# Chapter 4 Building a Digital Map

So far, you have been provided with the appropriate data files for cities such as Kathmandu, Kirtipur, so you could start working with a GIS without worrying about other issues. However, in practice, geographic data comes in different formats. This chapter introduces you to some of them, then helps you to put these diverse formats together to make an even more powerful map.

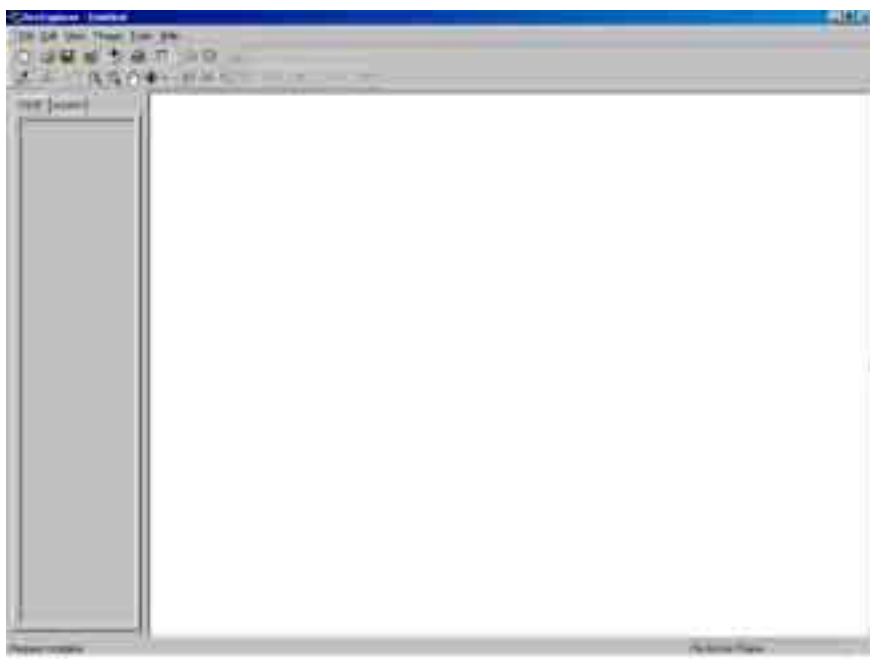
## Exploration 9–Make a map of Kathmandu from digital data

Your new boss from the USA is coming to Kathmandu to work at ICIMOD. You have to find a place for him to live. Your new boss wants a house that is close to ICIMOD, not located in a highly air-polluted zone, and near to a hospital. After he arrives in Kathmandu, you have to present him with a map, so that he can decide where to stay.

You have several shape files such as location of ICIMOD, highways, major roads, city roads, hospitals and rivers. You have a satellite image that will make an interesting background. You also have an Arc/Info coverage of air pollution zones.

### Step 1

Start ArcExplorer, if necessary.



You see a blank map view and a blank legend.

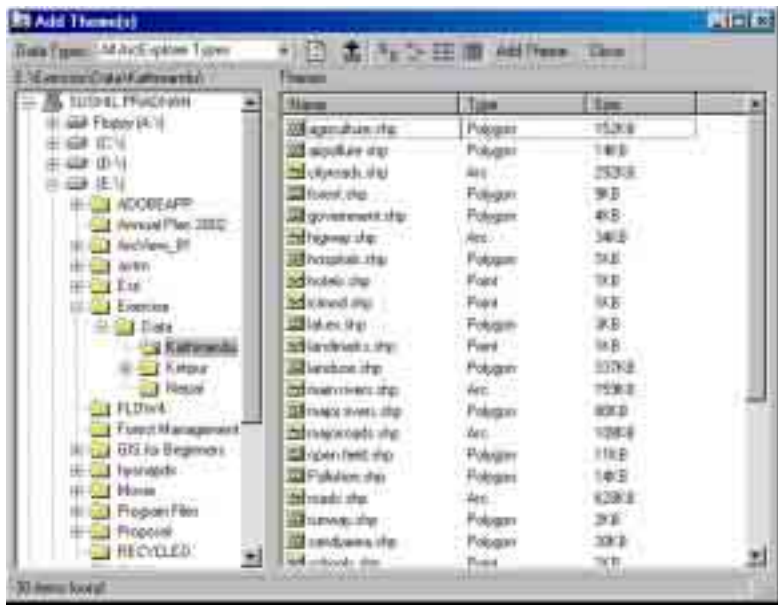
### Step 2

Click the Add Theme button. The Add Theme(s) dialogue box is displayed.

