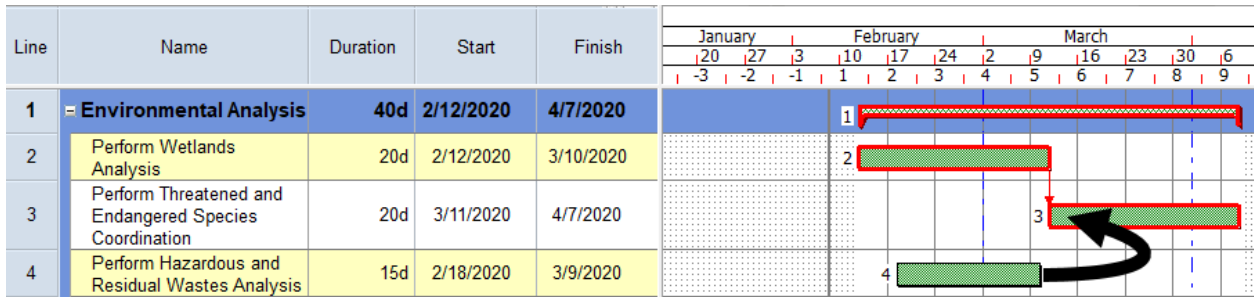
1. Select a task on the *Bar Chart* using the  cursor as shown above.
2. The *Object Edit Toolbar* is now displayed at the foot of the screen.



8.4.3- Moving Tasks Vertically. When you have listed out your task you are still able to change the order of those tasks at any time.

To Move a Task to the Top of the Project:

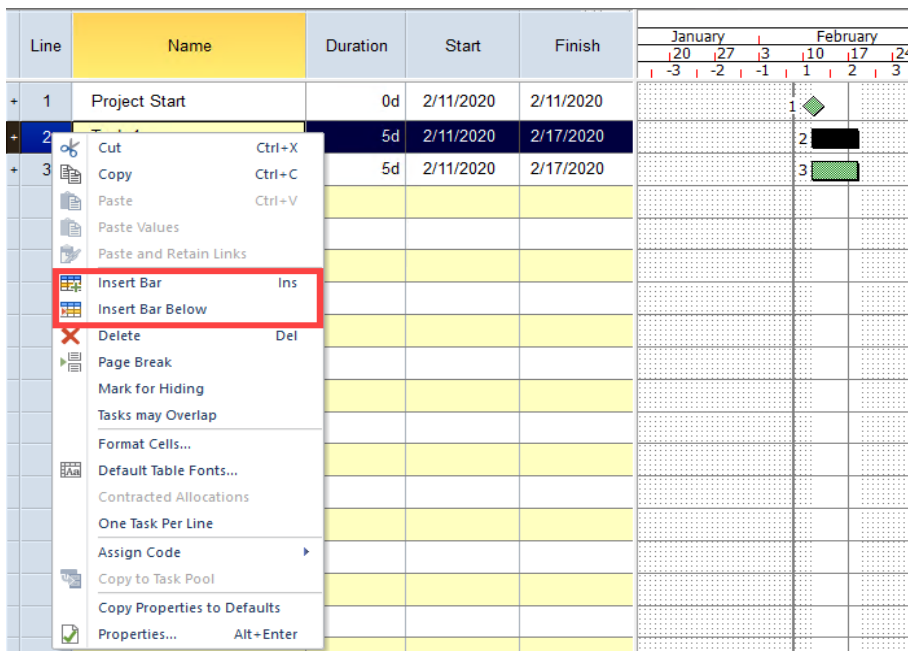
1. **Left-click** on the **line number** for the task you want to move (the line will be highlighted). Place your cursor on the task in the bar chart, you should see the cursor. 



2. **Click and drag** the bar to the new line above.

8.4.4- Inserting Tasks. You can insert new lines into your project to put new tasks on or just to space existing tasks for formatting purposes.

1. On the **line number** below where you want to insert your new line **Right-click** and select **Insert Bar** or **press insert** on your keyboard or select **Insert Bar Below**.
 - **Insert Bar** – will insert a bar above the selected line.
 - **Insert Bar Below** – will insert a bar below the selected line

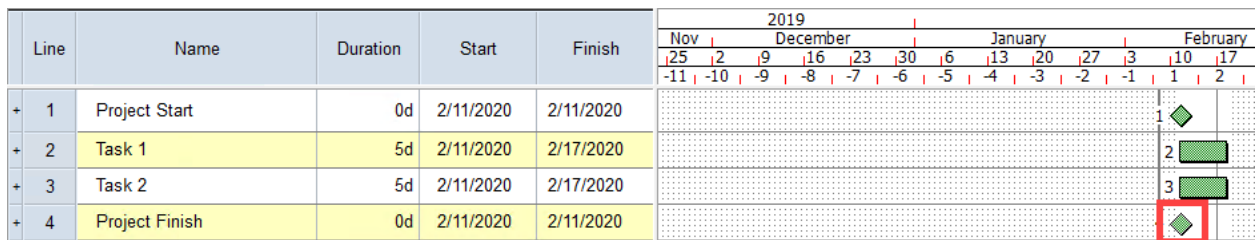


A blank bar will be inserted above or below the currently selected bar.

8.4.5- Milestones. Milestones are used to display key dates or events in our project and have zero duration.

To Create a Milestone

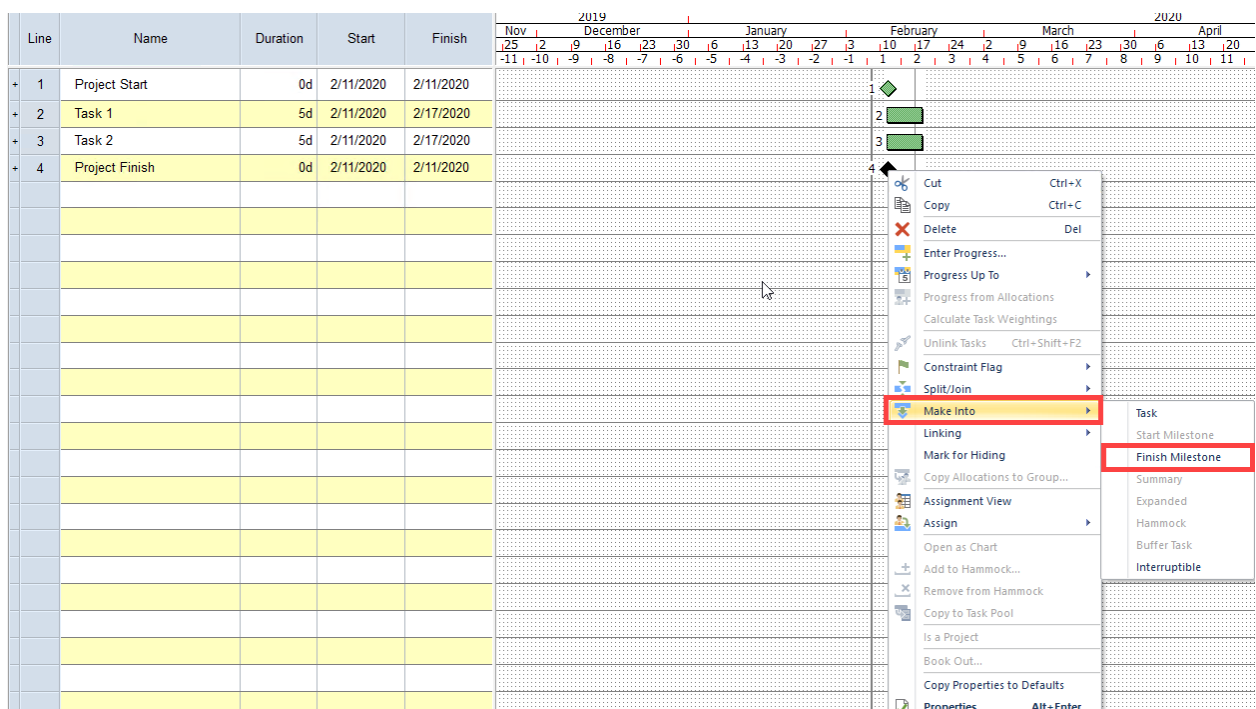
1. Name the task in the normal way.
2. Enter **0 (zero)** in the duration column. The 0 will not display as the default is to not show zeros, but a diamond symbol will now appear in the bar chart.



Milestones can be either a Start or Finish milestone. Start Milestones will show at the start of a working day, whereas Finish milestones will show at the end of the working day, e.g. if a task is completed on Friday afternoon, a Start Milestone will appear on Monday morning. A Finish Milestone will appear at the end of Friday afternoon. By default you will create a Start milestone. (This is set in the bar chart default settings)

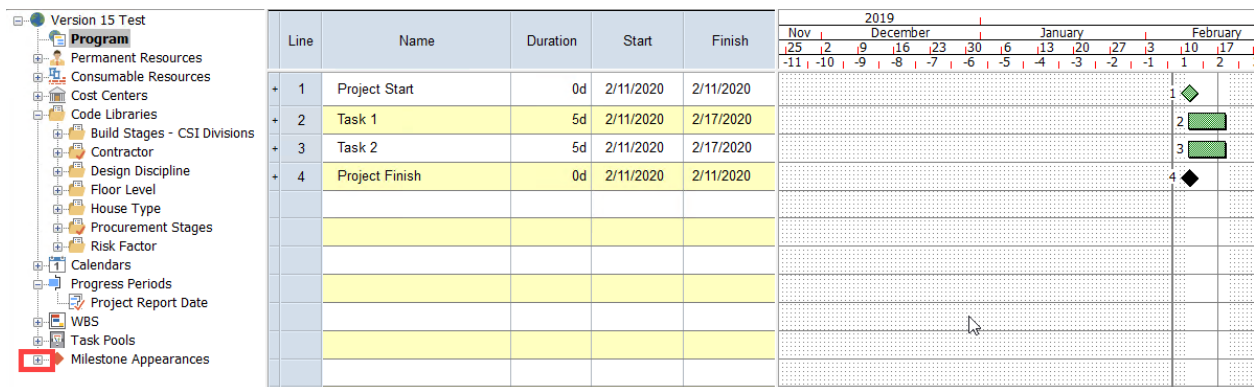
To change a Milestone into a Finish Milestone:

1. Right-click on the Milestone. Select **Make Into > Finish Milestone**.

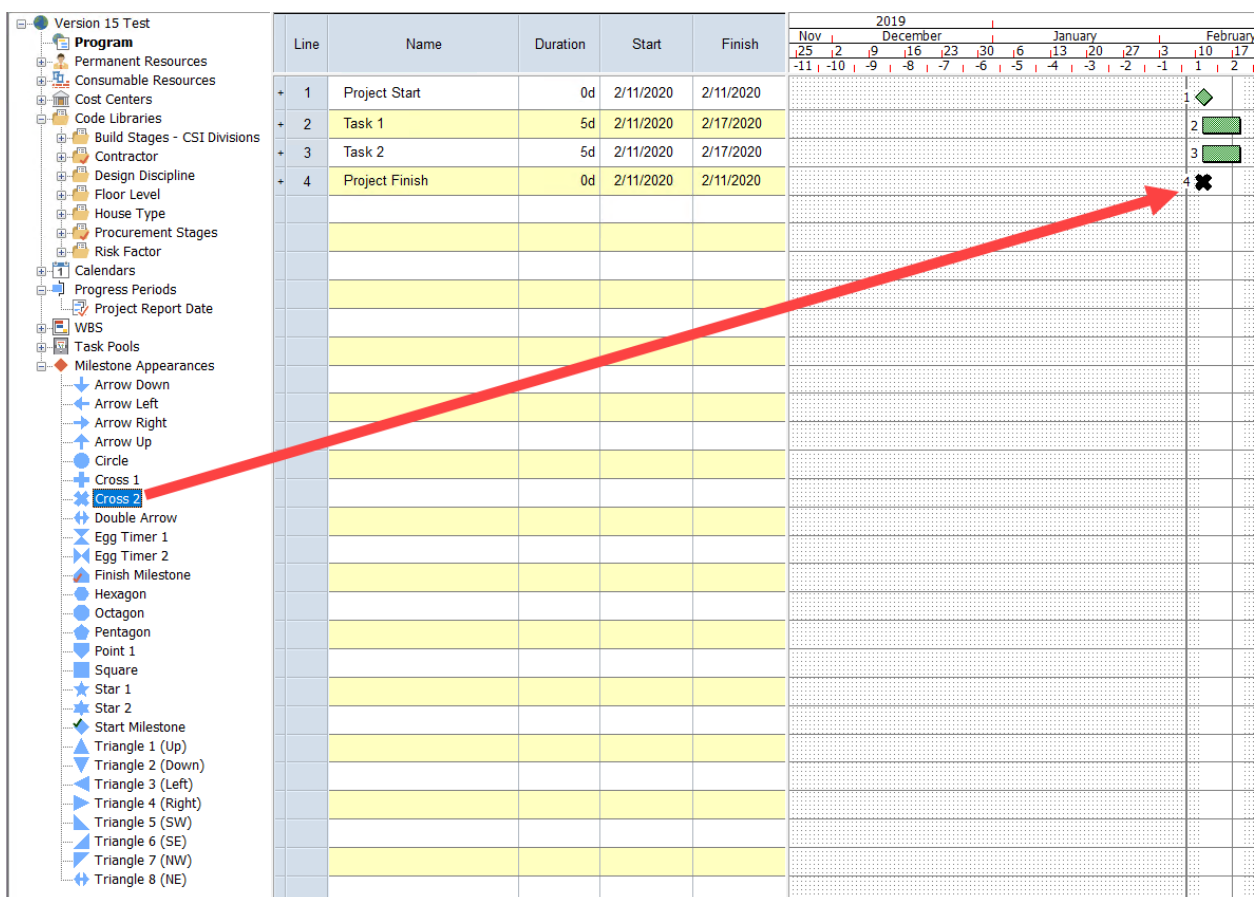


To change a Milestones Appearance:

1. Open the Project View, select the + sign next to Milestone Appearances.



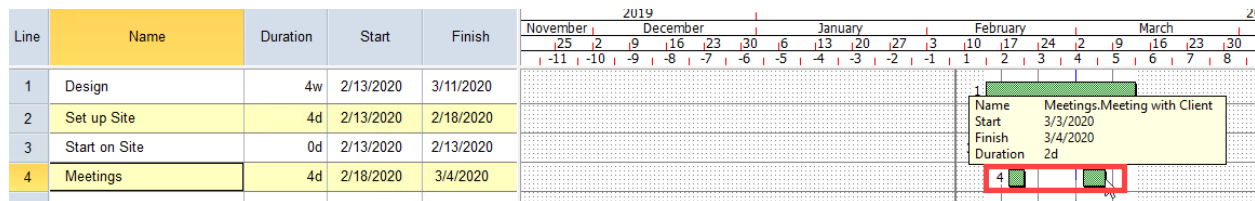
2. Click the Milestone appearance that will be applied and drag it to the milestone in the Bar Chart.



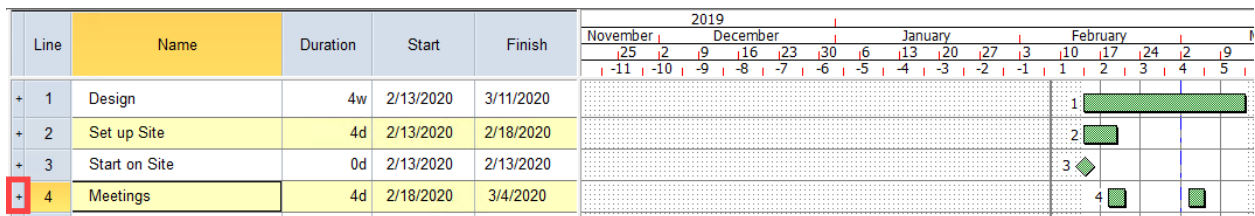
8.4.6- Task-Per-Line Mode. In Elecosoft Powerproject it is possible to display more than one task on a bar. This is useful if you have several tasks of the same type or you have a process made up of a number of single tasks. Elecosoft Powerproject can separate tasks that exist on the same line by dropping them down onto separate lines. This is achievable by using Task-per-line mode.

To Create Multiple Tasks on the Same Line:

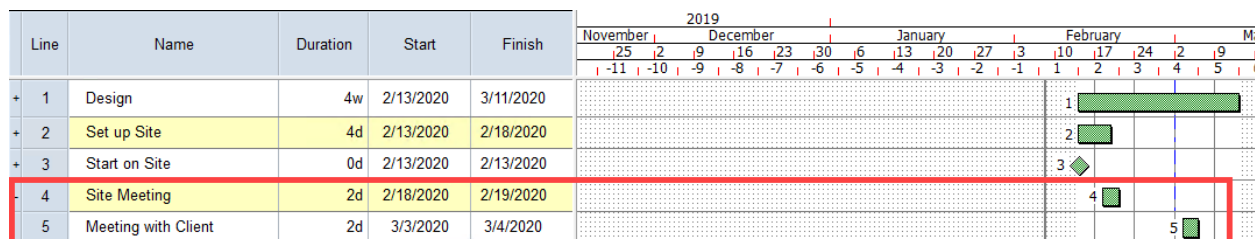
1. Using the cross hair cursor draw more than one task onto the same line in the Bar chart.



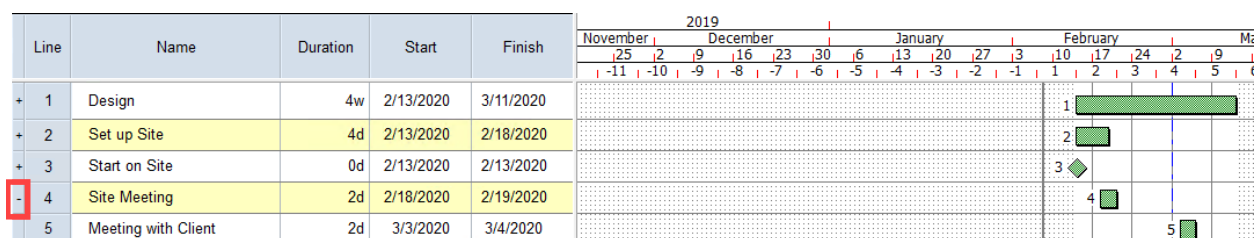
2. You can now drop these tasks down onto separate lines by clicking the + *symbol* to the left of the line number you have drawn them on.



The tasks are now on separate lines, and can be renamed. Renaming the tasks while broken down will not change the name of the rolled up task.





3. Click on the - *symbol* to roll the tasks back up onto one line.



To Roll up Existing Tasks:

There are also buttons which allow you to select a number of already pre-drawn tasks which are on separate lines and roll them up onto one line.

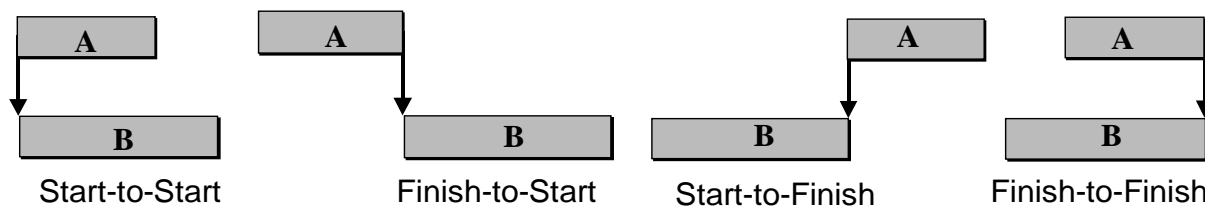
1. Select the line numbers of the tasks you wish to place on one line.
2. On the **Home tab**, click the **Roll up tasks**  icon.
3. The process can be reversed using the **Unroll task**  icon.

8.5- LINKING TASKS

Once you have entered in your tasks you will need to consider the order that you wish to approach those tasks. It is possible at this point to move the tasks into order by selecting the start and finish dates that you wish to use.




However, in order for the software to understand the order that you wish to work through your project, you will need to link your tasks to indicate how they relate to each other.

8.5.1- Link Types. Links can be drawn starting and ending anywhere along the length of a task and you can link tasks in many different ways. The type of link used depends on the nature of the relationship between tasks.

There are 4 types of link:

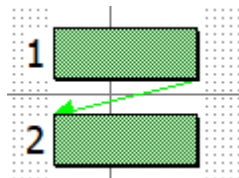
In all cases, the direction of the arrow controls where the next task appears (A controls where B appears).

8.5.2- Drawing Links in the Bar Chart. *Links* are drawn between tasks using the following *cursor shapes*:

	<p><u>End link Cursor:</u></p> <p>This cursor shape indicates that you are linking from / to the <i>end</i> of a task</p>
	<p><u>Start link Cursor:</u></p> <p>This cursor shape indicates that you are linking from / to the <i>start</i> of a task</p>
	<p><u>Mid-link Cursor:</u></p> <p>This cursor shape enables you to link from/to any <i>midpoint</i> along the length of a task. A pop up box will indicate your exact position during the task, e.g. 3 days into a 10 day task</p>

To Draw a Finish to Start Link Between 2 Tasks:

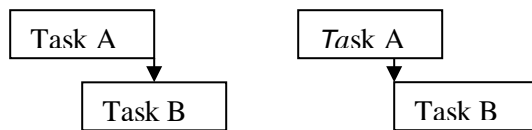
1. Place the mouse at the end and at the top or bottom corner of the first (predecessor) task to display the end link cursor.
2. ***Left-click*** and ***drag*** to draw the link to the start of the corresponding (successor) task.
3. ***Release the mouse*** when the Start Link cursor is displayed.
 - A link is made between the 2 tasks. The link arrow is green. This means that the link is selected.
4. ***Click elsewhere*** on the bar chart to deselect the link.



This now tells Elecosoft Powerproject that task B cannot start before task A is finished.

Sometimes it is necessary to show that tasks will happen simultaneously.

To show a link is drawn starting or ending somewhere along the length of a task is known as a mid-link.

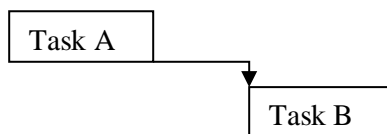


To Draw a Mid-Link:

1. Place the cursor at the start of the predecessor task. Without pressing move the cursor to the right so that the mid-link cursor is displayed.
2. A pop up box will indicate where during the task you are linking from.
3. **Left-click** at the desired position and **drag** to move the pointer to the desired position on the successor task.
4. **Release the mouse** when the corresponding link cursor is displayed.

Drawing Links With Lead/Lag Time

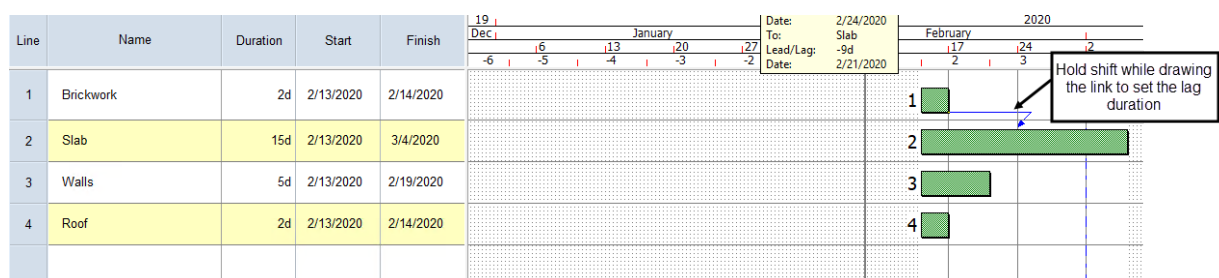
There may be times when you need to insert a period of waiting or delay into your project, e.g. waiting for paint or concrete to cure:



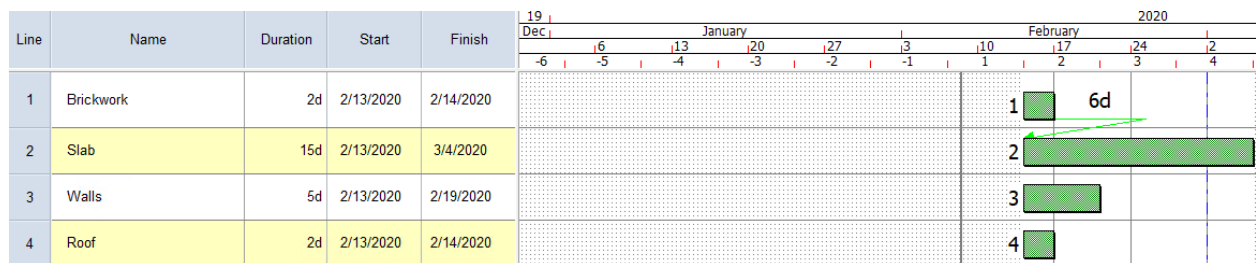
1. Draw a Finish to Start link.
2. **Right-click** on the link and select **Properties**.
3. Click on the **Link Start tab**.
4. Enter the lead/lag time in days, e.g. 2d.

-Or-

4. Move the cursor to the bottom right hand corner of the predecessor task so that the end link icon appears, **Left-click** and **keep the mouse button held down**.
5. Press and hold the **Shift button** on the keyboard and with the mouse button still held down **drag the cursor** horizontally. A pop up box will appear displaying the lead/lag duration.

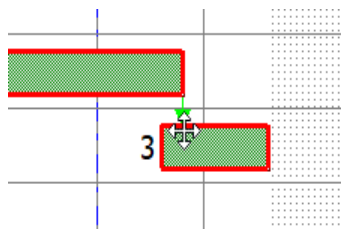


Once you have reached the desired duration release **Shift** but **keep hold of your mouse button** and **drag** it over to where you want to end the link and let go.

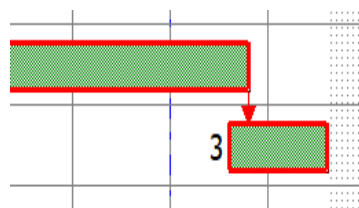


8.5.3- Moving/Editing Links. If you have drawn a link incorrectly, you can simply ‘drag’ the link to the correct position, rather than deleting and redrawing the link.

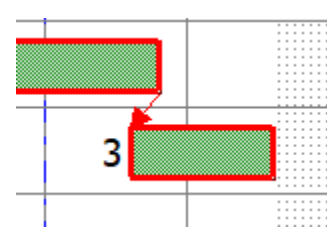
1. Select the link (it will show as green).
2. Hover the cursor over the end of the link you wish the move until a ‘cross’ cursor becomes visible.
3. The link can now be dragged to the correct position.



The link should have been to the start



When the link is selected the Drag/Move Cursor can be displayed



Pull the link to the correct position on the task

Multiple links in a sequence can be highlighted by selecting the first link in the sequence, holding the **SHIFT** key and selecting the last link in the sequence

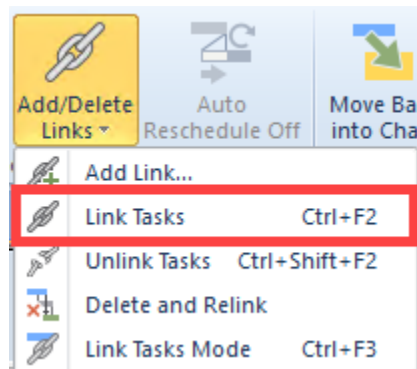
8.5.4- Block Linking. If you have more than 2 tasks to link together e.g. a whole section of work, the Add/Delete Links button can be used.

1. Select the tasks that you want to link.
2. To link tasks that are next to each other on your chart **click on the line number of the first bar. Left-click** and **drag downwards** to select adjacent bars.

-Or-

2. To link tasks that are not next to each other on the chart **hold the ctrl button** on keyboard while **clicking on line number** the task you want to link.

3. Click the **Add/Delete Links** button on the **Home** tab and then **'Link Tasks'**




Finish to Start links are placed between each of the tasks.

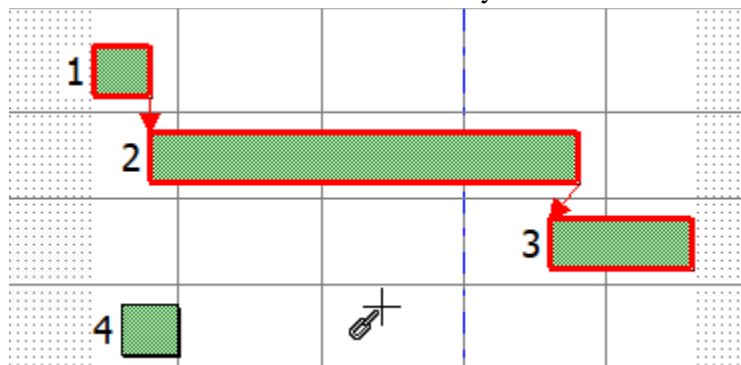
8.5.5- Link Tasks Mode. You can use Link Tasks mode to link tasks automatically as they are created, or as you select them one-by-one in the bar chart. This saves you from having to create links separately by drawing them in the bar chart.

To Link Tasks Automatically as They Are Drawn in the Bar Chart:

1. On the **Home tab**, in the **Schedule** group, click the **Add/Delete Links** dropdown and select **Link Tasks Mode**.

The cursor changes shape to to  indicate that you are now in Link Tasks mode.

2. **Draw a task in the bar chart.** Note that if a task was selected when you entered Link Tasks mode, a link is drawn automatically from the selected task to the task that you have just drawn.
3. **Draw another task in the bar chart.** As soon as you have finished drawing the task, a Finish-to-Start link is drawn automatically from the first task to the second task:

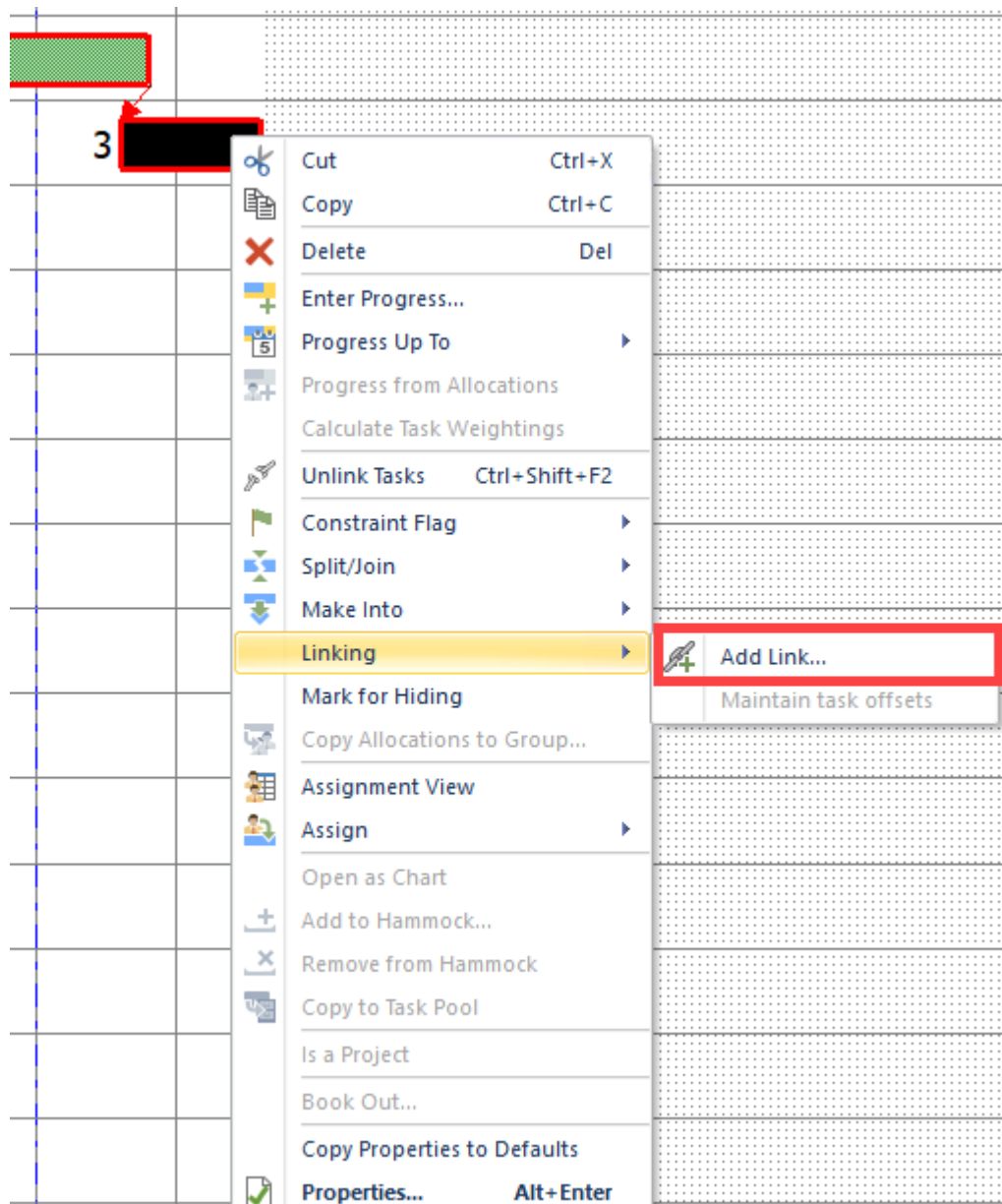


4. As you draw further tasks, each new task is linked to the previous task automatically as long as you remain in Link Tasks mode.

To exit Link Tasks mode, on the **Home tab**, in the **Schedule** group, click the **Add/Delete Links** dropdown and select **Link Tasks Mode** again, or press **ESC**.

8.5.6- Linking Tasks Without Drawing on the Bar Chart. As well as drawing links directly onto the Bar Chart using the mouse, you can also link tasks by selecting one or more tasks in the Bar Chart and specifying the task you want to link to by name. Creating links in this way is an easy way to link tasks which are not close to each other in the Bar Chart.

1. **Right-click** on a task or tasks on the Bar Chart.
2. Select Linking > Add Link.



The **Link From/To** dialogue box is displayed as shown on the following page:

Link From/To

Search

- Link -

☒ Link from selected ☐ Link to selected

- Selected Items -

Walls

Link the selected items to items meeting the following criteria:

Name

Unique task ID

Link type

Lag

More >> Link Close

3. Indicate whether you are linking from or to the selected task(s).
4. Identify the task you are linking to.
5. Select the type of link.
6. Select Link and Close.

8.5.7- The Wild Card. By placing an asterisk (SHIFT + '8' on your keyboard) after the first few letters or words of the task to which you are linking. This acts as a wild card and it will search for all tasks that begin with those letters or words.

Link the selected items to items meeting the following criteria:

Name:

Unique task ID:

Link type:

Lag:

More >> Link Close

If it finds more than one task beginning with these letters or words it will give you the choice of which task you want to link to.

8.5.8- Chasing Logic

1. **Right click** on an activity
2. Select **Properties**.
3. Navigate to and select **Links tab**.
4. See the activities that are connected to the activity that was selected.
5. Right click and select **Go To Other End** to see the other activities.

Bar and Task Properties for Prepare Initial Cost Estimate

Bar Task Allocations Links Relations

U...	Path name	Predecessor name	% c...	Ty...	L...	C...	D...	Start ...	Finis...	To...
10	\District 2 Bri...	Start Project	0.00	FS	0...			7/7/...	7/7/...	0...

Add Link... Unlink Tasks Change... Properties...

U...	Path name	Successor name	% c...	Ty...	L...	C...	D...	Start ...	Finis...	To...
80	\District 2 Bri...	Design Field View Approved	0.00	FS	0...			7/13...	5/11...	67...

Go To Other End
Change...
Unlink Tasks
Properties...

Add Link... Unlink Tasks Change... Properties...


Variance... Less << Close

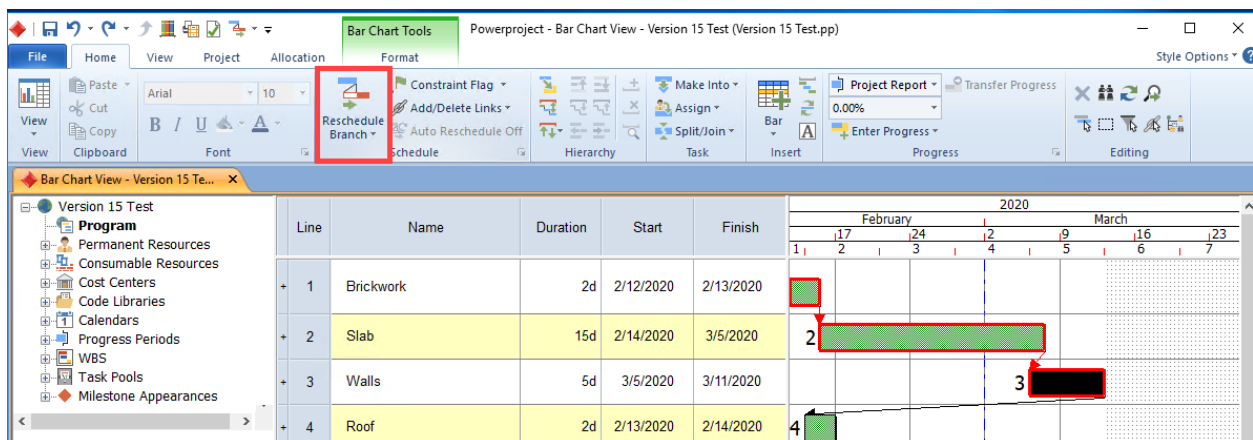
8.6- RESCHEDULE

When you have linked your tasks you can reschedule the project. The reschedule performs a series of actions:

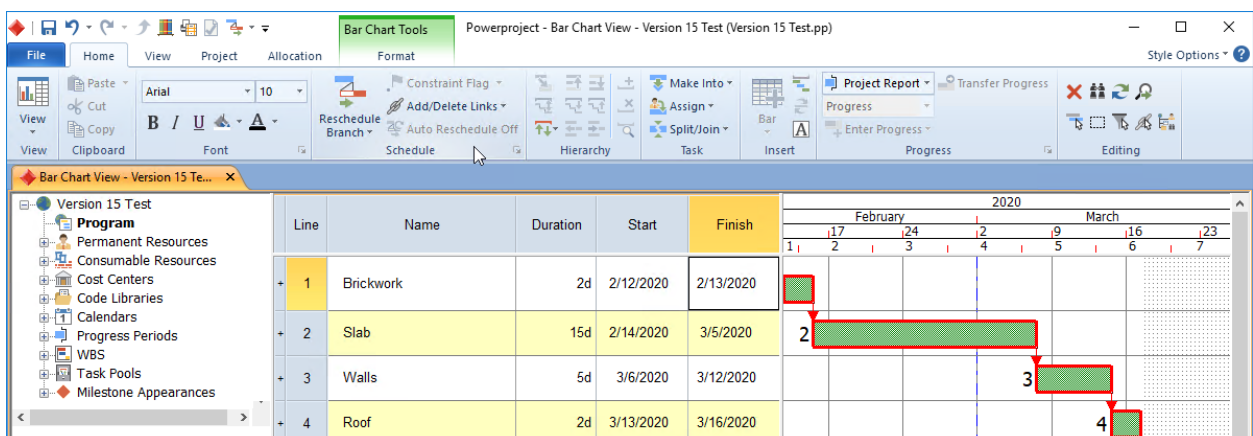
- Places the start of the first task at the beginning of the project
- Calculates the optimum start and end dates of all tasks according to the logical links applied
- Calculates whether a task has any float attached
- Shows whether a task is Critical Analysis)
- Identifies any constraints which have been exceeded
- Calculates the earliest project end date

8.6.1- Rescheduling the Project

1. On the *Home* tab, click the *Reschedule*  icon.

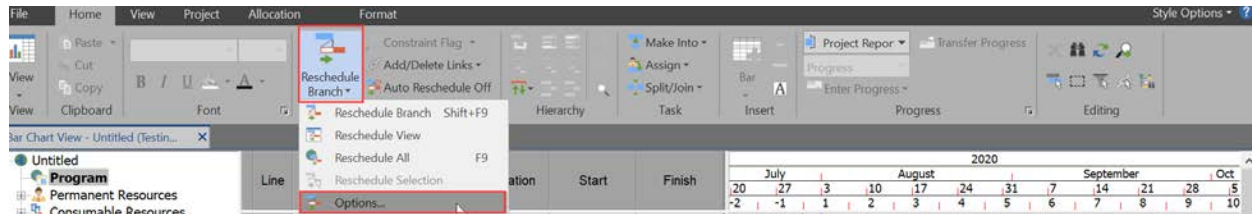


Once the project is rescheduled, the critical path of the project is shown outlined in red

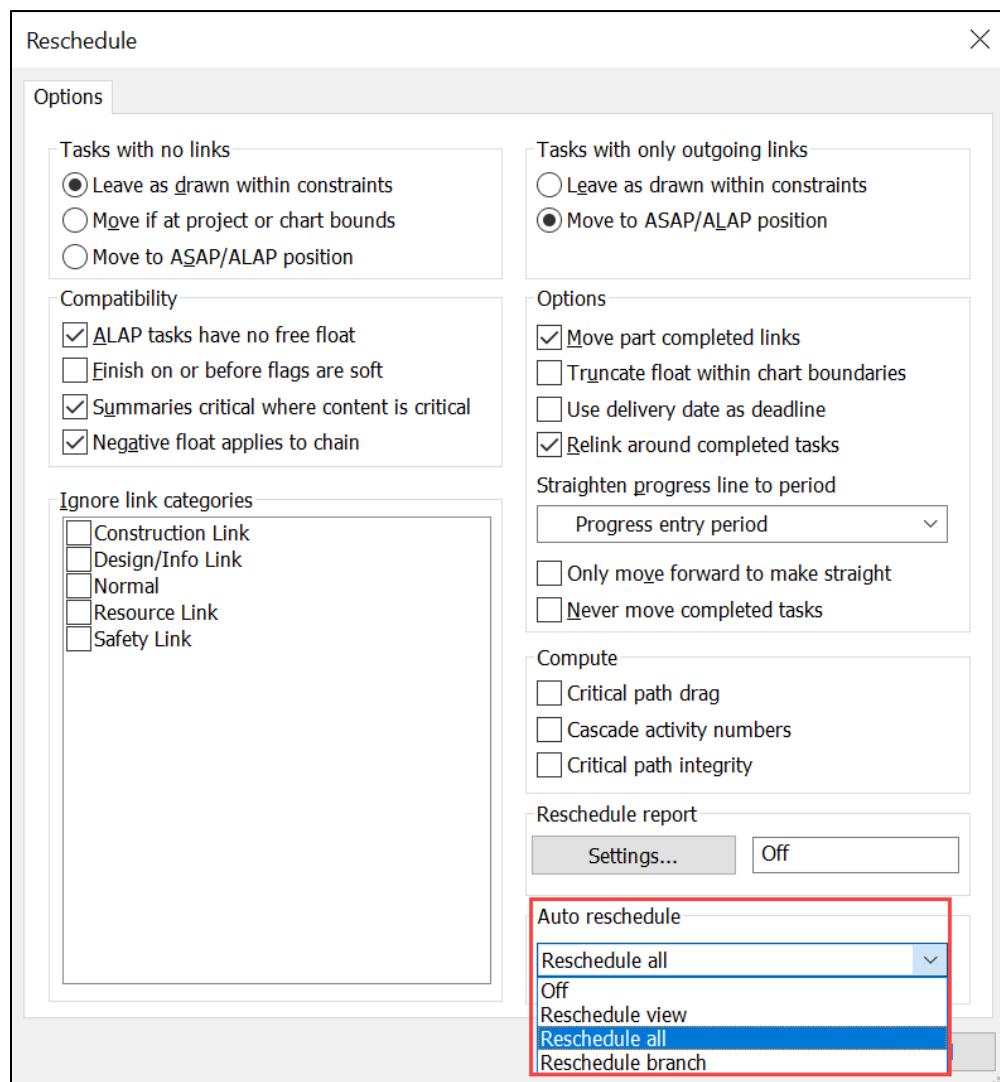


8.6.1.1- Reschedule All Every time the schedule is adjusted the project will automatically reschedule

1. In the **Home** Tab, click the **Reschedule Branch** icon.
2. Select **Options**.



3. Under the **Auto Reschedule** dropdown select **Reschedule All**.



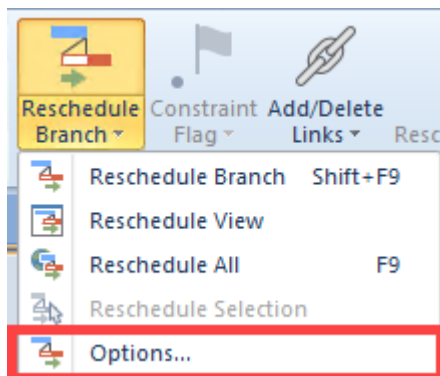
4. Click **Ok**

8.6.2- Viewing the Schedule Log. A log can be generated once the project has been rescheduled. A log will give you such information as:

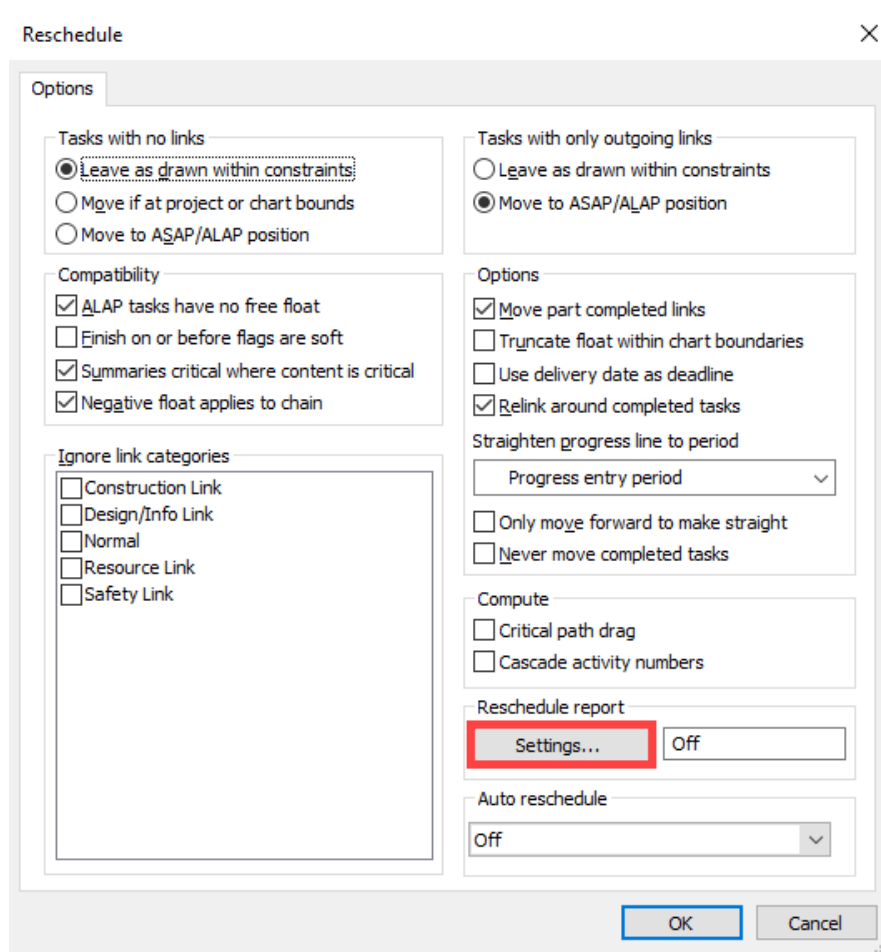
- **Environment** – Shows the project name, short name, project file, reschedule date, user name, and reschedule number.
- **Statistics** – Gives the number of tasks rescheduled, the number of milestones reschedules, number of logic links, number of tasks/milestones not started, number of tasks/milestones in progress, number of tasks/milestones completed, number of tasks/milestones changed, highest logical precedence, and elapsed processing time (seconds).
- **Scope and options** – Shows scope, tasks with no links, tasks with outgoing only links, As Late As Possible (ALAP) tasks have free float, negative float held at end of chain, finish in, on or before flags are soft, summaries critical where content is, ignore link categories, move part completed links, truncate float within chart boundaries, relink around completed tasks, straighten progress line to period, and only move forward to make straight.
- **Reschedule dates** – Shows the imposed start, imposed finish, progress date/data date, prevailing contract date for completion, calculated earliest actual start, calculated early start, and calculated latest early finish.
- **Errors** – Shows tasks in a link loop, tasks finishing after their deadlines, tasks with conflicting constraints, and completely consumed buffer tasks.
- **Open ended** – Shows the number of tasks/milestones with only incoming, the number of tasks/milestones with only outgoing, the number of tasks/milestones with both, and the number of tasks/milestones with no links.
- **Tasks with constraints** – Shows tasks with constraint flags with gaps and tasks where start on new day was applied.
- **Deadlines** – Shows deadlines with gaps.
- **Key milestones** – Shows milestones tasks showing current and computed start dates.
- **Buffer tasks** – Shows buffer tasks with current and original durations.
- **Interruptible tasks** – Shows interruptible tasks with current and original durations.
- **Out of sequence progress** – Shows incomplete tasks which logically precede completed.
- **Unsatisfied constraints** – Shows tasks with unsatisfied logic and tasks with unsatisfied start flags.
- **Critical tasks** – Lists all the critical tasks.
- **Longest path** – Lists the longest path.

To Run and View the Schedule Log:

1. On the Home Tab, Select the arrow **Reschedule Branch > Options**.

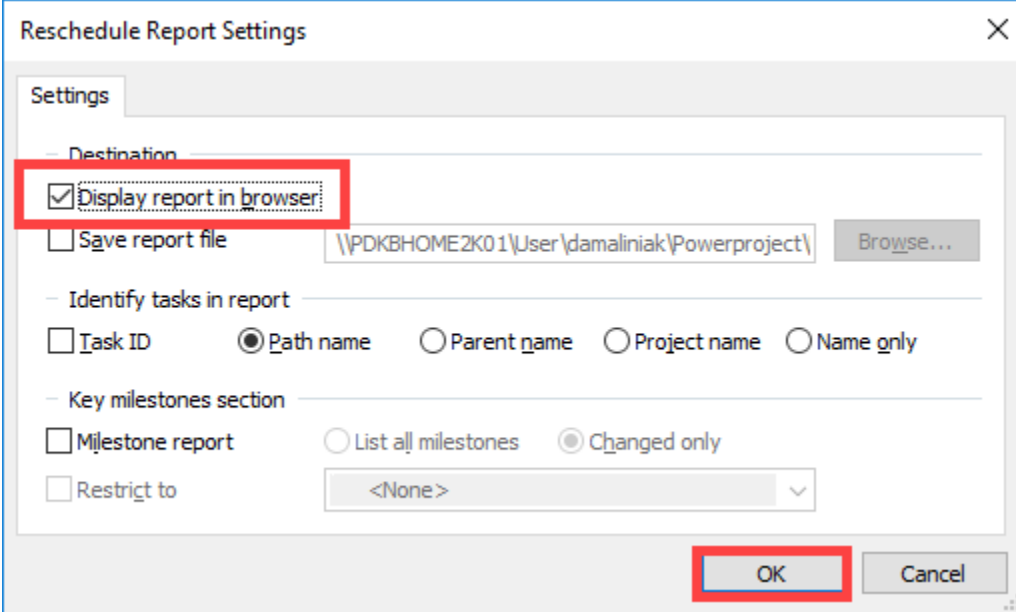


2. The reschedule Options Dialog box will appear. In the Options window, select **Settings**.




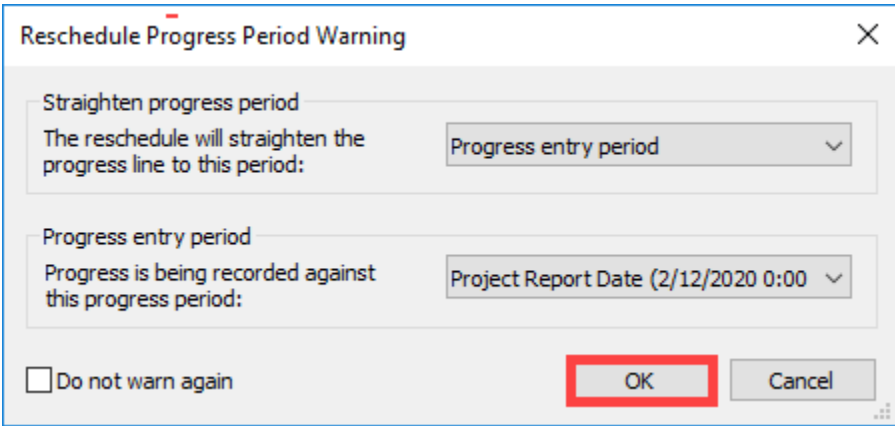
The Reschedule Report Settings Dialog Box will appear.

3. Select either **Display report in browser** or select **Save report file** and browse to the location that you want the log to be saved.



The image shows the 'Reschedule Report Settings' dialog box. It has a 'Settings' tab. Under the 'Destination' section, the 'Display report in browser' checkbox is checked and highlighted with a red rectangle. Below it, the 'Save report file' checkbox is unchecked, and a file path is shown in a text box: '\\PDKBHOME2K01\User\damaliniak\Powerproject\'. To the right of the text box is a 'Browse...' button. Under the 'Identify tasks in report' section, there are five radio buttons: 'Task ID' (unchecked), 'Path name' (selected), 'Parent name' (unchecked), 'Project name' (unchecked), and 'Name only' (unchecked). Under the 'Key milestones section' section, there are two options: 'Milestone report' (unchecked) and 'Restrict to' (unchecked). The 'Milestone report' section has two radio buttons: 'List all milestones' (unchecked) and 'Changed only' (selected). The 'Restrict to' section has a dropdown menu showing '<None>'. At the bottom right, there are 'OK' and 'Cancel' buttons. The 'OK' button is highlighted with a red rectangle.

4. Select **OK**.
5. Reschedule the project, by selecting **Reschedule icon**  on the **Home Tab**.
6. A Reschedule Report Warning Dialog Box will appear. Select **OK**.



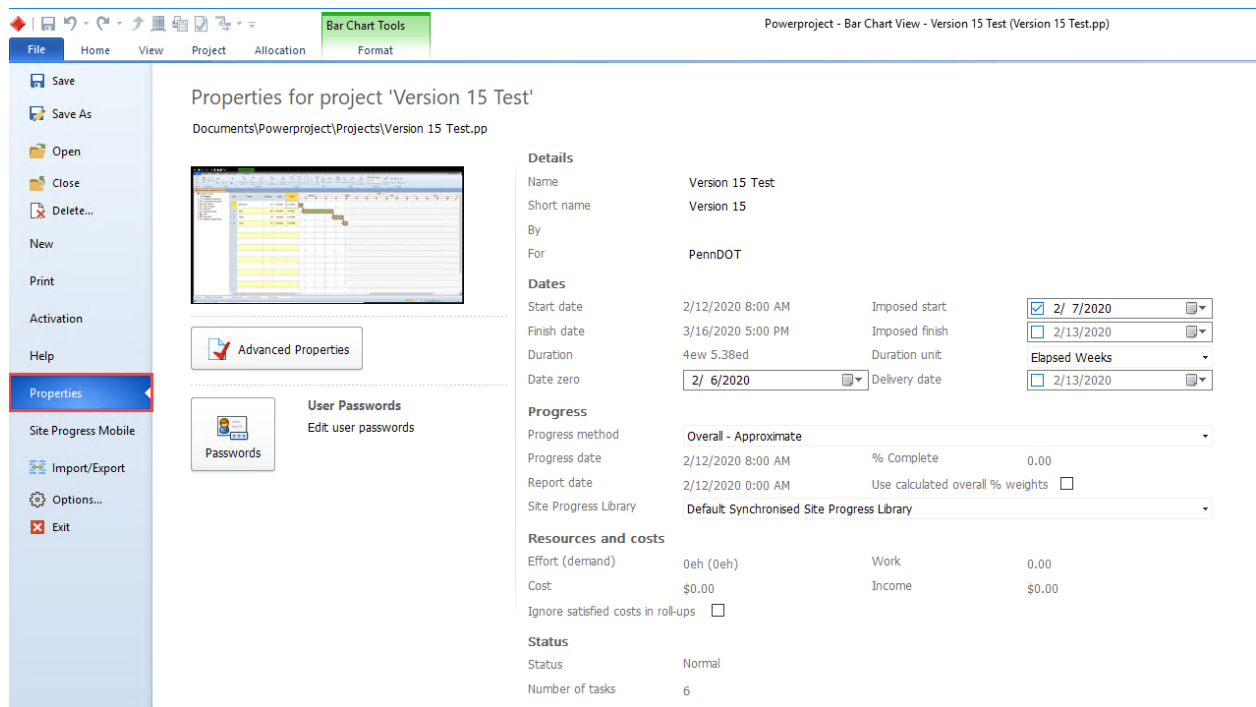
The image shows the 'Reschedule Progress Period Warning' dialog box. It has a title bar with a close button. The dialog box contains two sections. The first section is 'Straighten progress period' and contains the text 'The reschedule will straighten the progress line to this period:' followed by a dropdown menu showing 'Progress entry period'. The second section is 'Progress entry period' and contains the text 'Progress is being recorded against this progress period:' followed by a dropdown menu showing 'Project Report Date (2/12/2020 0:00)'. At the bottom left, there is a checkbox labeled 'Do not warn again' which is unchecked. At the bottom right, there are 'OK' and 'Cancel' buttons. The 'OK' button is highlighted with a red rectangle.

The report will automatically generate if Display report in browser was selected. If Save Report File was selected, the report will need to be opened from the file location that was specified.

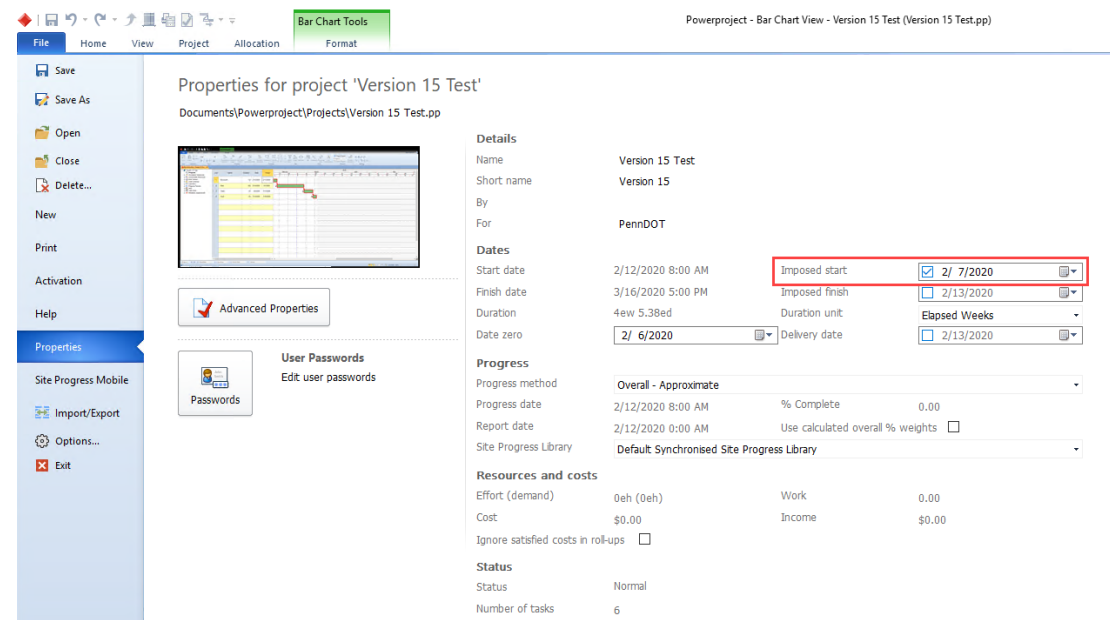
8.6.3- Changing the Project Start Date. The start date of the project can be changed at any time. This will control when the first task in your project will reschedule to.

To Change the Start Date:

1. In the **File** tab, select **Properties**.



2. Change the **Imposed Start** to the new project start date.



3. Go back to the **Home** tab.
4. **Reschedule** the project to see the new start date take effect.

8.7- CONSTRAINTS

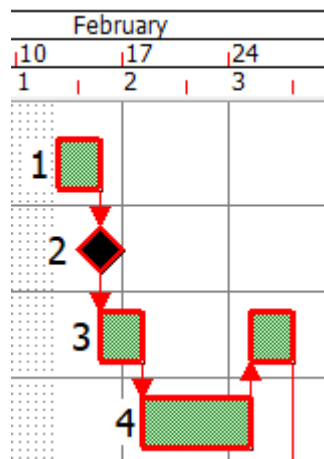
Once the tasks have been linked and rescheduled, your project will be laid on the most logical order. What we have yet to take into consideration are any fixed dates that will need to be adhered to, such as a specific let date or a contract completion date.

To show fixed dates in your project, and to show the impact they have on the rest of the tasks in your project you will need to use Constraints on those tasks.

8.7.1- Adding a Constraint

To Add a Constraint to a Task:

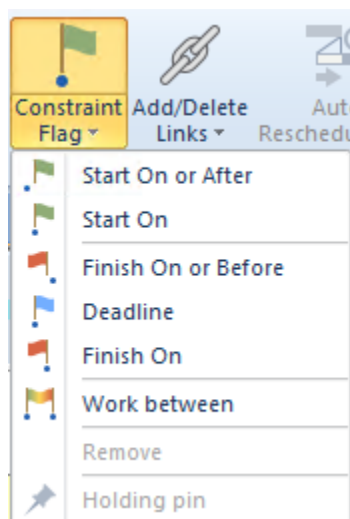
1. **Click** and **drag** the task to the required position.



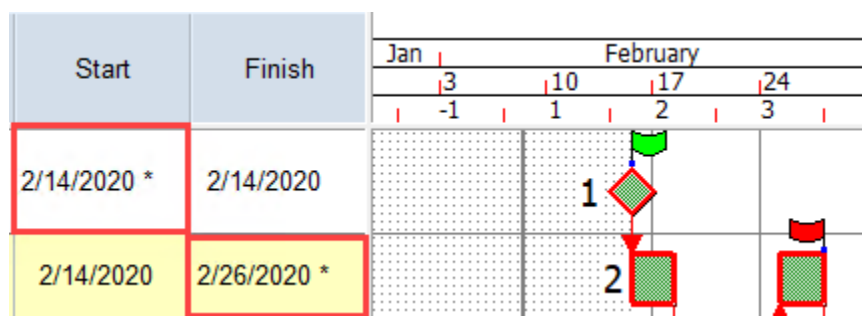
2. Select the task you wish to constrain.
3. On the **Home tab** click on the drop down arrow under the **Constraint Flag** icon.



4. Select the constraint you wish to impose on the task.



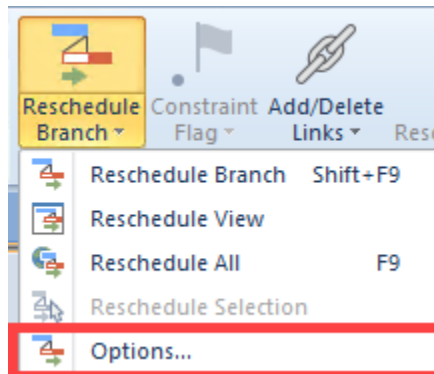
Once the constraint has been added to the task, an asterisk will appear in either the start or finish column.



