NAACCR Geocoding Tutorial

I.   Introduction

The goal of the tutorial is to familiarize you with the NAACCR online geocoder. The NAACCR geocoder can be used to geocode one address at a time or in batch mode by providing multiple addresses in a file (e.g. text file).

For the tutorial, you will be geocoding addresses of Starbucks locations. The data set is available on the GIS Resources Page https://www.naaccr.org/gis-resources/ (Sample Training Dataset, a csv file, same location as this Tutorial)
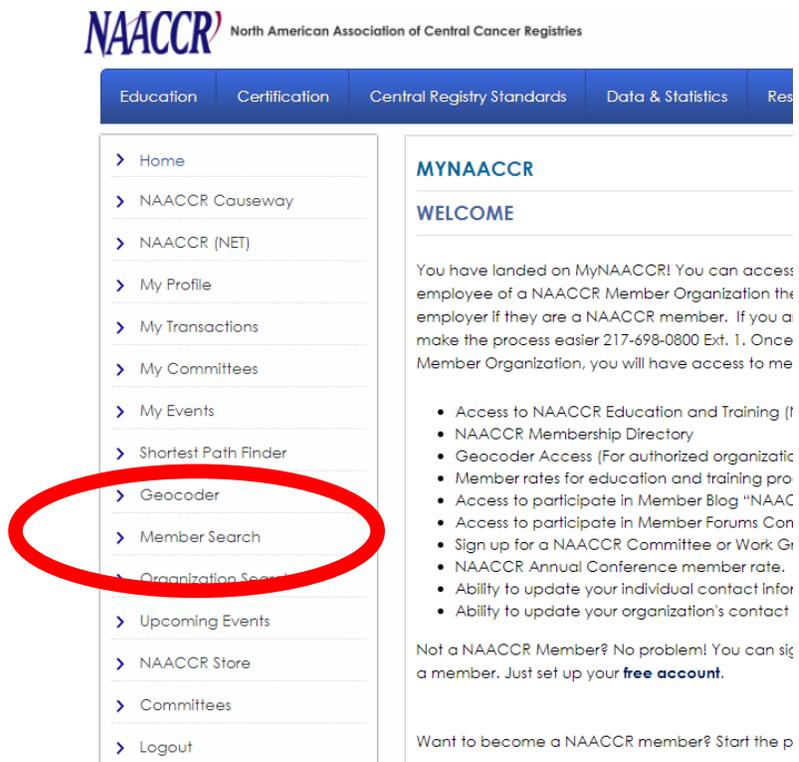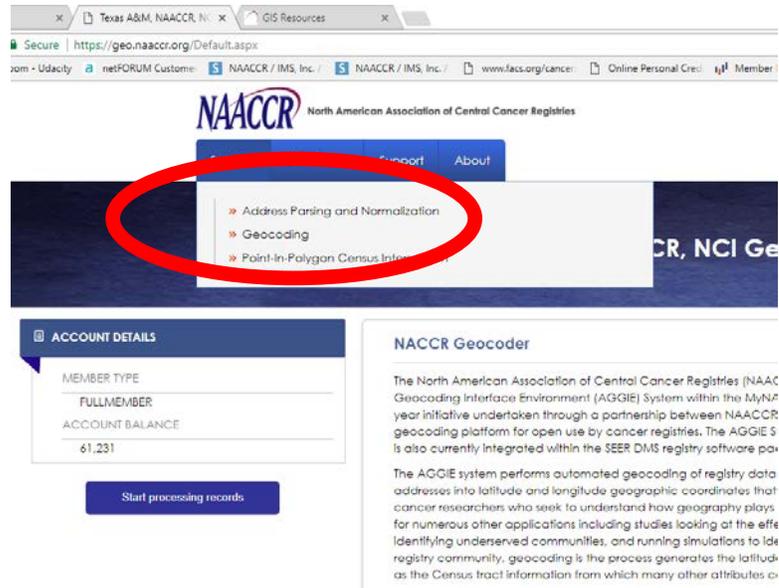
II. Accessing the online NAACCR Geocoder