In this box, there are two windows. On the left is a list of all the drives and directories on your computer. This is where you find your data.

### Step 3

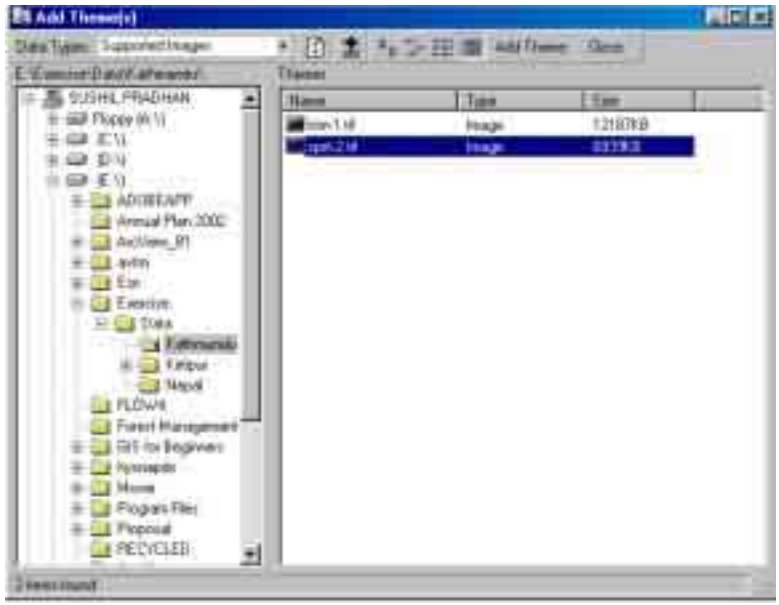
On the left side of the dialogue box, find your local drive where the data is stored. Then go to the *GIS Basics\Exercise\Data\Kathmandu* directory.




When you open the folder, you will see several themes with different formats listed in the right window. At the top of the box, in the Data Types window, All Arc Explorer Types is the default choice. For this selection, the right window shows shape files or image files.

### Step 4

Using the Data Types pull-down menu, choose Supported Images.



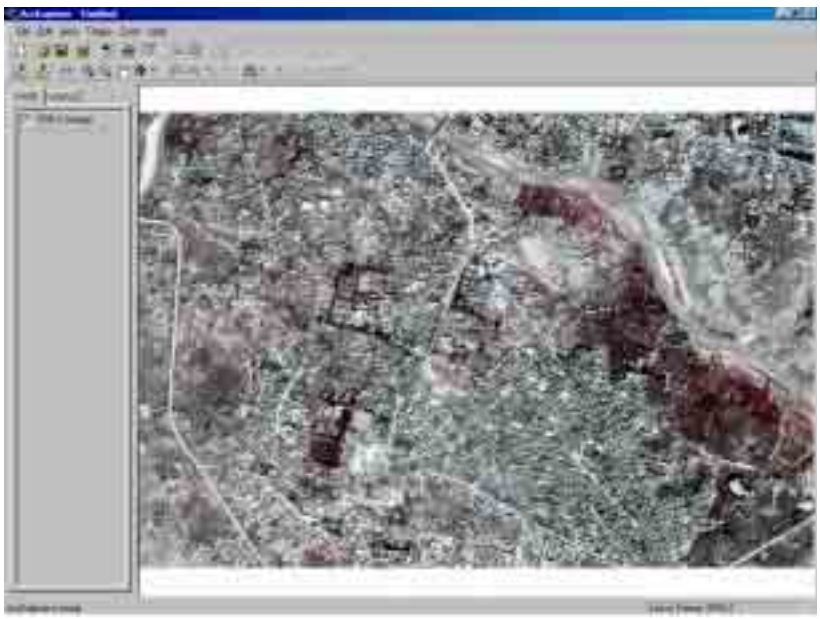
You see an image called spin-2.tif listed. You will add this image to the map view.

