

## Geocoding by Postal Code Using ArcMap

These procedures outline:

1. Creating the Input Table
  - a. Inputting the Data
  - b. Exporting the Data
2. Geocoding by Postal Code

**Definition of Geocoding:** Taking an address or postal code and giving it an x and y co-ordinate that accurately positions it on a map of the earth's surface (such as a digital map of the City of Toronto).

In order to use these instructions, you must have Microsoft Excel and ArcMap 9.0 or higher. In this example a data table will be created in Microsoft Excel, exported as a .dbf file and then geocoded in ArcMap. These instructions will explain how to use a DMTI postal code file to geocode by postal code.

### A. Creating the Input Table

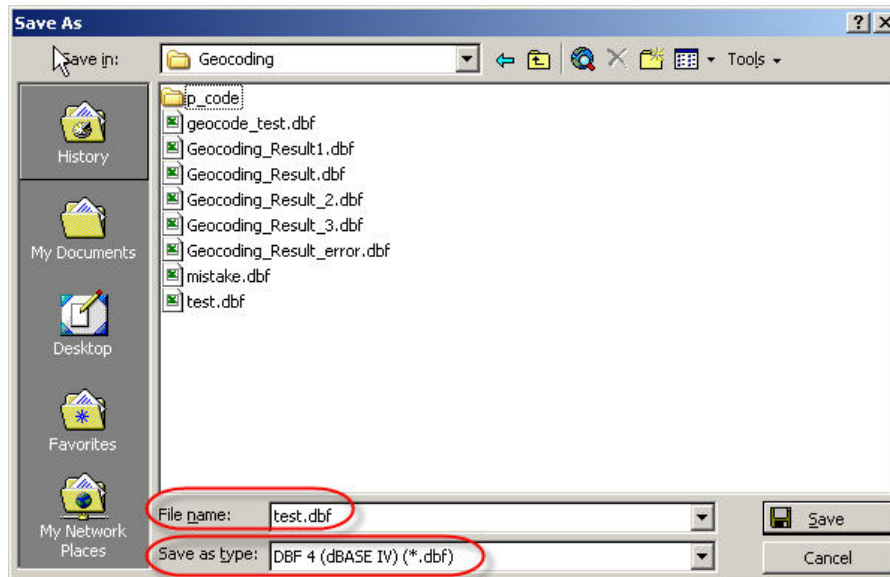
In order to geocode, ArcMap requires a table containing address information. If the user wishes to geocode by postal code then this table must have a six digit postal code.

If the user wishes to geocode by address, then this table must contain the street name, number, and if applicable, the street's prefix direction, prefix type, street type, or suffix direction.

1. Open **Microsoft Excel**: *Click Start > Programs > Microsoft Office > Microsoft Excel*
2. Create column headings: In cell **A1**, type **P\_code** (this will be the column heading for postal codes).
3. Below the **P\_code** column heading, type in the appropriate postal code. For this example make sure there are no spaces between the six digit postal code. Example A2B1C3.

	A	B
	<b>P_Code</b>	
2	M9W5J5	
3	M5B2K3	
4	M5S1X1	
5	M5R1V9	
6	M6G1A2	
7	L5L1C6	
8	M1C1A4	
9	M5S3G7	

4. In order to open the table in ArcMap it must be saved as a .dbf file. Prior to saving, make sure that an active cell is selected. *Click* on one of the postal codes that you have entered (in order to save the file as a .dbf, an item in the list must be clicked or else an error message will be return when the user attempts to save). From the main menu bar, *click* **File > Save As**. In the **File Name** text box give the table an appropriate name (in this example we will name it **test.dbf**). In the **Save as type** drop down menu, select **DBF4**.



- a. *Click* **Ok** when the “**selected file type does not support workbooks that contain multiple sheets**” message appears.
  - b. *Click* **YES** when the “**... may contain features that are not compatible with DBF4**” message appears.
5. *Close* **Microsoft Excel**.
    - a. When prompted to save changes *click* **Yes**.
    - b. *Click* **Save** in the **Save As** window.
    - c. *Click* **Yes** when asked to replace the existing file.
    - d. *Click* **YES** when the “**... may contain features that are not compatible with DBF4**” message appears.

