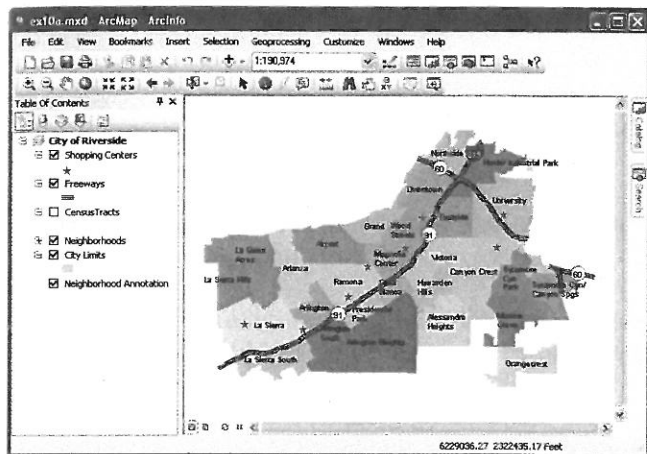


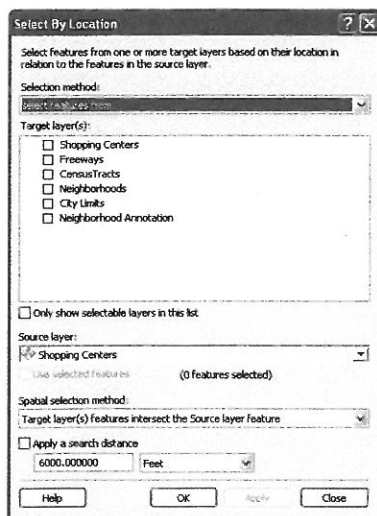
- 1 Start ArcMap. In the ArcMap—Getting Started dialog box, under the Existing Maps section, click Browse for more. (If ArcMap is already running, click the File menu and click Open.) Navigate to **C:\ESRIPress\GTKArcGIS\Chapter10**. Click **ex10a.mxd** and click Open.



The map extent is the city limits of Riverside. Layers include neighborhoods, freeways, and shopping centers.

First, you'll select neighborhoods near freeways.

- 2 Click the Selection menu and click Select By Location.



By default, the selection method is "select features from." Use this whenever you want to create a new selected set.

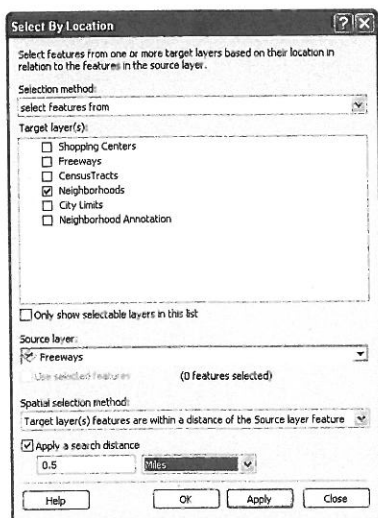
- 3 In the box of layers, check Neighborhoods.
- 4 In the list of Source layers, click the drop-down arrow and click Freeways.
- 5 In the list of Spatial selection methods, click the drop-down arrow and click "Target layer(s) features are within a distance of the Source layer feature."

The check box to apply a search distance to the features is checked. This search distance (not drawn on the map) defines the distance around freeways within which features will be selected.

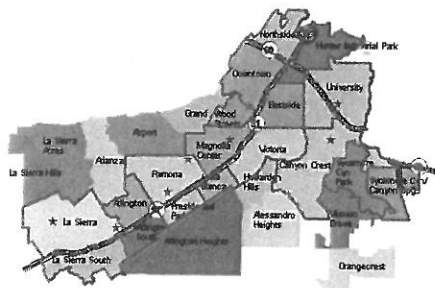
- 6 Replace the current distance value with **0.5**. Click the distance units drop-down arrow and click Miles.

You have specified that you want to select all neighborhoods within half a mile of a freeway. A neighborhood will be selected if any part of it is within this distance.

- 7 Make sure your dialog box matches the following graphic, then click Apply and move it away from the map.



The neighborhoods are selected on the map.

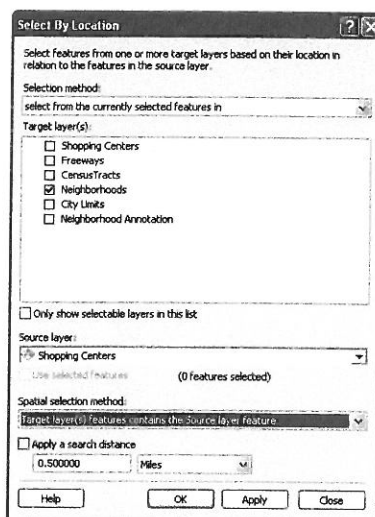


Now you'll refine the selection by choosing those neighborhoods from the currently selected set that also contain a shopping center.

