

ArcGIS® 9

Using Territory Design for ArcGIS



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About Territory Design for ArcGIS

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IN THIS CHAPTER

- **Introduction to Territory Design for ArcGIS**
- **Creating, balancing, and managing territories**
- **Getting additional help for Territory Design for ArcGIS**

Welcome to ESRI® Territory Design for ArcGIS®. By using your own custom boundaries or utilizing the geography layers within ArcGIS Business Analyst you can create, edit, and balance your sales regions, services areas, or franchise networks to benefit your business. Territory Design works with ArcGIS Desktop to create powerful yet easy-to-use software.

Territory Design represents the latest major product enhancement from earlier versions of ArcGIS Business Analyst. In addition to the familiar wizards for analyzing data for stores, customers, and trade areas in Business Analyst, Territory Design is also wizard driven, providing an easy-to-use suite of tools to create and manage your territories.

Introduction to Territory Design for ArcGIS

Territory Design for ArcGIS offers an easy way to increase sales force productivity by designing, analyzing and managing geographic territories such as sales territories, franchise territories, distribution networks or services areas. Since territories are naturally geographic by design, utilizing this tool allows you to look at how your current territories are distributed. This capability is vital for revealing existing physical gaps in your distribution network, areas where your sales are saturating a market, and areas where your sales and customers are deficient. Once a sales manager identifies these areas, the next logical step is to fix the problem to increase sales and customer distribution. Territory Design offers several tools to import, create, manage, and balance territories:

Creating New Territories

- Based on a set of points to seed the territory creation
- Based on an existing database of territory assignments
- Can be performed manually

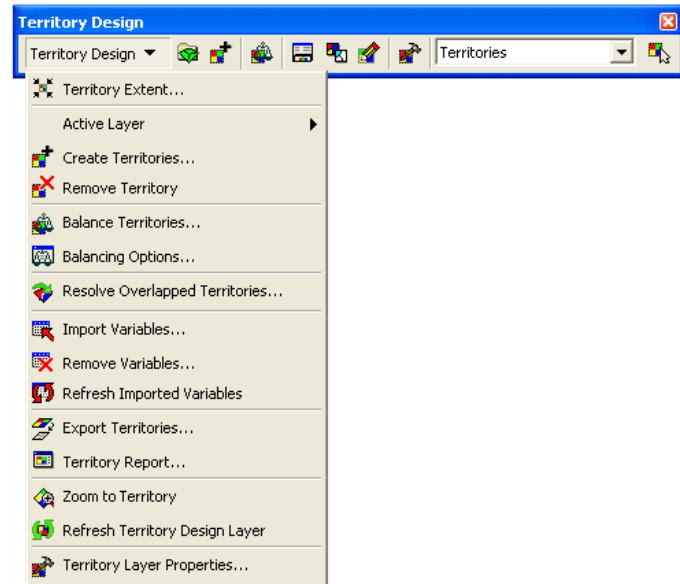
Balancing Territories

- Based on customer data
- Based on existing geographic/territory data, as well as any data included with the Business Analyst extension
- Based on distance

Managing Territories

- Importing and viewing existing territories
- Adding/removing territories or any associated attributes
- Organizing and creating hierarchies for territories
- Benchmarking sales territories against demographics

Territory Design toolbar



Creating New Territories

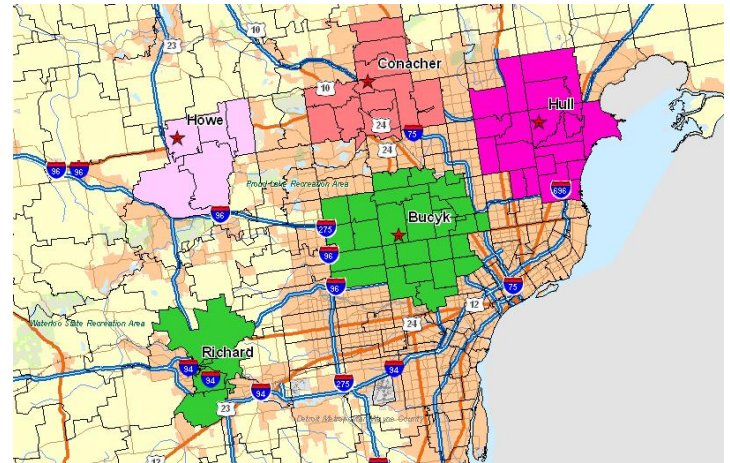
Territories are collections of geographic elements that are aggregated to create a larger unit. For example, a set of ZIP Codes around a service center can make up a territory for that service center. Collections of these territories can then further be summarized to create regions, districts, and the like. Territory Design lets you import, create, and define as many levels of territory hierarchy as you want.

Territory Design includes a suite of tools to create and optimize territories. You can import an existing territory assignment database and manually work with the Territory Design tools to adjust and balance the territory assignments. Territory Design includes a number of visualization windows (charts, data, and statistics) where you can view the impact of reassigning an element from one territory to another.

Territory Design includes a set of tools for automatically balancing your territories. You can also create a set of territories from scratch and optimize the territory distribution based on your own sales data or any attributes that are provided with the Business Analyst extension.

During the process of creating new territories you have several options to view your sales territories. Say, for example, that you have been tasked with streamlining the budget resources of your division and the first step is to increase your margins and customer base. The first part of this task is understanding where your sales and customers are coming from and making sure your sales force is appropriately distributed across your service area. Many sales managers have only seen their sales numbers associated with regions in spreadsheets and have never actually visualized them. When creating new territories, you can import in databases of sales and visualize your market. In the example on this page, you can see a breakdown of sales territories by ZIP Code with seed points that represent sales representatives. This map illustrates how the existing sales territories have large gaps

between sales staff. In a market where your objective is to have complete coverage and no cannibalization, it is imperative to understand where your strengths and weaknesses are by visualizing your database of sales territories.



A map showing sales territories with large gaps between territories assigned to each office.

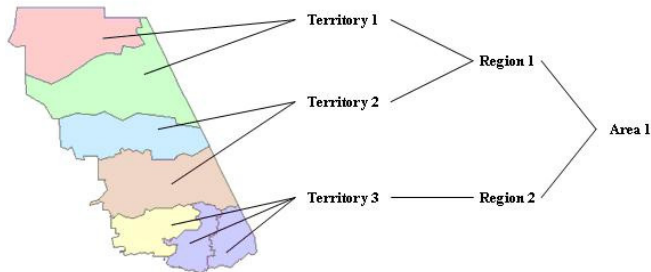
Managing Territories

Territory Design includes many tools to manage your territories from adding or removing variables in the balancing process to exporting your database with your newly balanced territories to organizing your territories in hierarchies so you can better understand your market. Analyzing your territories starts first with analyzing the markets your territories fall within, and this can be displayed by creating higher levels of territories that collapse down into your sales territories. These higher levels of territories are typically used to further define your sales territories, and is beneficial to see and analyze these distributions as well.

In the graphic below, Area represents your total market, each Region represents a sales manager, and Territory represents the territories your individual sales managers are responsible for.

With these hierarchies, you can a broader view of your market and your regions to better determine how to increase the marketability of your products. One easy way to do this is to

export your regions as trade areas and analyze their demographics in Business Analyst using its multitude of built-in tools. With the trade area analysis tools in Business Analyst, you can run demographic reports to compare and contrast your sales against the base demographics in those areas such as household counts, median household income, adult population, etc, and create correlations between your sales output and the customer base and sales potential in your market.



Getting additional help for Territory Design for ArcGIS

What to read next

To begin learning about how to use Territory Design, proceed to Chapter 2, “Tutorial”. This section gives a step-by-step walk-through of the process of creating, balancing, and analyzing territories using the sample data provided.

For a detailed look at all the functionality of Territory Design proceed to chapter 3, “Using the Territory Design toolbar”. In this chapter, you be introduced to all the functionality and tools associated with Territory Design.

ArcGIS Desktop Help

ArcGIS Desktop Help is available for Territory Design by pressing F1 or clicking the Help menu, clicking Extensions, clicking Business Analyst, then clicking Territory Design.

Getting help online

To browse the contents of ArcGIS Help Online, click the Help menu and click ArcGIS Desktop Help Online. On this page you can access the help by clicking the Extensions drop-down, clicking Business Analyst, then clicking Territory Design. You can also click the Business Analyst link under ArcGIS Extensions and click Territory Design.

Visit the online ESRI Knowledge Base for access to Business Analyst and Territory Design related product documentation, white papers, and system requirements at <http://support.esri.com/knowledgebase>.

Visit the online ESRI User Forums to share ideas and findings with other users at <http://support.esri.com/forums>.

Getting technical support from ESRI

Please see the product registration and support card that came with Business Analyst, or look at the ESRI Online Support Center section of ArcGIS Help Online.

ESRI training and education

ESRI provides educational opportunities related to geographic information science, GIS applications, and technology. You can choose among instructor-led courses, Web-based courses, and self-study workbooks to find education solutions that fit your learning style. For more information, go to www.esri.com/education.

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Find out everything you want to know about ESRI software and services. Visit ESRI’s Web site at www.esri.com.

Tutorial

2

IN THIS CHAPTER

- **Exercise 1: Creating a territory layer**
- **Exercise 2: Creating and balancing territories**
- **Exercise 3: Reassigning territories and creating a territory report**

Welcome to the Territory Design for ArcGIS tutorial. This chapter takes you through the process of creating, balancing, and analyzing territories. When you install ArcGIS Business Analyst, the Territory Design toolbar is also installed. You will find sample data for this tutorial at `\ArcGIS\Business Analyst\Datasets\Tutorial\sales_locations.shp`.

In this tutorial, you're the VP of Metro Landscape, a major residential landscape services firm in the Detroit, Michigan area. Your business is rapidly growing, and you are in charge of overseeing the management of each of the five branch locations. With the growing business and increasing area population, problems have surfaced such as overlapping crews, uneven sales at each office, and a decline of new contracts. Your goal is to work with each of the five office managers to create new territories that will define boundaries for sales and marketing efforts and establish consistent service areas. Territory Design for ArcGIS can help you:

- Determine your market area.
- Locate your offices.
- Create and balance sales territories for each branch.

Here's a chance to use Territory Design for ArcGIS as part of your business solution.

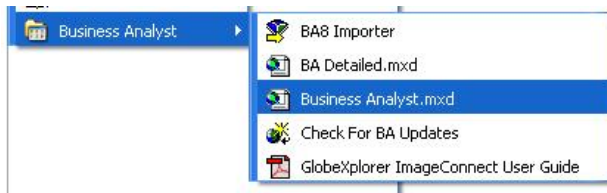
Exercise 1: Creating a territory Layer

Having an alignment layer is the foundation to creating territories. An alignment layer is a set of geographic boundaries, such as census tracts, ZIP Codes, or counties, commonly containing demographic information. Business Analyst provides many different levels of alignment layers for use in Territory Design, but you can also bring in your own data. With an alignment layer selected, a territory layer can be created in ArcMap.

In this exercise, you will zoom to an area and create a territory layer.

Getting started

1. Click Start, point to All Programs, point to ArcGIS, point to Business Analyst, then click Business Analyst.mxd.
2. ArcMap starts, and the Business Analyst dialog box appears. This dialog box gives you the option to turn off the Business



Analyst extension at startup. To do this, check the Turn off the Business Analyst Extension check box and click OK.

To leave the extension turned on, click OK.

When turned on, this option automatically adjusts the coordinate system of the data frame to a custom Business Analyst projection whenever the map extent changes. If you want to set and maintain a fixed coordinate system, turn off the Business Analyst extension.

The Business Analyst dialog box appears again. Click OK to close it.

3. The Business Analyst Assistant docks on the right side of your screen. Review this tutorial to become familiar with the different functions of Business Analyst. You can work with the Assistant interactively, or if you are finished, click Close. You are now ready to begin working with the map.
4. Click the File menu and click Save As to save your map document under a new name. Navigate to C:\My Output Data and create a new folder. Name the folder "TD Tutorial" and save the map document as TD_Tutorial.mxd.

You will use both the Territory Design toolbar and the Business Analyst toolbar in this tutorial. Make sure you have both of them turned on and active in ArcMap.

To add the toolbars to ArcMap, click the View menu, point to Toolbars, then check both the Business Analyst and Territory Design check boxes. Make sure they are both checked on under Tools > Extensions. These toolbars are both dockable, meaning you can drag them anywhere on-screen or dock them at the side, top, or bottom areas of the ArcMap window.

Zoom to a location and create a territory layer

Business Analyst provides you with predefined spatial bookmarks that help you easily zoom to an area. You use these bookmarks to get to our market area. Once you settle on an area of interest, you can create a territory layer. When you create your territory layer you set up the basic parameters needed to later create and balance territories.

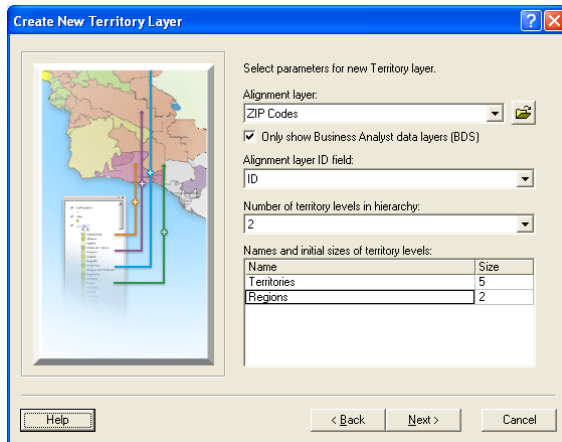
1. Click the Business Analyst drop-down menu and point to Set Analysis Extent > Jump to a Location > States LA - MT > Michigan > Detroit.

Business Analyst will zoom to the desired location, the metropolitan Detroit area. You are now ready to create the territory layer.

2. Click the Territory Design drop-down menu and click Active Layer, then click Create Territory Layer. The Create New Territory Layer wizard opens.

