Chapter 1

Resources

Work, Material, Cost: Resource Types

Without resources doing the work projects would remain a planned schedule. Project 2010 has the ability to offer multiple types of resources to help accomplish the work of a project. The different types of resources are intended to provide flexibility to address most types of resources required during the planning and management of a project.

In this lesson we will discuss the resource types and their intended use:

1. Work resources
2. Cost resources
3. Materials resources
4. Budget resources

Work Resources

Assigning work resources to a project will allow for resource requirement forcasting and project scheduling based on resource availability. Work resources are usually human resources but can also be facilities, equipment rental and other types of resources. Resource costs can be forecasted using resource assignments to provide projected project budgets. Each work resource entry will contain a resource type, grouping, availability calendar, rate tables and other relevant data.

Effective uses of Work Resources are:

- Individual people – actual named resources
- Generic resources – these are job titles that can be used as placeholders to identify resources by skill type, skill level or if a resource is unknown. For example: DBA, Developer level 1, Event Planner, Plumber
- Group resources – used to state the quantity of a specific type of resource. For example: Helpdesk, Movers, Painters, Attendees, Members
- Facilities – a room or area that must be reserved for a period of time

- Contracted resources – external contracted labor
- Equipment – a machine used for a particular number of hours

Cost Resources

Cost Resources are defined as any thing that will add a dollar(s) cost to a project. Use of Cost resources enables the scheduler to add estimated costs during the planning phase of the project. These costs will be updated into the baseline. When actual costs become available during tracking, the actual costs will be updated and compared against the original estimates to provide a variance.

Cost resources will inherently increase the cost for a task and for the project. Cost resources have no effect on work or duration. The cost value is applied to tasks as a flat amount at the time of assigning the cost expense to a task.

Effective uses of Cost resources are:

- Flat estimated cost:
  - Travel expenses estimated in advance
  - Flat amount equipment rental
  - Flat amount facilities rental
- Fees: license fees, permits
- Estimates for meetings expenses or food provided for events
- Estimates for miscellanous project expenses
- Estimates for a flat amount for a fixed bid contracted resource when hours are not accumulated

Best Practice: Project 2010 allows for as many cost resources as needed but for simplicity try to consolidate cost resources and keep them to a limited number. The type of reporting required for the project would drive the quantity of cost resources that will be needed.

Material Resources

Material resources are defined as consumables. For example: Reference books for a new product might cost $50 each and 20 books are needed. A material resource would be created with a cost of $50 per book. An assignment would be entered for a task for 20 books. As a result $1,000 is added to the cost of the project. During tracking, the actual number of books would be entered to adjust the quantity if necessary.

The cost of the material resources are added to the total cost of the project and updated into the project baseline. Material resources do not affect work or duration.

Effective uses of Material resources are:

- Construction: create a material resource for the cost of 1 foot of trim. Enter the number of feet required for the task
- Conference: create a material resource for the cost of giveaway bags. Enter the number of giveaway bags needed for the conference
- Servers: create a material resource for the cost of 1 server. Enter the number of servers needed for the project.

Best Practice: If your project will be using a large quantity of materials such as a construction project, using Excel might be less work and a more effective means of keeping track of materials.

Resource Sheet

A work resource is usually a named person or generic skill type.

- The resource cost is stored in the resource record on the Resource Sheet.
- The number of hours of work will come from the assignment of the resource to the task.
- Assignments units will be the quanitity of the resource.

Resources are entered on the Resource Sheet.

To display the Resource Sheet:

- Click **Task → Gantt Chart view → Resource Sheet**

The default table view of the Resource Sheet is called the entry table view which is shown below. This table is a subset of many resource fields of information that are available. This table represents the most important fields that should have values entered for a resource. More information is accessible through the Resource Information dialog box.

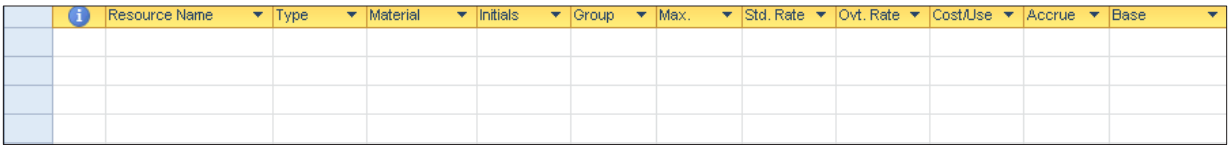
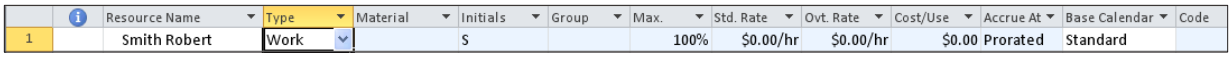


Figure 1-1 PLACEHOLDER

To enter a resource, type the resource name in the “Resource Name” field. The Resource Name is the key field for the resource data.

Many reports and assignment views will display resources in alphabetical order. A standard of last name first name allows for easy location of resources while making assignments. The database does not allow commas or other special characters. When entering first names it is best to use full first names and avoid using nicknames.

After the name is entered, several fields will be populated with default information. The view below shows the default information that is automatically entered:



	Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar	Code
1	Smith Robert	Work		S		100%	$0.00/hr	$0.00/hr	$0.00	Prorated	Standard	

Figure 1-2 PLACEHOLDER

The values for these fields are:

Type: Work is the default and will establish Robert Smith as a work resource. Other values are material and cost and can be changed by clicking the down arrow and changing the type selection.

Material: used for Material resources only – skip for work and cost resources.

Initials: enter full initials for resources. Initials may be substituted on Gantt Charts or reports as needed to shorten reports.

Group: Group is technically a free use field. It is usually used for department, location or skill set. It is one of the few fields populated in the task data when an assignment is created. This information is used to generate reports by groupings of resources. A best practice is that an organization set a standard for the use of this field.

Max units: The value shown above is in the default percentage format but can also be viewed as a decimal value.