- 8 In the Select By Location dialog box, click the selection method drop-down arrow (the one at the top) and click "select from the currently selected features in." In the layers box, leave Neighborhoods checked.
- 9 In the drop-down list of layers, click Shopping Centers.
- 10 In the list of Spatial selection methods, click the drop-down arrow and click "Target layer(s) features contains the Source layer feature." Leave the check box Apply for search distance unchecked.

ArcMap will examine the selected neighborhoods to see which ones contain a shopping center. Those that do will remain selected; those that don't will be unselected.

- 11 Make sure your dialog box matches the following graphic. Click Apply, then click Close.



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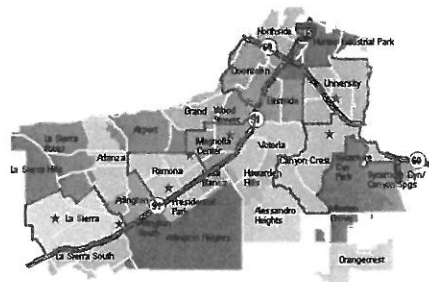
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[illegible]

Six neighborhoods meet your criteria. In the next exercise, you'll narrow the search further by looking for the affluent ones.

- 12 If you want to save your work, click the File menu and click Save As. Navigate to `\GTKArcGIS\Chapter10\MyData`. Rename the file `my_ex10a.mxd` and click Save.
- 13 If you are continuing with the next exercise, leave ArcMap open. Otherwise, exit the application. Click No if prompted to save your changes.

- 2** In the table of contents, turn on the Census Tracts layer.



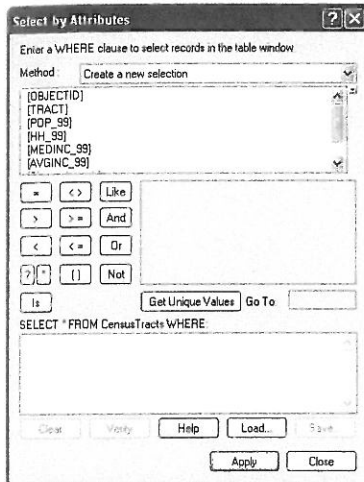
Thin light lines outline the census tracts. Some tracts cross neighborhood boundaries and some neighborhoods include more than one tract.

- 3** In the table of contents, right-click the Census Tracts layer and click Open Attribute Table.

Table									
CensusTracts									
	OBJECTID *	Shape *	TRACT	POP_99	HH_99	MEDINC_99	AVGHC_99	Shape_Length	Shape_Area
1	Polygon	06065042300	6,778	2,213	\$35,122.00	\$39,063.00	40716.688832	21223272.178006	
2	Polygon	06065030100	7,574	2,332	\$37,158.00	\$41,377.00	34609.158488	47805294.841587	
3	Polygon	06065042203	11,756	5,427	\$22,372.00	\$27,404.00	47968.772721	77029688.539122	
4	Polygon	06065042204	14,090	4,663	\$53,257.00	\$63,986.00	17544.504765	9893963.229287	
5	Polygon	06065042204	14,090	4,663	\$53,257.00	\$63,986.00	43066.162108	49341412.147733	
6	Polygon	06065042204	14,090	4,663	\$53,257.00	\$63,986.00	15179.959301	1065123.183422	
7	Polygon	06065030200	5,505	2,166	\$33,981.00	\$57,869.00	52138.381742	58006433.917904	
8	Polygon	06065040200	13,803	4,249	\$33,405.00	\$39,474.00	12619.789946	3904301.958263	
9	Polygon	06065030500	11,428	3,149	\$26,193.00	\$38,979.00	36024.297831	46255465.622958	
10	Polygon	06065030300	6,789	2,014	\$21,152.00	\$26,811.00	29292.194688	28809584.560391	
11	Polygon	06065030400	7,140	1,811	\$26,405.00	\$34,768.00	23817.855922	29532904.58809	
12	Polygon	06065042202	2,592	359	\$22,356.00	\$30,414.00	36706.353913	47895598.659127	
13	Polygon	06065030700	6,148	2,425	\$39,208.00	\$45,690.00	23237.445678	26653424.253939	

You'll use the number of households (HH_99) and the average household income (AVGINC_99) as criteria for locating your business.

- 4 At the top of the table, click the Table Options menu and click Select By Attributes.

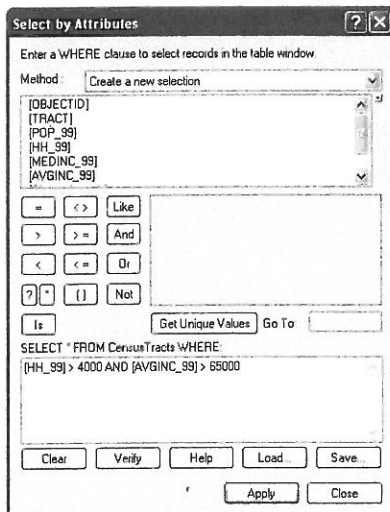


The Method drop-down list is set to Create a new selection, which is what you want.

