

Getting Started with MARPLOT

This section provides a hands-on guide to the most common MARPLOT functions. It uses the sample Prince William County, VA map that was distributed with your MARPLOT system. This guide is meant to be used interactively while you work at the computer with MARPLOT. You will get the most out of it if you perform each step on your MARPLOT system, and try all of the suggested tasks.

Further examples of various MARPLOT functions are given in Chapter 5.

3.1 Starting and exiting MARPLOT

On Windows...

To start MARPLOT, double-click its icon in the Program Manager or select MARPLOT from the taskbar Start menu. Click OK on the greeting screen. To exit MARPLOT, choose Exit from the File menu in the upper-left corner of the MARPLOT map window.

On Macintosh...

To start MARPLOT, double-click its icon in the Finder. Click on the greeting screen. To exit MARPLOT, choose Quit from the File menu.

3.2 Guided tour of basic MARPLOT functions

IMPORTANT NOTE:

For CAMEO users...

This guided tour makes use of objects on the CAMEO Map. The CAMEO Map is a folder (directory) stored in the same place as your CAMEO database or stack files. You must *run MARPLOT and CAMEO simultaneously* on your computer at least one time before going through this tour. To do this, start both programs and enter any necessary passwords. Make sure you see the CAMEO Map objects in MARPLOT. Then quit both programs. After having done this, the CAMEO Map objects will continue to appear in MARPLOT, even when CAMEO is not running.

For non-CAMEO users...

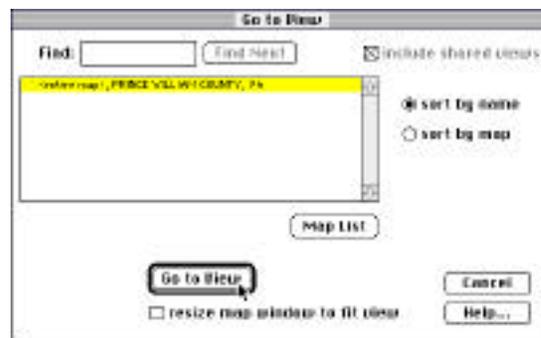
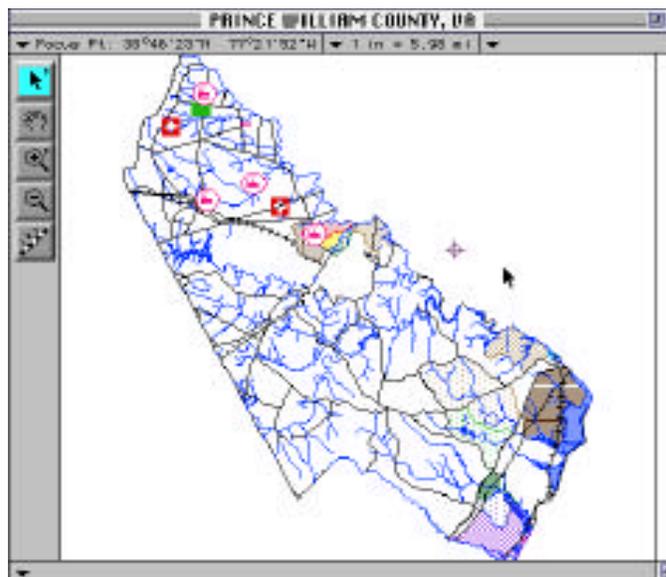
This guided tour makes use of objects on a map called CAMEO Map. Even if you do not have this map, you should be able to follow along with most steps of the tour. If you do have it, *but you are not a CAMEO user*, you

should put it into your MARPLOT folder (directory) before going through the tour.

Showing Different Layers

1. Start MARPLOT.

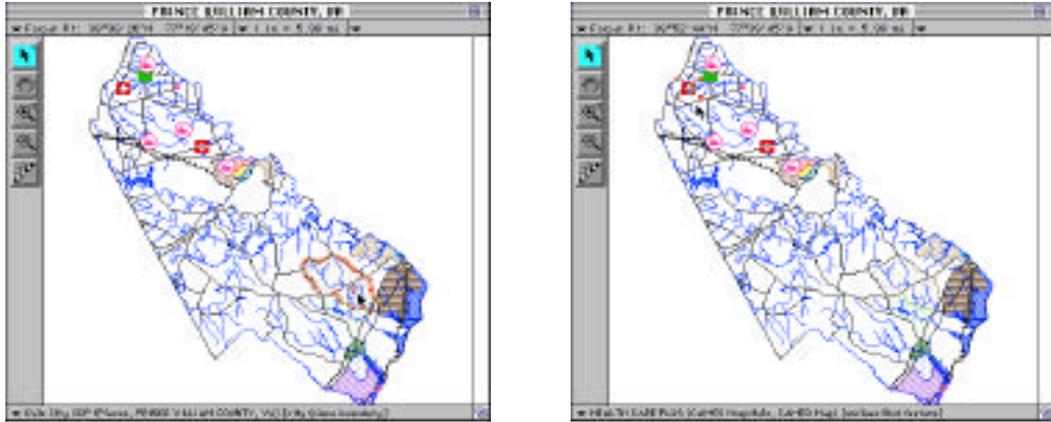
2. After you click on the title screen, MARPLOT opens the map window. The sample map, Prince William County, is shown. (If, for some reason, your MARPLOT does not open to this view, use the Go to View item in the View menu, highlight the <entire map> view for Prince William County, and click Go to View.)



