Working on More Than One Project

If you're like most project managers, you juggle several projects at the same time. You may have several smaller projects that are part of a larger effort—like the subprojects for building the different parts of a new airplane. Or you may simply manage several separate projects at once, like several fundraisers for the charity you work for. In almost every case, you have to share resources with others. For organizations with oodles of projects, Microsoft's enterprise project-management software (Project Server and Project Web App, or Project Online) provides tools for managing entire portfolios of projects (page xvii). However, Microsoft Project Standard and Professional also have features for managing smaller numbers of projects.

In Project, a *master project* is the easiest way to work with several projects at the same time. You create a new Project file and then insert other Project files into it to consolidate them into one file. (Although you insert the files into a master project, they still exist as separate Project files.) A master project is great for assembling multiple subprojects in one place, but it works equally well if you're managing a bunch of unrelated projects and want an easy way to keep an eye on all of them at once. This chapter describes how to build a master project from related subprojects and how to consolidate several unrelated projects into one Project file.

Master projects aren't your only option when working with multiple projects, though. Sometimes all you need is a link between a task in one project and a task in another project. Suppose one project in your company has magnanimously funded a new database-management system. One of your projects can use the system, but you don't want to start your database work until the stakeholders have approved the other project's database design. In cases like that, you can create what's called an *external task dependency* (a.k.a. *cross-project dependency*) between the database-design milestone and the start of your project's database work. In this chapter, you'll learn how to create external task dependencies.

Whether you fight over resources with yourself or with other project managers, you eventually have to share the resources you use. Project Server has the niftiest tools for finding and sharing resources, but plain-Jane Project can share resources, too—the program lets you create a file called a *resource pool* to hold information about available resources. In this chapter, you'll learn how to create a resource pool and apply it to your projects. You'll also learn different ways of opening a resource pool and when to use each one.

■ Managing Multiple Projects

If you don't have the option of using Project Server to manage multiple projects, you can insert subprojects into a master project instead, no matter how much or how little the projects have in common. Here are a few situations in which inserting subprojects into a master project can help you manage multiple projects:

- **A large project with subprojects.** Suppose you're managing a project so large that it requires several project managers to handle different parts. For example, a project to build a new airplane may have subprojects for the fuselage, engines, electronics, wiring, and so on. The separate systems progress individually, but they have to come together before the rubber can hit the tarmac. When you set up a master project that contains the separate subprojects, the project managers for the subprojects (whether they're subcontractors or part of your organization) each work on their own Project files. But you can see the big picture of all the subprojects simply by opening the master project.

> **TIP** Master projects and subprojects aren't appropriate for managing humongous projects with casts of thousands, budgets in the millions, hordes of risks and issues, and project interdependencies galore. For a stable of big projects like those, Enterprise Project Management Solutions (which includes Project Server) are what you need to stay on top of everything.

- **Several projects share the same resources.** Say you and another project manager in your company work on different projects, but you both pull your resources from the same pool of employees. After a few hallway tussles over popular resources, you decide to try a better way. The two of you create a resource pool that contains the resources you both share. Then you both link your projects to that resource pool so you can check resources' availability.

- **Several unrelated projects.** If you spend each day juggling several small projects, you'd probably like to keep track of them all within Project. By creating a master project and inserting all your Project files into it, you can open all your projects simply by opening the master file. Even better, you can work on the projects without switching Project windows and create links between tasks in different projects. Similarly, you can produce consolidated views or reports for all your projects. (If you open the same, unrelated projects day after day, using a *workspace* can also save you some time, as the box on page 517 explains.)

TIP When you add subprojects to a master project file, Project calculates a single critical path for all the subprojects. However, if you're using a master project to track *unrelated* projects, you want each project to have its own critical path. To tell the program to calculate separate critical paths for each project, choose File→Options, and then choose Schedule on the left side of the Project Options dialog box. Scroll to the bottom of the dialog box and, in the "Calculation options for this project" section, turn off the "Inserted projects are calculated like summary tasks" checkbox. Then click OK.

- **Reporting on overall progress.** You can insert projects into a master project temporarily to produce consolidated views or reports for several projects.