To change to a decimal value: Click **File → Options → Schedule**

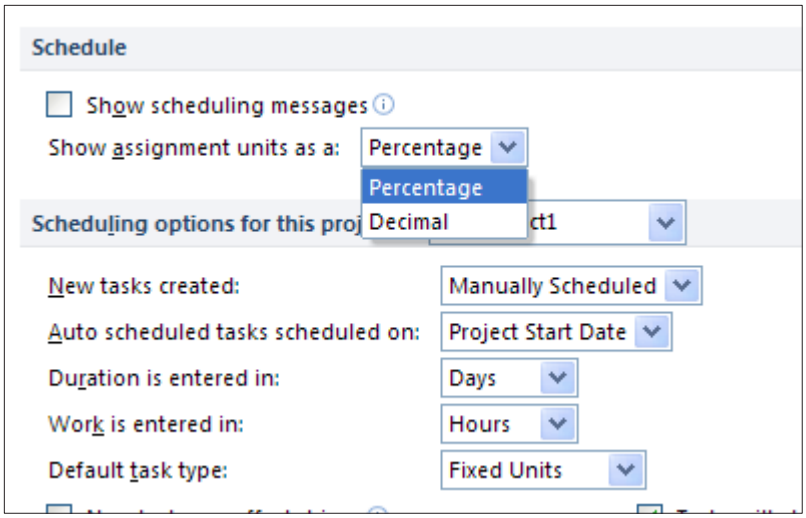


Figure 1-3 PLACEHOLDER

The Max units' value is an indicator of the quantity of a resource that is available. Typically an individual should always have a value of 1 or

100%. When entering a group resource such as the number of people on the Helpdesk, enter the number of resources in the group. Each resource represents 1 unit. The available quantity of the resource will be determined by number of hours in a day x Max units. For example if there are 5 people on the Helpdesk, enter 5 or 500% in the Max Units column. With 5 available resources each one can work 8 hours per day. Helpdesk will have 40 available hours of work per day. When Helpdesk resources are assigned to a task, the Helpdesk will be not be overbooked until 40 hours have been assigned.

Some reference sources recommend using a lesser value in the Max units field to limit a resource's availability. This can produce variable results when creating assignments.

Standard rate: Enter the loaded rate for the resource. A loaded rate is pay scale plus overhead factors. In most organizations, this figure comes from the accounting department with periodic updates. Default is rate per hour but a rate may be enterd as /yr a yearly rate or /w for a weekly rate.

Overtime rate: When using overtime, a rate for the overtime hours may be entered in this field. It will affect only overtime hours entered.

Cost per use: An extra value that may be added to a task over and above the Standard Rate for the resource. For example: A repairman is called to fix a refrigerator. The repairman charges a transportation charge, and hourly rate, plus parts. The cost per use is the transportation charge and would be applied to every task the repairman would be assigned to.

Accrue at: Cost accrual is an indicator of a point in time when costs are incurred. Cost accrual settings have 3 options: incur costs at the start of the task, incur costs at the end of the task, or incur costs throughout the task (prorated). Prorated accrual is the default option.

Base calendar: Each work resource will have a resource calendar associated with it. The resource calendar is based on calendars that have been previously established for the project. The Standard Calendar is the default resource Base Calendar. If the base calendar contains company non-working time it is not necessary to reestablish company holidays, statutory holidays, etc. as all of these will be applied to the resources. Use the dropdown list to select the appropriate calendar for a resource.

The Resource Information dialog box is used to record information about a resource that is not captured in the Resource Sheet.

To view Resource Information dialog box:

- Double click the resource you wish to access

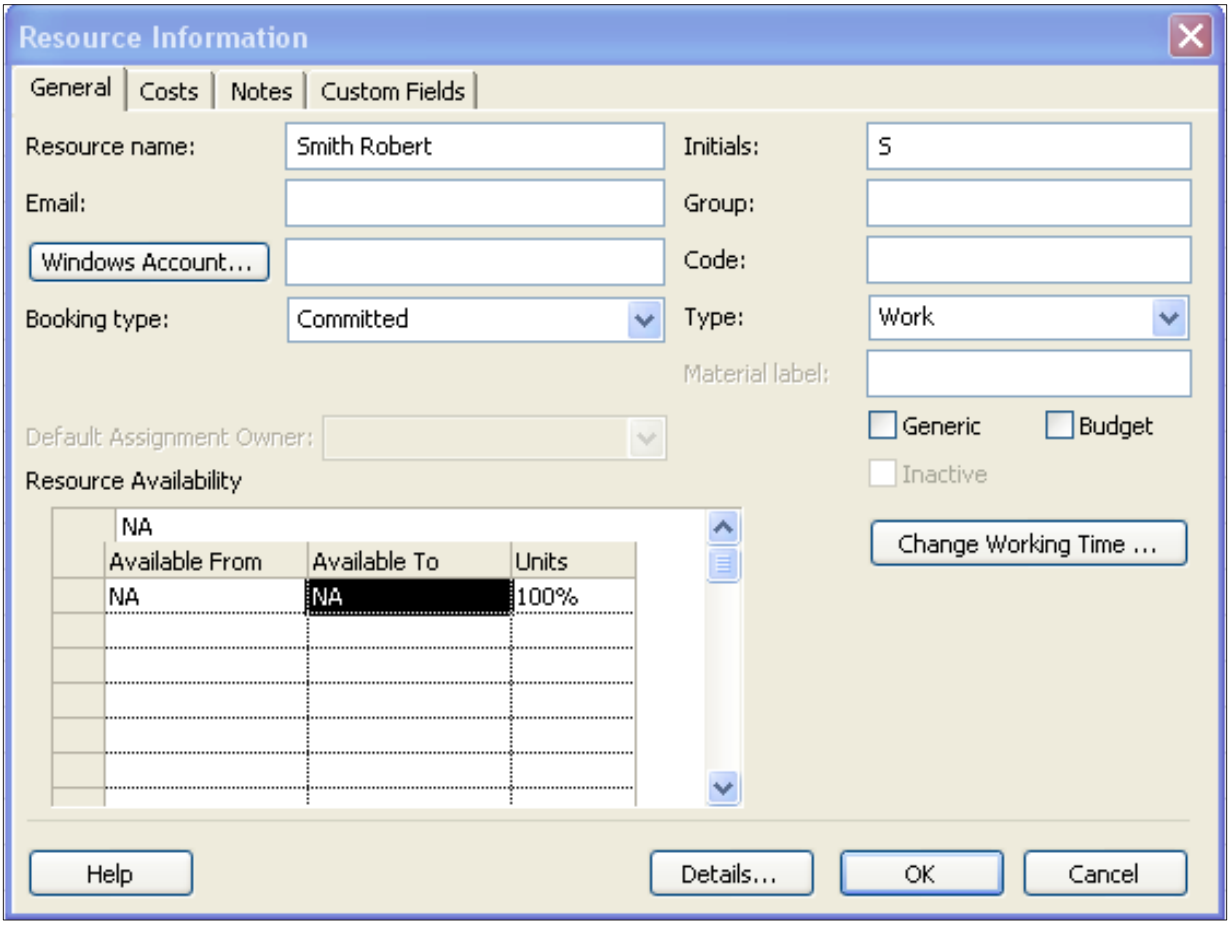


Figure 1-4 PLACEHOLDER

General tab data:

Email: reference only for Project 2010 standard

Windows Account: Project Server 2010 usage only

Booking type: Project Server 2010 usage only

Code: If you have a code associated with a resource, enter it here. Typically this code is a cost center or department cost category. Free use field for users.

Generic: Click this field to indicate that the resource is a generic resource. A generic resource is a skill type resource to be used as a holding value until a human resource is assigned. When generic resources are used, default base calendar for scheduling.

Budget: budget resources only

Inactive: Project Server 2010 use only

Resource availability: Enter dates if the resource is only available for a particular period of time. For example: An outside contractor is hired for a specific length of time. Enter the date ranges the resource will be available.

To change the resource availability calendar:

From the **General** tab, click **Change Working Time** button. The view will appear:

The form looks identical to the form used to change project and base calendars discussed in an earlier module. The view above is the calendar assigned to Smith Robert and it uses the Standard calendar as a base build the calendar for the resource. Changes to this calendar are made in the same way that changes were made to the project calendar.

Click **OK** to close the calendar form.

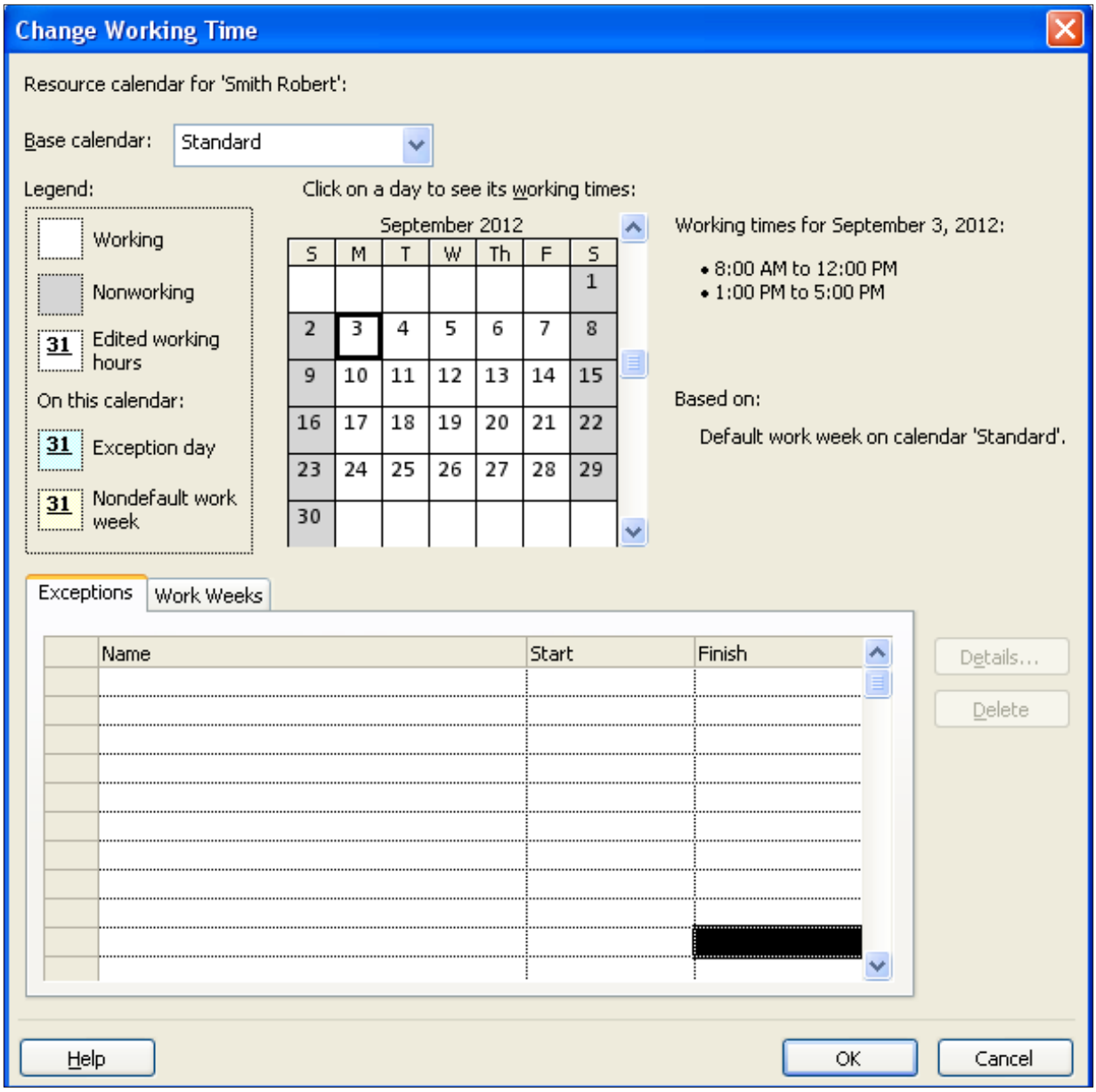


Figure 1-5 PLACEHOLDER

Cost tab data:

Resource costs are stored on the Cost tab. A resource may have up to 5 cost tables to accommodate varying rates. The tables are labeled A, B, C, D, and E. Labels may not be changed. Some resources will charge

different rates when performing different types of work. Each assignment may be assigned a rate table.

If more than one rate table is being used for a resource, enter a note on the Notes tab to help keep track of the purpose of each rate table.

Most organizations using costing experience periodic rate changes. The effective date allows early storage of future rate adjustments and become active based on a cut off date. If a project spans the cut off date, the tasks before the cut off date of the project will be costed at the earlier date rate and the remaining tasks which exceed the cut off date will contain increased rate. It is easy to see that if a project runs late, the cost of the project could increase when using rate tables.