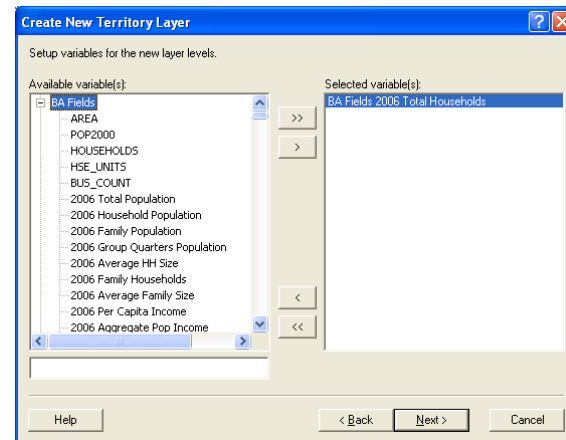


3. Choose ZIP Codes as your alignment layer.



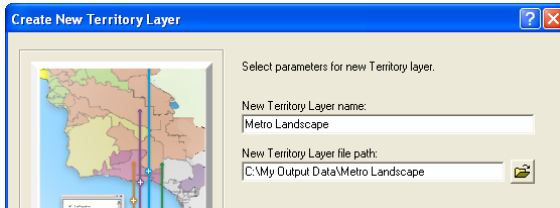
Note: Check the Only show Business Analyst data layers (BDS) check box to limit which layers are displayed. The alignment layer forms the geographic building blocks for the sales territories. The alignment layer must have a unique ID. Choose ID from the alignment layer ID field drop-down list; this is already included in the ZIP Code database.

4. Determine the number of territory levels in your hierarchy, choose 2 from the drop-down menu. The levels are automatically added as Territories and Regions below. You will make a total of five sales territories nested within two regions. Because territories are hierarchical, regions are created from the underlying territories. In the size field, type “5” for Territories and “2” for Regions, then click Next.
5. Choose the variables that determine how you balance your territories. The variables become the attribute fields in your territory layer. For this exercise, you want to focus on the households in the Detroit area. In the Available variable(s) window, click the + sign next to BA Fields to expand the selection. Click <current year> Total Households add it to the Selected variable(s) window by clicking the right arrow > button. Make sure this is the only variable chosen, if General Count is selected, remove it and click Next.

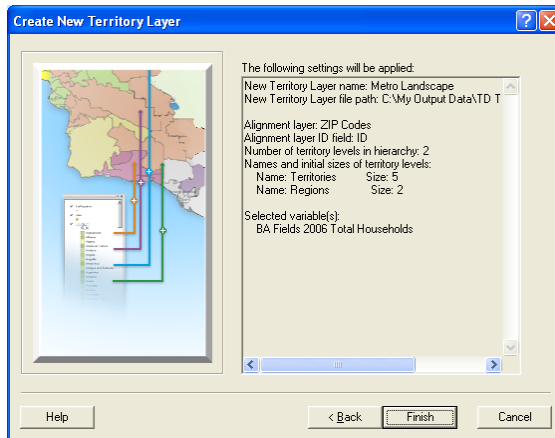


Note: You can use as many variables as you want.

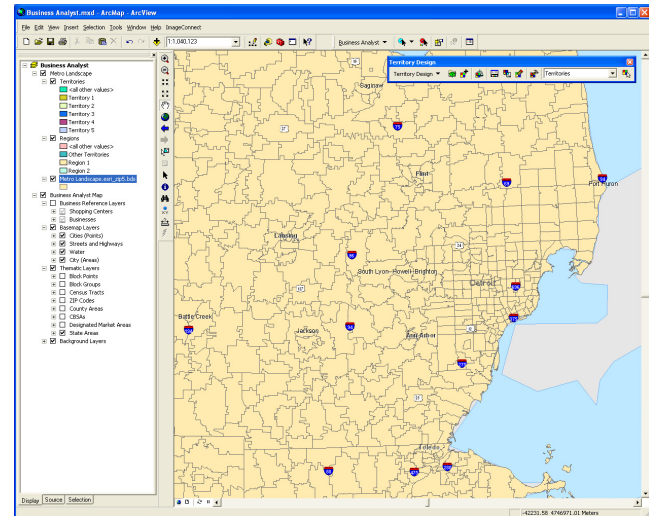
- Type “Metro Landscape” in the New Territory Layer name text box; give the New Territory Layer file path the following name: C:\My Output Data\TD Tutorial\Metro Landscape; click Next.



- Review the settings you applied and click Finish.



The territory layer is added to your table of contents. The territory layer consists of the Territories and Regions levels you specified and a copy of the alignment layer. Default names (Territory 1, Territory 2, etc.) are used until you specify territory names when creating territories.



The territory layer you created includes ZIP Codes for the whole US. Zoom into the Detroit area to see the alignment layer polygons.

- In the table of contents, right-click Territories and choose Open Attribute Table to examine the contents. Notice that the <current year> Total Households field is added, but none of the information is populated. The information is populated when you create and balance the territories in the next exercise. Close the table when you are finished.

Shape *	TerrOID	TerrName	OID *	Shape_Length	Shape_Area	2006 Total Households
Polygon	3	Territory 1	1	0	0	0
Polygon	4	Territory 2	2	0	0	0
Polygon	5	Territory 3	3	0	0	0
Polygon	7	Territory 4	4	0	0	0
Polygon	8	Territory 5	5	0	0	0

- Save your work. Click the File menu, then click Save. Proceed to Exercise 2.

Exercise 2: Creating and balancing territories

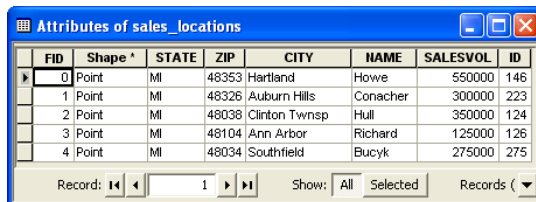
Now that you have created a Territory layer, you are ready to create territories. You can create territories using a variety of methods, but for this tutorial, you will create territories from locations. The locations, seed points, are starting points around which territories are created. Seed points in this tutorial are your Metro Landscape branch offices. These offices contain equipment and are where all business activities are centered.

In this exercise, you will add seed points, create and balance territories and regions, set the territory extent, and view your regions in Edit Mode.

Add seed points

1. If you've exited ArcMap, click Start, point to Programs, point to ArcGIS, then click ArcMap. The Business Analyst extension dialog box opens. Click OK to close it, and the Welcome to Business Analyst dialog box opens. Click an existing map, click TD_Tutorial.mxd, and then click OK.
2. Click the Add Data button from the Standard toolbar and navigate to \ArcGIS\Business Analyst\Datasets\Tutorial.
3. Locate sales_locations.shp and click Add.

A geographic projection warning will appear, click Close. The shapefile is added to ArcMap in the table of contents and in the map view. In the table of contents, right-click sales_locations and choose Open Attribute Table. The attribute table contains information such as the office city location, the office manager and his/her employee ID, and the manager's yearly sales volume to date. Close the table when finished.



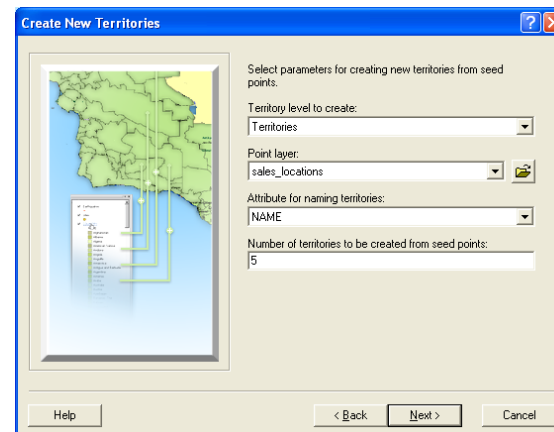
FID	Shape	STATE	ZIP	CITY	NAME	SALESVOL	ID
0	Point	MI	48353	Hartland	Howe	550000	146
1	Point	MI	48326	Auburn Hills	Conacher	300000	223
2	Point	MI	48038	Clinton Twnsp	Hull	350000	124
3	Point	MI	48104	Ann Arbor	Richard	125000	126
4	Point	MI	48034	Southfield	Bucyk	275000	275

Create territories

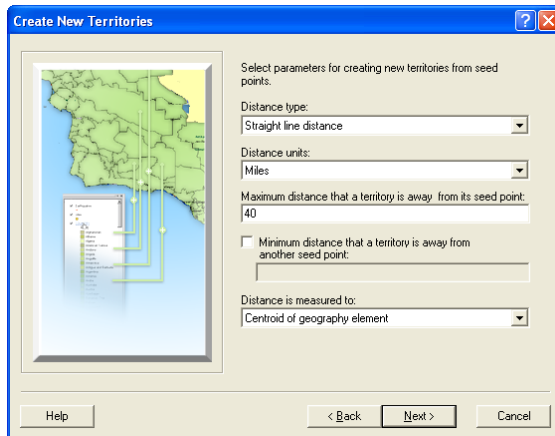
1. Click the Create Territories button on the Territory Design toolbar.



2. Choose Metro Landscape from the Territory layer drop-down list.
3. Click Create territories from locations and click Next.
4. Choose Territories from the Territory level to create drop-down list.
5. Choose sales_locations from the Point layer drop-down list.
6. Choose NAME from the Attribute for naming territories drop-down list. These names will replace the default names in your territory layer currently in the table of contents.
7. Choose Territories from the Territory level to create drop-down list. Be sure the number of territories to be created from seed points text box is "5", click Next. You will later create Regions as well.

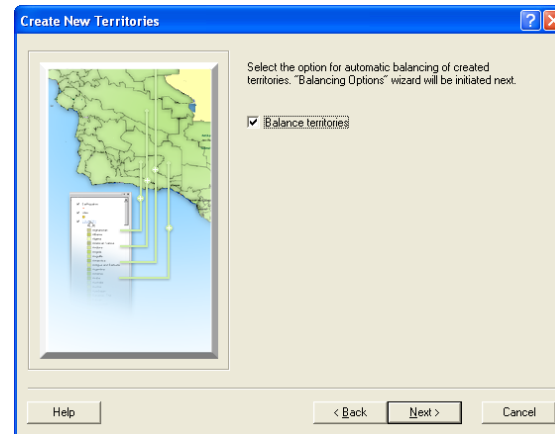


- This dialog box focuses on how distance is measured from your seed points to your territories. To maximize efficiency, you know that your fleet should never travel beyond 40 miles from each office. For Distance type, choose Straight line distance from the drop-down list and make sure the distance units are measured in miles. Type “40” in the text box provided for Maximum distance that a territory is away from its seed point. This will ensure each territory boundary is limited to 40 miles from each office. Leave the Minimum distance that a territory is away from another seed point box unchecked. Choose Centroid of geography element in the Distance is measured to drop-down list and click Next.

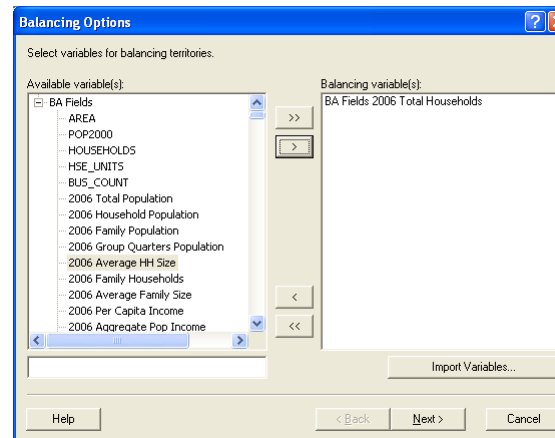


- Check Balance territories and click Next. The Balancing Options dialog box appears.

Note: Unbalanced territories are created if you do not choose to balance territories first.

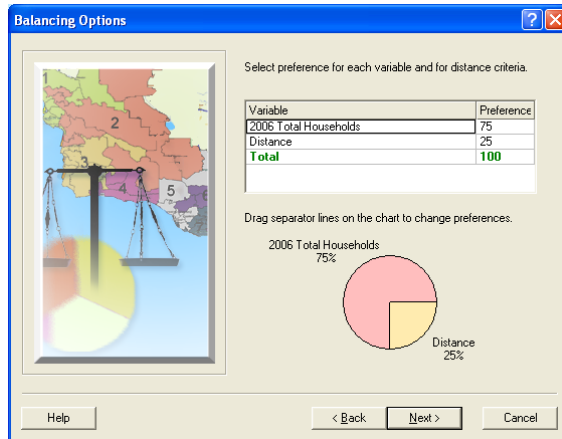


- You now want to choose the variables that will determine how your territories are balanced. The Available variable(s) window represents fields in the alignment layer. Since residential properties are your core clientele, you want to make sure that each territory you assign contains an equal number of households. Choose the <current year> Total Households and add it to the Balancing variables window using the right arrow > button. Click Next.

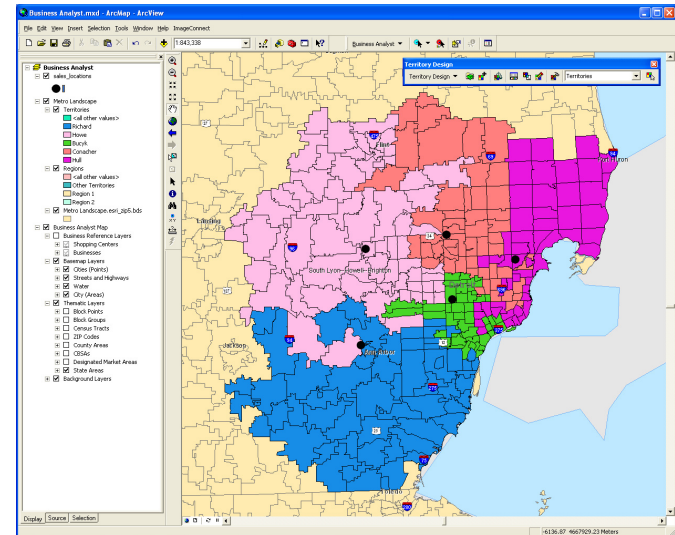


11. You want to make sure total households is more of a factor in the balancing method. The default variable ratio is set to 50, but you can change the importance dynamically using the pie chart. Click and drag the pie chart separator lines until you have reached 75 for <current year>Total Households Sum, 25 Distance. Click Next.

Note: you can manually edit the variable preference, but the values must total 100.



12. Check the boxes for Territories must be contiguous and No holes inside territories and click Next. This will ensure there are no gaps between ZIP Codes.
13. Review the settings you applied and click Finish. Your territories have been created, and the names of each office manager have been assigned to their respective territories.



The territories you created should look similar to the territories shown in the map above. There are many default territory colors so the territories you create may be slightly different.