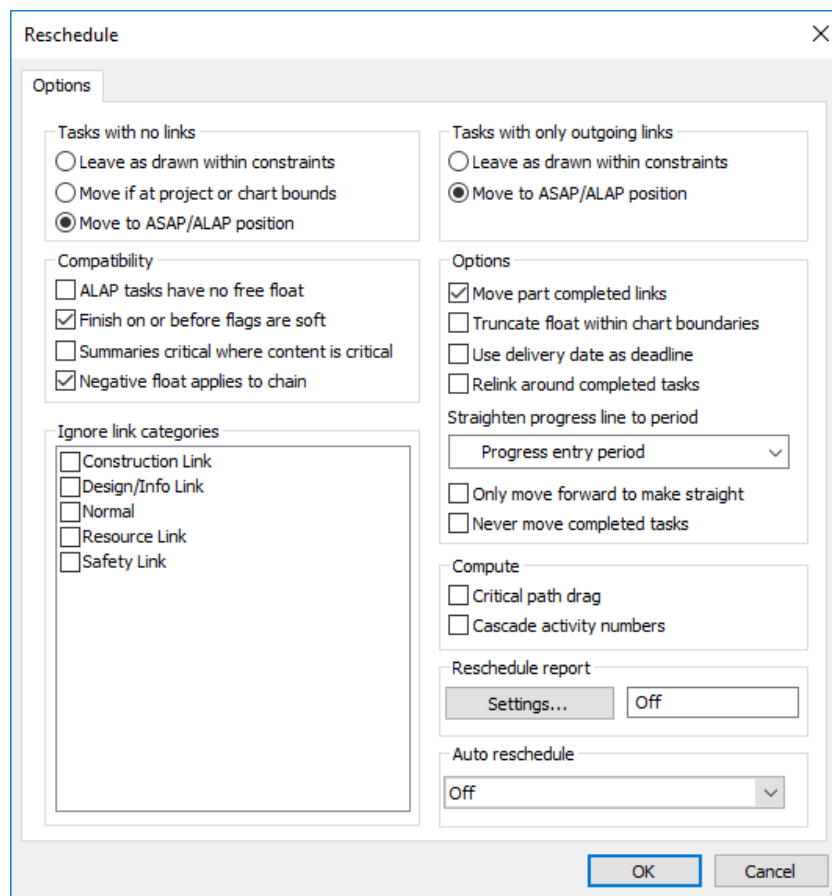
Note: On all design schedules, a 'Finish On' constraint should be set for the activity 'Open Bids'. In order for early and late dates to show properly in the schedule along with total float rippling through the critical path, certain options have to set up with the Reschedule Branch Options Menu.

To Set Constraint and Float Options When Rescheduling:

1. On the **Home** Tab, Select the arrow **Reschedule Branch > Options**.



- The reschedule Options Dialog box will appear.
2. In the Options window, it is recommended to have the following options selected:

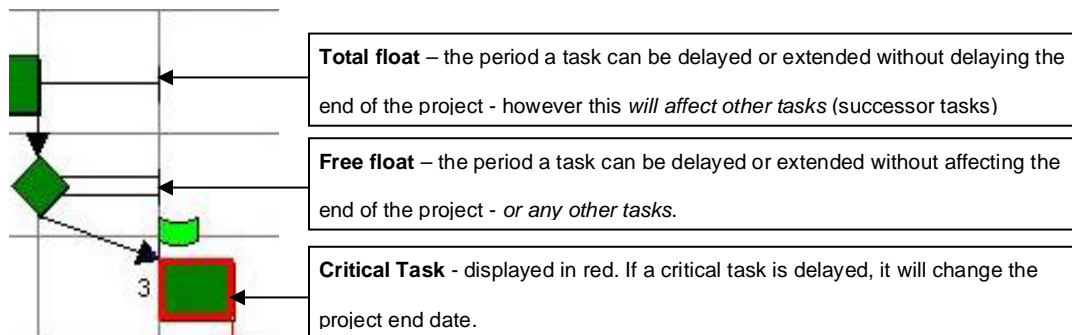


3. Click **OK**.
4. Reschedule the project, by selecting **Reschedule icon**  on the **Home Tab**.

8.7.2- Types of Constraint

	<p><u>Start on or after</u></p> <p>A soft constraint which will not allow the task to start before the constraint date, however it could move to a later date</p>
	<p><u>Start on</u></p> <p>A hard constraint which will fix the start of the task to a constraint date</p>
	<p><u>Finish on or before</u></p> <p>A soft constraint that will not allow the task to end after the constraint date, however it could finish earlier</p>
	<p><u>Deadline</u></p> <p>A soft constraint which works as a warning but will allow the project to move beyond the target deadline</p>
	<p><u>Finish on</u></p> <p>A hard constraint that will fix the end date of the task to the constraint date</p>
	<p><u>Work between</u></p> <p>A soft constraint that will allow either the start or the end date to be constrained between</p>
	<p><u>Holding pin</u></p> <p>A Constraint which will move with the task if the task is manually moved</p>

8.7.3- Reschedule Results (Float). Rescheduling a project with constraints will affect the appearance of tasks & may result in some items showing Float.



8.8- MODIFYING THE SCHEDULE

Once a schedule is created using the PDSMASTER template, it will need to be modified to conform to the project. Any task that pertains to the project should be tracked in the schedule. Sometimes this will necessitate the use of duplicate activities. For example, if a project has multiple structures, each individual structure should be tracked separately in the schedule. If the task is not listed in the PDSMASTER, a nonstandard PennDOT task can be created.

Any task that is added to a schedule that is not part of the PDSMASTER template is considered a non-standard PennDOT task. The PDSSTANDARD code field is used to screen non-standard activities out of the Department's historical data. A "1" is assigned to all standard activities – those found in the PDSMASTER template. Any task that is added outside of these standard activities should be assigned a "2."

8.8.1- Recurring Activities. For some projects, there may be a need to track the same task or group of activities more than once. As with other activities, the activities should be pulled from the task pool following the standard PennDOT templates, so that all task descriptions and code files are left intact.

For example, in design, the standard description for structures is, "Structure (S-XXXXX)." For a simple bridge replacement project this will be the only task needed, because the bridge is the only structure being tracked. But suppose a new directional interchange is to be built, entailing several structures. Since all of these must be tracked individually, one would copy and paste the standard structures task, then modify the task name accordingly, resulting in a list:

- Structure (S-54701)
- Structure (S-54703)
- Structure (S-54704)
- Structure (S-54705)
- Structure (S-54709)

8.8.2- Updating Task Detail. As a project progresses it may be necessary to provide additional detail or address activities that may not be required due to a change in scope.

8.8.2.1- Adding Task Detail. When a change in project scope occurs there may be the necessity to add work detail to the existing schedule. Section 8.8 – Modifying the Schedule and Section 8.8.1 – Recurring Activities provides the method for adding detail (activities) to a schedule.

When activities are added to a project, the new activities need to be tied into the project and reschedule branch performed to verify that the original target date is still being met. In the event that the project duration is extended beyond the target date, project logic and task durations may need to be changed. Any change made should have the concurrence of the project team. Upon concurrence, another baseline should be created.

8.8.2.2- Task Closeout. During the life of a project, work that is initially identified as being required may be determined that it is no longer needed by way of a scope change or study outcome. To address this situation, activities associated with the initial scope of work should not be deleted from the schedule but should be closed out.

If the project is in progress, the task that is no longer needed to be tracked must be recorded as complete by using the following procedure:

1. Record the date that someone determined the task is not needed as the Actual Start and Actual Finish dates.
2. Set the Progress Type as 'Complete' and Progress Value as '100%'.
3. Do not change the plan duration of a task. Elecosoft Powerproject will calculate the duration based on the task dates entered for the task.
4. Record the reason why the task is not needed in the Task Notes. Enter an explanation of why the task is not needed and by whose direction.

For projects that do not have a baseline set, the task may be deleted and its predecessors and successors re-linked as needed.

The deletion of activities should only occur during the project planning phase. After a project is progressed, existing activities that are affected by a change in scope should be closed out.

Progress out of sequence occurs when a task is started or completed when its assigned relationship type is not honored, e.g., a finish to start relationship linking two activities is not being followed. Progress out of sequence must be fixed by reviewing task logic and making necessary task relationship edits.

8.9- STRUCTURING THE PROJECT

Project management is not only about defining tasks and setting up their dependencies, it is also about organizing the different parts of a project into a coordinated whole.

Elecosoft Powerproject lets you organize your project using Summary Tasks to group related tasks together and Expand Tasks to break down the project into greater detail. This section explains how you can use charts and summary bars to structure your project in a logical format.

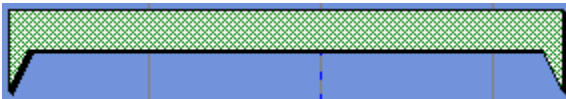
8.9.1- Creating Summary Tasks. Summary tasks are useful for grouping related activities together in sequential order. A summary task takes its position and duration from the position and duration of the tasks within the summary group. It provides ‘rolled up’ information relating to all tasks within the summary and gives the user control over displaying each & every task in the project or displaying only the summarized information.

To Summarize Tasks in the Project:

1. Highlight the bars you wish to group together by clicking and dragging on the line numbers within the table.



2. On the **Home tab** click the **Summarize** icon.
 - A summary bar appears on the **Bar chart**.



3. Enter a name for the summary bar in the table e.g. Sub Substructure.

You can now choose to hide the tasks that are part of the summary group from the chart so that only the summary bar & ‘rolled up’ details are displayed.

8.9.2- Opening and Closing Summary Tasks:

1. On the **Bar Chart**, place the cursor over the summary task so that the sweet wrapper cursor is displayed and **Double-click**.
 - The individual tasks are hidden from view.





Line	Name	Duration	Start	Finish	
1	Finalize DFV Submission	101d	2/12/2020	7/2/2020	


2. **Double-click** again to display the tasks.

Line	Name	Duration	Start	Finish	
1	Finalize DFV Submission	101d	2/12/2020	7/2/2020	
2	Prepare DFV Report	30d	2/12/2020	3/24/2020	
3	Review DFV (District)	15d	3/25/2020	4/14/2020	
4	Review DFV (BOPD)	15d	4/15/2020	5/5/2020	
5	Review DFV (FHWA)	20d	5/6/2020	6/3/2020	
6	Review DFV (PA Turnpike)	20d	6/4/2020	7/1/2020	
7	Hold DFV Meeting	1d	7/2/2020	7/2/2020	

8.9.3- Adding & Removing tasks into Summary Groups

1. Select the task(s) by clicking on the line number under the “Line” column.
2. On the **Home tab** click  on the **Indent icon**.
 - Tasks will be added to the summary that is above.
3. To remove tasks from a summary group,  use the **Outdent icon**.

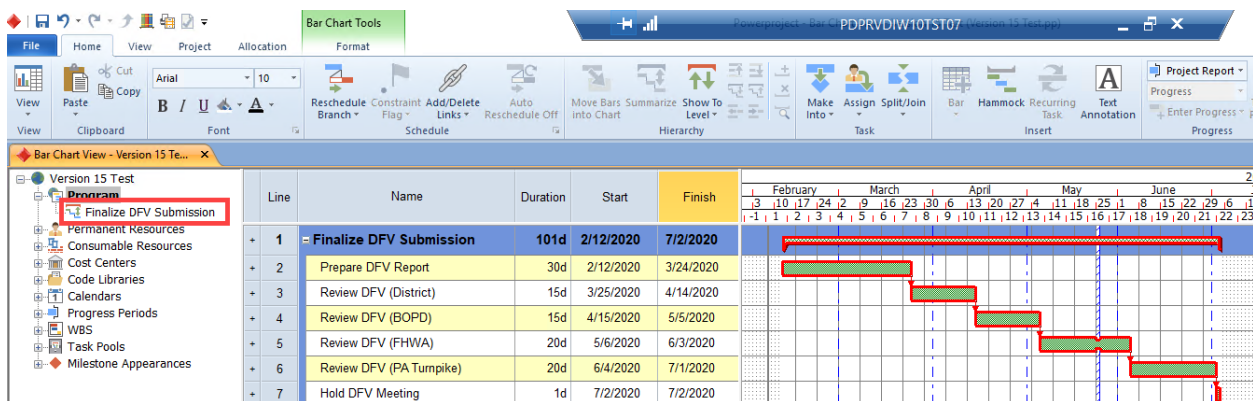
8.9.4- Removing Summary Tasks

1. Select **all of the contents** of the summary group.
2. Click the **Outdent icon**. 
 - If there are no contents in the summary group the summary task no longer exists.

8.9.5- Using the Project View to Navigate the Project. The structure of our project is clearly displayed in the Project View.

1. Click on the ‘+’ **sign** to open the contents of headings. **Program** is usually the top level.
2. Select any of the **summary groups** to display only that section of work on the Bar Chart.

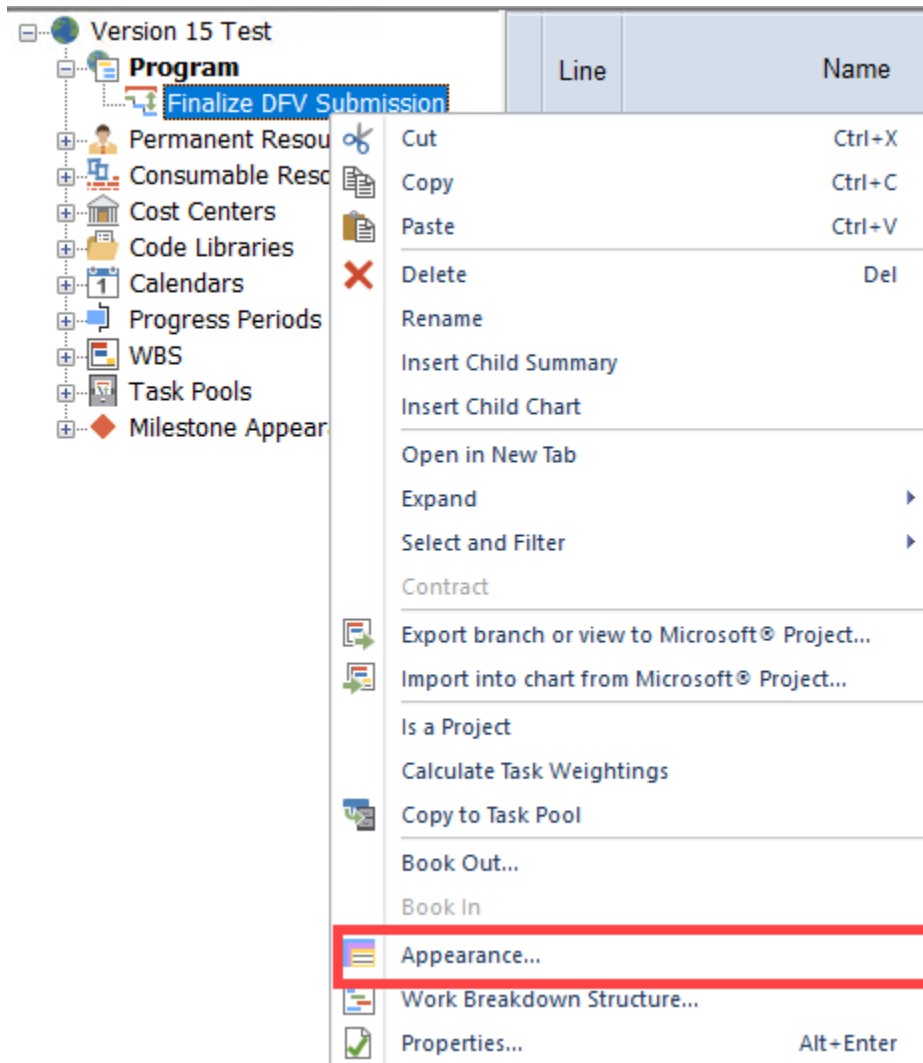
In the example below only Design Field View has been selected therefore you are only shown the contents of the Design Field View summary bar:



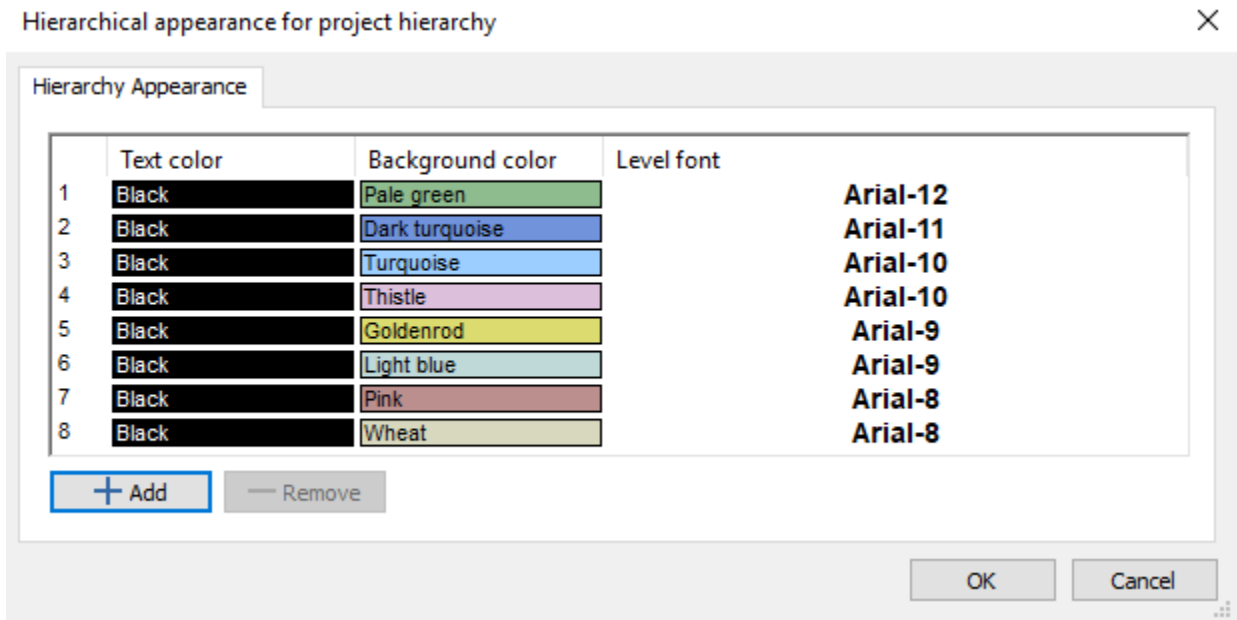
8.9.6- Summary Bar Level Formatting. Once you have summarized your project, the spreadsheet cell color and font, as well as the background color for that row on the bar chart, can now be set for a Summary/Expanded task in the Project View. The coloring is set for each level of the project, so more than one summary may have the same color.

To Alter the Appearance of the Summary Bar/Expanded Task:

1. In the Project view, **Right-click** on any *Summary bar* and select *Appearance*.



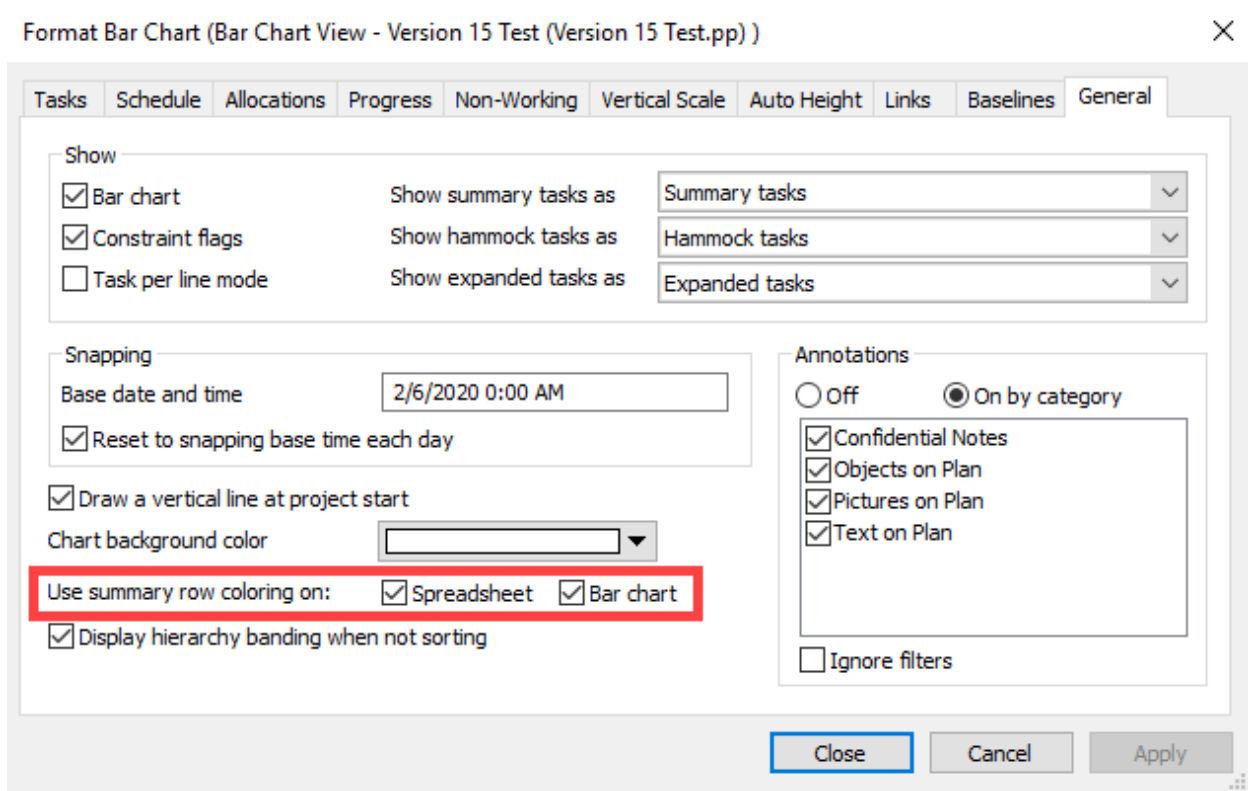
2. Choose the *text color*, *background color*, and *font style* and *size* of your choice.



Once the level coloring is set, it will need to be turned on in the Bar chart.

To Turn the Summary Row Color On:

1. On the **Format tab** click the **Format Bar Chart** command.
2. On the **General tab** tick **Bar chart** and click **Close**.

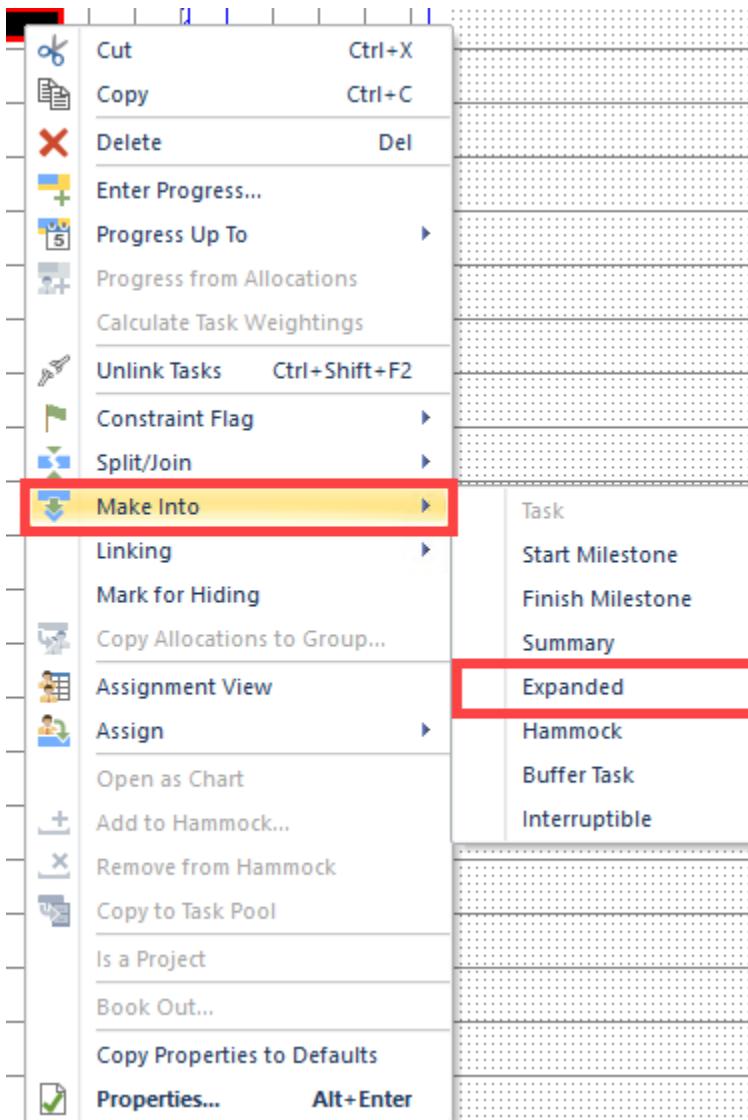


8.9.7- Creating Expanded Tasks. Expanded tasks allow you to organize your plan as a hierarchical tree of charts, gradually breaking the project down further and further into more and more detail. These new Expanded Tasks are clearly displayed in the Project View.

Any existing task can be converted into an expanded task or a new task can be created and made into an expanded task.

To Make a Task into an Expanded Task:

1. **Create a task** by entering a task name and duration into the table.
2. In the bar chart, place the mouse over the task and **Right-click** on it.
3. Select **Make into > Expanded**.



The selected task becomes a new chart in the project hierarchy.

To Access the New Chart:


1. **Left-click** to select the chart from the Project View.

-Or-

1. **Double-click** on the task on the bar chart.

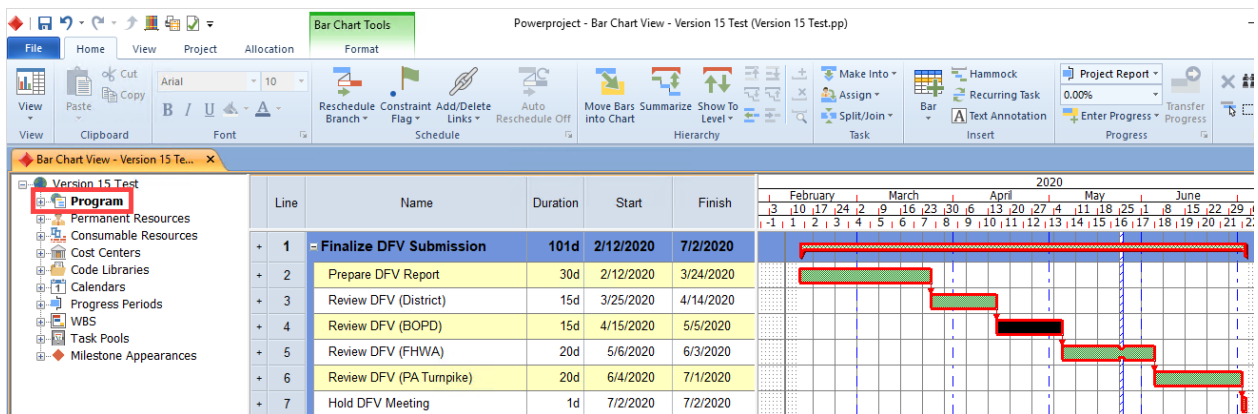
Create tasks and plan your work in this new chart as normal.

To Return to the 'Program' of the Project:

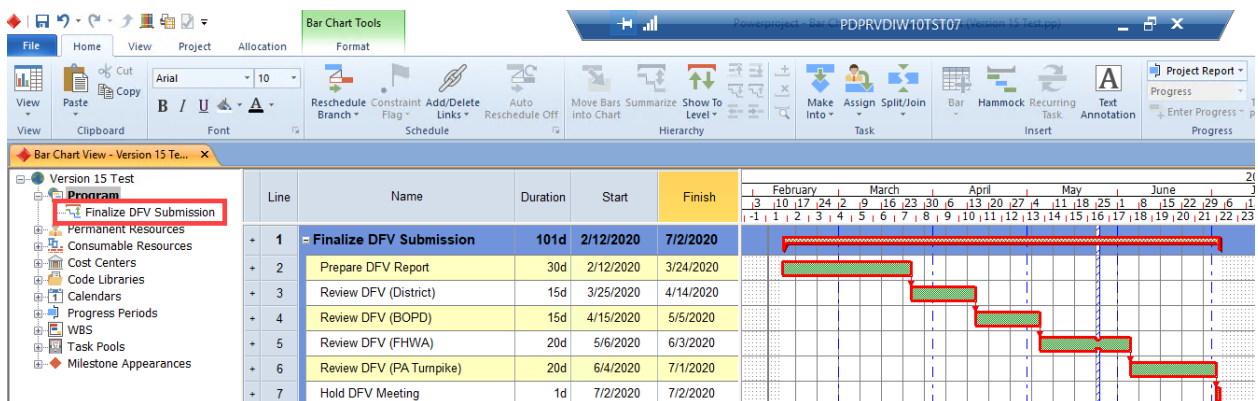
1. Select **Program** from the project view or select **Up one level**  from the Quick Access Toolbar at the top your screen
 - At Program level the expanded task is displayed with a critical appearance. The expanded task can now be linked into the project just like a normal task.

8.9.8- Using the Project View to Navigate the Project. The structure of our project is clearly displayed in the Project View.

1. Click on the '+' *sign* to open the contents of heading. 'Program' is usually the top level.



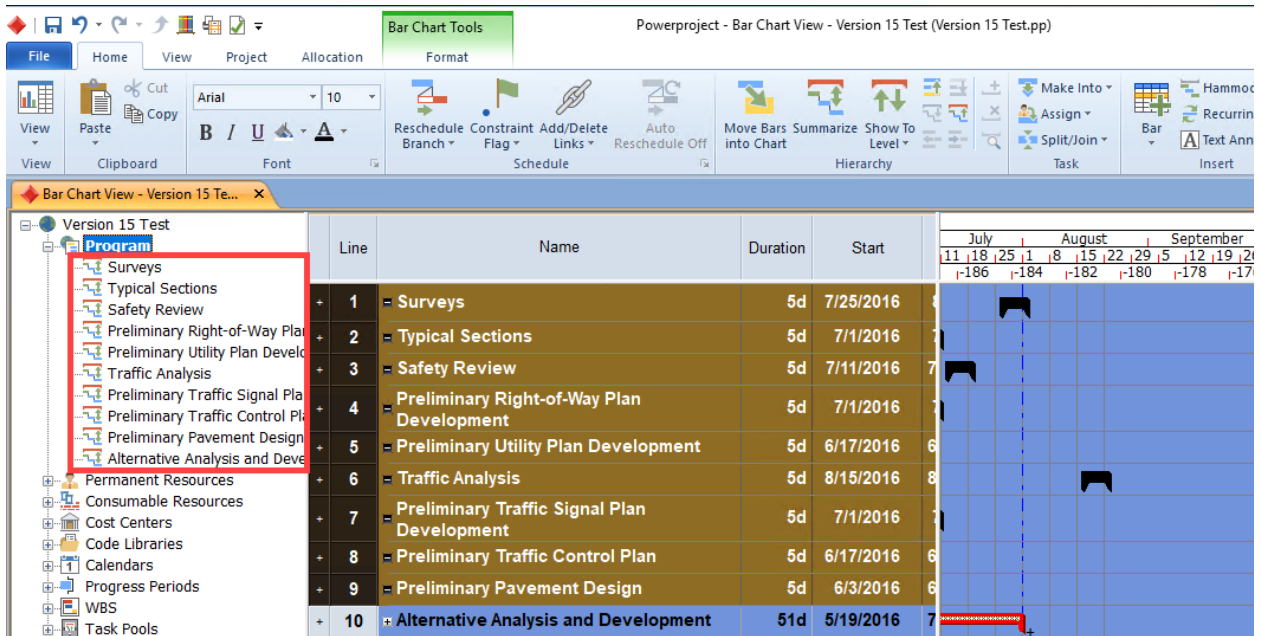
2. Select any of the summary groups to display only that section of work on the bar chart.



8.9.9- Cross Chart Linking. Sometimes it is necessary to show links between tasks held in the root chart of your project and tasks held in sub-charts. These links can be made by bringing the tasks onto one screen to enable links to be drawn between them or by using the Link From/To dialogue.

To Display the Tasks From Different Charts on One Screen:

1. Click on **Program** in the Project View.
2. Hold down the **Ctrl** key on the keyboard and also **click on the expanded chart** in the Project View.



Tasks from both charts are now displayed on the same screen, Note the links have been drawn between tasks as required.

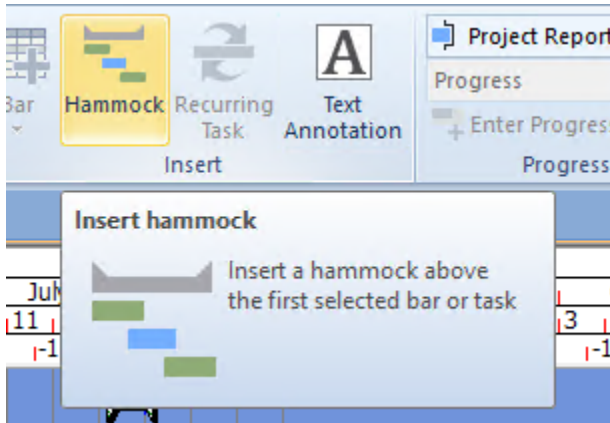
Alternatively the Link From/To Dialogue Can Be Used:

1. **Right-click** on the required task in whichever chart of your project.
2. Select **Linking > Link From/To** from the list.
3. Enter the name of the task you are linking to in the 'Task Name' field and click **Link**.

8.9.10- Hammock Tasks. Hammocks are used to show an overview of related tasks which are not next to each other in the project. Like summaries & expanded tasks, hammock tasks take their total duration from the tasks within them. The hammock and its contents are displayed at the foot of your project.

To Create a Hammock:

1. Select an empty bar of your project by clicking on the line number.
2. On the **Home tab** in the **Insert** section select **Hammock**.

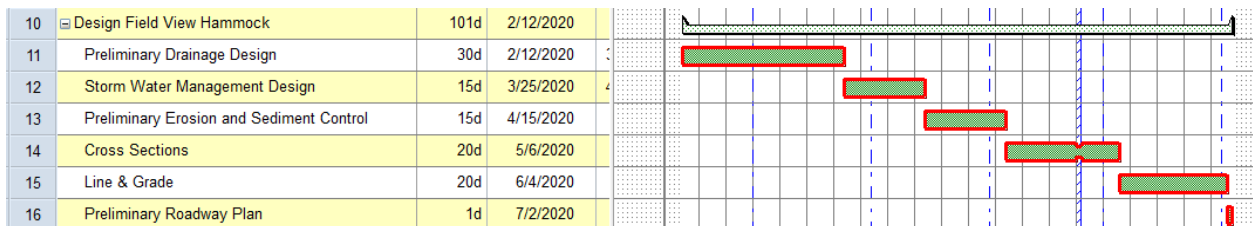


3. Name the Hammock task.

To Add Tasks to a Hammock:

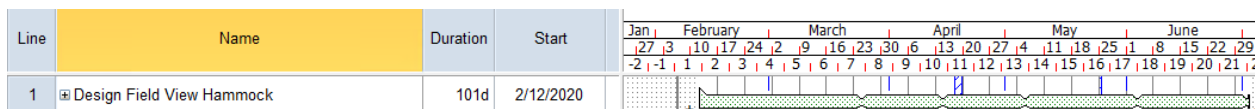
1. **Right-click** on a task.
2. Select **'Add to Hammock'** from the list.
3. **Select the hammock** if there is more than one and click **OK**.

A copy of each task is shown within the hammock.

**To Remove Tasks From a Hammock:**

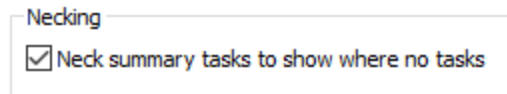
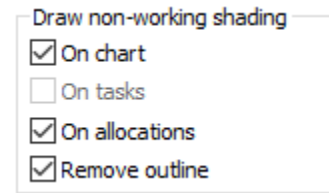
1. **Right-click** on a task.
2. Select **'Remove from Hammock'** from the list.

You can change the appearance of how your hammock looks by 'necking' or 'pinching' it to show whereabouts the subordinate tasks are located.



To Change the Appearance of a Hammock:

1. **Right-click** on the Barchart.
2. Select Format Barchart.
3. On the non-working tab, **un-tick On tasks** the check box under Draw non-working shading.
4. Then tick Neck summary tasks to show where no tasks



This will now show necking in the summary bars and your hammocks. The necked areas show where there aren't any tasks on those dates.

8.10- BUFFER TASKS

Some contracts may have a period of contingency planned into the program to allow for any delays encountered. This could be marked but using a constraint to show the contract completion on the correct date, however, this could result in float showing on a large part of the project.

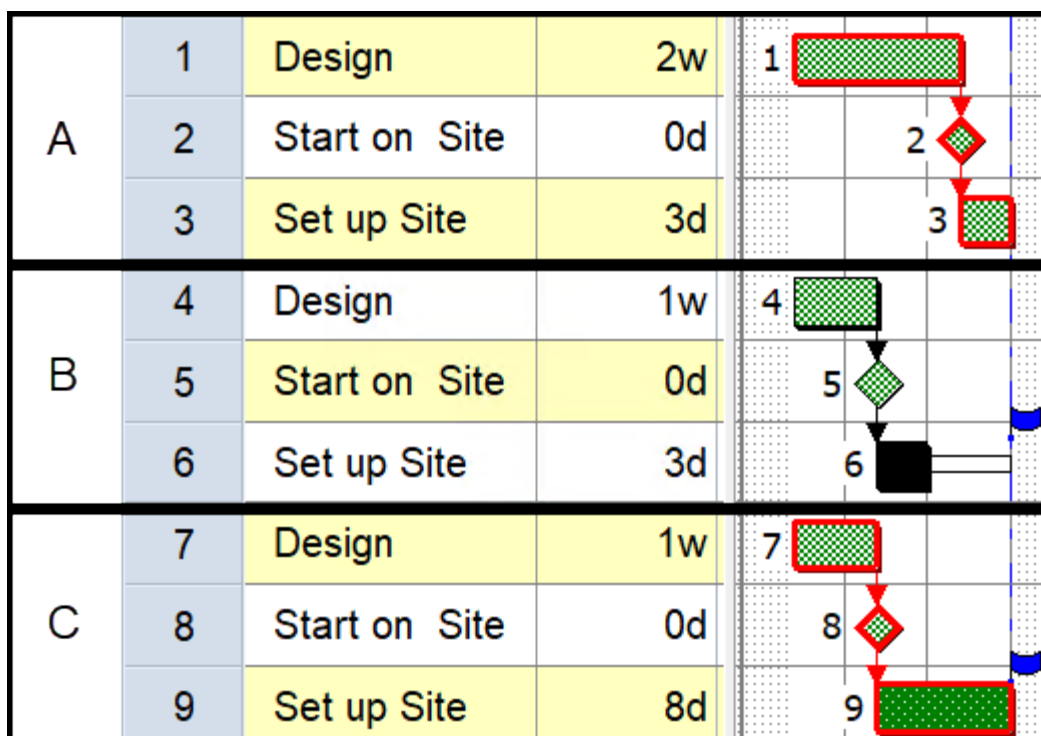
Another way of showing your contingency is by adding a Buffer task to your project. A Buffer task is one that will expand or contract into the space available, filling time that may otherwise show as float on a project.

There are two types of buffer tasks:

- **Feeder buffers** – which sit within the project protecting key dates
- **Project buffers** – usually the last task in a project protecting the project end date

A buffer contributes to the Critical Path calculation, but when its start date is affected it will shrink (or expand) and protect the Critical Path.

This technique is often referred to as Critical Chain.



In the example shown below *Design* in example *B*, is reduced to 1w and *Set Up Site* moves back, in example *C*, *Set Up Site* expands to 8d.

To Create a Buffer:

1. Type a task name into the spreadsheet.
2. Create a task by either typing in the duration column or by drawing on the bar chart.
3. Link the task into the project and reschedule the project (so that the task takes up the correct position within the project).
4. Right-click on the task and go to Make Into > Buffer Task.

Note: For a Feeder buffer task, a ‘start on or after’ constraint flag will be required on the succeeding task

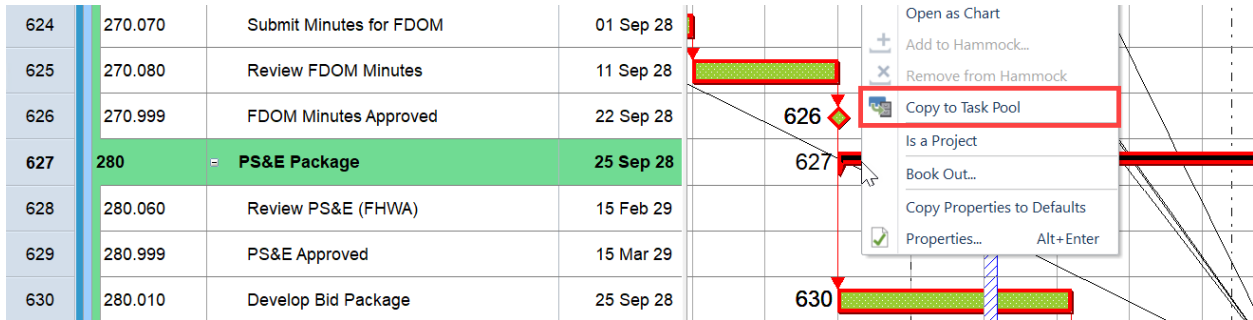
8.11- TASK POOLS

Task pools will allow you to save together networks of tasks such as those for a Design Field View or PS&E Package or any tasks that are grouped together under summary bars to form ‘phases’ of work in a project.

These can then be copied and pasted through the program or used as a starting point in new programs. The PennDOT templates, all have task pools already created in them with the standard PennDOT activities.

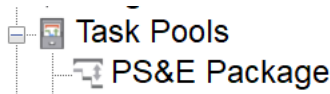
To Create a New Task Pool:

1. Where you have a group of tasks grouped together **Right-click** on the relevant **summary bar** on either the bar chart or the project view.



2. Select **Copy to Task Pool**.

The task pool will then be displayed in the project view on the left hand side of the screen. It can be used again in the same project or saved into a project template for use in future projects.

**To Add a Task Pool into a Project:**

1. Move your cursor over the task pools in the project view.
2. **Click** and **drag the task pool** to the position that you would like them to start in the project.

You will then see the network of tasks copied into the project.

8.12- CODE LIBRARIES

Code Libraries allow us to color code tasks so that their appearance represents something relevant. A project can contain many code libraries, which can be hierarchically based.

The four standard PennDOT design task code folders are already created within the PDSMASTER and the district specific templates. These consist of the Department work breakdown structure (PDSWBS), organizational breakdown structure (PDSOBS), cost function folder (PDSCOST) and standard task folder (PDSSTANDARD).

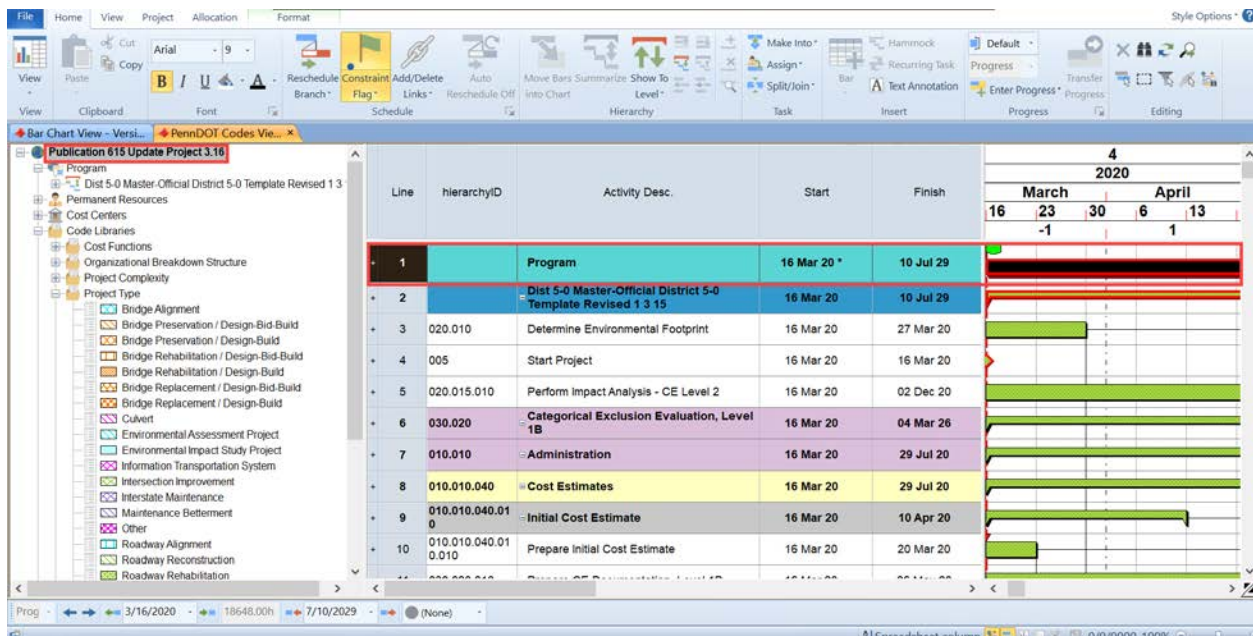
All of the standard activities within the PDSMASTER and district specific templates have coding assignments already given to them. If you add non-standard PennDOT activities to your schedule, these activities must also have coding values added. For non-standard activities, the PDSSTANDARD must be 2, while the other coding values should be assigned which are appropriate for that task.

It is the responsibility of the District Portfolio Manager to make coding assignments consistent with PennDOT methodology. If the Portfolio Manager has questions with regards to how these changes should

be applied, contact the Elecosoft Powerproject Support Group within Central Office. For standard activities established in the PDSMASTER template, no changes to the PDSWBS codes are permitted. Changes can only be approved and implemented by Central Office, in order to preserve historical data.

There are two other codes that are standards for all PennDOT schedules (Design, Pre-bid, and Construction): Project Type and Project Complexity. These code folders are also already created within the PDSMASTER and the district specific templates, along with the Pre-bid and Construction template. In Elecosoft Powerproject Client, these codes will still be utilized at the ‘program level’.

During the project schedule setup in Elecosoft Powerproject Client, assign the appropriate Project Type and Project Complexity code from the Code Library. These two codes should be assigned at the highest ‘program’ level of the project view on the left hand side of the screen. When assigning these two codes, make sure the highest program level is selected, and drag and drop the code values onto the highest level task.



The Project Type classification is based on the primary nature of the project. For example, a 10 mile roadway resurfacing project which includes a bridge should be classified as “roadway resurfacing,” not bridge preservation. Similarly, a bridge replacement project which includes the reconstruction of 1000 feet of approach on both sides should be classified “bridge replacement. In addition the project type for design projects is further defined as either Design-Build or Design-Bid-Build. Therefore a bridge replacement project may be coded as “bridge replacement/design-build’ or bridge replacement/design-bid-build”.

Additionally, all projects shall have a project code that identifies the complexity of the project. These consist of the following:

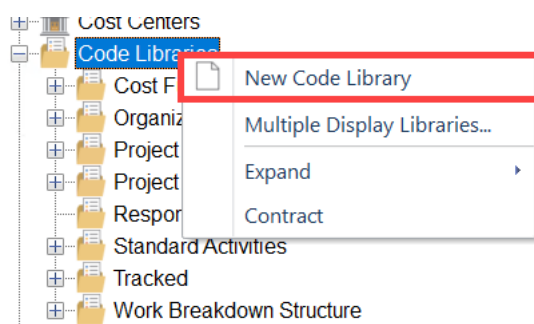
- Typical Most Complex (Major) Projects
- Typical Moderately Complex Projects
- Typical Non-Complex (Minor) Projects

The definitions of the above are those found in PennDOT's Design Manual DM1 Chapter 2.

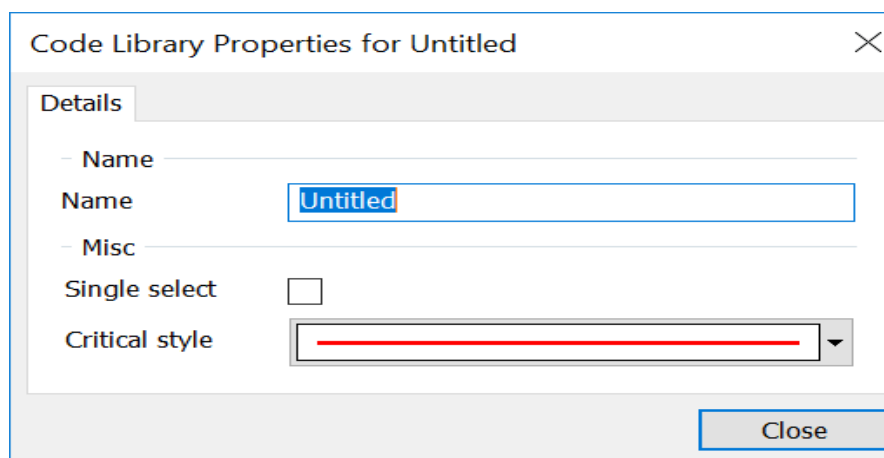
Additional codes are created in the Library Explorer.

8.12.1- Creating Code Libraries

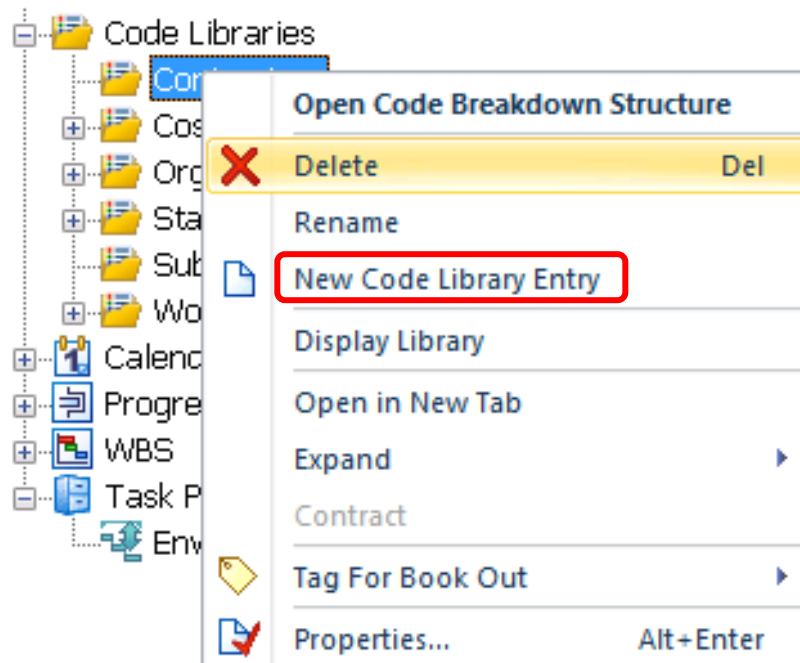
1. In the Project View, right-click on Code Library and select *New Code Library*.



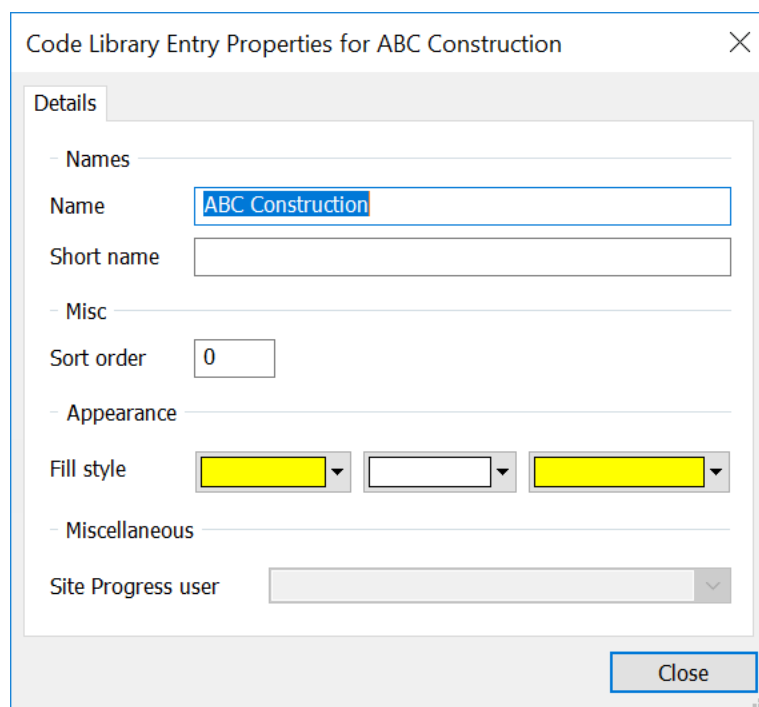
2. Give it a name (for example, Contractors).



3. In the Project View, right-click on the Contractor folder and select **New Code Library Entry**.



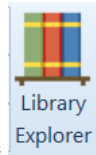
4. In the Name box type in 'ABC Construction' to represent our first contractor.



5. Change the **Fill Style** under Appearance to change the Foreground Fill, Background Fill and Pattern to select colors and patterns to identify this contractor.

6. Click **Close**.
7. Repeat steps 2-5 until all contractors are added within the code library folder.
8. To create other code library folders, repeat starting at step 1.

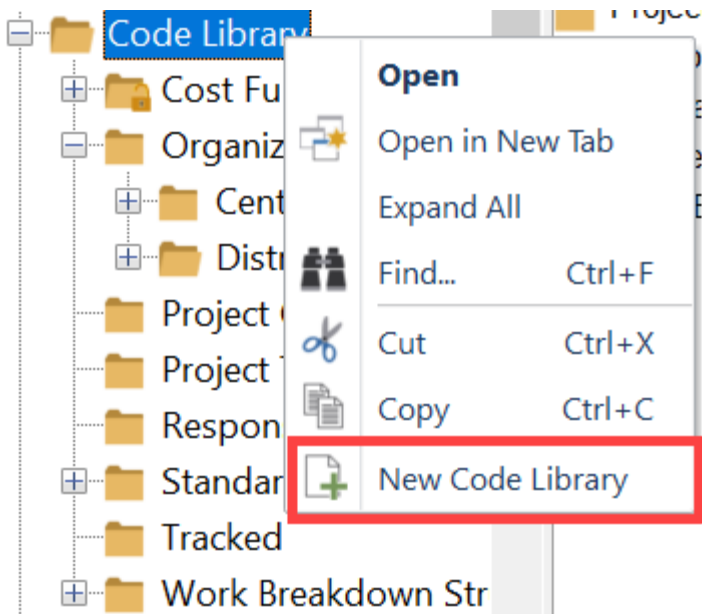
Or another way to create codes is to do so using the Library Explorer.



1. On the **View tab** click the **Library Explorer** icon.
2. In the left window of Library Explorer, click on the **Code Library** folder.

1 object(s) selected		Contents of 'Code Library'		
		Name	Critical style	Single select
Project Objects	^	Cost Functions		<input checked="" type="checkbox"/>
Allocation Group		Organizational Breakdown Structure		<input checked="" type="checkbox"/>
Annotation Category		Project Complexity		<input checked="" type="checkbox"/>
Calendar		Project Type		<input checked="" type="checkbox"/>
Code Library		Responsible Party		<input checked="" type="checkbox"/>
Cost Functions		Standard Activities		<input checked="" type="checkbox"/>
Organizational Break		Tracked		<input type="checkbox"/>
Central Office		Work Breakdown Structure		<input checked="" type="checkbox"/>
District				
Project Complexity				
Project Type				
Responsible Party				
Standard Activities				
Tracked				
Work Breakdown Str				

- 3. In the right window, on a blank part of the screen, **Right-click** and select **New Code Library**.

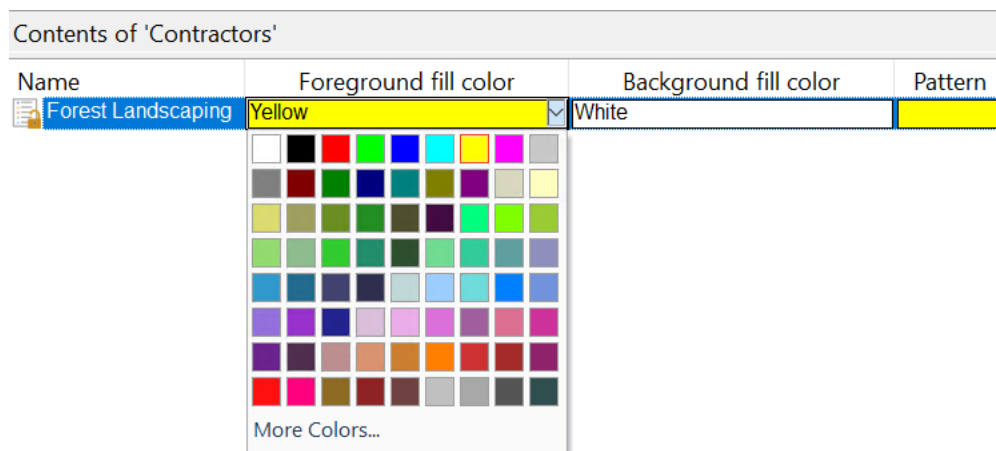


- 4. Give it a name (e.g. **Contractors**).

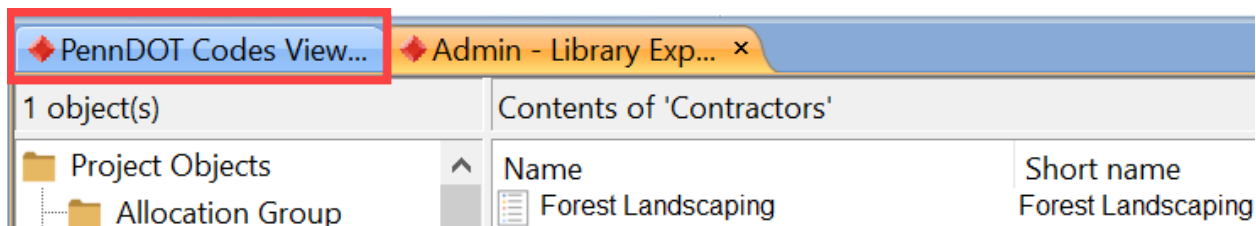
Contents of 'Code Library'		
Name	Critical style	Single select
Cost Functions		<input checked="" type="checkbox"/>
Organizational Breakdown Structure		<input checked="" type="checkbox"/>
Project Complexity		<input checked="" type="checkbox"/>
Project Type		<input checked="" type="checkbox"/>
Responsible Party		<input checked="" type="checkbox"/>
Standard Activities		<input checked="" type="checkbox"/>
Tracked		<input type="checkbox"/>
Work Breakdown Structure		<input checked="" type="checkbox"/>
Contractors		<input type="checkbox"/>

- 5. In the right window, **Double-click** on the **Contractors** folder.
- 6. **Right-click** in the right hand pane and choose **New Code Library Entry**.
- 7. In the **Untitled** box type in **'Forest Landscaping'** to represent our first contractor.

8. Click under **Foreground Fill**, **Background Fill**, and **Pattern** to select colors and patterns to identify this contractor.



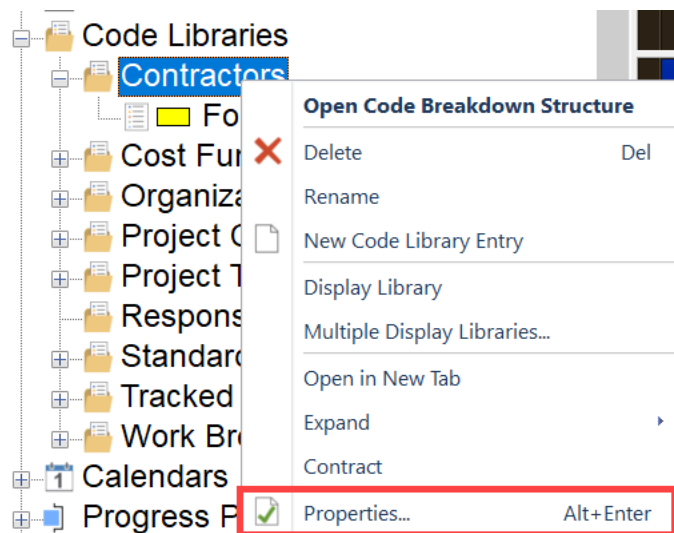
9. Right-click under **Forest Landscaping** to create a new code entry for **Janson's Timber**.
10. Repeat the process until all contractors are added. The other contractors are; **Acme Building**, **Goldstone Utilities** and **Smarts Decorators**.
11. To Return to the Project, click on the Bar Chart View Tab.



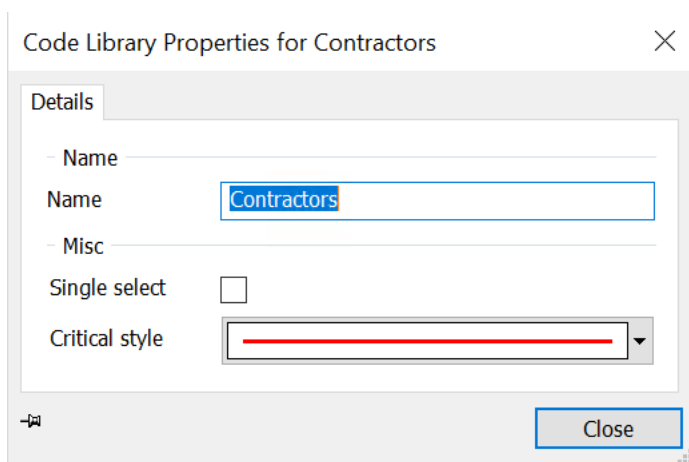
8.12.2- Single Select on Code Libraries. Single select means that once you have allocated one code there will be no option to add further codes from the same folder to a task

To Set the Single Select Feature:

1. **Right-click** on a code library in the project view and select **Properties**.



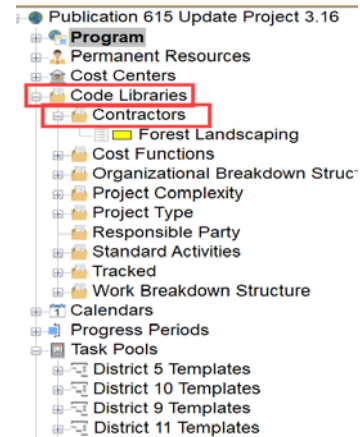
2. When the Properties box pops up choose **Single select**.



