

# ArcGIS: Geocoding

Yale *Center for Geospatial Solutions*

## **MATERIALS NEEDED: nh\_businesses.csv**

In this lab, you will convert a text file containing the addresses of New Haven businesses to a point feature class for mapping. All businesses in this dataset were recently established (2017-2025).

### **Opening the CSV**

After downloading the csv file, open a new Project in ArcGIS Pro or Insert a New Map into an existing Project.

Use the Add Data button to add the table nh\_businesses.csv to the map. Right-click on the csv and choose “Open” to open the table. Take a moment to inspect the field (column) names and the values beneath them. You will see 325 businesses in New Haven, with fields for the address, number of employees, sales volume in dollars, and year of establishment.

Pay particular attention to the addresses. There is a column containing the full address (Complete\_Address), as well as separate columns for street, city, and state. Close the table when you are finished.

The SIC Code is a 4-number government code used to identify industries by their businesses type; pay attention to the column of descriptions for each code. The most common business types within this dataset are Restaurants, Attorneys, and Beauty Salons.

## Geocode Addresses

In the Table of Contents, right-click on the table's name. Choose Geocode Table from the right-click menu. This launches the geocoding workflow. You will move through each panel of the workflow. Click Start.

The first panel asks you to choose an Input Locator. Very likely the only choice you will see is ArcGIS World Geocoding Service. Choose this and then click Next.

In the second panel, verify that the input table is nh\_businesses.csv. From the drop-down menu, choose "more than one field".

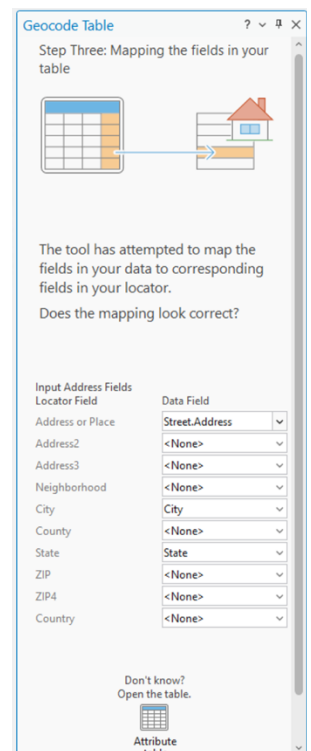
In the third panel of the workflow, select Street\_Address, City, and State for the associated dropdown options. For most projects, you may find it helpful to add the ZIP\_Code column or choose the "one field" option, then simply use a combined address column with attached zip codes. For this exercise, though, we won't be using the zip codes. Click Next.

In the fourth panel, consider using Address Location, though it is not important for this example. **Change the Output Fields drop-down to Minimal** to prevent generating a massive output table. Click Next.

In the fifth panel, limit the location to the United States. In the sixth panel, it might be appropriate to limit the categories to Address for this dataset, but it is not that important. Click Finish.

At the end of the workflow, you will see the Geocode Table tool filled out for you. It is also possible to access this tool directly from the toolbox, if you find that quicker or easier.

It costs credits to use the World Geocoding Service. You can check your credits balance in the My Settings option under your username in ArcGIS Online. The going rate is 40 credits per 1,000 geocodes (2024).



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### Credits

Credits

Remaining 25,285.78 Assigned 30,000.00

Credits are the currency used across ArcGIS and are consumed for specific transactions and types of storage. Any ArcGIS software that interacts with ArcGIS Online can use credits. Most of what you do in ArcGIS Online does not require credits. In many cases, credit-consuming activities carry a relatively low cost. [Learn more about credits](#)

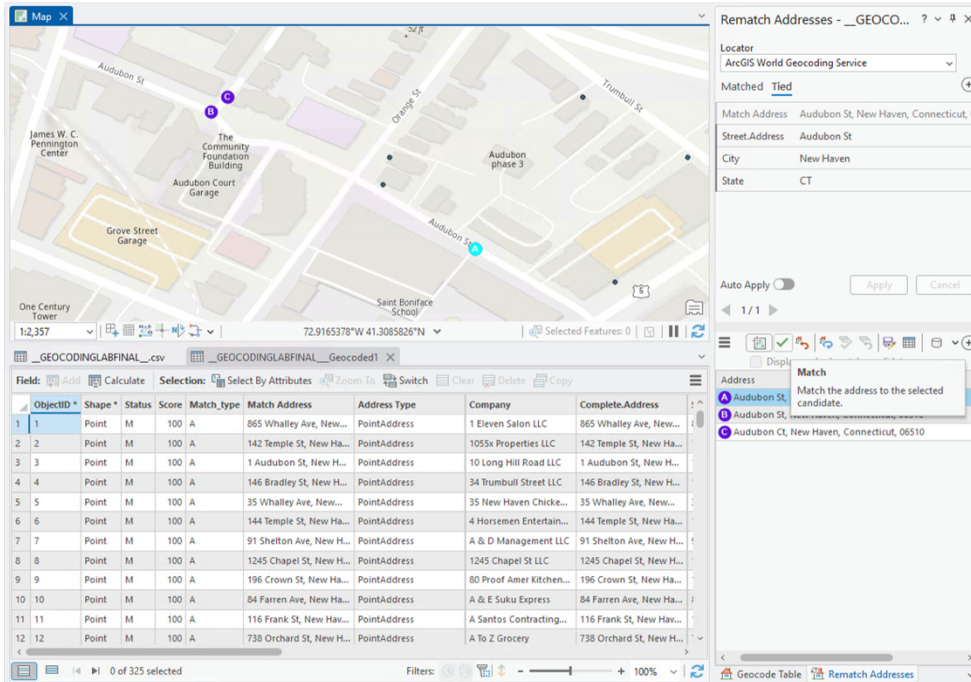
Remember that using the World Geocoding Service will send the addresses to a remote ESRI server over the internet. This is not appropriate for protected data like personally identifiable health data.