Note: Your map window may not look exactly the same as the one shown in the picture above. The scale value shown at the top of the window will probably be different.

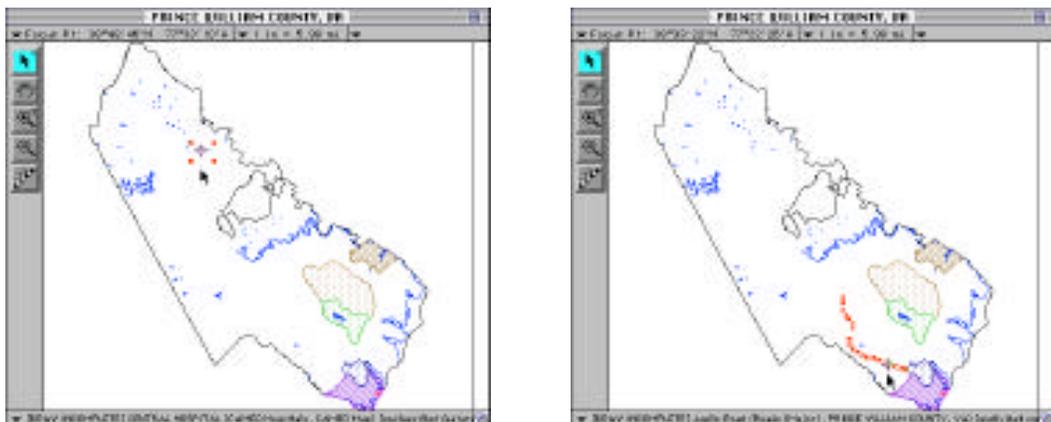
3. A number of different layers are shown, including the Places layer showing the various towns in Prince William County, the water layer, and several CAMEO objects, which are all clustered in the northern part of the county. With the arrow tool, click several times on the map. As you select objects, they become

highlighted with red dots, and MARPLOT displays their name at the bottom of the map window. Also, the location of your click is marked with a flashing icon called the Focus Point. The latitude/longitude coordinates of the Focus Point are shown in the upper-left corner of the map window.



4. From the View menu, select the Redraw item. Watch the bottom of the map window as MARPLOT draws. It shows which layer is being drawn. Use the Redraw item a couple more times to get a feel for how long it takes MARPLOT to draw the different layers on your computer.

5. Use Redraw one more time, but this time, try to press the ESC (escape) key as soon as MARPLOT starts drawing the Water layer. Pressing the ESC key causes MARPLOT to stop drawing. It displays the message [DRAW INCOMPLETE] at the bottom of the map window to remind you that all of the layers to be drawn were not drawn. Even when the drawing is incomplete, however, you can still click on the map with the arrow tool to select any object that would have been drawn. With the map partially drawn, try clicking on some of the CAMEO objects in the northern area of the county.



6. Use Redraw one more time to display all of the shown layers.

7. From the list menu, select the Layer List item. This brings up MARPLOT's list of layers. The layers can be sorted alphabetically or from top to bottom according

to the order in which they are drawn. Currently the layers are sorted in draw order. Scroll up and down in the list of layers. Notice that the TIGER-derived layers such as Places and Roads are lower in the list than the CAMEO layers such as Facilities and Hospitals. Since the layers are shown according to the draw order, this means that the TIGER-derived objects will draw first, on the “bottom,” and then the CAMEO objects draw after, on the “top.” That’s why, when we stopped the drawing, we saw some of the TIGER layers (the shoreline, the places, and some of the water) but the CAMEO objects still hadn’t been drawn.