3. If you want to specify that a code library is used only once on a task tick the box marked as single select.

8.12.3- Allocating Codes. Now that the Code Libraries have been created we can apply these to tasks within the project. To do this we will use the Project View:

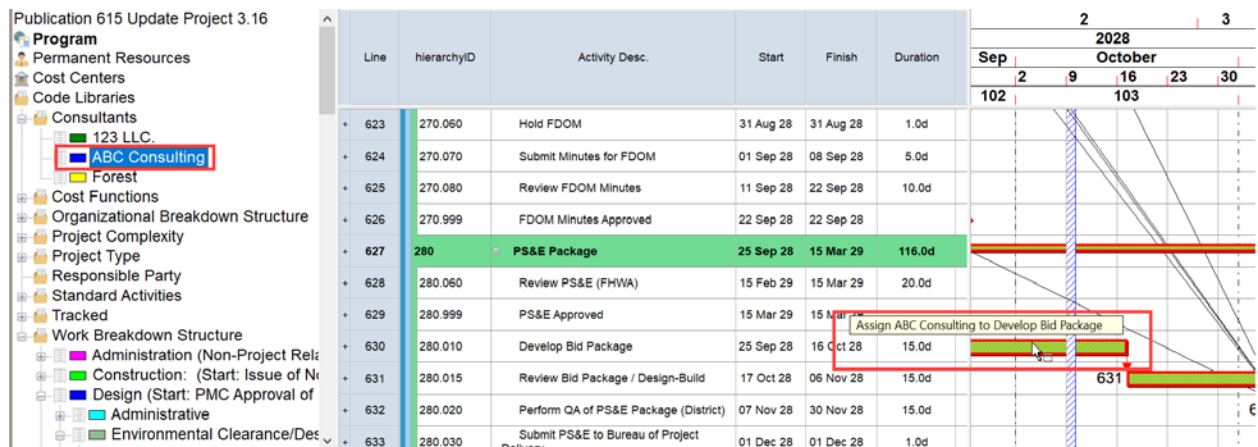
1. To expand the list of Code Libraries in the Project View, *click the +* to the left of **Code Libraries**.
2. To expand the list of Contractors codes, *click the +* to the left of **Contractors**.



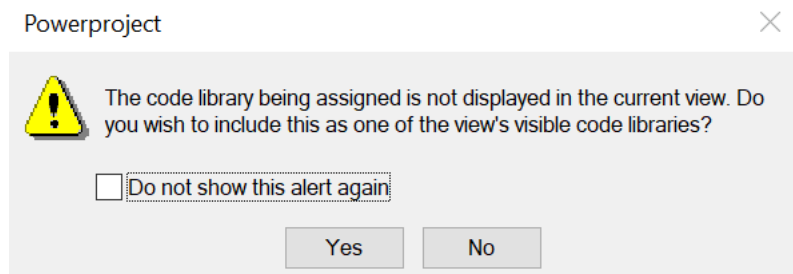
8.12.4- Single Task Allocation

To Allocate a Code to a Task:

1. Place the cursor over the **Code** entry in the Project View.
2. Press the *left mouse button* and *drag* until the cursor is over the task in the Barchart to assign the code to, *then release*.



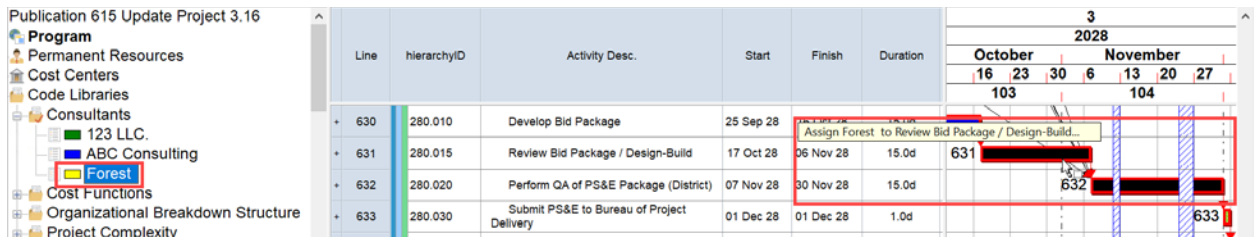
3. The following message will appear. Click **Yes** to apply the new Code Library color.



8.12.5- Multiple Task Allocation

To Allocate a Code to Multiple Tasks:

1. Select multiple tasks by holding down **CTRL + left-clicking** the tasks in the barchart (tasks will be highlighted in black).
2. Place the cursor over the code entry in the Project View.
3. Press the **left mouse button** and **drag the cursor** to one of the highlighted tasks in the barchart then **let go of the mouse**.

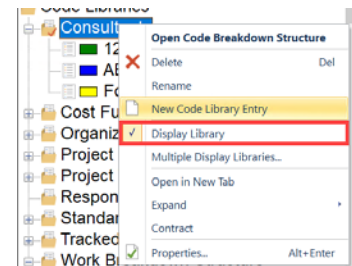


4. **Click away** to deselect and the bars will change color.

8.12.6- Switching the Display Between Code Library Folders. Elecosoft Powerproject will only allow one Code Library to display at a time on tasks.

To Switch Between Folders:

1. In the Project View, Right-click on the Code Library Folder to display and select Display Library.
 - The red tick indicates the code library currently on display.



To Remove the Display of Code Libraries:

1. **Right-click** on the folder that is on display (shows a red tick).
2. Select **Display Library** to remove the display of this library. No code libraries are now selected to be on display.

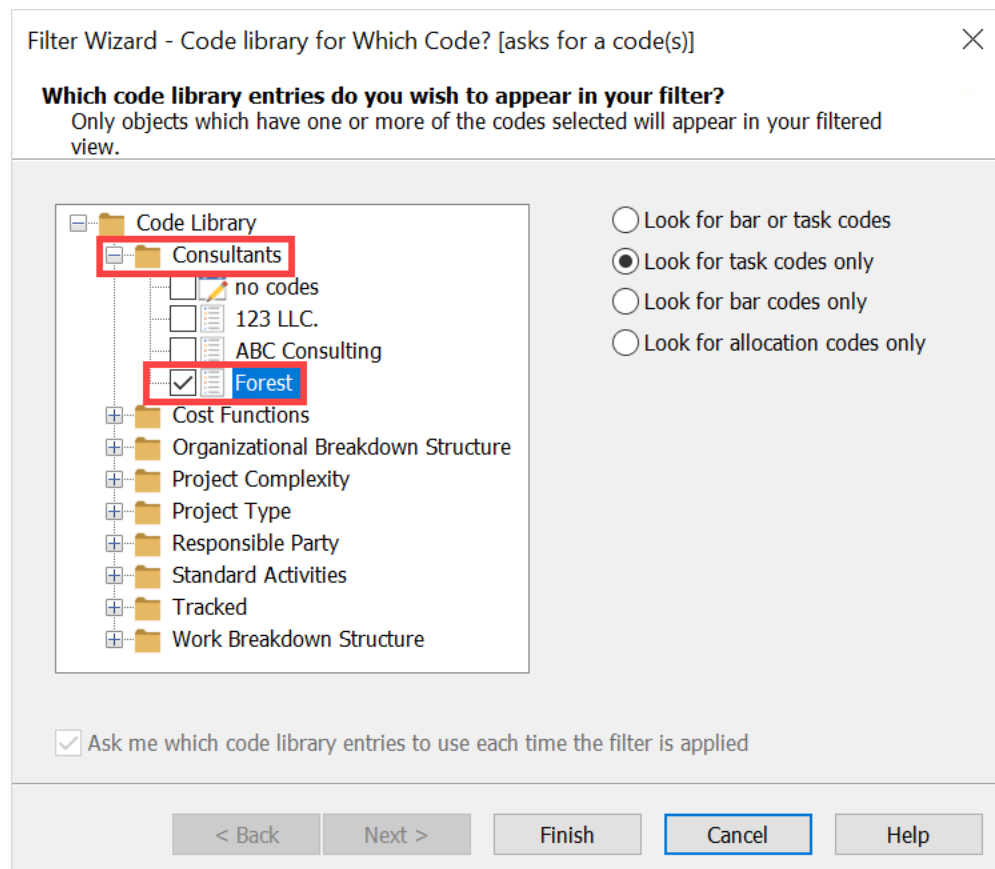
8.12.7- Simple Filters Based off of Codes. Now that the project is coded, filters can be used to show only the tasks with a certain code

To run a Filter on a Code:



1. On View tab click on the **Filter** icon.
2. Under the Codes category, select **Which Code Folder to Filter On**.

- Click on the + against the Code Folder and select the box next to the code to filter on.



- Click on Finish and run the filter.
- To stop a filter running, click on the **Filter** command and select **No Filter**.

8.13- UNIQUE TASK ID NUMBERING

Elecosoft Powerproject generates a unique identification number for each task in a project. The ID, which is created automatically each time you create a task, is a combination of an alphanumerical prefix string, which you can define, and a number. As each new task is created within a project, the number is incremented by an amount that you can specify. You can specify a minimum number of digits for the task ID if you wish. If you do this, Elecosoft Powerproject pads out smaller IDs with zeros to bring them up to the minimum width. You can use unique task IDs as a way of identifying the tasks within your project.

If you copy bars and tasks from one project to another, unique task IDs are maintained in the copied tasks, unless any of the IDs conflict with IDs in the destination project.

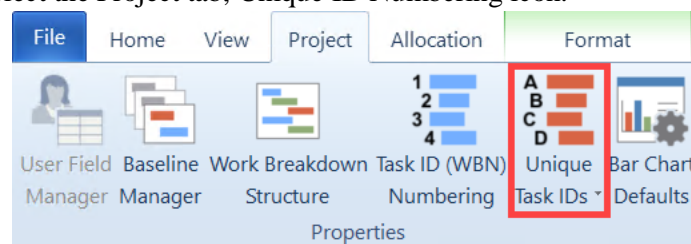
8.13.1- Displaying Unique Task ID Codes. When you draw tasks on the Bar Chart, unique task ID numbers are automatically generated for each task.

To view Unique Task ID codes, you will need to set up a Spreadsheet column containing the column Unique Task ID (see The Spreadsheet section on how to add columns, Section 8.15.C).

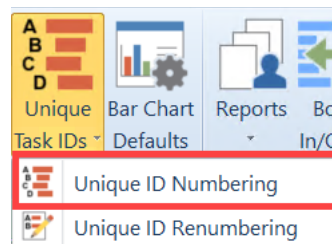
8.13.2- Renumbering Unique Task ID Codes. Now that the Unique Task ID's are displayed on the Project, you can manually change the numbers to suit or Elecosoft Powerproject can automatically renumber tasks for you.

To Renumber All the Tasks in View:

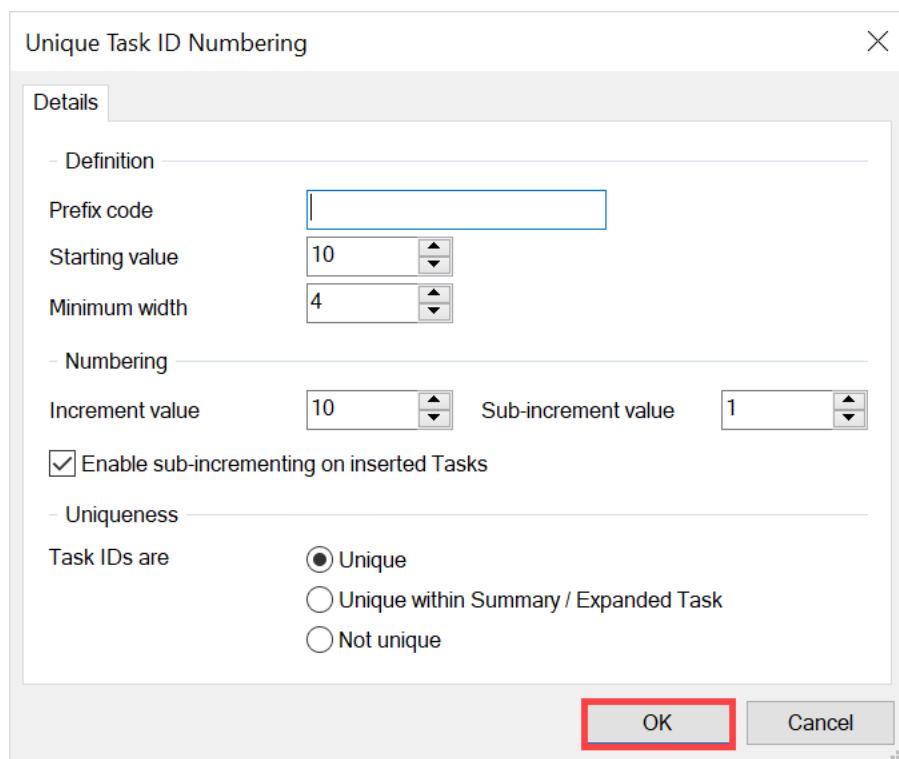
1. Hold down the **Ctrl** key and then select the letter **A** on your keyboard (this selects all of the tasks in the view).
2. Select the Project tab, Unique ID Numbering icon.



3. From the list of options that will display firstly select **Unique ID Numbering**.

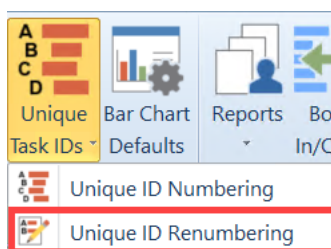


4. You can choose the start value, minimum width and increment values.



The image shows the 'Unique Task ID Numbering' dialog box. It has a 'Details' tab. Under the 'Definition' section, there is a 'Prefix code' text box, a 'Starting value' spinner set to 10, and a 'Minimum width' spinner set to 4. Under the 'Numbering' section, there is an 'Increment value' spinner set to 10 and a 'Sub-increment value' spinner set to 1. A checkbox labeled 'Enable sub-incrementing on inserted Tasks' is checked. Under the 'Uniqueness' section, there are three radio buttons: 'Unique' (selected), 'Unique within Summary / Expanded Task', and 'Not unique'. At the bottom right, there are 'OK' and 'Cancel' buttons, with the 'OK' button highlighted by a red rectangle.

5. Once you have chosen your preferred numbering options you can then close this box, click **OK**.
6. Reselect the **Unique ID Numbering**, this time when the menu drops down select **Unique ID Renumbering**.



7. When the dialog appears just click **Apply** and it will perform a renumbering for you.


8.14- USER DEFINED FIELDS

Within Elecosoft Powerproject can add your own “user fields” to tables in the database. For example you might want to add fields to show delay Notes, progress comments or if a task has been approved.

8.14.1- Creating User Fields for Projects

1. First the project must be saved. The **User Field Manager** will not be available if there is any unsaved information.
2. Select **Project tab** and click the **User Field Manager** command.

3. Click on the **drop down arrow** and select **Bar** from the Object Type, then click **Add**.
4. Select the type of field that you want to create:
 - **String** – a text field, e.g. for a name or comment field
 - **Integer** – a field for whole numbers
 - **Float** – a field for decimal numbers
 - **Boolean** – a True/False field, e.g. for an option that can be on or off. Boolean fields might be shown as check boxes or drop-down controls providing Yes/No or True/False options
 - **Date** – a date/time field, e.g. to record the date or time
 - **URL** – A hyperlink field

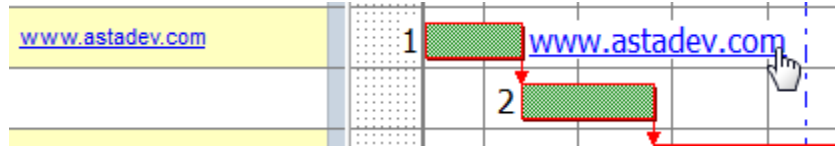
 The field name doesn't like spaces, and so if you want a space (e.g. QA Approved) then use an underscore (_) between the words. When the column is added into the table, use table definition to edit out the '_' in the title

5. As String is selected by default, enter the name ***“Comments”*** in the **User Field Name** box.
6. Click **OK**.
7. Click **Close**.

To Add a User Field as a Column:

1. **Right-click** on an existing column heading and select **Add Column**.
2. Choose the **User Fields** category and then choose your new **User Defined Field**.

8.14.2- User Defined Fields and Task Data Display. If you create a URL user defined field you can input web addresses and file locations into the column. To activate the link you have to hold down the Alt key and select the link with your mouse. However you can also show these hyperlinks on the left or right hand side of your tasks using task data display. If these hyperlinks are displayed next to the task, by Left-clicking on the link it will activate.

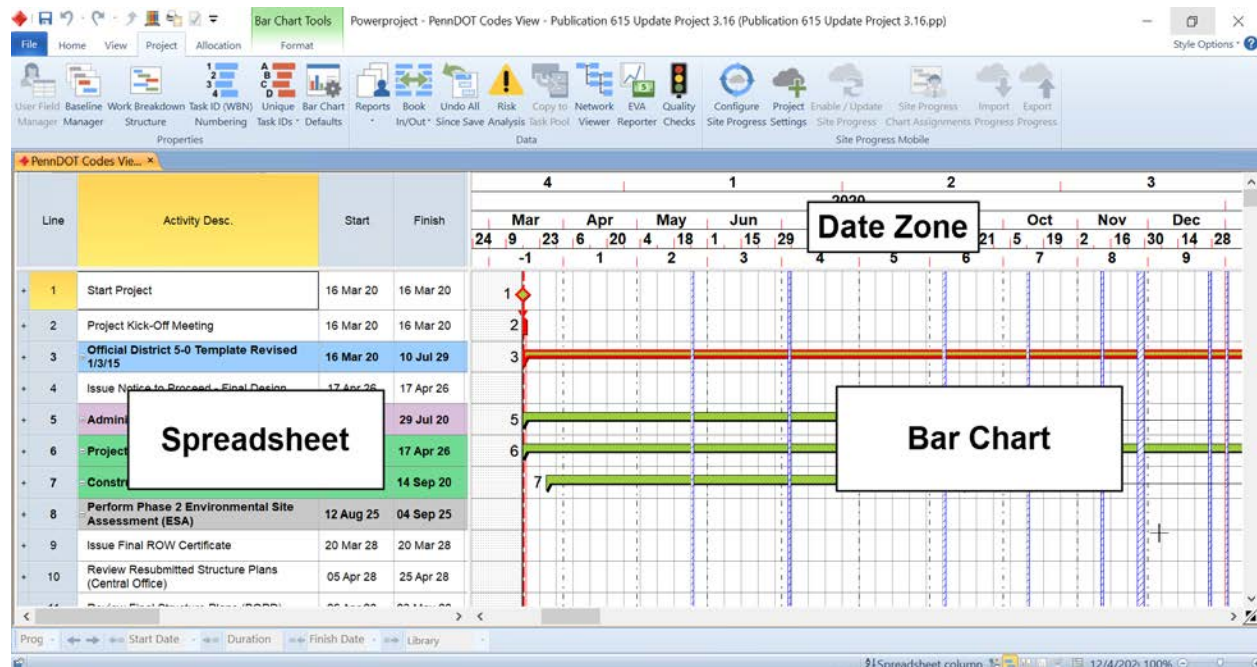


To Switch on Task Data Display:

1. **Right-click** on the bar chart.
2. Select Format Barchart.
3. On the Tasks tab, select left or right data display.
4. It will give you a dropdown menu of column categories, you need to select your **URL column** from the **user field category** to display the link next to the tasks.

8.15- EDITING THE VIEW

The 'view' of your project is made up of 3 areas. Changes can be made to the appearance of each of these areas independently:



Note: Existing District specific views have already been created within the PennDOT template files and within the PennDOT Elecosoft Powerproject Client.

8.15.1- The Date Zone. The Date Zone is the area where date information relevant to the project is displayed. By default the Date Zone shows 4 rulers (Date lines) running across the top of the project, these are the Year, Month, Week Start and Project Week Numbers (elapsed weeks).

8.15.1.1- Adding/Editing Rulers on the Date Zone. The Date Zone can contain up to 10 rulers of date information across the top.

To Control the Information that is Displayed:

1. Place the cursor anywhere in the Date Zone area and **Right-click**.
2. Select **Properties** from the list.

The General tab controls the folding Calendar and the date ruler on display.

The screenshot shows the 'Date Zone Properties' dialog box with the 'General' tab selected. The 'Folding calendar' dropdown is set to '< Default >'. Under 'Check to fold out of view', the 'Non Working' checkbox is checked, while 'All non-Working', 'Holiday', 'Overtime', and 'Weekend Working' are unchecked. A table on the right lists rulers with columns for Type, Time Unit, and Quantity. The first ruler is 'Fiscal' with 'Elapsed Quarter' and quantity '1'. The second ruler is 'Year' with 'Elapsed Month' and quantity '1'. The third ruler is 'Month' with 'Elapsed Month' and quantity '1'. The fourth ruler is 'Week Start' with 'Elapsed Month' and quantity '1'. The fifth ruler is 'Unused'. Below the table, there are color selection boxes for 'Background' (White), 'Tick Marks' (Red), and 'Text' (Black). At the bottom, there are checkboxes for 'Display progress lines' and 'Display progress shading', both of which are unchecked. The 'Close', 'Cancel', and 'Apply' buttons are at the bottom right.

Type	Time Unit	Quantity
Fiscal	Elapsed Quarter	1
Year	Elapsed Month	1
Month	Elapsed Month	1
Week Start	Elapsed Month	1
Unused		

3. To add a fifth ruler, click once on an **Unused** ruler and select from the drop down list.
4. To remove any of the rulers first select and then choose **Unused** from the list.
5. Click on **Apply** to see the changes on your project.

8.15.1.2- Week Numbering. Week 1 in the Date Zone will default to the project's start date when the project was first created. This is displayed in the 'elapsed week' line

To Align Week 1 to Another Date:

1. Place your cursor anywhere in the Date Zone area and **Right-click**.
2. Select **Properties**.
3. Select the **Dates/Scales** tab.

Date Zone Properties

General | **Dates/Scales** | Grids | Shading

Date zero ☒ 3/16/2020 00:00

Fiscal year start: Month Day

Week start day

Week ending day

Month start

Zone	Start Date	Scale
1 (always used)		9 Days per in
2 <input type="checkbox"/>	<input type="text"/>	1 Days per in
3 <input type="checkbox"/>	<input type="text"/>	1 Days per in

Scales here are a rough guide assuming no folding calendar. Finer control may be obtained by dragging the date zone.

Close Cancel Apply

4. Against '**Date Zero**' use the date picker from the drop down arrow to choose your new week 1.
5. Click **Close**.

8.15.1.3- Grid Lines . The construction template supplied with Elecosoft Powerproject comes with some grid lines, Year, Month, Week and Day.

A vertical grid line that occurs at a variable date specified by you can also be added to the project, e.g. a line that shows at 'Today's Date' or the 'End of week'.

To Add a Grid Line to a Project:

1. Select the **Grids** tab from the Date Zone Properties dialogue.

Date Zone Properties

General Dates/Scales **Grids** Shading

Name	Interval	Time unit	Style	Variable d...	Position	Zone1	Zone2	Zone3
Elapsed We 1	1	Elapsed Week	————		Under Holida	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Elapsed Mo 1	1	Elapsed Month	- - - -		Under Holida	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Elapsed Yea 1	1	Elapsed Year	————		Under Holida	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

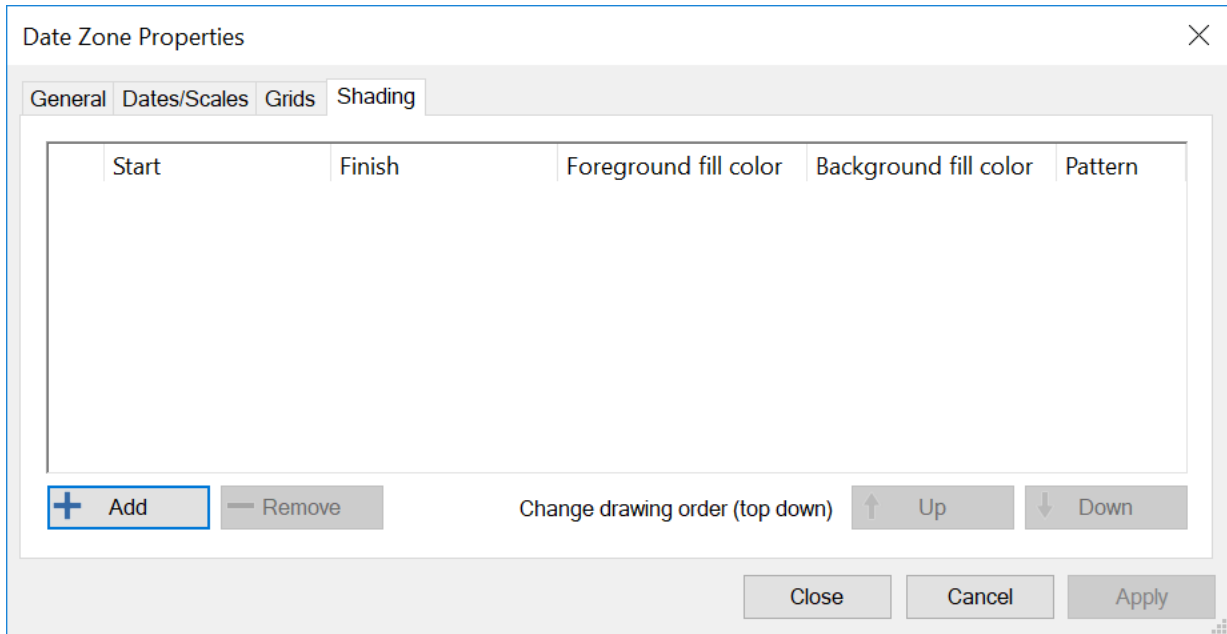
+ Add — Remove Change drawing order (top down) ↑ Up ↓ Down

Close Cancel Apply

2. Click **Add** to add a new grid line.
3. Enter a new **Name**.
4. Left-click in the **Time Unit** column and change Elapsed Week to **Variable date**.
5. Click on the thin black line and change the line **Style** to how you want your line to look.
6. Then **Left-click** in the empty space where the **Variable date** will be and a date picker will appear, **choose your date** or click on **Click to select variable date**.
7. Press **Close**.

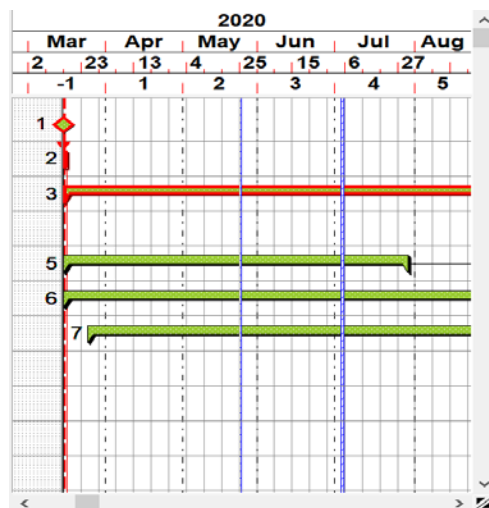
8.15.1.4- Shading. Elecosoft Powerproject can also put shading behind the tasks within the project, it has no effect on the project but it can be used to show certain information i.e. bad weather, school term times etc.



1. **Right-click** in the Date Zone and select **Properties**.
2. Select the **Shading tab**.



3. Enter the **Start** and **End dates** for the shading or a '**Variable Date**' (see grids) from the list and then **choose a color**.
4. Click **Close** to close the properties dialog. This will also 'Apply' changes.

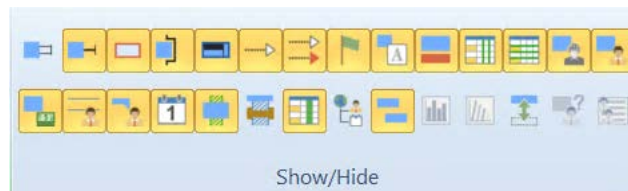
8.15.1.5- Fit to Window. When using Elecosoft Powerproject you will notice that very quickly there will be tasks that do not appear on the same screen.



1. These tasks can be repositioned so that they will all fit on to one screen by clicking on the **View tab** and then on the **Fit All to Window icon**.  Fit All to Window
2. If you just want to fit the tasks that are visible in the spreadsheet to the window then click on the **drop down arrow** to the **right of the “fit all to window” button** and select **Fit Visible to Window icon**.  Fit Visible to Window

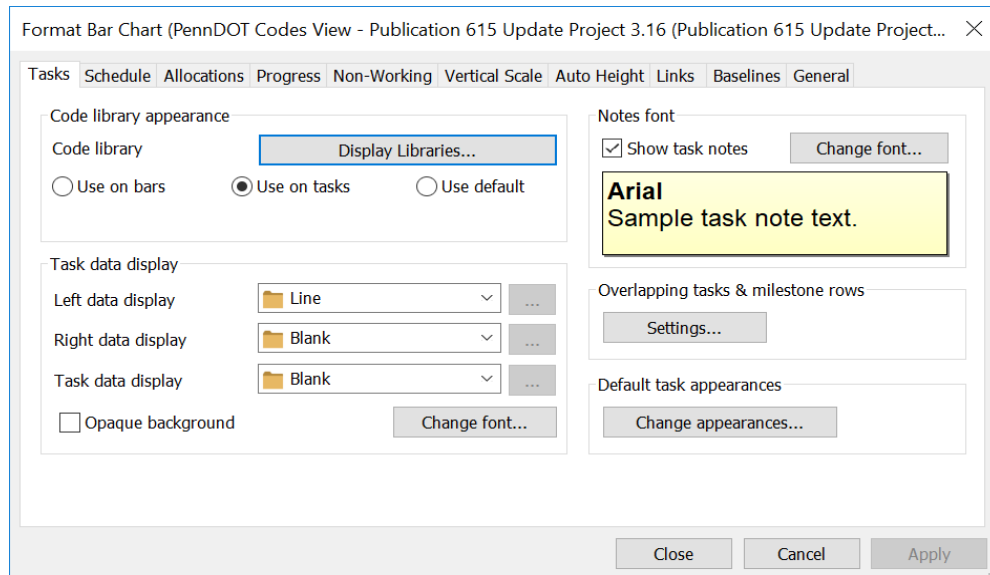
8.15.2- Bar Chart

8.15.2.1- Show/Hide Switches. On the Format tab, there are two rows of show/hide switches which will allow you to show and hide certain visual elements of the project.

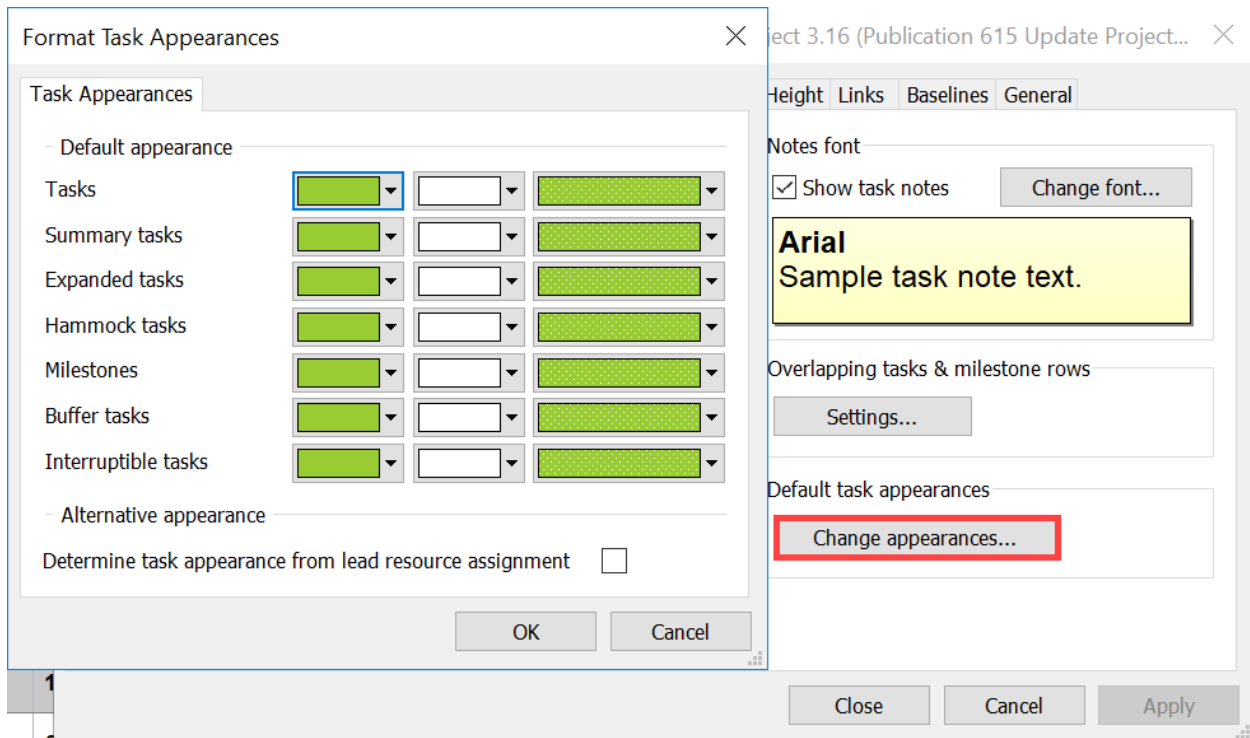


8.15.2.2- Specifying a Default Appearance of Each Different Task Type. As an alternative to displaying tasks using the appearance of the codes that are assigned to them, you can now choose to color tasks according to the appearance of the lead resource that is assigned to them.

1. **Right-click** on the bar chart and select **format bar chart**.
2. On the **tasks tab** you need to select **which code library appearance you are using**. i.e to show code library colors and summary colors you would need to select **Use on bars**.



3. Select **Change appearances** to change the appearance of the different tasks.

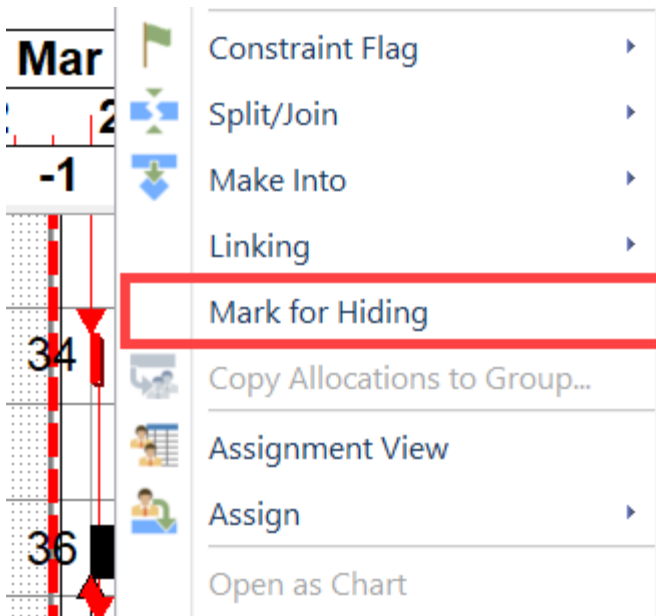


8.15.2.3- Hiding Tasks. Sometimes you may choose to hide certain tasks before printing. They can easily be put back onto display at any time.

In order to hide specific bars or tasks, you must first mark them for hiding.

To Mark a Task for Hiding:

1. **Right-click** the bar or task and select **Mark for Hiding** from the menu that appears.



2. Once you have marked items you can hide them from view at any time by clicking the **Hide/Show icon** on the **Format tab**. Clicking it again will unhide the tasks.

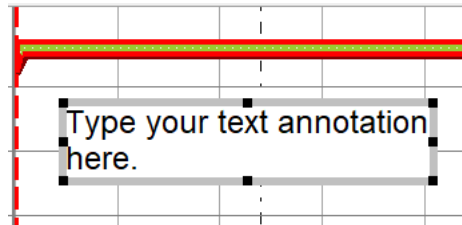


To Unmark the Items:

1. **Right-click** on the task/bar.
 - In the menu a tick indicates that they are marked.
2. Select **Mark for Hiding** again to unmark the items.

8.15.2.4- Creating Text Annotations

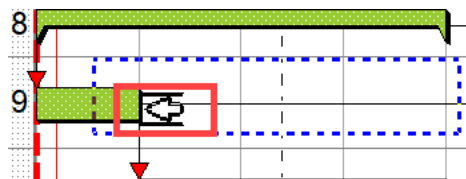
1. On the Home or Format tab, click the Text Annotation icon.
2. Take the cursor onto the bar chart. The cursor will be a letter 'T'.
3. **Left-click and drag** the mouse downwards and to the right to **draw a box**:



4. Type the text that you want in the text box.
5. The text color, font, style and size can all be adjusted using the **Font** section of the **Home tab**.
6. **Click away** to deselect the box.

8.15.2.5- Attaching Annotations to Tasks. Text annotations can be created to refer to specific tasks in your project. In this case the text box can be attached to the task so that it stays with it should the task move within the project.

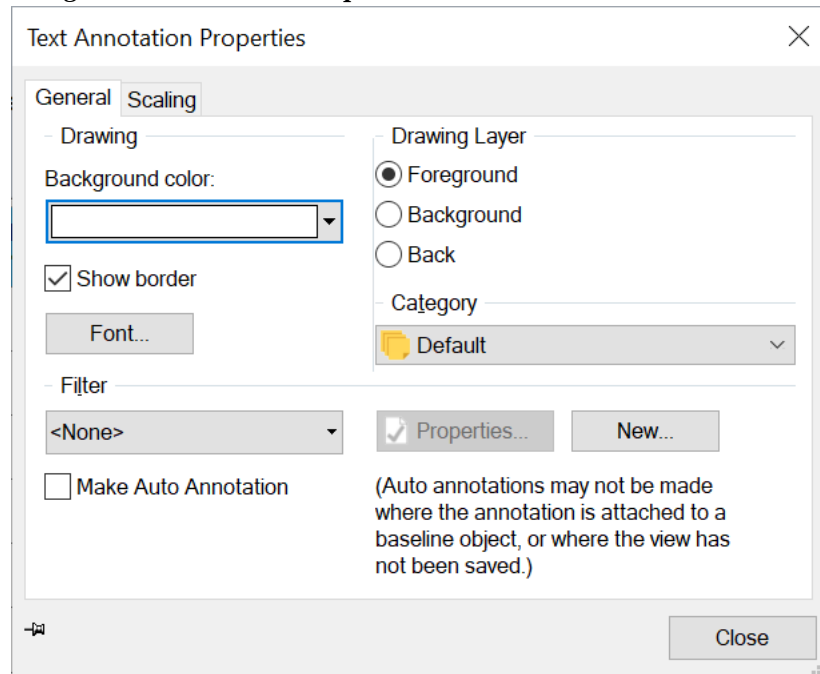
1. Click on the annotation you wish to move.
2. **Hold the left mouse button down, and drag** the annotation toward the task you wish to attach it to.
3. The cursor will change to an arrow in a box to indicate how the text box will attach to the task.



4. To detach an Annotation select the text box and select **delete**.

8.15.2.6- Formatting the Text Annotation. The properties of the text box can be adjusted to control how it looks on your project e.g. whether there is a border, set the text into the background of the project or even make the task annotation appear only against specific tasks in our project.

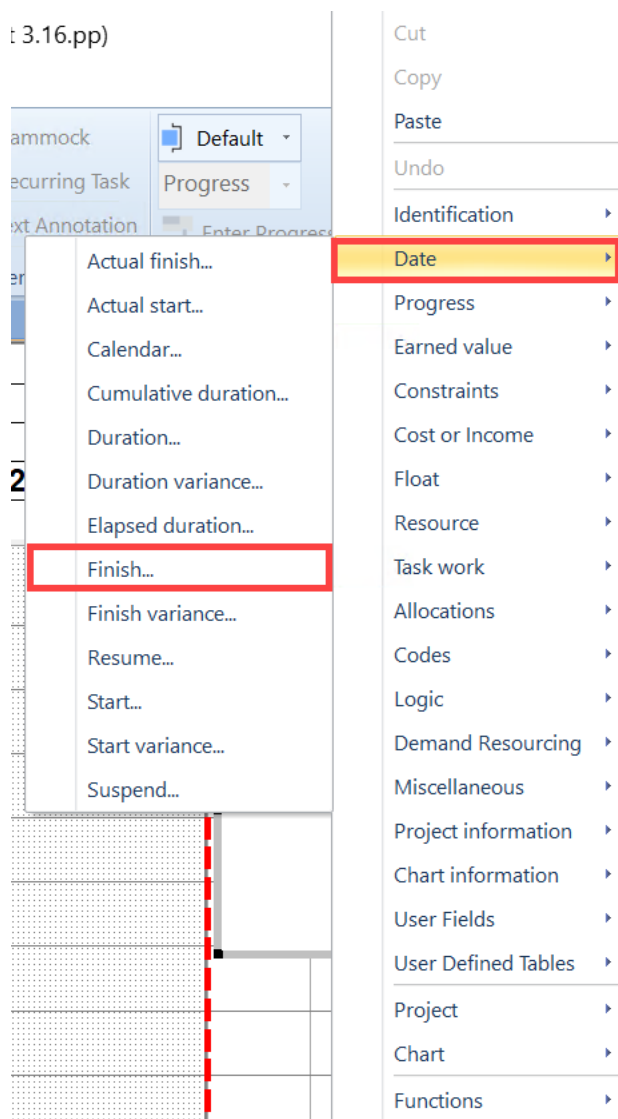
1. **Left-click** once on the annotation to select it.
2. **Right-click** and select **Properties**.



3. Set a **background color**, check **Show border** if an outline around the text box is desired, and select a **Font**.
4. Select the **drawing layer**, whether the annotation should be displayed 'in front' or 'behind' tasks on the chart.
5. Under Filter, check **Make Auto Annotation** to make the annotation appear against every task or select a filter to control which tasks it appears on.

8.15.2.7- Inserting Fields into Text Annotations. You may type project or task specific information into text annotations e.g. end dates or percent complete. However when the task is updated the annotation will not. Elecosoft Powerproject can use 'Fields', which update according to the current project data:

1. **Double-click** the text annotation so that the cursor is inside ready to type.
2. **Right-click** to display a list of available '**Fields**'.
3. Select a field as required e.g. select **Date > Finish**.



4. Click **OK** at the pop up box.

When deselected, the annotation will display the end date of the task. If the task should change the annotation will also be updated.

8.15.2.8- Auto Annotation & Filter. If you have inserted a field into an annotation you can tick auto annotation in the properties, select this check box to make the annotation appear automatically on all bars, tasks and allocations

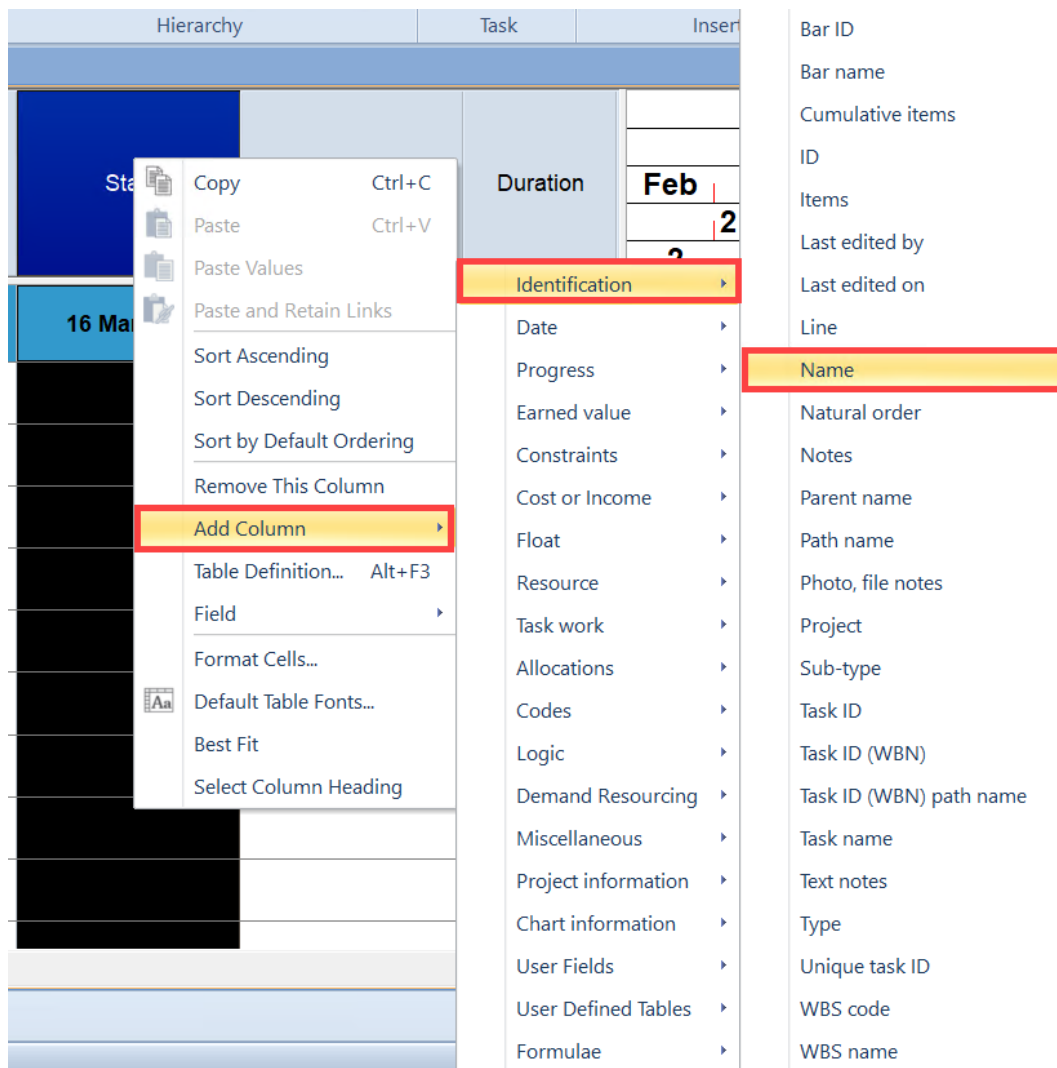
Once the auto annotation has been ticked above there is a filter dropdown, so for example you could auto annotate with the task names and then filter so they only show against milestones.

8.15.3- The Spreadsheet. The spreadsheet can be customised to display whatever project information you choose. Columns contain Fields which read data from your project, End date, Start date, Percent Complete and can be added, edited and deleted.

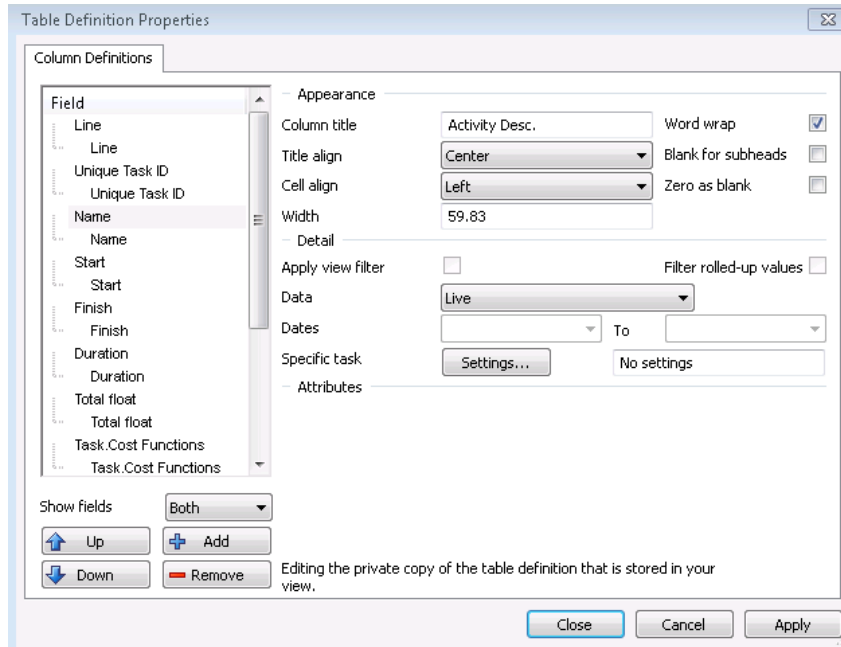
The spreadsheet can be saved as a table so that it can be applied to other Bar Chart views. For example, you might have one table for entering new tasks and another for assigning progress.

8.15.3.1- To Add New Columns

1. **Right-click** on an existing column heading and select **Add Column**.




2. Choose a **Field category** (e.g. Identification) and then choose a **field** (e.g. Name).



3. In the **Table Definition Properties** pop up changes to the settings for that column can be made.
4. Click **Close** once you have made your changes.

8.15.3.2- To Move the Position of Columns

1. Place the cursor at the top of a column heading so that the select/move  cursor is displayed.

Activity Desc.	Start	Finish	Duration
----------------	-------	--------	----------

2. **Left-click & drag** column to desired position.

8.15.3.3- Saving the Spreadsheet. You can save the columns that have been created as a table, which will allow you to switch between the different tables as required.

1. In the **View tab**, click the **Table** command.
2. Select **Save As**.
3. Give your table a new name.
4. Choose a **Category** for the new table to be saved in if desired.

5. To switch between different tables, in the **View tab**, click the **Table** command and select from the list of saved tables.

8.15.3.4- Table Definition. Table Definition is the properties box for the table you are in. It can also be used to create new tables and is useful for setting more specific attributes to produce more advanced tables e.g. changing a column title, referencing a token to a baseline rather than to the live project:

1. Right-click on a column heading and select Table Definition.
2. In Column title change the title of your column.

Table Definition Properties

Column Definitions

Field

- Line
- hierarchyID
- Name
- Start
- Finish
- Duration
- Total float
- Task.Work Breakd
- Task.Work Breakd
- Task.Organization
- Task.Organization
- Task.Cost Functio
- Task.Cost Functio

Appearance

Column title	Activity Desc.	Word wrap	<input checked="" type="checkbox"/>
Title align	Center	Blank for subheads	<input type="checkbox"/>
Cell align	Left	Zero as blank	<input type="checkbox"/>
Width	65.41		

Detail

Apply view filter ☐ Filter rolled-up values ☐

Data Live

Dates To

Specific task Settings... No settings

Attributes

Show fields Primary

Up Add

Down Remove

Editing the private copy of the table definition that is stored in your view.

Close Cancel Apply

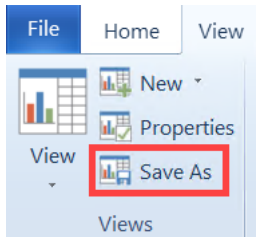
3. Click **Close**.

8.16- VIEWS

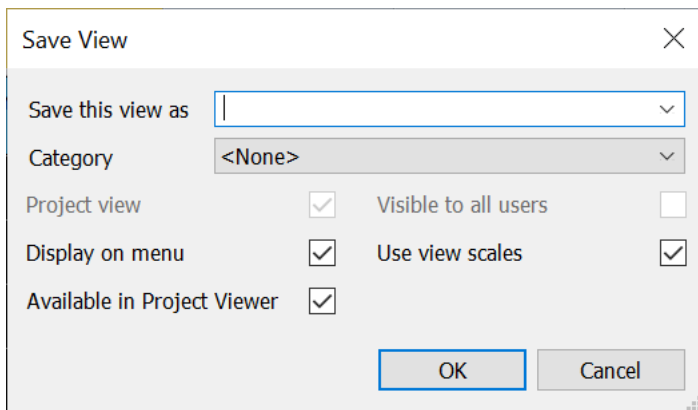
Once the different areas of the view have been changed, the settings can be saved as a collective called a view. Each view of your project therefore can display the project with different formatting.

8.16.1- Saving a View

1. On the **View Tab**, select **Save As**.

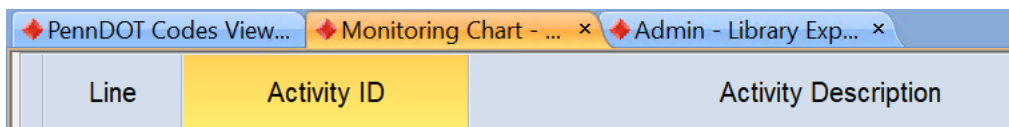


2. Give your View a name.



3. Click **Ok**.

Once a view has been opened, it will show as a tab across the top of your project area. Views can be changed by selecting the relevant tab:



8.16.2- Opening Another View

1. Select the **View icon** on either the **Home** or **View Tab** and choose the view you wish to open.



8.16.3- Copy Views From One Project to Another. You can copy views from one project to another. This is useful if you have set up a view in one project that you want to use in another project without having to set up the view's attributes, filter, sort/group and table again in the other project. When you copy a view from one project to another, you can specify whether associated objects, such as the view's filter, sort/group and table, are copied across to the destination project along with the view itself.

In order to copy a view from one project to another, both projects must be open in Elecosoft Powerproject.

To Copy a View From One Project to Another:

1. Open the project that contains the view that you want to copy, and the project to which you want to copy the view.
2. Within the project that contains the view that you want to copy, on the **View Tab**, in the **Views** group, click the **View** dropdown and select **More Views**.
3. The More Views dialog appears.
4. Select the view that you want to copy and click **Copy To**.
5. The Copy View to Project dialog appears.
6. Select the project to which you want to copy the view that you selected on the **More Views** dialog in the **Destination project** field.
7. Select the **Copy associated filter, sort and tables check box** to copy the filter, sort/group and table that have been applied to the view that you are copying to the destination project, or **clear this check box** to copy the view without these associated library objects.
8. Select the **Match missing object references by name check box** to attempt to match any objects that are referred to by the view to objects in the destination project that have the same name, or **clear the check box** to revert any such references to default values.
9. Select the **Copy view annotations check box** to copy any annotations that are attached to the view to the destination project, or **clear the check box** to copy the view without any such annotations.
10. Select the **Delete row and cell exceptions check box** to delete any row and cell exceptions that have been applied to the view's spreadsheet table, or **clear the check box** to copy row and cell exceptions to the destination project.
11. Click **OK**.

8.16.4- Specifying the Views to Open When a Project is Reopened. When reopening a Elecosoft Powerproject file you can specify which view(s) will open, it is possible to specify that the project will open up either.

- The view that was in focus the last time that the project was open.
- All views that were open when the project was closed.

To Specify What View is Opened When a Project is Opened:

1. Go to File > Options > View tab.
2. Click on the drop down arrow where it says *Restore on project open*.

Options for Publication 615 Update Project 3.16

Edit Assign **View** Format Progress Reschedule File Locations Calendars Spreadsheet General

- Project view

Show types...

Display WBS by:

☒ Name ☐ Code

Sort milestone appearances by:

☒ Name ☐ Sort order

- Default view options

Restore on project open

Project default view Edit...

Histogram 'Show Tasks' view

PDSACTBR- PennDOT Standard Activity Ba

☒ Include +/- button on summary name column

☐ Display status indicators in the spreadsheet

☒ Show sort bands in the bar chart

- Default currency

USD

☐ Always display amounts in this currency

- Code library options

☒ Show code library appearance

☒ Use short format in code library bands

Sort/group entries by:

☒ Name ☐ Sort order

- Bar line shading

☐ Show shading on changed bar lines

- Property dialogs

☐ Show common information

- Chart headers

☐ Show multiple chart headers

- Miscellaneous

☐ Always draw whole milestones

Identify non-embedded baselines by:

☒ Title ☐ File name

ASAP force critical override color

None

Close

3. Select Last active view, All open views, User default view, or Project default view.

Properties for Publication 615 Update Project 3.16

Properties Fields

Details

Name Publication 615 Update Project 3.16

Short name Publicatio Status Normal

For By

Dates

Start date 3/16/2020 8:00 AM Duration 2331.00d

Finish date 7/10/2029 4:00 PM Duration unit Elapsed Days

Imposed start ☒ 3/16/2020 00:00 Imposed finish ☐ 3/20/2020 00:00

Date zero 3/16/2020 00:00 Delivery date ☐ 3/20/2020 00:00

Progress

Progress method Overall - Approximate

Progress date 3/16/2020 8:00 AM % Complete 0.00

Report date 3/16/2020 0:00 AM Use calculated overall % weights ☒

Resources And Costs

Effort (demand) 0.00eh (0.00eh) Work 0.00

Cost \$0.00 Income \$0.00

Ignore satisfied costs in roll-ups ☒

Miscellaneous

Number of tasks 642 Default View PennDOT Codes View

Number of logged on users 1 (as at 3/20/2020 10:13:13 AM)

Close

4. If Project Default View or User Default View was selected, click **Edit . . .** to select the Default to use.
5. Click on **Close** and these settings will be saved for the next time the project is opened.

8.17- BASELINES

Baselines are created to record the project at a particular point in time (e.g. for recording the contract program), this allows you to compare current information with planned information. A baseline is a record of all or any part of a project including bars, tasks, links, resource/cost allocations, libraries, histograms and annotations. Creating a baseline allows you to forecast using what if scenarios and can be useful with claim situations.

Once a project schedule has been reviewed, fine-tuned, and accepted, it can be considered final. At this point it is important to set an Initial Baseline which records the initial project plan, including scheduled dates, task assignments, work and costs. . The Initial Baseline should always be created prior to any progress being entered into the schedule.

8.17.1- Creating Baselines

1. In the Project tab, choose the Baseline Manager icon.
 - The Baseline Manager Dialogue Box will appear.



Baseline/What If Manager (Publication 615 Update Project 3.16) ✕

Search

Name	ID	Created	Updated	Active	Cur...	Imp...	Del...	Reverti...
There are no items to show.								

New...
Merge...
Delete
Set As Current
Revert To
Import...
Export...

Details

Pathname

Description

Appearance

Revert Options

☒ Restore deleted objects

☐ Restore deleted and changed objects

☐ Restore selected objects

☐ Overwrite

Close
Cancel
Apply

2. Click **New**.
 - The Baseline Wizard box will pop up.

3. Enter a **Name** for your baseline (see Note below), **Description**, and an **Issue Date**.

Baseline Wizard

Details
Enter a name, description and issue date for the baseline

Give your baseline a name to make it easier to recognize in the future. This need not be the same as the filename.
You may also add an optional longer description and alter the issue date if it is not correct.

Name: Initial Baseline

Description: Schedule of Record

Issue date: 3/20/2020

☐ Embed the baseline in the file

< Back **Next >** Finish Cancel Help

Note: Every project must have a baseline created once the schedule is accepted and before any progress is entered. This baseline should be named **Initial Baseline** with a description of **Schedule on Record**. Once the project is underway, if additional baselines have to be created they should be named the following:

Name	Description
Initial Baseline	Schedule on Record
Baseline Update 1	Updated Baseline (Revision 1)
Baseline Update 2	Updated Baseline (Revision 2)
Baseline Update X	Updated Baseline (Revision X)

4. The **Next** button will become active once details have been completed. Click to continue to the next stage.

5. On the **Destination** screen, if you want to place the baseline in another location instead of the directory that has been specified select **Browse**. If not changed the baseline will be stored in the same location on your computer as the live project. Change the file name to the name of your baseline (for example XXXXX_Initial.ppb)

Baseline Wizard

Destination
Specify a filename and location for the new baseline

Enter a filename and location for the new baseline, or click Browse to search for a location to save it.

Enter a filename only, without specifying a path, to create the baseline in the same folder as the project itself.

If you do this, the link between the project and the baseline will be maintained if the project and baseline are both copied subsequently from one folder to another.

Publication 615 Update Project 3.16_0.ppb

Browse...

< Back Next > Finish Cancel Help

6. Click **Next** to continue.

7. On the *Scope* screen, choose '*All tasks in the current view*'. If you are at the top level of your project this will include any tasks held within expanded tasks or sub charts (N.B. you can alternatively choose to baseline a selection from the program).

Baseline Wizard

Scope
Define the data you want to baseline

Define the data you want to baseline.

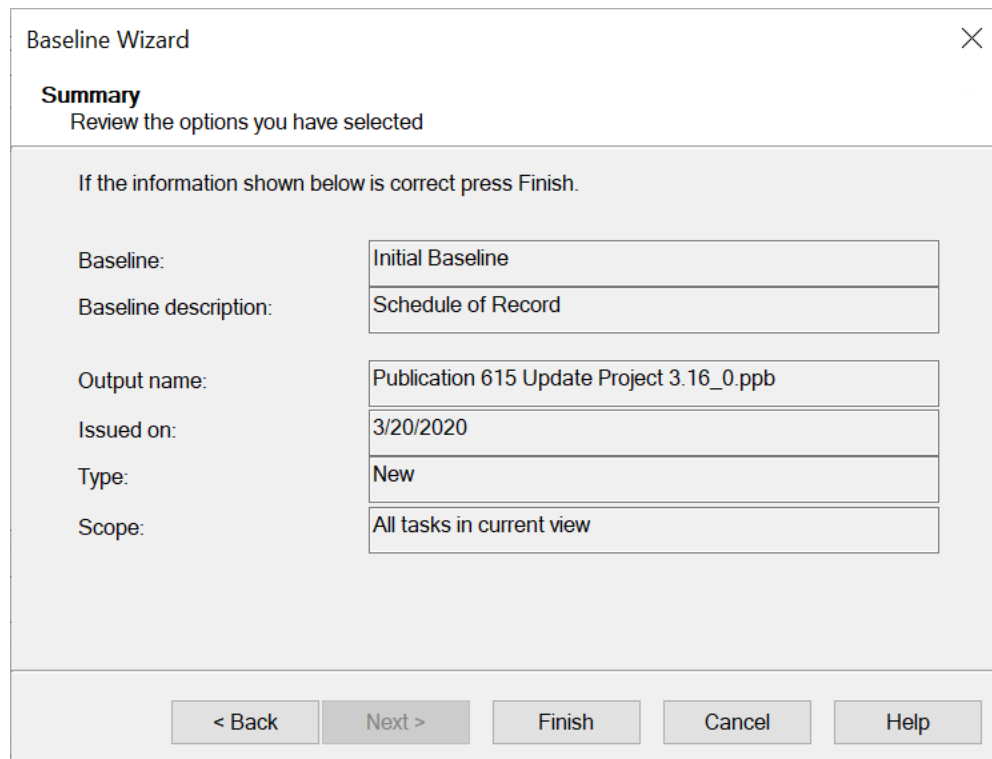
☒ All tasks in the current view

☐ Selected tasks only

< Back Next > Finish Cancel Help

8. Click *Next* to continue.

9. Check the information is correct on the final screen, then select **Finish** as shown on the following page.



Baseline Wizard

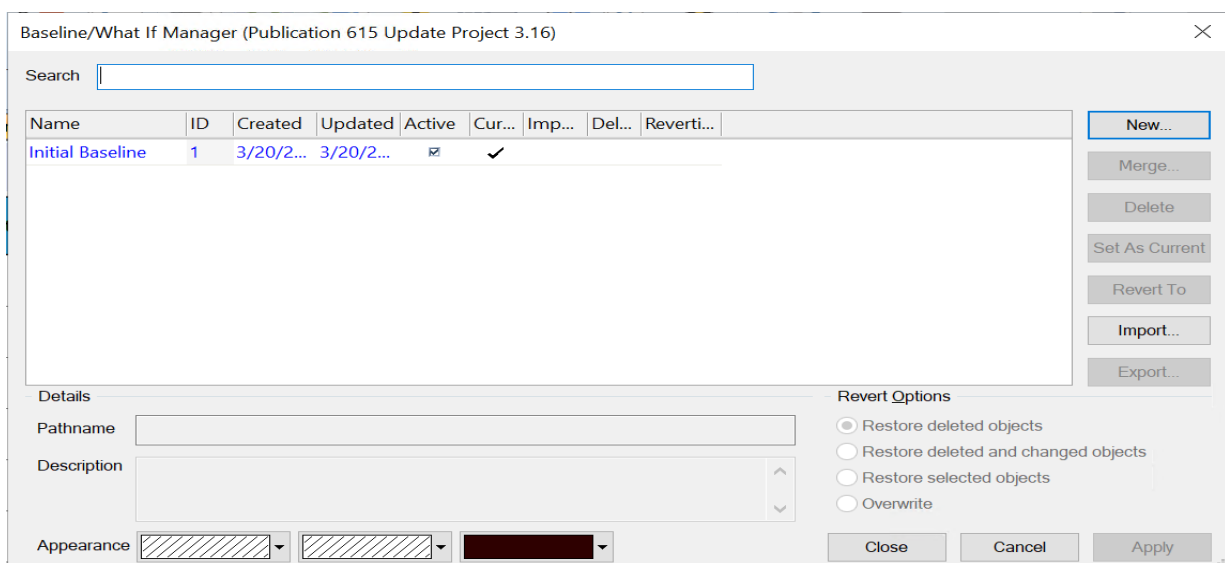
Summary
Review the options you have selected

If the information shown below is correct press Finish.