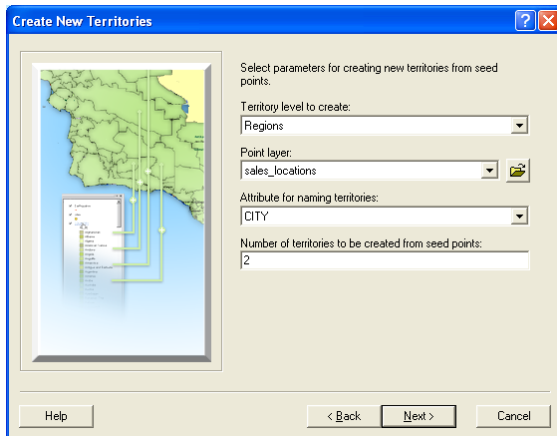
Set the territory extent

1. Now that you have defined your market area, you can set a territory extent to ensure only that area is used in your analysis. Click the Territory Design drop-down menu and click Territory Extent. The Territory Extent wizard opens.
2. Choose Metro Landscape from the Territory layer drop-down list and choose Boundary of a layer, then click Next. Choose Territories from the drop-down list and click Finish. Territory Design will draw a thick border around your territories to define the outermost boundary of your analysis. Zoom out once so that all of your territories are in view.

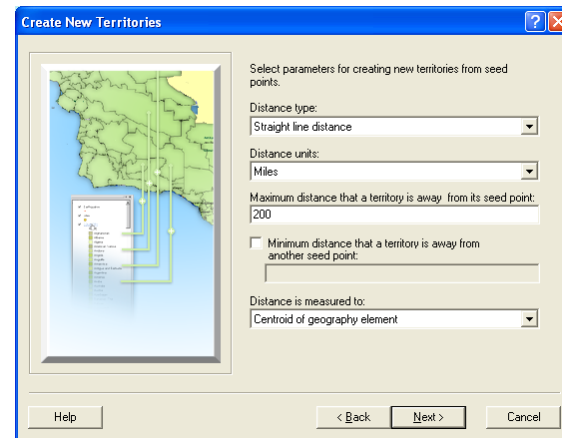
Create regions

Creating regions requires many of the same steps as creating territories, except you are creating a higher level to which the underlying territories belong.

1. Click the Territory Design drop-down menu and click Create Territories.
2. Choose Metro Landscape from the Territory layer drop-down menu list
3. Choose Create territories from locations and click Next.
4. Choose Regions from the Territory level to create drop-down list.
5. Choose sales_locations from the Point layer drop-down list.
6. Choose CITY from the Attribute for naming territories drop-down list. These names will replace the default names in your region layer currently in the table of contents. You have chosen CITY as the name because these locations will divide the two main command centers for all territories.
7. Choose Regions from the Territory level to create drop-down list and type “2” in the Number of territories to be created from seed points text box. Click Next.



8. Choose Straight line distance from the Distance type drop-down list and make sure the distance units are measured in miles. Type “200” in the text box for Maximum distance that a territory is away from its seed point. This ensures all territories within the territory extent are included. Choose Centroid of geography element from the Distance is measured to drop-down list and click Next.

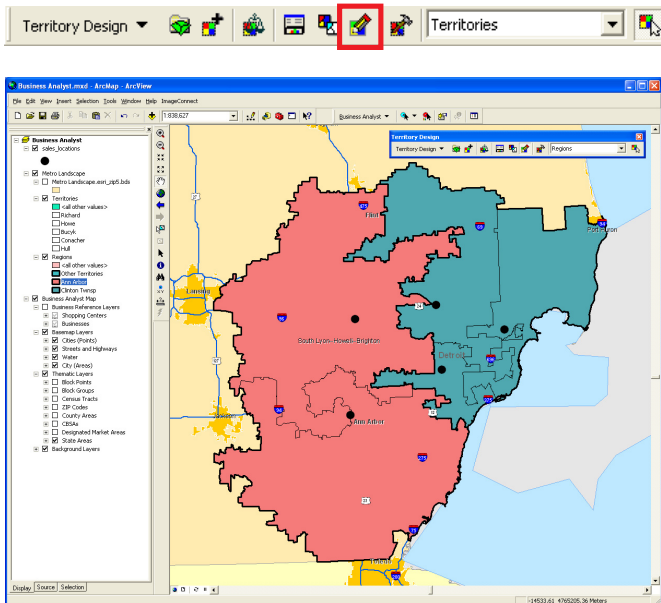


9. Check Balance territories and click Next. The Balancing Options dialog appears. The <current year> Total Households variable should remain selected; if not, add it to the Balancing variable(s) window using the right arrow > button. Click Next.
10. To remain consistent with the underlying territories, click and drag the pie chart separator lines until you have reached 75 for Total Households, 25 for Distance. Click Next.
11. Check the boxes for both Territories must be contiguous and No holes inside territories and click Next.
12. Review the settings you applied and click Finish. Your regions have been created, and the city locations (Ann Arbor and Clinton Twmsp) have been assigned to each region.

View your regions in Edit Mode

Using Edit Mode will increase the thickness of your region outlines and temporarily make the underlying territories invisible. Edit Mode makes multiple levels of territories easily distinguishable without having to turn layers on or off in your table of contents.

1. Choose Regions from the territory level drop-down list located on the right side of the Territory Design toolbar.
2. Click the On/Off Edit Mode button on the Territory Design toolbar. The Ann Arbor and Clinton Twmsp regions are separated by color.



3. Click the On/Off Edit Mode button on the Territory Design toolbar to exit Edit Mode and show territories again.
4. Save your work. Click the File menu, then click Save. Proceed to Exercise 3.

Exercise 3: Reassign territories and create a territory report

In previous exercises you created a territory layer, brought in seed points, and created and balanced territories and regions. You are now ready to determine how well you balanced your territories and manually reassign them. Then you can create a report to output the information about your territories.

In this exercise, you will examine the Territory Design window, manually reassign territories, and create a territory report.

View the Territory Design window

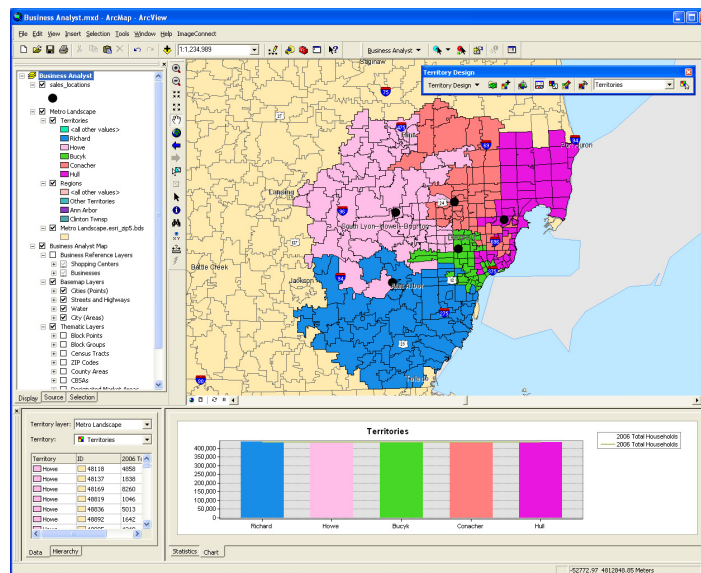
1. If you've exited ArcMap, click Start, point to Programs, point to ArcGIS, then click ArcMap. The Business Analyst extension dialog box opens. Click OK to close it, and the Welcome to Business Analyst dialog box opens. Click An existing map, click TD_Tutorial.mxd, then click OK.

The Business Analyst Extension dialog box opens again; click OK to close it. The Business Analyst Assistant opens; close it if you've already reviewed the tutorial.

2. Click the Show/Hide TD Window button on the Territory Design toolbar.

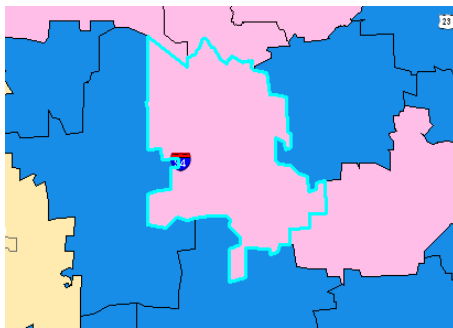


The Territory Design Window opens at the bottom of the screen. The TD window is dockable so you can resize and move it to other locations within ArcMap if necessary. You are now ready to view the TD Window. Notice that the window is separated into two panes: the Data and Hierarchy tabs on the left side and the Statistics and Chart tabs on the right. You will focus on the Data and Chart tabs first, then examine the Hierarchy tab.

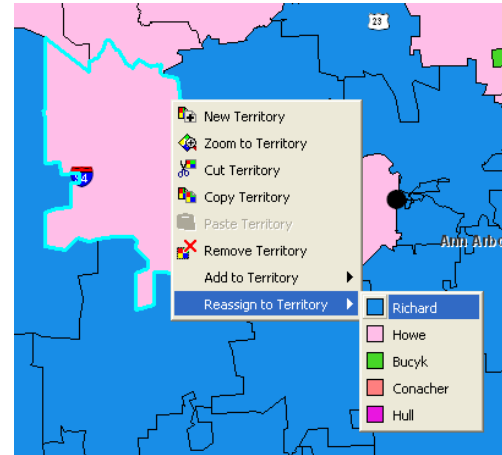


3. Click the Data tab. The data view shows which attributes are included in each level of your analysis. Choose Metro Landscape as the Territory layer and click Territories from the Territory drop-down list. Click the <current year> Total Households field header to sort ascending and descending. Doing this shows the different ZIP Codes with the highest and lowest number of households assigned to each territory. You can right-click any data record to view the different data management options available, such as Zoom to Territory or Remove Territory.

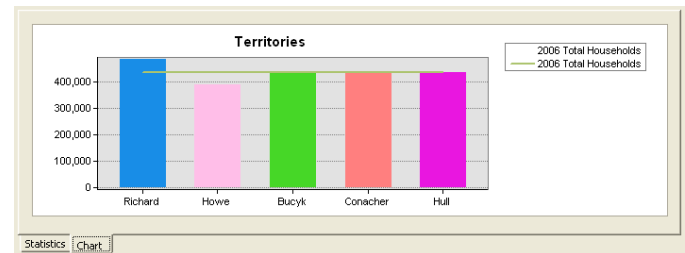
- Click the Chart tab. The chart view is a visual guide to how well territories are balanced. A balancing line is included to show the mean value of a selected variable for all territories. The chart shows all five territories by name. They appear to be equally balanced by total households.
- On the left pane, click the Hierarchy tab. The hierarchy view shows a graphic tree view of your territory levels. Expand the two regions to see their respective territories. The numbers in parentheses next to the territory names are the number of ZIP Codes in each territory. The numbers in parentheses next to the region names represent the count of territories in each region. Click on a region name to see the chart view change to show region information. You see two bars instead of five. Click on a territory name to return the chart view to the territory information. Your territories seem to be fairly equally balanced, but you notice that Mr. Richard is covering a rural area and his sales numbers have been low over the past year. You will now manually reassign more ZIP Codes to increase his territory area.
- Click the Territory Select Tool from the Territory Design toolbar and click a ZIP Code assigned to Howe in the map.



- Right-click the selected ZIP Code and point to Reassign To Territories at the bottom of the context menu, then choose Richard.

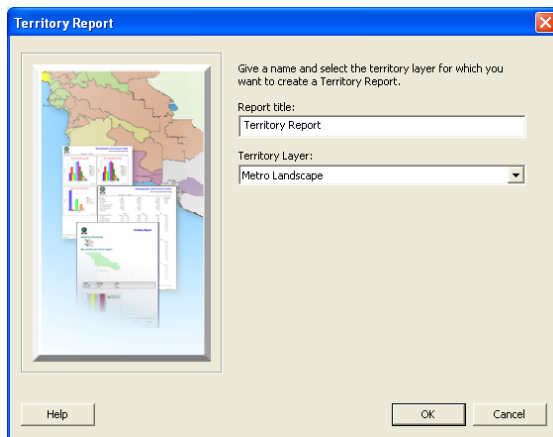


You can see that the ZIP Code has been added to Richard's territory in the map view and on the chart. In the chart view the number of households in his column is more than the average level. Reassign a few more territories using the same process. The Territories balance chart and data is updated to reflect this change.



Create a territory report

1. Click the Territory Design drop-down menu and click Territory Report. The Territory Report dialog box opens.
2. Type a name for your territory report.
3. Make sure Metro Landscape is selected in the Territory Layer drop-down list and click OK. A report opens onscreen showing a map, balancing chart, and hierarchy of your territories and regions. You can export the file to PDF to share with your office managers.



Now that you've completed all the tasks in the tutorial, you have a good idea of what's involved with using Territory Design for ArcGIS from creating and balancing territories to reassigning them and creating reports. Continue reading to learn about other things you can do with Territory Design or, if you prefer, use this guide as a reference, reading the specific sections you need to complete your tasks.

Using the Territory Design toolbar

3

IN THIS CHAPTER

- **Using the Territory Design toolbar**
- **Setting the Territory Extent**
- **Creating New Territory Layers**
- **Creating New Territories**
- **Using the Balancing Options and Balancing Territories wizards**
- **Resolving Overlapped Territories**
- **Importing Variables and Removing Variables**
- **Exporting Territories**
- **Creating a Territory Report**
- **Using the Territory Design Window**
- **Working in Selection Mode and Edit Mode**
- **Setting the Territory Layer Properties**

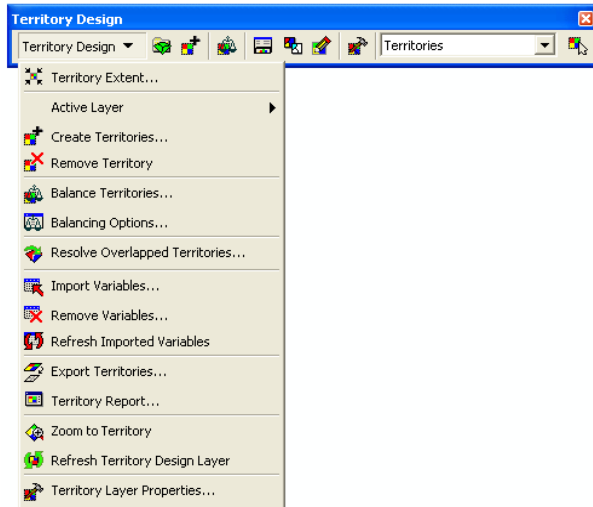
In this chapter, you will learn about the different functions of Territory Design for ArcGIS.

The Territory Design toolbar utilizes a drop-down menu and a wizard driven interface similar to the other tools in the Business Analyst extension. Many features of the two programs are interchangeable. For example you can use ZIP Codes found in Business Analyst to serve as a base layer for creating trade areas in Territory Design. Or you can export a Territory Design layer to Business Analyst to further study demographic information of newly created sales territories. All Territory Design features can be accessed from the toolbar or drop-down menu. This section gives step-by-step instructions for each Territory Design tool.