1. Log in to your NAACCR account. Click MyNAACCR at bottom of NAACCR Webpage and login.
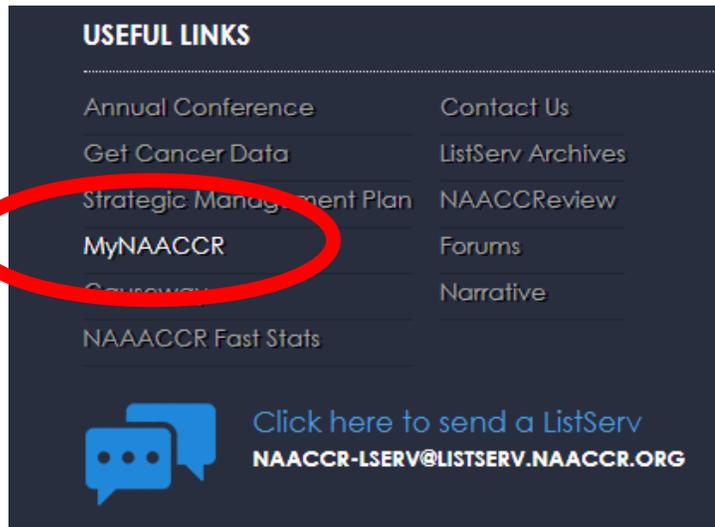
2. On the left side of the screen, in the menu bar, click "Geocoder"

3. On the menu bar at the top of the page, hover over "Services" and then click "Geocoding"

4. On the right hand of the screen, under "In this Section", click "Batch Database Geocoding"

5. After reading the
   overview of the
   steps, click
   "Start-Step 1
   >>"

In a nutshell, to upload and geocode a database you will need to perform four steps:

Step 1 - Upload your data files and validate that we can open and read them
Step 2 - Choose which data in your files you want to process
Step 3 - Identify the fields of your data so we know which column is what
Step 4 - Choose your processing options and start the process

Start - Step 1 >>

Single address geocoding is also available: non-parsed and parsed

III. Upload a text or database file of addresses to the NAACCR geocoder

1. Click "Add New Database"
2. Click the second option: "Upload New Database"
3. Use 'Option A' to upload the new database
   a. Click "Browse" and find the sample data, called TrainingDataset.csv)
   b. The data type is: Comma separated values (*.csv). The geocoding site accepts multiple file types so always be sure you have specified the one that matches your data—although usually it autofills.
      Note: the geocoder does not accept .dbf or .xls files.
      Note: when geocoding your registry files, you may choose to FTP the data.
   c. Ensure the box next to, "First row contains column headings" is checked.The text separator should be "comma" and the text qualifier should be "none."
   d. Once all of these settings are entered, click "Upload"

Option A) Upload New Database Using You Web Browser

File	Choose File	Geocoder-Tr...Dataset.csv
Type	Comma separated values(*.csv) ▾	
Columns	☑ First row contains column headings	
Text Separator	comma (,) ▾	
Text Qualifier	double quote (") ▾	

Upload

Database Validation

1. Make sure there is a message at the top of the page that reads, "Your database uploaded successfully"
2. Click "Validate Database" to ensure that the database can be opened and was read correctly

Your database uploaded successfully.

Please click the Validate Database button to verify that it can can be opened and its tables can be identified.

Database: Geocoder-Train.csv

Validate Database

Table Validation

1. Make sure there is a message at the top of the page that reads, "Your database was opened and read successfully"
2. Click "Validate Table" to ensure that the table can be open and read

Your database was opened and read successfully.

Please select your table and click the Validate Table button to verify that it can can be opened and read.

Database:	Geocoder-Train.csv
Table:	Geocoder-Train ▾

Validate Table

Verify Your Data

Database:	Geocoder-Train.csv
Table:	Geocoder-Train
Record Count:	1442

1. The figure to the right should be your result.
    a. Make sure the record count is matches with your dataset. There are 1442 records in this sample database.
    b. There is a separate field (column) for the Brand, StoreNumber, StreetAddress, City, State, Zip, and 2 long/lat fields which are not relevant to this exercise.
    c. If you use the scroll bar at button, you can scroll to right to see the Auto_Unique_ID (the site generates this). <mark>NOTE: When uploading registry data,</mark> you must include your own unique ID to link back to the case record.