Baseline:	Initial Baseline
Baseline description:	Schedule of Record
Output name:	Publication 615 Update Project 3.16_0.ppb
Issued on:	3/20/2020
Type:	New
Scope:	All tasks in current view

< Back Next > Finish Cancel Help

10. Once you have completed the new project wizard you will return to the Baseline/What If manager box. If you click on the name of the baseline you will then see the baseline details.



Baseline/What If Manager (Publication 615 Update Project 3.16)

Search

Name	ID	Created	Updated	Active	Cur...	Imp...	Del...	Reverti...
Initial Baseline	1	3/20/2...	3/20/2...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

Details

Pathname

Description

Appearance

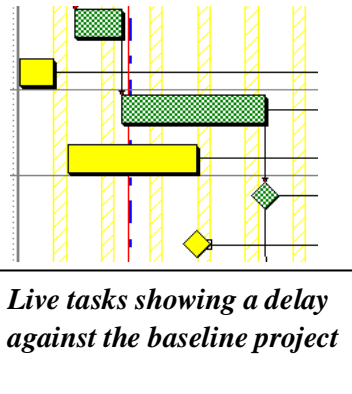
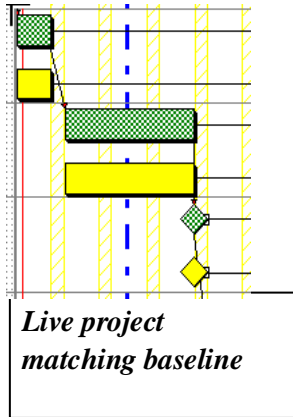
Revert Options

☒ Restore deleted objects
☐ Restore deleted and changed objects
☐ Restore selected objects
☐ Overwrite

Close Cancel Apply

Note: The baseline has a tick under 'Current'. If baselines are created and you want a new baseline to become current, you must click the 'Set as Current' button, which moves the tick.

8.17.2- Changing the Appearance of Baseline Tasks. The Baseline will now appear as a second line mirroring the task above. (Should you now make a change to your program e.g. an anticipated delay, the baseline will not move)



8.17.2.1- To Change the Color of the Baseline

1. In the Project tab, choose the Baseline Manager icon.
2. Select the appropriate baseline.



Baseline/What If Manager (Publication 615 Update Project 3.16)

Search

Name	ID	Created	Updated	Active	Cur...	Imp...	Del...	Reverti...
Initial Baseline	1	3/20/2...	3/20/2...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

Details

Pathname: C:\Users\damaliniak\Desktop\Publication 615 Update Project 3.16_0.ppb

Description: Schedule of Record

Appearance:

Revert Options

☒ Restore deleted objects

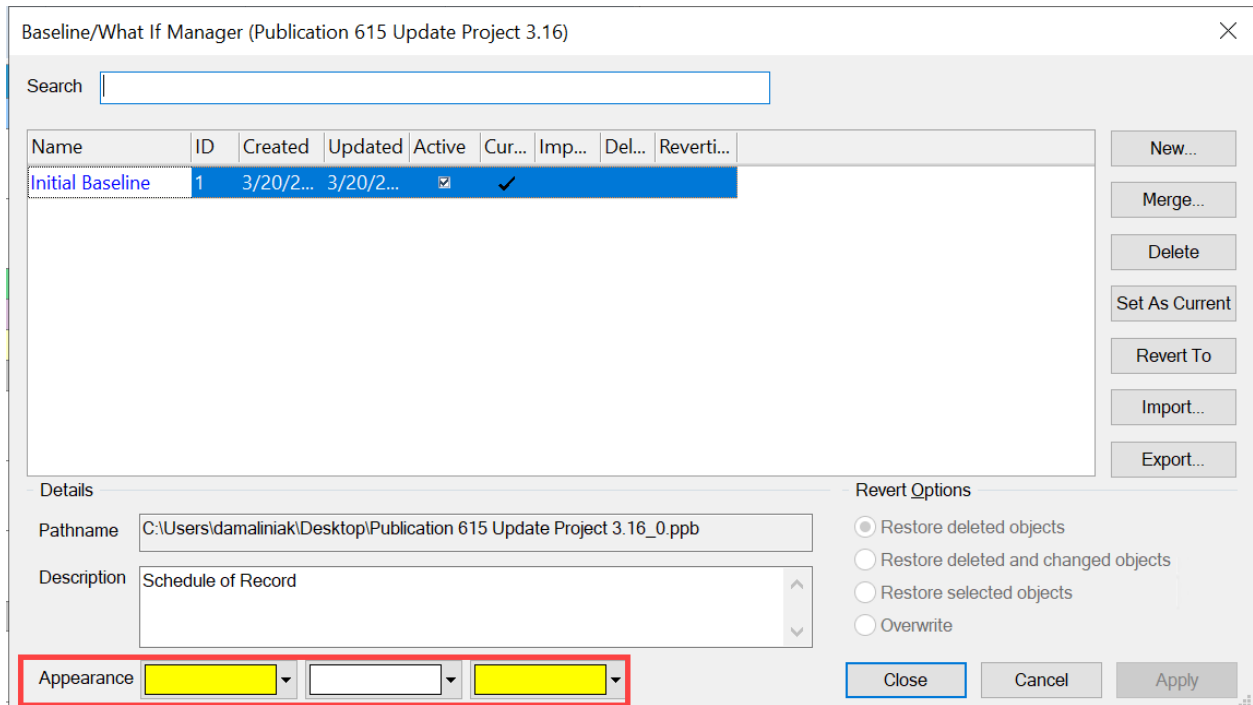
☐ Restore deleted and changed objects

☐ Restore selected objects

☐ Overwrite


Buttons: Close, Cancel, Apply

- Click the **appearance color bar** at the bottom left to change the appearance of the baseline by either changing the foreground, background, or pattern.

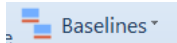


- Close out of the baseline manager dialogue by selecting **Close**.

8.17.2.2- To Hide a Baseline From the View

- In the Format tab, choose the Show/hide baselines icon. 

8.17.2.3- To Choose Specific Baselines to Show or Hide

- Click on the **Format tab** on the ribbon.
- Click the **drop down arrow** beside Baselines. 
- Tick or Un-tick** the baseline that you want or do not want to be displayed.

8.17.3- Reverting to a Baseline. When planning a project you might create one standard plan then experiment with several other ‘what if’ scenarios and baseline each scenario for your records. If you decide that you want to adopt one of these scenarios as the project plan, you can revert the project to that baseline.

8.17.3.1- To Revert a Project to a Baseline

- In the **Project tab**, choose the **Baseline Manager**



icon.

2. Select the baseline you want to revert to and click **Revert To**.

Baseline/What If Manager (Publication 615 Update Project 3.16)

Search

Name	ID	Created	Updated	Active	Cur...	Imp...	Del...	Reverti...
Initial Baseline	1	3/20/2...	3/20/2...	✓	✓			

Details

Pathname: C:\Users\damalniak\Desktop\Publication 615 Update Project 3.16_0.ppb

Description: Schedule of Record

Appearance: [Yellow] [White] [Yellow]

Revert Options

- ☒ Restore deleted objects
- ☐ Restore deleted and changed objects
- ☐ Restore selected objects
- ☐ Overwrite

Buttons: New..., Merge..., Delete, Set As Current, **Revert To**, Import..., Export..., Close, Cancel, Apply

3. From the **Revert Options** group, select: **Overwrite** to revert the whole project to the baseline.
4. Click **Close**.
5. Click **OK** to revert to the baseline.

All tasks will now move back to their positions recorded in that baseline.

8.17.4- Merging. Once a baseline has been created a function becomes available that allows you to merge extra data into that baseline.

To Merge Data into a Baseline

1. In the **Project tab**, choose the **Baseline Manager** icon.
2. Select the baseline you wish to merge the new data in to.



3. Select **Merge**.

Baseline/What If Manager (Publication 615 Update Project 3.16)

Search

Name	ID	Created	Updated	Active	Cur...	Imp...	Del...	Reverti...
Initial Baseline	1	3/20/2...	3/20/2...	✓	✓			

Buttons: New..., Merge..., Delete, Set As Current, Revert To, Import..., Export...

Details

Pathname: C:\Users\damaliniak\Desktop\Publication 615 Update Project 3.16_0.ppb

Description: Schedule of Record

Appearance: [Yellow] [White] [Yellow]

Revert Options

- ☒ Restore deleted objects
- ☐ Restore deleted and changed objects
- ☐ Restore selected objects
- ☐ Overwrite

Buttons: Close, Cancel, Apply

4. The **Details** screen of the baseline will appear.

You cannot change the name of the baseline but may wish to amend the description if required.

5. Click **Next**.

Baseline Wizard

Scope
Define the data you want to baseline

Define the data you want to merge into the existing baseline.

- ☒ All tasks in the current view
- ☐ Selected tasks only

The existing baseline may be altered by the merge in various ways. Please select your preferred method below.

- ☐ Add new data only
- ☐ Add new data and edit existing data
- ☒ Full update

☐ Make a backup of the baseline

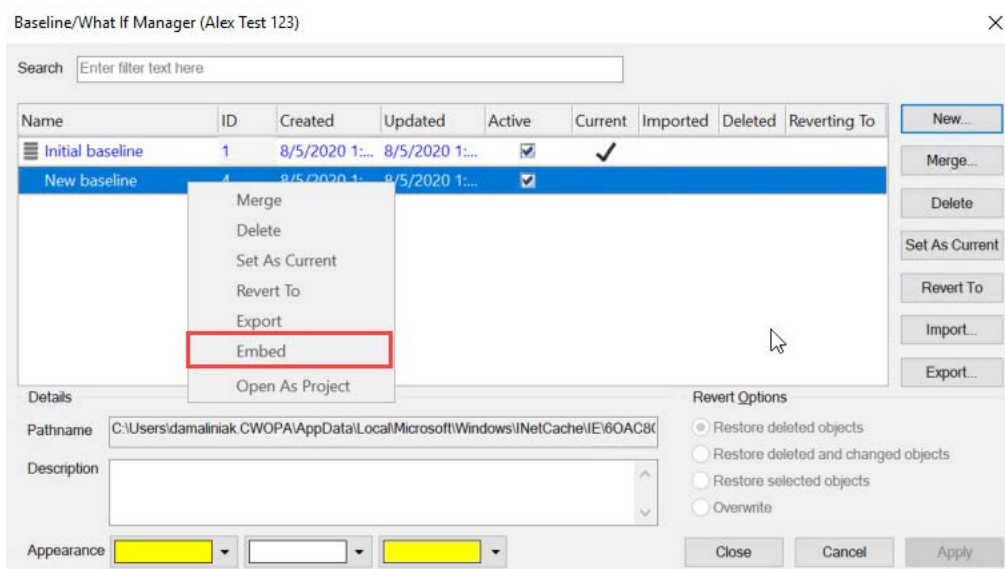
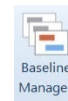
Buttons: < Back, Next >, Finish, Cancel, Help

6. On the Scope screen choose the data you are merging in, either **All tasks in the current view** or just **Selected tasks**.
7. In the lower part of this dialogue box choose how you want the existing baseline to be effected by the merge, if you are only adding in additional data then choose **Add new data only**. If the original data has changed choose the 2nd option or a full update would include any deleted data.
8. Click **Next**.
9. If the Summary details are correct click **Finish**.

Your baseline will be updated to record the changes made to your project.

8.17.5- Embedded Baselines. Once a baseline is created, a function becomes available that allows you to embed that baseline to the schedule, instead of having a stand along file.

1. In the **Project tab**, choose the **Baseline Manager** icon.
2. Select the baseline you wish to embed into the file.
3. **Right Click** on the baseline and select **Embed**.



4. The embedded baseline will now have horizontal parallel bars next to the baseline name.

8.18- UPDATING PROGRESS

Once the project is underway and an initial baseline is created, you should record its progress at regular intervals. Recording progress ensures that your project is kept up to date and lets you see if work is progressing as planned or if there are delays. It also ensures that you know how much work remains to be done to complete the project and will also give you a projected program end date. Updating consists of recording task Actual Start dates, the amount of work complete or the duration remaining, and Actual Finish dates when the activities are complete.

When you progress a task an actual start date must be entered and an actual finish date must be entered when the task is finished. Once the task is complete, mark it as complete and enter the actual finish date.

Before any progress is entered, the decision has to be made on how the schedule is going to be progressed. The options to progress are to use overall percent complete or remaining duration.

To progress via Overall Percent Complete, the following toggles must first be set within **File, Options, Progress Tab**:

The screenshot shows the 'Options for Publication 615 Update Project 3.16' dialog box with the 'Progress' tab selected. The dialog has a title bar with a close button (X) and a tabbed interface with the following tabs: Edit, Assign, View, Format, Progress (selected), Reschedule, File Locations, Calendars, Spreadsheet, and General.

Under the 'Progress' tab, the settings are organized into sections:

- Progress entry mode**
 - ☐ Update duration in step
 - ☒ Fill to progress line
 - ☐ Do not recompute remaining after overall percent update
- Snapping**
 - ☒ Snap actual/remaining duration to snapping unit
 - Progress snapping unit:
- Jagged Progress View**
 - ☒ Use current baseline
 - ☐ Use project baseline(s)
- Ribbon, toolbar progress controls and percent complete field**
 - ☐ Duration percent complete
 - ☒ Overall percent complete
- Miscellaneous**
 - ☐ Enter progress shows 'User Percent Complete'
 - ☐ In Progress from allocations, recalculate durations where allocation is calculated
 - ☐ Update progress via duration remaining
 - Progress method:
 - Site Progress Login:

A 'Close' button is located at the bottom right of the dialog.

To progress via remaining duration, the following toggles must first be set within **File, Options, Progress Tab**:

The screenshot shows the 'Options for Publication 615 Update Project 3.16' dialog box with the 'Progress' tab selected. The dialog has a title bar with a close button (X) and a tabbed interface with the following tabs: Edit, Assign, View, Format, Progress (selected), Reschedule, File Locations, Calendars, Spreadsheet, and General.

Under the 'Progress' tab, the settings are organized into sections:

- Progress entry mode:**
 - ☐ Update duration in step
 - ☒ Fill to progress line
 - ☐ Do not recompute remaining after overall percent update
- Snapping:**
 - ☒ Snap actual/remaining duration to snapping unit
 - Progress snapping unit: Days (dropdown menu)
- Jagged Progress View:**
 - ☒ Use current baseline
 - ☐ Use project baseline(s)
- Ribbon, toolbar progress controls and percent complete field:**
 - ☐ Duration percent complete
 - ☒ Overall percent complete
- Miscellaneous:**
 - ☒ Enter progress shows 'User Percent Complete'
 - ☐ In Progress from allocations, recalculate durations where allocation is calculated
 - ☒ Update progress via duration remaining
 - Progress method: Overall - Approximate (dropdown menu)
 - Site Progress Login: Company ID and Username (dropdown menu)

A 'Close' button is located at the bottom right of the dialog.

8.18.1- Working with Single Progress Periods. The simplest way to update progress is to use one progress line. This allows for changing the report date to suit whichever frequency is required for creating progress reports. The following details the actions to perform when updating progress.

To Displaying the Progress Table:

Depending on how the user is going to enter progress will depend on which progress columns need to be displayed in the spreadsheet in order to enter the project progress.

1. Add the progress specific columns.

The overall percent complete progress specific columns to add are:

Task ID	Name	Duration	Start	Finish	Actual start	Actual finish	Planned percent complete (PPC)	Overall percent complete
Identification Category		Date Category				Progress Category		

The remaining duration progress specific columns to add are:

Task ID	Name	Duration	Start	Finish	Actual start	Actual finish	Duration remaining
Identification Category		Date Category				Progress Category	

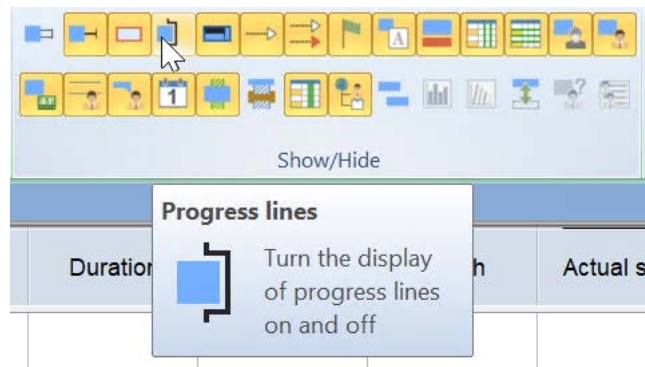
2. Save this table to use again in the future. Users can do this by clicking the **View tab > Table > Save As**, and then give the table a name, for example “Overall Percent Complete Progress Table” or “Remaining Duration Progress Table.”

NOTE: In Elecosoft Powerproject there are numerous ways to enter progress against tasks. The easiest way is to use the spreadsheet to enter the data as described above.

To Display Progress Lines:

To view the progress drop line and shading on the tasks within the Bar Chart:

1. On the **Format tab** select the **Progress lines** toggle switch.



You should now see a black line showing in the bar chart, usually on the start date of new projects.

To Set the Report Date:

To enter progress up to the correct date, the report date must first be established.

1. Double-click the black progress line in the bar chart.

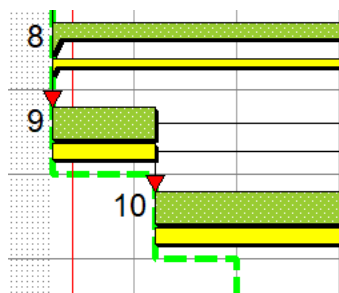
Or

1. In the Project View, click on the + sign next to **Project Periods**, then right-click on the **Project Report Date** and select **Properties**.

The Progress Period Properties dialogue will appear.

2. Change the Report date to what is required, for example 1 week into the program.
3. Click Close.

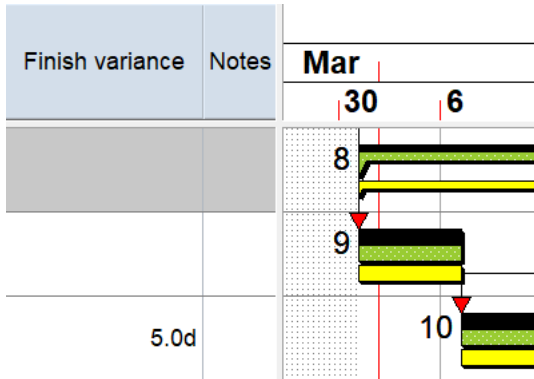
Notice how the progress line starts from the Project Report Date and 'jags' around the left hand side of the task(s).



To Enter Progress Using Overall Percent Complete:

The Planned Percent Complete column tells users what they should have done by the report date selected above.

1. Type the Actual Start Date in the '**Actual Start Date**' column and the progress value in the '**Overall Percent Complete**' column to see shading along the top of the task(s). If the task is 100% complete, type the Actual Finish Date in the '**Actual Finish Date**' column.

**To Enter Progress Using Remaining Duration:**

1. Type the Actual Start Date in the '**Actual Start Date**' column and the Remaining Duration in the '**Duration Remaining**' column to see shading along the top of the task(s). If the task is 100% complete, type the Actual Finish Date in the '**Actual Finish Date**' column.

8.18.2- Rescheduling

1. On the **Home** tab, click the **Reschedule Branch** icon.
2. In the Reschedule Progress Period Warning pop up, the Straighten progress entry period should be set to **Progress Entry Period**. If the user does not want to straighten the line, select **None**.



Reschedule Progress Period Warning

☐ Straighten progress period
The reschedule will straighten the progress line to this period: Progress entry period

☐ Progress entry period
Progress is being recorded against this progress period: Default (4/13/2020 0:00 AM)

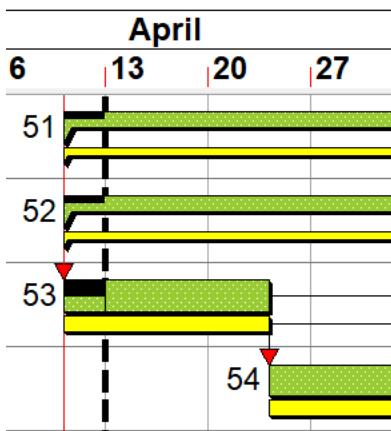
☐ Do not warn again

OK Cancel

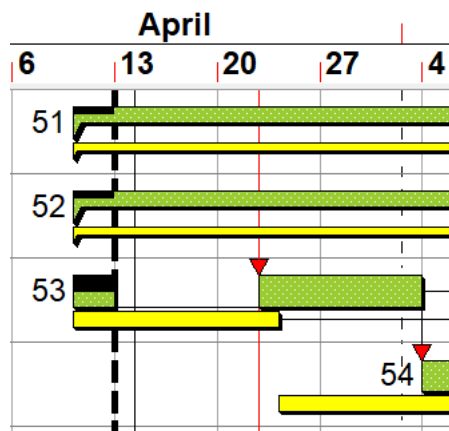
If “Progress entry period” is selected in the pop-up above, the effects of the progress will be visible when Elecosoft Powerproject straightens the progress line and moves all remaining work of incomplete and non-started tasks to the right of the Report Date.

NOTE: If the user has not baselined, then the user needs to be aware of the original start and end dates of the project as straightening the line may affect the end date of the project (the Undo option is available to rectify this). Alternatively, the user can select **File > Save As** before the user reschedules the project.

Before Rescheduling



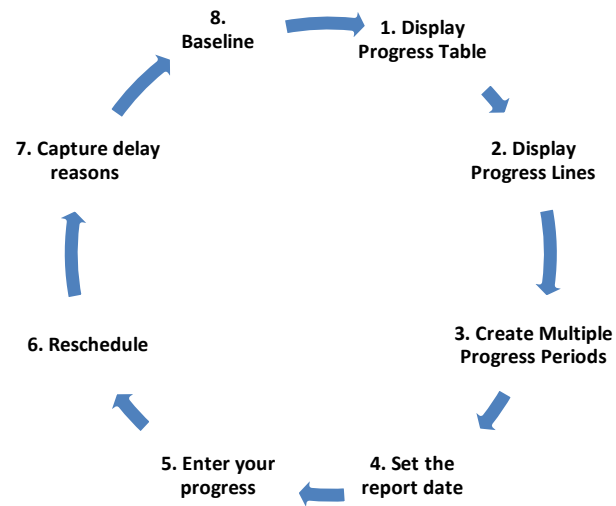
After Rescheduling



Notice the Finish Variance column is now populated, informing the user of the difference between the task(s) planned and actual finish dates.

To display the non-rescheduled view of the project and not the straight line, select Undo.

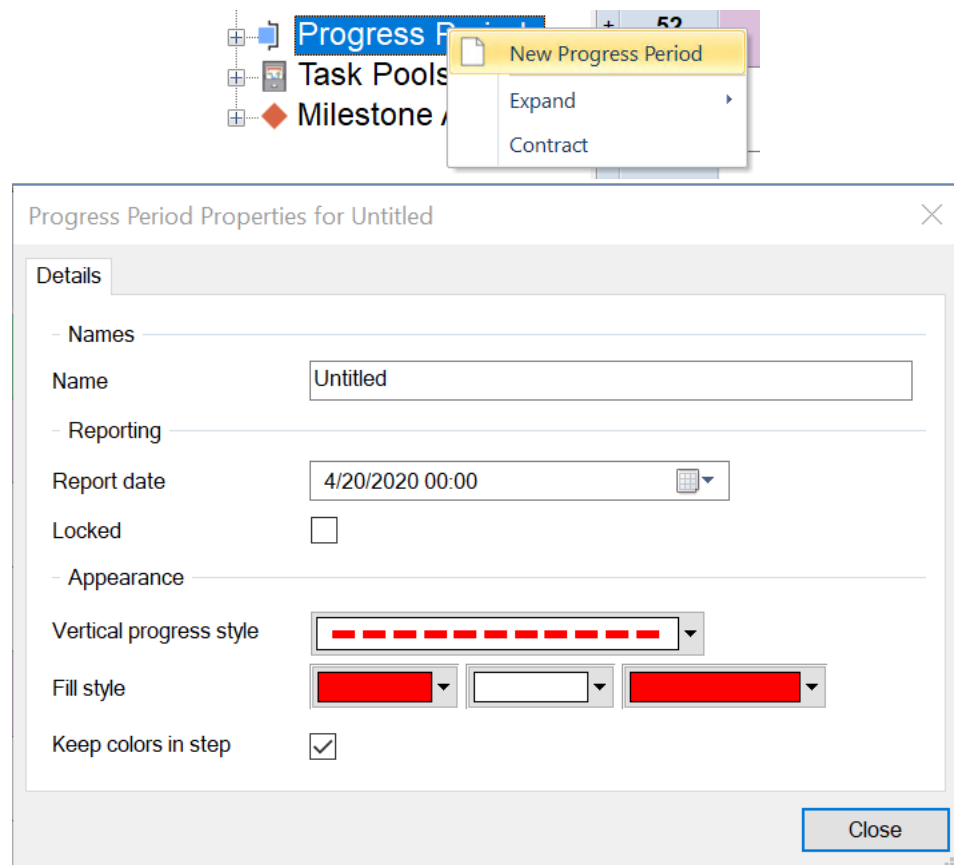
8.18.3- Working with Multiple Progress Periods



8.18.3.1- To Create Multiple Progress Periods:


Progress periods allow you to display against each task when work was carried out. To create a progress period:

1. In the Project View, Right-click on Progress Periods.
2. Select New Progress Period. The Progress Period Properties Dialouge will display

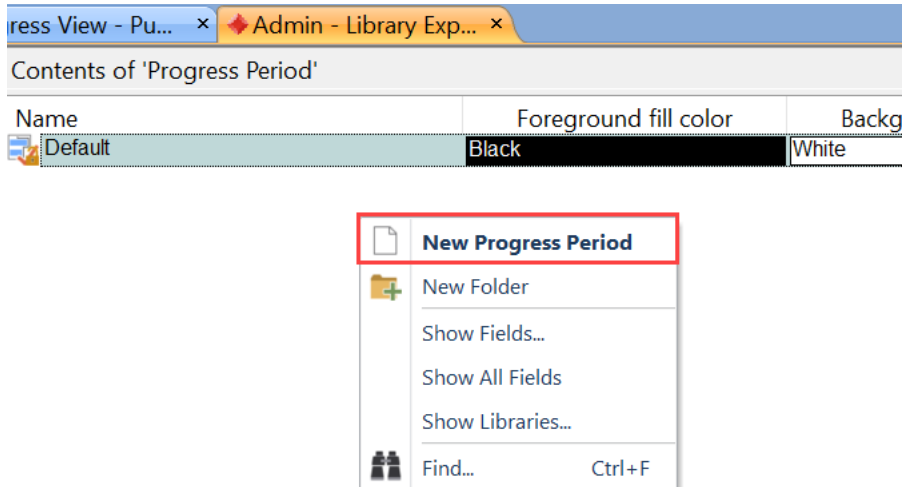


3. Give it a name 'Week 1' and ensure the date is at the end of the first week of the project. The Appearance can be modified to change fill style foreground and background color along with pattern.
4. Click Close.
5. Repeat steps 1 – 3 for as many progress period that need to be created.

Or another way to create Progress Periods is to do so using the Library Explorer.

1. Open the Library Explorer by selecting **Library Explorer**  icon on the **Quick Access Toolbar**.
2. Select the **Progress Period** folder on the left hand window.

3. Right-click underneath the Project Report Date entry and select New Progress Period.



4. Name it '**Week 1**' and ensure the date is at the end of the first week of the project. Then press **Enter** on your keyboard.
5. On the next line, type '**Week 2**', ensuring the date is at the end of the second week and **Enter**. On the following line type '**Week 3**' and ensure the date is at the end of week three, etc.

The screenshot shows the 'Contents of Progress Period' window with a table listing weeks from Week 1 to Week 10. Each week has a unique line style and color. The table is as follows:

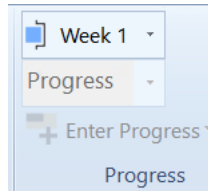
Name	Report date	Line style
Default	4/13/2020 0:00 AM	Black solid line
Week 1	4/20/2020 0:00 AM	Red dashed line
Week 2	4/27/2020 0:00 AM	Green dashed line
Week 3	5/4/2020 0:00 AM	Blue dashed line
Week 4	5/11/2020 0:00 AM	Cyan dashed line
Week 5	5/18/2020 0:00 AM	Yellow dashed line
Week 6	5/25/2020 0:00 AM	Magenta dashed line
Week 7	6/1/2020 0:00 AM	Grey dashed line
Week 8	6/8/2020 0:00 AM	Dark grey dashed line
Week 9	6/15/2020 0:00 AM	Brown dashed line
Week 10	6/22/2020 0:00 AM	Dark green dashed line

6. When you are finished close the Library Explorer by clicking on the 'x'.

8.18.3.2- To Set the Report Date:

Before we enter the progress we will need to ensure we are recording the progress against the correct progress period

1. On the **Home tab**, ensure that the correct period is set from the Progress Period drop down list.



Or

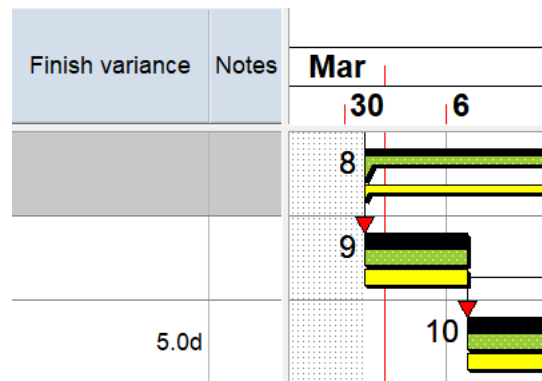
1. In the Project View, click the + **sign** next to Progress Periods, right-click on the progress period that you want to use and select **Progress Entry Period**.

Note: When it comes to updating progress for the following week, you will need to follow the Progress Cycle from the steps above, then select Week 2, and so on for the following weeks.

You will notice the progress line will appear down the report date and 'jag' around the left hand side of the appropriate task(s)

8.18.3.3- To Enter Progress Using Overall Percent Complete

1. Entering progress for multiple progress periods is the same as entering it with one. Type the Actual Start Date in the '**Actual Start Date**' column and the progress value in the '**Overall Percent Complete**' column to see shading along the top of the task(s). If the task is 100% complete, type the Actual Finish Date in the '**Actual Finish Date**' column.



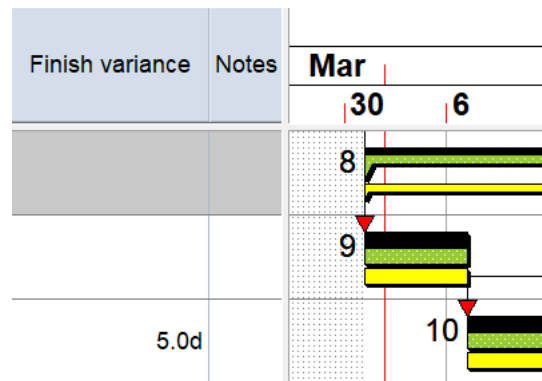
8.18.3.4- To Enter Progress Using Remaining Duration

1. Entering progress for multiple progress periods is the same as entering it with one. Type the Actual Start Date in the '**Actual Start Date**' column and the Remaining Duration in the '**Duration Remaining**' column to see shading along the top of the task(s). If the task is 100% complete, type the Actual Finish Date in the '**Actual Finish Date**' column.

8.18.3.5- Rescheduling with Multiple Progress Periods. When rescheduling the project with multiple progress periods, you will notice them listed in the *Straighten Progress Period* drop down list.

You have 2 options – you could reschedule to the Straighten progress period as seen above or select the Progress entry period (this will reschedule to whichever week has been selected on the Home tab).

8.18.4- Other Progress Tools



8.18.4.1- Showing Tasks in Progress on the Spreadsheet. You can configure the spreadsheet to highlight start and finish fields that represent actual dates. This provides you with a way of being able to see which dates are actual dates without having to display actual start and actual finish columns.

8.18.4.2- Displaying Specific Progress Periods in the Bar Chart

To view the progress drop line and shading on the tasks within the Bar Chart:

1. On the **Format** tab, select **Format Bar Chart**
2. Select the **Progress** tab.



icon.

Format Bar Chart (Progress View - Publication 615 Update Project 3.16 (Publication 615 Update Project 3.16.p... X

Tasks Schedule Allocations **Progress** Non-Working Vertical Scale Auto Height Links Baselines General

Lines

☒ On

☐ Progress entry date line only

Override color: None

Progress Periods

<input checked="" type="checkbox"/>	Week 2
<input checked="" type="checkbox"/>	Week 3
<input checked="" type="checkbox"/>	Week 4
<input checked="" type="checkbox"/>	Week 5
<input checked="" type="checkbox"/>	Week 6
<input checked="" type="checkbox"/>	Week 7
<input checked="" type="checkbox"/>	Week 8
<input checked="" type="checkbox"/>	Week 9
<input checked="" type="checkbox"/>	Week 10

Shading

☒ Show shading

Tasks

Default shading:

☒ Fixed

☐ Colored

Summaries/Hammocks

Default shading:

☒ Fixed

☐ Colored

Drawing

☒ All

☐ Completed

☐ Uncompleted

Miscellaneous

☒ Split progressed sections

☐ Use first out of sequence section

Line style

☒ Jagged (draw to task progress)

☐ Straight (draw to report date)


☐ Straight progress line on Summaries/Hammocks

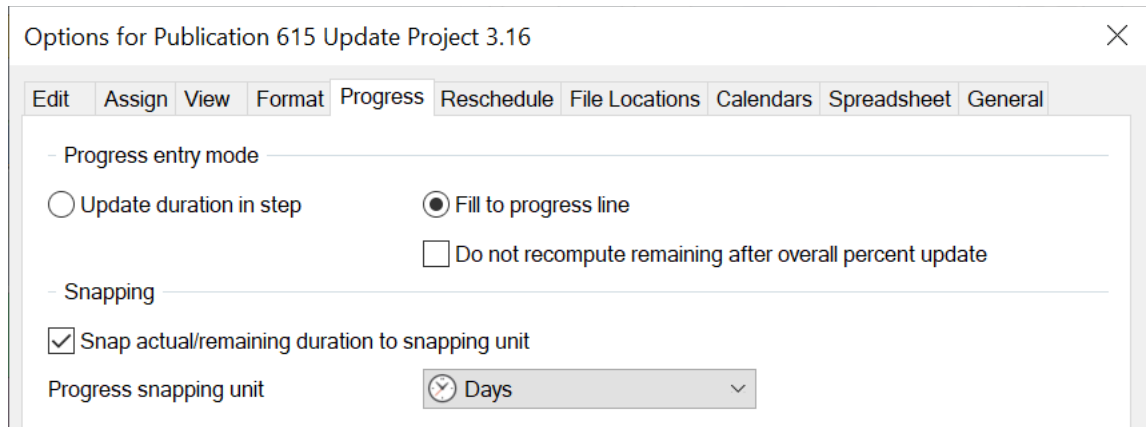
Close Cancel Apply

3. Put a tick in the **Lines On** tick box.
4. If you tick the **Progress entry line only** option, the software will automatically show the drop line of the selected report date.
5. If you want a specific progress drop line to show, select the progress period by placing a tick against that progress period.

8.18.5- Progress Options. When entering progress you may want to ensure that the correct options are set to suit your project.

1. In the **File tab**, select the **Options** icon.
2. Choose the **Progress tab**.

 Options...



The screenshot shows the 'Options for Publication 615 Update Project 3.16' dialog box with the 'Progress' tab selected. The tabs at the top are: Edit, Assign, View, Format, Progress (selected), Reschedule, File Locations, Calendars, Spreadsheet, and General. The 'Progress entry mode' section has two radio buttons: 'Update duration in step' (unselected) and 'Fill to progress line' (selected). Below this is a checkbox for 'Do not recompute remaining after overall percent update' (unselected). The 'Snapping' section has a checked checkbox for 'Snap actual/remaining duration to snapping unit'. Below this is a dropdown menu for 'Progress snapping unit' set to 'Days'.

3. Under **Overall Percent Entry Mode** decide if you would like the progress to be updated according to the amount of progress done (**Update duration in step**) or whether you would like the progress to automatically fill up to the current report line, pushing the remaining duration to the right of the report line (**Fill to progress line**).
4. Under **Snapping** decide if you would like the progress to snap to the nearest duration (e.g. **Days**). If this is not ticked the progress will sit at exactly the progress position stated (e.g. 10 day task with 33% done will leave 6d 5.6h left. If the snapping is ticked it will read 6d remaining).
5. Click **Close**.

8.18.6- Working with Baselines, Columns and Progress. If you would like to compare planned and actual progress data in your columns, there are a few things of which to be aware. Firstly, all planned data within Elecosoft Powerproject comes from the Baselines you have created. All the actual data is what you have recorded against the live tasks in your project.

8.18.6.1- Displaying Weekly Progress Figures (only possible with multiple progress periods)

To show the progress entered against the tasks for each week you have updated on, we will add a number of '**Overall Percent Complete**' or '**Percent Complete**' columns (see the difference above to choose your preferred column).

1. In the **Table Definitions Properties dialogue** of the first column, rename the title to **'Week 1 Progress'** and change the **Progress Period** to retrieve the information from **'Week 1'**:

Table Definition Properties

Column Definitions

Field	Appearance	Detail	Attributes
Line	Column title: Overall percent complete	Apply view filter: <input type="checkbox"/>	Show distributed average for charts/summaries: <input type="checkbox"/>
Unique task ID	Title align: Center	Data: Live	Progress period: <All>
Name	Cell align: Center	Dates: To	Filter rolled-up values: <input type="checkbox"/>
Start	Width: 22.50	Specific task: Settings...	Cumulative: <input type="checkbox"/>
Finish		No settings	
Duration			
Planned percent c			
Overall percent co			
Actual start			
Actual finish			
Duration remainin			
Overall percent co			
Finish variance			
Notes			

Show fields: Primary

Up Add Down Remove

Editing the private copy of view.

Apply

Progress entry period

<All>

Default (4/13/2020 0:00 AM)

Week 1 (4/20/2020 0:00 AM)

Week 2 (4/27/2020 0:00 AM)

Week 3 (5/4/2020 0:00 AM)

Week 4 (5/11/2020 0:00 AM)

Week 5 (5/18/2020 0:00 AM)

Week 6 (5/25/2020 0:00 AM)

Week 7 (6/1/2020 0:00 AM)

Week 8 (6/8/2020 0:00 AM)

Week 9 (6/15/2020 0:00 AM)

Week 10 (6/22/2020 0:00 AM)

2. Then **highlight the second column** you added and rename it to '**Week 2 Progress**' and point the column to the '**Week 2**' Progress Period, etc.

Table Definition Properties

Column Definitions

Field	Appearance	Detail	Attributes
Line	Column title: Overall percent complete	Apply view filter: <input type="checkbox"/>	Progress period: <All>
Unique task ID	Title align: Center	Data: Live	Progress entry period: <All>
Name	Cell align: Center	Dates: To	Week 1 (4/20/2020 0:00 AM)
Start	Width: 22.50	Specific task: Settings...	Week 2 (4/27/2020 0:00 AM)
Finish			Week 3 (5/4/2020 0:00 AM)
Duration			Week 4 (5/11/2020 0:00 AM)
Planned percent c			Week 5 (5/18/2020 0:00 AM)
Overall percent co			Week 6 (5/25/2020 0:00 AM)
Actual start			Week 7 (6/1/2020 0:00 AM)
Actual finish			Week 8 (6/8/2020 0:00 AM)
Duration remainin			Week 9 (6/15/2020 0:00 AM)
Overall percent co			Week 10 (6/22/2020 0:00 AM)
Finish variance			
Notes			

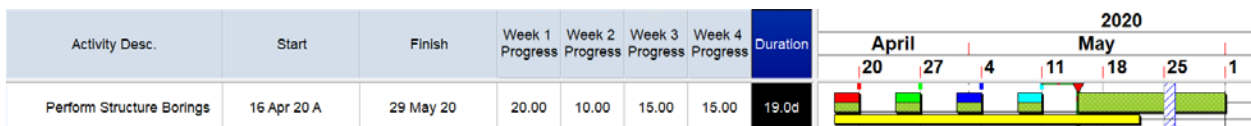
Show fields: Primary

Up Add Down Remove

Editing the private copy of view.

Apply

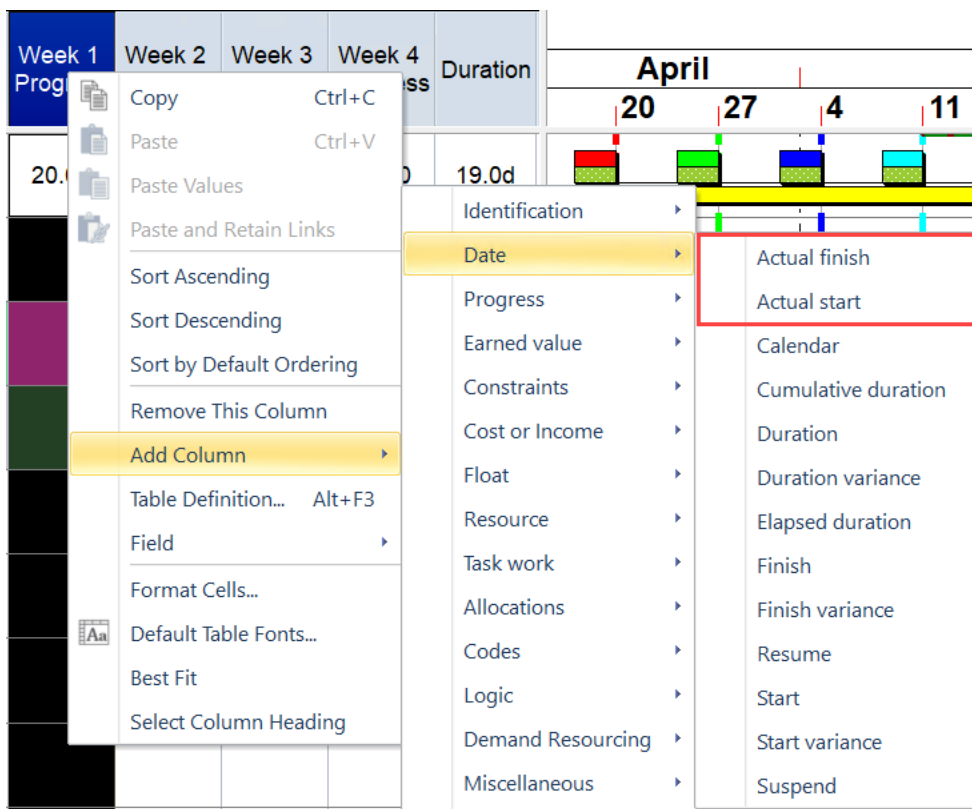
Your spreadsheet will show the percentages you have entered in each week of the project (notice the figures are not cumulative).



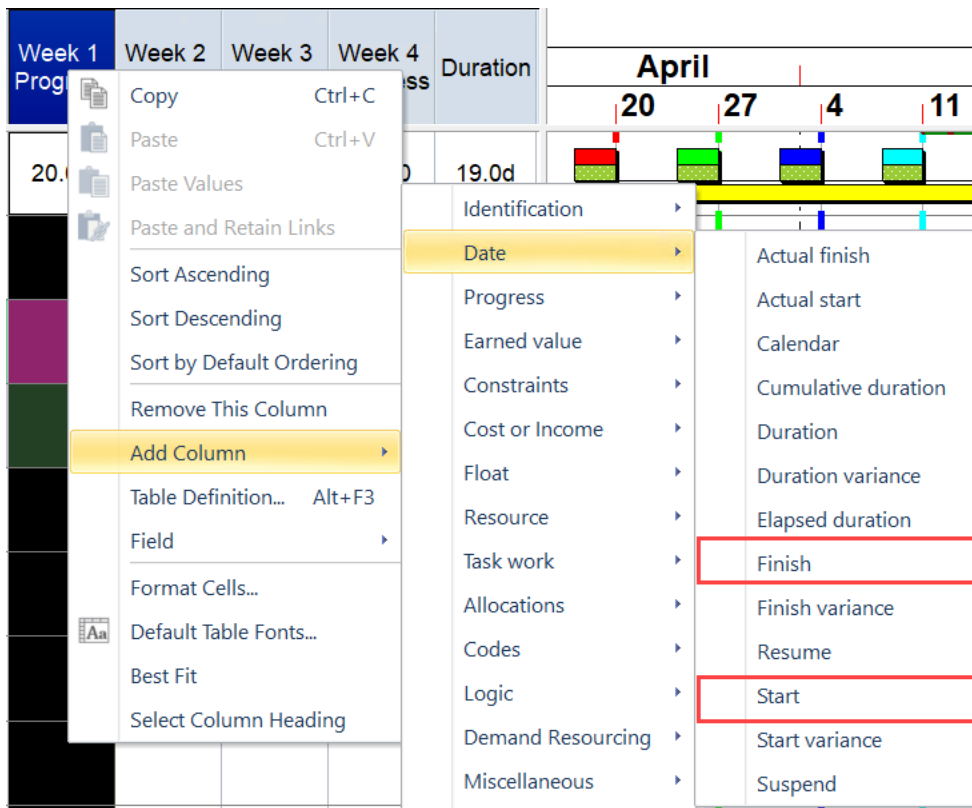
8.18.6.2- Displaying Planned vs. Actual Start and Finish Dates

To show planned and actual start and finish dates of the tasks in your project, add the following columns:

1. Add Column > Date > Actual Start and Actual Finish.



2. Also under the Date category of columns, **Add** the **Start** and **Finish** columns (These will become your planned columns):



- When the **Table Definition Properties dialogue** appears, change the **Start column title** to '**Planned Start**'. Afterwards rename the **Finish column title** to '**Planned Finish**'. Then ensure each column looks at the **Current Baseline** instead of the Live data.

Table Definition Properties

Column Definitions

Field

- Line
- hierarchyID
- Name
- Start
- Finish
- Start
- Finish
- Overall percent co
- Overall percent co
- Overall percent co
- Overall percent co
- Duration
- Total float
- Task.Work Breakd
- Task.Work Breakd
- Task.Organization

Appearance

Column title: Start

Title align: Center

Cell align: Center

Width: 22.50

Word wrap: ☒

Blank for subheads: ☒

Zero as blank: ☐

Detail

Apply view filter: ☐

Data: Live

Dates:

Specific task:

Attributes

Filter rolled-up values: ☐

Show fields: Primary

Up Add

Down Remove

Editing the private copy of the table definition that is stored in your view.

Close Cancel Apply

The spreadsheet will be populated with all the relevant data:

hierarchyID	Activity Desc.	Planned Start	Planned Finish	Actual start	Actual finish	2020						
						April		May				
						20	27	4	11	18	25	1
070.040.020	Perform Structure Borings	16 Apr 20	20 May 20	4/16/2020								

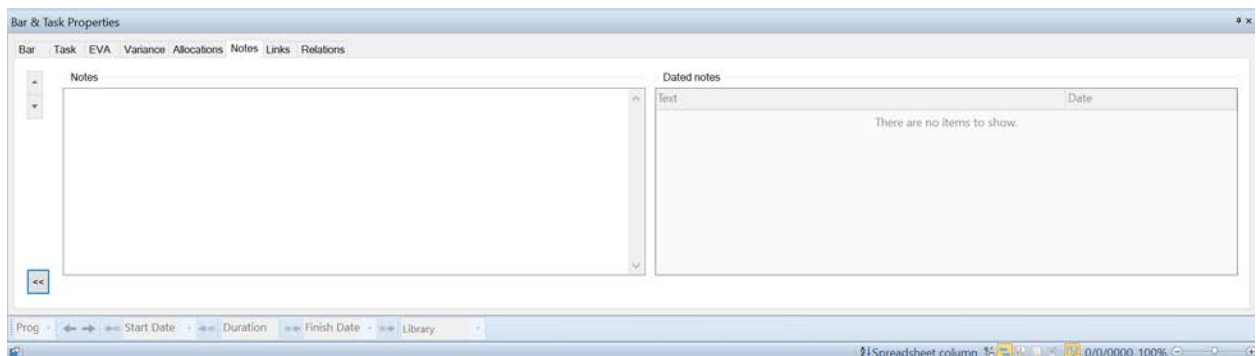
8.18.7- Recording the Actual Start and Finish Dates for Each Progress Period. When using multiple progress periods you can bring up a column that will look at the actual start and finish dates of each progress period.

- Add a column to the spreadsheet that displays either the **Actual start** or **Actual finish** field.
- On the **Column Definitions tab** of the **Table Definition Properties dialog**, select the field that you have added to the spreadsheet.

3. Select the **progress period** to which you want the field to refer in the Progress period field.
4. Enter an appropriate description for the spreadsheet column in the **Column title field** - if you set up more than one column, with each one displaying actual start or finish dates for a different progress period, include the progress period name in the column title.
5. Click **Close**.

Recording Notes. To record any delay reasons or important Notes from the previous week, type these in as notes on the activity.

In the bar chart select the task which you want to add notes to and click the **Bar & Task Properties > Notes tab**. If a dated note is entered, it will show the date and time the note was created. If a regular note is added when hovering over an activity, the dated note will not appear.



Note: If you cannot see 'Bar & Task Properties' at the bottom left hand side of Elecosoft Powerproject, select the Toggle Properties View icon. If you cannot see the Notes tab, click the >> icon in the bottom left of the the Bar & Task Properties to show more tabs. To enter activity notes, enter them in the Notes section. To enter notes that have a title and time stamp, enter them in the Dated notes section.

After each progress period you could keep a record of the week's progress by using a Baseline. This makes it easier and is useful to see everything that was recorded at the end of each progress period, especially for potential claim situations. (Please see the 'Creating Baselines' for the Notes on this).

8.19- FILTERS

Filtering allows us to access specific areas or a subset of our project, such as tasks that are critical or are being worked on by a certain resource. A commonly used filter is based on Code libraries that have been applied to tasks, but you can also filter by date, cost and many other criteria. Filters will be stored in your filter menu for future use.

8.19.1- Creating a New Filter Using the Filter Wizard

1. On the **View** tab, select the **Filter** icon, then select **New**.
2. Enter the name of the filter you are creating.



Filter Properties for Untitled

Filter

Identification

Name ☐ Display on menu

Category Subheading properties...

Filter criteria grid

Criteria	Enabled	Not	Task Types	Condition	
Criteria1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Tasks or Milestones	With:<no conditions set>	<input type="button" value="Insert..."/> <input type="button" value="Edit..."/> <input type="button" value="Delete"/>

Criteria logic

☒ Objects must meet ALL criteria
☐ Objects must meet ANY criteria
☐ Append criteria results

Filter options

☐ If summary/expanded tasks pass the filter show their contents
☐ Retrieve whole bar lines
☐ Hide progressed sections when filter applied
☐ Show only relevant allocations

SQL statement

☐ Use an SQL statement

OK Cancel

3. Choose a category for the filter (if applicable).

Filter Properties for Untitled

Filter

Identification

Name:

Category:

☐ Display on menu

Subheading properties...

Filter criteria grid

Criteria	Enabled	Not	Task Types	Condition
Criteria1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Tasks or Milestones	With:<no conditions set>

Insert... Edit... Delete

Criteria logic

☒ Objects must meet ALL criteria

☐ Objects must meet ANY criteria

☐ Append criteria results

Filter options

☐ If summary/expanded tasks pass the filter show their contents

☐ Retrieve whole bar lines

☐ Hide progressed sections when filter applied

☐ Show only relevant allocations

SQL statement

☐ Use an SQL statement

SQL...

OK Cancel

4. Click **Display on Menu** to add the filter to the short list of filters.

Filter Properties for Untitled

Filter

Identification

Name: ☐ Display on menu

Category: Subheading properties...

Filter criteria grid

Criteria	Enabled	Not	Task Types	Condition
Criteria1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Tasks or Milestones	With:<no conditions set>

Insert... Edit... Delete

Criteria logic

☒ Objects must meet ALL criteria

☐ Objects must meet ANY criteria

☐ Append criteria results

Filter options

☐ If summary/expanded tasks pass the filter show their contents

☐ Retrieve whole bar lines

☐ Hide progressed sections when filter applied

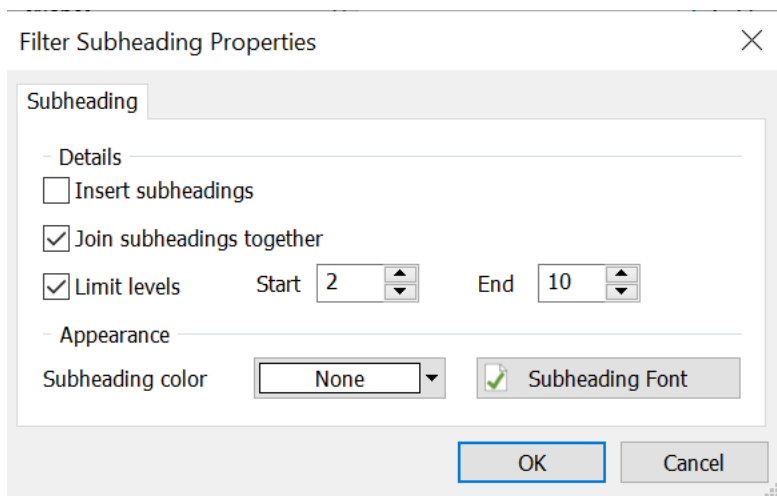
☐ Show only relevant allocations

SQL statement

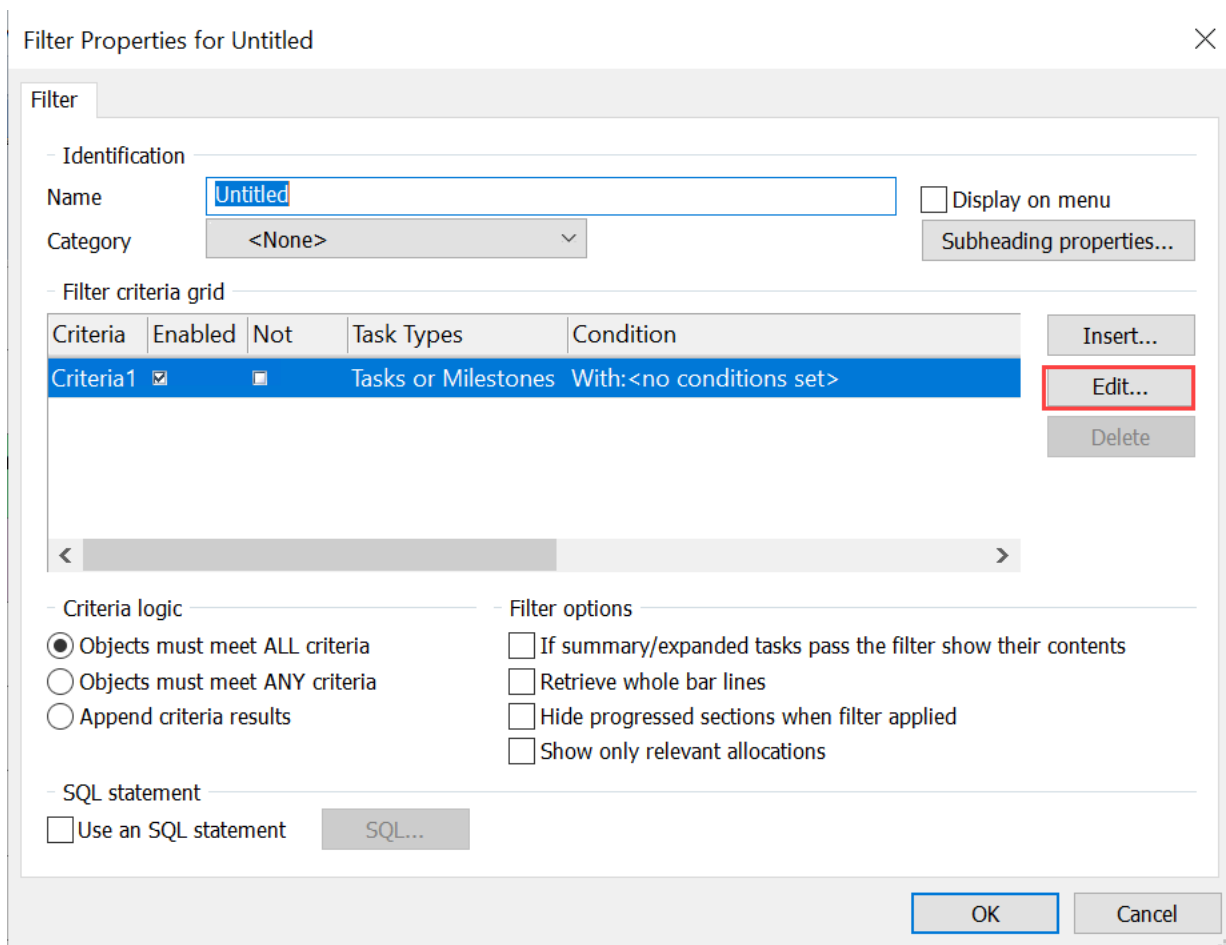
☐ Use an SQL statement SQL...

OK Cancel

5. Click **Subheading properties** to choose to have a color sub-heading band to highlight which area a task has come from.



6. Click **OK**
7. Select **Edit** to create the criteria of the filter:



8. Choose what types of tasks or allocations you wish to find with your filter, and click **Next**:

Filter Wizard - Tasks and Allocations ✕

Which task or allocation types will appear in your filter? 🔍

Click Next to add conditions to your filter.

☐ All task and allocation types

☒ Specific task types

☒ Tasks

☒ Milestones

☐ Summary tasks

☐ Expanded tasks

☐ Hammock tasks

☐ Permanent resource allocations

☐ Consumable resource allocations

☐ Cost allocations

< Back Next > Finish Cancel Help

9. Select the type of information that you wish to filter by, such as **Code Library**, **Time Slice** etc. Click **Next**.

Filter Wizard - Filter Areas ✕

Create filter conditions based on:
The following steps will guide you through specifying parameters for the areas you have chosen.

<input type="checkbox"/> ASAP / ALAP placement	<input type="checkbox"/> Project
<input type="checkbox"/> Bar / Task title	<input type="checkbox"/> Resources - Consumable
<input type="checkbox"/> Calendar	<input type="checkbox"/> Resources - Permanent
<input type="checkbox"/> Changed Objects	<input type="checkbox"/> Slip
<input type="checkbox"/> Chart Values	<input type="checkbox"/> Task ID (WBN)
<input type="checkbox"/> Code Library	<input type="checkbox"/> Task Work
<input type="checkbox"/> Constraints and buffers	<input type="checkbox"/> Time Slice - Date Range
<input type="checkbox"/> Costs	<input type="checkbox"/> Unique Task Ids
<input type="checkbox"/> Duration	<input type="checkbox"/> User Fields
<input type="checkbox"/> Float and criticality	<input type="checkbox"/> User Tables
<input type="checkbox"/> Formula	<input type="checkbox"/> Variance Values
<input type="checkbox"/> Late starting tasks	<input type="checkbox"/> WBS Code
<input type="checkbox"/> Links	
<input type="checkbox"/> Logical path	
<input type="checkbox"/> Number of tasks per line	
<input type="checkbox"/> Priority	
<input type="checkbox"/> Progress	

< Back Next > Finish Cancel Help

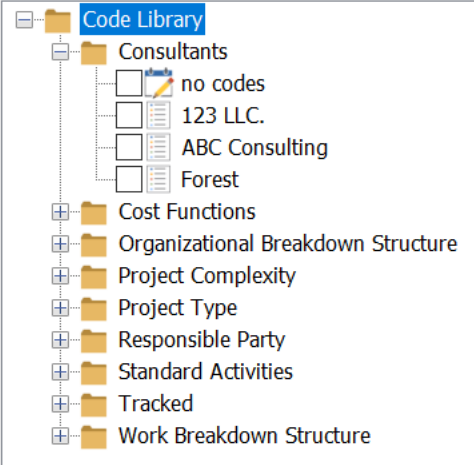
10. Select the specific data you wish to filter on, Click **Next**.

Note: If you select the tick box ‘Ask me which code library entries to use each time the filter is applied’ the filter will open this page of the filter wizard every time you run the filter.

Filter Wizard - Code library ✕

Which code library entries do you wish to appear in your filter?

Only objects which have one or more of the codes selected will appear in your filtered view.