Using the Territory Design toolbar

Territory Design toolbar drop-down menu

If the Territory Design toolbar is not visible, click the View menu, click Toolbars, then click Territory Design. The dockable toolbar opens.



Territory Extent—Allows you to set different analysis extents such as the current map view, a selected boundary, or none defined

Active Layer—Allows you to make a different territory layer the active territory layer, as well as create a new territory layer

Create Territories—Launches the Create New Territories wizard to create new territories

Remove Territory—Allows you to quickly remove previously created territories

Balance Territories—Allows you to balance territories based on multiple criteria

Balancing Options—Launches the Balancing Options wizard to setup or alter the variables and associated weights used in the balancing process

Resolve Overlapped Territories—Allows you to view duplicate territory assignments and resolve their locations

Import Variables—Launches the Import Variables wizard to add attribute information from another database or location to a territory layer

Remove Variables—Allows you to delete attributes previously imported to a territory layer

Refresh Imported Variables—Allows you to reimport variables if a joined database is changed

Export Territories—Launches the Export Territories wizard to export territory databases and boundaries for use outside Territory Design

Territory Report—Launches the Territory Report wizard to run reports on your territories

Show/Hide TD Window—Launches the Territory Design window to manage layers and view statistics and chart information about your territories

Selection Mode—Allows you to view elements of selected territory features

Edit Mode—Allows you to view and work with the active territory level

Territory Layer Properties—Allows you to view or make changes to a variety of Territory Design settings

Territory Select Tool—Allows you to select elements on the map

Setting the Territory Extent

Setting the territory extent will ensure that your analysis will include only the areas you specify. This extent determines your overall market area. If you do not set a territory extent, territories will be created for the entire layer you are working with. The additional processing can be time consuming.

You must create a Territory Layer before being able to set the Territory Extent.

Tip

You can set different extents to limit where your analysis is performed.

Current map view: Limits the analysis to the area currently on your screen

Current selection: Limits the analysis to areas you have selected, such as a group of ZIP Codes

Business Analyst study area: Limits the analysis to areas you have predefined in Business Analyst

Boundary of layer: Limits the analysis to the overall boundary of a polygon or group of polygons

No extent defined: Removes the analysis extent from your analysis

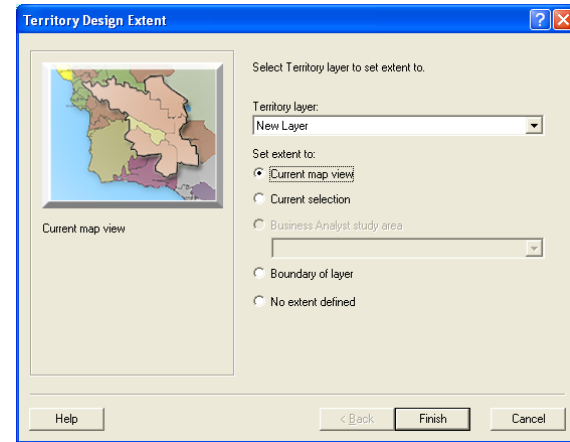
1. Click Territory Extent from the Territory Design drop-down menu.

The Territory Design Extent dialog box opens.

2. Choose the territory layer you want to use from the Territory layer drop-down list.
3. Choose one of the options and click Finish.

If you choose Business Analyst study area, choose the study area you want from the drop-down list and click Finish.

If you choose Boundary of a layer, click Next. Choose the boundary layer you want from the drop-down list and click Finish.



Creating New Territory Layers



Territory layers must be set up first to perform an analysis in Territory Design for ArcGIS. By creating a territory layer you set important parameters such as your alignment layer (for example, ZIP Codes or block groups), hierarchy levels, and the number of territories. You also determine what variables are needed to later balance your territories. Once you have successfully set up your Territory Layer, it will be added to the map's table of contents as a layer with an empty attribute table. When you create and balance your territories, the attribute information is automatically populated. This section teaches the various options for creating territory layers.

Here is some important information about territory layers.

- As a starting point Territory Design calls the first four levels Territories, Regions, Areas, and Divisions. These are standard terms for territory hierarchy. The remaining levels are named by level (such as Level 5, Level 6) You can set up to 10 territory levels and have the option to customize the level names to whatever you choose.
- You can use the standard geography boundaries provided in Business Analyst to create territories or use your own polygon layers. These boundaries are alignment layers.
- If you use your own boundaries, each polygon must have a unique ID and name associated with it.

Creating a New Territory Layer

Territory layers must be set up first to perform analysis in Territory Design for ArcGIS. These steps will give you instructions on how to set up a territory layer.

Tip

The alignment layer must have a unique ID. The alignment layer serves as the base geography layer from which all territories are created.

Tip

The New Territory Layer file path is the location where your Territory Design analyses are stored. By default the path is set to your My Output Data folder, but you can choose any location.

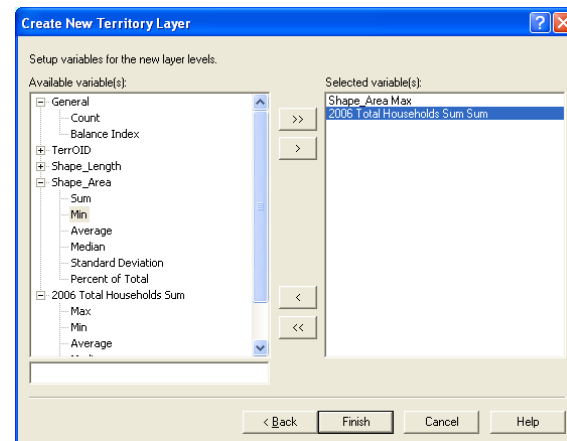
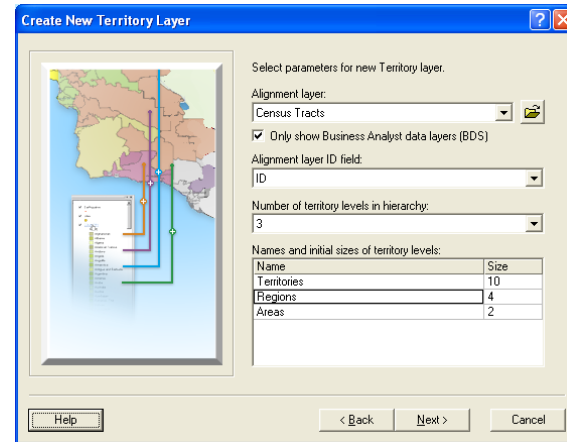
Tip

When creating a new territory layer, a copy of your alignment layer is created as well. The copy is made so your original data is not altered. The alignment layer copy is added to the table of contents underneath your new territory layer.

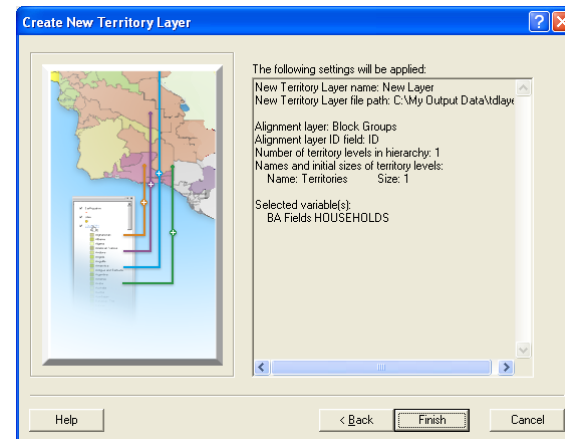
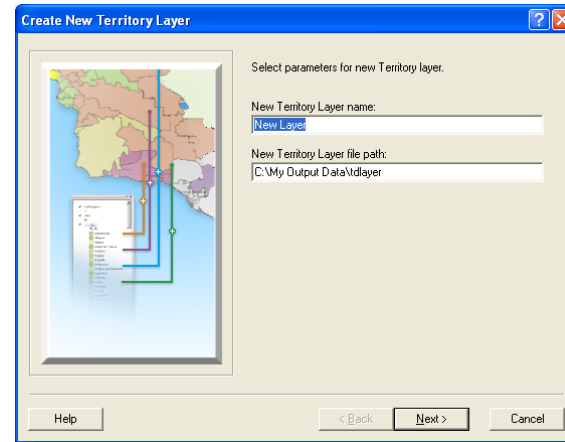
1. Select Create Territory Layer on the Territory Design toolbar.

The Create New Territory Layer dialog box opens.

2. Choose an alignment layer from the Alignment layer drop-down list..
3. Choose the Alignment layer ID field from the drop-down list. This field must be a unique ID.
4. Determine how many territory levels you want to create using the drop-down list.
5. Rename your territory levels as needed and enter the size of each level. Click Next.
6. Add the variables of each level that determine your balancing and click Next. These variables make up the fields in your territory databases. ▶



7. Type a name in the New Territory Layer name text box. Set the file path workspace and click Next.
8. Review the settings that will be applied to the new territory layer, click Finish.



Creating New Territories



Properly allocated territories are a key component of any successful business. With Territory Design you can setup, modify, and manage territories in a variety of ways. You may have created stagnant territories years ago that you want to reexamine or start fresh with no inherent knowledge of your company's newly acquired region. You might want to base your territories from franchise or customer locations. You might have a simple list of sales people and their accounts by location. These are all scenarios you can solve with Territory Design. This section teaches the various options for creating territories.

Territory creation options

Creating new empty territories: This option can be used to add territories to a previously created Territory Layer. The new territories will update in the table of contents.

Creating territories from locations: This option can be used when you have a point layer with unique locations, called seed points.

Importing territories from a database: This option can be used if you have a territory layer table format such as a .dbf. This dialog will help you map the appropriate fields to ensure it is importing into each territory level correctly.

Seed points

Seed Points are point locations used in Territory Design to determine starting points for creating territories. Seed points can be anything from franchise addresses and sales offices to distribution centers and are a common method for creating territories. For example, if you have a set of salespeople in offices around the Greater Chicago area, you can use this option

to create and balance their respective sales territories using census tracts around each location.

The seed point locations can be any point file with geographic information tied to it. Territory Design uses the locations to determine the geographic centers for the creation of the territories. If you are creating fewer territories than the number of seed points, Territory Design uses clusters of your seed points as the geographic center for each territory.

About the Number of territories to be created from seed points option

- The default number of territories is equal to the number of territories at the level where you create new territories. If the level where you create new territories is empty, the default number of territories is equal to the number of geographic elements from the alignment layer overlapped by the seed points.
- If the number of territories is equal to the number of geographic elements in the alignment layer that overlap the seed points, territories are created for each geographic element of the alignment layer where the seed points are located.
- If the number of territories specified is greater than the number of geographic elements from the alignment layer overlapped by the seed points, all seed points are used to create territories and the remaining number of territories are created from the nearest geographic elements of the base layer.
- If there are fewer territories than the number of geographic elements overlapped with seed points, Territory Design uses clusters of your seed points as the geographic centers for each territory.

Creating New Territories

Creating new empty territories

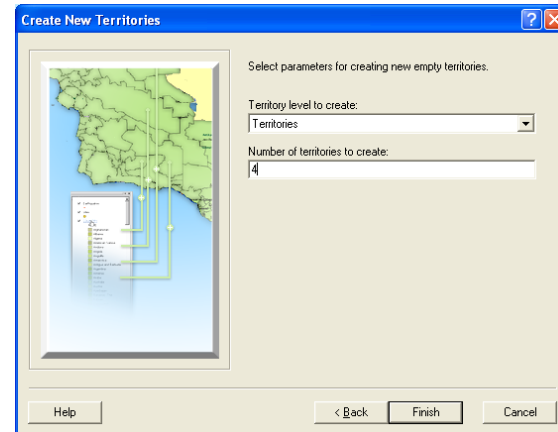
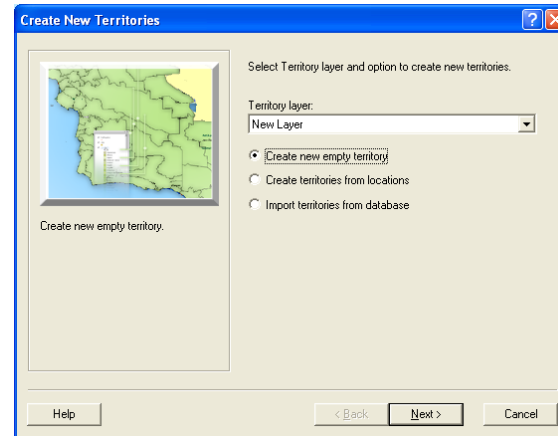
This option can be used to add territories to a previously created Territory Layer. The new territories will be added to the table of contents.

Tip

You must create a new territory layer before before creating territories (see “Creating new territory layers” in this chapter).

Creating new empty territories

1. Click the Territory Design drop-down menu and click Create Territories.
The Create Territories dialog box opens.
2. Choose the territory layer you want to use from the drop-down list.
3. Choose Create new empty territory and click Next
4. Choose the Territory level to create from the drop-down list.
5. Type the number of territories you want to add.
The new territory is added to the table of contents.



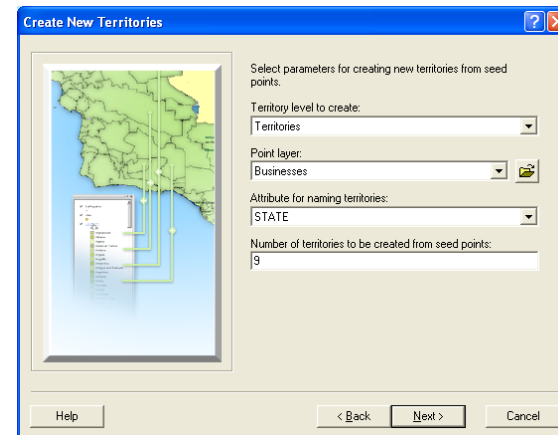
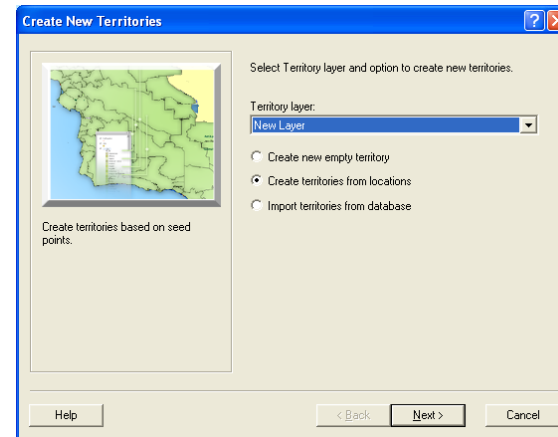
Creating New Territories

Creating territories from locations

The option can be used when you have a point layer with unique locations, seed points, around which you want to assign territories.