Brand	StoreNumber	StreetAddress	City	State	Zip	FreeLat	Free
Starbucks	11854	96 Calef Highway	Epping	NH	03042-2224	43 031873	-71 0732
Starbucks	79420	139 Portsmouth Ave	Exeter	NH	03833-2105	42 989763	-70 9320
Starbucks	3872	1450 Greenland Rd	Greenland	NH	03840-2438	43 04871	-70 816
Starbucks	13448	271 Lafayette Rd	Seabrook	NH	03874-4512	42 882128	-70 8680
Starbucks	10325	1855 Woodbury Avenue	Portsmouth	NH	03801-3228	43 092318	-70 792
Starbucks	7459	1 Market Square Suite 17D	Portsmouth	NH	03801-4011	43 077086	-70 7580
Starbucks	11182	1116 Main Street	Haverhill	MA	01830-1413	42 807206	-71 1020
Starbucks	7329	23 Market Square	Newburyport	MA	01950-2571	42 811138	-70 8695
Starbucks	7907	306 Highway 1 M150	Kittery	ME	3904	43 111116	-70 7340
Starbucks	76864	35 Computer Dr	Haverhill	MA	01832-1236	42 786955	-71 1158

2. If the data are not organized correctly, go back to the previous steps and make sure your settings are correct.

IV. Geocoding Process

1. Below the table, under "You may now use your database in the following services:" Click "Geocoding". This will take a while depending on the size of the uploaded file.

Identify Data Fields
1. Under Input Fields: The fields you enter are from your data set. When uploading registry data, you can use any field names for the required fields and identify them here.
2. If you click the dropdown arrow next to the input fields, you will see all of the field (column) names in the dataset. See figure below (on the next page) for setting confirmation.
   a. ID should be: "AUTO_UNIQUE_ID"
   b. StreetAddress should be: StreetAddress
   c. City should be: City
   d. State should be: State
   e. Zip should be: Zip
   f. Check the boxes next to:
      i. BookKeeping (check by default)
      this simply records your result and notifies the website if there are any problems processing your file
      ii. OutputGeocode (checked by default)
      iii. CensusValues
      Checking this box will enable you to connect your points to a census tract and its corresponding information. This must be checked to return County, Census Tract, and Block Group.
      iv. Matched Address, Parsed Address, and Feature Address will return additional fields that are useful for reviewing data quality or for reviewing cases that require additional review.
3. Once the correct settings are input, click "Next - Step 4>>"

Enter Project Information
1. Enter a brief description of what or why you are geocoding
2. Click "Next-Step 5>>"

Choose Options and Start Process
1. Under "Year of Census Data to intersect with" use the dropdown menu to select "TwoThousandandTen" (this contains the census tract codes from the year 2010, as determined by the census bureau)
2. You can decide if you would like to be notified by email about process status as well as your privacy options.
3. Ensure "Do not store my transaction details" is checked under *Privacy Options*. You can store details for this tutorial but not for actual registry data. However, with agreements in place, a user can check this box to allow TAMU developers to review problem addresses in order to provide feedback to a user or improve the geocoder.
4. Click "Start Process"
5. Click "View Process Status" (may take a few seconds to appear)

6. The "My processes" page provides information about the status of your database that is being geocoded. Take note of the "completed/total" and "status" fields.

This page shows you the history of processes you have started.

Note
- Click on the date of the process to view its details.
- Click on the magnifying class icon to view the records within the file that have been processed.

50 ▼ Results per page

Start	Service	Database	completed / total	status
7/17/2017 3:06:34 PM	Geocoding	Geocoder-Train.... | Geocoder-Train	30 / 1442 🔎	Running
12/16/2016 10:07:49 AM	Geocoding	TrainingGeo.csv... | TrainingGeo	1442 / 1442 🔎	Completed
5/9/2016 3:59:45 PM	Geocoding	NJhospitals.csv... | NJhospitals	147 / 147 🔎	Completed

☐ auto refresh 10 ▼ seconds

Completed means the number of records that have been geocoded; total represents the total number of records. If "Running" appears in the status field, records are still being geocoded. If you want the page to keep refreshing to update the amount of records that have been geocoded, check the box next to auto refresh. When all of the records have been geocoded, the completed/total will show 1442/1442.