If using resources that come on shore and off shore use the effective date to change rates for resources when they change location.

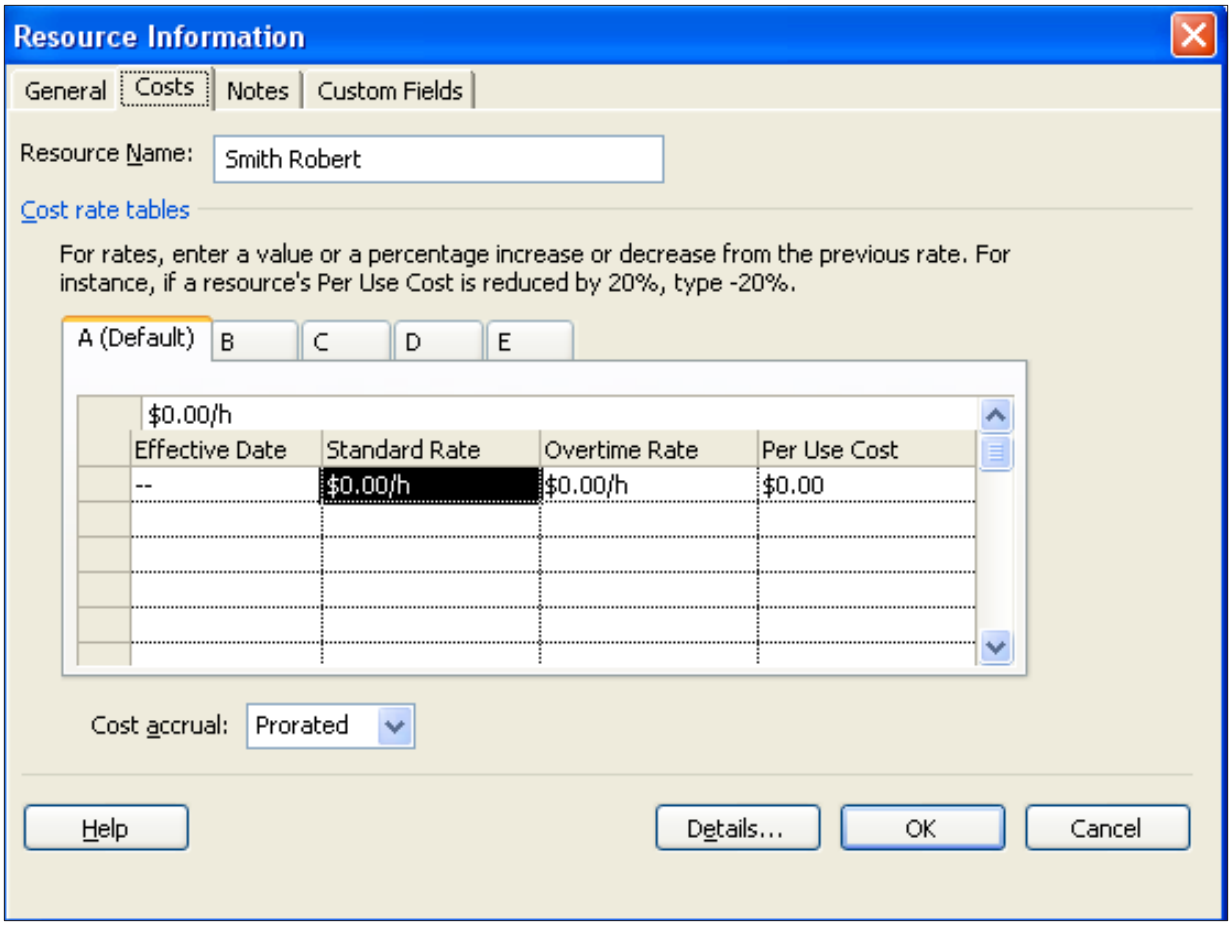


Figure 1-6 PLACEHOLDER

Notes tab data:

Resource notes are treated the same as task notes within Project 2010. Resource note data has the same formatting and flexibility as task notes.