Creating territories from locations

1. Click the Territory Design drop-down menu and click Create Territories.
The Create Territories dialog box opens.
2. Choose the territory layer you want to use from the drop-down list.
3. Choose Create territories and from locations, click Next.
4. Choose the territory level you want to create from the drop-down list.
5. Choose the point layer from the drop-down list (or click the browse button to navigate to it if it is not in the table of contents) to determine which seed point locations will build your territories.
6. Choose the attribute to name each territory.
7. Type the number of territories you want to create and click Next. ▶



Tip

The Drive distance and Drive time options are only available when the Business Analyst and ArcGIS Network Analyst extensions are installed.

Tip

For the Number of territories to be created from seed points option the default is the number of territories you specified when creating your territory layer. You can also have more seed points than territories. For example, if you have 60 different franchise locations, but only want to show 8 territories, Territory Design groups the seed points into clusters to determine the center point for each of the 8 territories.

Tip

Measuring Distance

Centroid of a geography element refers to the distance between a seed point location and the geographic centroid of a polygon (such as ZIP Codes).

Nearest boundary of geography element refers to the distance between a seed point location and the edge of a polygon boundary closest to that seed point.

8. Set the distance requirements for your territories:

Choose the Distance type (Straight line distance, Drive distance, or Drive time) and corresponding distance units from the drop-down lists.

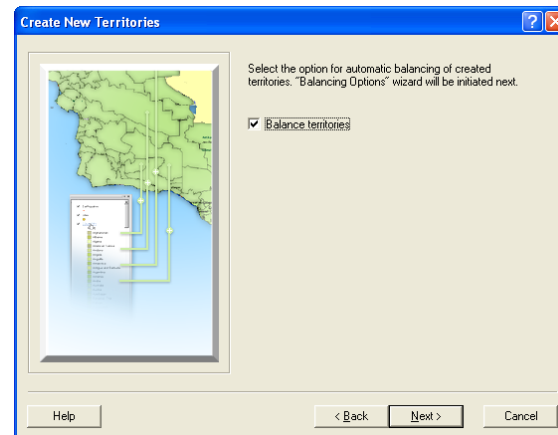
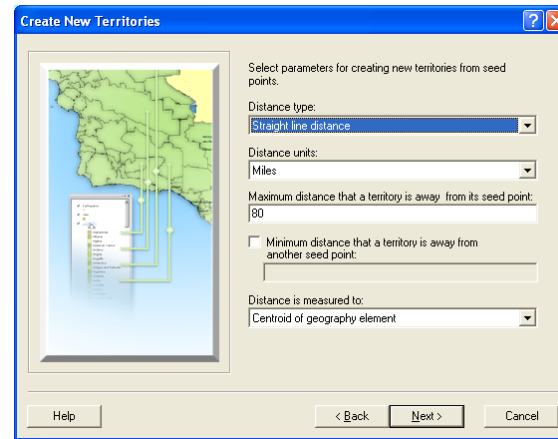
9. Set the maximum distance a territory can be from its seed point.

You can also choose to set the minimum distance a territory is from another seed point.

10. Choose whether distance is measured to the centroid of each geography element or to the nearest boundary of the geography element. Click Next.

To create territories without balancing them, click Next. Unbalanced territories are created after you review your settings and click Finish.

To balanced territories now, check Balance territories and click Next. The Balancing Options dialog box will open. To complete these steps, continue to “Using the Balancing Options and Balance Territories wizards”, step 8.



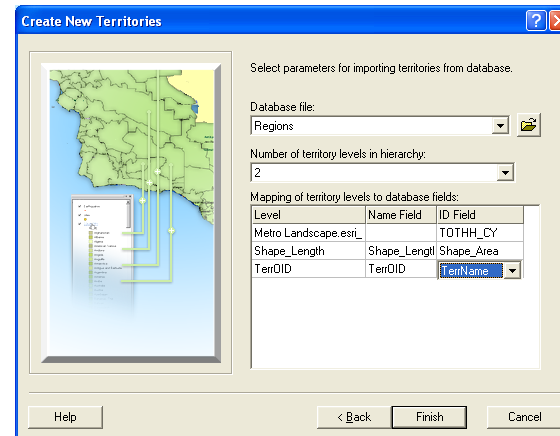
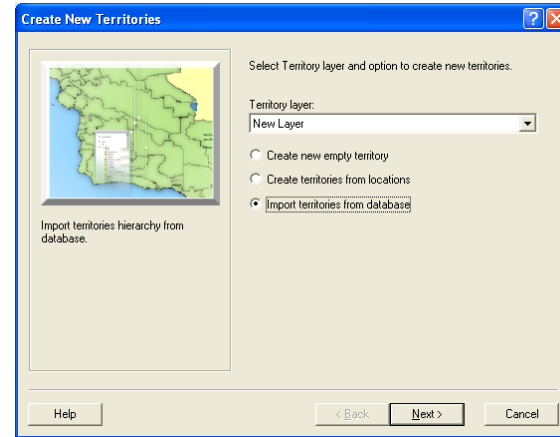
Create New Territories

Importing territories from database

The option can be used if you have a territory layer table such as a .dbf file. This dialog box will help you map the appropriate fields to ensure it is importing into each territory level correctly. An example of this would be that organizations may have a set of ZIP Codes assigned to salespeople. These ZIP Codes can be imported into Territory Design as sales territories. Once you have the data in Territory Design, further analysis can be performed.

Importing territories from a database

1. Click the Territory Design drop-down menu and click Create Territories.
The Create New Territories dialog box opens.
2. Choose Import territories from database and click Next.
3. Choose the database file from which you are importing your territories from the drop-down list or by clicking the browse button to navigate to it.
4. Choose the number of territory levels.
5. Choose the database fields for each territory level.
Click the attributes to change ID fields if needed. Click Finish.



Using the Balancing Options and Balance Territories wizards



A powerful aspect of Territory Design for ArcGIS is its territory-balancing capabilities. Balancing sales territories, service areas, or franchise boundaries is a key component to any successful business. With Territory Design, it is possible to balance areas based on multiple factors such as the size of each territory, the projected sales figures across your region, or the distance traveled between each store.

The two main components of balancing are the Balancing Options and Balance Territories wizards. Balancing Options is used to set up the parameters for how a particular territory should be balanced. For instance, you can choose ZIP Code Population and Sales Revenue Per Store Location as variables and allocate more importance to whichever variable should have a greater weight in determining the makeup of your territories. Once the balancing options are finalized the Balance Territories wizard is used to apply the parameters to your territories. This section provides insight into balancing territories using Territory Design.

Setting Balancing Options and Balance Territories parameters

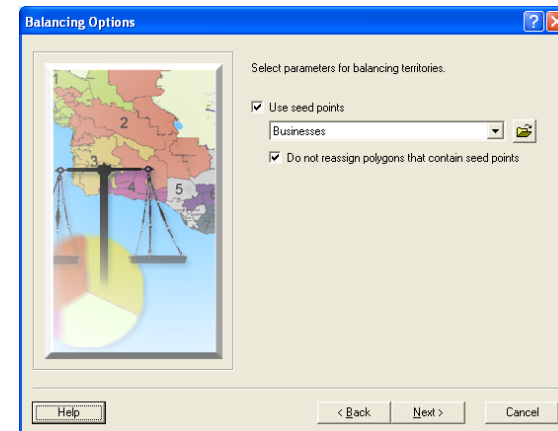
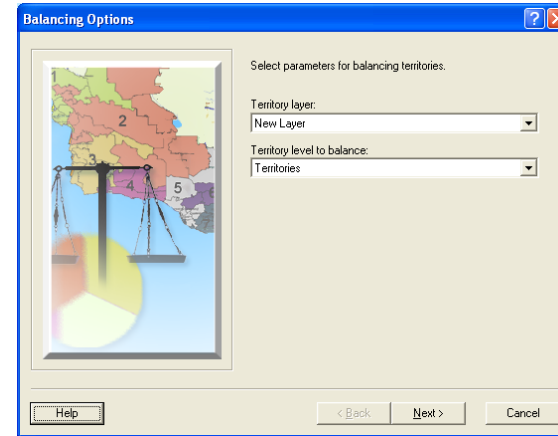
This section provides instruction on how to balance territories. Before proceeding with this section it is assumed you already created a territory layer and created territories.

Tip

Checking the do not reassign polygons that contain seed points check box will ensure that the polygons where seed point locations overlap are not changed to another territory. This is especially important when you have more seed points than the territories.

1. Click the Territory Design drop-down menu and lick Balancing Options.
The Balancing Options wizard opens.
2. If you have already created a territory layer, choose the Territory Layer you want to work with from the drop-down list.
3. Choose the level you want balance and click Next.
4. If you are balancing territories with seed points, check the Use seed points box and choose the point layer from the drop-down list..

Check the Do not reassign polygons that contain seed points check box if you do not want polygons that overlap seed points to change. ►



Tip

Measuring Distance

Centroid of a geography element refers to the distance between the center of a territory or seed point location (if specified) and the edge of a polygon boundary closest to that seed point.

Nearest boundary of geography element refers to the distance between the center of a territory or seed point location (if specified) and the edge of a polygon boundary closest to that seed point.

5. Set the distance requirements for your territories:

Choose the distance type (Straight line, Drive distance, or Drive time) and corresponding Distance units from the drop-down lists.

6. Set the maximum distance a territory can be from its center or seed point.

You can also choose to set the minimum distance a territory is from seed points.

7. Choose whether distance is measured to the centroid of each geography element or to the nearest boundary of the geography element. Click Next. ►

Balancing Options

Select parameters for balancing territories.

Distance type:
Straight line distance

Distance units:
Miles

Maximum distance that a territory is away from its center or seed point:
210

Minimum distance that a territory is away from center of another territory or another seed point:

Distance is measured to:
Centroid of geography element

Help < Back Next > Cancel

Tip

You can use the available fields filter to quickly find a variable to balance.

Tip

Using the preferences pie chart

By default, all variables are weighted equally. The pie chart is a way to change the variable importance of the territories you are creating. Click and drag the separator lines to dynamically change the percentages. The numbers will automatically change in the field view. The percentage must total 100. The distance weight is a significant factor in the development of territories. If you want to balance your territories based on an attribute, such as sales, make sure you minimize the distance weight in the pie chart.

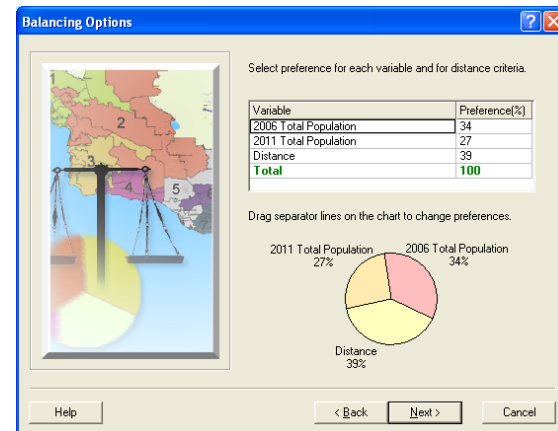
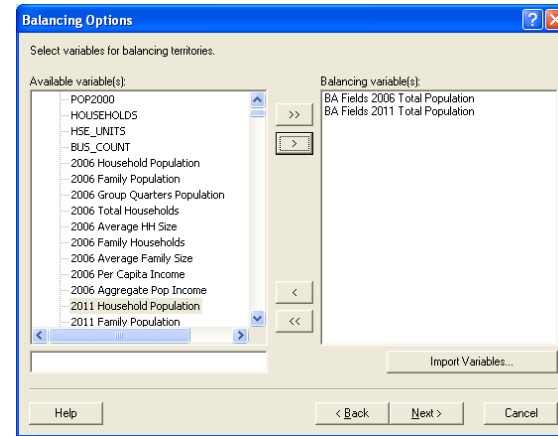
For example, you are a cable TV provider looking to redistrict your franchise areas, which are based on ZIP Codes. You know that having an equal population distribution is key to adequately support your customer base, but you also know that as long as you have enough technicians on hand, the size of the area is not relevant. In this case, you may want to set the population importance variable at a higher percentage and leave the distance factor low. This will increase the probability that the underlying ZIP Codes will be combined to form weighted territories with equal population.

8. Add the balancing variables that will weight your areas and click Next.

You can bring in other variables by clicking Import Variable. For more information, see “Importing variables and removing variables” later in this chapter.

9. Determine the importance each variable has toward balancing the territories.

To do this, under the Preference(%) column, type the percentage or drag the pie chart lines to the left or right. Click Next. ▶



Tip

Geographic Balancing Options

Territories must be contiguous: Checking this option ensures that all geographic objects adjacent to balanced territories are included in balancing.

No holes inside territories: Checking this option ensures that the balancing algorithm does not create blank areas wholly contained inside territories. Any unassigned elements are appended to the surrounding territory. The balancing algorithm does not remove holes that were present before starting the Balance command.

Use unassigned territories: Checking this option ensures that currently unassigned geographic elements are added to territories to improve the balance. Uncheck this option if you only want to swap geographic elements between territories.

Tip

Balancing Territories

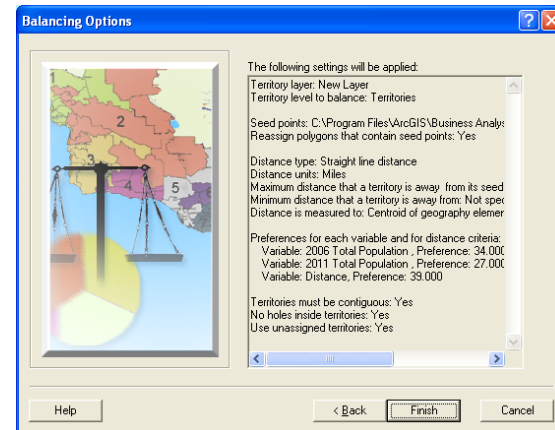
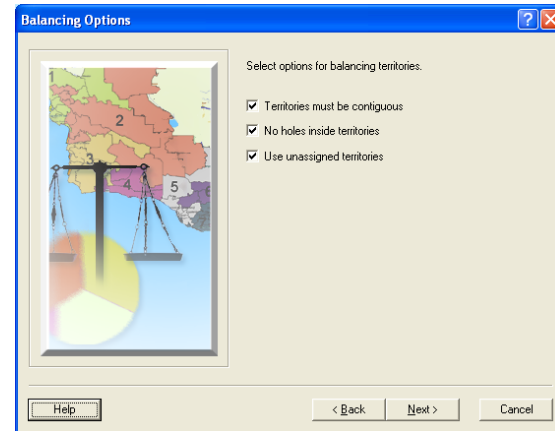
You should set your parameters on the Balancing Options wizard before choosing to balance territories. When you choose to balance territories, you are applying the parameters set on the Balancing Options wizard.