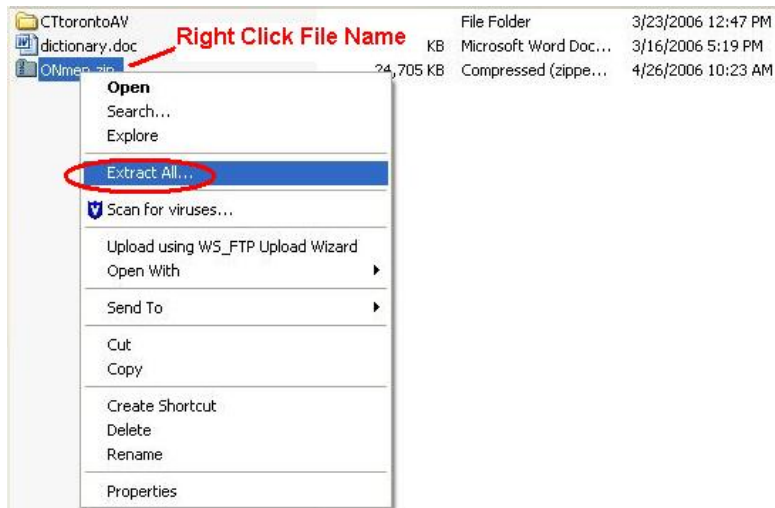
## **B. Downloading the Address Locator (postal code file)**

In order to geocode by postal code, ArcMap requires an address locator file that is used to match postal codes from the .dbf file to the postal code file. This file can be downloaded from the Ryerson University Library website.

**Note** – These data are for use by Ryerson University faculty, students and staff only. These data products are provided for the exclusive purposes of teaching and academic research. Read the appropriate licensing agreement for further information. To access


the files from a computer located off the Ryerson campus, you must be a Ryerson University student (full-time or continuing education), staff or faculty member and have a matrix (e-mail) account.

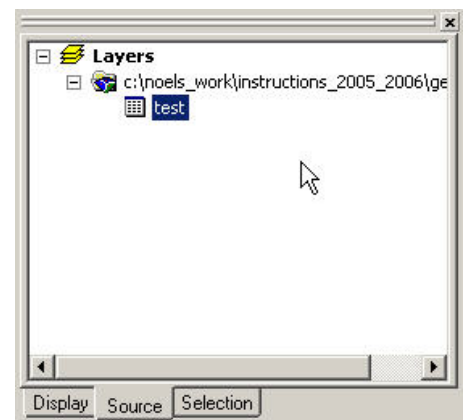
1. Navigate to the **Ryerson University Library Website** (<http://www.ryerson.ca/library/>)
2. On the main page *click* **Map & Data Resources**
3. In the main menu on the left *click* **Geospatial Data**
4. In the main menu on the left *click* **Search Geospatial Resources**
5. In the search input box, type in **CanMap Enhanced Canadian Postal Geography 2005.3**, then *click* **Search**
6. Scroll down to the search result with the title **CanMap Enhanced Canadian Postal Geography 2005.3** and *click* on the title
7. In the ensuing screen *click* **Link to Data**. Enter your user name and password (this is the same as your Ryerson E-Mail user name and password). Read over and agree to the licence agreement.
8. Scroll down and *click* **ONuep.zip**. Select a suitable location and save the .zip file.
9. When prompted to save, browse to an appropriate location and then *click* **Save**.
10. In order to extract the file, browse to its location, uncompress the file and follow the instructions provided by the Extraction Wizard. As shown below:



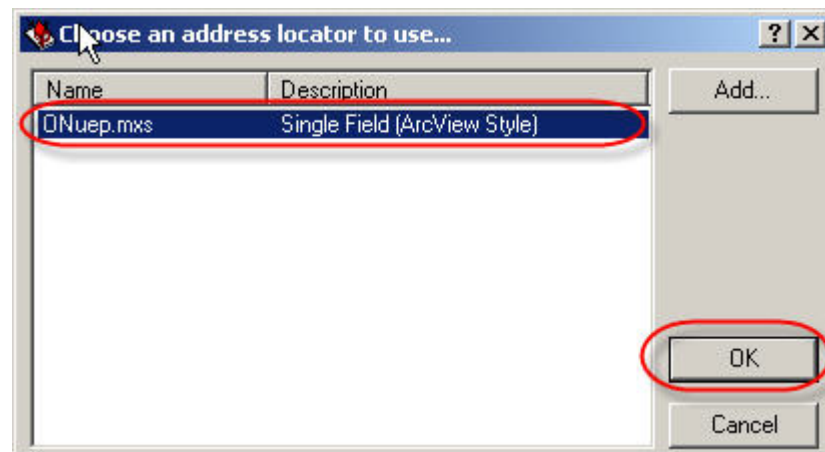
### C. Geocoding by Postal Code


1. *Double-Click* on the **ArcMap 9.0** icon or *Select Start > Programs > ArcGIS > ArcMap*. ArcMap should automatically prompt the option to **Add Data**.

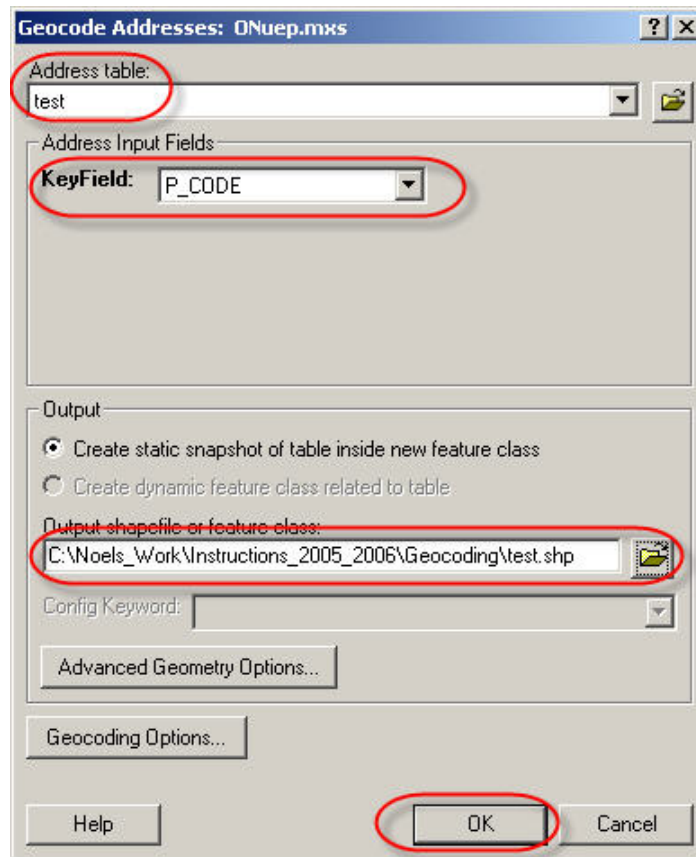
Otherwise, *Click* the **Add Data** button . In the **Add data** window, browse to the location of the saved .dbf file. (In this example we will use **test.dbf**). **test.dbf** should appear in the **Layers** window.