- Code Library
 - Consultants
 - no codes
 - 123 LLC.
 - ABC Consulting
 - Forest
 - Cost Functions
 - Organizational Breakdown Structure
 - Project Complexity
 - Project Type
 - Responsible Party
 - Standard Activities
 - Tracked
 - Work Breakdown Structure

☒ Look for bar or task codes

☐ Look for task codes only

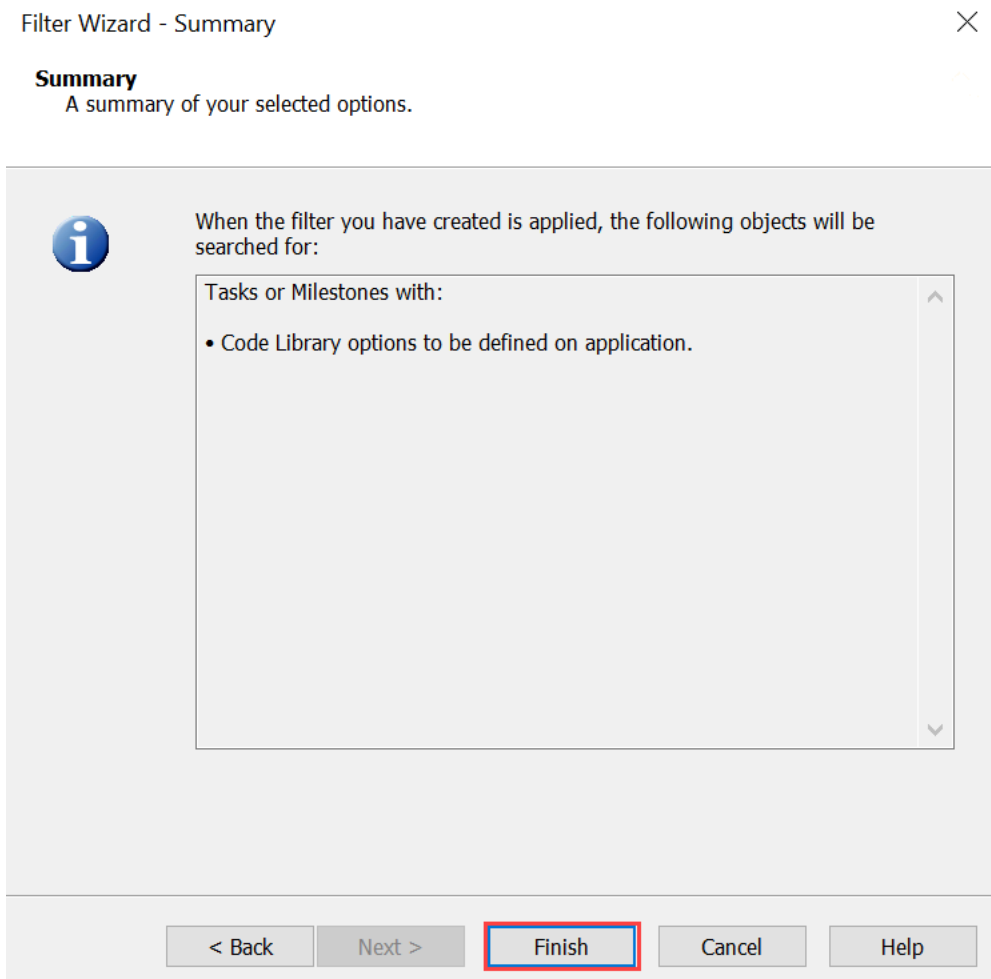
☐ Look for bar codes only

☐ Look for allocation codes only

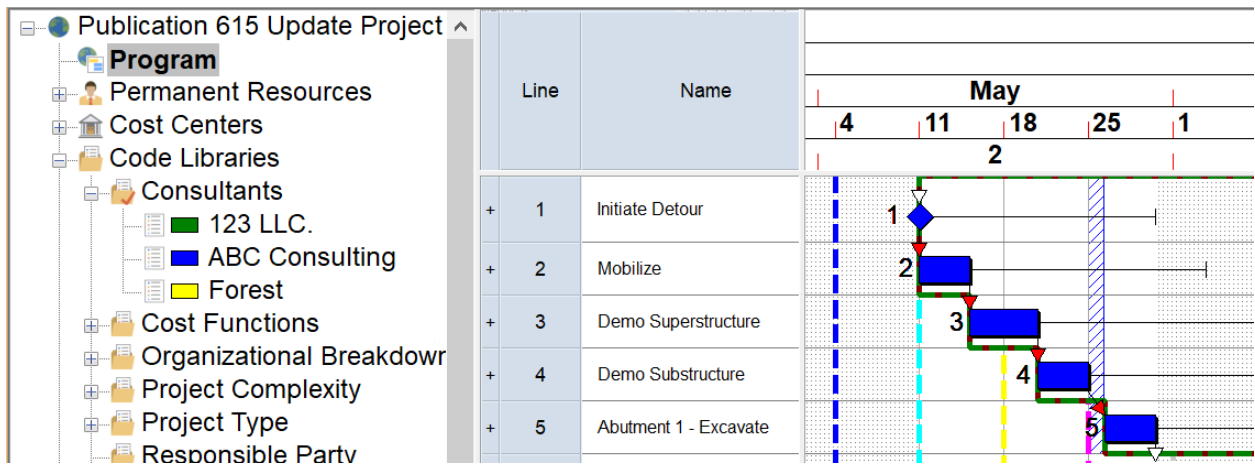
☒ Ask me which code library entries to use each time the filter is applied

< Back Next > Finish Cancel Help

11. Review the filter you have created, if all is correct click **Finish**. If not you can click **Back** to return to the previous screens.



12. Click **OK** to run the filter.

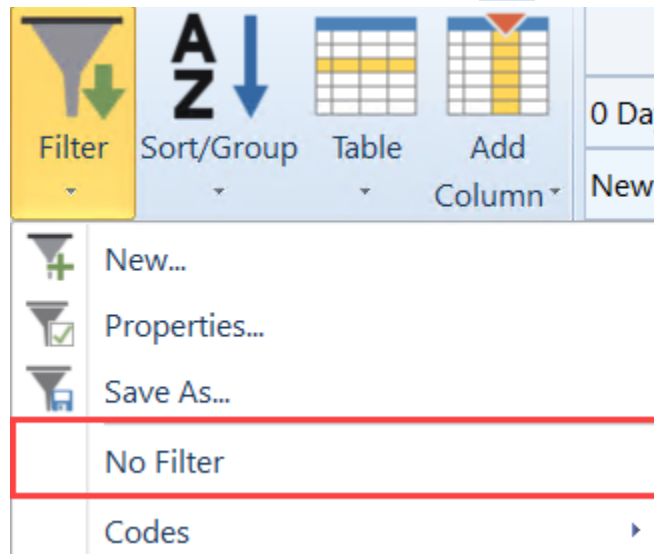


13. Once you have created your filters, they can be run by *selecting the Filter* icon from the **View Tab** and selecting the filter name.



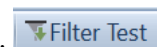
8.19.2- To Turn a Filter Off

1. On the **View Tab** click on the **Filter** icon and select **No Filter**.



-Or-

1. Click on the *filter description* showing at the bottom of the screen.



8.20- SORTING AND GROUPING A PROJECT

Within Elecosoft Powerproject you can sort or group bars and tasks to reorder your project according to certain data such as start date, by code library, their amount of work, their cost, their progress and many other parameters.

8.20.1- Creating a Sort. The Sort that will be shown in this section will reorder to the Contractors Code library.

1. On the **View tab**, select the **Sort/Group** icon.
2. Click on **New**.



Sort/Group Properties for Untitled

Bars / Tasks

Identification

Name Category Display on menu ☐

Detail

Type	Attribute
↑	Project hierarchy Charts and summ

Direction

Insert page breaks ☐

Retain natural order for charts and summaries ☐

Appearance

Ruling line

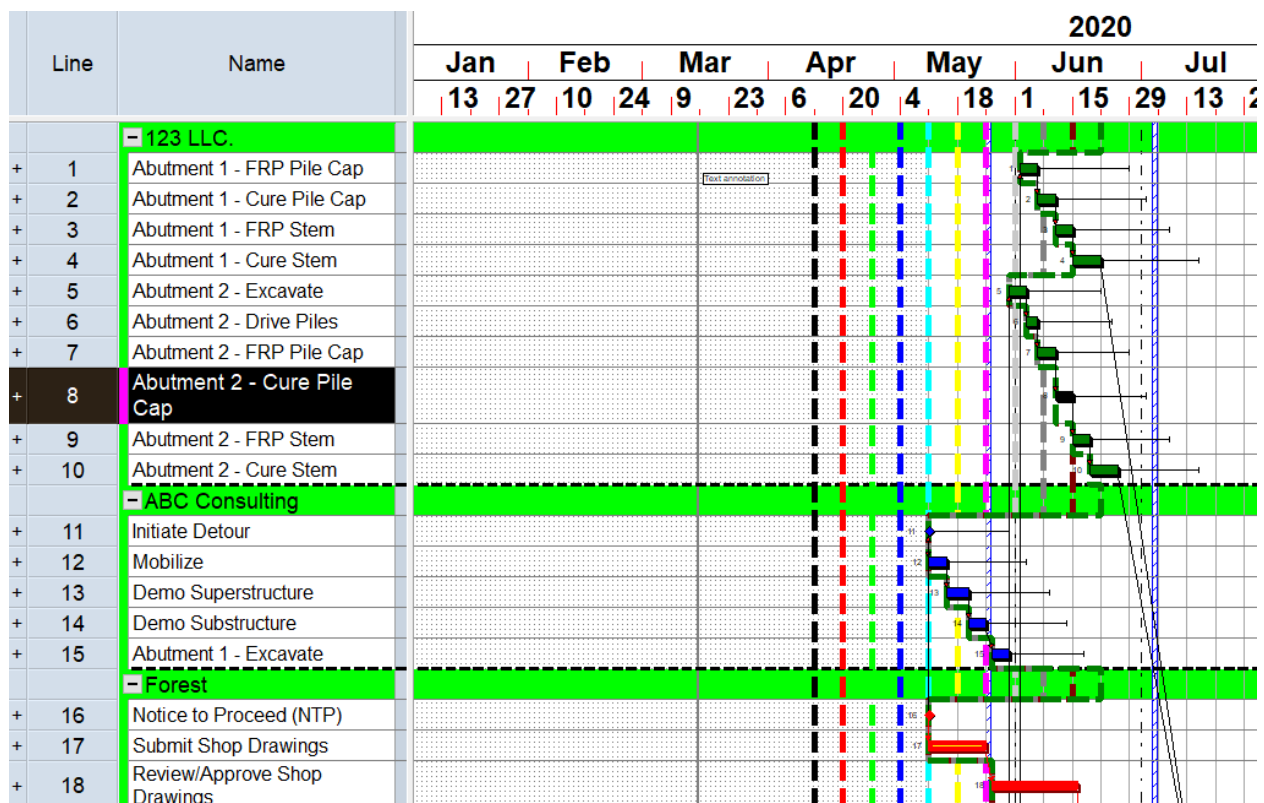
Sub-heading

Up Add Down Remove


More >> OK Cancel

3. Enter a Name for this sort, e.g. Contractor Sort.
4. Select a Category for this sort (if applicable).
5. Choose Display on menu if you want to sort to show on the shortlist under Sort/Group.

6. In the Type column, select the object type that you wish to sort, the most common is Task.
7. In the Attribute column, choose the specific piece of data you wish to sort by, such as Start, Contractor etc.
8. You can change the direction of the sort in the Direction drop down.
9. Tick Insert page break to have a page break at the bottom of each set of data. This will allow you to print each set of data on a separate page.
10. If you have assigned multiple codes to the same task, select Show duplicate items for multiple assignments, which create a copy of the task in each group of tasks.
11. The Sub-heading drop down allows you to choose how you want the summary heading to be displayed. Sub heading with only name column is the recommended option.
12. Click OK to apply the sort.



8.20.2- To Remove a Sort

1. Click on icon  on the **View tab** and select **Natural Order**.
 - You can also use this to choose to run another sort on your project

Natural Order

-Or-

1. Click on the **sort description** showing at the bottom of the screen.

Contractor Sort

8.21- CREATING TEMPLATES

Templates are used to make creating a new project as quick as possible, as the template can contain filters, code libraries, tables and many more items that you may use. For PennDOT design schedules, the templates have already been created (PDSMASTER and District specific templates).

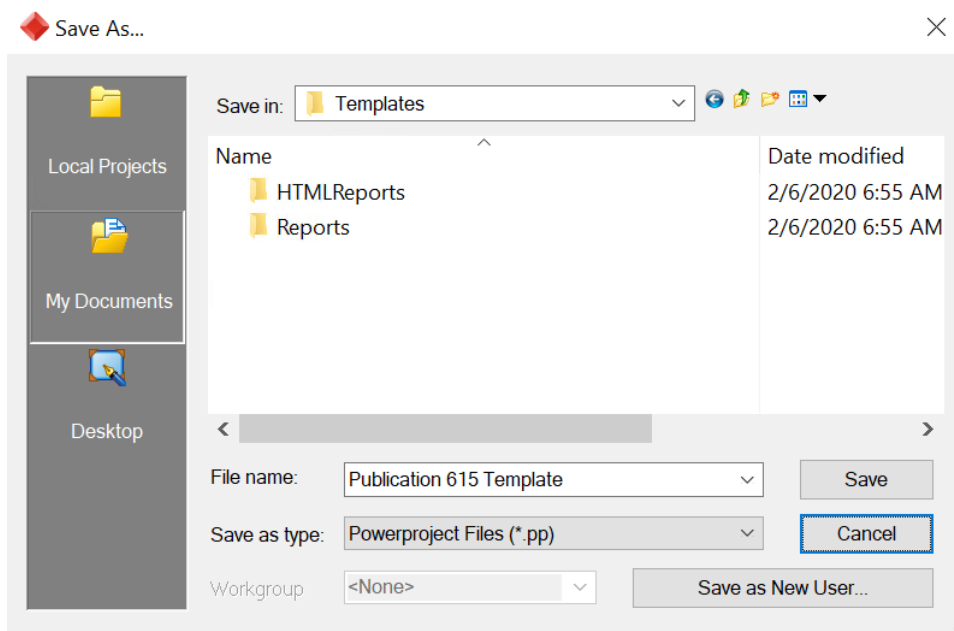
To create a template, it is best to base it on one that already exists (e.g. PDSMASTER Template) as this should already contain some items that may prove useful to you.

Once this project has opened on the screen you can now create everything you want in the template (e.g. *Filters*, *Code libraries*, etc).

You can even include titles and tasks within the Bar Chart. This could mean that for the first few lines of the project, you type in the most common titles (and include tasks if you wish) as it is quicker to delete something than to create it.

8.21.1- To Save a Project as a Template

1. Go to the **File** menu, select **Save As**.
 - The Projects folder and contents are displayed.



2. Go up a level by **clicking once on the yellow folder** just to the right of the folder window.
3. Inside this folder **Double-click** on the templates folder.
 - The templates folder and contents will be displayed.
4. At the bottom in the **File Name** you can rename your project template if you want to.
5. Click **Save**.

8.22- RESOURCES

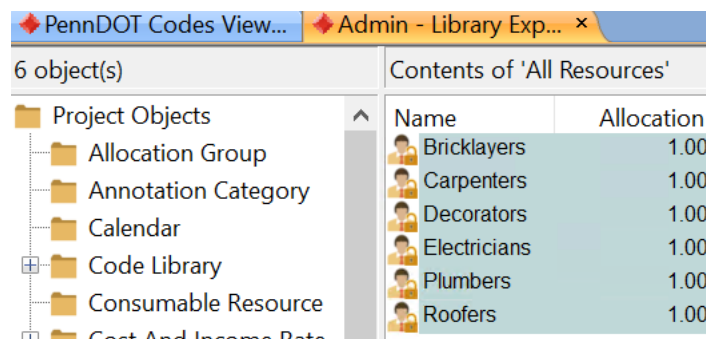
Both permanent and consumable resources can be recorded on the project, however for PennDOT construction jobs, only permanent resources are required to be tracked if the contract dictates a resource loaded schedule.

A Permanent Resource is a type of resource that is reusable (for example, labor and equipment). Consumable Resources are consumed by or supplied to tasks in a project (for example, materials, components, etc.).

8.22.1- Creating Permanent Resources. The resource library can be organized in a flat structure or users can plan in teams hierarchically (for example, putting resources in folders so that users can report on groups of allocations as well as individual resource allocations).

In this example, resources will be in a folder called All Resources.

1. Select **Permenant Resources** from the folders on the left-hand side.
2. In the right-hand window, Right-click and select **New Folder**.
3. Name the folder. Once created, Double-click on top of it.
4. Right-click on the right-hand side and select **New Permenant Resource**.
5. Type “Bricklayers” in the name field and press **Enter**.
6. Type in the remaining resources: Carpenters, Decorators, Electricians, Plumbers, Roofers, pressing **Enter** after each one.



8.22.2- Setting Permanent Resources Defaults. Default information can be set that will apply each time the resource is allocated through the project.

1. Right-click on the name Bricklayers and select **Properties**.
2. On the **Details** tab set an **Availability** figure to monitor any over allocation. This records the maximum number of resources available to work on the project at any one time and Elecosoft Powerproject will recognize a requirement greater than this as over-allocation. In this example, there will be 4 bricklayers available for this project.

Permanent Resource Properties for Bricklayers (All Resources) ✕

Details Cost/Income Assignment Codes Standard Work

Names

Name

Short single name

Short plural name

E-mail address

Attributes

Calendar Properties...

Availability

Skill Resource

Available from to

☐ Not available for new assignments

Appearance

Resource appearance

Miscellaneous

Site Progress user

Roll-ups... Leveling...

Less << Close

3. Change the resource appearance foreground color to a color of your choice.

4. On the Assignment tab set the **Modelling Type** to **Effort on Allocation** and change the **Calculated Parameter** to **Effort**. This ensures that the resource will not affect the duration of the tasks.

Permanent Resource Properties for Bricklayers (All Resources) ✕

Details Cost/Income Assignment Codes Standard Work

Modeling

Modeling type Effort On Allocation ▼

Effort = Duration * Allocation

Calculation

Allocation 1.00 Effort 1.00h

Duration 0.00h Delay 0.00h

Parameters

Calculated Effort ▼ Balancing Effort ▼

Use task calendar ☐ May be shorter than task ☐

Allocate proportionally ☒ Contributes to activity effort ☐

Share effort ☐ Lead resource ☐

Completed costs

Accounted for elsewhere ☐

Nonlinearity

☒ Linear ☐ Resource curve <None> ▼

Appearance

Zero duration appearance ◆ Diamond ▼

Less << Close

5. Finally put a tick against **May be Shorter than Task** if users require a resource to work for only part of the tasks duration.

8.22.3- Resource Allocation. A task can have several permanent resource allocations. In this example, assume that the resources will work the total duration of the task.

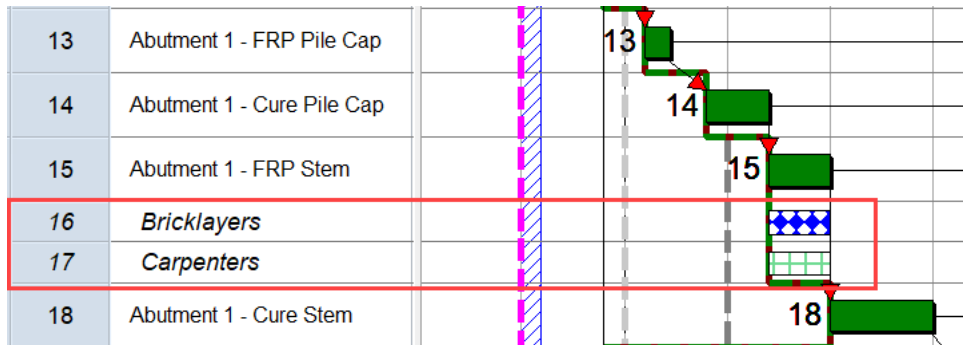
8.22.3.1- Creating an Allocation Table. First set up a table to allocate the resources and display the information clearly.

From the Default table, create a table to show:

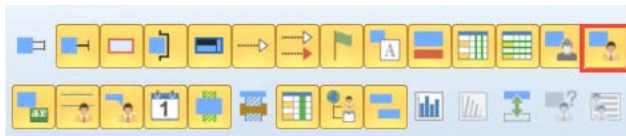
Line	Name	Start	Finish	Duration	Allocation	Effort
------	------	-------	--------	----------	------------	--------

1. Right-click on the column header and select **Add Column > Allocations > Allocation**.
2. Add a second column by clicking the **Add** button in the Table Definition Properties, select the duplicate column and from the drop down list of categories **Resource > Effort**.
3. Close Table Definition Properties. Save this as a Resource Allocation Table.

8.22.3.2- Showing/Hiding Resource Allocation Bars. When users allocate a permanent resource, an allocation bar indicating the allocation and its position may be shown under the task.

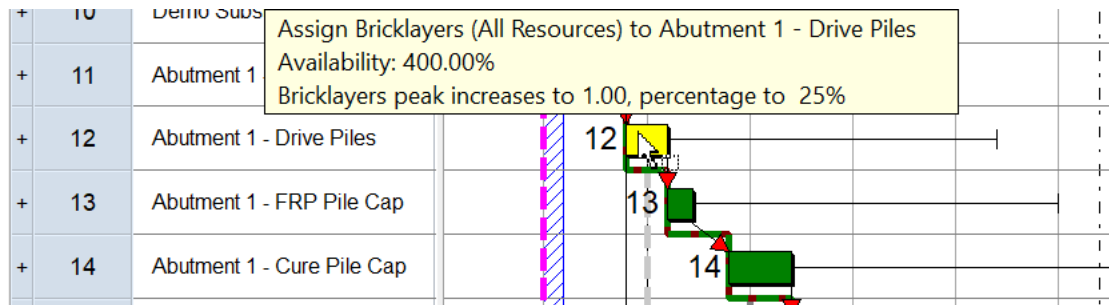


Using the Display Switch on the Format tab at the top of the screen, select **Scheduled Allocations** icon.

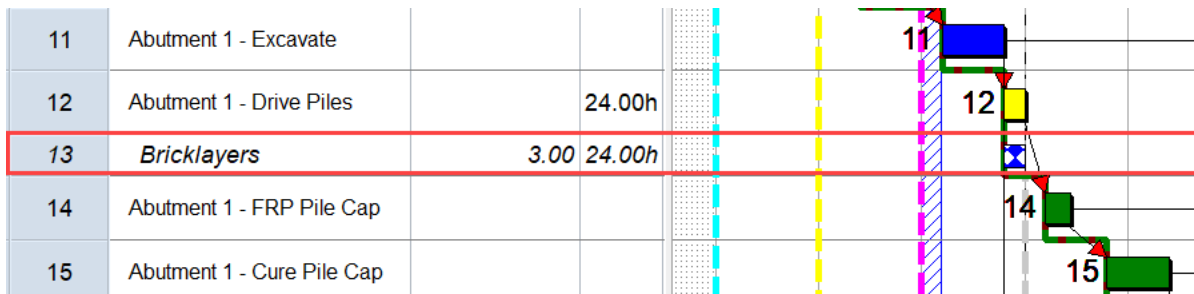


8.22.4- Allocating Permanent Resources to a Task

1. Make sure the Project View is open.
2. Expand the tree until you can see the Bricklayer resource.
3. Left-click the mouse and drag the Bricklayer resource over the Brickwork to Abutment 1 - Drive Piles task until the pop up box says "Assign Bricklayers to Abutment 1 - Drive Piles" and let go of the mouse.



4. The allocated resource is displayed in the Bar Chart and in the spreadsheet.



5. Change the figure in the allocation column from 1 to 3 to show that 3 bricklayers will do this task.

8.22.5- Resource Report Table. This table allows users to make allocations by entering data straight into the spreadsheet so it could be used as an alternative to the 'drag and drop' method above. It is also useful for reporting on our resource allocations throughout the project.

Line	Name	Bricklayers	Carpenters	Decorators	Electricians
------	------	-------------	------------	------------	--------------

1. From the Default table, Right-click on any spreadsheet column and select **Add Column> Resource> Resource Allocations**.

2. The Table Definition dialogue will then appear.

Table Definition Properties ✕

Column Definitions

Field
Line
Name
Resources allocati

- Appearance

Column title: Word wrap: ☒

Title align: Blank for subheads: ☒

Cell align: Zero as blank: ☐

Width:

- Detail

Apply view filter: ☒ Filter rolled-up values: ☐

Data:

Dates: To:

Specific task:

- Attributes

Cons/Perm/All:

Resource:

Scheduled/Demand:

Rolled/Direct:

Use resource name: ☐

Show fields:

Editing the private copy of the table definition that is stored in your view.

3. Additional columns can be added via this dialogue box.
4. To add more resources columns select **Add** from the bottom left hand corner. Users can add as many of these as they want (so each resource can have its own column).

Now to reference this to the resource we want it to display.

- Right-click on the Resource Allocation field (to the left of the dialogue) and in the Appearance field marked 'Column Title'. Adjust the text to read Bricklayers – this controls the text that is used for the column titles in the table.

Table Definition Properties ✕

Column Definitions

Field
Line
Name
Resources allocati
Resources allocati
Resources allocati

– Appearance

Column title Word wrap ☒

Title align Blank for subheads ☒

Cell align Zero as blank ☐

Width

– Detail

Apply view filter ☒ Filter rolled-up values ☐

Data

Dates To

Specific task

– Attributes

Cons/Perm/All

Resource

Scheduled/Demand

Rolled/Direct

Use resource name ☐

Show fields

Editing the private copy of the table definition that is stored in your view.

6. To make the column token refer to a particular resource, in the Attributes section change the 'Cons/Perm/All' field to 'Permanent Resources' and change 'Resource' to Bricklayers.

Table Definition Properties ✕

Column Definitions

Field
Line
Name
Resources allocati
Resources allocati
Resources allocati

Appearance

Column title: Word wrap: ☒

Title align: Blank for subheads: ☒

Cell align: Zero as blank: ☐

Width:

Detail

Apply view filter: ☒ Filter rolled-up values: ☐

Data:

Dates: To:

Specific task:

Attributes

Cons/Perm/All:

Resource:

Scheduled/Demand:

Rolled/Direct:

Use resource name: ☐

Show fields:

Editing the private copy of the table definition that is stored in your view.

7. Repeat for any other resources, using the same 'Resources Allocations' token, renaming the column title and referring to the attributes to the relevant Permanent or Consumable resources.
8. Click **Close**.

Line	Name	Bricklayers	Carpenters	Decorators
10	Demo Substructure	5.00	2.00	1.00
11	<i>Bricklayers</i>	5.00	0.00	0.00
12	<i>Carpenters</i>	0.00	2.00	0.00
13	<i>Decorators</i>	0.00	0.00	1.00
14	Abutment 1 - Excavate	0.00	0.00	0.00
15	Abutment 1 - Drive Piles	3.00	0.00	0.00
16	<i>Bricklayers</i>	3.00	0.00	0.00

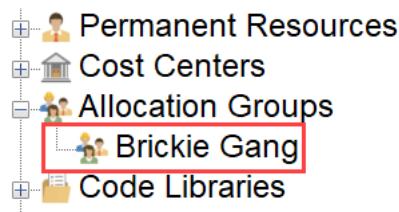
This table will now allow users to type the resource allocation for each task directly into the spreadsheet. If the resource is not already assigned, then typing into the table will assign it.

Unlike the first method, this method allows users to enter an allocation without displaying the allocation bars on the bar chart.

8.22.6- Using Groups of Resources. If bricklayers and laborers work together on this project, they could be allocated separately but this will become time consuming if the project is large. Instead we can create a team using an Allocation Group.

Creating Groups. For example, to put bricklayers and laborers into an allocation group called ‘Brickie Gang.’

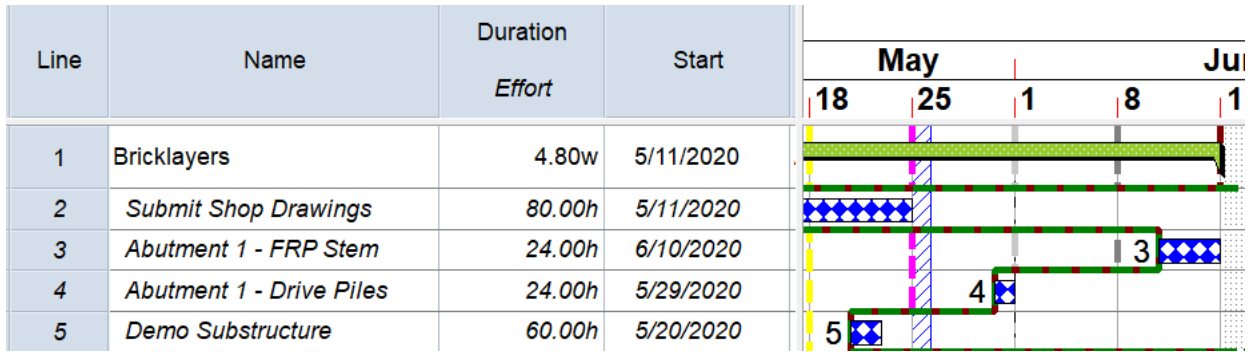
1. First create Permanent Resource libraries for each resource.
2. Allocate both bricklayers and laborers to a task in the desired quantities.
3. Right-click on the task and select *Copy Allocations to Group*.
4. Type ‘Brickie Gang’ in the name field then click *Ok*.



The allocation group appears in the project view. When this gang is needed again, drag and drop ‘Brickie Gang’ on the appropriate task(s) and it will be assigned the resource.

8.22.7- Using the Resource Breakdown Structure View (RBS). Sometimes it is very useful to see a view of the project by a resource (or resources) (for example, to have a view of where in the project Bricklayers are allocated). This type of view is called a Resource Breakdown Structure or RBS for short.

1. Make sure the Project View is opened and ensure that allocations are displayed on the Bar Chart.
2. Right-click on Bricklayers and select *Open RBS*.



3. Hold down the **Ctrl** key and then select multiple resources in the Project View to build RBS views of more than one resource.
4. To return the project back to how is it normally viewed, just click once on Program in the project view.

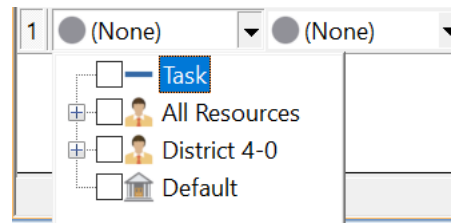
8.22.8- Displaying a Resource Histogram

1. Go to the **View tab > New Histogram**.



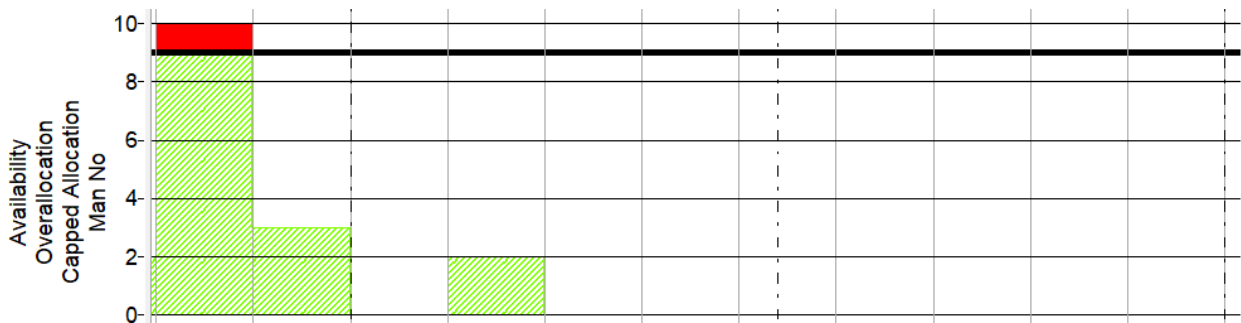
Users will initially be presented with a thin histogram however users can resize the histogram.

2. Move the histogram up the screen by placing the cursor over the top line of the histogram area and dragging this up the screen.
3. Now move the cursor over the bottom line of the histogram and drag this down the screen to enlarge the histogram area.
4. In the histogram at the bottom of the chart, Left-click in the first drop down window to the left of the screen and select the resource folder that the user has been using.



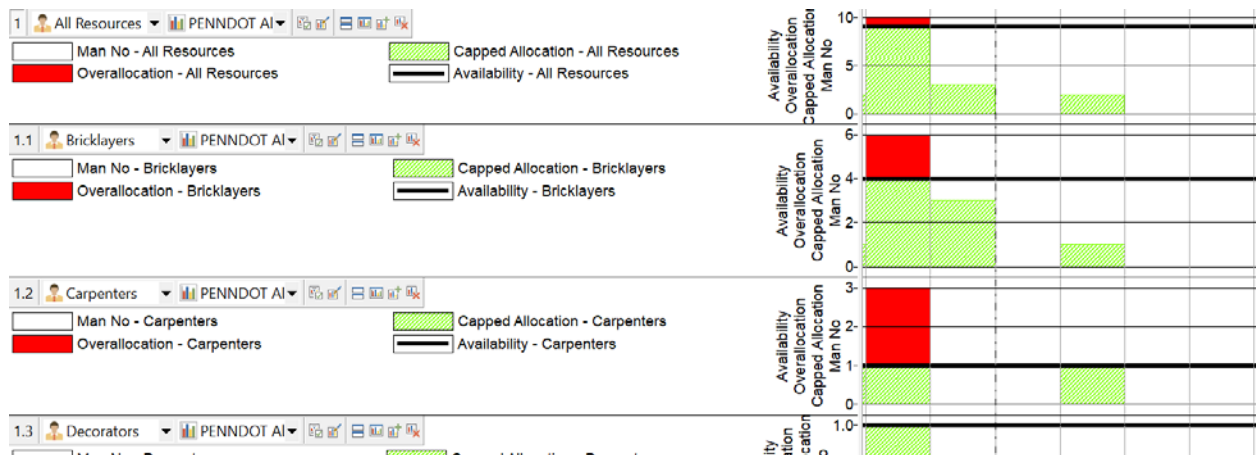
5. In the second drop down window, select **Allocation, Availability, and Over Allocation**.

The graph shows the availability, allocation and over allocation of resources.



8.22.9- Drilling Down. The All Resources folder is a group made up of several individual resources. It is possible to create graphs for each of these individual resources from this overall graph.

1. Right-click on the graph area and select **Drill Down (All)**.
2. The individual graphs are now displayed underneath the overall graph. Use the scroll bar on the right-hand side of the screen to see the graphs.



3. Right-click on any of the lower graphs and select **Drill Up** to close the graphs.
4. To close the histogram, select **View > Close Histogram**.

As an alternative, users may prefer to see all the resources 'stacked' on one graph.

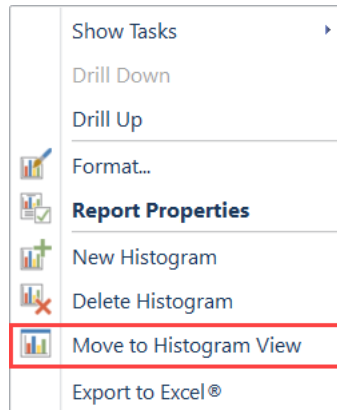
8.22.10- Showing Tasks. It is possible to display the tasks that contribute to the over allocation.

1. Right-click directly over the red area on the histogram, select **Show Tasks** from the menu.
2. A new view is displayed showing the tasks where the over allocation has occurred.

8.22.11- Other Histogram Tools

8.22.11.1-Displaying/Printing off the Histogram

1. Right-click on the left-hand side of the histogram and select ***Move to Histogram View***.



2. This will then take the histogram off the project and put it in its own view. Users can repeat this as many times as they want to have more than one histogram in the view.
3. By closing the view users will automatically return the histogram back to the project.
4. Or if users want to return a specific one back to the project, Right-click on the left-hand side and select ***Move to Barchart*** to return to the project.

8.22.11.2- Changing the Scale of the Histogram. It is possible to adjust the scale down the side of the graph.

1. Right-click on the right-hand side of the histogram and select '***Format...***'
2. Select the ***Row*** tab.
3. In the middle of the dialog box put a tick against Fixed y-axis and then enter the range (first figure goes from 0 down and the second window from 0 up (for example, -3 to 7)).

Format Histogram - Row 1

Details Row View

Show

☒ Legend ☐ Data-grid ☒ Axis labels ☒ % likelihood usage

Background: Ruling lines: major minor

Decimal places in data-grid:

Scales

Histogram height: in

☐ Fixed y-axis range: to

Graphs

☐ Draw through non-working ☒ Fade colors for multiple resources

Stacking: ☐ Sum values in data-grid

Save to Defaults Load from Defaults Reset Defaults Close

8.22.11.3-Displaying Axis Labels and Legends of the Histogram. On the Row tab, tick the Axis Labels and Legends boxes at the top of this dialog box.

Details Row View

Show

☒ Legend ☐ Data-grid ☒ Axis labels ☒ % likelihood usage

8.23- HOW TO CONVERT A COMPATIBLE FORMAT TO ELECSOFT POWERPROJECT

8.23.1- Working with Elecosoft Powerproject Compatible File Formats. Elecosoft Powerproject is unique in that it can open and save to other scheduling file formats. It is compatible with Sure Trak, P3, P6, and Microsoft Project.

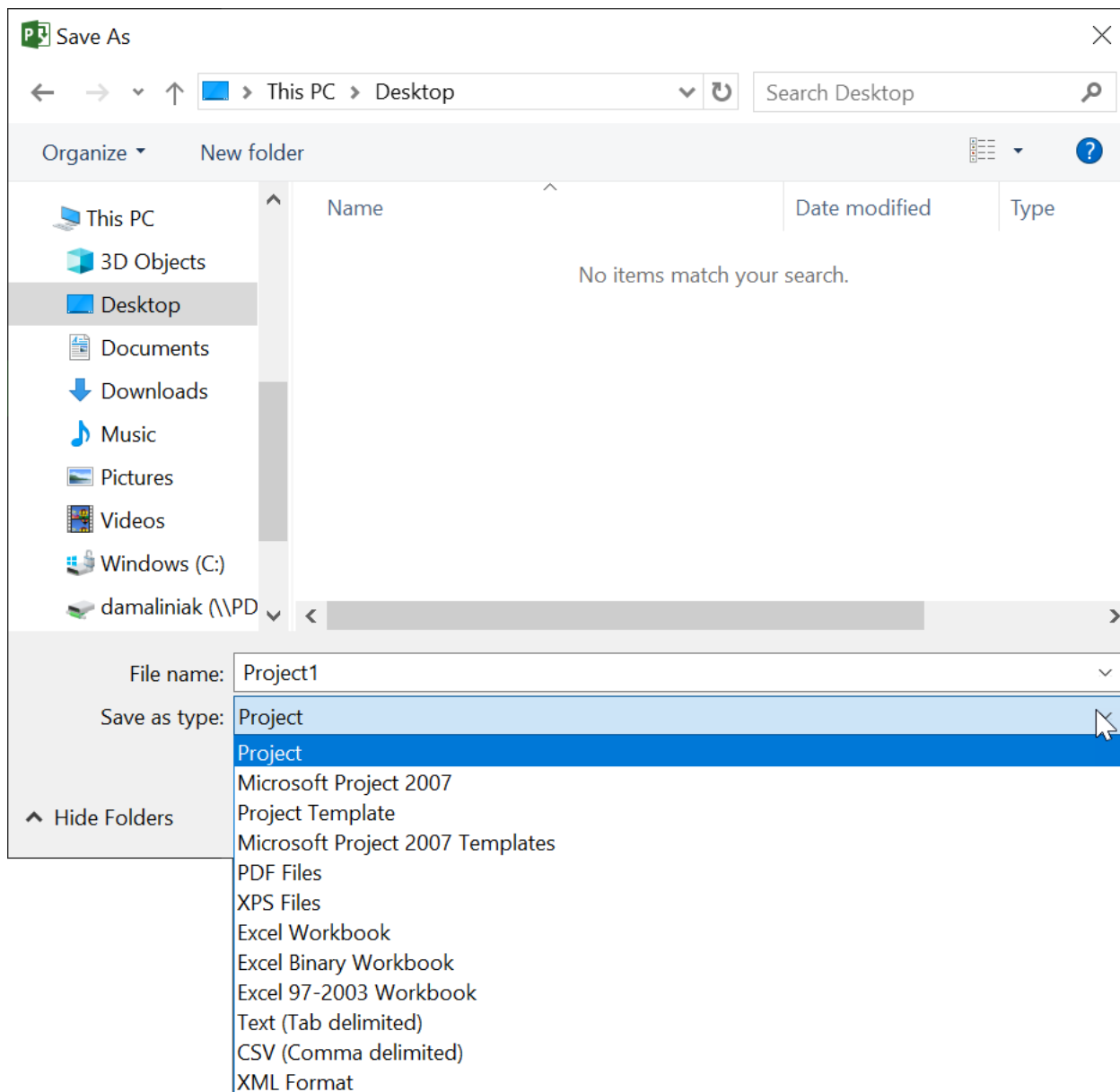
Before a conversion can take place, the contractor must first have a licensed copy of Elecosoft Powerproject. A contractor does have the ability to request a license of Elecosoft Powerproject from PennDOT at no cost to them. This license will be a loaned license for 90 day increments for the life of the construction project. To download Elecosoft Powerproject and request a license, see Chapter 7 of this manual.

Once a licensed copy of Elecosoft Powerproject is available, the following sections will walk the contractor through how to convert an Elecosoft Powerproject compatible format to Elecosoft Powerproject.

8.23.2- Microsoft Project File Conversions

8.23.2.1- To Save a Microsoft Project File in the correct compatible Microsoft Project format

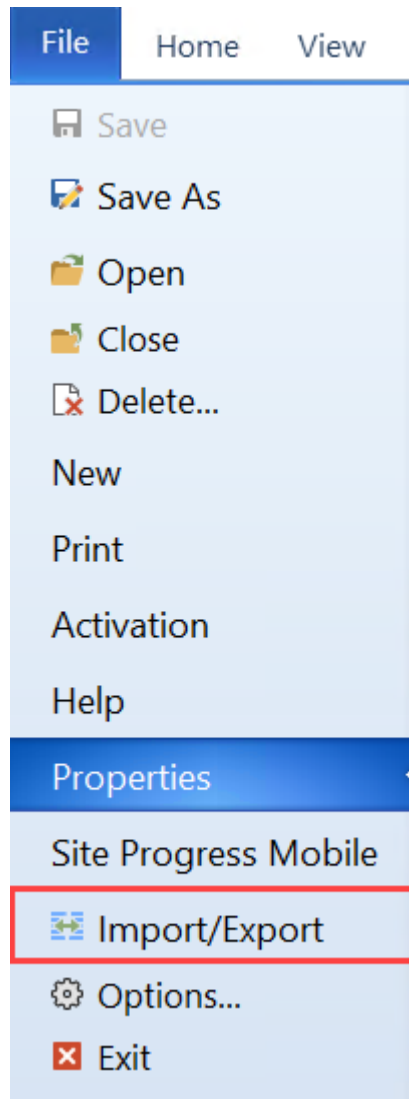
1. Open the Microsoft Project schedule in Microsoft Project
2. Go to **File, Save As**
3. Select the Destination where the file is to be saved (One Drive, Computer, etc.)
4. Change the **Save As Type** to **XML** or **MPP Format**



5. Click *Save*


8.23.2.2- To Convert a .XML or .MPP Microsoft Project File into Elecosoft Powerproject


1. Open Elecosoft Powerproject
2. Go to *File, Import/Export*





3. Select **Import from Microsoft Project®**


Import/Export

 **Import from Primavera®**
P6 XML or XER, or SureTrak®

 **Export to Primavera®**
P6 XML or XER

 **Import from Microsoft Project®**
XML or MPP

 **Export to Microsoft Project®**
XML or MPP

 **Export to HTML**

 **Export to CSV**

4. Select **Browse**, and navigate to the Microsoft Project file.

Microsoft Project® Import Options

– Import from Microsoft Project®

File Browse...

– Template

Use template Blank ▼

– Options

☒ Import cost allocations

☒ Import resource allocations

☒ Import code libraries

Convert negative costs to Income ▼

OK Cancel

5. Click **Open**
6. Select the template that should be used, **Use Template** should be one of the **PennDOT Templates**.

Microsoft Project® Import Options

– Import from Microsoft Project®

File Browse...

– Template

Use template Blank ▼

– Options

☒ Import cost allocations

☒ Import resource allocations

☒ Import code libraries

Convert negative costs to ▼

Cancel

Blank

District 1-0 Template

District 10-0 Template

District 11-0 Template

District 12-0 Template

District 2-0 Template

District 3-0 Template

District 4-0 Template

District 5-0 Template

District 6-0 Template

District 8-0 Template

District 9-0 Template

PennDOT Construction Template

PennDOT Master Template

PennDOT Pre-bid Template

Construction Template

Engineering Template

Housing Template

MSP Template

P6 Template

Services Template

Tutorial Template

7. Under **Options**, make sure all boxes are checked.

Microsoft Project® Import Options

– Import from Microsoft Project®

File Browse...

– Template

Use template PennDOT Master Template ▾

– Options

☒ Import cost allocations

☒ Import resource allocations

☒ Import code libraries

Convert negative costs to Income ▾

OK Cancel

8. If negative costs are built into the schedule select if they should be imported as **Income** or **Negative cost**

Microsoft Project® Import Options

– Import from Microsoft Project®

File Browse...

– Template

Use template PennDOT Master Template ▾

– Options

☒ Import cost allocations

☒ Import resource allocations

☒ Import code libraries

Convert negative costs to

Income ▾

Income

Negative cost

OK Cancel

9. Select **OK**

Microsoft Project® Import Options

Import from Microsoft Project®

File: eline CPM Schedule - April Update - 3.mpp Browse...

Template

Use template: PennDOT Construction Template

Options

☒ Import cost allocations

☒ Import resource allocations

☒ Import code libraries

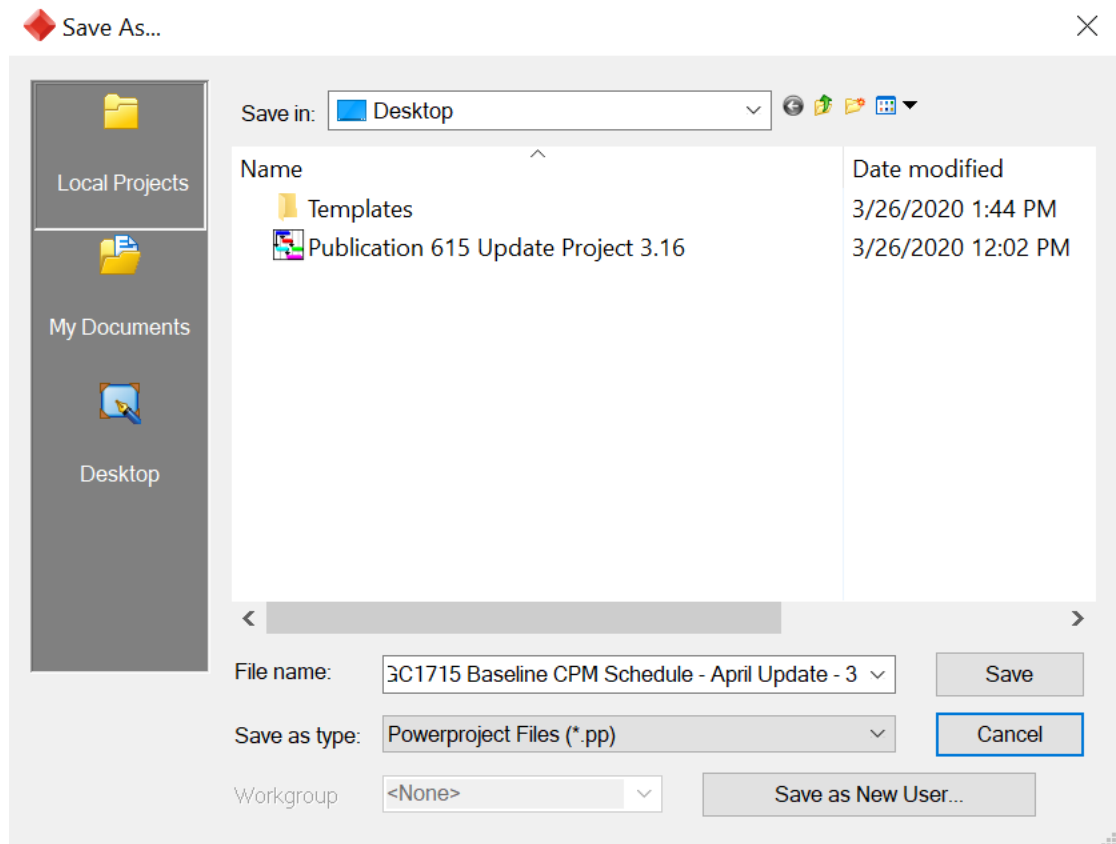
Convert negative costs to: Income

OK Cancel

10. Once the file opens in Elecosoft Powerproject, reschedule the project

11. Select **File, Save As**

12. Select the destination to Save the schedule and make sure the *Save as type* is set to *Elecosoft Powerproject (*.pp)*

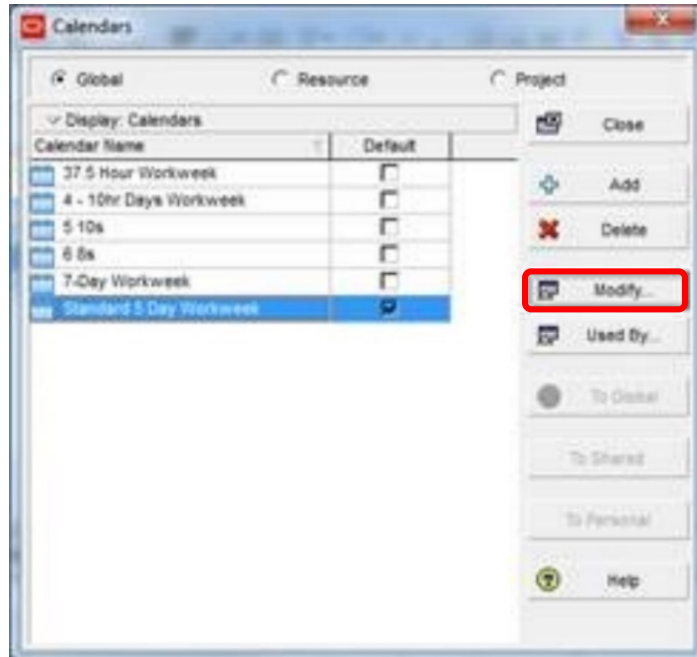


8.23.3- Primavera File Conversions. For the most part, Primavera file conversions do come into Elecosoft Powerproject one to one. There is one aspect of Primavera that does not convert into Elecosoft Powerproject and that is 'mandatory constraints'. Before converting into Elecosoft Powerproject, make sure all 'mandatory constraints' (mandatory start or mandatory finish) are changed to 'start on' or 'finish on' respectively.

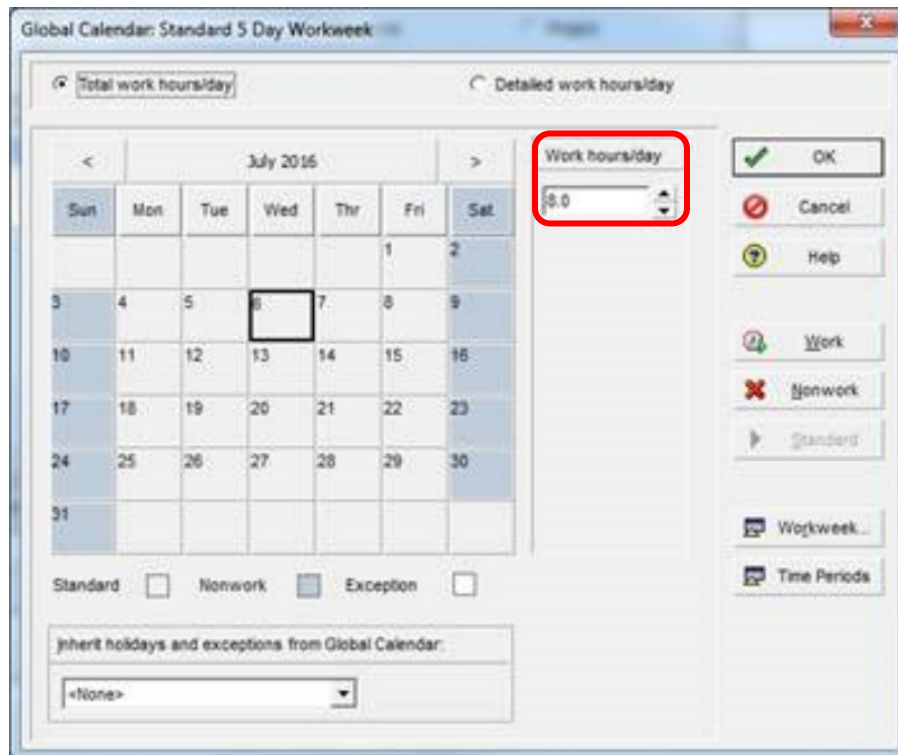
Another tip before you convert a Primavera file to Elecosoft Powerproject, verify that the working hours per day of all the calendars are set up correctly within Primavera. The following steps will walk through how to ensure working hours per day are set up:

8.23.3.1- How to Verify Working Hours per Day in Primavera

1. Open calendars from the Enterprise Menu
2. Select the calendar that is being used and click **Modify**

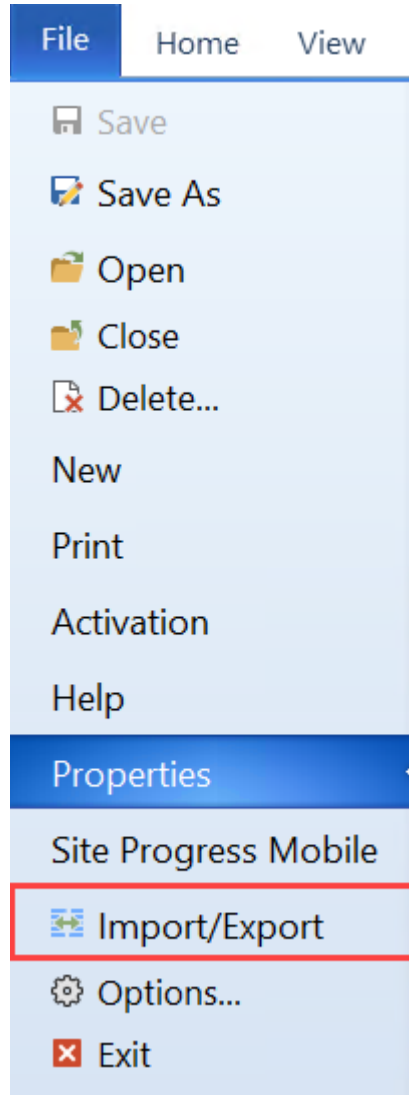


3. There is a box on the right where the hours per day is set, verify the value is what is desired for the specific calendar.



8.23.3.2- To Convert a Primavera File into Elecosoft Powerproject

1. Open Elecosoft Powerproject
2. Go to *File, Import/Export*



3. Select **Import from Primavera®**

Import/Export



Import from Primavera®
P6 XML or XER, or SureTrak®



Export to Primavera®
P6 XML or XER



Import from Microsoft Project®
XML or MPP



Export to Microsoft Project®
XML or MPP



Export to HTML



Export to CSV

4. Select the **Import type** and then select **Browse**, and navigate to the Primavera file.

Primavera® XML & XER Import Options

– Import XML, XER or SureTrak® file

Import type ☐ XML ☒ XER ☐ STX/DIR

File Browse...

Template

Use template

Username Password

– Calendar for link lag

Enter the calendar used for scheduling relationship lag in Primavera® (under Schedule Options)

☒ Predecessor ☐ Successor ☐ 24 Hour

An XER file may supply this setting, which will take precedence over the one given here. The 'Project default calendar' option is not available in Powerproject.

– Units of measurement to classify resources in SureTrak®

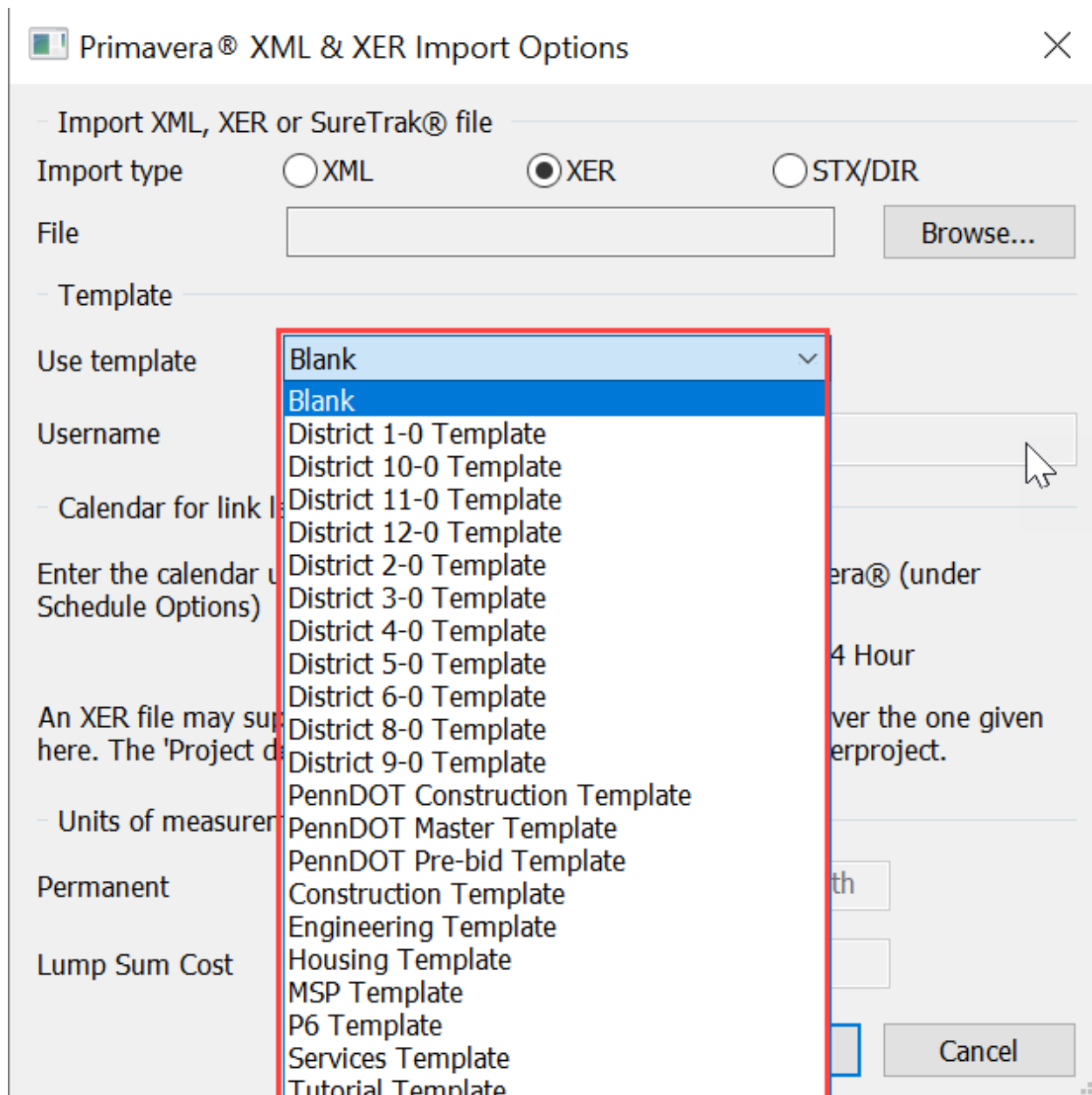
Permanent

Lump Sum Cost

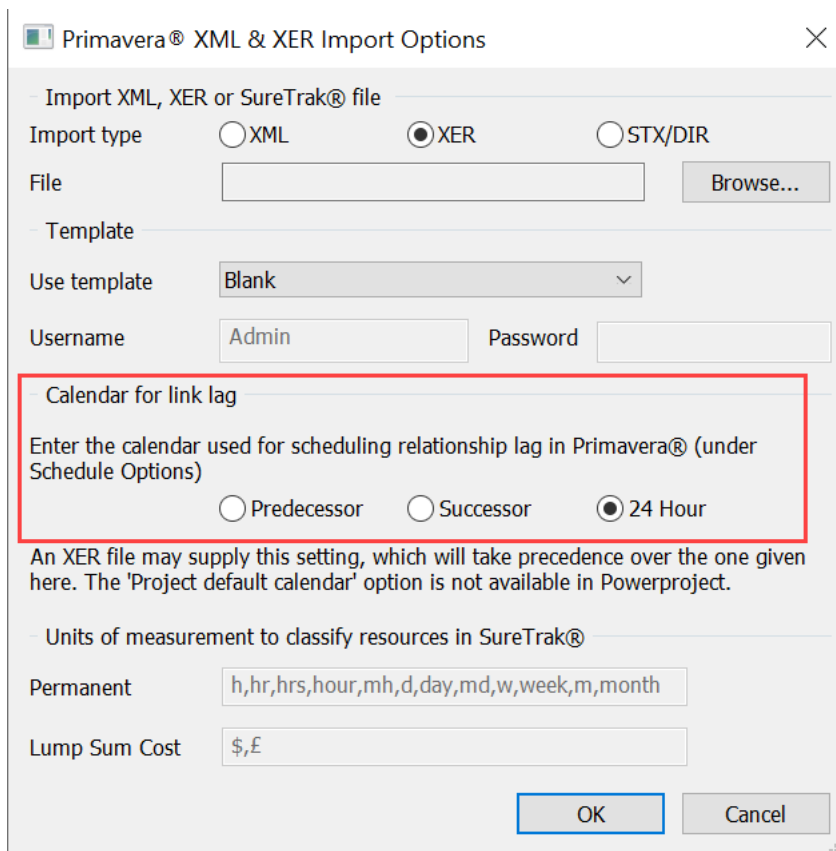
OK Cancel

5. Click **Open**

6. Select the template that should be used, *Use Template* should be one of the *PennDOT Templates*.



7. **Calendar for link lag** should be set to **24 Hour**.



Primavera® XML & XER Import Options

– Import XML, XER or SureTrak® file

Import type ☐ XML ☒ XER ☐ STX/DIR

File Browse...

– Template

Use template ▾

Username Password

– Calendar for link lag

Enter the calendar used for scheduling relationship lag in Primavera® (under Schedule Options)

☐ Predecessor ☐ Successor ☒ 24 Hour

An XER file may supply this setting, which will take precedence over the one given here. The 'Project default calendar' option is not available in Powerproject.

– Units of measurement to classify resources in SureTrak®

Permanent

Lump Sum Cost

OK Cancel

8. If STX/DIR was selected as the file type check, the **Permanent** and **Lump Sum Cost** under **Units of measurement to classify resources in SureTrak®**.

Primavera® XML & XER Import Options

Import XML, XER or SureTrak® file

Import type ☐ XML ☐ XER ☒ STX/DIR

File

Template

Use template

Username Password

Calendar for link lag

Enter the calendar used for scheduling relationship lag in Primavera® (under Schedule Options)

☐ Predecessor ☐ Successor ☒ 24 Hour

An XER file may supply this setting, which will take precedence over the one given here. The 'Project default calendar' option is not available in Powerproject.