If you click on the date and time (blue hyperlink) for your database in the 'My processes" page (status can be completed or running) the "My process details" Page gives you more information about the database you are geocoding and the process. Take note of the starred information. The "total", "completed", and "running" are also displayed on this page.   If you started a process in error, you can

id	aaa0458c-b830-4e16-a92e-598c05a1b206 🔎
service	Geocoding
database	Geocoder-Train.csv
table	...Train
total	1442
completed	741
start	7/17/2017 3:06:34 PM
updated	7/17/2017 3:10:41 PM
don't store transaction details	True
notify	True
abort on error	False
state	Running
result	
actions	cancel
Download database	
Delete database	

☑ auto refresh 10 ▼ seconds

cancel it on the "My process details" page.   When all of the records have been geocoded, the details will have 1442 in total and completed, status as "Completed."

7. Once completed, check the result on "My process details" page—it should read "Completed Successfully." If there is an error message here, check your file. It may contain non-standard addresses or characters like $ of %, etc. If the latter is the case, non-standard address characters will need to be removed. If you are unable to resolve your error, you can submit a "Contact Us" using the drop down from the **Support** tab.

| id	bc244042-a885-4227-a94d-2edf7f6d1638 🔍
service	**Geocoding**
database	Geocoder-Train.csv
table	Geocoder-Train
total	1442
completed	1442
start	7/17/2017 3:28:50 PM
updated	7/17/2017 3:32:20 PM
don't store transaction details	True
notify	False
abort on error	
state	Completed
result	Completed Successfully
actions	
Download database	Download
Delete database	Delete

☑ auto refresh 5 ▼ seconds

8. Now you can download your updated database with the geocoded result by clicking "download." *Note: if you had the original training dataset file open, you must close it in order to download the geocoded result because they have the same file name.

9. When you click "download," a small dialog box should appear that leads you to the next download step. It may take a few seconds, but click the link "show all downloads" when it appears.

   [The menu for downloading files from the internet is browser specific, so the steps might be slightly different depending upon platform]

Texas A&M, NAACCR,...

https://geo.naaccr.org/UserSen

Your download should begin in 3 seconds.

If the download does not begin, click here

Click here to close this window

Show all downloads... ×

10. After you click, "show all downloads," you will be directed to the downloads page, at which point you will click the link that contains your database name. (Again, make sure the original file is closed.)
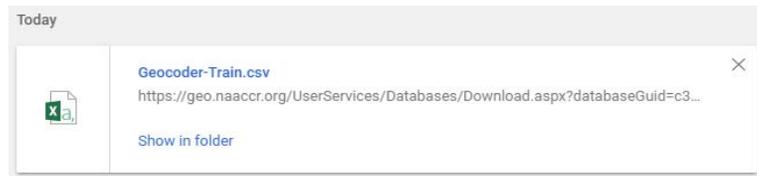
11. Once you download and open the geocoded addresses, save the file as with a name indicating it has been geocoded. This will enable you to keep the original addresses and the geocoded addresses separate.

V.   Explore your Results

1. Your results should look like the figure below (without the colors, based on starbucks sample data). Take a minute to explore the data yourself, by looking at what fields were created (Census tract ID, Lat, Long, etc..).

2. Specifically, the light blue contains information (addresses) from the original file

3. The green contains the latitude and longitude coordinates generated by the geocoder. These coordinates would allow you to map the points in a software, like ArcGIS to observe spatial patterns.

4. Now, it is important to investigate how exactly these records were geocoded because not all records are geocoded the same way. Look at the field, "GeocodeQualityType". The information in this field tells you which geographic area the record matched with. For example, the record in row 4 has a geocode quality type of a state centroid. This indicates that if you mapped the lat/long coordinates for this record, the point would be located in the middle of the state, in this case, New Hampshire (refer to address).

5. Additionally, look at the "naaccrQualCode" and "naaccrQualType" fields. These represent the geocode quality type that the NAACCR has defined. How do these codes differ from the geocodequalitytype codes you looked at in the previous step? The figure below provides a description of each value, namely what geographic area the record has indeed matched with.

	AF	AG
1	naaccrQualCode	naaccrQualType
2	0	AddressPoint
3		Unmatchable
4	98	Unknown
5	0	AddressPoint
6	11	CityCentroid
7	3	StreetSegmentInterpolation
8	9	AddressZIPCentroid
9	0	AddressPoint
10	9	AddressZIPCentroid
11	98	Unknown
12	3	StreetSegmentInterpolation

North American Association of Central Cancer Registries (NAACCR) GIS Coordinate Quality Codes

The NAACCR GIS Coordinate Quality Codes provide an indication of the level of accuracy of a geocode.