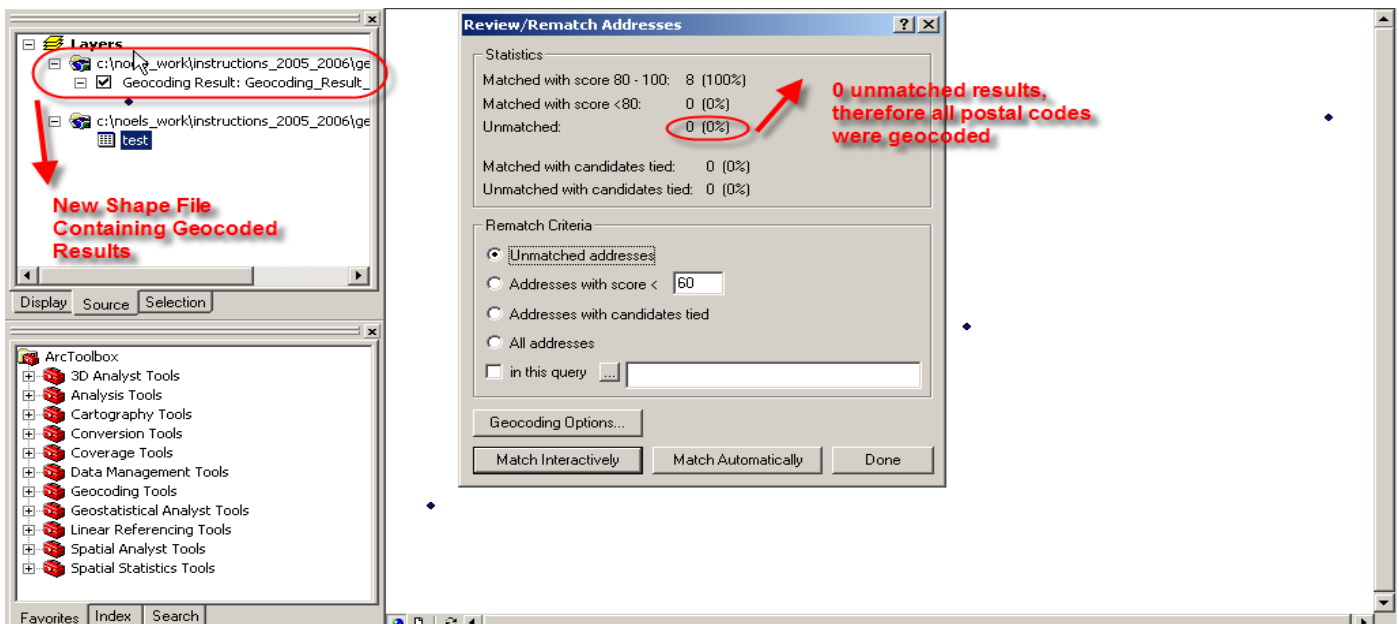
2. From the main menu *click* **Tools > Geocode > Geocode Addresses...** This will open the **Choose an address locator to use** window.
3. *Click* **Add**. In the **Add Address Locator** window browse to the location where **ONuep** is saved, then *double click* the **ONuep** folder. *Select* **ONuep.mxs**, then *click* **Add**. **Note:** If an error message appears asking you to repair the file, *click* **No**. Open **My Computer** and make sure that none of the folders that ONuep is in contains a space. **Be sure that the selected name or any of the folders in the file directories do not have spaces (use letters or numbers and use the underscore key rather than a space)**. Once this has been corrected, repeat step 3.
  - a. *Click* **Ok** in the **Choose an address locator to use** window.