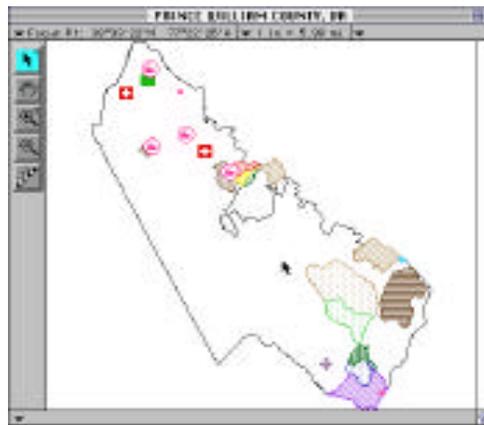
8. In the Layer List, click on the names of different layers. Notice that, in the bottom part of the window, MARPLOT displays the number of objects on that layer, and also some graphical information about the layer.



9. As can be seen in the columns in the center of the Layer List, all of the CAMEO layers are currently in “Show” mode, and most of the TIGER-derived layers (roads, railroads, etc.) are currently in “Range” mode. When a layer is in Show mode, it displays no matter what the map scale. When a layer is in Hide mode, it does not display. When a layer is in Range mode, it displays only within a certain range of map scales. For now, let’s put all of the non-CAMEO layers except for the Places layer into Hide mode. To do this, click on each layer’s line in the Hide column.



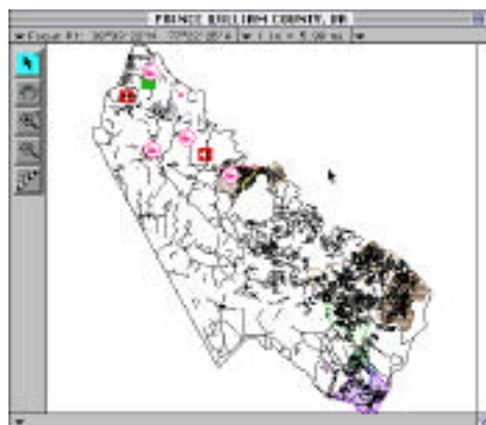
10. Click OK. The map is redrawn with just the Places and CAMEO layers shown.



11. Return to the Layer List dialog box using the Layer List menu item again. This time, set the Roads layer to Show mode by clicking in the Show column of the Roads layer's line.



12. Click OK. The map is redrawn with the Roads layer shown.

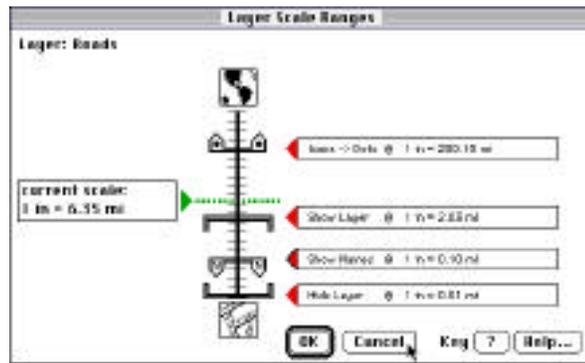


13. It takes a significant amount of time to draw all of the roads at this zoomed-out view of the entire county. It would be better to draw the roads only when we are zoomed in closer. That way, we wouldn't have so much to draw at one time. This is just what the Range setting in the Layer List dialog box is for. Return to the Layer List and set the Roads layer to Range mode. In order to see what range of scales the roads will show in, make sure the Roads layer is highlighted in the list and then click on the Scale Ranges button.

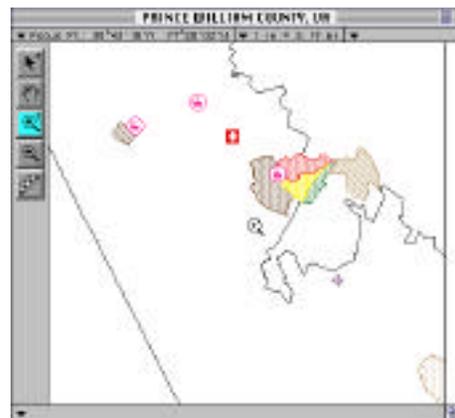
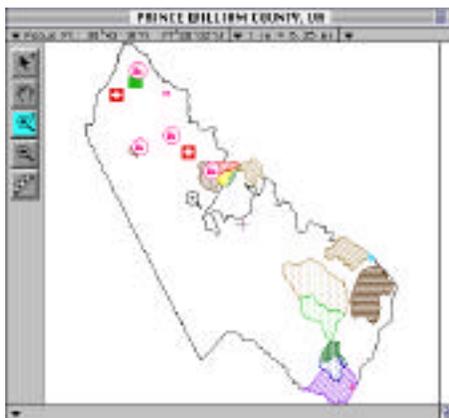


14. The Layer Scale Ranges dialog box displays and lets you modify four scale values: the most zoomed-out scale the layer will display at, the most zoomed in scale the layer will display at, the scale you have to zoom in to before objects on the layer are labeled with their names on the map, and the scale you have to zoom out to before symbol objects on the layer are displayed as dots instead of as their usual icons.