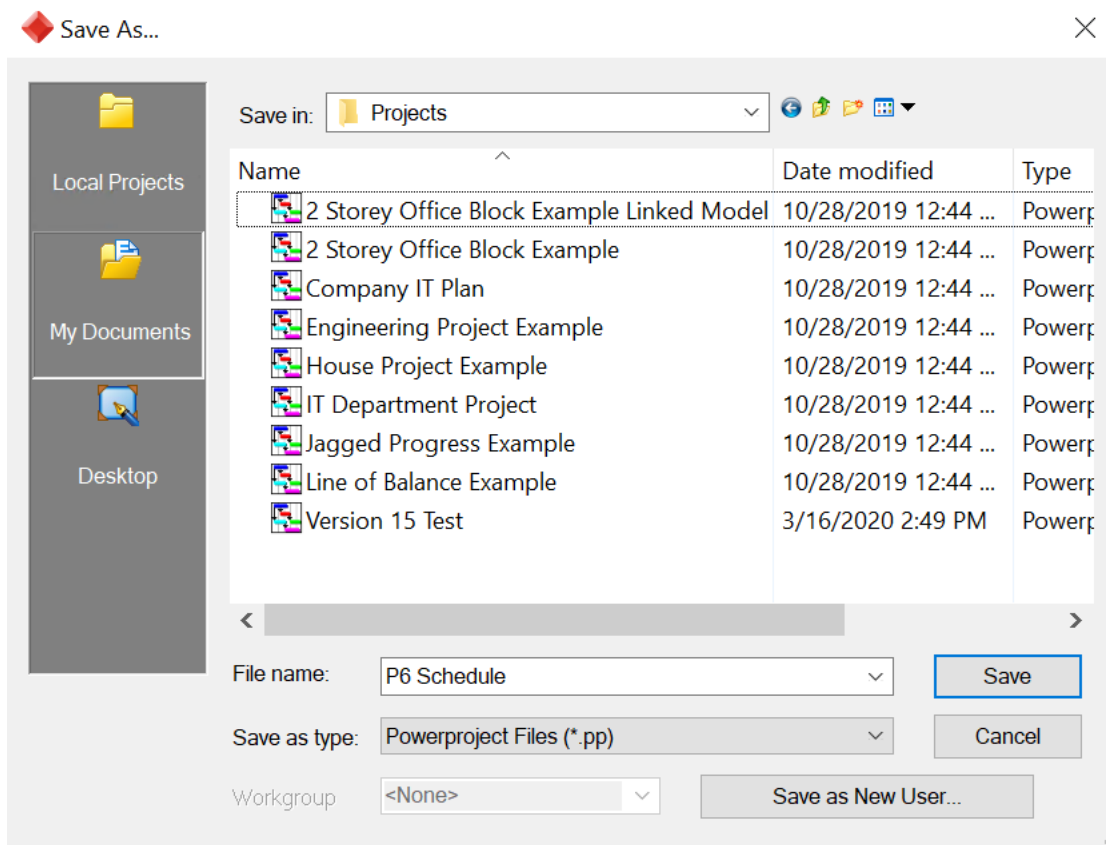
Units of measurement to classify resources in SureTrak®

Permanent

Lump Sum Cost

9. Click **OK**
10. Once the file opens in Elecosoft Powerproject, reschedule the project.
11. Select **File, Save As**

12. Select the destination to Save the schedule and make sure the **Save as type** is set to **Elecosoft Powerproject (*.pp)**



13. Click **Save**

8.23.3- Opening Elecosoft Powerproject Compatible Schedule Formats

1. Select the **File** tab.
2. Select **Import/Export**

Import/Export



Import from Primavera®
P6 XML or XER, or SureTrak®



Export to Primavera®
P6 XML or XER



Import from Microsoft Project®
XML or MPP



Export to Microsoft Project®
XML or MPP



Export to HTML



Export to CSV

3. Browse to the compatible file format (from the list above on the screenshot), and select **OPEN**.

8.23.4- Saving Elecosoft Powerproject Compatible Schedule Format into Elecosoft Powerproject Client

1. Once the compatible file format is open within Elecosoft Powerproject Client, select **File**.
2. Select **Save As**.
3. Give the file a name, and change the **Save as Type** to a **.pp** extension.
4. Select **Save**.

8.23.5- Saving Elecosoft Powerproject Client schedule into an Elecosoft Powerproject Compatible Schedule Format

1. Once the Elecosoft Powerproject schedule is open with Elecosoft Powerproject Client, select **File**.
2. Select **Import/Export**.
3. Select an Export Option.

Import/Export



Import from Primavera®
P6 XML or XER, or SureTrak®



Export to Primavera®
P6 XML or XER



Import from Microsoft Project®
XML or MPP



Export to Microsoft Project®
XML or MPP



Export to HTML



Export to CSV

4. If **Export to Primavera** was selected, toggle on the appropriate settings for you project.

Primavera® XML & XER Export Options

Export XML or XER file

Export type ☒ XML ☐ XER

File Browse...

XER version 15.2

Baselines for export

Select baselines ☐ (Current Baseline) ☐ initial Baseline ☐ New Baseline

Export

WBS hierarchy ☒ Natural order ☐ WBS

Scope

Export Scope ☒ All ☐ Branch

Options

Calendar for link ☐ Predecessor ☐ Successor ☒ 24 Hour

Resource roles ☐

Demand allocations ☐ All demands ☐ Pending only ☒ None

Currency unit for export USD

Export calendars as project calendars ☒

Export code libraries as project activity codes ☒

Add constraint flags to tasks with no incoming links ☒

OK Cancel

5. Give the file a name and location.

6. Select **Save**.

Note: In order for a schedule to be uploaded into the Web Portal, at this time the schedule must be in an Elecosoft Powerproject (.PP) file format.

8.24- THE NETWORK VIEWER

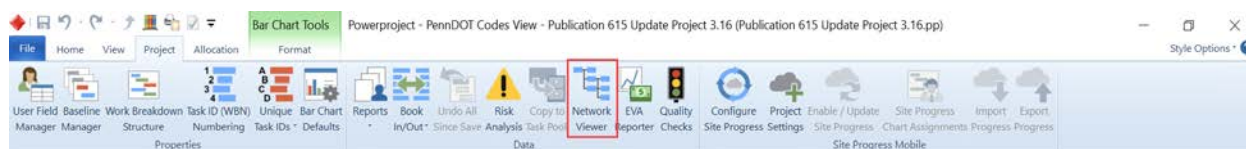
The Network Viewer is a tool that can be used to easily view the project's logic. It is a more compact and simpler way to depict tasks and the relationships between them. The Network Viewer is just another view within Elecosoft Powerproject that allows users to easily view and print out the layout of the project which can be very useful when reviewing and analyzing projects.

8.24.1- Accessing the Network Viewer in Elecosoft Powerproject

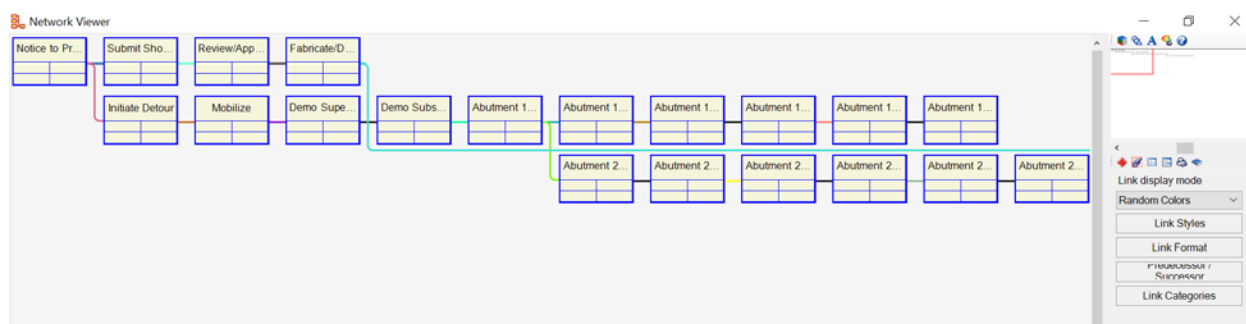
1. Select the **Project Tab**.



2. On the **Project Tab**, select **Network Viewer**.



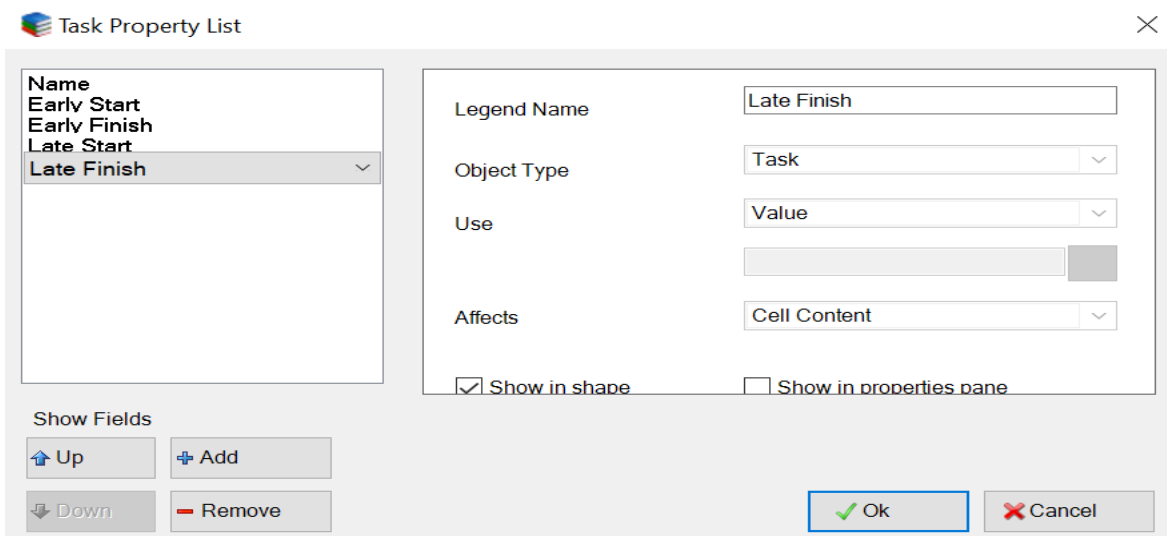
3. The Network Viewer is launched, displaying the current view of the project as a PERT chart in the main view.



8.24.2- Modifying the Content of the Boxes

1. Click **Manage Task Properties**  in the top right corner on the  toolbar


The Task Property List displays.

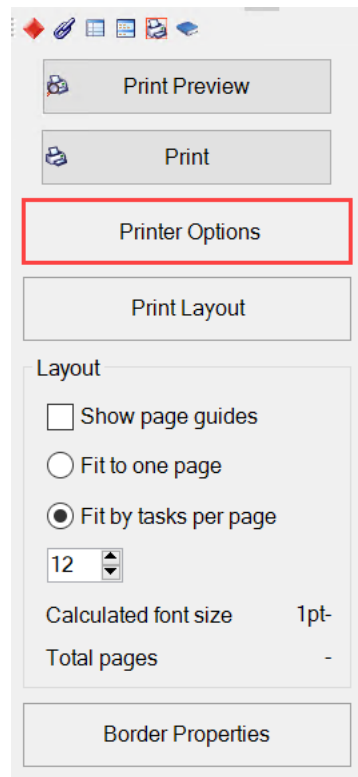


The Task Property List dialog box is shown. It has a title bar with the text 'Task Property List' and a close button. The dialog is divided into two main sections. The left section contains a list box with the following items: 'Name', 'Early Start', 'Early Finish', 'Late Start', and 'Late Finish'. The 'Late Finish' item is selected. Below the list box is a 'Show Fields' section with four buttons: 'Up', 'Add', 'Down', and 'Remove'. The right section contains four dropdown menus: 'Legend Name' (set to 'Late Finish'), 'Object Type' (set to 'Task'), 'Use' (set to 'Value'), and 'Affects' (set to 'Cell Content'). Below these dropdowns are two checkboxes: 'Show in shape' (checked) and 'Show in properties pane' (unchecked). At the bottom right of the dialog are two buttons: 'Ok' and 'Cancel'.

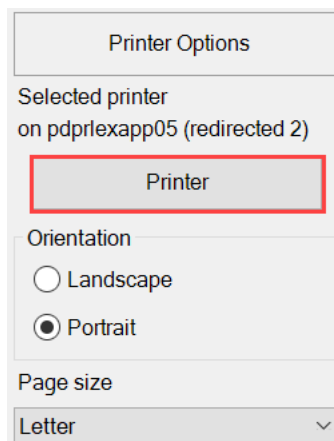
2. Fields can be added or removed depending on what the user wishes to show within the box.
3. Click **Ok**.

8.24.3- Printing the Network Viewer

1. Click the **Print**  icon.
 - The Printer Options will populate on the right side of the screen.



2. Click **Printer Options** to change settings for the printer.
 - The Printer Options dialog box displays.



Printer Options

Selected printer
on pdprlexapp05 (redirected 2)

Printer

Orientation

☐ Landscape

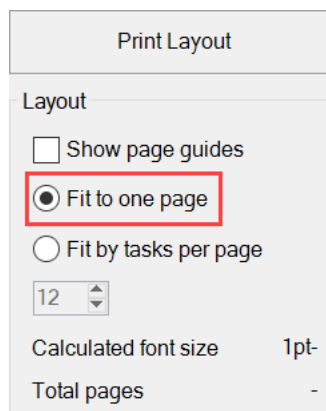
☒ Portrait

Page size

Letter

3. Select the Printer, by clicking the **Printer** button.
4. **Orientation** can be set to either Landscape or Portrait (Landscape is recommended).
5. Select a **Page Size** from the drop-down list.
6. Select **Print Layout** to change the layout options.

The Print Layout dialog box displays.



Print Layout

Layout

☐ Show page guides

☒ Fit to one page

☐ Fit by tasks per page

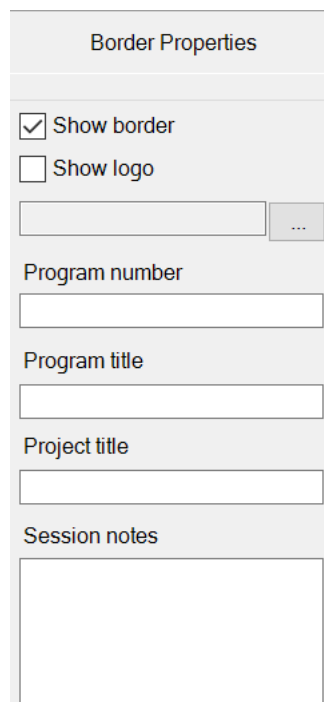
12

Calculated font size 1pt-

Total pages -

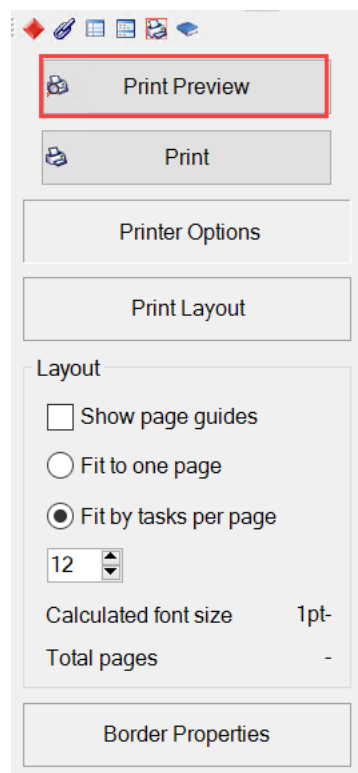
7. Layout should be set to **Fit to one page**.

8. Select **Border Properties** to change the border properties.
 - The Border Properties dialog box displays.

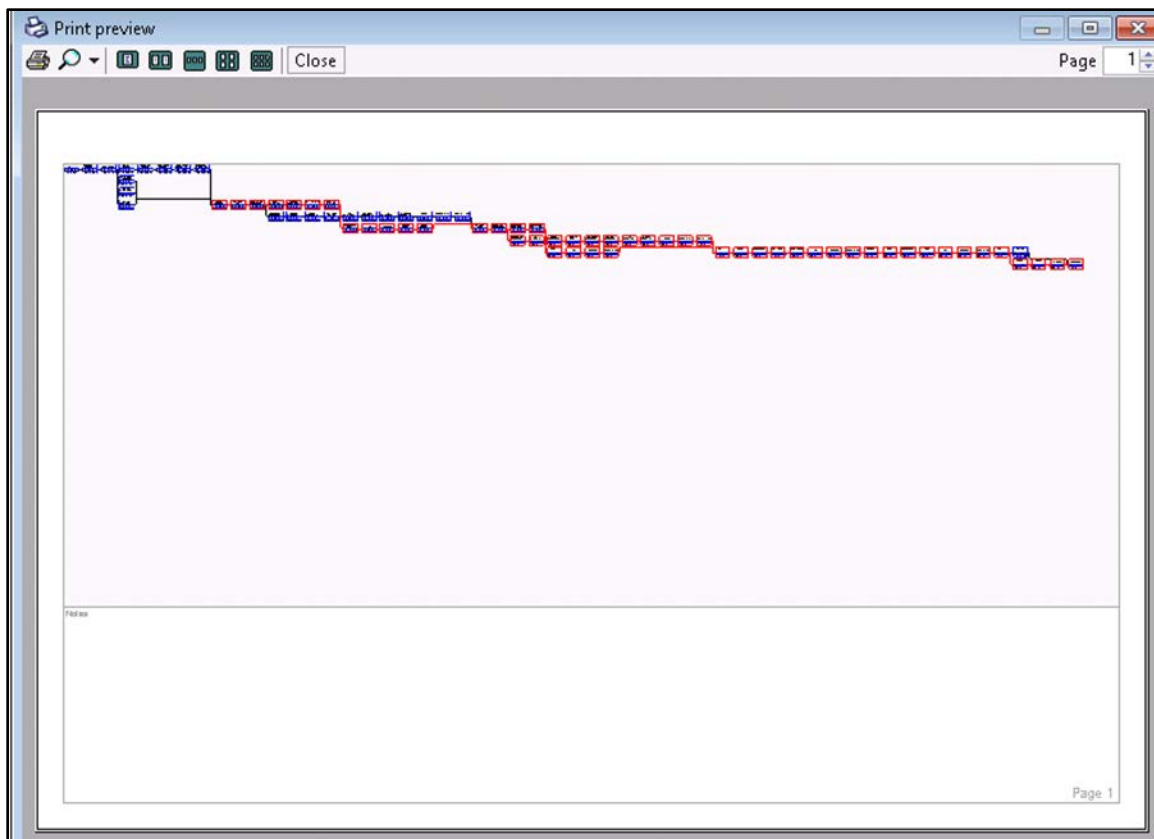



The image shows the 'Border Properties' dialog box. It has a title bar with the text 'Border Properties'. Below the title bar, there are two checkboxes: 'Show border' (checked) and 'Show logo' (unchecked). Below these checkboxes is a text input field and a button with three dots. Below that is a section labeled 'Program number' with a text input field. Below that is a section labeled 'Program title' with a text input field. Below that is a section labeled 'Project title' with a text input field. Below that is a section labeled 'Session notes' with a large text area.



9. Click **Print Preview** to view the printout.



The image shows the 'Print Preview' dialog box. It has a title bar with several icons. Below the title bar, there is a button labeled 'Print Preview' with a printer icon, which is highlighted with a red rectangle. Below that is a button labeled 'Print' with a printer icon. Below that is a button labeled 'Printer Options'. Below that is a button labeled 'Print Layout'. Below that is a section labeled 'Layout' with three radio buttons: 'Show page guides' (unchecked), 'Fit to one page' (unchecked), and 'Fit by tasks per page' (checked). Below the radio buttons is a text input field with the value '12' and a spinner. Below that are two labels: 'Calculated font size' and 'Total pages', with values '1pt-' and '-' respectively. At the bottom is a button labeled 'Border Properties'.



10. If the printout shows the information the user wishes to see, click **Print**  from the Print Preview.

Other modifications can be made to the Network Viewer, which are further explained in the Help Menu, by selecting  on the  toolbar.

8.25- SETTING UP THE PROJECT TO PRINT

As a general rule what you display on the screen is what will be printed

Therefore, select the 'View' of your choice or manually change any formatting, tables etc to customise the display to what you wish to print

The scale of the project can be adjusted for you to allow printing to a certain number of pages

8.25.1- Editing Details for Display on Borders . When you print an Elecosoft Powerproject file it is printed with a border around the project. The border file enables you to display relevant project & company information along with your project data

Some of this information, like the Project Name, Who the project is by & who it is for has already been completed and can be accessed.

8.25.1.1- Accessing the Project Information:

1. Select the File tab, select Properties and then Advanced Properties.

Properties for Publication 615 Update Project 3.16 ✕

Properties Fields

Details

Name

Publication 615 Update Project 3.16

Short name

Publicatio

Status

Normal

For

By

Dates

Start date

5/11/2020 8:00 AM

Duration

74.00d

Finish date

8/24/2020 4:00 PM

Duration unit

⌚ Elapsed Days

Imposed start

☒ 3/16/2020 00:00

Imposed finish

☐ 3/30/2020 00:00

Date zero

3/16/2020 00:00

Delivery date

☐ 3/30/2020 00:00

Progress

Progress method

Overall - Approximate

Progress date

5/11/2020 8:00 AM

% Complete

0.00

Report date

4/13/2020 0:00 AM

Use calculated overall % weights

☐

Resources And Costs

Effort (demand)

328.00eh (0.00eh)

Work

0.00

Cost

\$0.00

Income

\$0.00

Ignore satisfied costs in roll-ups

☐

Miscellaneous

Number of tasks

35

Default View

PennDOT Codes View

Number of logged on users

1 (as at 3/30/2020 11:12:16 AM)

Close

All further information, such as revision dates, program numbers etc can be found:

2. Select the **File Tab**.
3. Click the **Print** command.

4. Choose Full Preview icon.



5. Click on the Output Fields icon.



Output Fields ✕

Project	Chart	View	Statistics	Miscellaneous	Project Fields	User Fields - Project / Chart
Long name	Publication 615 Update Project 3.16					
Project for						
Project by						
Start	5/11/2020					
Finish	8/24/2020					
Percent complete	0.00					
Duration	14.80w					
Report date	4/13/2020					
Comment						
Drawn by						
Issue date	<input type="text" value="3/30/2020"/>					
Revision comment						
Program number						
Revision date	<input type="text" value="3/30/2020"/>					
Manager	<None> ▼					
Revision number						

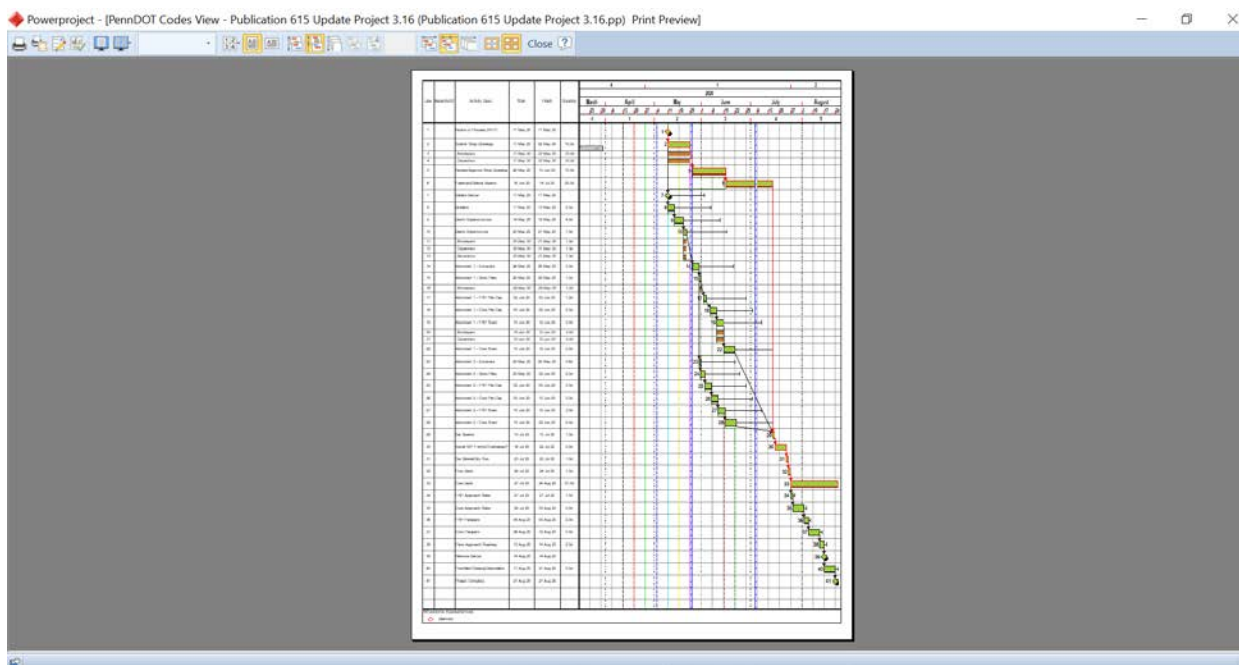
8.26- PRINTING THE PROJECT

As a general rule what you display on the screen is what will be printed. Therefore select the 'View' of your choice or manually change any formatting, tables, etc.

8.26.1- Customizing the Display for What to Print

1. Select the *File Tab*.

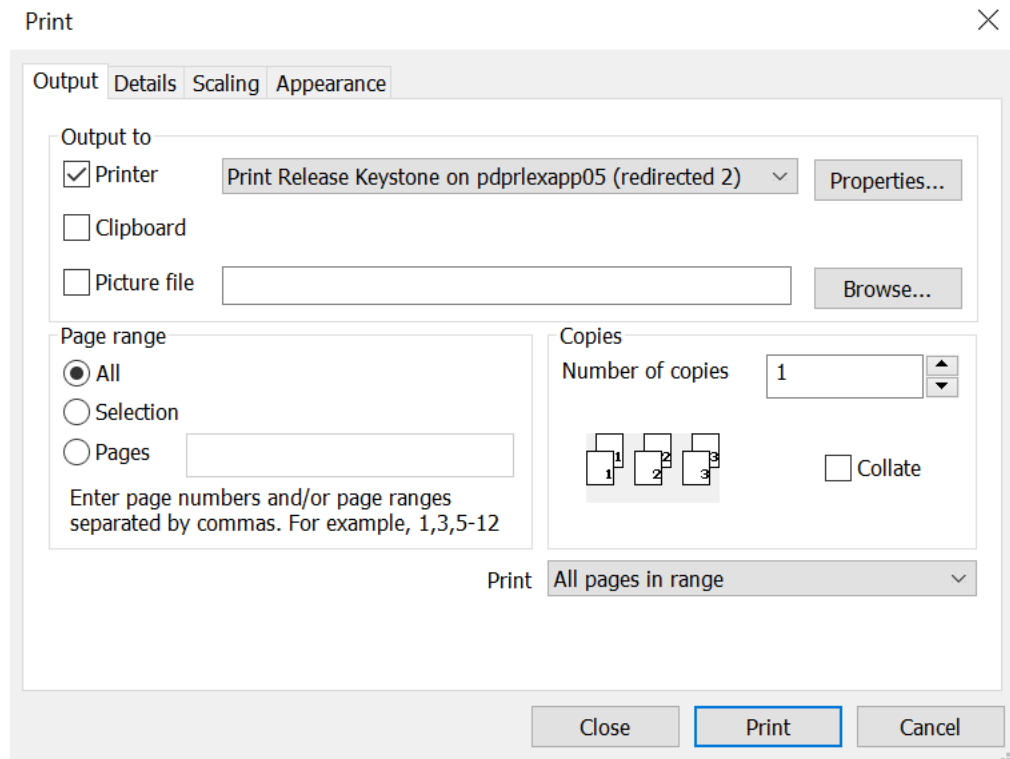
2. Click the **Print** command.
3. Choose **Full Preview** icon.



8.26.2- Print Settings. This function allows you to configure the settings to be used when printing, i.e. which printer or PDF writer to use, which border file to use and customize etc. To access this, select the icon below:



8.26.2.1- Output Tab



The output tab control where the print out is going to and what file type is going to be created if applicable. The main output options are:

- **Printer** – Tick Printer and choose your printer from the drop down list; from the properties button decide your printer orientation and size (standard printer usage) Press the Print button to activate Print.
- **PDF** – If you have a PDF writer installed, you should see it listed in your printer dropdown list. If not, consult your IT department who can install it for you.
- **Clipboard** – Tick clipboard to have your print preview copied to the clipboard. You can then open Word, Excel etc. Right-click on the page and select paste, to paste your print preview into the document. Press the Print button to activate the copy to clipboard.
- **Picture file** – Tick Picture file to have your print converted into a JPEG picture file, which can be inserted into Word, Excel, PowerPoint etc. Use the Browse button to choose where to save the new file and what filename to give it. Press the Print button to activate the file creation.

The Print Range decides which pages of the project document you wish to print this time:

- **All** – Prints all pages
- **Selection** – Prints only what you have selected in Elecosoft Powerproject

- **Pages** – Prints only the pages you specify in the available field

8.26.2.2- Details Tab

Print ✕

Output Details **Scaling** Appearance

– Border file
 Browse... Edit...


Style: Embed...

Border page size : (0.00 x 0.00 in)

Printer page size : Letter (8.50 x 11.00 in) Portrait

– Date range
 From To

– Language English Print order

☐ Down, then over ☒ Over, then down 

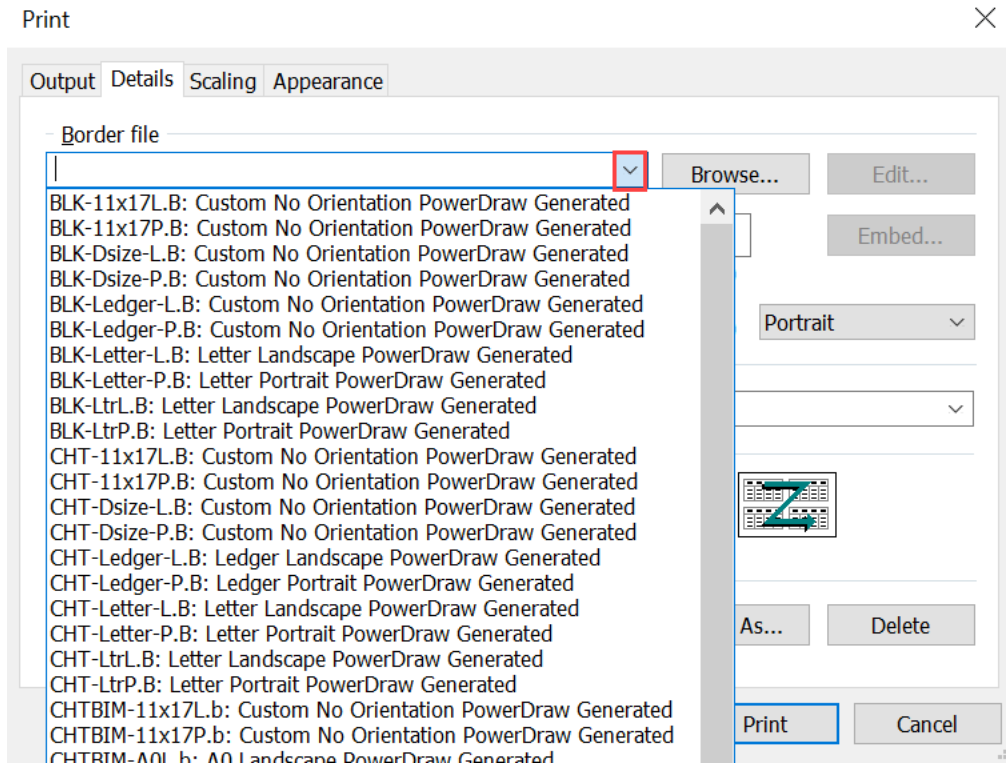
– Print profile
 Admin Save As... Delete

Close **Print** Cancel

In Details you have the options for your border file and it lets you limit the dates of the project you wish to print. When you print an Elecosoft Powerproject file it is printed with a border around the project. The border file enables you to display relevant project and company information/logos etc. along with your project data.

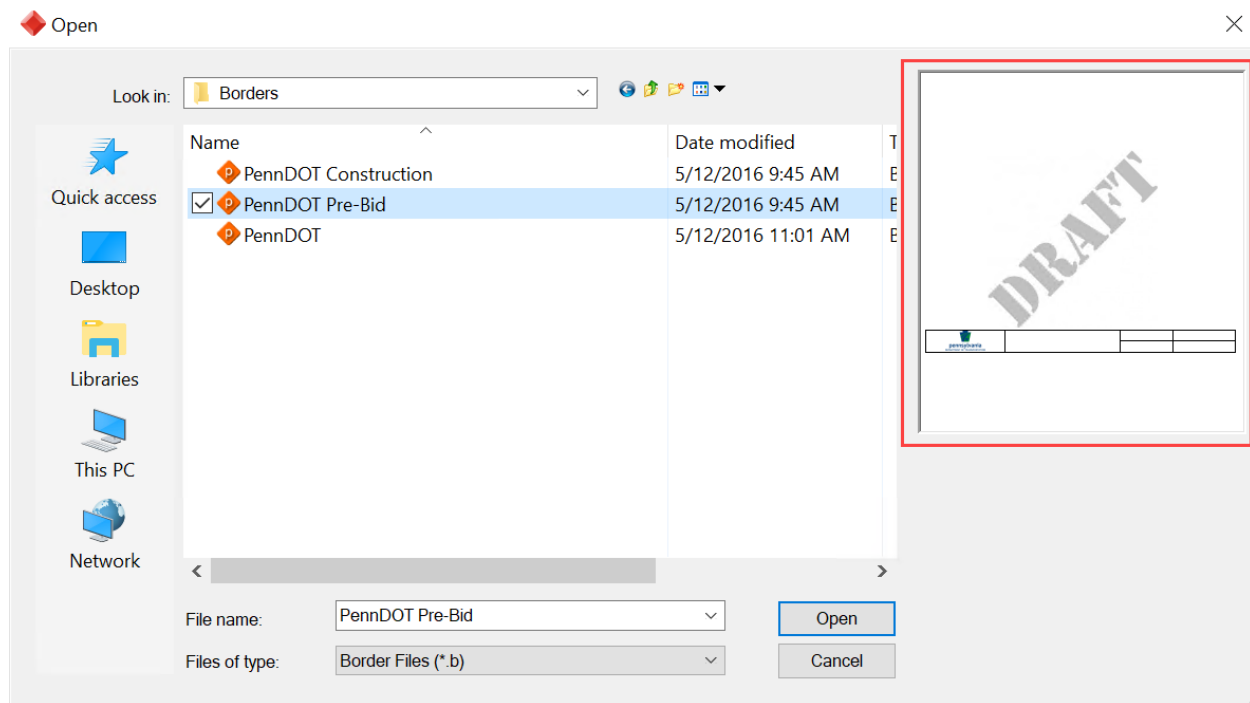
Choosing a Preferred Border File:

1. Click the **dropdown arrow** to view all of your available border files.



2. The filenames of our border files contain a name (i.e. CHT) and page size (i.e. A4) and the orientation of the paper (i.e. 'L' for landscape or 'P' for portrait). A good default border to use would be ***CHT-A4L***.

- You can select a file from the list, or click **'Browse'** if you have your own border saved elsewhere. When you do this, it will take you to the 'Borders' folder as shown below. An example of the border file selected will appear on the right hand side.



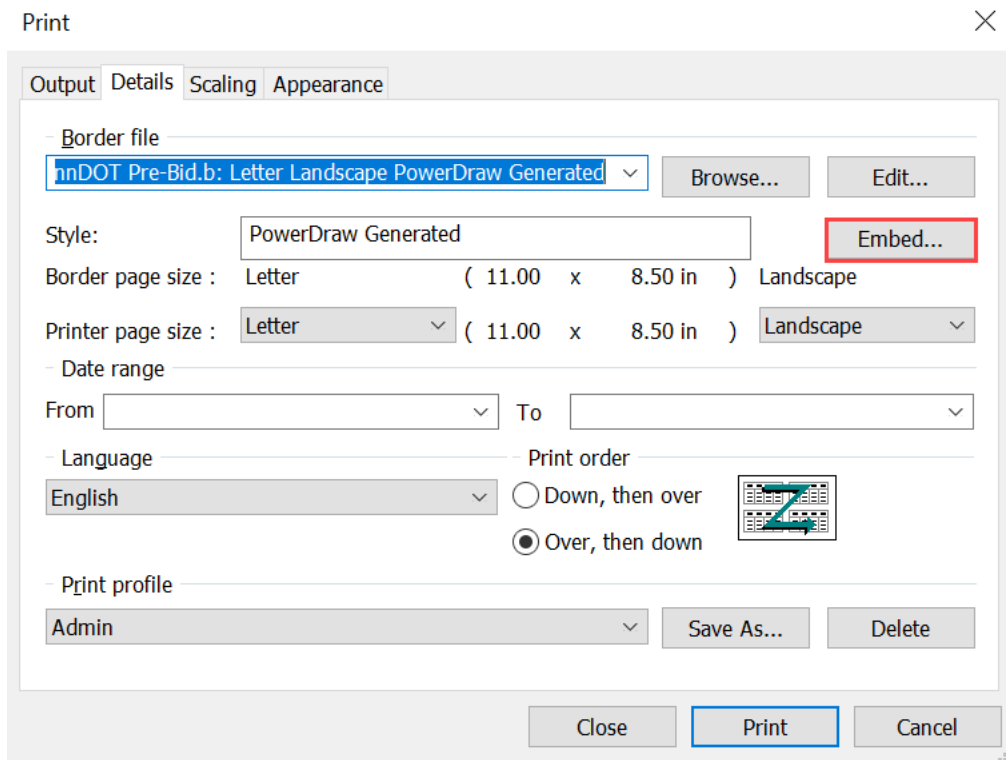
- Click **Open** when you have selected the appropriate border file.

Borders are separate files on your computer or network and do not form part of your Elecosoft Powerproject file. This may mean that if you send your project elsewhere to be viewed or printed, such as via email, the border file may not be available to the recipient

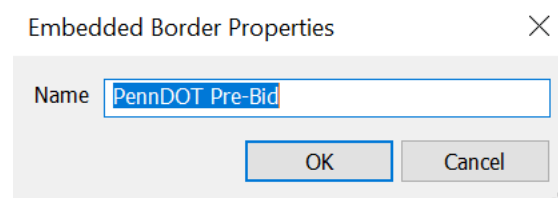
To avoid this, you are able to embed the border file which will add a compressed copy of the border file to the Elecosoft Powerproject file, meaning if it were to be sent, the border file would be included.

8.26.2.3- Embedding a Border File

1. Click on the **Embed button**.



The following dialogue box will appear:



2. Choose a name for your embedded border (N.B it doesn't have to be the same as the Border file).
3. Click **OK**.
4. The **Embedded border** shows in the Border file list and the **Embed** button now displays as **Delete**.
5. Delete is active so that if you no longer need the embedded border it can be deleted from the .pp file. (N.B. this does not delete the main border file).

Note: Once a border file has been selected, you will need to ensure the 'Border page size' matches the 'Printer page size', e.g. as seen below, the Printer page size needs to be changed to Landscape.

Print

Output Details Scaling Appearance

Border file
nnDOT Pre-Bid.b: Letter Landscape PowerDraw Generated Browse... Edit...

Style: PowerDraw Generated Embed...

Border page size : Letter (11.00 x 8.50 in) Landscape

Printer page size : Letter (11.00 x 8.50 in) Landscape

Date range
From To

Language English

Print order
☐ Down, then over
☒ Over, then down

Print profile
Admin Save As... Delete

Close Print Cancel

In the **Date Range** section, you are able to select specific dates within the project that you wish to print.

8.26.2.4- Printing a Specific Date Range:

1. From the two drop down cells, choose a start date for the data you are printing and an end date to slice that period for printing

Once you have chosen your settings, sizes and selections in the print dialogue box you can save all these ticks.

8.26.2.5- Saving a Print Profile:

1. With all selections made click on **Save As**.

Print ×

Output Details **Scaling** Appearance

– Border file
 nnDOT Pre-Bid.b: Letter Landscape PowerDraw Generated Browse... Edit...

Style: PowerDraw Generated Embed...


Border page size : Letter (11.00 x 8.50 in) Landscape

Printer page size : Letter (11.00 x 8.50 in) Landscape

– Date range
 From To

– Language Print order

English
☐ Down, then over
☒ Over, then down



– Print profile
 Admin Save As... Delete

Close **Print** Cancel

2. Give your new profile a name, click on **OK**.

Note: The next time you then want to print, go straight to ‘Print profile’ and choose the profile that you want from the dropdown arrow. All the selections you saved will be remembered

8.26.2.6- Customizing the Border File and Inserting a Company Logo:

After selecting the appropriate border file in the Details tab, you can click Edit on the right hand side to customise it further.

Customizing a Border File:

- Click *Edit*.

Print

Output Details Scaling Appearance

Border file
nnDOT Pre-Bid.b: Letter Landscape PowerDraw Generated Browse... Edit...

Style: PowerDraw Generated Embed...

Border page size : Letter (11.00 x 8.50 in) Landscape

Printer page size : Letter (11.00 x 8.50 in) Landscape

Date range
From To

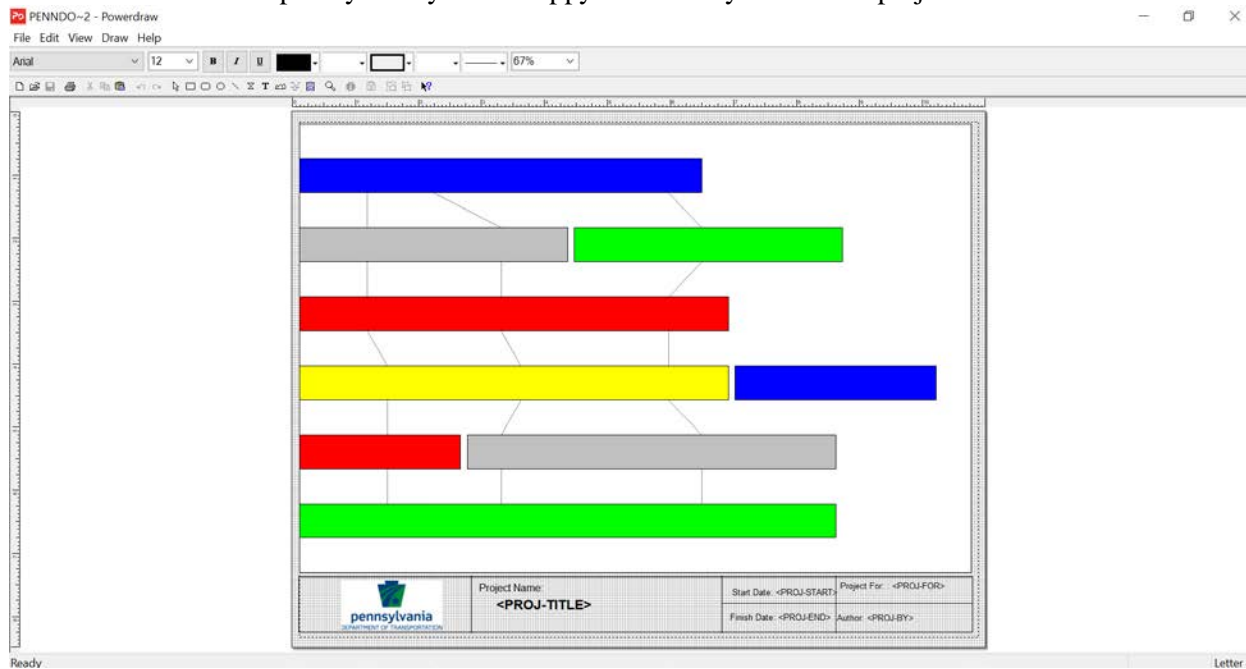
Language English Print order
☐ Down, then over
☒ Over, then down


Print profile
Admin Save As... Delete

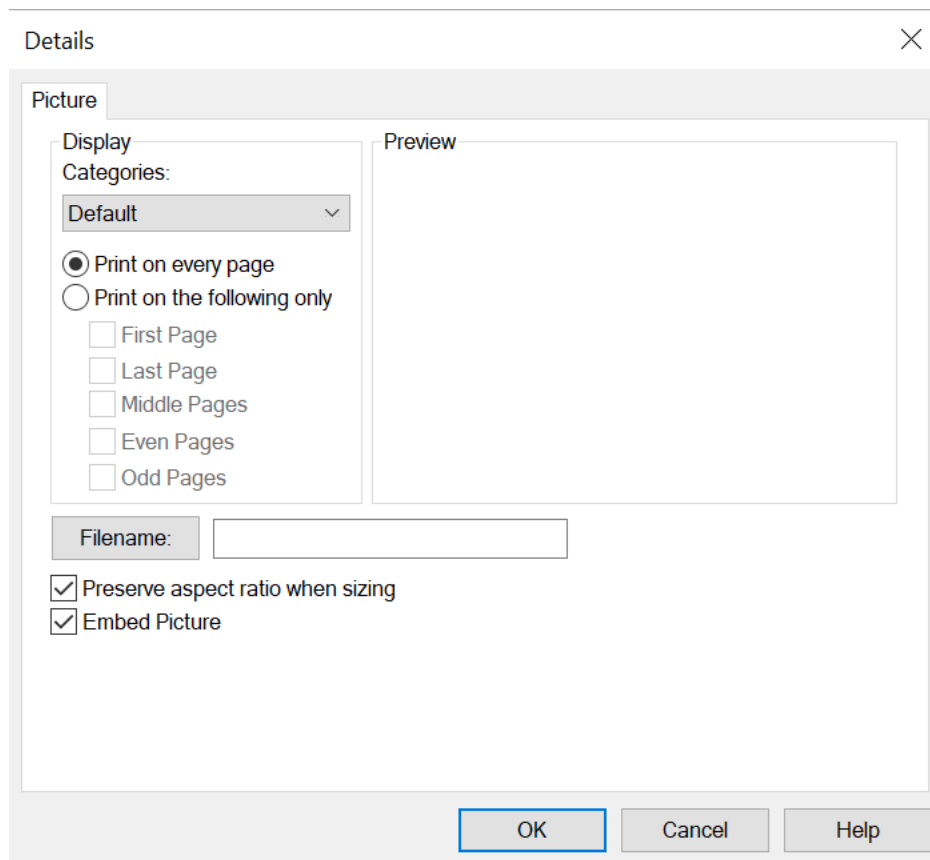
Close Print Cancel

This will open up a separate software program called '**Elecosoft Powerproject Powerdraw**' which is used solely to create and customize border files for Elecosoft Powerproject files.

You will notice the fields of information that will be shown when this border file is printed, e.g. **<PROJ-TITLE>** as seen in the screen print below. These can be moved around your border file or deleted completely until you are happy with the layout and the project data that will be visible.

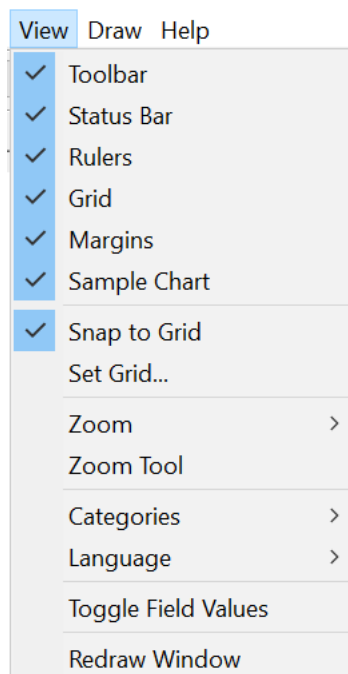


- To insert a company logo, select the **New Picture**  icon on the toolbar. Then use your cursor to draw a square box of where you want the logo to appear. When you release the cursor, the following dialogue box will appear:



- Click **'Filename'** as circled above to navigate to the folder which contains the company logo you wish to use.
- Click **'Insert'** and **'OK'** to see the logo in your border file. You can then reposition and resize the logo accordingly

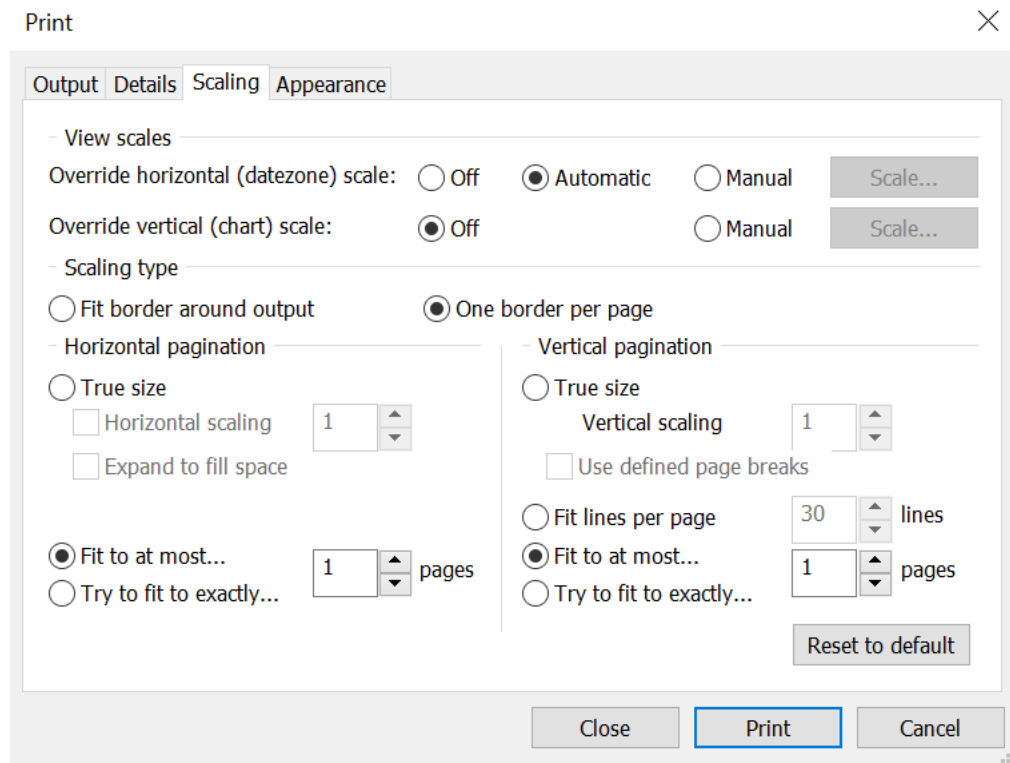
- By default the picture(s) will snap around the faint square boxes that appear in the background of the border file. In order to reposition and resize it accurately, select '**View**' from the toolbar and untick the '**Snap to Grid**' option from the list:



- When all the changes have been made, click '**File**', '**Save As**' so you can select this customised border file again the in future. If you do not want it to be saved in the Borders folder, click '**Browse**' and open the appropriate folder to save it in.

8.26.2.7- Scaling Tab

The scaling tab is used to control the size of your print out. It can be set manually, by selecting the actual print size of a time unit (i.e. 1 Week to a centimeter) or by selecting the number of pages you would wish to have:

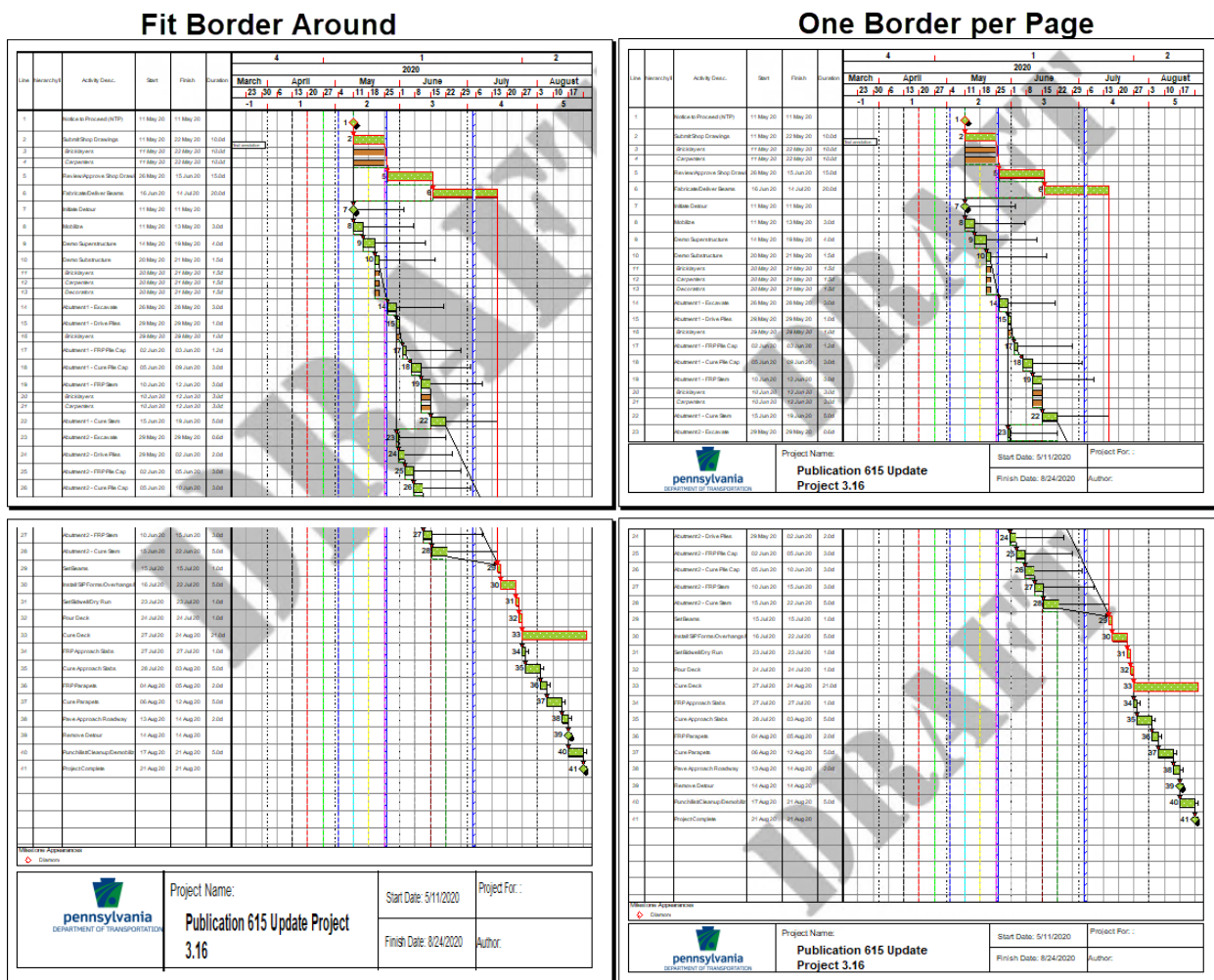


The View Scales options allow you to control the size manually:

- **Override horizontal (date zone) scale** – Allows you to control the scaling of the date zone (size of a week etc). The default setting is set to 'Automatic'.
- **Override vertical (Chart) scale** – Allows you to control the scaling of each bar line, Allocation and Baseline height. This is controlled by the settings in Format Bar Chart, Vertical Scale, but does not set them in the program.

The Scaling Type details how the border file will be used on a multi-page printout:

- **Fit border around output** – If printing to more than one page, this setting allows you to apply the border around all of the pages.
- **One border per page** – If printing to more than one page, applies your chosen border to each page printed.

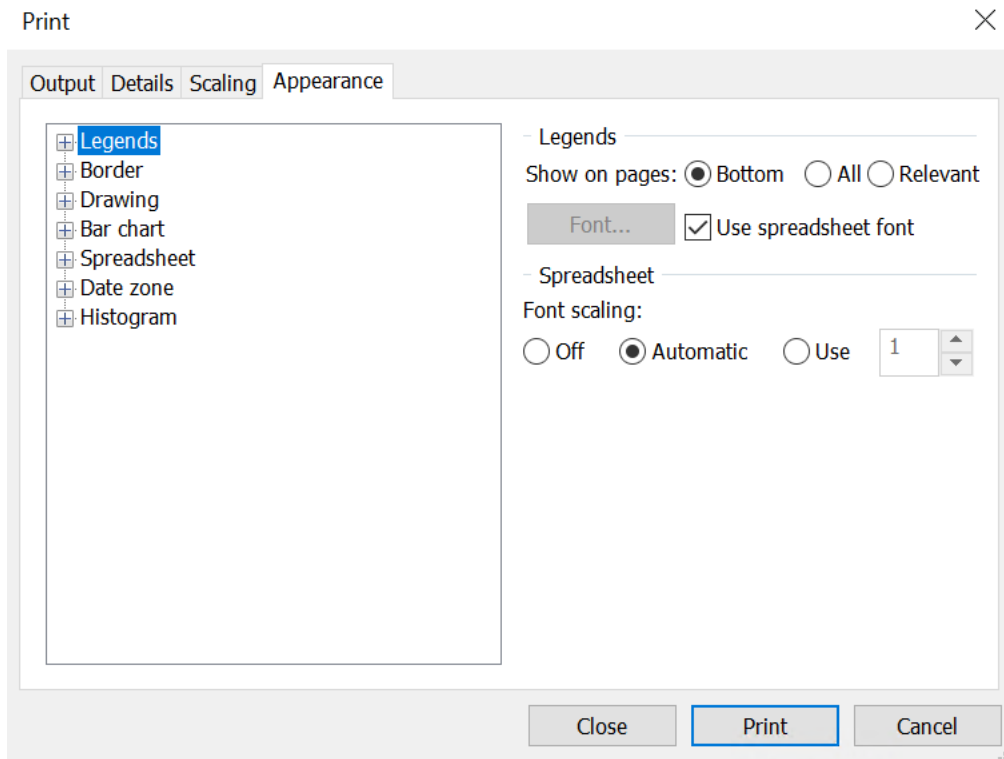


The Horizontal & Vertical Pagination options allow Elecosoft Powerproject to adjust the size of the print out to fit to a chosen number of pages

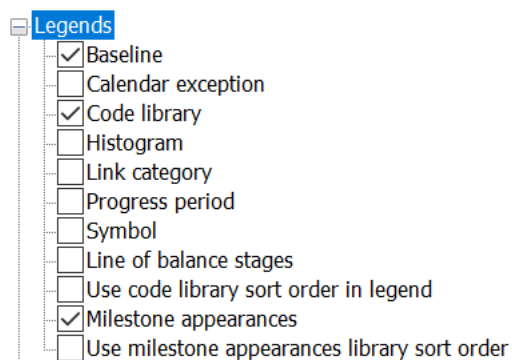
- **True size** – Prints your plan at the exact size set in the date zone or spread sheet, so may end up printing across a number of pages.
- **Horizontal scaling** – With true size selected this will increase or decrease your print out by the number selected e.g. 1.5 would print at 1.5 times its normal size.
- **Expand to fill space** – Expands the chart to the edge of the border.
- **Vertical scaling** – Increases your vertical scale by the number entered. E.g. 2 would increase your vertical scale by twice the height.
- **Use Defined page breaks** – Prints a page dictated to by the position of a page break. A page break is created in the bar chart by Right-clicking in the bar chart where you want the page break to happen and selecting Page Break.
- **Fit lines per page** – Gives you control of how many lines you would want printed on each page.
- **Fit to at most** – Will fit it to the pages you specify 1x1, 2x2 but if you choose a size which is beyond a reasonable printout e.g. 5x5 pages for a 10 line program it will keep it to a size which it regards as a best fit.
- **Try to fit to exactly** – Will fit exactly to the pages requested whether it would look reasonable or not.

2.26.2.8- Appearance Tab

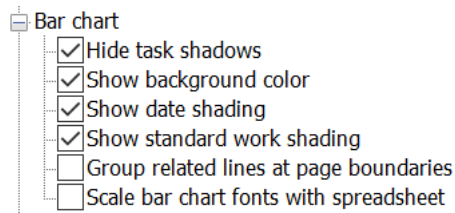
The appearance tab allows you to add or remove certain elements of the printout, such as legends, shading and hidden columns.



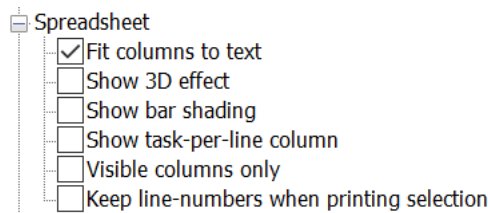
- **Legends** – this shows a key at the bottom of the print out for any of the items ticked.



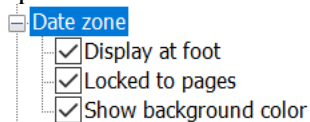
- **Bar Chart** – ‘Show date shading’ will either show or hide shading used on a plan.



- **Spreadsheet** – ‘Tick Visible columns’ only to only print the columns you can see on the screen.

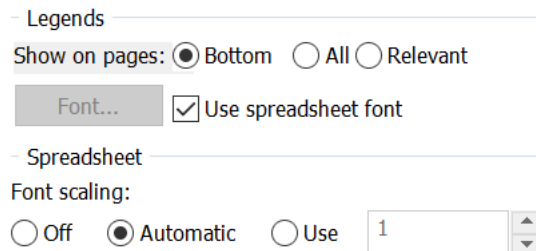


- **Date zone** – ‘Display at foot’ will show the date zone at the bottom of the page as well as the top.



On the right of the dialogue box:

- **Legends** – You can change the font of the legends which display at the base of the print out or just use the fonts from the spreadsheet.



- **Spreadsheet** – If a font is difficult to read you can use these options to change the size of the font in the spreadsheet to make it easier to read.

8.26.3- Output Fields. The Output fields icon (circled below) is where you can edit the display of relevant project and company information that may appear within your chosen border file.



The information you can edit in these tabs include the program number, revision number, comments, etc.

Output Fields ✕

Project	Chart	View	Statistics	Miscellaneous	Project Fields	User Fields - Project / Chart
Long name	<input type="text" value="Publication 615 Update Project 3.16"/>					
Project for	<input type="text"/>					
Project by	<input type="text"/>					
Start	<input type="text" value="5/11/2020"/>					
Finish	<input type="text" value="8/24/2020"/>					
Percent complete	<input type="text" value="0.00"/>					
Duration	<input type="text" value="14.80w"/>					
Report date	<input type="text" value="4/13/2020"/>					
Comment	<input type="text"/>					
Drawn by	<input type="text"/>					
Issue date	<input type="text" value="3/31/2020"/>					
Revision comment	<input type="text"/>					
Program number	<input type="text"/>					
Revision date	<input type="text" value="3/31/2020"/>					
Manager	<input style="background-color: #cccccc;" type="text" value=" <None> "/>					
Revision number	<input type="text"/>					

- To edit the original project name, the recipient of the project and who created it, close the full preview screen and select **File, Properties, Advanced Properties**.