If you are trying to balance a set of unassigned geographic elements (eg, ZIP Codes, census tracts) into territories, you must first create territories.

10. Check the boxes for geographic options for balancing territories and click Next.

11. Review the settings that will be applied and click Finish.

The Balancing Options dialog box closes. With the balancing options set, you are now ready to balance territories. ►

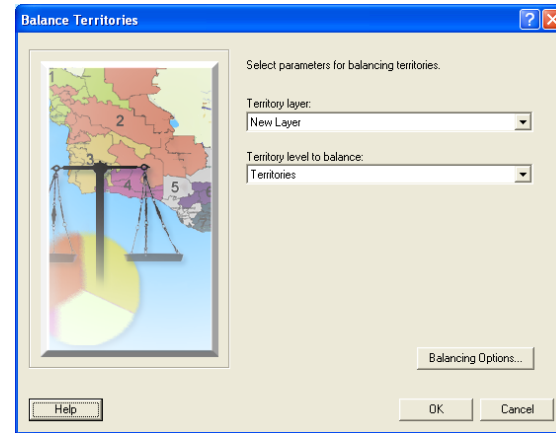


12. Click the Territory Design menu and click Balance Territories.

The Balance Territories dialog box opens.

13. Choose the territory layer you want to work with from the drop-down list.
14. Choose the territory level you want to balance and click OK.

The attribute table and map are updated based on the balancing options you have set.



Resolving overlapped territories

It is possible that more than one territory can contain the same unique element. For example, one ZIP Code could belong to two different territories. Territory Design provides the Resolve Overlapped Territories utility to solve this.

Tip

The overlapping of territories is supported only at the alignment layer level.

Territories can be created to overlap each other by importing territories, from a selection on the map, and by copying/pasting.

Within the Resolve Overlapped Territories dialog box, Concurrent elements refers to territories at each hierarchy level that belong to more than one territory at the higher level. The Overlapped territories listing contains upper-level territories, which incorporate currently selected unresolved territories. You can check on/off the upper-level territories to resolve the overlapping.

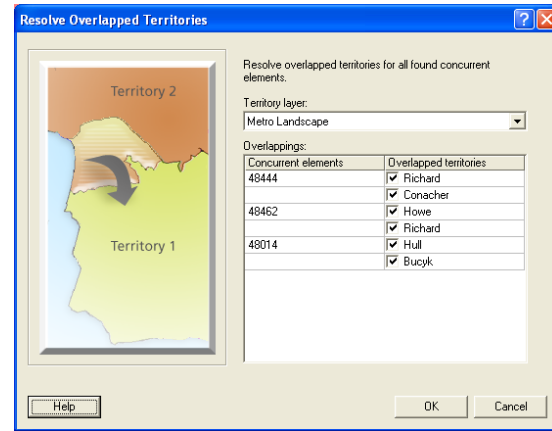
Tip

If you have overlapped territories, they will appear in the table of contents as a new layer. Overlapped territories appear hatched in the map.

1. Click the Territory Design drop-down menu and choose Resolve Overlapped Territories.

The Resolve Overlapped Territories dialog box opens.

2. Choose the territory layer you want to use from the drop-down list.
3. Only one box under the Overlapped territories column corresponding to the Concurrent elements column should be checked to ensure territories are not overlapped. Check only the boxes where territories belong to concurrent elements.



Importing variables and removing variables

Territory Design provides options to bring new attributes into an existing territory layer. For example, you may want to join newly compiled sales figures before readjusting your company territories. Once you bring in selected variables, you can refine the list using the Remove Variables dialog box.

Tip

You can import point or polygon layers to Territory Design. When you choose a polygon layer and click Join by locations, the values to the imported variables are divided in proportion of the imported polygons that overlap the polygons of the alignment layer.

You can also import a Business Analyst Dataset (BDS). The Business Analyst apportionment method is used to calculate the values of the imported variables.

Tip

Refresh Imported Variables reimports variables from joined databases.

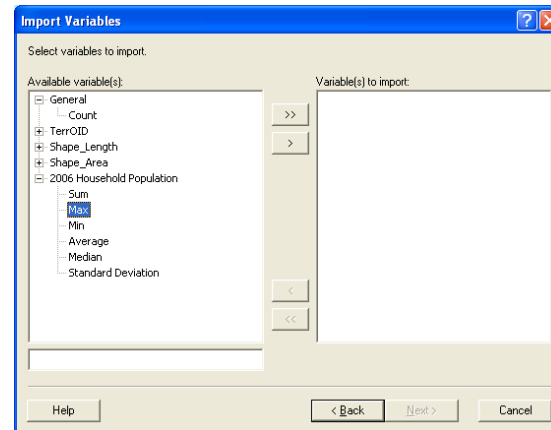
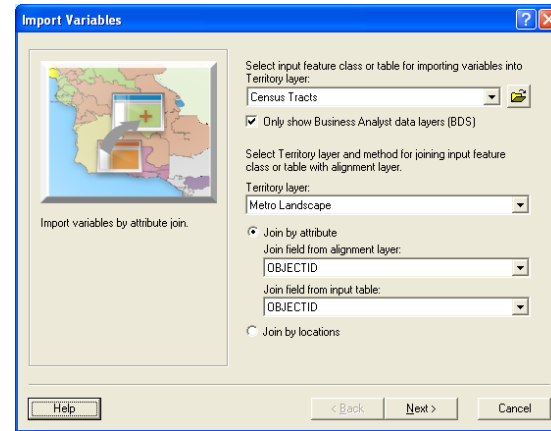
Importing Variables

1. Click the Territory Design drop-down menu and click Import Variables.
The Import Variables wizard opens.
2. Choose the input feature class or table you want to import from the drop-down list or click the browse button to navigate to it.
3. Select the territory layer you want to import the variables to.
4. Choose the database join method.

- a. If you choose Join by attribute, do the following:
 - Choose the alignment layer field you want to join from the drop-down list.
 - Choose the input table field you want to join from the drop-down list and click Next.

- b. If you choose Join by locations, click the button and click Next.

5. Choose the variables you want to import to the territories and use the right-facing arrows to add them.
6. Confirm the settings that will be applied and click Finish.



Tip

Choosing to remove variables will remove the joins between the external tables of the imported variable and the territory database. It is assumed you have already imported variables before choosing to remove them. Note: If you move your joined external table, the join will be broken and you will not be able to access the imported attributes in Territory Design.

Tip

The performance of the balancing operations can be reduced when imported variables are present.

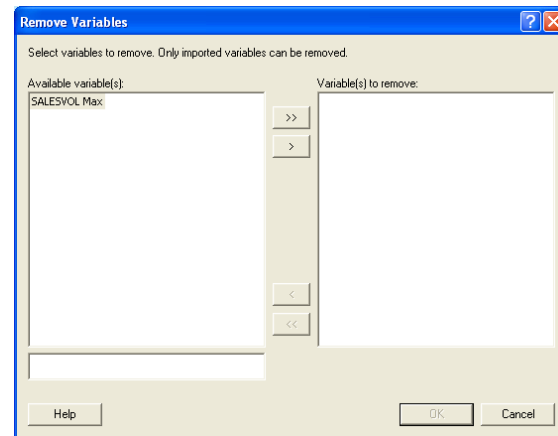
Removing Variables

1. Click the Territory Design drop-down menu and click Remove Variables.

The Remove Variables dialog box opens.

2. Choose the variables you want to remove by clicking the right arrows. Click OK.

The variables are removed from the territory database.



Exporting territories

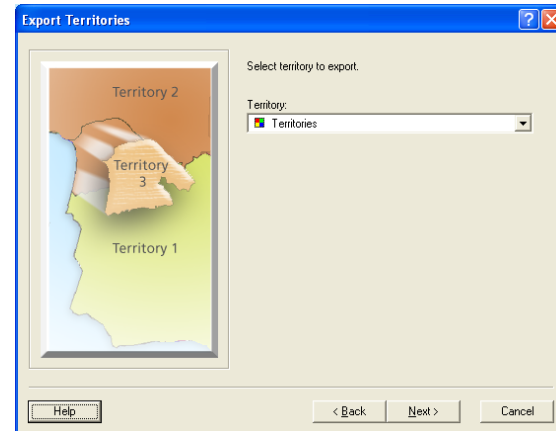
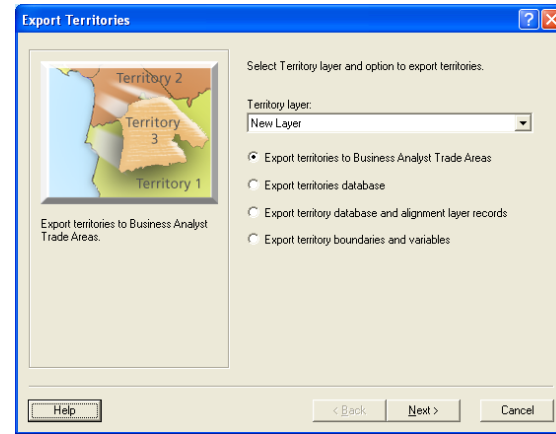
Territory Design provides multiple options to export your territories for analysis in other programs. For example, you can create a set of territories in Territory Design, then export them for use in Business Analyst.

Tip

Exporting territories as trade areas allows Business Analyst to read the territory polygons within the Trade Area wizard. You can then use these trade areas in subsequent reports and analysis in Business Analyst.

Exporting territories to Business Analyst Trade Areas

1. Click the Territory Design drop-down menu and click Export Territories.
The Export Territories wizard opens.
2. Click Export territories to Business Analyst Trade Areas and click Next.
3. Choose the territory level or individual territories you want to export from the drop-down list.
4. Give the trade area a name.
5. Review the settings that will be applied.
6. Click Finish.



Exporting a territory database creates a territory assignment table. The assignment table contains names and unique IDs for each hierarchy level, such as Territories, Regions, and Areas.

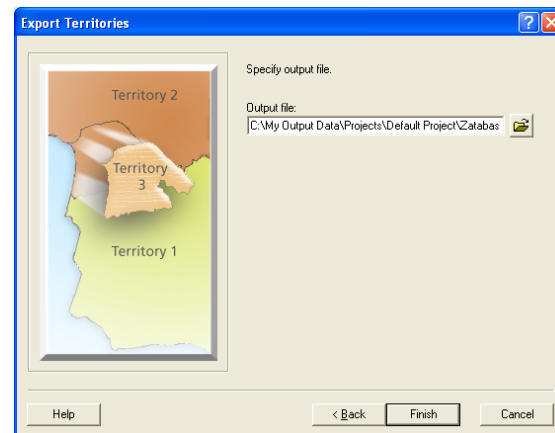
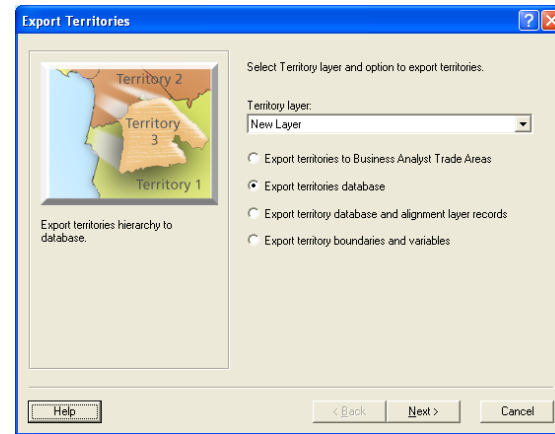
Tip

You can export your territory database to the following formats:

- dBASE Tables
- File and personal geodatabase tables
- SDE tables

Exporting a territory database

1. Click the Territory Design drop-down menu and click Export Territories.
The Export Territories wizard opens.
2. Click Export territories database and click Next.
3. Click the browse button to navigate to a location where you want to save the file. Name your file and click Save.
4. Click Finish.



Tip

Exporting the territory alignment layer is helpful, especially if you have joined attributes from another database. The exported file shows the selected variables from both the original database and the externally joined table.

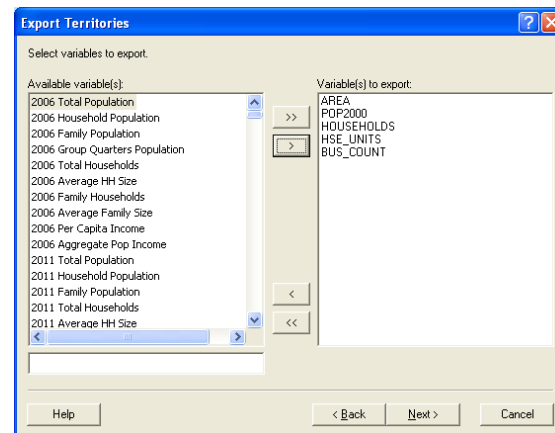
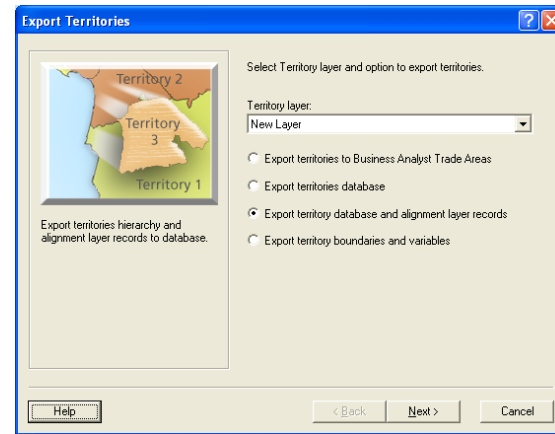
Tip

You can export your territory database and alignment records to the following formats:

- Shapefile
- File and personal geodatabase tables
- SDE tables

Exporting both territory database and alignment layer records

1. Click the Territory Design drop-down menu and click Export Territories.
The Export Territories wizard opens.
2. Click Export territory database and alignment layer records and click Next.
3. Add the variables you want to export by clicking the right arrows and click Next.
4. Click the browse button to navigate to a location where you want to save the file. Name your file and click Save. Click Next.
5. Review the settings that will be applied.
6. Click Finish.



