

Geocoding to Geographic Entities other than Street Address

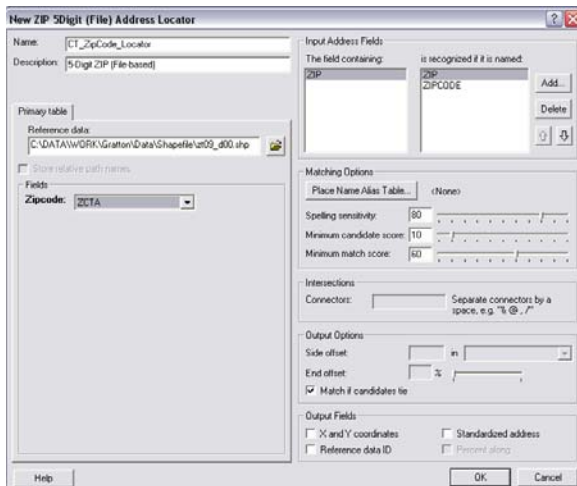
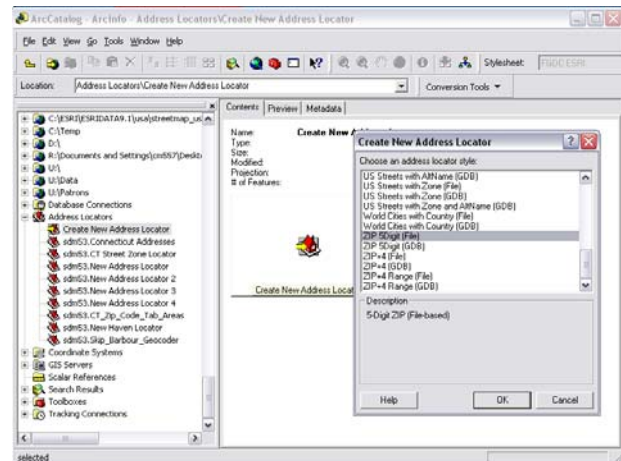
In many cases, especially when dealing with sensitive data (medical, income, crime, etc...), data will be aggregated by some geographic unit, rather than tabulation by individual address. It is still possible to geocode this aggregated data using ArcMap. This tutorial explains the steps to geocode a dataset that has been aggregated by zip code. While this is a popular means of aggregating data, it should be noted that use of zip codes to aggregate data can be problematic, since the method assumes zip codes are areas, when in fact they are networks.

Before you start:

- **Your aggregated dataset must contain a field with the zip codes that is formatted as text (string).**
- Download the **Census 2000 5-Digit ZIP Code Tabulation Areas (ZCTAs)**, boundary files for your State (or for the entire U.S.) from the U.S. Census Website:
<http://www.census.gov/geo/www/cob/z52000.html>
- Unzip the file to your project folder (preferably a folder without spaces in the pathname)

Creating the Address Locator

1. Open **ArcCatalog** and scroll to the bottom of the **TreeView Window** to find the **Address Locators** item.
2. Expand the **Address Locators Group** and double-click on the **Create New Address Locator** item to open the dialog box.
3. In the first dialog box, scroll down to find the **5-Digit ZIP (File-based) Locator Style**. Click **OK**.