POWER USERS' CLINIC

Opening Several Projects At Once

Say you're working on three small projects that have nothing in common other than having you as the project manager. After a few days of opening one project file after another, a shortcut for opening your files sounds like a good idea. If you don't need the resource-sharing features of a master file, a *workspace file* is just the ticket.

The Save Workspace command isn't on the ribbon, so first you have to make it available. After that, creating and accessing a workspace is a snap. Here's what you do:

1. To add the Save Workspace command to the Quick Access toolbar, click the down arrow to the toolbar's right, and then choose More Commands. In the "Choose commands from" drop-down list, choose "Commands Not in the Ribbon." Scroll down the list, click Save Workspace, click Add, and then click OK.

2. To create a workspace file, first open all the Project files that you want to belong to the workspace. (Close any that you don't want in the workspace.)

3. On the Quick Access toolbar, click the Save Workspace icon.

4. In the Save Workspace As dialog box, navigate to the folder where you want to save the workspace file.

5. In the "File name" box, type something meaningful like *Q1Workspace*. (The file extension is *.mpw* for "Microsoft Project workspace.")

6. Click Save.

Now you can open the workspace file just like you would a regular Project file (page 99). The only difference is that, when you do, *all* the Project files in the workspace open automatically. You still have to close the files one at a time.

Although you can insert a Project file into any *other* Project file (see step 3 on page 518), the best way to keep track of multiple projects is to create a master project—a Project file that contains other projects. Here's how a master project works when you insert Project files into it:

- All the inserted subprojects assemble cheerfully in one Project window, so you can work on and save them all as if they were a single file, even though the individual projects remain separate files.

- The inserted projects look like summary tasks, which you can expand to show all the subtasks, or collapse to see the big picture.

- You can work on subproject tasks as if they belong to the master project—modifying, sorting, filtering, and grouping the aggregated tasks.

- Because a master project is a regular Project file, you can add tasks to it—for example, for the work you do supervising the other project managers.

• A master project maintains continuous contact with its inserted subprojects. If someone modifies and then saves a subproject, those saved changes are immediately visible in the master file. Conversely, if you make a change to a subproject in the master project, those changes are immediately visible to anyone looking at the original Project file for that inserted subproject.

Head to page 525 to learn how to create a master project that contains several subprojects.

Linking Tasks in Different Projects

Maybe only a few tasks in one project link to tasks in another project. For example, suppose that planning the cycling fundraiser grabs everyone's attention like a cute puppy, so you don't want to start preparing the proposal for the wine tasting until the planning for the cycling event is complete. In order to indicate this connection in Project, you need to link tasks in different projects to create an *external task dependency*. The easiest way to do this is to insert both projects into a temporary master project and then link them the way you would two tasks in the same Project file.

To create an external task dependency, follow these steps:

1. **Choose File→New, and then, on the New screen, click Blank Project.**

    Project creates a new, blank file that's ready to accept your subprojects.

2. **Select the first blank row, and then, in the Project tab's Insert section, click Subproject.**

    The Insert Project dialog box appears. Navigate to the folder that contains the first project you want to insert.

3. **Select the project you want to insert, make sure the "Link to project" checkbox is turned on, and then click Insert.**

4. **Repeat steps 2 and 3 to insert the second project.**

    The two projects look like summary tasks, except that a Project file icon appears in the indicator column. Click the white triangle next to each project's name to display all the subtasks.

5. **Select the task that acts as the predecessor (click anywhere in its row), and then Ctrl-click the successor task.**

    Be sure to select the predecessor first and the successor second.

6. **In the Task tab's Schedule section, click the "Link the Selected Tasks" icon (it looks like two links of chain).**