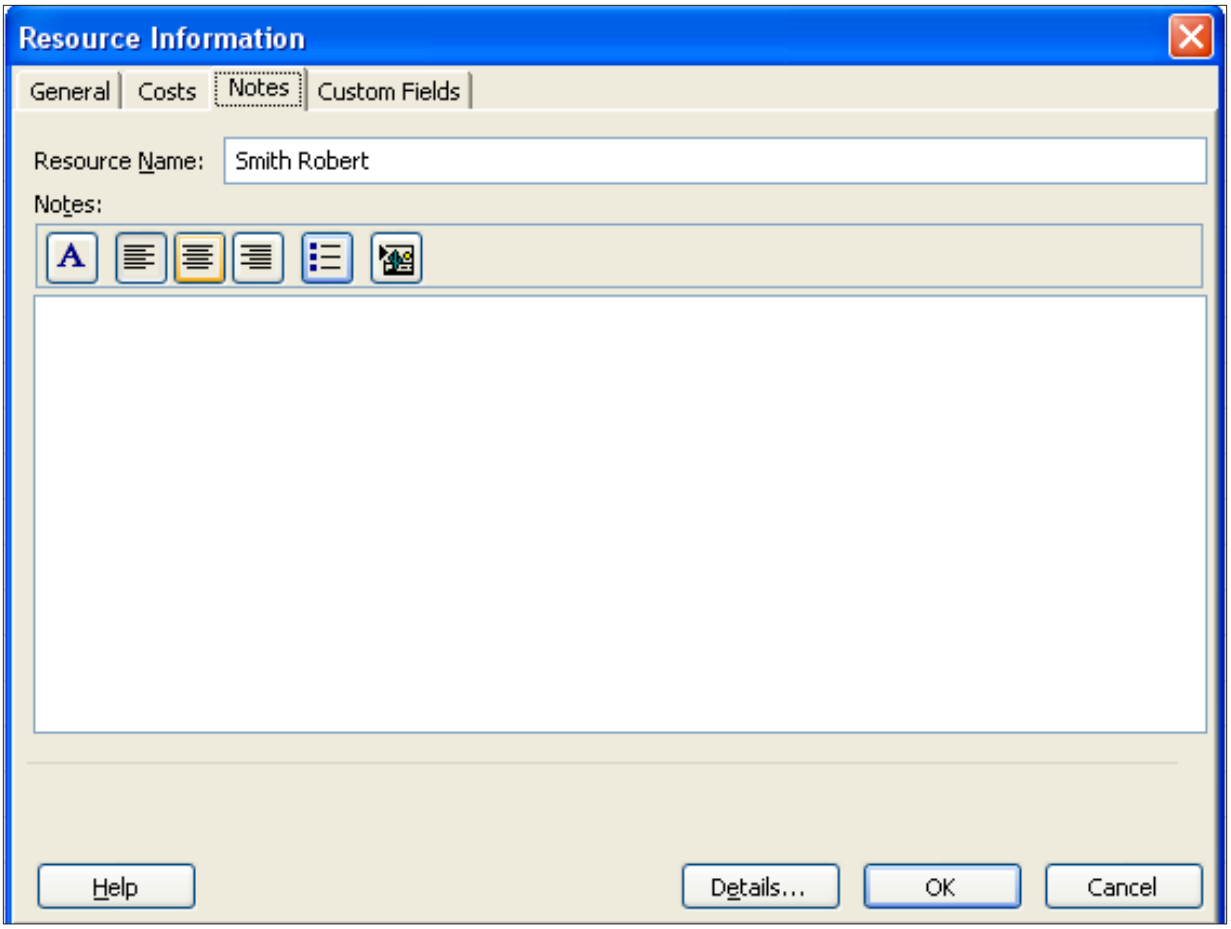


Figure 1-7 PLACEHOLDER

Custom Fields tab data:

If custom fields have been created for resources, they will be available through the custom fields tab.

Resources may be imported from Active Directory and Outlook to be added to the Resource Sheet. Once they are downloaded from these sources, additional information will be required to complete the entries for the resources.

To access the download function for resources click:

- Click **Task → Gantt Chart view → Resource Sheet**

- Click **Resource → Add Resources**

  Add Resource options are shown below.

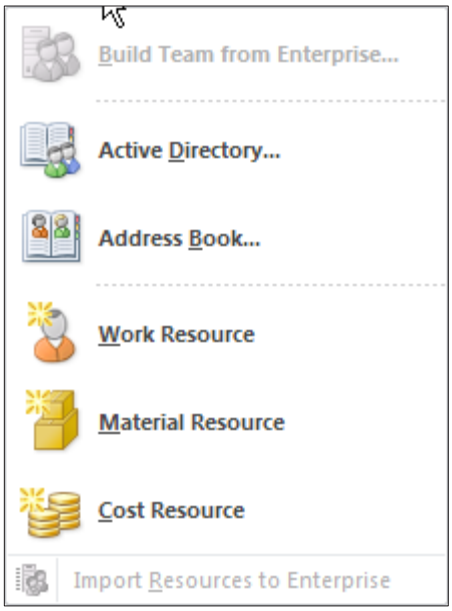


Figure 1-8 PLACEHOLDER

Calendar

Material Resources

Material resources are supplies to be used by the project, such as paint, building materials, equipment, etc. Material resources are valued based on the quantity of material to be used which is assigned to a task.

Below are the fields associated with Material resources.

Resource name: name of the consumable item

Type: Material

Material label: boxes, gallons, feet, each – the label that describes the material

Standard rate: the per unit/each price

Accrue at: accrual rate for the material

Material resource entries are shown below:

Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue At
Smith Robert	Work		RS		100%	$100.00/hr	$0.00/hr	$0.00	Prorated
Paint	Material	gallons	P			$25.00		$0.00	End
PC's	Material	desktops	PC			$2,000.00		$0.00	Prorated
Boxes	Material	each	B			$10.00		$0.00	Prorated

Figure 1-9 PLACEHOLDER

Cost Resource: Lite

Cost resources are used to apply estimated costs specific tasks in a project. Estimated costs are entered during the planning stage and tracked when actual costs are entered during the execution or control stage of the project.

When naming cost resources include “Cost” as the first word in the name. It will be helpful when assigning cost resources for the name to give an indication of the resource type. Resources appear in alphabetical order when creating assignments and including “Cost” as the first word ensures all Cost resources will be grouped together in the list.

To enter a cost resource:

Resource name: For example: Cost travel, Cost food, Cost room rental, etc.

Type: Cost

No other information is required. Below 3 cost resources have been added. The amount of the cost will be added at the time the assignment is created.

	Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar
1	Smith Robert	Work		RS		100%	$100.00/hr	$0.00/hr	$0.00	Prorated	Standard
2	Paint	Material	gallons	P			$25.00		$0.00	End	
3	PC's	Material	desktops	PC			$2,000.00		$0.00	Prorated	
4	Boxes	Material	each	B			$10.00		$0.00	Prorated	
5	Cost travel	Cost		C						Prorated	
6	Cost food	Cost		C						Prorated	
7	Cost room rental	Cost		C						Prorated	

Figure 1-10 PLACEHOLDER

Assign Cost Resource

The purpose of assigning a cost resource to a task is to add additional estimated costs that the task might incur. Tasks may have multiple cost resources applied but the same resource name may not be applied more than once. Cost resources will not affect the scheduling of a project.

There are several methods available to assign a cost resource to a task. A few are described below:

Create an assignment using the Assign Resources box:

- Click **Task → Gantt Chart**
- Click **Resource → Assign Resources** to display the Assign Resources dialog
- Click on the task you would like to assign a Cost Resource to
- Click the **Cost resource name**
- Enter the amount of the cost in the cost column
- Click **Assign**
- Click **Close to close the box**