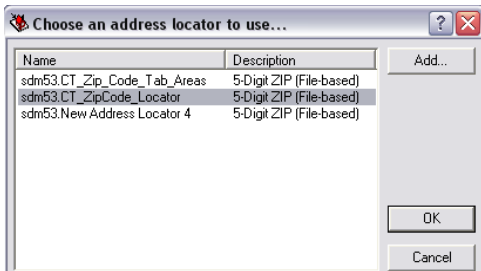
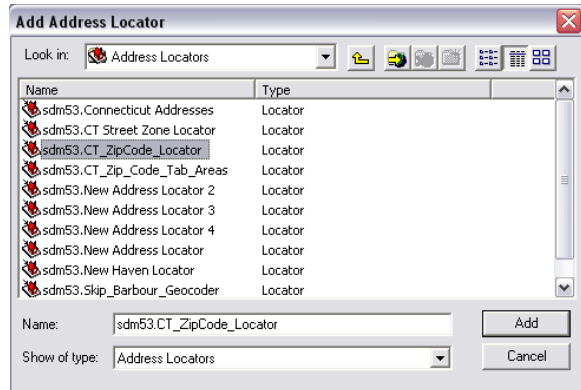
4. In the next dialog box:
 - Give your locator an appropriate **Name**;
 - Use the **“Reference Data:”** browse button to browse to the **Census 2000 5-Digit ZIP Code Tabulation Areas** layer you downloaded.
 - Under **Fields**, use the dropdown to select **ZCTA** as your **Zipcode** field.

- Under the **Output Fields** options, check the **“X and Y Coordinates”** checkbox.
- Click **OK**.

5. Close **ArcCatalog**.

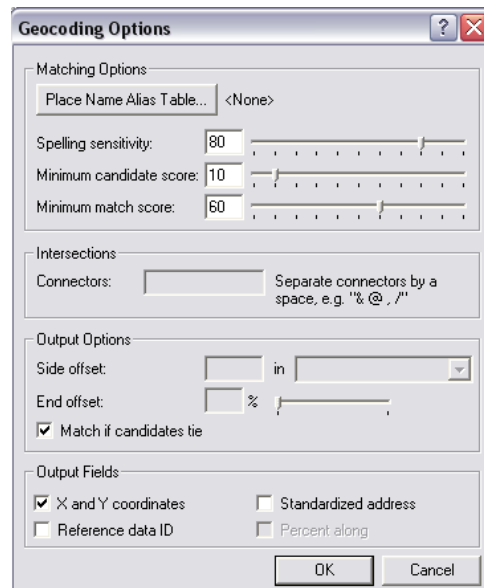
Geocoding Your Data Using Your New Address Locator

1. Open **ArcMap** and use the **Add Data** button to add your table of data (aggregated by **Zipcode**) to your **ArcMap** document.
2. Right-click on your data table and select **Geocode Addresses**.
3. In the **“Choose an Address Locator...”** dialog box, click on the **Add...** button and browse use the **“Look in:”** drop-down to go to the **Address Locators**.



4. Select your **Address Locator** from the resulting list. Click **Add**.
5. Select the **Address Locator** you just added and click **OK**. The **Geocode Addresses Options** Dialog will appear.

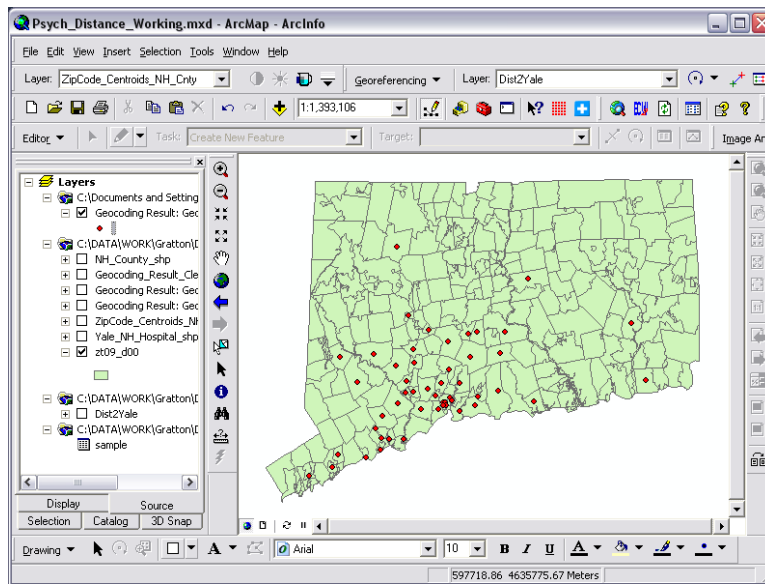
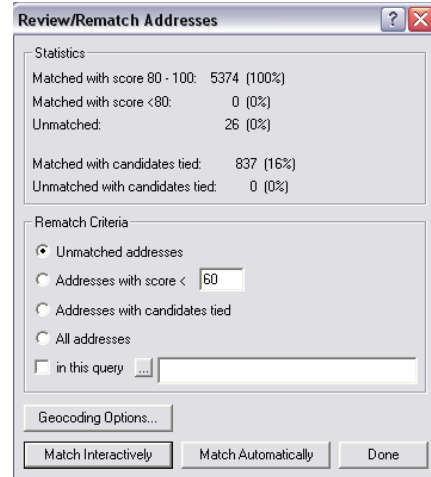
6. Use the **Address Input Fields** drop-down to assign the appropriate **zip code** field from your data table.
7. Browse to an appropriate folder and name your **“Output Shapefile or Feature Class.”**
8. You can click on the **Advanced Geometry Options... Button** to assign a **Spatial Reference** (the default is to use the reference of the locator dataset).
9. Click on the **Geocoding Options** Button and make sure that **X and Y Coordinates** is checked under **Output Fields**. Click **OK**.
10. Click **OK** to Geocode your data.