15. Note that, in the case of the Roads, the layer is set to show when the scale is about 1 inch = 2 miles. Note that our current scale is more zoomed out than that. Thus, if we leave these scale values, and leave the Roads layer in Range mode, we'll have to zoom in a bit close for the roads to appear.

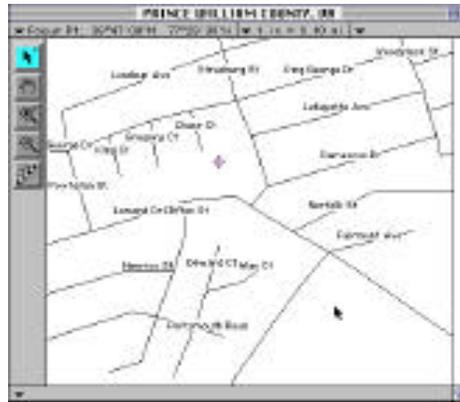
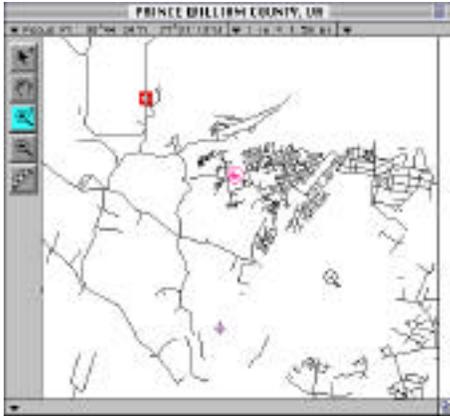


16. Click OK to exit the Layer Scale Ranges dialog box, and then click OK to exit the Layer List dialog box. Notice that the roads are no longer displayed. Let's zoom in closer using the magnifying glass tool, . Click on this tool and then, with the magnifying glass, click about in the center of the county. This causes the view to zoom in by a factor of 2, centered on the point of your click. Note that the number of miles per inch has been cut in half. (Note: You may find that after zooming the Places layer containing the county and cities is hidden.)

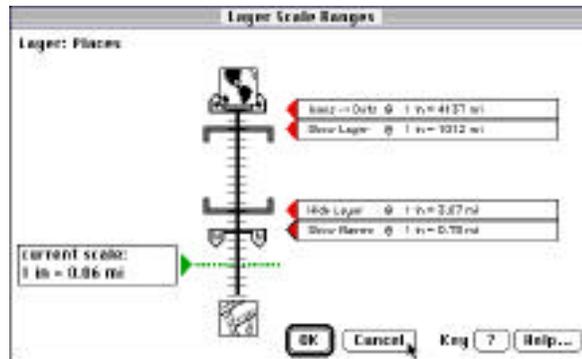


17. The roads still do not display because, as we saw in the Layer Scale Ranges dialog box, they are set to show only when we are zoomed in to at least 1 inch = 2 miles. Click one more time with the magnifying glass, again around the center of the map window. Now the roads appear because we have zoomed in past the

threshold scale. If we continue to zoom in with the magnifying glass tool, we can reach the scale at which the names of the roads appear. (Note: Depending on the settings in your copy of MARPLOT, you may have to zoom in a bit farther to see the road names.)



18. You may also have noticed that, as we were zooming in, the cities and towns disappeared. That is because the Places layer, like the Roads layer, is currently in Range mode, and the Places are set to turn off when we zoom in past a certain scale. To see this, return to the Layer List dialog box, highlight the Places layer and click on the Scale Ranges button.



19. Since it's true for most layers that you'll only want to see them within a certain range of scales, it is common for most of the layers to be set to Range mode. There are some exceptions. For instance, there may be relatively few objects on certain layers, such as the CAMEO layers. Since these layers draw very quickly, you might want to leave them always in Show mode. On the other hand, consider the Census Block Groups layer. This layer contains a large number of polygons that take a while to draw. It's not that you want them to show only when you are zoomed in close. Rather, you will probably want to keep them in Hide mode until you need them, set them to Show mode while you work with them, and then set them back to Hide mode.