### Step 5

Click on the file name spin-2.tif. Click Add Theme, then click Close. The theme is added to the legend as SPIN-2 (IMAGE).

### Step 6

Turn on the theme SPIN-2.



Now you will add your shape files to the map view.

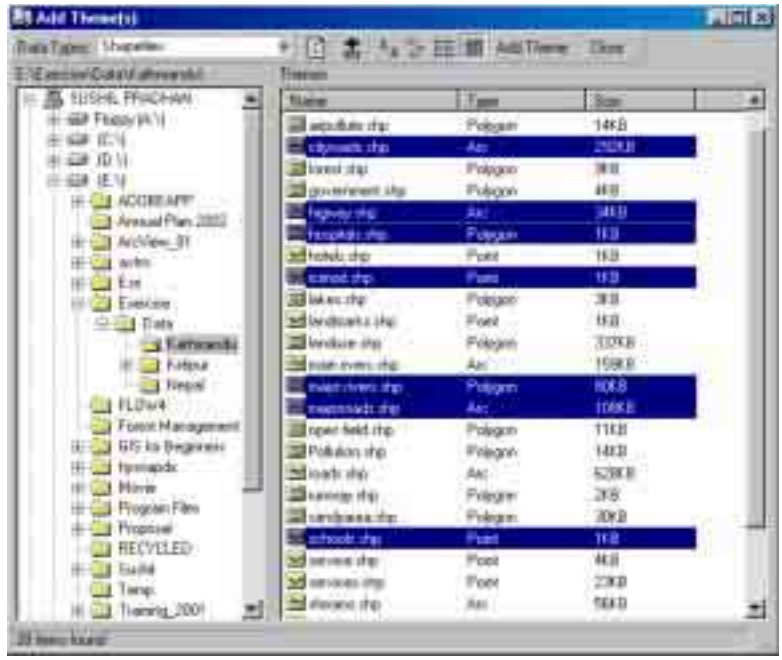
### Step 7

Click the Add Theme button. In the Add Theme dialogue box, choose Shapefiles as the data type.

Only shape files appear in the Theme list.

### Step 8

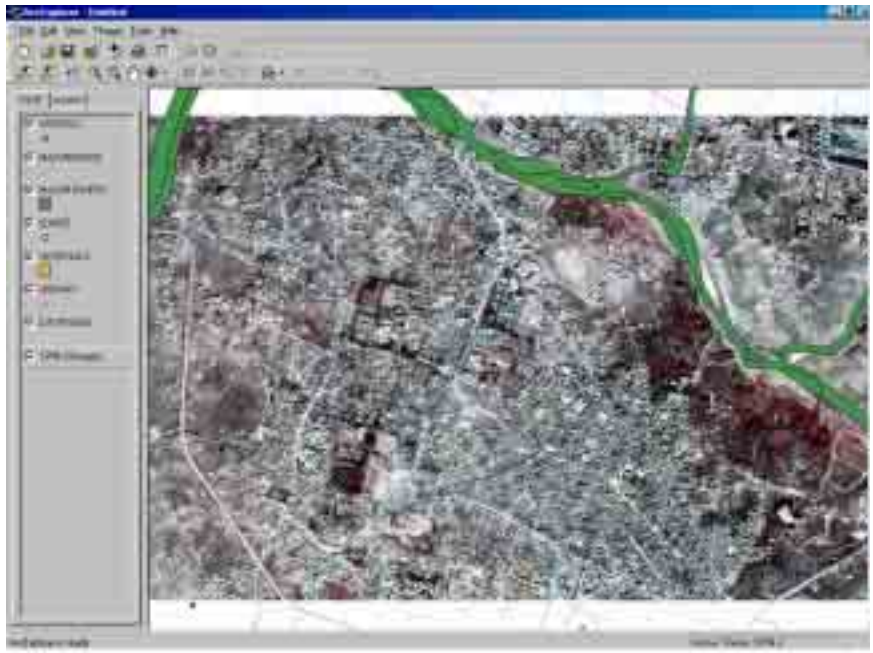
Click on highway.shp and Add Theme. To add more than one theme at a time, hold down the control key, click on cityroads.shp, majorroads.shp, major rivers.shp, icimod.shp and hospitals.shp. Then click Add Theme.