Before you finish the geocoding workflow, you must estimate the cost in credits in the blue ribbon at the top of the panel. Then run the tool. You should see that over 300 records have matched correctly with a handful of ties.

## Rematch Addresses

Click “Yes” to start the Rematch process. The Rematch Addresses dialogue box defaults to showing you the Matched addresses. While you can (and probably should) audit the matches, we will assume that they have been correctly matched and switch instead to fixing the Tied addresses.

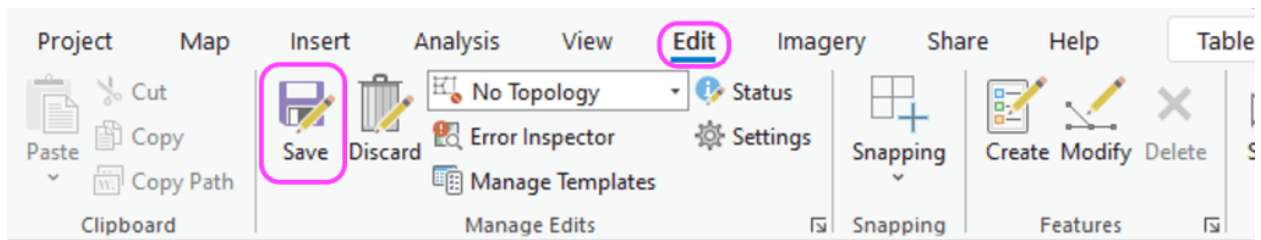
Here, the geocoder is confused over which location on Audubon Street to choose. You can inspect the options in the map and choose one you like. Use “Match”, the green checkmark symbol, to accept a choice. Then scroll to the next tie using the right-arrow symbol.



You can also use the square icon to the left of the checkmark to place a point by hand, if the geocoder does not have an appropriate choice.

When you have chosen all four tied addresses, close the Rematch pane. Then, save your changes using the Save icon in the Edit ribbon.

In the Table of Contents, right-click on the geocoded points layer and choose Zoom to Layer to see your results.

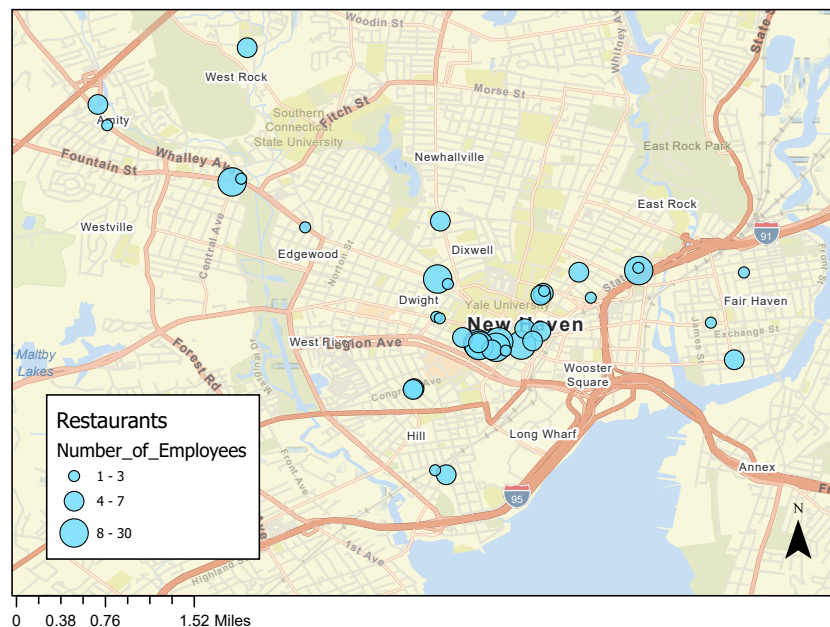


## Example Map

Click Select by Attribute in the Map ribbon. Make sure the input rows are your new geocoded layer. Add a new clause where your SIC Description column is equal to Restaurants. Press Apply and then OK.

To make this selection permanent, create a new layer by right-clicking on your geocoded layer in Contents, going down to Selection, then choosing “Make Layer from Selected Features”. Your restaurant subset will now appear as a new layer in the Contents pane.

You can experiment with appearance by right-clicking on your new restaurant layer and choosing “Symbology”. Choose the Graduated Symbols option for Primary Symbology and use Number of Employees as your Field. Explore the Method and Classes dropdowns and decide which combinations best represent your data. You can also adjust transparency and color for ease of viewing.



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Jill R. Kelly, adapted by Mara Klein in March 2026 for ArcGIS Pro version 3.6

The New Haven business data used in this lab is taken from Data Axle, 2026. Two fictional locations were added to this dataset for the rematch addresses exercise (Elm City Hiking Gear and Connecticut Brushworks).

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