    Project draws link lines between the two tasks as if they were in the same project. If you insert the Predecessors column, you'll see that the Predecessors field for the successor task includes the full path to the file that contains the successor task with the task's ID appended at the end, as shown in Figure 18-1.
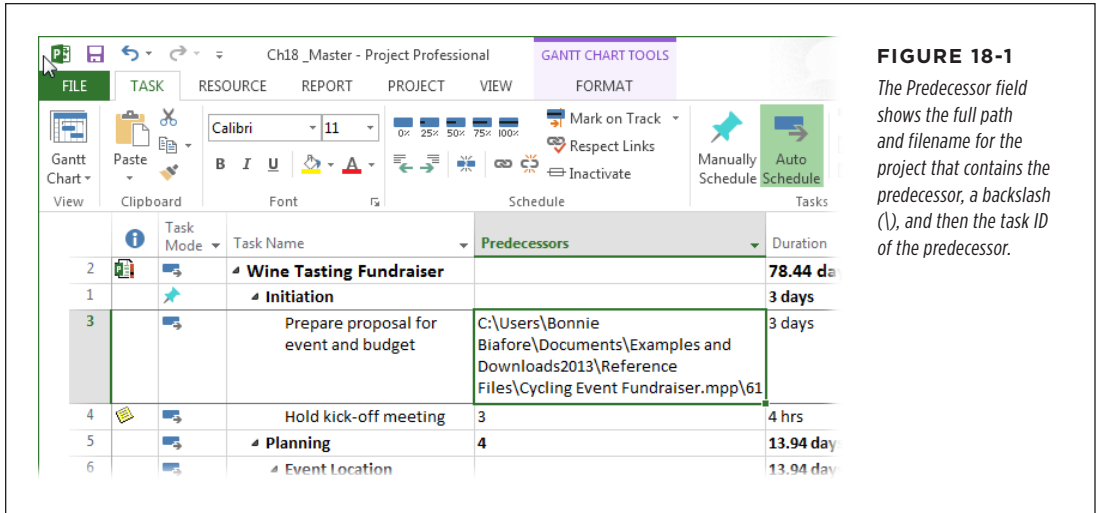
7. **Choose File→Close. In the first dialog box that asks if you want to save your changes (for the master project), click No. In the second and third dialog boxes that ask if you want to save your changes (for the subprojects), click Yes.**

   By clicking No in the first dialog box, you discard the master project you created. However, the link between the tasks in the two projects is still in place. If you open the file that contains the successor task, the external predecessor appears in the row immediately above the successor task (the text in its row is gray). In the file that contains the predecessor task, the external successor appears in the row immediately below the predecessor task.

> **NOTE** When you open a Project file that contains external task dependencies, the Links Between Projects dialog box might open, which shows all the file's external predecessors and external successors. If you don't see the dialog box or want to open it later on, in the Project tab's Properties section, click Links Between Projects. You can also control the appearance of cross-project links. Choose File→Options. On the left side of the Project Options dialog box, choose Advanced. In the "Cross project linking options for this project" section, you can turn off the "Show external successors" and "Show external predecessors" checkboxes (they're on by default) to hide external tasks. And if you don't want the Links Between Project dialog box to open automatically, then turn off the "Show 'Links Between Project' dialog box on open" checkbox.

■ Sharing Resources Among Projects

People usually work on more than one project for more than one project manager. If each project manager creates a resource to represent the same worker in each Project file, then overallocated resources and resource squabbles will soon follow. The solution in Project Standard and Professional is a *resource pool*, which is a Project file dedicated to resource information—the pool of resources who work on projects, their cost, availability, and most importantly, how much time they're already allocated to tasks. (A resource pool in Project is based on the same idea as the enterprise resource pool in Project Server, although Project Server includes a few more tools for finding the right resources.)

The beauty of a resource pool is that resource information is in one place. Project managers who use those resources simply link their projects to the resource pool. Assigning resources works exactly as it does when resources are contained in the project file. The only difference is that you can see how much of the resources' time is allocated to tasks from all linked projects.

Creating a Resource Pool

The simplest way to set up a resource pool is to create a new Project file that does nothing but act as a resource pool. Although you *can* use a Project file with tasks in it as the resource pool, you may run into problems if you want to work on the tasks and someone else wants to work on resource information.

TIP If an existing project contains all the shared resources in your organization, you don't have to build a resource pool from scratch. Open the existing project, and then choose File→Save As to save a copy of the project. Open the copy, delete all the tasks in it, and then save the Project file. (To quickly delete all tasks, display Gantt Chart view. Click the Select All cell immediately above the first ID cell to select all tasks, and then press Delete.) Voilà—you have a Project file that can serve as a resource pool.

To create a standalone resource pool, do the following:

1. **Choose File→New→Blank Project.**

   Project opens a blank file.