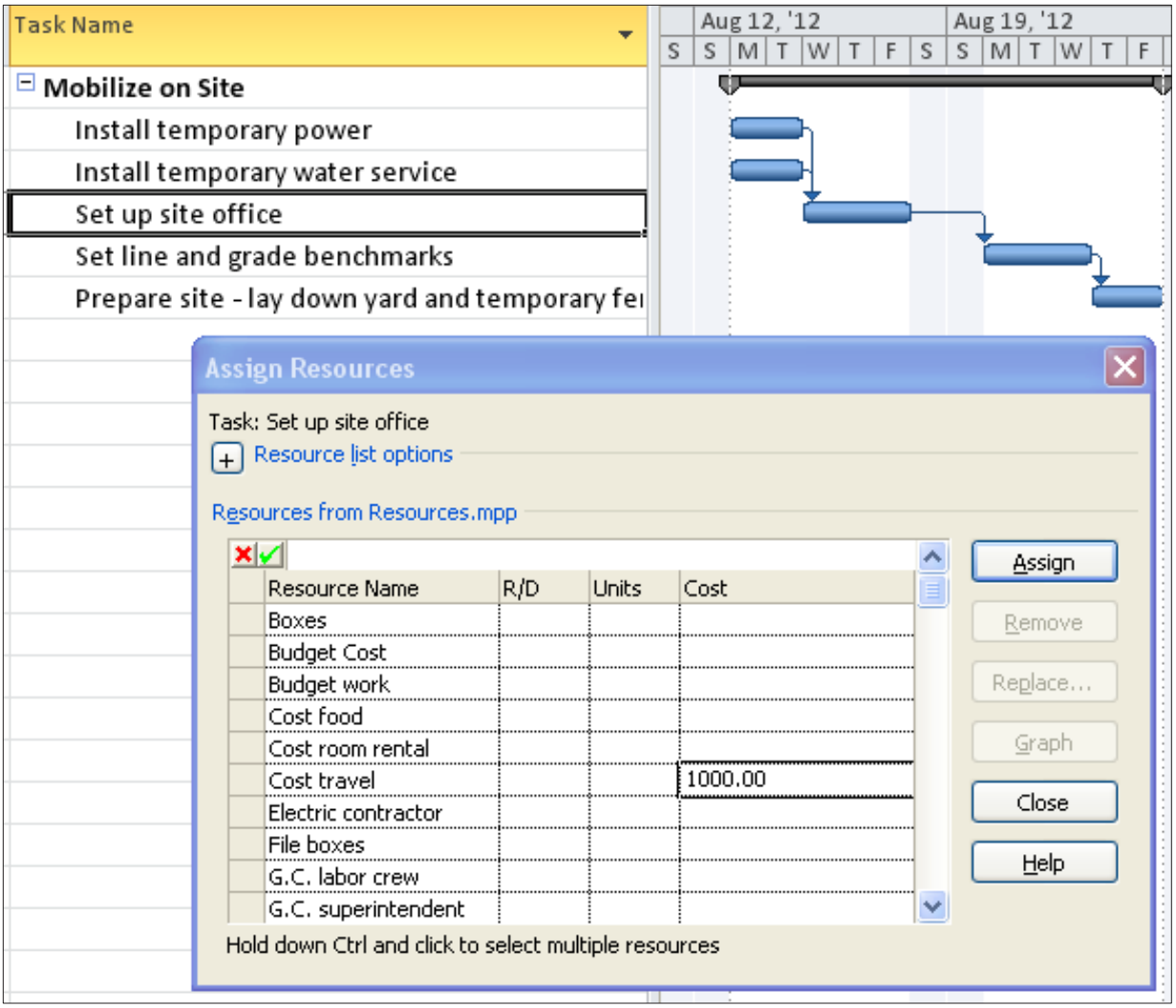


Figure 1-11 PLACEHOLDER

The result of the assignment will appear like this:

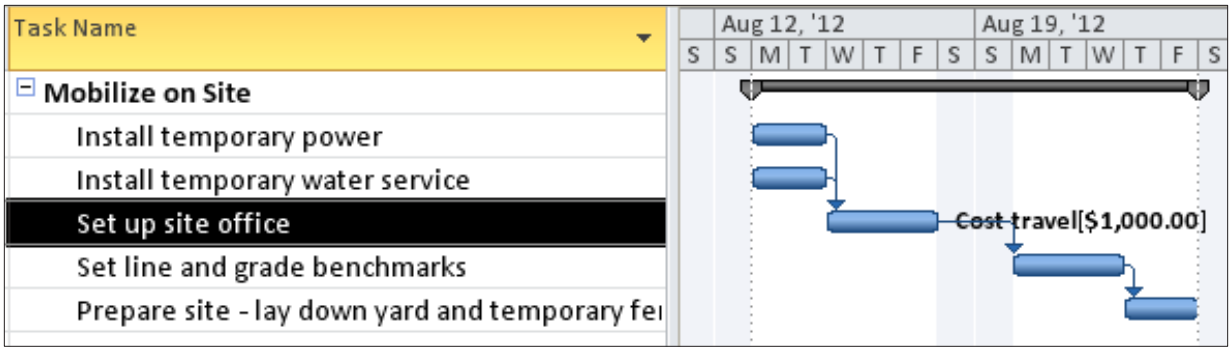


Figure 1-12 PLACEHOLDER

An alternate method of assigning a Cost Resource to a task is through the Task Information dialog box:

- Click **Task → Gantt Chart**
- Double click on the task you would like to assign the cost resource to
- Click **Resources** tab
- Click on the next open line and select the cost resource to apply
- Enter the cost value in the cost column
- Repeat for additional entries
- Click **OK** to close the box