Properties for Publication 615 Update Project 3.16 ✕

Properties

Fields

Details

Name

Publication 615 Update Project 3.16

Short name

Publicatio

Status

Normal

For

By

Dates

Start date

5/11/2020 8:00 AM

Duration

74.00d

Finish date

8/24/2020 4:00 PM

Duration unit

⌚ Elapsed Days

Imposed start

☒ 3/16/2020 00:00

Imposed finish

☐ 3/31/2020 00:00

Date zero

3/16/2020 00:00

Delivery date

☐ 3/31/2020 00:00

Progress

Progress method

Overall - Approximate

Progress date

5/11/2020 8:00 AM

% Complete

0.00

Report date

4/13/2020 0:00 AM

Use calculated overall % weights

☐

Resources And Costs

Effort (demand)

328.00eh (0.00eh)

Work

0.00

Cost

\$0.00

Income

\$0.00

Ignore satisfied costs in roll-ups

☐

Miscellaneous

Number of tasks

35

Default View

PennDOT Codes View

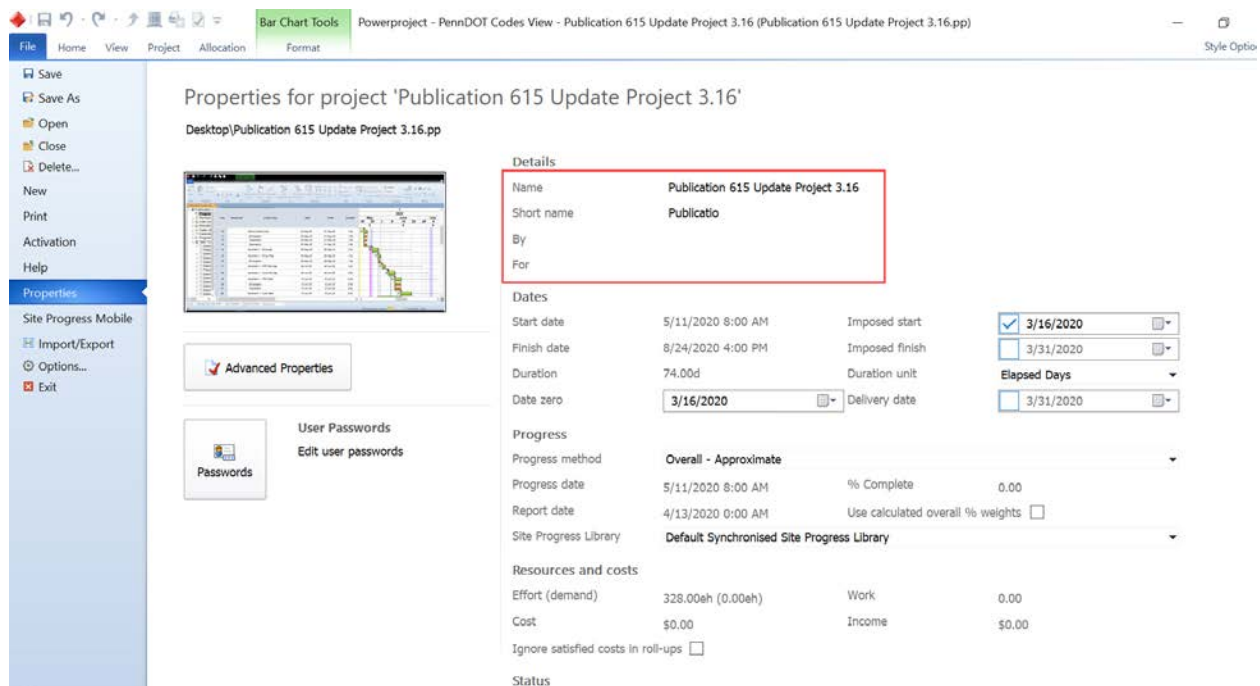
Number of logged on users

1 (as at 3/31/2020 9:45:43 AM)

Close

Or

- Select **File, Properties** and edit the information under **Details**



8.26.4- Display Switches. Users are able to access the display switches from the Format tab in the Full Preview screen. When clicking the Display Switches icon a subset of additional icons will appear on the right hand side of the toolbar.



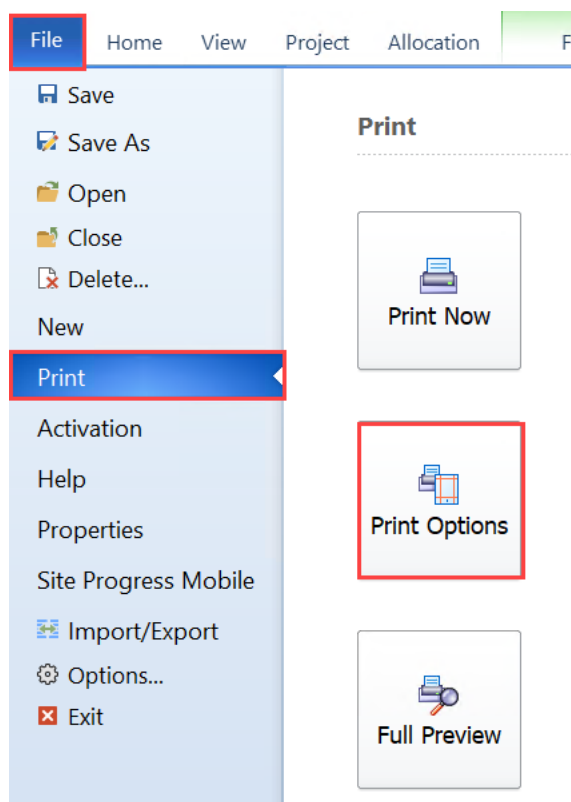
Users can easily toggle on and off what they wish to display or not display on their printout.

8.26.5- Print. When satisfied with the layout and data displayed, click the 'Print' button from the toolbar circled below:



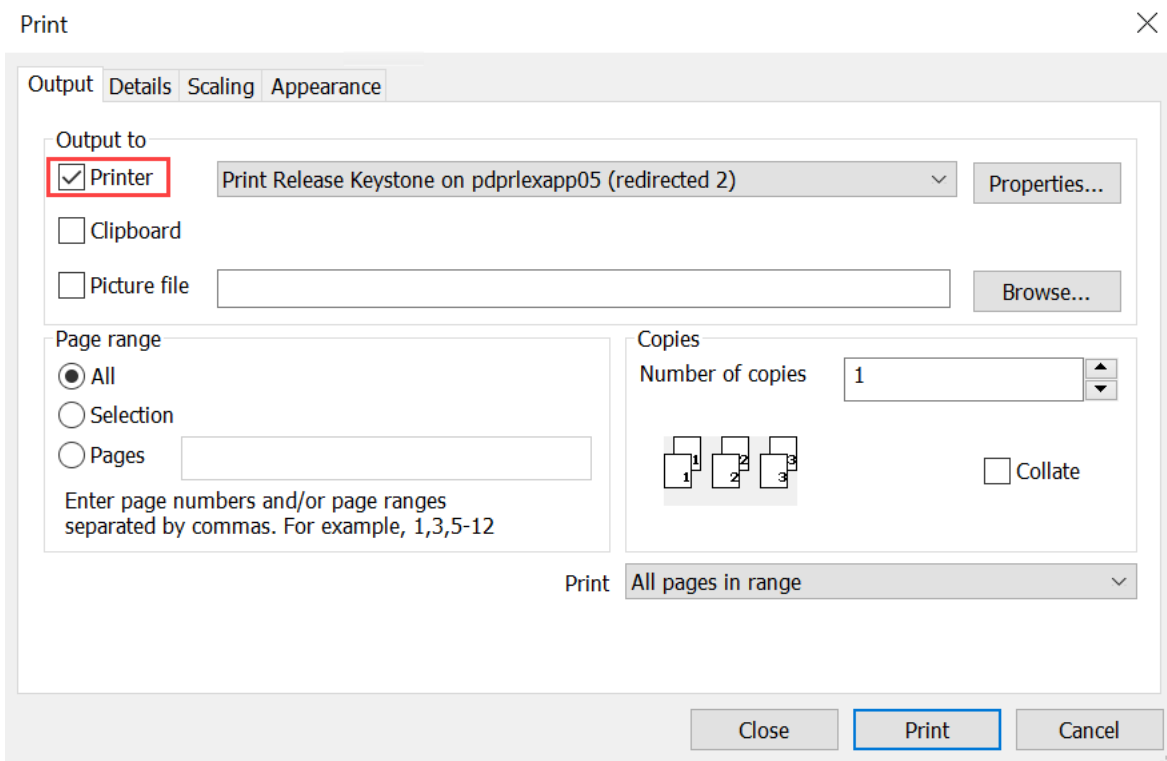
8.26.6- Customizing for an 11 x 17 Printout

1. Select the **File Tab**.
2. Click **Print**.
3. Click **Print Options**.

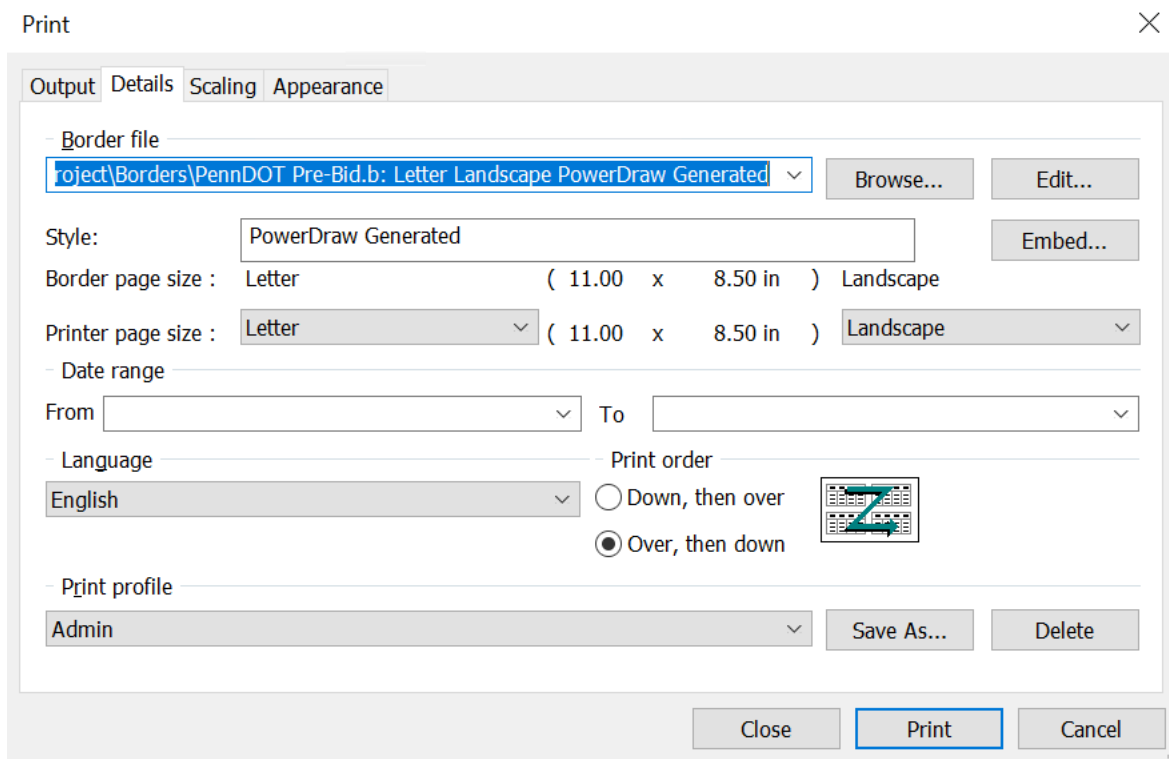


- The Print dialog box displays.

4. Make sure the **Printer box** is selected and select the correct printer to print to.



5. Select the **Detail Tab**.



6. Click **Browse** to locate the correct border file to use. PennDOT has several standard border files starting with the title “PennDOT . . .”
7. Set **Printer page size** to **Tabloid**. Select **Landscape** from the drop-down box.

Print ✕

Output Details **Scaling** Appearance

– Border file
 Project\Borders\PennDOT Pre-Bid.b: Letter Landscape PowerDraw Generated ▾ Browse... Edit...


Style: PowerDraw Generated Embed...

Border page size : Letter (11.00 x 8.50 in) Landscape

Printer page size : Tabloid (17.00 x 11.00 in) Landscape ▾

– Date range
 From ▾ To ▾

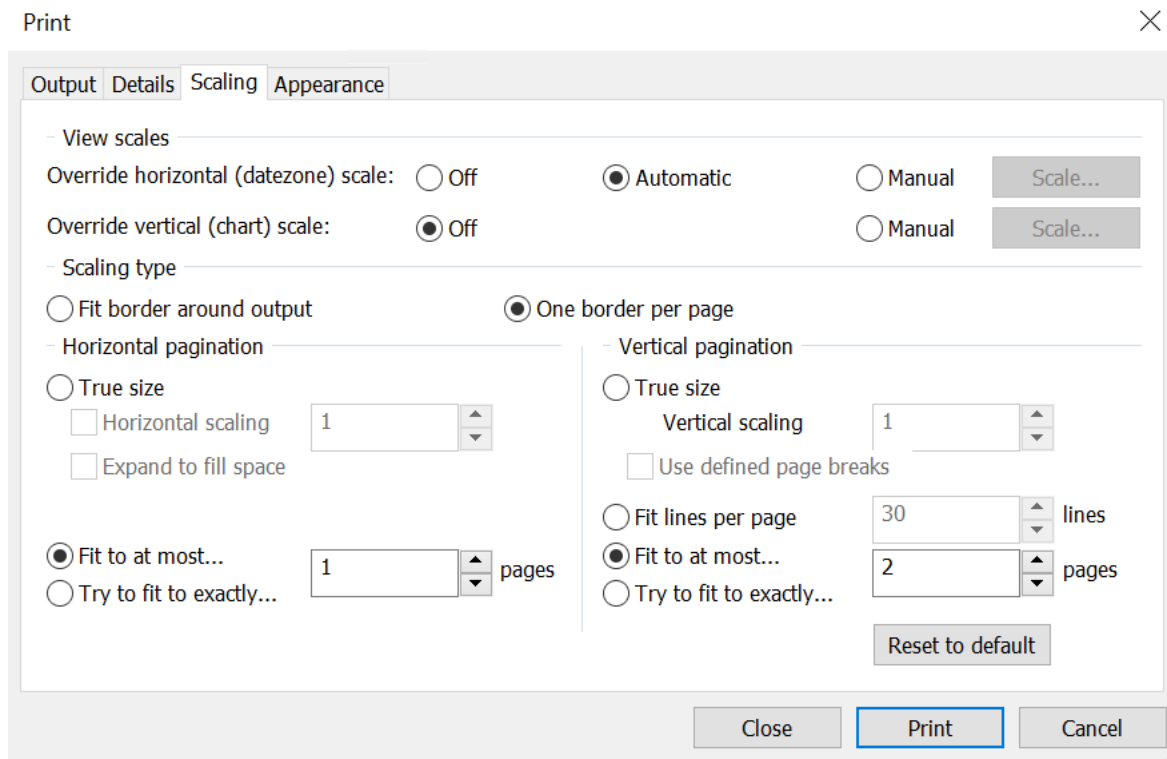
– Language English ▾

– Print order
☐ Down, then over 
☒ Over, then down

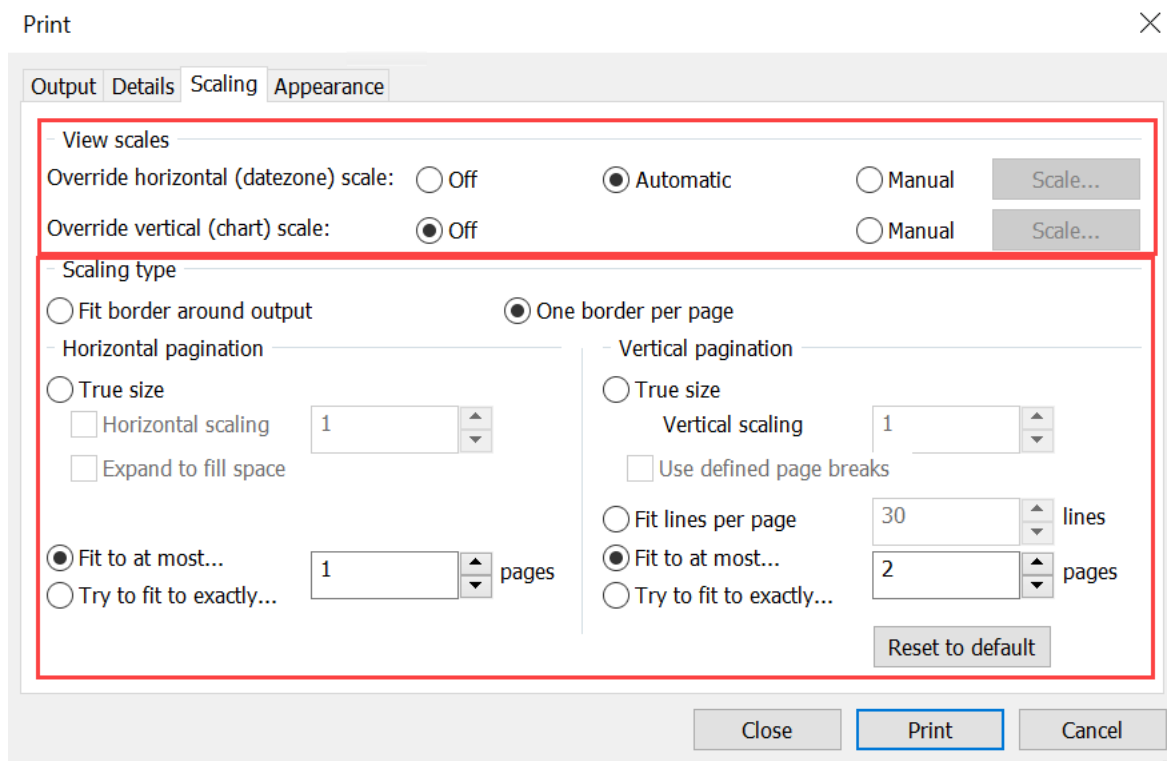
– Print profile Admin ▾ Save As... Delete

Close Print Cancel

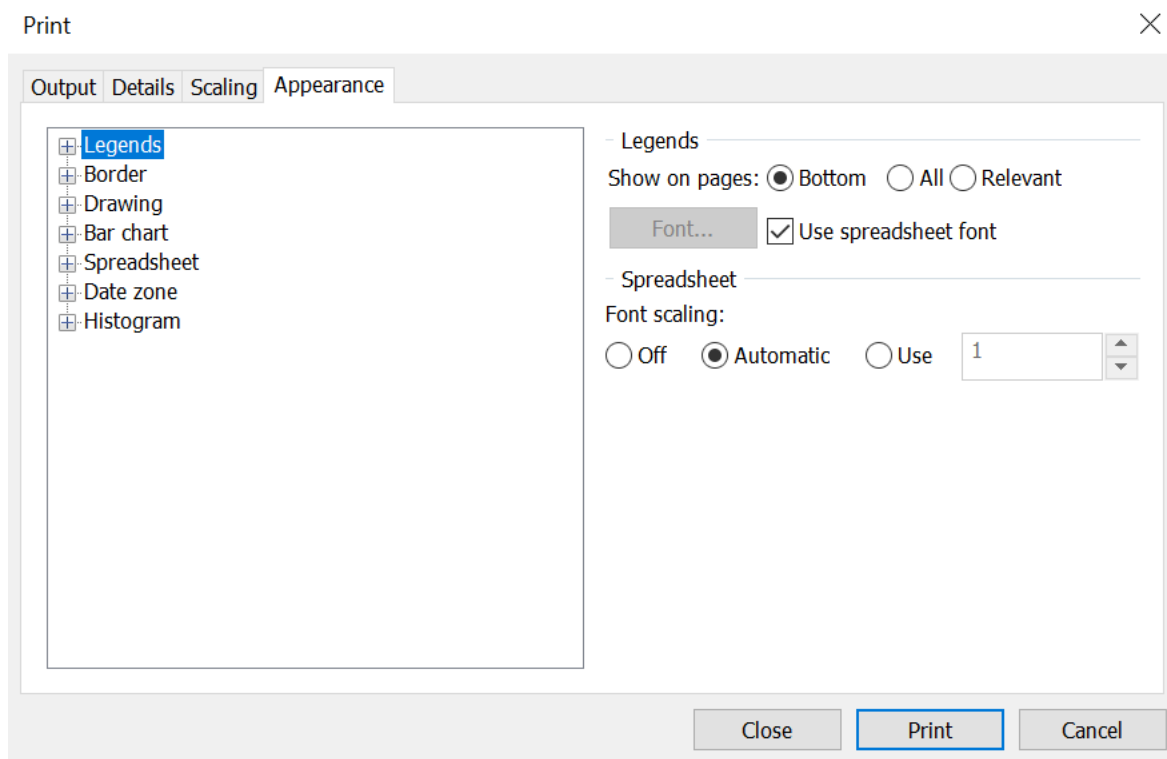
8. If desired, set the **Date Range**. This is only relative to the bar chart. All activities within the spreadsheet will still print. If nothing is set it, the range will include the entire project.

9. Select the *Scaling Tab*.10. Use the radio button to set *Override horizontal (datezone) scale* to *Automatic*.11. Use the radio button to set *Horizontal pagination* to *Fit to at most . . .*. Use the drop-down box to select *1 page*. This ensures that the spreadsheet and the bar chart are fitting horizontally on the same page.

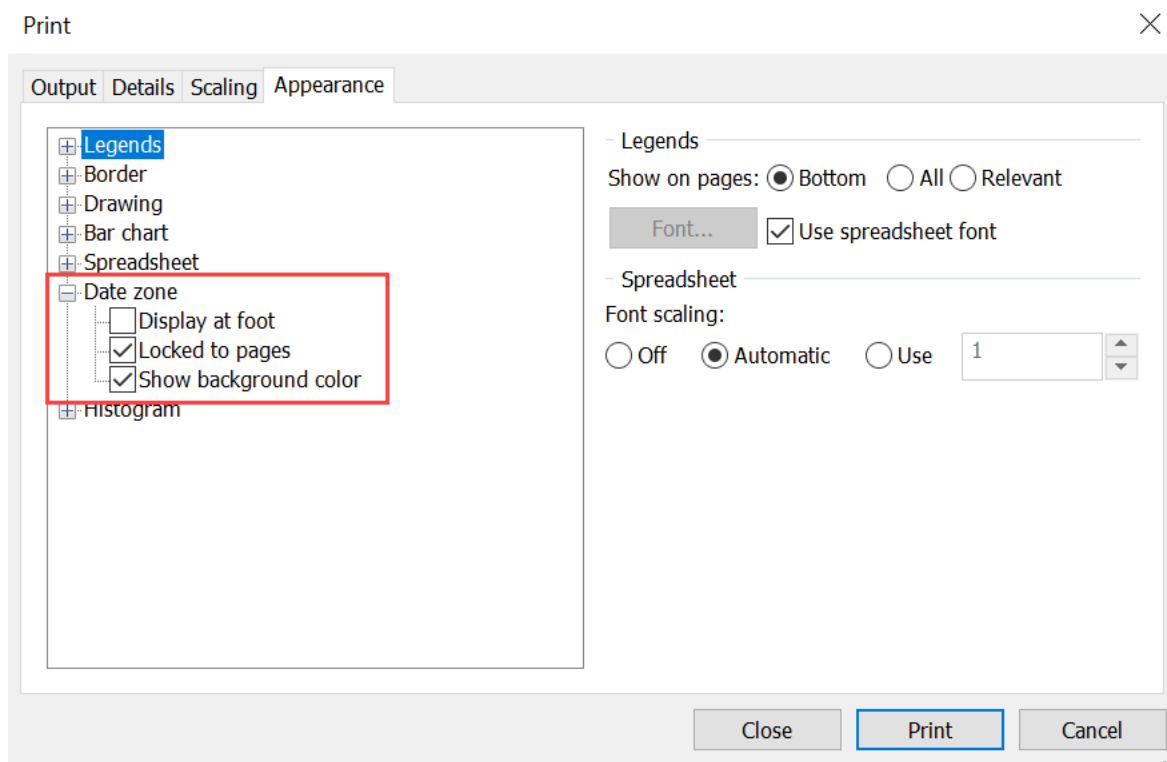
12. Use the radio button to set the **Vertical pagination** to **True size**.



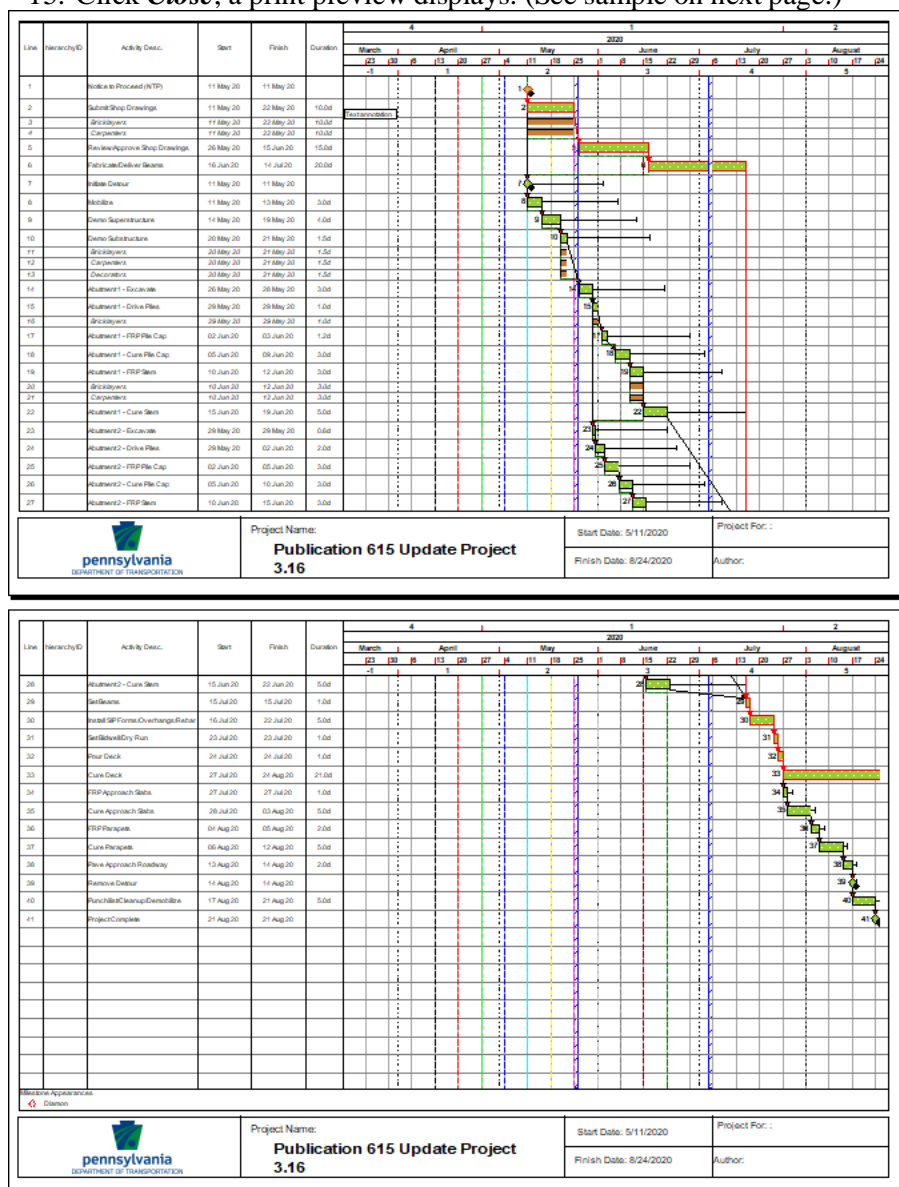
13. Click the **Appearance Tab**.



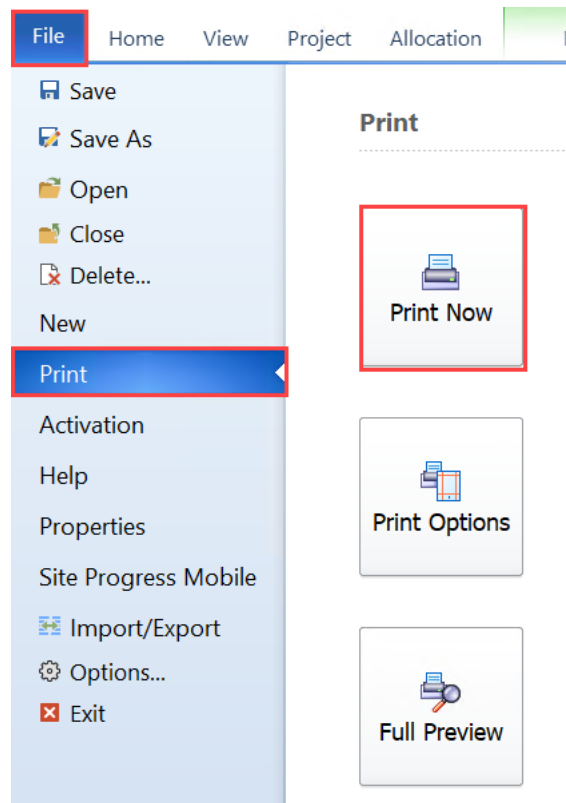
14. Click the + next to **Date zone**. Make sure **Locked to pages** is selected. This ensures that when multiple pages are printed, the column headings and date zone are printed on all pages.



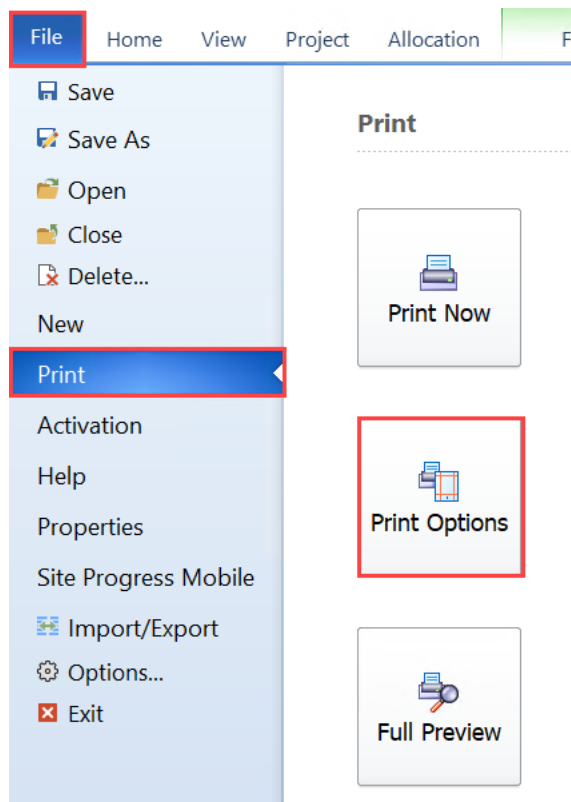
15. Click **Close**, a print preview displays. (See sample on next page.)



16. If the preview is legible and depicts what is wanted to print, click **Print Now**.

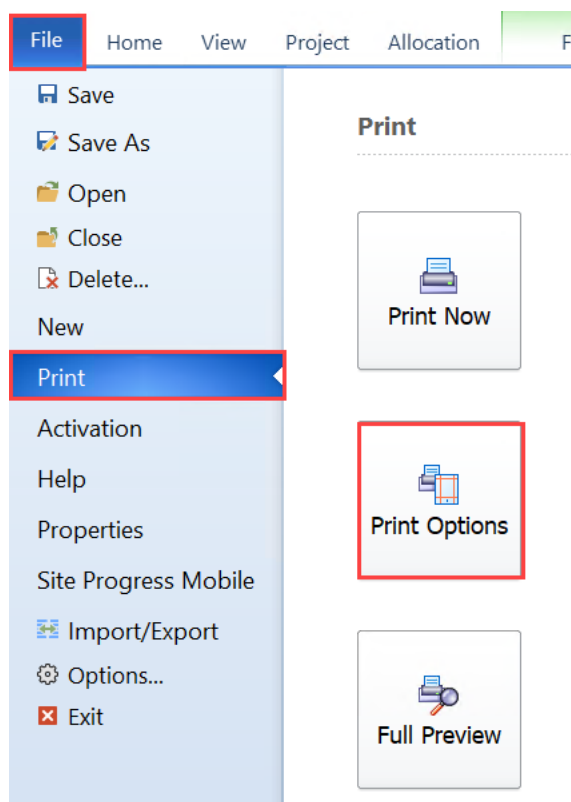


17. If changes need to be made (such as the date range), click **Print Options** to modify the printout.

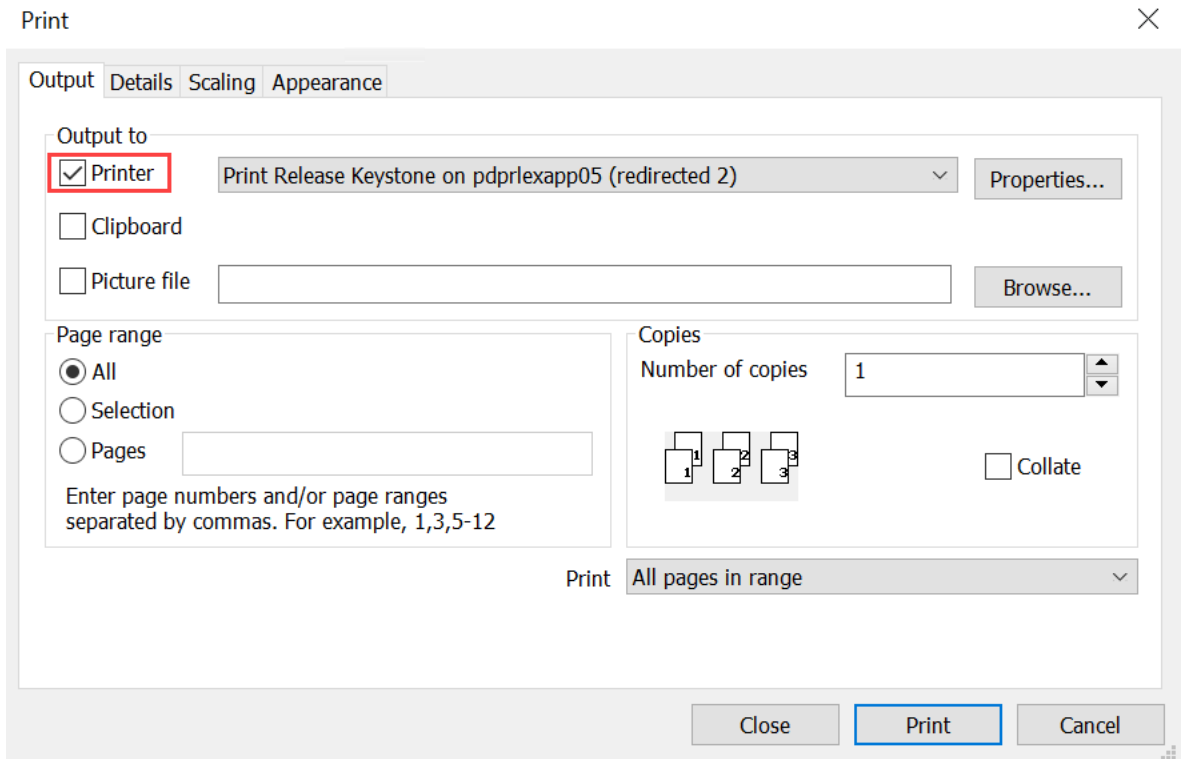


8.26.7- Customizing for a 22 x 34 Printout

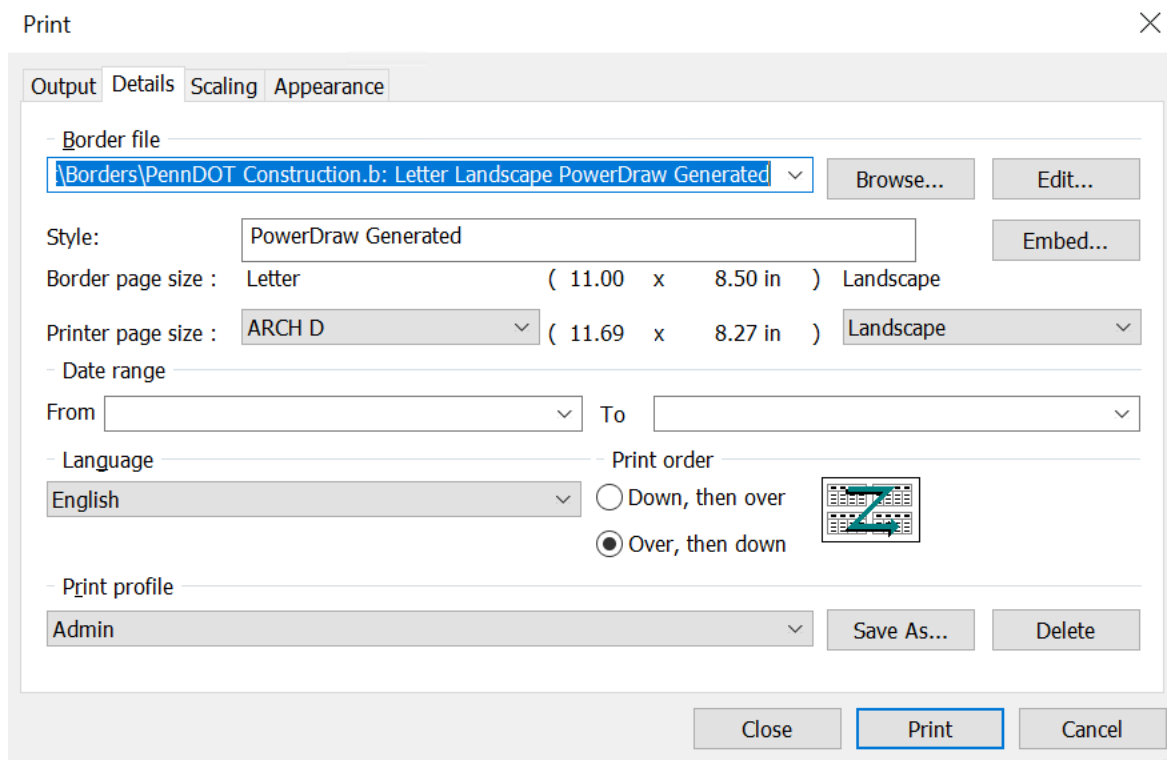
1. Select the **File Tab**.
2. Click **Print**.
3. Click **Print Options**.



- The Print dialog box displays.



4. Make sure the **Printer box** is selected and select the correct printer to print to.
5. Select the **Detail Tab**.



6. Click **Browse** to locate the correct border file to use. PennDOT has several standard border files starting with the title "PennDOT . . ."

7. Set **Printer page size** to **Arch D or D size sheet**. Select **Landscape** from the drop-down box.

Print ✕

Output Details **Scaling** Appearance

- Border file
 \Borders\PennDOT Construction.b: Letter Landscape PowerDraw Generated ▾ Browse... Edit...


Style: PowerDraw Generated Embed...


Border page size : Letter (11.00 x 8.50 in) Landscape

Printer page size : ARCH D (11.69 x 8.27 in) Landscape ▾

- Date range
 From ▾ To ▾

- Language English ▾ Print order

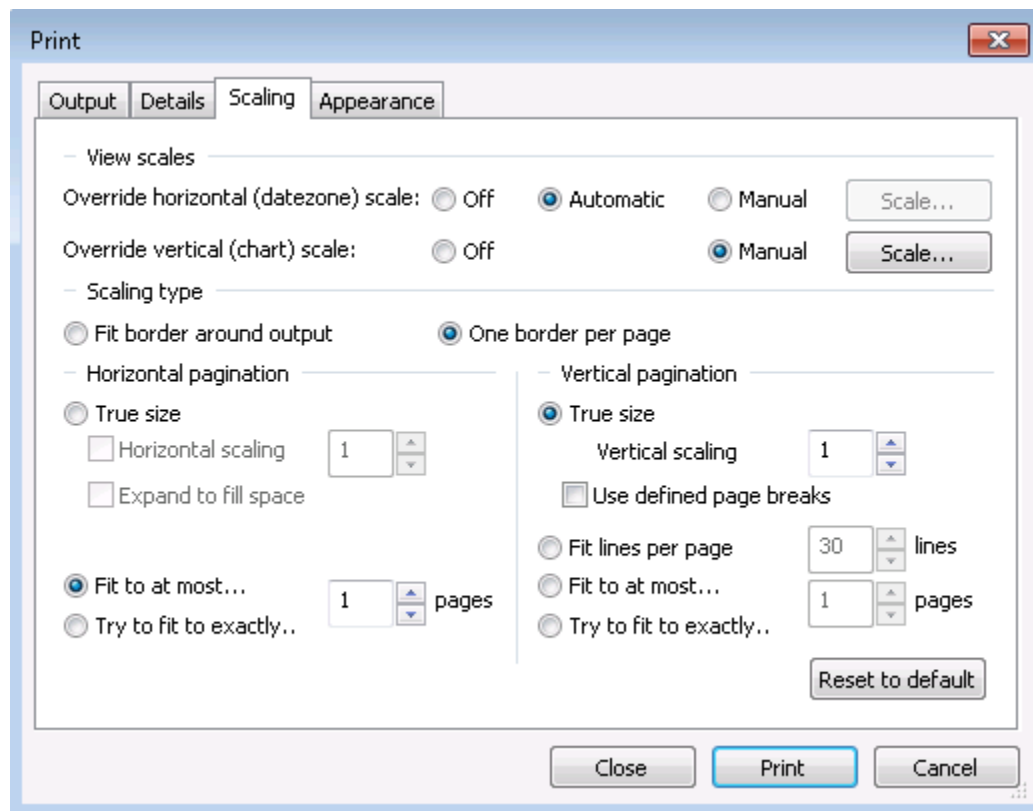
☐ Down, then over 

☒ Over, then down 

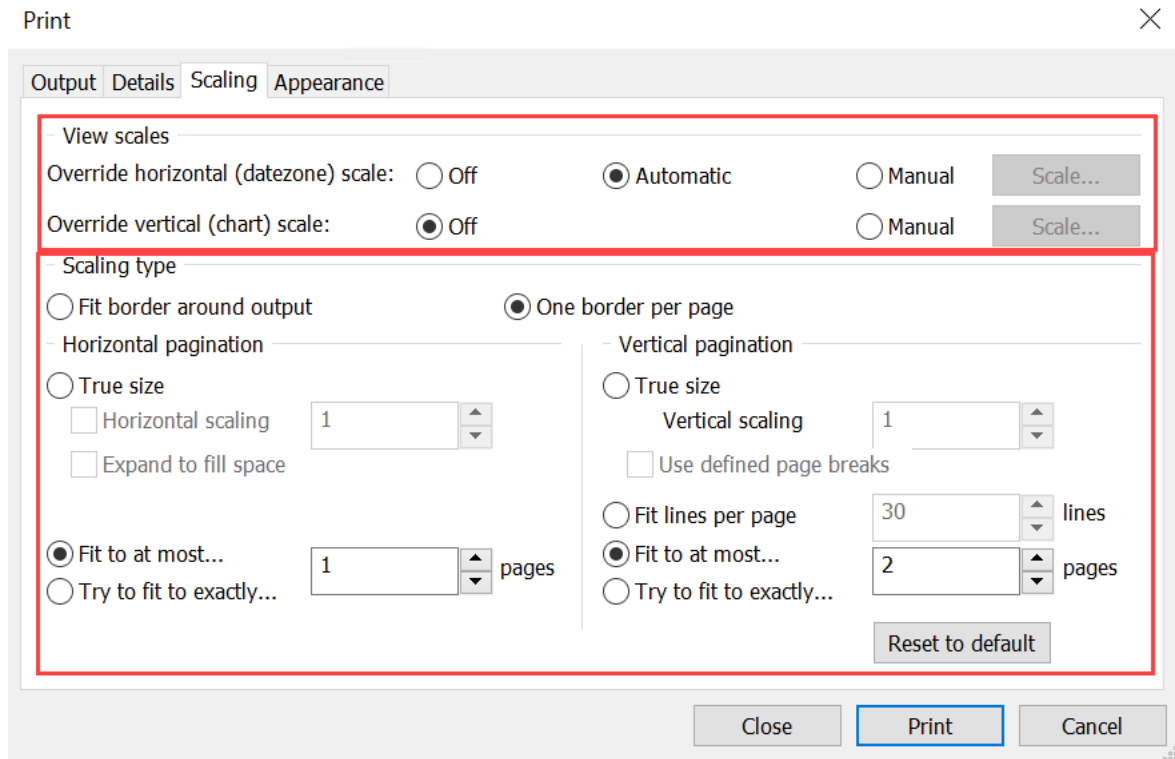
- Print profile
 Admin ▾ Save As... Delete

Close Print Cancel

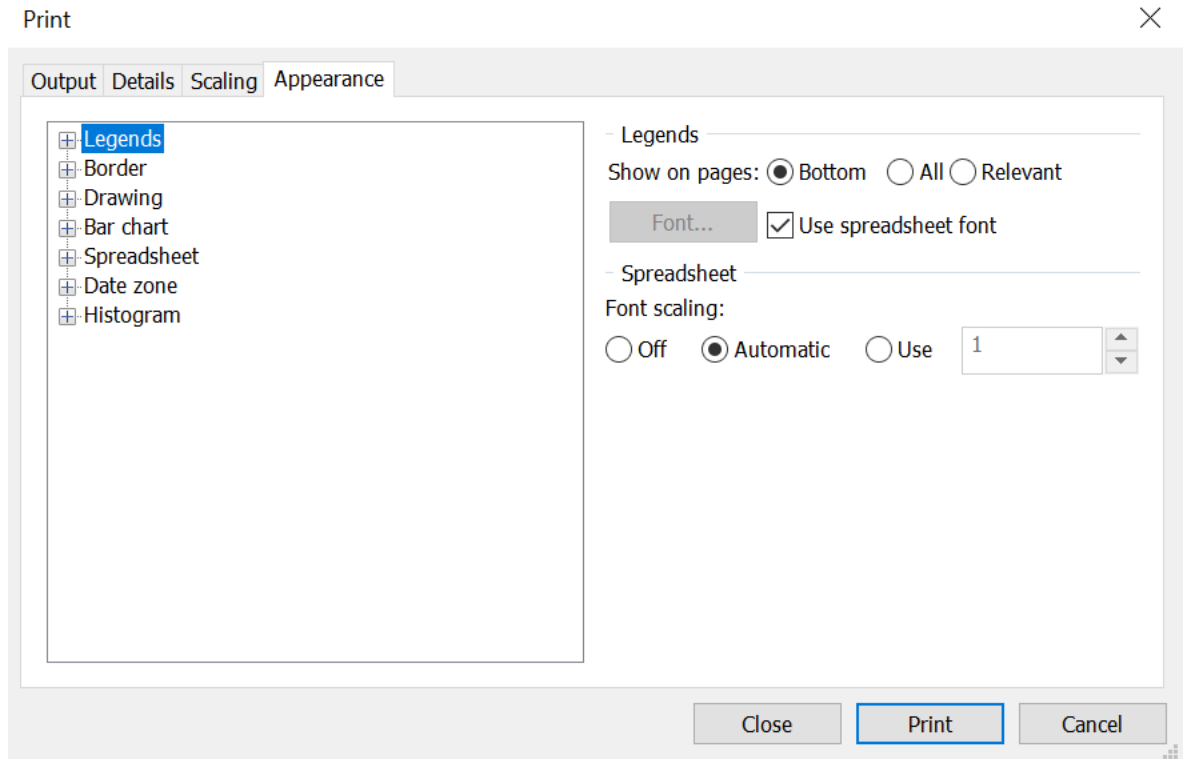
8. If desired, set the **Date Range**. This is only relative to the bar chart. All activities within the spreadsheet will still print. If nothing is set it, the range will include the entire project.

9. Select the *Scaling Tab*.10. Use the radio button to set *Override horizontal (datezone) scale* to *Automatic*.11. Use the radio button to set *Horizontal pagination* to *Fit to at most . . .*. Use the drop-down box to select *1 page*. This ensures that the spreadsheet and the bar chart are fitting horizontally on the same page.

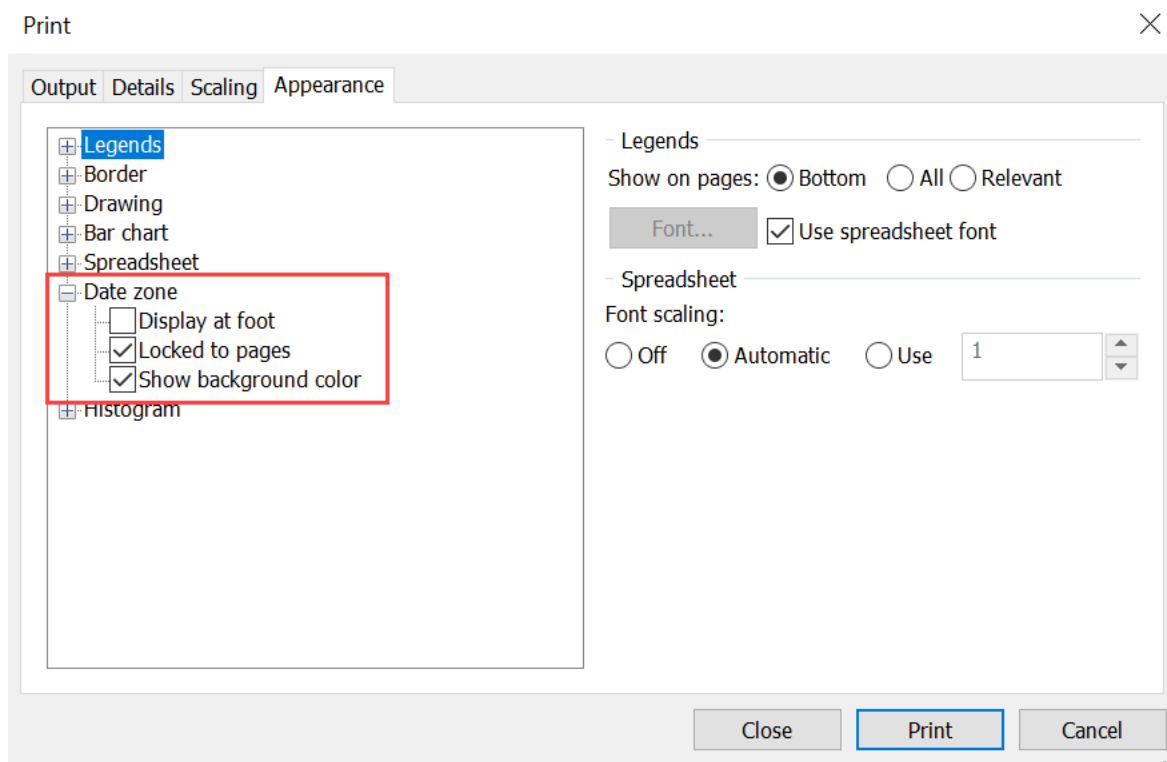
12. Use the radio button to set the **Vertical pagination** to **True size**.



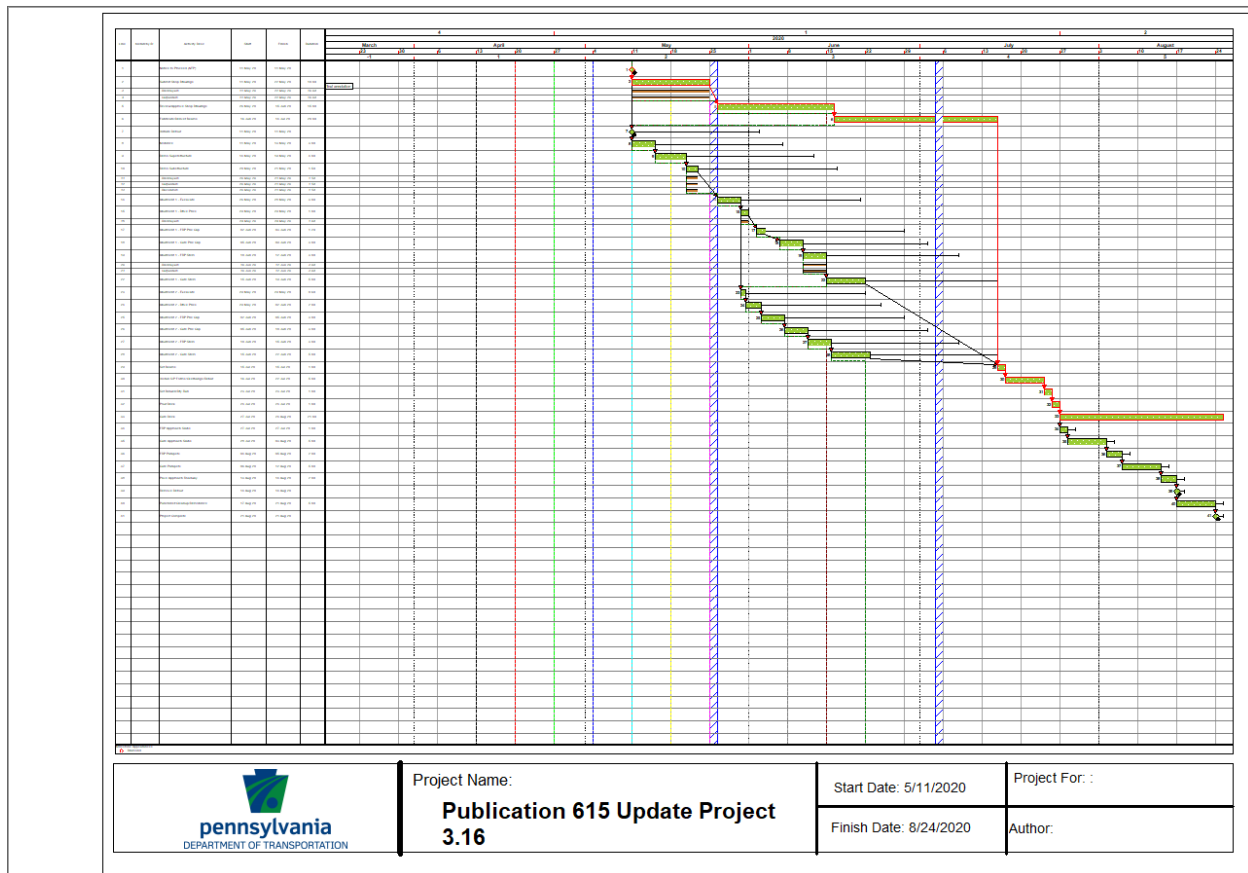
13. Click the *Appearance Tab*.



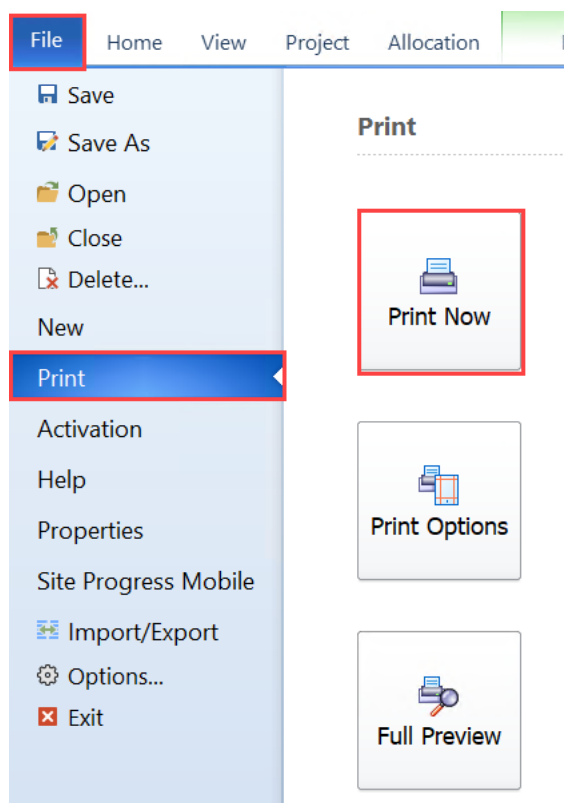
14. Click the + next to **Date zone**. Make sure **Locked to pages** is selected. This ensures that when multiple pages are printed, the column headings and date zone are printed on all pages.



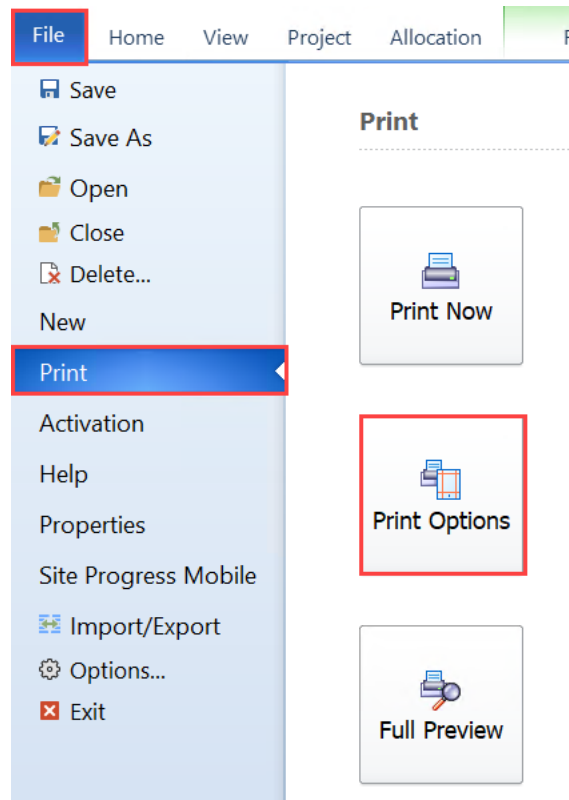
15. Click **Close**, a print preview displays. (See sample on next page.)



16. If the preview is legible and depicts what is wanted to print, click **Print Now**.

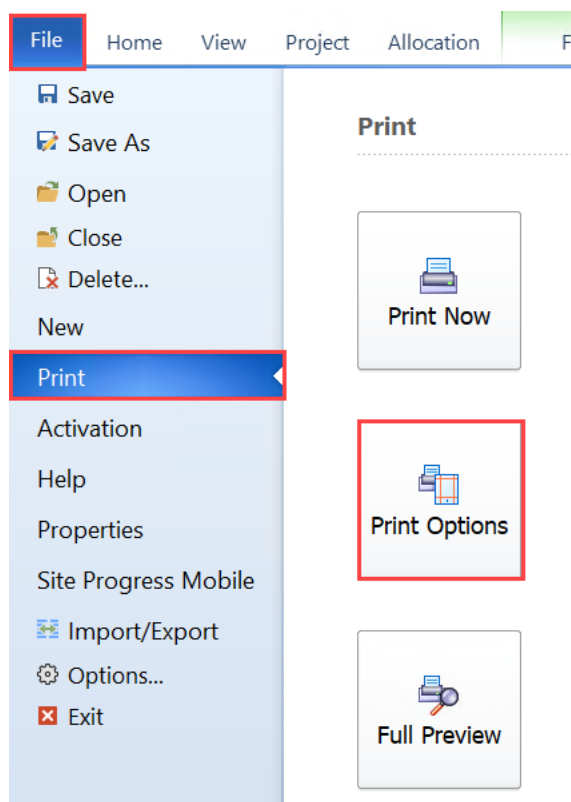


17. If changes need to be made (such as the date range), click **Print Options** to modify the printout.

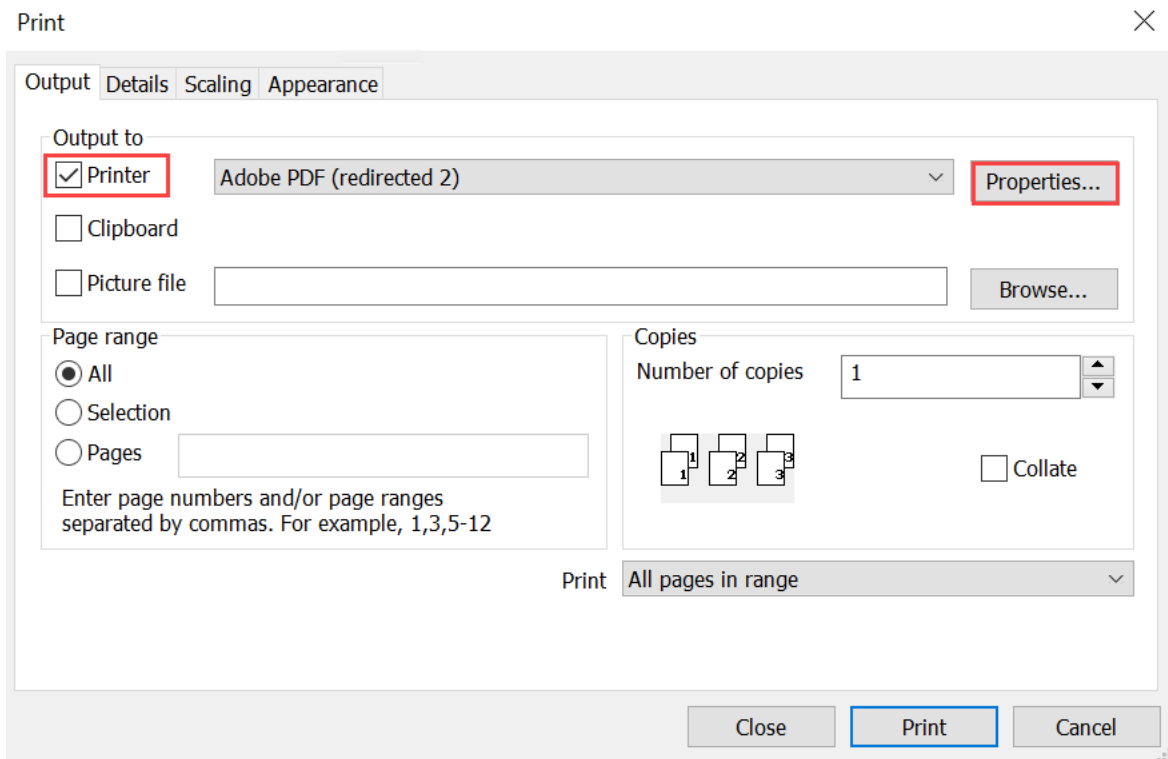


8.26.8- Creating a Custom Sized Printout

1. Select the **File Tab**.
2. Click **Print**.
3. Click **Print Options**.

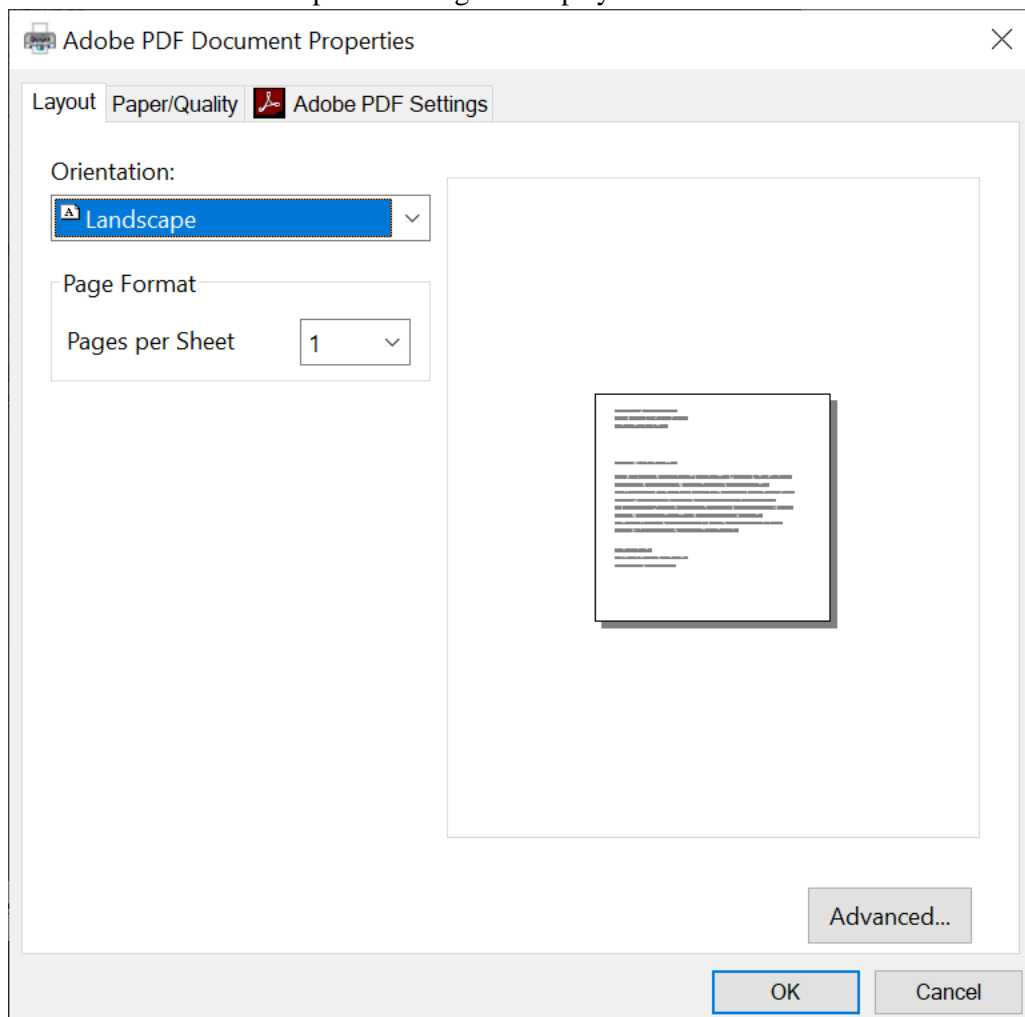


- The Print dialog box displays.