2. **In the View tab's Resource Views section, click Resource Sheet.**

   Resource Sheet view is home to all the data about your resources (page 79).

3. **Fill in information about your shared resources.**

   Typically, you fill in resource names, their standard charge rates or cost, and the maximum availability for work resources. If you want to include other information like work group, overtime rate, or cost per use, fill in those fields, too.

4. **Choose File→Save.**

   In the Save As page, choose where you want to save the file, such as Computer or OneDrive, and then choose the folder you want (in the Recent Folders list

or by clicking Browse). In the Save As dialog box, name the project something meaningful (like Resource Pool).

Be sure to save the resource pool in a location that all project managers can access. Saving it to your laptop, for example, won't help other project managers who need to link to the file. So go with a network drive or another shared location instead.

> **TIP** If you have resource information in Microsoft Outlook, Active Directory, or an HR database, then you can import that information into Project, as described on page 211. Or you can copy resources from one Project file and paste them into the resource pool file. (See the box on page 537 for copy and paste steps.)

Connecting a Project to a Resource Pool

Before you can assign resources from a resource pool to project tasks, you have to link the file that contains the tasks to the resource pool. Any Project file that uses a resource pool is known as a *sharer file*. With the project–resource pool connection in place, the resource pool resources act as if they're part of the project file.

To connect a project to the resource pool, do the following:

1. **In Project, open the resource pool file.**

   Since many project managers may share the resource pool, open the resource pool file as read-only so you don't lock anyone out of the file. To do that, in the Open dialog box, select the resource pool file, and then, on the Open button, click the down arrow, and then choose Open Read-Only.

2. **Open the project file that needs to access the resource pool.**

   If you have several projects to share with the resource pool, you can open them all at the same time and then cycle through to connect each one to the resource pool.

3. **With the project file active, in the Resource tab's Assignments section, choose Resource Pool→Share Resources.**

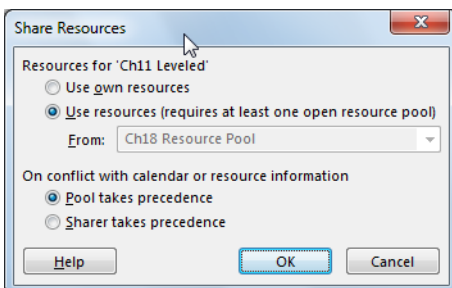   The Share Resources dialog box opens (Figure 18-2).

FIGURE 18-2

The Share Resources dialog box includes options to tell Project whether to use resources from the project file itself or from the resource pool. For example, if you want to switch from using the resource pool back to using your own file, select the "Use own resources" option.

4. **Select the "Use resources (requires at least one open resource pool)" option and then, if necessary, in the From drop-down list, choose the resource pool file.**

   If you have several projects open, the From drop-down list shows all open projects that aren't already sharer files.

5. **Under "On conflict with calendar or resource information," select an option to tell Project how you want to resolve resource information discrepancies.**

   The best choice is to let the resource pool take precedence (select "Pool takes precedence"), because then the resource pool has the final say about resource information. In that situation, changes made in the resource pool overwrite resource information in the sharer file. For example, suppose someone else opens the resource pool file and updates everyone's standard and overtime rates. When you open a sharer file, the project automatically uses the updated rates. In turn, if you change resource information in your project file, the resource pool is immune to those changes.
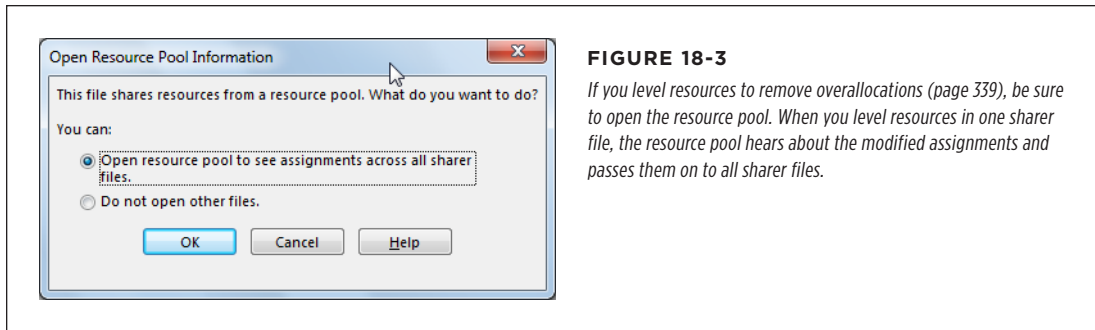
   If you select "Sharer takes precedence" instead, then resource information you change in your project overwrites information in the resource pool. This approach is fine *if* you use a resource pool for resources dedicated to only your projects. With this option selected, you can change resource information in a project and Project automatically updates the resource pool when you save the project. But if you share the resource pool with several other project managers, the "Sharer takes precedence" option usually leads to unwanted resource changes, as each project manager tries to modify resources.