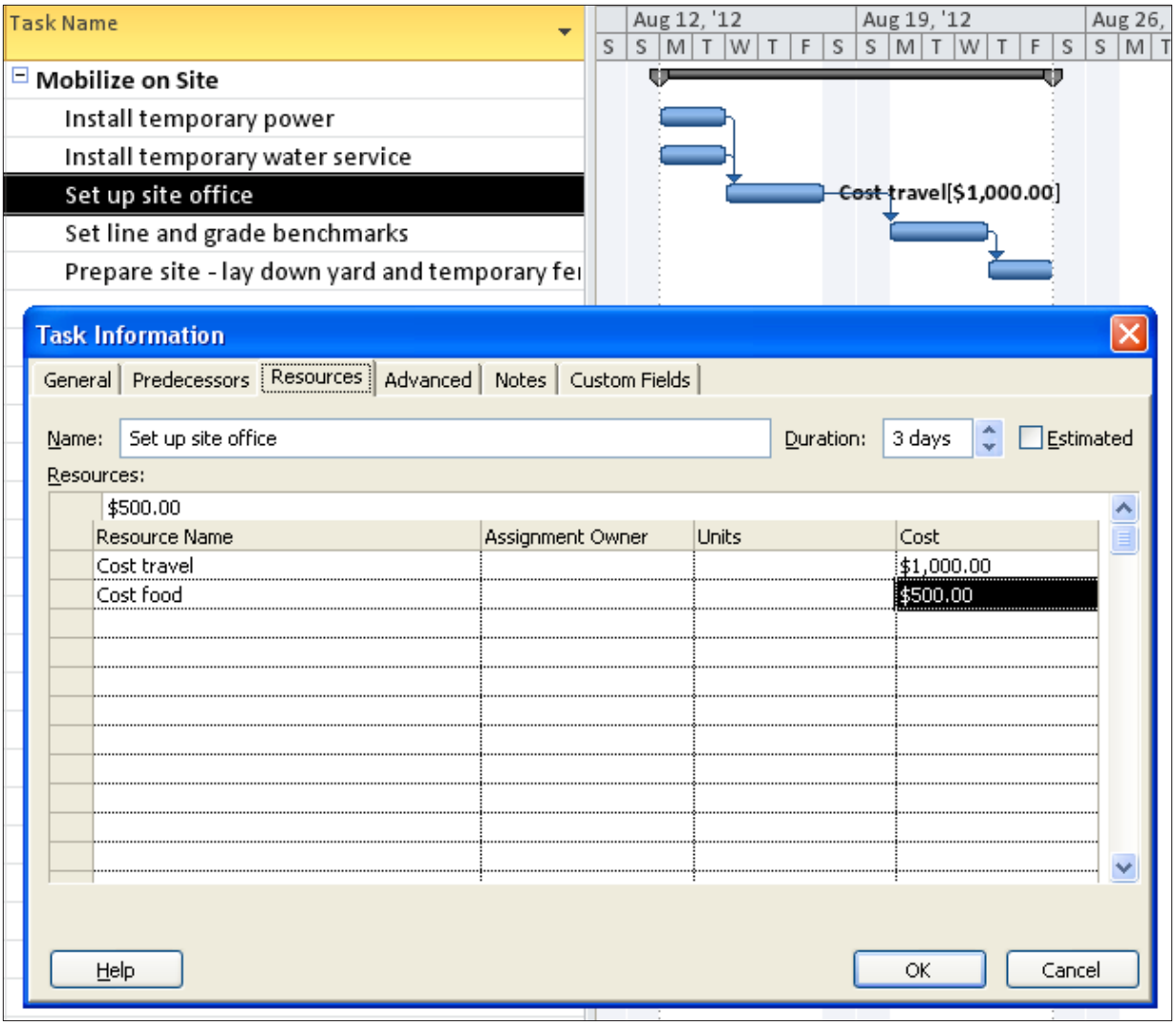


Figure 1-13 PLACEHOLDER

Project 2010 allows entering a new resource name in the Task Information dialog box or the Assign Resources box. The resource will be added to the Resource Sheet as a new resource using the default field values as a work resource which might not be correct for the resource data needed. Additional field values may also be required to complete the resource data correctly. It is a best practice is to create resources through the Resource Sheet.

Assign Material Resource

Assignment of material resources is very similar to assigning a cost resource to a task. A material resource is assigned by entering the number of items for the material resource assignment.

There are several methods of assigning a material resource to a task. A few are described below:

Create an assignment using the Assign Resources dialog box:

- Click **Task → Gantt Chart**
- Click **Resource → Assign resources**
- Click the task you would like to assign a material resource to
- Click on the **Material** resource
- Enter the amount of the number of items in the units column
- Click **Assign**
- Click **Close** to close the box

In the example below, 200 Electrical Connectors were assigned to the Install Temporary Power task.