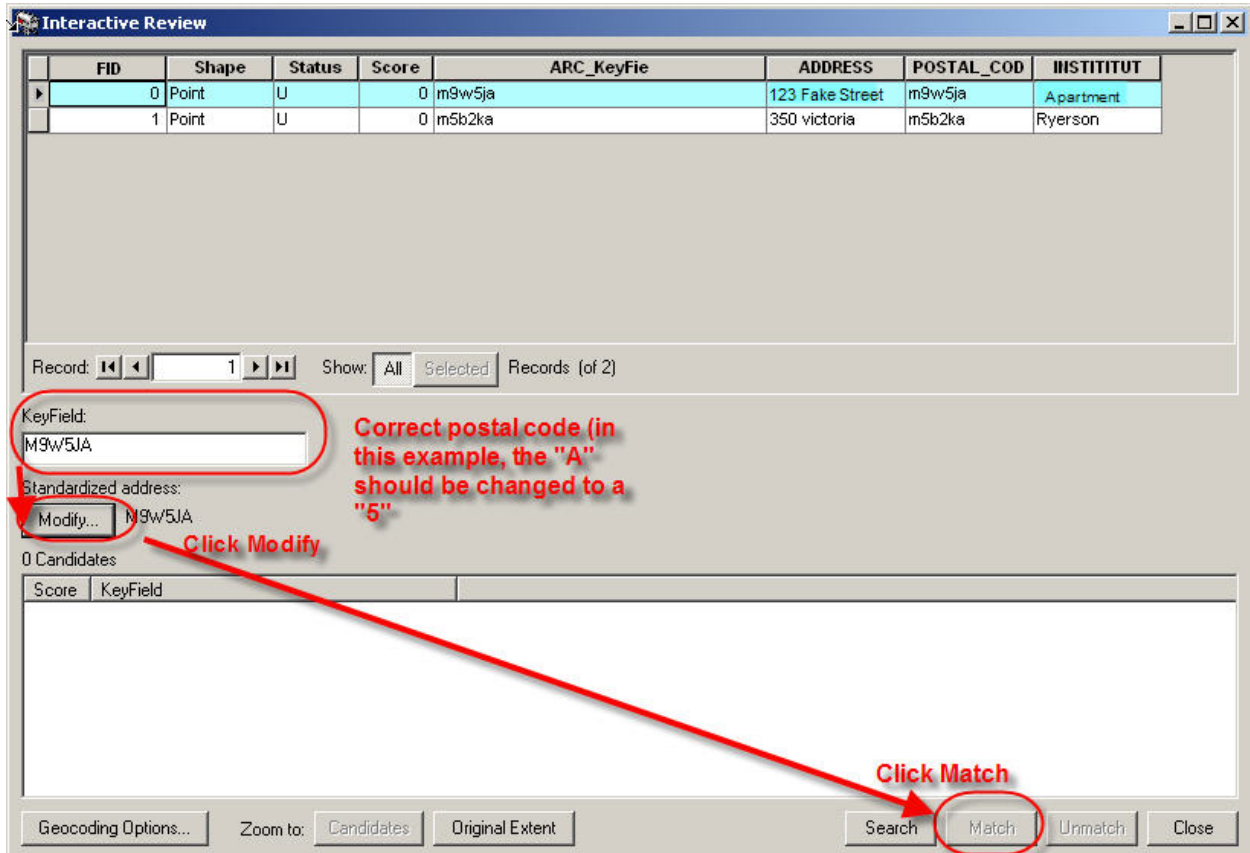
4. In the **Geocode Addresses** window select the name of the .dbf table (in this example **test.dbf** will be used) in the **Address Table** scroll down menu.
  - a. In the **Key Field** scroll down menu *select* **P\_Code**.
  - b. In the output shapefile or feature class text box, type in or use the  open folder button to browse to an appropriate location to save the file (in this example the name will be **test.shp**). Once an appropriate name has been selected, *click* **Save**. **Be sure that the selected name or any of the folders in the file directories do not have spaces (use letters or numbers and use the underscore key rather than a space)**.
  - c. Then *click* **Ok**.



- The Review/Rematch window allows the user to see the success rate of the geocoding process. If all of the postal codes were geocoded, then the number next to the **Unmatched** title should be 0 and 0%. If this is the case, *click Done*. The file containing the geocoded points will appear in the **Layers** window and the geocoded points will appear in the **Data View**. **Note:** The newly geocoded points will be displayed in the same projection (GCS North American 1983) as the file used as the address locator (ONuep.mxs).




- If there are any postal codes that were not geocoded, **click Match Interactively.**
- In the **Interactive Review** window make sure that the postal code is typed correctly, if not then change it in the **KeyField** text box.
- Click Modify**
- Click Match**
- Click** the right pointing triangle to  advance to the next record (if any) and repeat step b.



- Once all of the postal codes have been correctly adjusted **click Close.**
- Click Done.**

#### **D. Adding Additional Data**

At this point the geocoding process is complete. The file containing the geocoded points will appear in the **Layers** window and the geocoded points will appear in the **Data View**. In order to add additional data layers (such as a streets file or boundary file) to the data view:

- Click the  **Add Data** button
- In the **Add Data** window browse to the location of the desired files
- Click Add.**