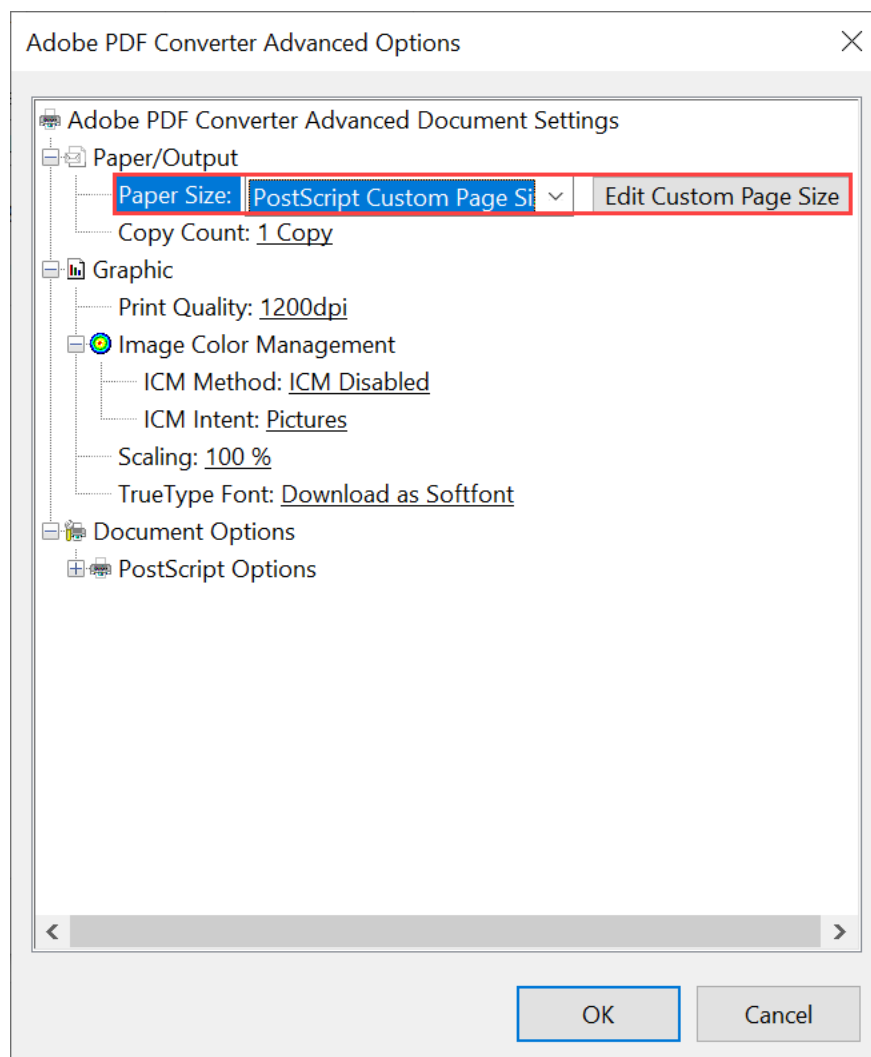
4. Make sure the **Printer box** is selected and select the correct printer to print to.
5. Select **Properties**.

The Adobe PDF Document Properties dialog box displays.

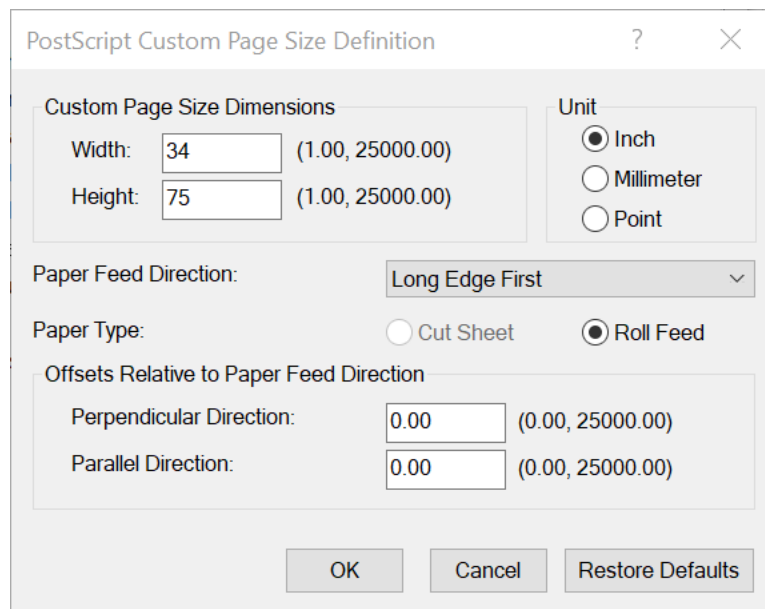


6. Select the *Layout Tab*.
7. Click *Advanced*.

8. Use the drop-down box to set **Paper Size** to *PostScript Custom Page Size*.



9. Click **Edit Custom Page Size** to change the page size. The following dimensions are recommended for large projects.



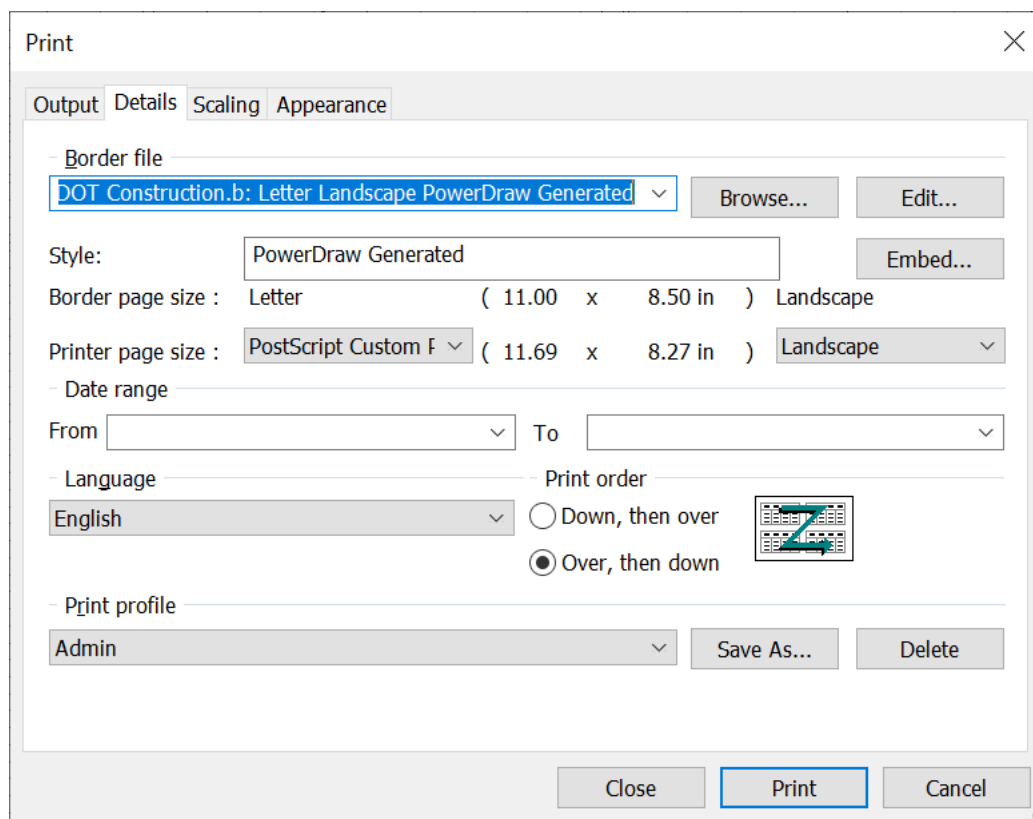
The dialog box is titled "PostScript Custom Page Size Definition". It contains the following fields and controls:

- Custom Page Size Dimensions:**
 - Width: 34 (1.00, 25000.00)
 - Height: 75 (1.00, 25000.00)
- Unit:**
 - ☒ Inch
 - ☐ Millimeter
 - ☐ Point
- Paper Feed Direction:** Long Edge First (dropdown menu)
- Paper Type:**
 - ☐ Cut Sheet
 - ☒ Roll Feed
- Offsets Relative to Paper Feed Direction:**
 - Perpendicular Direction: 0.00 (0.00, 25000.00)
 - Parallel Direction: 0.00 (0.00, 25000.00)

Buttons at the bottom: OK, Cancel, Restore Defaults.

10. Continue to click **OK** until the Print dialog box returns.

11. Select the **Detail Tab**.



The Print dialog box has tabs: Output, Details, Scaling, Appearance. The Details tab is selected.

Fields and controls in the Details tab:

- Border file:** DOT Construction.b: Letter Landscape PowerDraw Generated (dropdown menu). Buttons: Browse..., Edit...
- Style:** PowerDraw Generated (text field). Button: Embed...
- Border page size:** Letter (11.00 x 8.50 in) Landscape
- Printer page size:** PostScript Custom F (11.69 x 8.27 in) Landscape (dropdown menu)
- Date range:** From (dropdown menu) To (dropdown menu)
- Language:** English (dropdown menu)
- Print order:**
 - ☐ Down, then over
 - ☒ Over, then down
- Print profile:** Admin (dropdown menu). Buttons: Save As..., Delete

Buttons at the bottom: Close, Print, Cancel.

12. Click **Browse** to locate the correct border file to use. PennDOT has several standard border files starting with the title “PennDOT . . .”
13. Set **Printer page size** to **PostScript Custom Size**. Select **Landscape** from the drop-down box.
14. If desired, set the **Date Range**. This is only relative to the bar chart. All activities within the spreadsheet will still be shown. If nothing is set it, the range will include the entire project.

Print

Output Details **Scaling** Appearance

Border file
DOT Construction.b: Letter Landscape PowerDraw Generated

Style: PowerDraw Generated

Border page size : Letter (11.00 x 8.50 in) Landscape

Printer page size : PostScript Custom F (11.69 x 8.27 in) Landscape

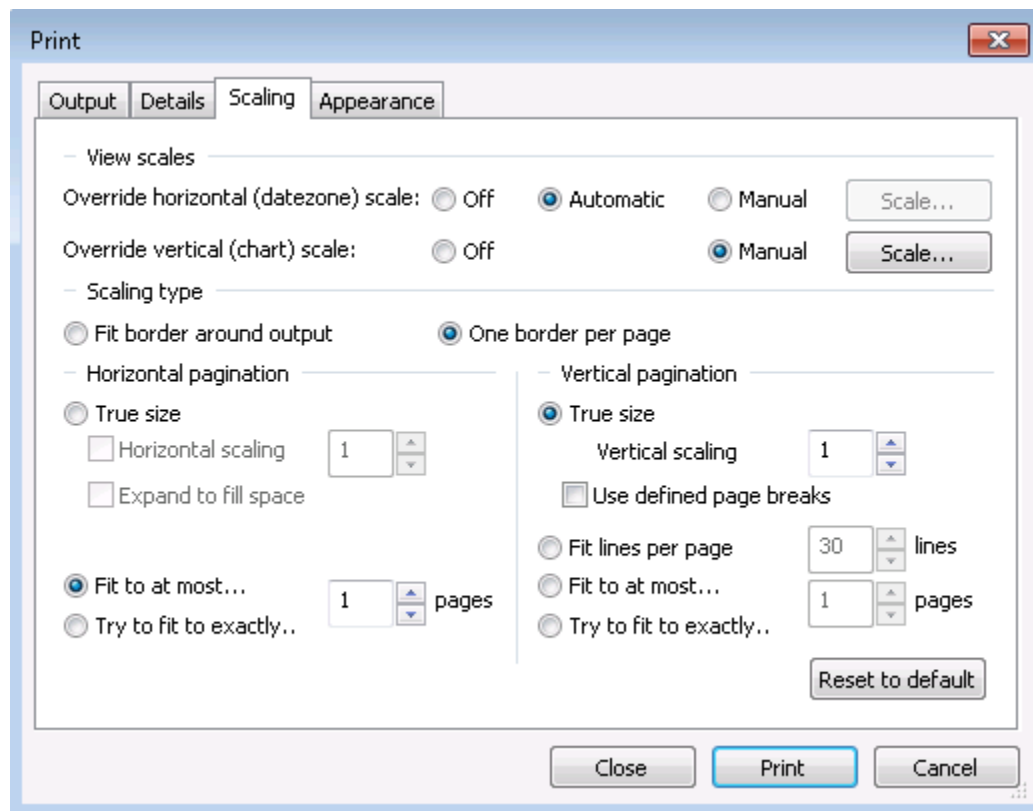
Date range
From To

Language English

Print order
☐ Down, then over
☒ Over, then down

Print profile
Admin

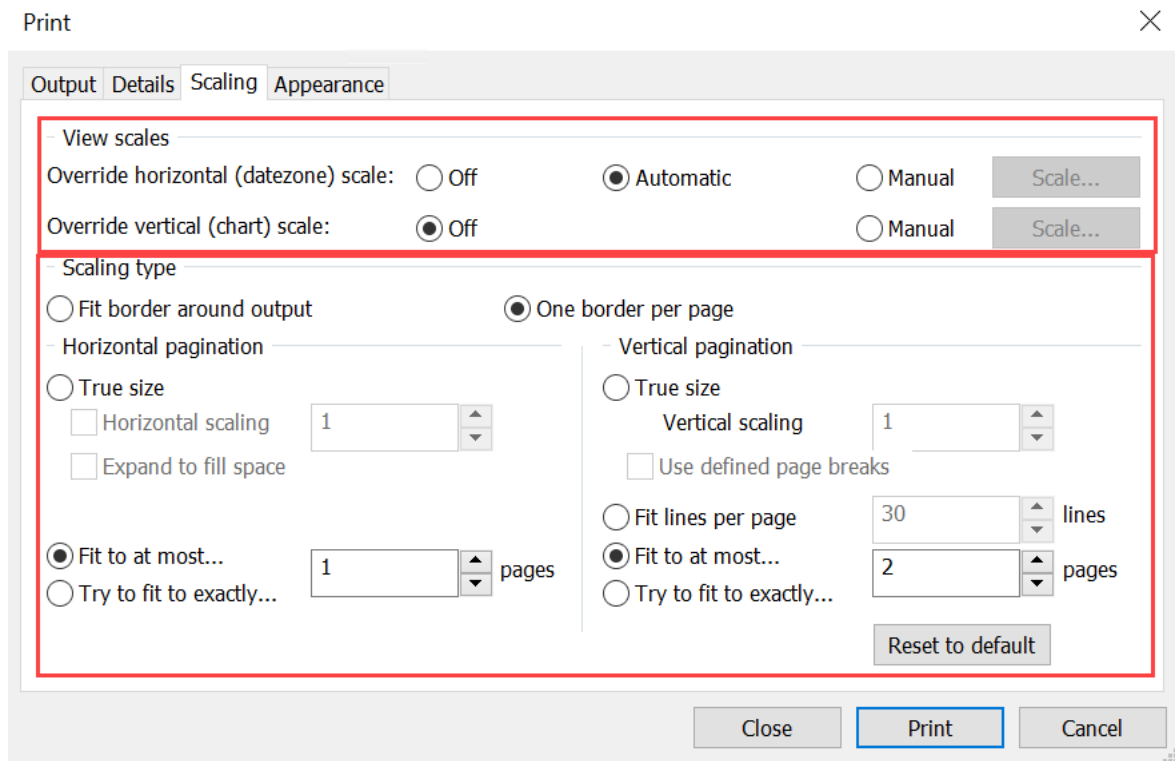
15. Select the *Scaling Tab*.



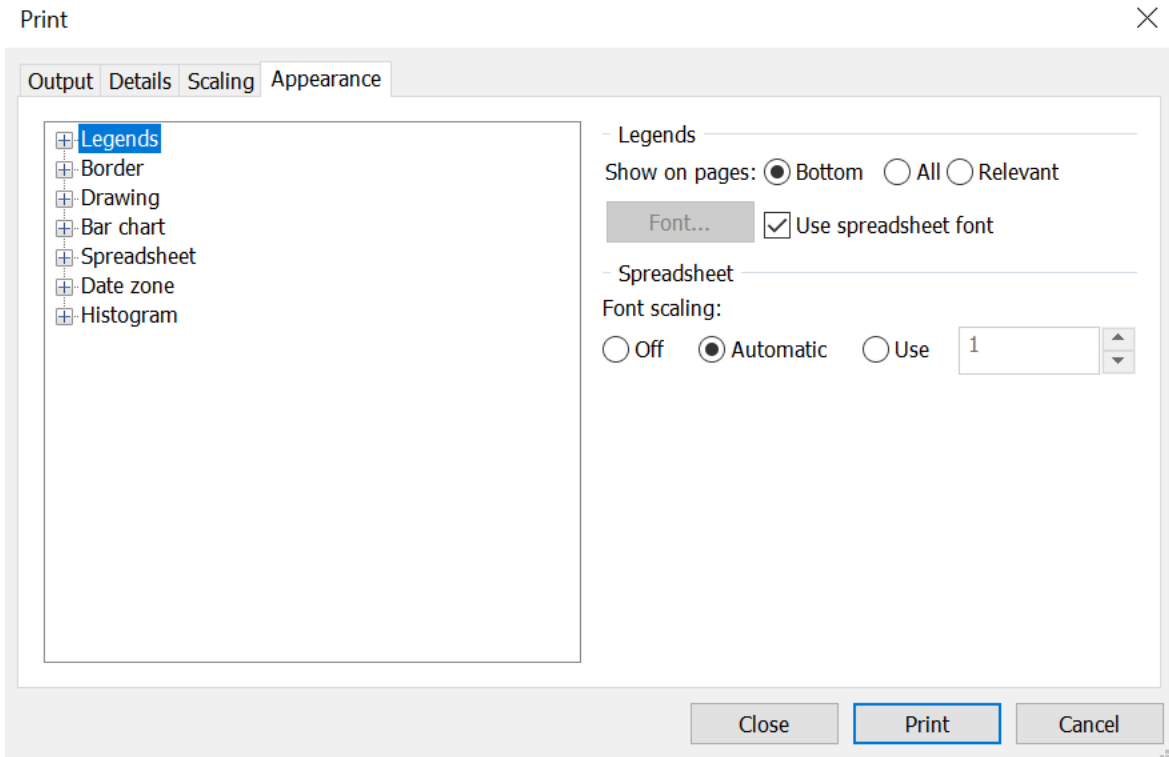
16. Use the radio button to set *Override horizontal (datezone) scale* to *Automatic*.

17. Use the radio button to set *Horizontal pagination* to *Fit to at most . . .*. Use the drop-down box to select *1 page*. This ensures that the spreadsheet and the bar chart are fitting horizontally on the same page.

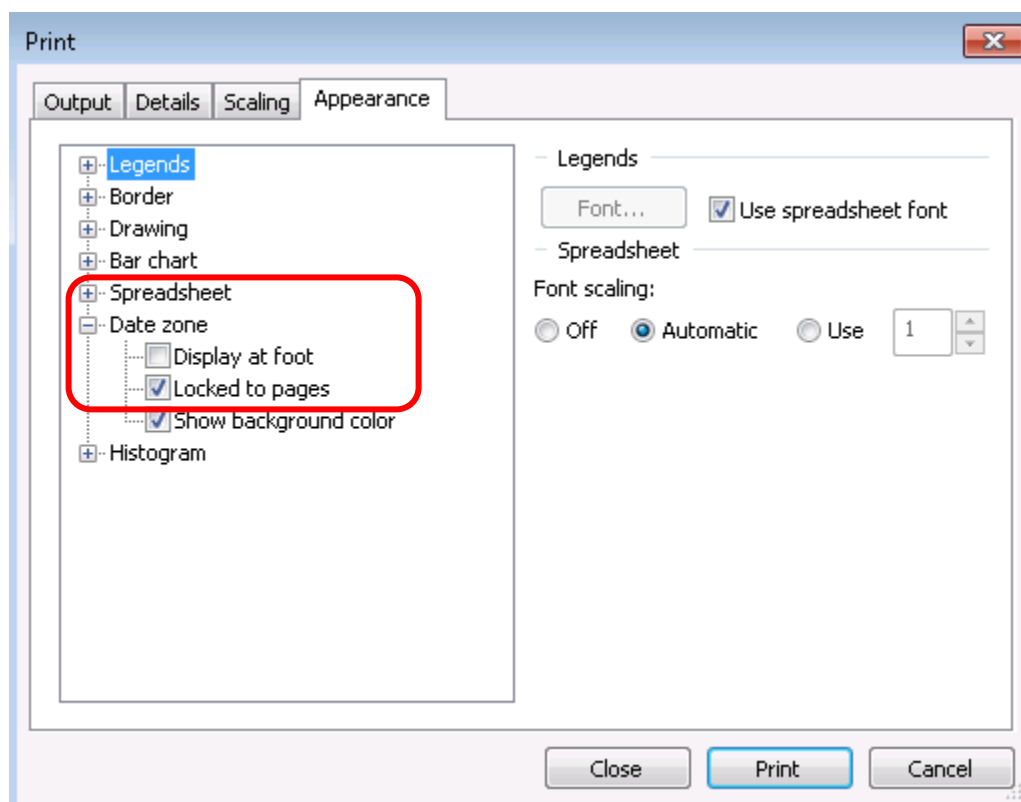
18. Use the radio button to set the *Vertical pagination* to *True size*.



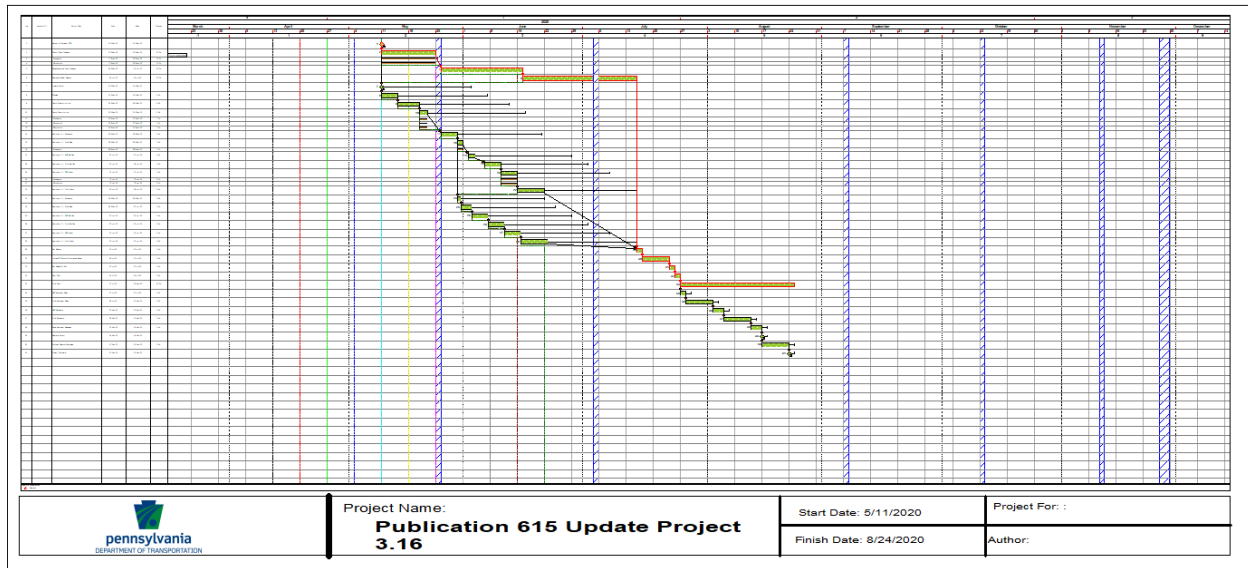
19. Click the *Appearance Tab*.



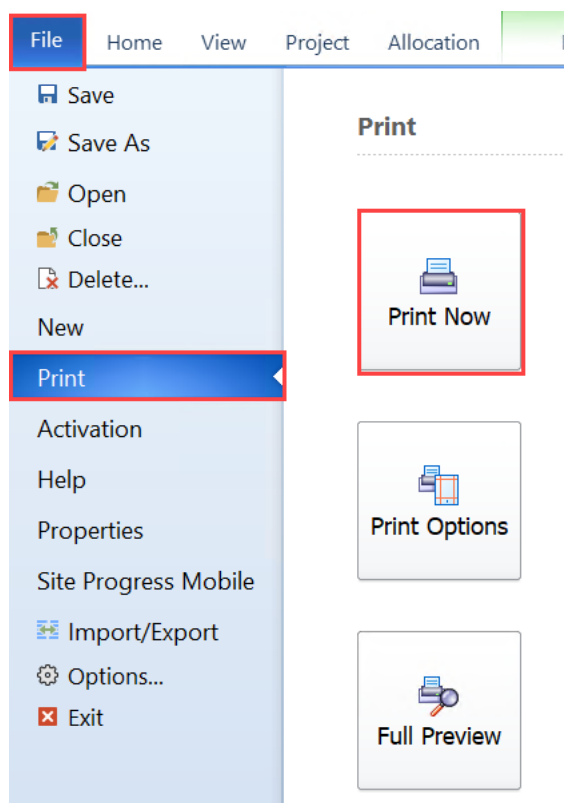
20. Click the + next to **Date zone**. Make sure **Locked to pages** is selected. This ensures that when multiple pages are printed, the column headings and date zone are printed on all pages.



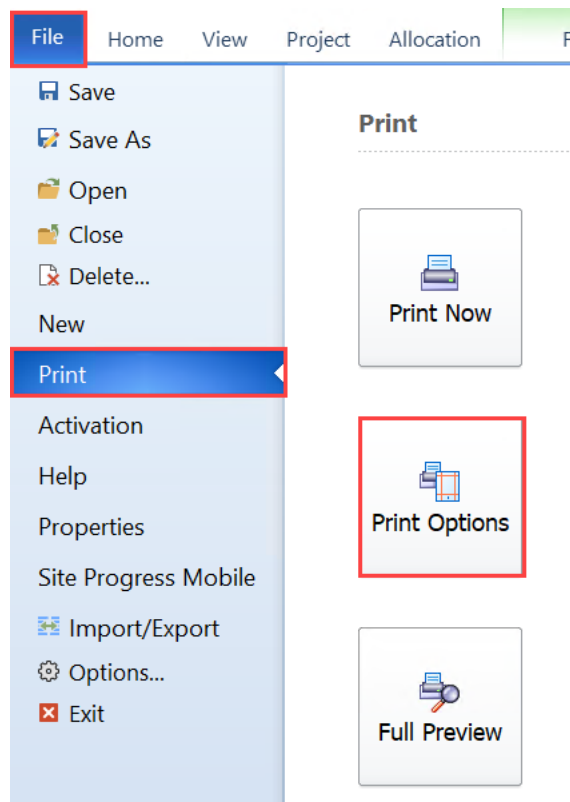
21. Click **Close**, a print preview displays. (See sample on next page.)



22. If the preview is legible and depicts what is wanted to print, click **Print Now**.



23. If changes need to be made (such as the date range), click **Print Options** to modify the printout.



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CHAPTER 9 - ELECSOFT POWERPROJECT BUSINESS INTELLIGENCE

9.0- PURPOSE

The main purpose of Elecosoft Powerproject Business Intelligence is to aide in the analysis of past data in order to help future data become more accurate. Business Intelligence makes it possible for Project Managers to create professional looking reports that can be tailored and delivered quickly to project demands.

The key benefits of Business Intelligence include:

- Reports that are customized to PennDOT
- The continuation of existing reports via Crystal Reports
- Status of existing activities
- Drill down capabilities which give Portfolio Managers and Project Managers the ability to analyze issues and quickly provide corrective actions

All projects that are managed by the Elecosoft Powerproject Project Web Portal will be exported to the portal version of Elecosoft Powerproject Business Intelligence.

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CHAPTER 10 - ELECOSOFT POWERPROJECT PROJECT COMPARISON

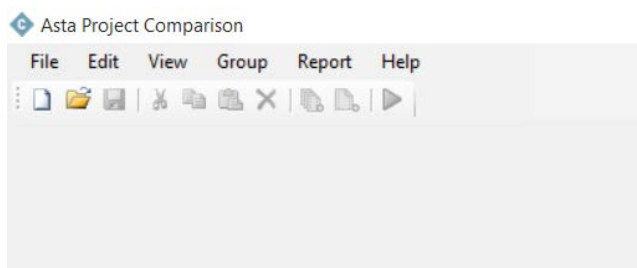
10.0- PURPOSE

Elecosoft Powerproject Project Comparison is an add-on utility which allows users to compare two different projects and see the differences between them via a report. The Project Comparison tool is decentralized in that it can be installed as needed by individual users along with their local copies of Elecosoft Powerproject. Several options are available for the user to select prior to executing the comparison report:

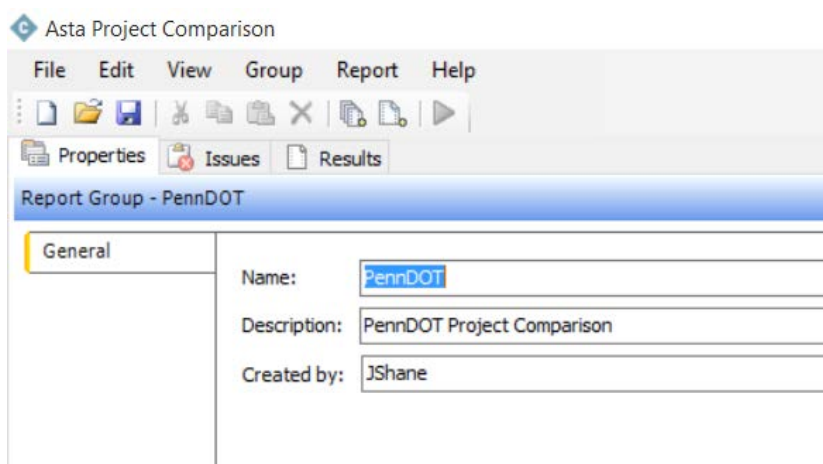
10.1- WORKING WITH PROJECT COMPARISON

In order to set the tool up and compare projects, follow the instructions below:

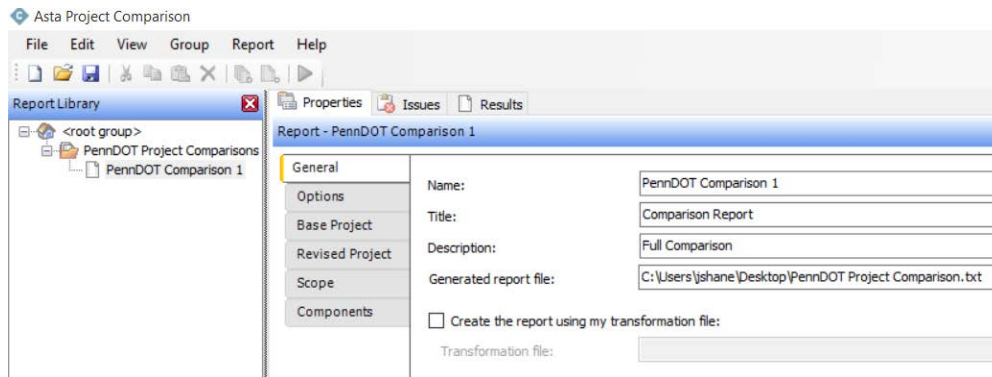
1. When first opening the comparison tool, users are presented with a simple menu which is the basis for creating a report group.



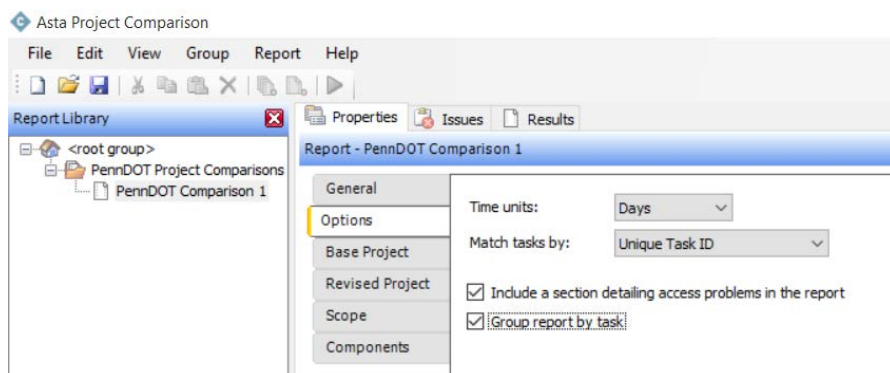
2. *Selecting File / Open* allows the user to **create a Report Group**. Report groups are used to allow users the capability of differentiating between individual projects, districts or enterprise wide.



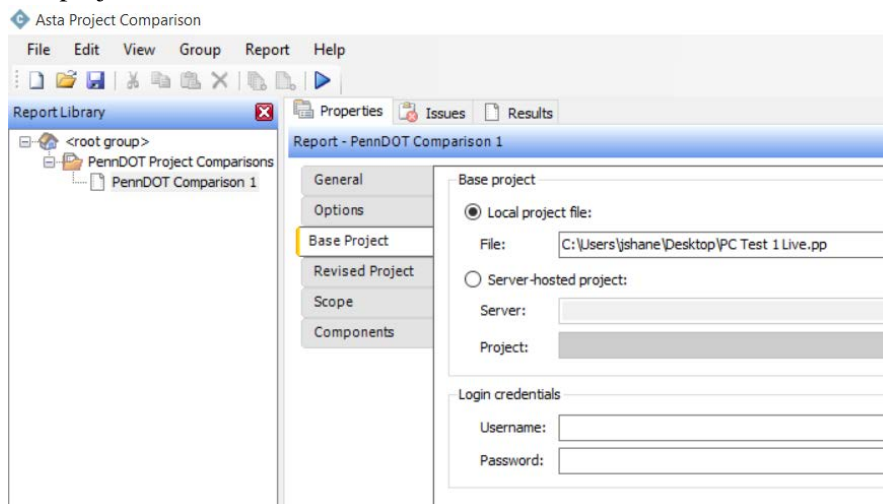
- Once a Report Group has been created, users can create reports (project comparisons) within that report group. The “General” tab allows for naming, description and the location of the output file.



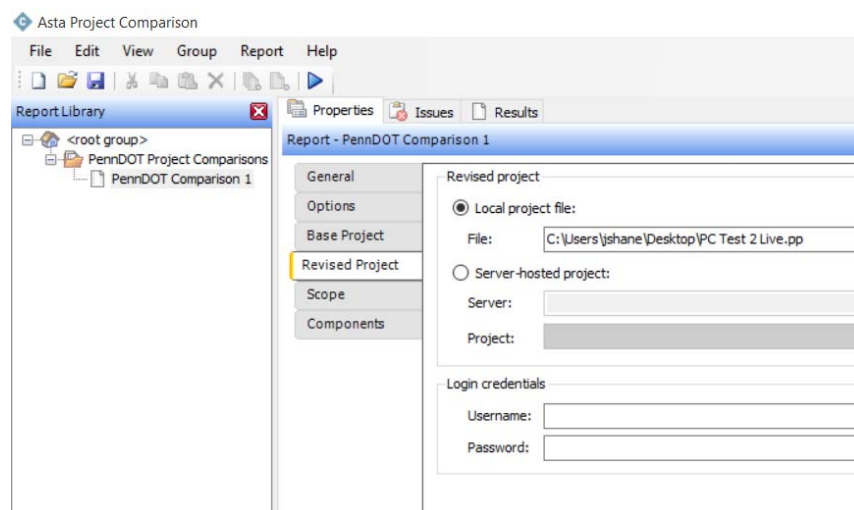
- The “Options” tab allows users to determine whether time units will be in days or hours and how to match the tasks. Since PennDOT is using “Unique Task ID”, this will generally be the setting.



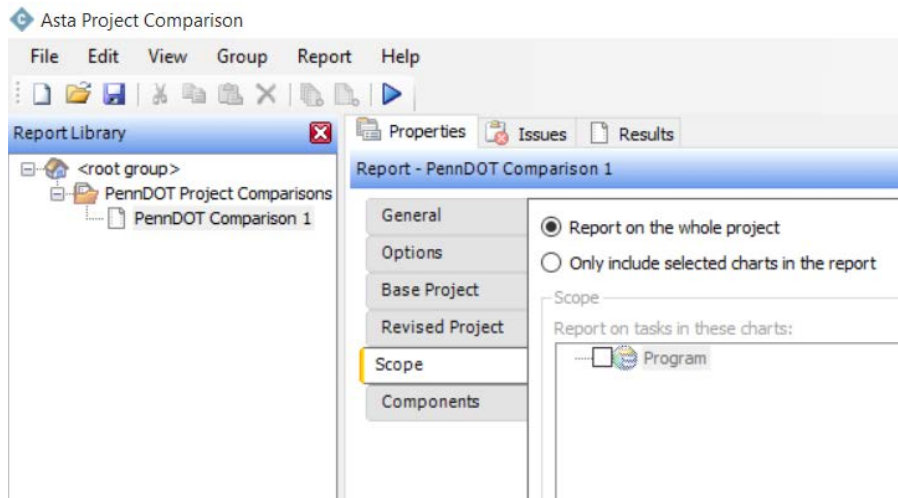
5. The “Base Project” tab allows the user to select the original project they would like to compare to. This will be the project used so as the user can see what changed in the live project.



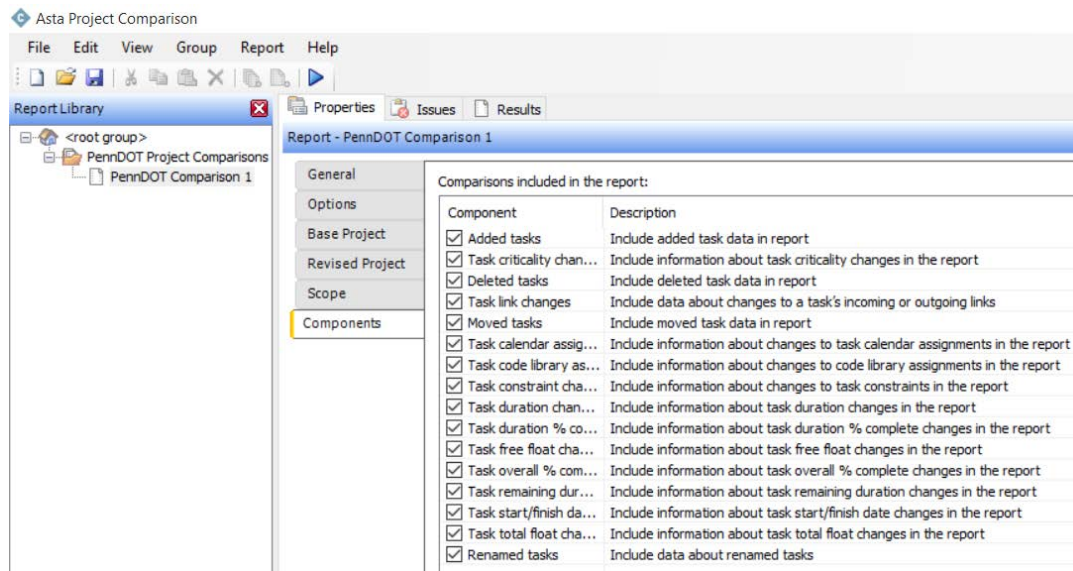
6. The “Revised Project” tab allows users to select the revised project they would like to compare to.



7. The “Scope” tab allows user to be specific as to what sections of a project they would like to compare. Users may select individual branches of the hierarchy.



8. The “Components” tab lets users determine which attributes they would like to use for comparison.



9. Once a user has gone through the report tabs, they can run the project comparison which will execute the report and place it where the user called for on the “Options” tab. Typical data looks like the information below.

```
Task Data
\Task 2,0020
Base duration,Revised duration,Duration change,
16.00d
38.00d
+22.00d

Base remaining duration,Revised remaining duration,Remaining duration change,
16.00d
38.00d
+22.00d

Start/Finish Date Changes,
Finish date changed from 9/21/2015 5:00 PM to 10/21/2015 5:00 PM

\Task 3,0030
Start/Finish Date Changes,
Start date changed from 9/22/2015 8:00 AM to 10/22/2015 8:00 AM
Finish date changed from 10/5/2015 5:00 PM to 11/4/2015 5:00 PM

\Task 4,0040
Start/Finish Date Changes,
Start date changed from 10/6/2015 8:00 AM to 11/5/2015 8:00 AM
Finish date changed from 10/16/2015 5:00 PM to 11/17/2015 5:00 PM
```


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APPENDIX A- STANDARD REPORT ACTIVITIES

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To facilitate standard reports, Table A-1 Standard Report Activities is a tabulation of task descriptions that shall be used in all design schedules. Changes or alterations (abbreviations, etc.), shall not be performed. The specific text and spacing that appears in this table shall be used. The activities below are consistent with the current PennDOT Master Design Schedule Template.

Table A-1 – Standard Report Activities

Task Description.	PDOC	ROW	Utility	Pavement	Permits	Grade X' ing	Proj Trk' ing	Sig Projects	HQAD	BQAD	CDAS	URWS	LOCAL
Start Project													x
Consultant Services													x
Environmental Analysis													x
Perform Threatened and Endangered Species Coordination							x						
Cultural Resources							x						
Environmental Documentation							x	x					x
Section 4(f) Evaluations							x						
Environmental Clearance	x								X				
Design Field View							x	x	X				x
Surveys													x
Line & Grade													x
Safety Review													x
Submit Plans and Authorization to Utilities			x										
Preliminary Pavement Design				x									
Design Exceptions							x		X				
Erosion & Sedimentation Control Plan / NPDES	x				x		x	x					x
Review & Submit Erosion and Sedimentation Control Plan					x								
Review & Submit NPDES Permit Application					x								
E&S Plan Approved	x				x								
NPDES Permit Approved	x				x								
Final Pavement Design and Preservation							x						
Final Pavement Design				x			x						
Pavement Preservation Package				x			X						
Pavement Design Approved				x			X						
Final Right-of-Way Plan Development	x	x					X					x	x
Perform Final ROW Plan Check									X				
Final ROW Plan Approved	x	x										x	
Right-of-Way Appraisal & Negotiation	x	x					X	x				x	x
Perform Right-of-Way Appraisal		x					X						
Complete Appraisal		x											
Review Appraisal		x										x	
Perform Right-of-Way Negotiation		x											
DT Requests to Central Office												x	
File DT and Notify Condemnee												x	
Request Just Compensation Funds		x											

Task Description.	PDOC	ROW	Utility	Pavement	Permits	Grade X' ing	Proj Trk' ing	Sig Projects	HQAD	BQAD	CDAS	URWS	LOCAL
Relocations Complete – Occupants Vacated		x											
Request R/W Certificate												x	
Issue Interim ROW Certificate		x											
Issue Final ROW Certificate	x	x					X					x	
Waterway Permit Application	x						X	x		x			x
Prepare Hydrologic and Hydraulic Report													x
H&H Report Approved													x
Joint Permit Application / 401 Water Quality Certificate					x								x
Prepare Joint Permit Application / 401 Water Quality Certificate					x								
Submit Final Joint Permit Application					x		X						
Joint Permit Application Approved					x								x
GP XXX Permit Application					x								
Prepare GP XXX Permit Application					x								x
Submit GP XXX Permit Application					x		X						
Review / Approve GP XXX Permit Application (Agencies)													x
GP XXX Permit Application Approved					x								x
Exx - 9999 Permit					x								
Prepare and Submit Exx - 9999 Permit					x								
Exx - 9999 Permit Approved					x								
DEP Prepare and Submit USACE Permit					x								
USACE Permit Approved					x								
Structures													x
Type, Size & Location Development							X	x					x
Final TS&L Complete	x									X			
Structure Foundation Development							X	X					
Final Structure Foundation Report Approved										X			
Final Structure Design							X	x					
Final Structure Plans Approved										X			
Perform Value Engineering / VEACTT							X		X				
Develop Final Utility Plan			x									x	x
Obtain D-419 Utility Clearance	x		x				X	x				x	x
Utility Agreement Package Received from Utility - Final Design Phase (metric)			x										
Utility Agreement Executed and Issued to (Utility)			x										
Issue Utility Relocation Clearance D-419 (District)			x										

Task Description.	PDOC	ROW	Utility	Pavement	Permits	Grade X' ing	Proj Trk' ing	Sig Projects	HQAD	BQAD	CDAS	URWS	LOCAL
Issue Utility Relocation Clearance Certification (Central Office)			x										
Perform Public Utility Commission Coordination							X					x	
Prepare Railroad Reimbursement Agreement (CON)						x							
File PUC Application						x						x	
Submit ROW Plan to PUC						x							
Issue PUC Secretarial Letter												x	
Issue PUC Order												x	
Submit Construction Plans to PUC						x							
Hold Final Plan Checks (BOPD)							X		X				
Final Design Office Meeting							X		X				
PS&E Package								x					x
Perform QA of PS&E Package (District)							X				x		
Submit PS&E to Bureau of Project Delivery											x		
Review PS&E (BOPD)							X						
Review PS&E (FHWA)							X						
PS&E Approved	x										x		x
Advertise Project	x						X	x			x		x
Open Bids											x		x
Project Re-Bid	x						X	x					
Award Contract	x												

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APPENDIX B- SCHEDULE CHECKLISTS

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B.1 - DESIGN SCHEDULE SETUP CHECKLIST

- ☐ Create the new project using the Elecosoft Powerproject Web Portal. (See Page 7-16)
- ☐ Select the Business Partner Company associated with the project, or 'None' if it's an in-house project.
- ☐ The MPMS project number should be used as the project name for the project design schedule.
- ☐ Select the Business Partner Project Manager from the drop down list.
- ☐ Select a Progress Method, must be Site Progress if a Business Partner is associated with the project.
- ☐ Select the PennDOT Project Manager from the drop down list.
- ☐ Select the template that will be used to create the project from.
- ☐ Enter an anticipated start date for the project.
- ☐ Add any Notes associated with the project at a high level. A description of the project should be included here which should include county, state route, section and local name.
- ☐ Click Create.
- ☐ Once the project is created, you then want to select operation and 'Checkout' the project to be able to create the actual schedule. (See Page 7-21)
- ☐ Once the project is 'Checked Out', the project can be opened directly or saved on a computer.
- ☐ The newly created project will need to be opened in Elecosoft Powerproject. (See Page 8-4)
- ☐ Add tasks into the schedule by dragging and dropping from the Task Pools (See Page 8-61)
- ☐ Add additional nonstandard or reoccurring tasks to the schedule if necessary. (See Page 8-27)
- ☐ Assign an appropriate duration to all of the tasks in the schedule (See Page 8-31). The only tasks that can have a zero duration are flagged milestone tasks.
- ☐ Create the logic in the schedule (See Page 8-33). All tasks (excluding summaries) must have a predecessor and a successor, the exceptions being the first task does not need a predecessor and last task does not need a successor.
- ☐ Once the durations and logic are established in the schedule, run Reschedule Branch (See 8-40) with an appropriate constraint date set (See Page 8-46) for Project Start and Open Bids and review the start and finish dates of all tasks.
- ☐ Once the project is created, it needs to be saved and checked in to the Web Portal (See Page 7-23).
- ☐ Once the Project is Checked In to the Web Portal, it must be Submitted (See Page 7-25).

- ☐ The PENNDOT PM will then Download Latest (See Page 7-30) and review the schedule. If any changes are needed, they will Reject the project in the Web Portal (See Page 7-26) and have the Consultant/PM Check Out the Project, open the Project in Elecosoft Powerproject, make changes, save the project, and Check In and Submit again. If no changes are needed, the PennDOT PM will approve the Project in the Web Portal. (See Page 7-26)
- ☐ Once the project is approved, progress can be entered into the schedule via Site Progress in the Elecosoft Powerproject Web Portal (See Page 7-39) or Elecosoft Powerproject for in-house jobs not using Site Progress (See Page 8-99). At a minimum, schedules must be updated once a month. The Progress Date should be set to the first of the month. All schedules must be progressed by the tenth of the month.
- ☐ When a task is started, an actual start date must be entered.
- ☐ When a task is in progress, “Remaining Duration” or “Percent Complete” must be used.
- ☐ Once a task is completed, an actual finish date must be entered.
- ☐ After the progress is submitted thru the Elecosoft Powerproject Web Portal, the PENNDOT PM will need to go into Elecosoft Powerproject Web Portal to review the progress and either approve (See Page 7-43) or reject the progress (See Page 7-45). Once the progress is approved, it will automatically go into the Elecosoft Powerproject schedule.
- ☐ Over the life of the project, if there is negative float in the schedule greater than or equal to fifteen days a schedule recovery plan is required. This should include how you plan on making up the lost time or if the time cannot be made up it may require the let date to be moved. If a schedule recovery plan is required, the recovery plan should be input in the Elecosoft Powerproject Web Portal in the Notes Field on the Edit Project Page.
- ☐ If major changes need to be made to the schedule, other than progress, the PENNDOT Portfolio Manager or Project Manager, must change the status of the project within the Web Portal (See Page 7-35) to “Checked In” (Changing the status of the project is only required if Site Progress is the method in which a project is being progressed). The Consultant or PennDOT Project Manager will then have the ability to Check Out the schedule from the Elecosoft Powerproject Web Portal, save the file, open the file in Elecosoft Powerproject, make the necessary changes, save the file, check back in the file, and submit the new schedule. Once the PennDOT Project Manager reviews the new schedule, it will need to be approved again.

B.2 - PRE-BID SCHEDULE CHECKLIST

Please log into PPCC (<https://ppcc.penndot.gov>) select the Reference tab. Once on the Reference tab, select the Central Office file folder, then the Construction Schedule Review folder and select the file named “PreBid Schedule Checklist.”

APPENDIX C- CRYSTAL REPORTS

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C.1- INTRODUCTION

While Elecosoft Powerproject views can facilitate a lot of the Department's reporting needs it may be easier to create a Crystal Report when the reporting need requires pulling data from multiple sources. Crystal Reports is the Department's official software for generating reports. Crystal Reports pulls data from the Elecosoft Powerproject BI data source to create user defined reports. There are two ways of using Crystal Reports: the client software and the enterprise version.

C.2- CLIENT SOFTWARE

The client software is installed on a PC and used to create standalone Crystal Reports and Enterprise Reports. The data structure of the Elecosoft Powerproject software can be very confusing for a user trying to create a report. Therefore, if a District needs assistance creating a Crystal Report using Elecosoft Powerproject data they can contact Central Office. However, if the District chooses to create their own reports they can reference the System Data contained in this appendix to locate the appropriate tables and fields within Elecosoft Powerproject to create their Crystal Reports.

C.3- ENTERPRISE

This intranet based system contains Crystal Reports that have already been developed by Central Office. These reports have various parameters that are used to refresh the reports based on current Elecosoft Powerproject data. All of the Elecosoft Powerproject reports can be found in the Elecosoft Powerproject folder under Public Folders. Central Office is responsible for uploading Crystal Reports to this folder but District users with the appropriate security level can run the reports located here at their discretion. The Elecosoft Powerproject folder contains a multitude of reports and new reports are added regularly.

C.4- ELECSOFT POWERPROJECT REPORTS

Central Office runs multiple reports on a regular basis. There are two main reports that individuals within Central Office and the Districts are getting measured on, the Project Delivery Operation Center (PDOC) Wall Charts and Projects of Significance Report.

C.4.1- PDOC Wall Charts

The PDOC wall charts form the basis for the Department's weekly Project Delivery Operations Center meetings.

Rather than being accessed through Crystal Reports / Business Objects, PDOC charts are accessed through PDIF, the PennDOT Data Integration Facility. Access to PDIF can be requested by contacting the ECMS help desk at 717-783-7711. Once access has been granted, the PDOC reports can be accessed using the following procedure.

To Access the PDOC Wall Chart Report:

1. Log onto PDIF at http://pdif.pdot.state.pa.us/PDIF_Home.aspx.
2. Click on **ARRA**.

3. Click on **Report**.
4. From the dropdown menus, select **Project Delivery**, then **Design**.
5. From the list of reports select **ARRA045 – ARRA District Projects Timeline - Chart**.

The PDOC chart is a combination of data pulled from MPMS, ECMS, and Elecosoft Powerproject. PDOC charts have several color-coded columns – Let Date, Description, Milestone Activities, and Float – and each has a separate color coding scheme. These schemes are outlined in the tables below.

Table C.1- PDOC Chart, Let Date color coding

Let Date Column Color	Description
Green	The project was let and the ECMS Actual Bid Date is within 30 days of the ECMS committed Bid Date.
Red	This is a miss. The Elecosoft Powerproject Open Bids Date is more than 30 days past the ECMS committed Bid Date and the current date the report was run on is 30 days past the ECMS Committed Bid Date.
Blue	The Elecosoft Powerproject Open Bids Date is before the ECMS Committed Bid Date and the project has not been let yet.
Yellow	The Elecosoft Powerproject Open Bids Date was moved from its original ECMS Committed Bid Date, but is still within 30 days.
Red/Yellow Stripes	This is an anticipated miss. The Elecosoft Powerproject Open Bids Date is more than 30 dates past the ECMS Committed Bid Date and the ECMS Committed Bid Date is still within 30 days of the current date that the report was run on.
White	The Elecosoft Powerproject Open Bids Date is equal to the ECMS Committed Bid Date and the date is in the future.

Table C.2- PDOC Chart, Project Description color coding

Description Column Color	Description
White	The project is more than three weeks away from being advertised.
Yellow	The project is to be advertised within three weeks.
Red	The project has missed the ECMS or Elecosoft Powerproject Advertisement Date.
Light Green	The project is Advertised, but not Bid.
Green	The project has been Bid.
Light Orange	Notice to Proceed has been issued.
Light Blue	Physical Work is Complete
Purple	Project is not in ECMS, or is a Department Force project

Table C.3- PDOC Chart, Project Milestone color coding

Project Milestone Color	Description
White	Elecosoft Powerproject Late Start/Finish dates are in the future.
Yellow	Elecosoft Powerproject Late Start date has been missed
Red	Elecosoft Powerproject Late Finish date has been missed
Green	Elecosoft Powerproject Actual Start or Actual Finish Dates are entered
Green w/ Red Outline	Elecosoft Powerproject Actual Start or Actual Finish dates are entered, but the Actual Start or Actual Finish dates fall after the Baseline date.

Table C.4- PDOC Chart, Float color coding

Float Color	Description
Green	Project has less than 15 days of negative float.
Red	Project has equal to or greater than 15 days of negative float.

C.4.2- Projects of Significance Report

The Projects of Significance Report is used for projects that are of high importance to the Department to track key milestone dates to ensure the projects are let on time.

To Access the Projects of Significance Report:

1. Log onto Business Objects at <http://pdprodsapbi.penndot.lcl:8080/BOE/BI>
2. Type your *CWOPA User Name* and *Password*.
3. Click on *Log On*.
4. Click on *Document List Folder*.
5. Click the + next to *Public Folders*.
6. Click the + next to *Elecosoft Powerproject*.
7. Click the + next to *BOD*.
8. Click the + next to *PSSCS Project Tracking Reports*.
9. Click on *Significant Projects Tracking Reports Folder*.
10. *Double-click* the district report to be opened.

On the report, the ECMS Committed Let Date is black, if this date is not equal to the MPMS Let Date and Date will show up in red.

The MPMS Actual Date is black, the MPMS estimated Let Date is green, and if the MPMS estimated Let Date is passed, the date will show up in red.

The Approved Construction Cost is red if the difference is greater than 15% of the Construction Estimated Cost.

The top dates on the report are the baseline finish dates. The second line of dates is either the actual start date or the early start date. The third line of dates is either the actual finish date or the early finish date. The actual dates are black and the early dates are in green. If the early dates are passed, and no actual date is entered, the early dates will show up in red.

The total float is red if it is less than or equal to negative fifteen (-15) days.

The data date is when the schedule was last updated. The data date is red if the difference from the data run date is less than negative four (-4) weeks.

APPENDIX D- GLOSSARY

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Bar

Horizontal area on the spread sheet and Bar Chart containing information about a task.

Bar Chart

The area of the screen where tasks can be viewed graphically.

Baseline

A complete copy of the project recorded at a stage in time. Elecosoft Powerproject can record and display multiple baselines allowing for: tracking of major changes; production of what-if scenarios; comparison of information (e.g. budget cost to actual cost)

Border File

A print function which contains information to be included in printouts, including graphics such as company logo, project information such as the project title and relevant dates.

Buffer

A Task that is used to collect float and protect the Critical Path through the project. It achieves this by having its duration dynamic which increases or decreases in response to project changes.

Code (Color)

A facility to allow the assignment of colors to tasks to represent information about the task.

Code Library

This is the library (or folder) that contains Codes, allowing you to have multiple 'categories' of codes

Constraint (Flags)

These are used to enforce dates when a Task can happen (stopping a task starting before a certain date, or stopping a task finishing after a certain date). Using Constraint Flags within the project can have a major effect on your Critical Path

Control Key (CTRL)

A key on the key board normally found at the bottom left (and one on the right) used throughout windows applications for either commands (e.g. CTRL + S for saving) or for selective highlighting. (To highlight everything that is clicked upon whilst the key is held down)

Critical Path

This is shown as a red outline on Task and all Links showing red, the critical path means that this is the most important route through the project. If any of the items on the critical path are changed in anyway (durations or positions of) then the end date of the project will change, becoming earlier, or later

Date Zero

Normally at the start of the project, but can be moved without affecting the project. Date Zero is the point where week -1 meets week 1 (so allowing you to make your project 'start' in week -10)

Date Zone

This is the area above your project that contains rulers of information (e.g. week numbers, week start).

Exceptions

These are time periods that are different to the usual work week, e.g. holidays, working etc.

Expanded

This type of task is very similar with Summary tasks, in that it is used to group together Tasks within the project, but rather than have them on screen with itself like the Summary task, the content is actually held off chart in its own chart (or Sub Chart as it is commonly known)

Filter

This is a tool that will leave on screen only those items that meet a particular criteria, for example all the items that a particular contractor is doing (Code based filtering) or you want to see everything but only during a 6 week period (time based filtering) even to show only those items that have been completed (Progress based filtering)

Float

This appears on items that are not on the Critical Path. Float is the amount of time a Task may be delayed or extended before the item rejoins the critical path and pushes out the end date of the project. See Total Float and Free Float for more information

Free Float

This is one of the two types of Float; Free float means that if the task is extended or delayed in anyway during its period of float only this item is affected, nothing else will move.

Lag (Links)

Waiting time that is shown as the horizontal part on a Link (e.g. Concrete curing time, paint drying time or just delivery times).

Library Explorer

This is another main area of the software, It is inside of here that certain items are created (Cost Centers, Calendars, Codes, Permanent Resources to name but a few) But also certain settings can be changes in here as well (the exception colors, link colors, working in pounds or Euros)

Link

This is an arrow going between two items, representing the logical path through the project. Where one Task can start before another one. If shown in red then the link is Critical.

Mid-link

The software supports 4 major types of Links and a mid-link is one of those four with some setting to it so it allows it to be drawn almost anywhere along the task rather than from (or to) the start or end of the Task

Milestones

Milestones are points in time; they have no duration of their own (0 days) and are used to represent key events within projects. (E.g. Handover)

Progress Period

Progress is the method used to mark up the project so it is easy to know whether the project is in front or behind. A progress period is the reporting date, shown as a line going down the screen, and it will bend to the left to show items behind time and bend to the right to show items ahead of time.

Project View

This white window that opens on the left hand side of the screen is used to navigate around the project, or to assign items into the project like Code Libraries, Cost Centers, Permanent Resources, Consumable Resources and Calendars.

Shift Key (or a bold arrow pointing up)

A key on either side of the keyboard, used for creating capital letters, to pick up any of the top row of symbols on the numerical keys and others. Also used to highlight a range of items, (Left-click on one item, then hold down shift and select another item. Everything in between becomes highlighted.) Also used for creating Lag links.

Sort

Unlike a filter that temporarily removes items off the screen, a sort will leave all Tasks on screen, but will reorder them according to criteria that have been set. For example, rather than the program showing the Tasks in time order (earliest task first as most programs are created) the project could be told to group together all the Tasks according to the Code that has been assigned to it

Spreadsheet

This is the yellow and white stripped table down the left hand side of the screen (assuming the Project View is closed) the Spreadsheet is made up of different columns and these columns can be removed, added or even moved around. The software supports a large number of these columns

Summary

This is an item that groups together Tasks on screen under its own task. Items are grouped because they share certain information, for example, summaries could be used to group together all the Tasks on different floors. A Summary could also be used to show different phases or even stages within a project. Summaries can be placed inside of each other allowing a project structure or hierarchy to be created (Three different buildings, broken up into 4 different floors – so 3 main summaries each containing 4 more summaries inside of them)

Task

The activities or ‘blocks’ that appear within a Bar on the Bar Chart.

Template

A template is a file that is used when creating a project from new. This particular file will already contain items needed in the project. So a template could already have Calendars, Permanent Resources, Cost Centers, Code Libraries it could even have titles in the Spreadsheet and Tasks in the Bar Chart.

Total Float

This is one of the two types of Float. Total float means that if the task is extended or delayed in anyway during its period of float, then all items directly after it (those containing Float) will also be affected as well.

UDF

User Defined Fields – the software already has a large range of columns that can be used in the Spreadsheet but every column has a use. UDF’s are columns created by the user for whatever purpose, whether it is for recording delivery Notes, delay Notes or even to have a tick box to say whether or not a health and safety check has been done.

View

A view is the method used for the software to remember screen settings. When saved the ‘view’ will remember if the Project View is opened or closed, it will remember the current column configuration within the Spreadsheet. It will also remember the current settings of the Bar Chart, also the Date Zone and finally whether there are any Filters or Sorts running within the program. Putting all of this together a view is the ability to change all of these settings to a predefined set by only doing one click of the mouse. The software can have unlimited number of views saved.

APPENDIX E- REFERENCES

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