6. **Click OK.**

   The project now obtains its resource information from the resource pool.

Opening and Saving Sharer Projects

When you open a sharer file, Project asks whether you want to open the resource pool (if it's not open), as shown in Figure 18-3. In almost every case, you do indeed want to open the resource pool, because that way you'll see all the resources from the resource pool in your project's Resource Sheet view. All resource assignments (from all sharer files) appear in Resource Usage view, so you can see all the tasks on which a resource works. To open the resource pool, select the "Open resource pool to see assignments across all sharer files" option (see Figure 18-3).

FIGURE 18-3

If you level resources to remove overallocations (page 339), be sure to open the resource pool. When you level resources in one sharer file, the resource pool hears about the modified assignments and passes them on to all sharer files.

TIP Because an open resource pool shows all assignments for a resource, your Resource Usage view is likely to have a lot more tasks than you remember. The problem is you can't tell which assignments are from *your* project and which come from *other* projects. To identify the project an assignment belongs to, right-click the heading row in the Resource Usage table area, and then choose Insert Column→Project. The Project cell for each assignment then shows the sharer file that made the resource assignment.

Opening the resource pool file also means that the resource assignments you make in your project file affect the resource's availability in the resource pool. When you save a sharer file while you have the resource pool file open, Project asks if you want to update the resource pool. To save the resource changes to the resource pool, click OK. (Click Cancel to save the sharer file without updating the resource pool, for example when you're testing what-if scenarios and haven't decided which one you're going to use.)

NOTE If other sharer projects are open, updating the resource pool saves the resource changes from *all* open sharer projects. So before you update the resource pool, be sure to close any sharer files that contain resource changes you don't want in the resource pool just yet. When those sharer files are ready for prime time, open them and the resource pool file, and then save the projects and update the resource pool.

If you select the "Do not open other files" option, then only the resources already assigned to tasks in your project appear in Resource Sheet view. Likewise, you see only the assignments from your project. When you save the sharer file, the resource pool doesn't receive the resource assignments you make.

TIP To make sure you're up to date with the most recent changes in the resource pool, in the Resource tab's Assignments section, choose Resource Pool→Refresh Resource Pool. Project immediately shows the most current information from the resource pool. Similarly, if you've made scads of resource assignments, then you can update the resource pool immediately by choosing Resource Pool→Update Resource Pool.

Detaching a Sharer Project from the Resource Pool

You can disconnect a sharer file from the resource pool, which is perfect if your project gets canned before it gets started. On the other hand, if a project contains a lot of assignment information, keeping the sharer file and the resource pool connected helps you report on all resource assignments at once. For example, if you want to evaluate resource usage for the past year, you want to keep all projects—active, completed, and discontinued—connected to the resource pool.

To remove a project from the resource pool, open the sharer file, and then do the following:

1. **In the Resource tab's Assignments section, choose Resource Pool→Share Resources.**

   The Share Resources dialog box opens.

2. **Select the "Use own resources" option, and then click OK.**

   Any resources assigned to tasks remain in the project and appear in Resource Sheet view, but all other resource pool resources disappear from Resource Sheet view. In addition, the assignments from the detached sharer file (which is now just a regular Project file) no longer appear in the resource pool.

Editing Resource Pool Information

Once a resource pool is connected to at least one sharer file, you have three ways to open the pool. Sometimes you just want to see what's in the resource pool. Sometimes you need full read-write access—for example, when you're updating everyone's cost rates or work calendars. Project gives you options for each scenario.