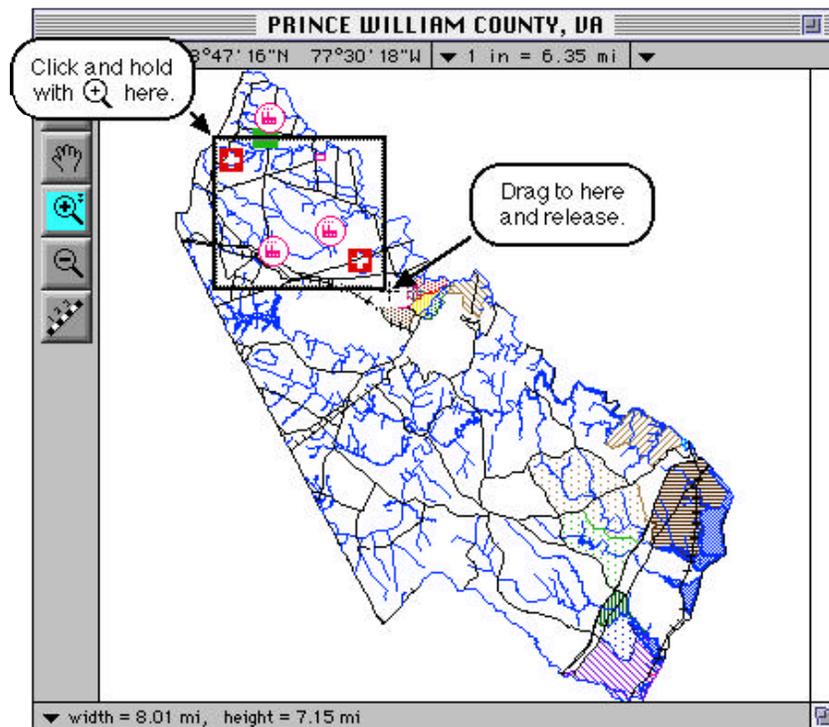
20. For now, let's set all of the TIGER-derived layers except for the Census Block Groups layer back to Range mode. As you do so, you may want to click on the Scale Ranges button to see the range setting for some of the other layers. Then use the Go to View dialog box to return to the <entire map> view for Prince William County.





Navigation and Views

21. In the preceding steps, we've already seen two ways to navigate around the map: the Go to View dialog box, and the plus magnifying glass tool. You may have guessed that the minus magnifying glass tool — is used to zoom out, also by a factor of 2. Two other tools along the left edge of the map window are also used for changing the view. The hand tool — is used to shift the map view without changing the scale. The plus magnifying glass tool — can also be used to zoom into a particular rectangular area. Select the plus magnifying glass tool now by clicking on it. With the entire Prince William County map in view, notice the two hospitals objects (red crosses) among the CAMEO objects. Let's zoom into an area just big enough to show both hospitals. Click with the magnifying glass above and to the left of the top hospital. With the mouse button still down, drag below and to the right of the bottom hospital. A gray box defines the region as you drag. When you have just surrounded both hospitals, release the mouse button. MARPLOT changes the view to show the area defined by the rectangle.

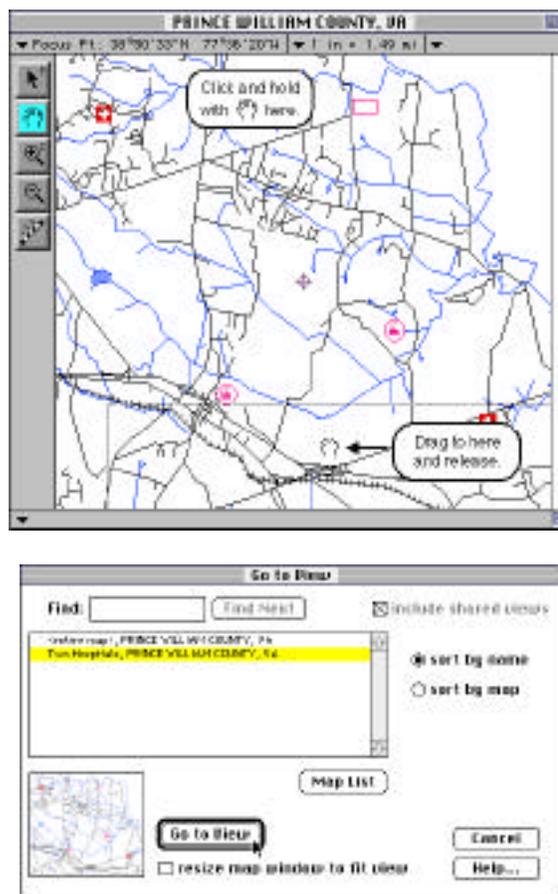


Note: If you make a mistake using the magnifying tool, you can always return to the last view using the Go to Previous View item in the View menu. Also, if you start defining the rectangle and then decide you don't want to zoom after all, you can press the ESC key while the mouse is still down to abort the zoom.