11. The Review/Rematch Addresses Dialog will be presented once Geocoding has been completed. You can click on the Match Interactively button to examine the records that did not successfully geocode.

12. Once you have finished reviewing and rematchng your results, click Done.

You should now have a new point shapefile layer containing your geocoded results.

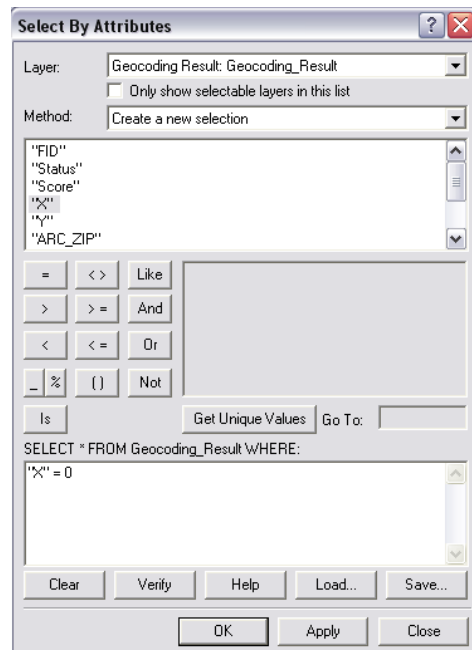


Subsetting to Your Successful Geocode Points

Your resulting geocoded point layer will contain ALL of the records from your original data table, whether they were successfully geocoded, or not. This will cause problems when you try to run any type of geoprocessing tools that require geometric calculations, since the records that did not geocode have no geometry (by problems, I mean ArcMap will crash and you will lose any unsaved changes to your Map Document). Therefore, before you use your new file to perform any geoprocessing, you should subset to the successful geocoding results in your file.

1. In the **Main Menu**, go to **Selection>Select by Attributes**.
2. Choose the following options:
 - Layer: **Your Geocoding Results Point Layer**
 - Method: **Create a New Selection**

- In the SQL Query Window: **"X" = 0**
3. Click **OK**.
 4. Right-click on your **geocoding results layer** and open the **Attribute Table**.
 5. Click on the **Show: Selected** button. Note that the selected records have no **X and Y coordinates**.
 6. Click on the Show: All button. Click on the Options button and select Switch Selection.
 7. Close the **Attribute Table**.
 8. Right-click on your **geocoding results layer** and go to **Data>Export Data**.
 9. Since you have an active selection, **Export: Selected Features** should be the default.
 10. Select the **Coordinate System** option of your choice and give your export file an appropriate **name (Geocode_Clean.shp, for example)**. Click **OK** and add the layer to your map document when prompted.



You should now have a shapefile of your successfully geocoded data.