All the selected themes will be added to the legend. Then click Close in the Add Theme dialogue box.

### Step 9

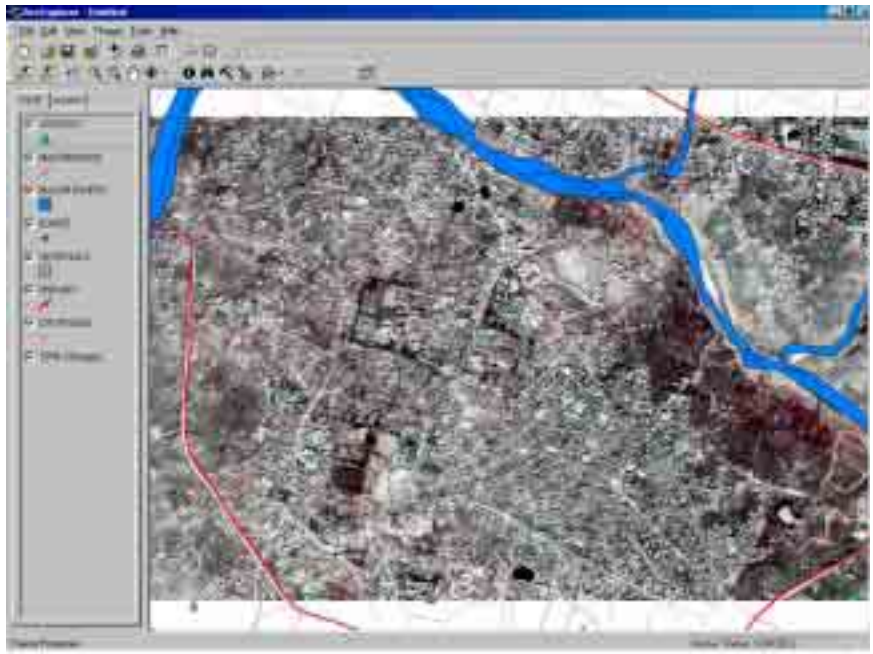
Turn on all new themes in the legend.



Since ArcExplorer assigns random colours to the new themes, you may need to assign more appropriate colours.

### Step 10

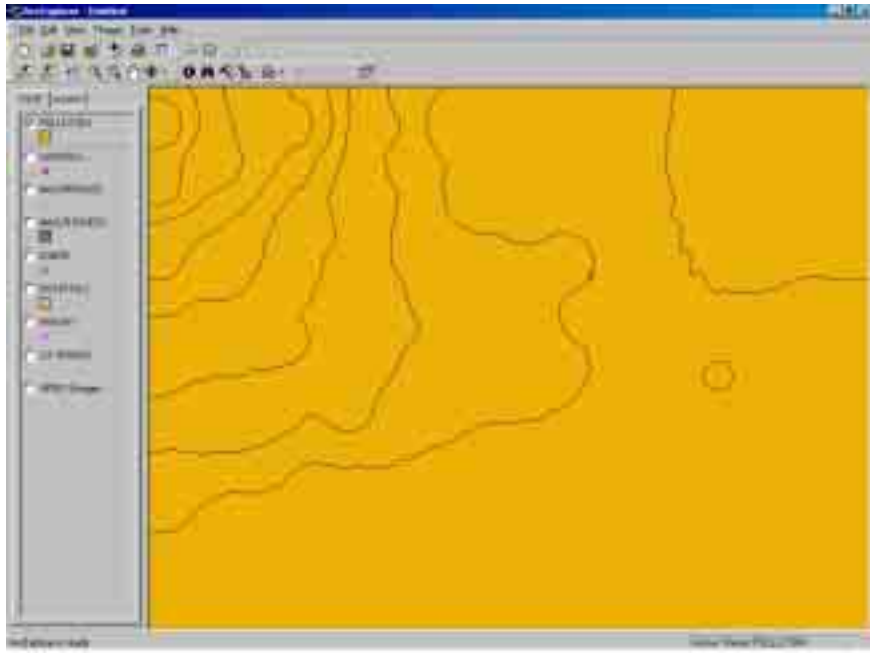
Use Theme Properties in turn for each theme to assign appropriate colours and symbols as shown below.