When you open a resource pool file (choose File→Open, and then select the resource pool Project file), the Open Resource Pool dialog box appears with options that win the prize for longest option labels. Here's what your choices are, and when to use each one:

- **Read-only.** The "Open resource pool read-only allowing others to work on projects connected to the pool" option opens the resource pool as read-only. However, even if you choose this option, saving your sharer files updates the resource pool with assignments you've made. The benefit of choosing this option is that everyone else who uses the resource pool can continue to work on their projects at the same time.

- **Read-write.** If you need to make changes to resources in the resource pool, select the "Open resource pool read-write so that you can makes changes to resource information (like pay rates, etc.), although this will lock others out of updating the pool with new information" option. When you select this option, you can modify fields like costs and resource calendars. Of course, you want to use read-write mode for as short a time as possible, because no one else can access the resource pool while you're using it. That means other project

managers can't see resource assignments and availability in any of the sharer files connected to this resource pool. If they open their Project files, they have to do so without opening the resource pool.

- **Create master project.** The "Open resource pool read-write and all other sharer files into a new master project file. You can access this new master project file from the View tab, Switch Windows command" option combines the resource pool and all sharer files into a brand-new master project file. If you work on several projects of your own, this is an easy way to build a master project. This master project is also useful when you want to produce reports that span all the projects your organization performs. Remember that the resource pool is read-write, so other project managers can't open their sharer files connected to the resource pool while you have it open.

Creating a Master Project

Setting up a master project is a matter of sharing resources from your resource pool file with each project you want to be part of the master project. Once you do that, you can open the resource pool file and choose the option that creates a master project from all the sharer files. (The less-common alternative is to create a master project when you already have a single large project that you want to break into subprojects. The box on page 526 tells you how to do that.) If you create a master project to supervise several projects managed by others, be sure to store all the files in a shared location that all the project managers can access.

Here's how you create a master project that includes several subprojects:

1. **Open a project file that you want to be part of the master project.**

2. **If the project isn't connected to your resource pool file, follow the steps on page 520 to share the resources in the resource pool file with the project you just opened.**

3. **Save the project and update the resource pool.**

4. **Repeat steps 1–3 for all projects that you want in the master project.**

5. **Open the resource pool file if it isn't already open. In the Open Resource Pool dialog box, select the option that begins with "Open resource pool read-write and all other sharer files into a new master project file."**

6. **Save your new master project.**

> **NOTE** When you insert projects into a master project, the ID cells for tasks seem to go crazy. Project assigns sequential ID numbers to each subproject, beginning with 1. However, the tasks that belong to inserted projects have ID numbers that *also* begin with 1. So you're likely to see several tasks with the same ID number. When you work with subprojects, ignore the ID numbers. Instead, refer to the WBS code with a project prefix (see the Note on page 157) to uniquely identify every task.

WORKAROUND WORKSHOP

Creating a Master Project from One Large Project

You've forged ahead on a massive project, putting all the tasks into one Project file. One day, you realize that this big, awkward file is making it harder for you to manage the project and, more importantly, delegate subprojects to other project managers. All is not lost—you can turn your gargantuan project into a master project with subprojects without breaking a sweat. Here's how:

1. Create a Project file for each subproject within your large project.

2. In each new file, set the subproject's start date to the start date of the original colossal project and pick the same calendar (page 102) as the original project. (In step 8, you'll link the subprojects so they start on the correct dates.)

3. In the original massive Project file, select all the tasks you want to move to the first new subproject file by dragging over their ID cells (the numbered cells in the table's first column). Then, in the Task tab's Clipboard section, choose Copy to copy all the information about the selected tasks

to the Clipboard. (If you drag over the Task Name cells instead, Project copies only the tasks' names.)

4. Switch to the corresponding Project file for the new subproject, and then in the Task tab's Clipboard section, click Paste→Paste Special to copy all the tasks from the original Project file. In the Paste Special dialog box's "As:" list, choose Project Data, and then click OK.

5. Save the subproject Project file.

6. Repeat steps 3–5 for each subproject until you've copied all the tasks from the original Project file into subproject files.

7. Create a Project file for the master project, and then insert all the subproject files into it, as described on page 525.