Tip

By exporting the territory level and corresponding variables, you have the option to select any of the summarized fields including Sum, Max, Min, Average, Median, Standard Deviation, and Percent of Total. These summarized fields represent the apportioned data within a territory boundary. For example, if you export a territory layer created from ZIP Codes and select Sum for a population variable, Territory Design will export the boundary of the territory with the aggregated total population within the ZIP Codes that make up the new territory.

Tip

You can export your territory database and alignment records to the following formats:

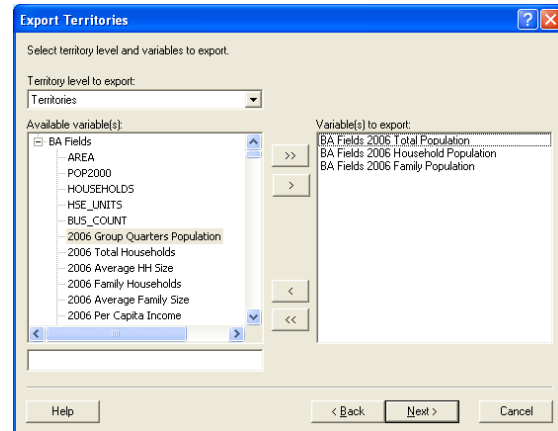
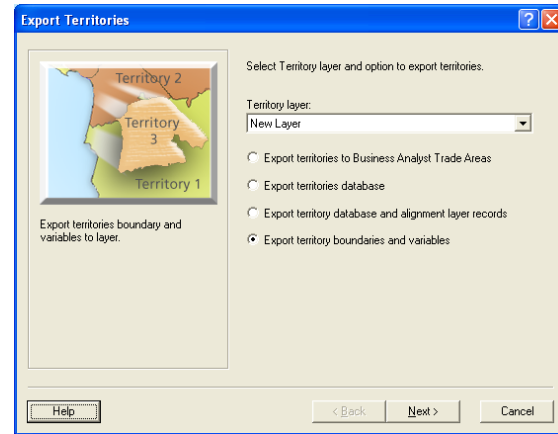
- Shapefile
- File and Personal Geodatabase tables
- SDE tables

Exporting territory boundaries and variables

1. Click the Territory Design drop-down menu and click Export Territories.

The Export Territories wizard opens.

2. Click Export territory boundaries and variables and click Next.
3. Choose the territory level to export from the drop-down list.
4. Add the variables you want to export by clicking the right arrows and click Next.
5. Click the browse button to navigate to a location where you want to save the file. Name your file and click Save. Click Next.
6. Review the settings that will be applied.
7. Click Finish.



Creating a territory report

You can generate a report showing the main elements of creating territories. This document serves as a summary for the work you have done to create and balance your territories. The territory report is accessed through the Crystal Reports viewer, but you can export to various formats such as PDF, Word, or HTML.

The territory report includes the following information:

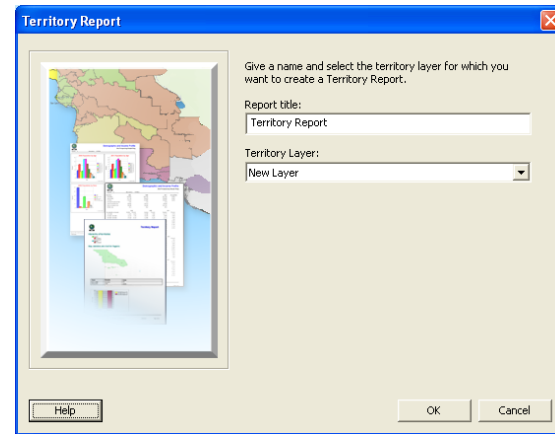
- Hierarchy of territories
- Map of territories
- Territory variable statistics
- Chart view of territory statistics

1. Click the Territory Design drop-down menu and click Territory Report.

The Territory Report dialog box opens.

2. Type name for your territory report in the text box provided.
3. Choose the territory layer you want to report on from the drop-down list and click OK.

The Territory Report is displayed on screen.



Territory Design Window



The Territory Design window is the central location for viewing your territory information and adjusting properties. The window is dockable and is divided into two main panes. The first pane contains two views, Data and Hierarchy. The second pane also contains two views, Statistics and Chart. The window can be accessed from the Territory Design toolbar and is designed to

be interactive as you perform your analysis within Territory Design. The different views will help show how well your territories are balanced. You can customize the window using the options in the Territory Layer Properties dialog box. Since the window is dockable, it can be resized and move it to different parts of the screen. This section explains the different parts of the Territory Design window.

Territory Design toolbar

Territory layer

Alignment layer

Resize the TD window pane left or right here

Active territory layer

Click and hold here to dock the window elsewhere

Data view

Hierarchy view

Statistics view

Chart view

Balancing line view

Resize the window pane up or down here

Territory Design window

Territory	POP2000
Home Plumbing	17445
Kironval Plumbing	17442
Zetterberg Drain	17443
Yzerman & Sons	17445
Lidstrom Plumbers, Inc.	17447

Territory	POP2000_SUM
Home Plumbing	17445
Kironval Plumbing	17442
Zetterberg Drain	17443
Yzerman & Sons	17445
Lidstrom Plumbers, Inc.	17447

Territory Design Window:

Data view

The data view is a table view of objects that make up your territories. The data view is synchronized with the hierarchy view. The territory layer and selected territories are applied in both views. You can perform many behind-the-scenes analysis in the data view.

Tips

- You can sort fields in ascending or descending order by clicking any of the attribute field headers.
- You can add more attribute fields to the data view by opening the Territory Layer Properties dialog box, and choosing from the available variables.
- You can quickly reassign territories by clicking a field under Territory. The Territory drop-down list allows you to select other territories.
- Right-clicking a Territory field provides many different territory management options.
- Double-clicking any data record zooms to that element on the map.
- Selection of multiple territories is supported in the data view by holding down the Shift or Ctrl key and clicking fields.

Working in data view

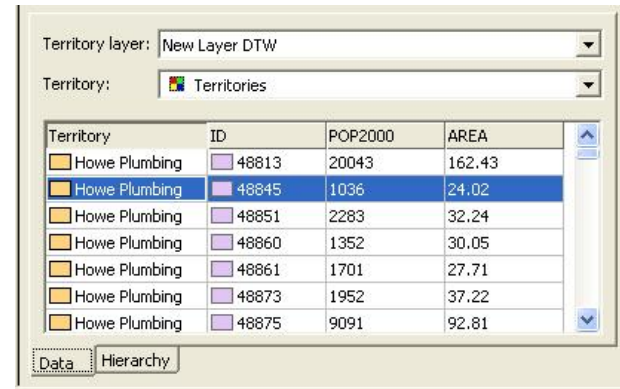
1. Click Show/Hide TD Window from the Territory Design toolbar.

The Territory Design window opens. Dock it as necessary.

2. Click the Data tab.
3. Choose the Territory layer you want to work with from the Territory layer drop-down list.

4. Choose the territory level you want to work with from the Territory drop-down list.

The territory attributes are displayed in the data window.



Territory Design Window:

Hierarchy view

The Hierarchy view is a graphical view of your territory levels. The hierarchy view of territories is displayed in a tree view. The Hierarchy view is synchronized with the Data view.

Tips

- Each geographic element contains sub-objects when applicable. For example, lower territories are connected to their higher regions in a tree view.

- You can drag and drop lower-level elements to higher categories. For example, you can move a territory assigned to Region 1 into Region 2.

- Right-clicking any geographic element provides many different territory management options.

- Double-clicking any geographic element record in the hierarchy view zooms to that element on the map.

- Double-clicking the territory symbols (colored rectangles) opens the standard ArcGIS Symbol Selector dialog box. Right-clicking the territory symbols will open the ArcGIS Color Pick dialog box.

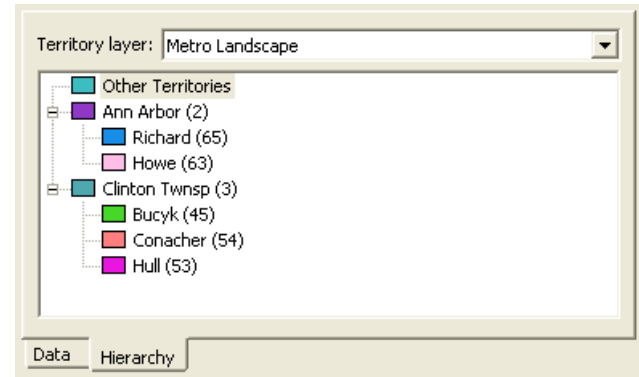
Working in hierarchy view

1. Click Show/Hide TD Window from the Territory Design toolbar.

The Territory Design window opens. Dock it as necessary.

2. Click the Hierarchy tab.
3. Choose the Territory layer you want to work with from the Territory layer drop-down menu.

All geographic elements of the territory layer are shown in the hierarchy window.



Territory Design Window:

Statistics view

The Statistics view displays the statistics for selected levels of your territory hierarchy. The available statistics are summarizations of the territory attribute fields.

Tips

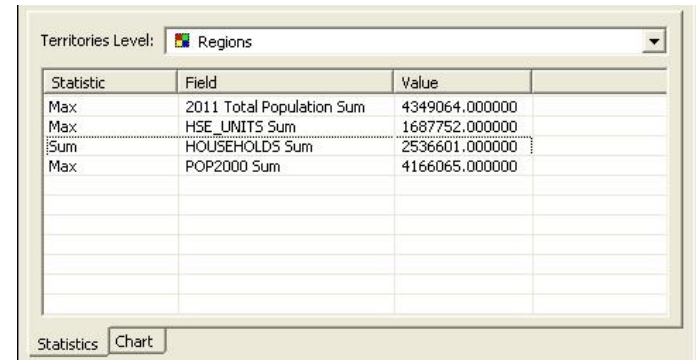
- Statistics are shown as count, sum, min, max, average, median, standard deviation, and balance index. The balance index indicates how close the created territories are to the parameters defined in the Balancing Options dialog box.
- You can add more statistic fields to the statistics view by opening the Territory Layer Properties, and choosing from the available variables for each territory level. Clicking +/- expands or collapses your territory level tree views.
- You can view statistics by overall territory level or individual geographic elements by choosing the desired layer from the Territories Level drop-down menu.
- Right-clicking any place in the statistics view and clicking "Statistics..." opens the standard ArcGIS Statistics dialog box.

Working in statistics view

1. Click Show/Hide TD Window from the Territory Design toolbar.

The Territory Design window opens. Dock it as necessary.
2. Click the Statistics tab.
3. Choose the territory level you want to work with from the Territories Level drop-down list.

The statistics for the selected geographic elements are displayed.



The screenshot shows the Statistics view in ArcGIS. At the top, there is a dropdown menu labeled 'Territories Level:' with 'Regions' selected. Below this is a table with four columns: 'Statistic', 'Field', 'Value', and an empty column. The table contains the following data:

Statistic	Field	Value	
Max	2011 Total Population Sum	4349064.000000	
Max	HSE_UNITS Sum	1687752.000000	
Sum	HOUSEHOLDS Sum	2536601.000000	
Max	POP2000 Sum	4166065.000000	

At the bottom of the window, there are two buttons: 'Statistics' and 'Chart'.

Territory Design Window:

Chart view

The chart view displays balancing information for territories. The chart provides a visual guide to how well territories are balanced. A balancing line is included to show the mean value of a selected variable for all territories.

Tips

- You can add more attribute fields to the chart view by opening the Territory Layer Properties dialog box, and choosing from the available variables in the Chart tab.
- Add the balancing line in the Chart tab in the Territory Layer Properties dialog box.
- Territory names may not be visible or are truncated in the chart view if there are too many characters in a territory name or if there are many territory columns.
- Right-clicking a territory chart column provides many different territory management options.
- Double-clicking any territory chart column opens the ArcGIS Symbol Selector. Changing the color or symbol in the chart view is also reflected on the map and in the data and hierarchy views.

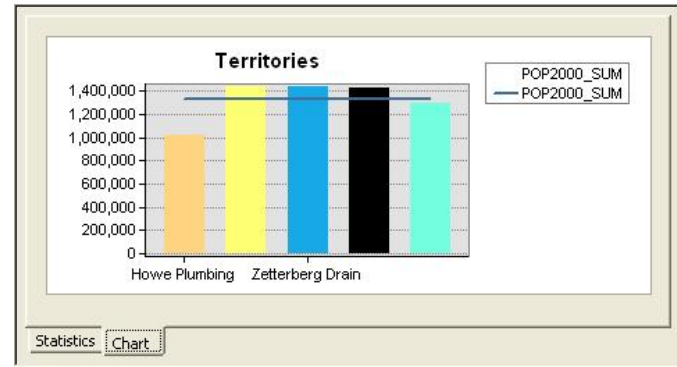
Working in chart view

1. Click Show/Hide TD Window from the Territory Design toolbar.

The Territory Design window opens. Dock it as necessary.

2. Click the Chart tab.

The contents of the chart view are controlled by what is selected in the Territory layer drop-down list of the data or hierarchy views or by the current level selected on the drop-down list on the TD toolbar (not the Territory Design drop-down menu, but the hierarchy level drop-down list on the right side of the toolbar).



Working in Selection Mode



Selection Mode is a way of working with selections of your territories and displaying the results for only those selections. You can access Selection Mode from the Territory Design toolbar. Selection Mode works in the data view, statistics view, and chart view.

Selection Mode relates to selections made by the Territory Select Tool found on the Territory Design toolbar. Selections made by the standard ArcGIS Select Feature tool do not affect the Territory Design views when in Selection Mode. It does, however, turn off Selection Mode.

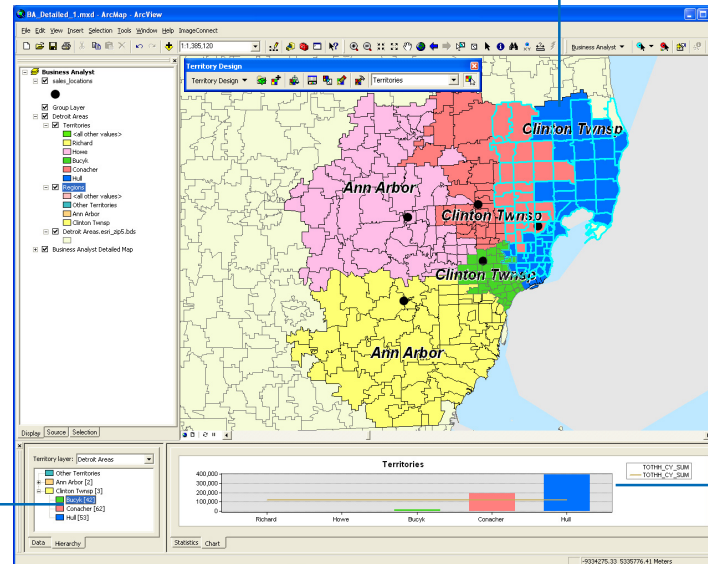
If you are using Selection Mode for the data view, data are shown only for elements that are selected in the map.