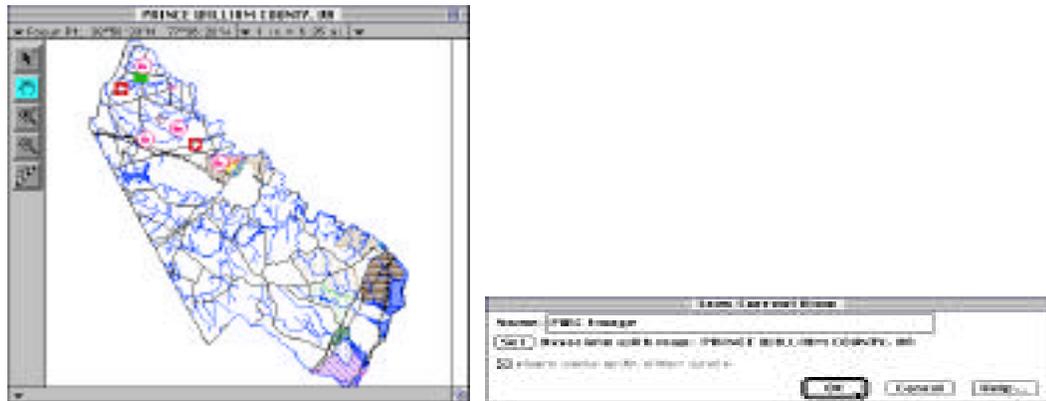
22. The new map window now displays the selected area. We can save this view for future reference. Select the Save Current View item from the View menu. Name the view “Two Hospitals” and click OK.



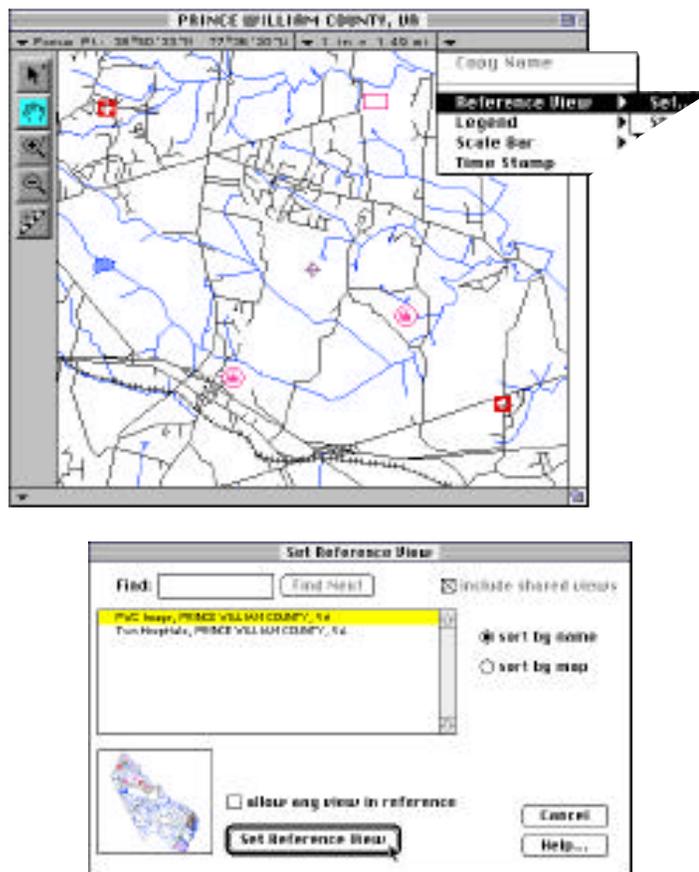
23. To show how the view is used, use the hand tool to shift the map view. To do this, click with the hand tool near the top of the view, drag down to the bottom of the window and then release the mouse button. This shifts the view to the north. Now select the Go to View item in the View menu, highlight the Two Hospitals view, and click Go to View. You are returned to the saved view.



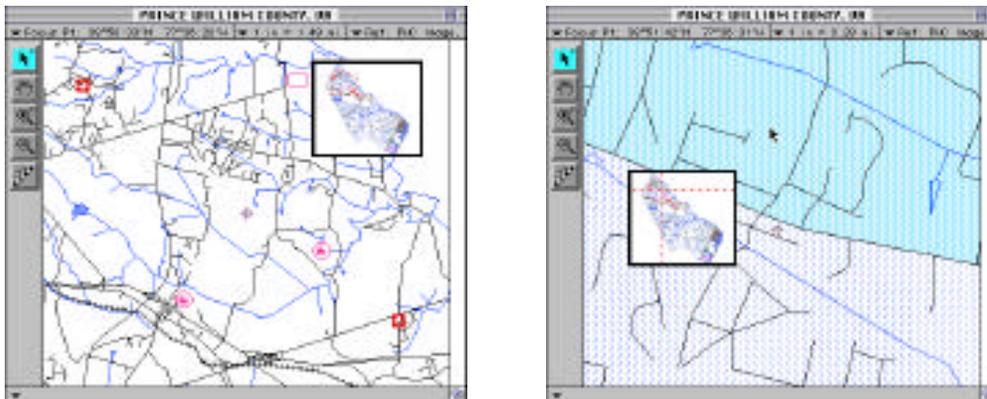
24. Use the Go to View dialog box again to return to the <entire map> view of Prince William County. Let's save this view also, using Save Current View. Let's name it PWC Image.