Your map looks better. All that you need now is the air pollution zone.

### Step 11

Use the Add Theme button to add the Pollution.shp. Then turn on the POLLUTION theme.



ArcExplorer displays the themes in the order they appear in the legend from bottom to top. Since the POLLUTION theme is on top of the list, it covers all the other themes. You will move it down the list.

### Step 12

Click on the name of the POLLUTION theme in the legend and, holding down the mouse button, drag the mouse pointer until it is above the SPIN-2 (Image), then release the mouse button.

Now you will need to symbolise the POLLUTION theme to show polluted zones.

### Step 13

Make the POLLUTION theme active. Click the Theme Properties button.

In the Theme Properties dialogue box, select Unique Values under Classification Options. Select Zone as the field.

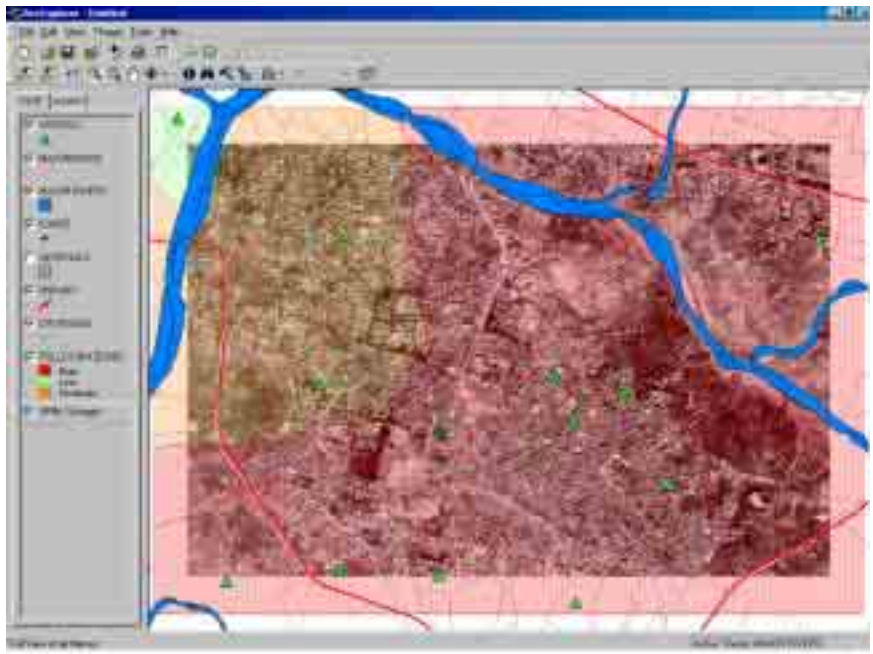
You see that ArcExplorer automatically assigned a random colour to each unique classification—high, moderate, low.

## Step 14

Under discrete values and symbols, click on the colour box next to 'High'. In the Symbol Properties dialogue box, select dark red for both the colour and outline colour, and Light Gray Fill as the style. Click OK.

## Step 15

Similarly select light orange and light green for 'Moderate' and 'Low' for both the colour and outline colour. Choose Light Gray Fill as the style for both 'Low' and 'Moderate'.



Your map view looks great. With this map, your new boss can decide where to stay. Now go ahead and explore your map. Use the pan and zoom to have a closer look.