If you are using Selection Mode for the statistics view, statistics are shown only for elements that are selected in the map.

If you are using the Selection Mode for the chart view, the chart is will shown only for elements that are selected in the map.

You can use the Territory Select Tool to work with the map. With it, you can select data management options such as create a new territory, reassign a territory, copy, and remove a territory.

Selected geographic elements (ZIP Codes) within territories



Hierarchy information is updated to show only selected features.

Chart representing selected items only within territories

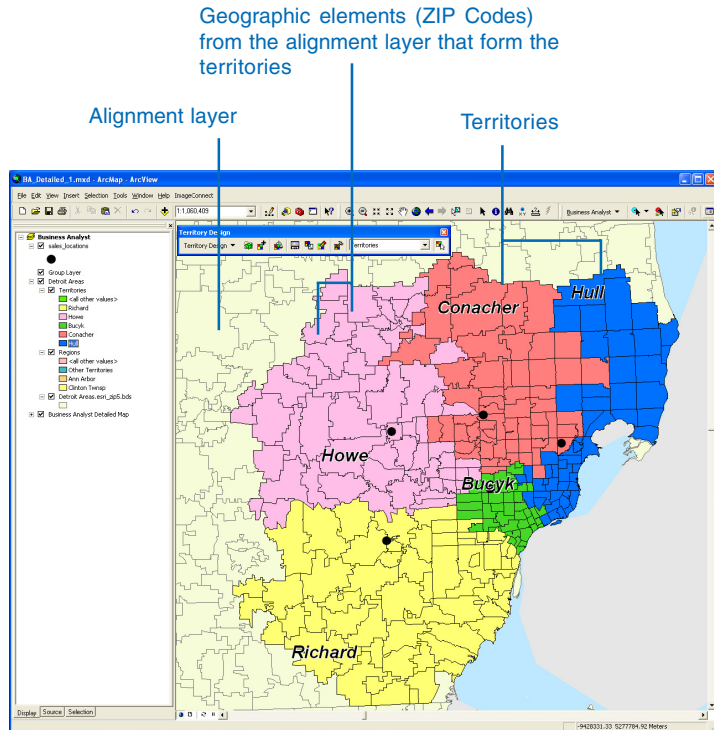
A map showing a set of territories with Selection Mode turned on. The TD Window chart shows only the information for the selected areas.

Working in Edit Mode

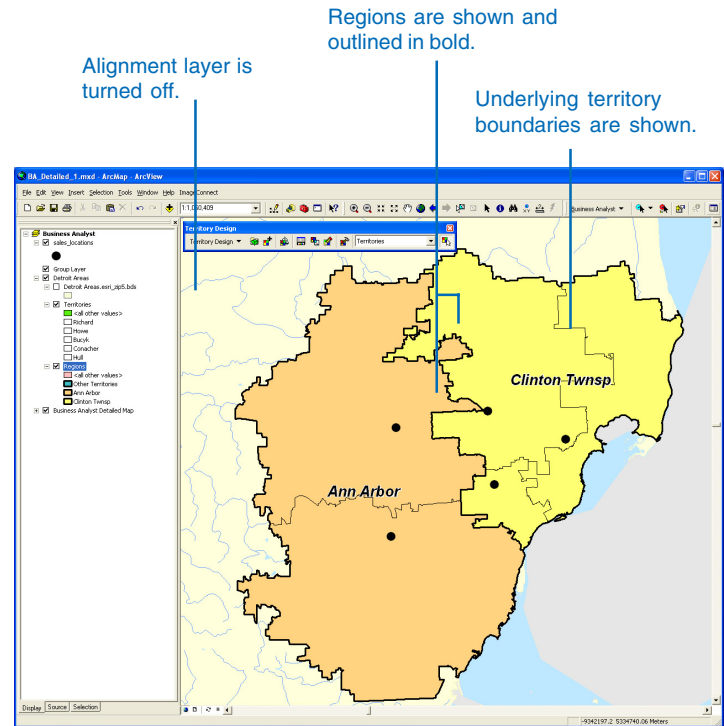


Edit Mode is a way of working with territories having multiple hierarchies. When in Edit Mode, Territory Design increases the thickness of the boundary lines for the active level of territories and shows geography elements of its base layer, making the

hierarchy levels easily distinguishable. Also, other territory levels on the map become temporarily invisible. You can edit territories in Edit Mode using the standard Territory Design editing features including the Territory Select Tool, and data view and by dragging and dropping territories. The visibility of the territory levels is restored after turning off Edit Mode.



A map showing a set of territories. Regions are created from these territories, but will not be shown until Edit Mode is turned on.



A map showing a set of regions in Edit Mode. The underlying territories are made invisible.

Setting the territory layer properties



The Territory Layer Properties dialog box is accessed from the Territory Design toolbar. It can be used to control a variety of settings for working with the software.

Throughout this section, you will learn more about the different tabs on the Territory Layer Properties dialog box, including:

- Data tab
- Statistics tab
- Chart tab
- Map Display tab
- Data Source tab

Territory Layer Properties:

Data tab

The Data tab allows you to control what attributes are included in each level of your analysis.

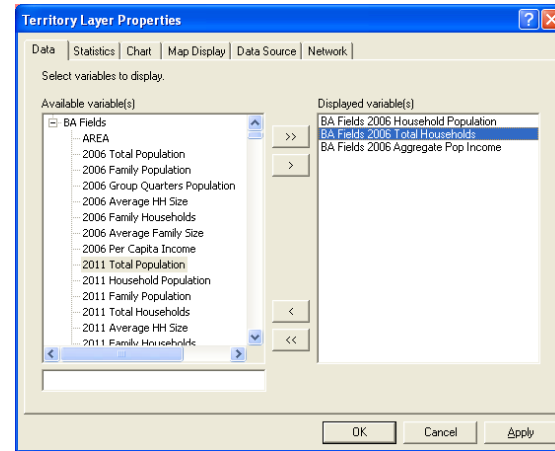
Tip

If you add available variables to the displayed variables window in the Data tab, the displayed variables are automatically added to the territory level database you are working with. Conversely if you remove any displayed variables, they will be removed from the territory level database.

Setting territory layer Properties on the Data tab

1. Click the Territory Layer Properties button from the Territory Design toolbar.

The Territory Layer Properties dialog box opens.
2. Click the Data tab.
3. Choose the available variables and use the arrows to move them to the Displayed variable(s) area and make them active. Click Apply to continue to work with the territory layer properties, or click OK to save your new settings and close the dialog box.



Territory Layer Properties:

Statistics tab

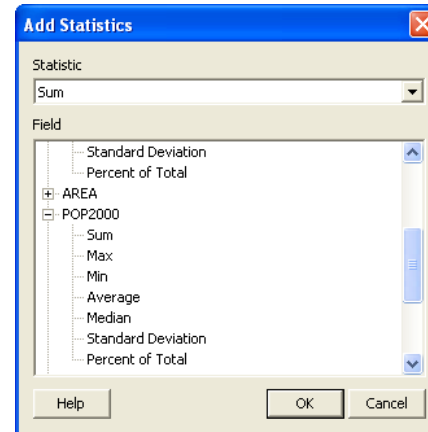
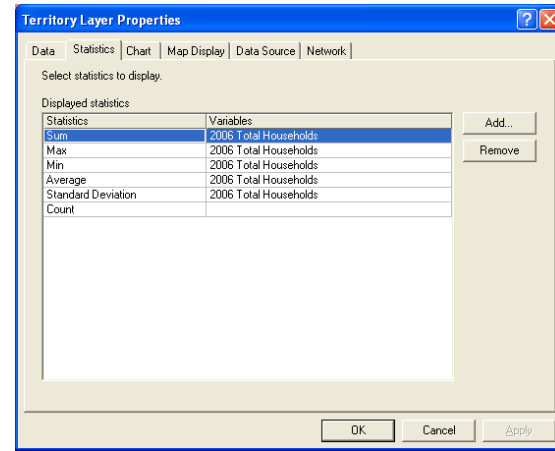
The Statistics tab allows you to control what attribute statistics are shown in each level of your analysis.

Tip

The variables that you add on the Statistics tab will show up in Territory Design Window.

Setting territory layer properties on the Statistics tab

1. Click the Territory Layer Properties button from the Territory Design toolbar.
The Territory Layer Properties dialog box opens.
2. Click the Statistics tab.
3. Click Add to see a list of variables.
4. Choose the type of statistic you want to see from the drop-down list.
5. Choose the variable you want to show in the Field area and click OK.
6. Click Apply to continue to work with territory layer properties or click OK to save your new settings and close the dialog box.



Territory Layer Properties:

Chart tab

The Chart tab allows you to control what attributes are included in the Territory Design charting. You can view the chart information in the Territory Design Window on the Chart tab.

Tip

By checking on the Show balancing lines check box a line is displayed in the Territory Design Window chart showing the mean value of the attributes you choose. This provides a visual guide to how well a territory has been balanced. You can show more than one attribute at a time; a balancing line is shown for each attribute.

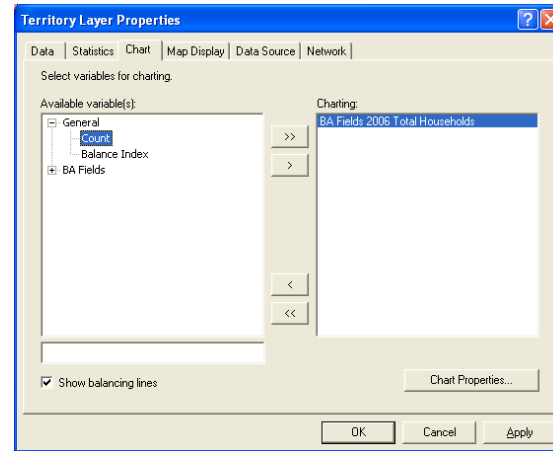
Tip

Clicking Chart Properties opens the standard ArcGIS Advanced Chart Properties dialog box. You can further customize your chart using this dialog box.

Setting territory layer properties on the Chart tab

1. Click the Territory Layer Properties button from the Territory Design toolbar.

The Territory Layer Properties dialog box opens.
2. Select the Chart tab.
3. Choose the available variables and click the right arrows to move them to the Displayed variable(s) area and make them active. Click Apply to continue to work in the territory layer properties or click OK to save your new settings and close the dialog box.



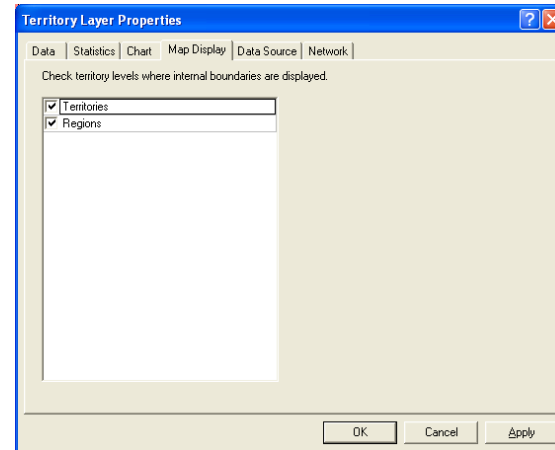
Territory Layer Properties:

Map Display tab

The Map Display tab allows you to control which territory levels are shown with internal boundaries in ArcMap. For example, if you have two territories created from a set of 30 ZIP Codes, the ZIP Code boundaries are displayed within each territory. When a territory is created, the alignment layer boundary files are dissolved to form a contiguous territory polygon. Displaying the boundaries can be helpful if you want to show the total boundaries within each territory or the size distribution of the boundaries.

Setting territory layer properties on the Map Display tab

1. Click the Territory Layer Properties button from the Territory Design toolbar.
The Territory Layer Properties dialog box opens.
2. Click the Map Display tab.
3. Check the territory levels where you want to display internal boundaries.
4. Click Apply to continue to work with territory layer properties or click OK to save your new settings and close the dialog box.



Territory Layer Properties:

Data Source tab

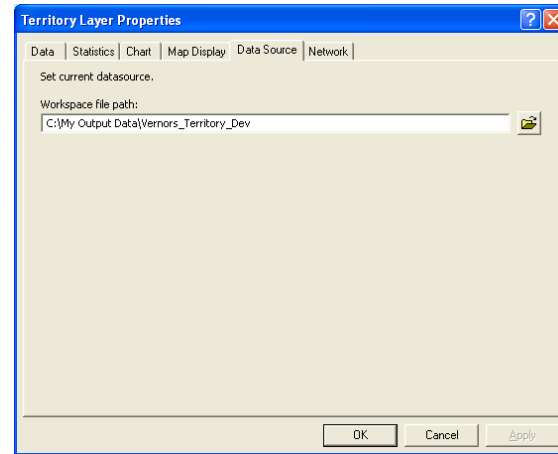
The Data Source tab allows you to control where your Territory Design analyses are saved. The information is stored in a file-based geodatabase.

Tip

By default, the Territory Design workspace is set to C:\My Output Data, but you have the option to save it to any location you choose.

Setting territory layer properties on the Data Source tab

1. Click the Territory Layer Properties button from the Territory Design toolbar.
The Territory Layer Properties dialog box opens.
2. Click the Data Source tab.
3. Type your workspace file location or click the browse button to navigate to a location.
4. Click Apply to continue to work with territory layer properties or click OK to save your new settings and close the dialog box.



Territory Layer Properties:

Network tab

The Network tab allows you to control which drive-time methods Territory Design uses. You have the option to use StreetMap™ or Network Analyst.

Tip

Drive-times can be used in Territory Design when you balance territories. For instance you can set parameters so that a location can't exceed a 25-minute drive-time. In this scenario you, have the option to choose Network Analyst or StreetMap to solve the drive-time.

- Network Analyst yields highly detailed drive-time polygons but may take longer to create.

- StreetMap produces more generalized drive-time boundaries, but works very fast.

Setting territory layer properties on the Network tab

1. Click the Territory Layer Properties button from the Territory Design toolbar.
The Territory Layer Properties dialog box opens.
2. Click the Network tab.
3. Choose the analysis solver type from the drop-down list.
4. Click Apply to continue to work with territory layer properties or click OK to save your new settings and close the dialog box.