25. Another use for saved views is as a reference view. To see how reference views work, return to the Two Hospitals view again using Go to View. Then click on the triangle in the upper-right corner of the map window, go to the Reference View submenu, and choose Set. Select the PWC Image view, leave the "allow any view in reference" box unchecked, and click Set Reference View.

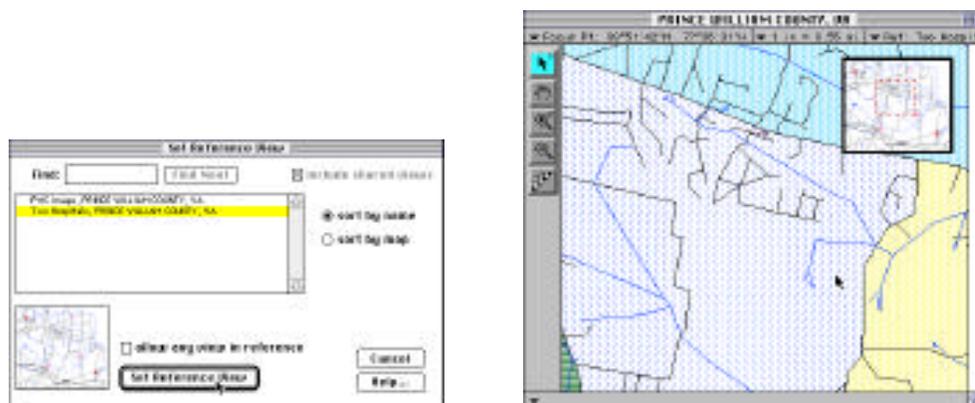


26. The reference view, showing the PWC Image, appears in the upper-right corner of the map window. The reference view shows the location of the current view in the map window relative to some other view. In this case, we see the area of the Two Hospitals view relative to the entire area of Prince William County. The flashing red box indicates the shown area.



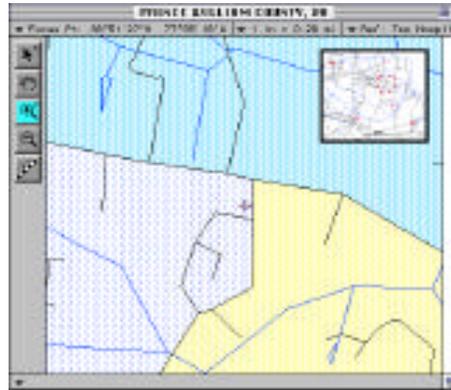
27. Use hand and magnifying glass tools to move all around the map. Notice how the flashing rectangle in the reference view follows you. Zoom in as far as you can go. Notice that, when the flashing rectangle gets too small, it is replaced by a cross-hairs, pinpointing your location. You can double-click at a point on the reference view to view that area. Try double-clicking a few times on the reference view. Also, by clicking once and dragging on the reference view rectangle, you can reposition it in the map window.

28. Let's try one more experiment with the reference view. Return to the Two Hospitals view using Go to View. Click once with the plus magnifying glass in the center of the map window. Now set the reference view again, this time choose the Two Hospitals view as the reference view (again, leave the "allow any view in reference" box unchecked). As we saw before when using PWC Image as the reference view, here the Two Hospitals is serving as a reference view and the flashing rectangle shows the area of the current map window relative to it.



29. This time, however, notice what happens when you use the minus magnifying glass to zoom out two times. As soon as the view in the map window

no longer fits within the Two Hospitals reference, MARPLOT automatically changes the reference view to the PWC Image. If you then zoom back into an area within the Two Hospitals view, MARPLOT automatically changes the reference view back to the Two Hospitals view. These automatic changes happen because we had the “allow any view in reference” box unchecked when we set the reference view. When this box is checked, MARPLOT allows a view to stay in the reference view, even when the current map view does not fall completely inside of it.



30. When you have saved a view and are sure you no longer want to work with it, you can delete it using the Edit Views item in the View menu. Select Edit Views now and delete both the Two Hospitals view and the PWC Image view. Click OK. Notice that the reference view is closed automatically because we deleted the view it was using.



Searching for Cities and Roads

31. One of the most common operations you will perform in MARPLOT is searching for an object, often for an address range or intersection of a certain road. Another common search, if you are working in a large county, is to find a certain city or town within the county. Let's search for a town within Prince William County. Bring up the Search Criteria dialog box by selecting Search from the List menu.