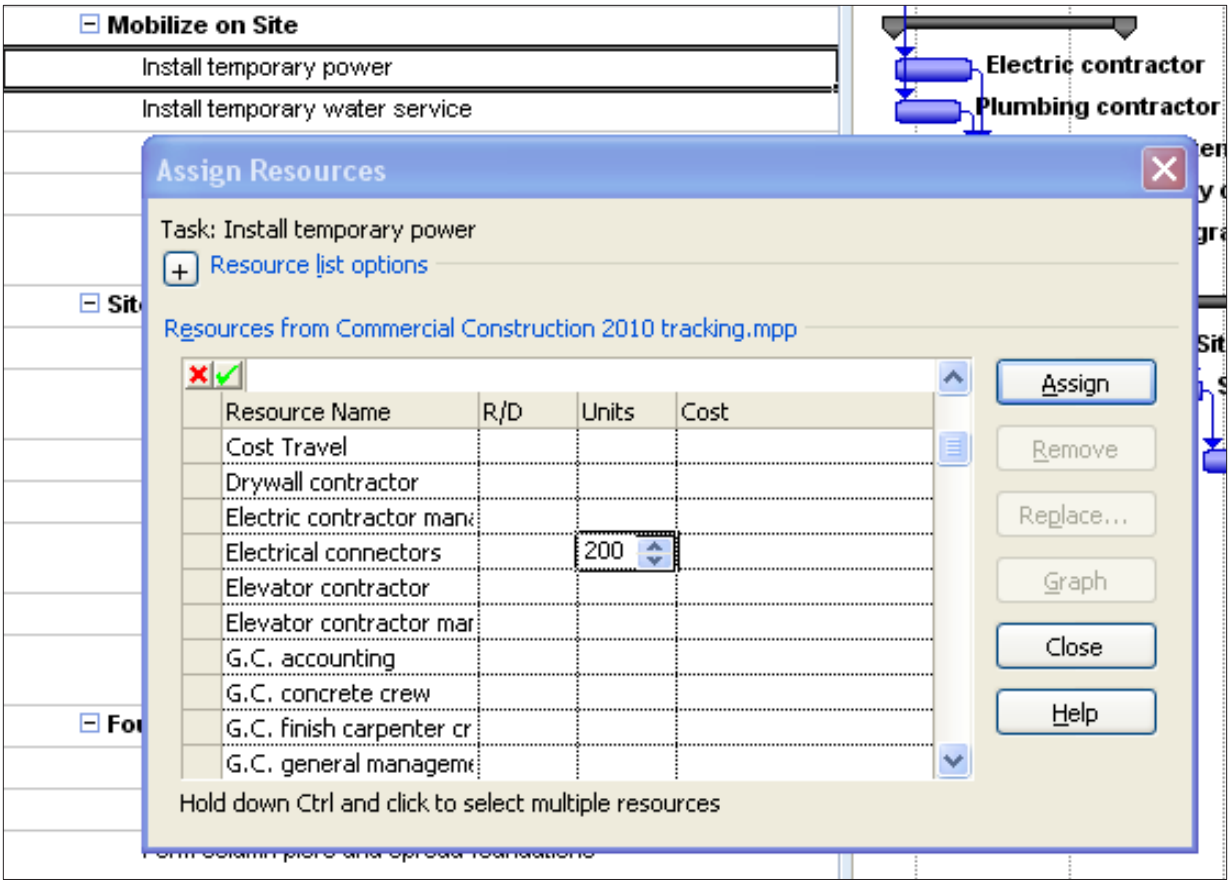


Figure 1-14 PLACEHOLDER

An alternate way of assigning a material resource can be accomplished using the Task Entry view. The Task Entry view is a preset view that displays the Gantt Chart in the upper portion of the screen and the Task Form in the lower portion. The view is shown below.

To display Task Entry view:

- Click **Task → Gantt Chart → More Views → Task Entry → Apply**
- Right click in the bottom pane and select Work

To create the assignment:

- Click the task you wish to assign the resource to
- Click **Resource Name** field in the lower pane
- Click the down arrow in the Resource Name field to display a list of resources
- Select a material resource

- Enter number of units or items in the units field
- Click **OK** button on the Task Form to enter the assignment

In the example below "Fencing material" is the material resource. On the Resource Sheet the material was entered as $20 per foot. 400 linear feet of fencing was entered in the units column for the assignment. Below is the result of the assignment.

When creating assignments or making changes in the Task Form as part of a split screen, the second button on the right of the view will say "Previous" As changes are made the value will change to "OK". The "OK" button must be clicked to have the changes take effect.

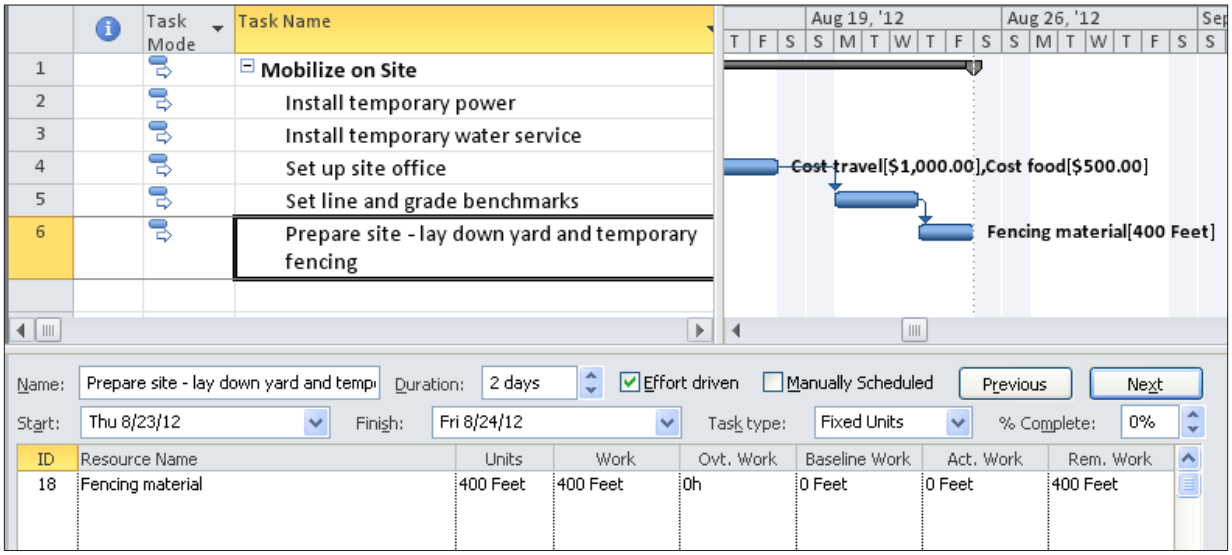


Figure 1-15 PLACEHOLDER

Right click in the bottom pane and select Cost and view will view the cost of the material.

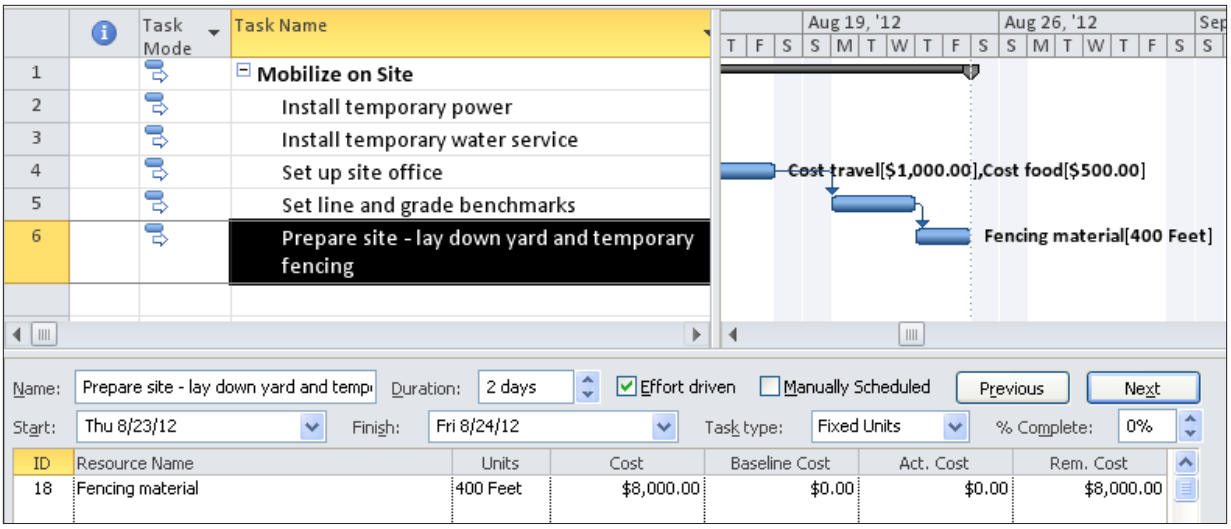


Figure 1-16 PLACEHOLDER