8. Create task dependencies between the subprojects to restore them to the chronological order they had in the original large project (page 176).

Now, you can work on the inserted projects as you would regular tasks. If you need help identifying tasks and resources from different subprojects, insert the Subproject File column into your Gantt Chart table (page 634). Figure 18-4 shows the Subproject File cells with the file paths and names for each inserted project.
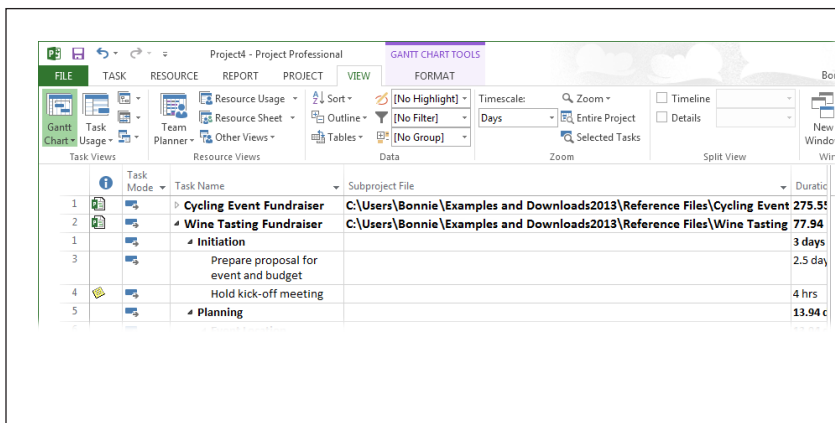

FIGURE 18-4

The Subproject File column contains the full path to the subproject file, which means the column's values are huge, as shown here. Don't widen the column to show the entire path. Instead, you can read the full path simply by putting your mouse pointer over a cell in the column.

TIP If your master project and subprojects contain some of the same resources, Resource Sheet view in the master project contains duplicate entries for those resources, one for each project containing that resource. The problem is you have to select the *correct* resource entry (the one for the subproject) when you assign resources within that subproject. You can tell the resource entries apart by inserting the Project column into Resource Sheet view. But the *best* way to solve the duplicate problem is to set up a *resource pool* for all the projects to share, as described in the box on page 218.

UP TO SPEED

Preventing Changes to Subprojects

Suppose you supervise several newbie project managers and you want an easy way to review all the projects they manage, but you don't want to change those subprojects by mistake. You can insert projects into a master project as read-only. Then you can view the inserted projects from the master project, but you can modify them only by opening their source Project files. To insert projects as read-only, in the Insert Project dialog box, click the down arrow on the Insert button, and then, from the drop-down list, choose Insert Read-Only.

You can also change an inserted project to read-only *after* it's inserted. In a Gantt Chart table, click anywhere in the inserted project's summary task row, and then press Shift+F2 to open the Inserted Project Information dialog box (or in the

Task tab's Properties section, click Information). Select the dialog box's Advanced tab, and then turn on the "Read only" checkbox. To quickly change several subprojects to read-only, insert the Subproject Read Only field in the Gantt Chart table (right-click in the table's heading area, and then choose Insert Column→Subproject Read Only). To make an inserted project read-only, change the field's value to Yes.

One exception to a subproject's read-only status occurs when you open the subproject and then open the master project while the subproject is still open. In that case, Project changes the read-only subproject file whether you make the change in the master project *or* the subproject source file.

Removing a Project from a Master Project

If you no longer need an inserted project in your master project, then you can delete the inserted project task while keeping the original subproject file. Suppose another project manager takes over one of your projects, so you no longer need to see that project. Simply delete it from your master project. The new project manager then works on the original Project file. That's it.

To remove an inserted project, do the following:

1. **In Gantt Chart view, click the ID cell for the inserted project's summary task.**

    Project selects the entire row.

2. **Press the Delete key on your keyboard, or right-click the task's row and choose Delete Task on the shortcut menu.**

    The Planning Wizard dialog box appears and asks you to confirm that you want to delete a summary task and all its subtasks.

3. **Make sure the Continue option is selected, and then click OK.**

    Project removes the inserted project from the master project but leaves the original subproject file where it is. (If you change your mind, click Cancel instead.)