32. Click on the pop-up box after the label “Search for objects that:” and select “have any name.” After “Layer(s) to search:” choose “Individual Layer...” in the first pop-up box and “Places” in the second pop-up box. After “Map(s) to search:” choose “Maps in View” and leave the final pop-up box set to “replace previous collection.” Then click the Search button.



33. MARPLOT performs the search, and puts all of the objects that match the specified criteria into the Search Collection. In this case, we found all of the objects on the Places layer of the Prince William County map. The Places layer contains one polygon object representing each city or town in the county, plus a single polygon object representing the boundary of the entire county.

34. Find “Dumfries town” in the list and click on its name to highlight it. Click the Show on Map & Zoom button. This causes MARPLOT to change the view so that Dumfries town just fits into the map window.



35. You may recall from earlier in this guided tour that the Places layer was set to Range mode, and normally the Places would not be visible at this new scale where Dumfries town fills the map window. However, since we asked MARPLOT to show Dumfries town on the map, it automatically changed the Places layer to Show mode. Let's go back to the Layer List and set the Places layer back to Range mode.



36. Now we see the same area without the Places polygons cluttering the view. There is a street in Dumfries town named “Fairfax St.” Let’s use the Search function to find this street. In the Search Criteria dialog box, search for objects that “have names that start with.” Type the letters “fair” in the box that appears in the upper-right. Search on the “Individual Layer” named “Roads.” Again, search on “Maps in View” and choose “replace previous collection.” Click Search.



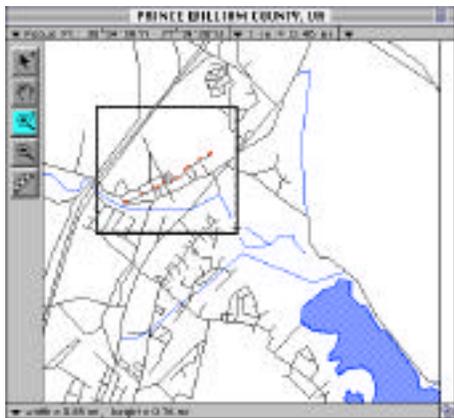
37. Again, the Search Collection dialog box comes up with the results of the search. Highlight “Fairfax St” and click Show on Map (we do not use Show on Map & Zoom this time because we don’t want to change the viewing scale; if we had used Show on Map & Zoom, MARPLOT would have changed the view to show just the area covered by Fairfax St in the map window).



38. MARPLOT highlights Fairfax St on the map with red dots and shows its name at the bottom of the map window. It also puts the Focus Point at the center of the street.



39. Use the plus magnifying glass tool to zoom into an area that shows just Fairfax St, plus a little extra space for borders.

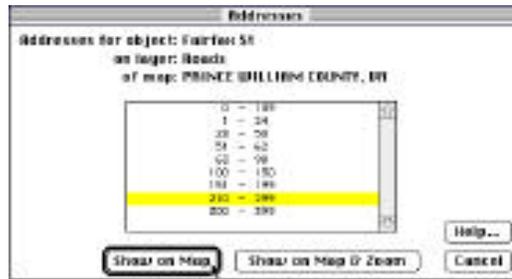


40. Suppose we want to know where the address 250 Fairfax can be found. Go back to the Search Collection using the Show Search Collection item in the List menu. With "Fairfax St" highlighted, click on the Addresses button.



41. MARPLOT displays the list of address ranges for Fairfax St. In this case, we see that there is an error in the TIGER data: the bogus address range 0-109. The

example in section 5.1 shows how you can correct this type of data error. For now, we are looking for address 250, which falls within the range 210-299. Highlight this range in the list and click Show on Map.



42. MARPLOT shows the location of the address range by positioning the Focus Point at the center of the segment that corresponds to the selected range.



43. Now suppose we want to find the intersection of Fairfax St and Duke St. Again, bring up the Search Collection using the Show Search Collection item in the List menu. With Fairfax St highlighted, click on the Intersections button.



44. MARPLOT lists all of the streets with which Fairfax St intersects. Highlight Duke St in the list and click Show on Map (Show on Map & Zoom would change the scale to an appropriate scale for viewing the intersection, but in this case we are already at such a scale).



45. MARPLOT selects both Fairfax St and Duke St, and puts the Focus Point at their intersection.



46. This concludes the MARPLOT guided tour. If other people will be taking this tour using this MARPLOT system, please use the Go to View dialog box now to return to the <entire map> view for Prince William County. Then exit from MARPLOT. You can find more step-by-step examples of using MARPLOT in Chapter 5.