- 5 In the Fields box, double-click [HH_99]. Click the > (Greater Than) button. Press the space bar and type **4000**. Click the And button. In the Fields box, double-click [AVGINC_99]. Click the > button. Press the space bar and type **65000**.

Your expression will select census tracts with more than four thousand households and where the average yearly income is over \$65,000.

- 6 Make sure your dialog box matches the following graphic, then click Apply. Close the attribute table. The Select by Attributes dialog box closes with it.



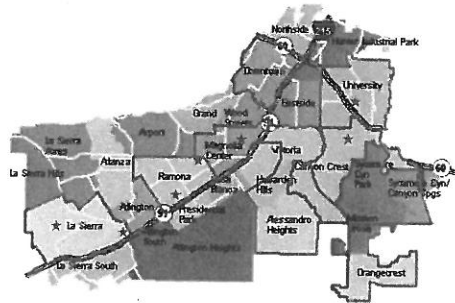
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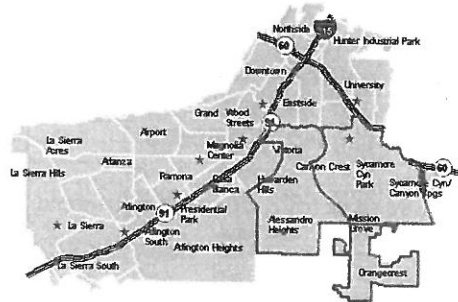
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In the display, three census tracts are selected.



It's hard to pick out the selected tracts because they are highlighted in the same color as the neighborhoods.

- 7 In the table of contents, turn off the Neighborhoods layer.

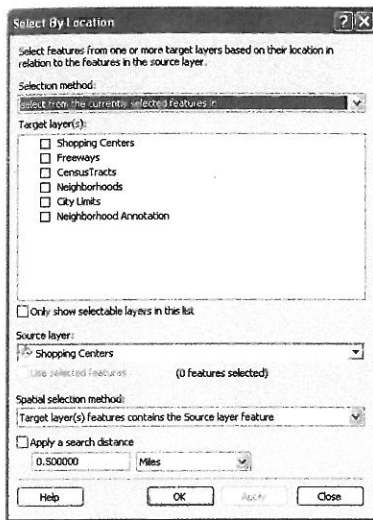


The three tracts are located in the southeastern part of the city.

- 8 In the table of contents, turn the Neighborhoods layer back on.

You'll use the selected census tracts to select the neighborhoods they overlap.

- 9 Click the Selection menu and click Select By Location.



- 10 If necessary, click the selection method drop-down arrow and click "select from the currently selected features in."
- 11 In the Target layer(s) box, check the Neighborhoods check box.
- 12 In the list of Source layers, click the drop-down arrow and click Census Tracts.
- 13 In the list of Spatial selection methods, click the drop-down arrow and click "Target layer(s) features have their centroid in the Source layer feature."

Neighborhoods with centers in one of the selected census tracts will be selected. This method will find those neighborhoods that substantially overlap the selected census tracts (and therefore substantially share their demographic characteristics).

Underneath the Source layer drop-down list, the check box to use selected features is checked. This means that only the three selected features in the Census Tracts layer will be used in the spatial selection.

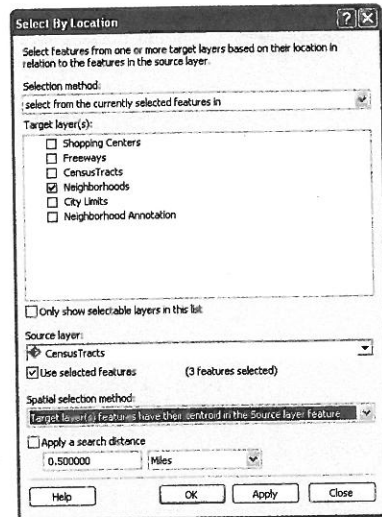
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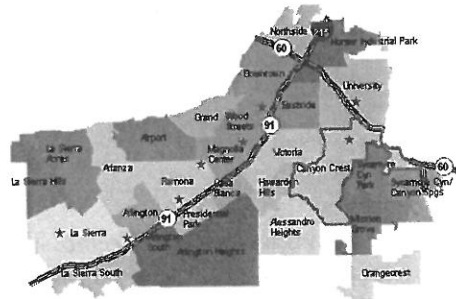
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- 14 Make sure your dialog box matches the following graphic, then click Apply. When the selection is finished, click Close.



- 15 In the table of contents, turn off the Census Tracts layer.



A single neighborhood, Canyon Crest, is selected. It is populous, affluent, contains a major shopping center, and is close to a freeway.