These codes describe information about:

► The quality of the reference feature matched to - parcel vs street intersection
► The type of input data submitted - ZIP centroid of an address vs ZIP centroid of a PO Box

Code	Value	Description
98	Unknown	Latitude and longitude are assigned, but coordinate quality is unknown
00	AddressPoint	Coordinates derived from local government-maintained address points, which are based on property parcel locations, not interpolation over a street segment's address range
01	GPS	Coordinates assigned by Global Positioning System (GPS)
02	Parcel	Coordinates are match of house number and street, and based on property parcel location
03	StreetSegmentInterpolation	Coordinates are match of house number and street, interpolated over the matching street segment's address range
04	StreetIntersection	Coordinates are street intersections
05	StreetCentroid	Coordinates are at mid-point of street segment (missing or invalid building number)
06	AddressZIPPlus4Centroid	Coordinates are address ZIP code+4 centroid
07	AddressZIPPlus2Centroid	Coordinates are address ZIP code+2 centroid
08	ManualLookup	Coordinates were obtained manually by looking up a location on a paper or electronic map
09	AddressZIPCentroid	Coordinates are address 5-digit ZIP code centroid
10	POBoxZIPCentroid	Coordinates are point ZIP code of Post Office Box or Rural Route
11	CityCentroid	Coordinates are centroid of address city (when address ZIP code is unknown or invalid, and there are multiple ZIP codes for the city)
12	CountyCentroid	Coordinates are centroid of county
99	Unmatchable	Latitude and longitude are not assigned, but geocoding was attempted; unable to assign coordinates based on available information
	Missing	GIS Coordinate Quality not coded

6. Next, look at the "CensusYear," "naaccrCertCode" and "naaccrCertType" fields. These values provide more details about which geographic area the record was matched with. CensusYear lists the census year you chose to intersect your geocoded database with. This means that the geocoded location of the

	AS	AT	AU
1	CensusYear	naaccrCertCode	naaccrCertType
2	TwoThousandTen	1	ResidenceStreetAddress
3			
4	TwoThousandTen	9	Missing
5	TwoThousandTen	1	ResidenceStreetAddress
6	TwoThousandTen	9	Missing
7	TwoThousandTen	1	ResidenceStreetAddress
8	TwoThousandTen	4	ResidenceZIP
9	TwoThousandTen	1	ResidenceStreetAddress
10	TwoThousandTen	4	ResidenceZIP
11	TwoThousandTen	9	Missing
12	TwoThousandTen	1	ResidenceStreetAddress

starbucks is linked with the 2010 census demographic and boundary information. CertType represents the Census Tract Certainty Code. The record in row 4 contains a census tract certainty code of "Missing" meaning that a census tract was not assigned, even though it was attempted through the geocoding process. The figure below displays the other census tract certainty codes that can potentially show up in the output.

North American Association of Central Cancer Registries (NAACCR) Census Tract Certainty Codes

The NAACCR Census Tract Certainty Codes provide an indication of the level of accuracy one can expect from the Census data associated with a geocode.

These codes describe information about:

► The quality of the reference feature matched to - parcel vs street intersection
► The type of input data submitted - ZIP centroid of an address vs ZIP centroid of a PO Box
► The relationship between the Census geographies matched to and the reference feature used to produce the geocode - Residence City Or ZIP With One Census Tract

Code	Value	Description
	Unknown	Unknown
1	ResidenceStreetAddress	Census tract based on complete and valid street address of residence
2	ResidenceZIPPlus4	Census tract based on residence ZIP + 4
3	ResidenceZIPPlus2	Census tract based on residence ZIP + 2
4	ResidenceZIP	Census tract based on residence ZIP code only
5	POBoxZIP	Census tract based on ZIP code of P.O. Box
6	ResidenceCityOrZIPWithOneCensusTract	Census tract/BNA based on residence city where city has only one census tract, or based on residence ZIP code where ZIP code has only one census tract
9	Missing	Not assigned, geocoding attempted
99	Unmatchable	Geocoding attempted, unable to assign
	NotAttempted	Not assigned, geocoding not attempted

VI.   Exploring individual records

While batch geocoding allows you to geocode many records at once, sometimes it is necessary to review individual records that did not geocode to try to get them geocoded. To explore individual records, you will use Non-Parsed Postal Address Geocoding.

1. Return to the "Geocoding"
    page by hovering over "Services"
    and clicking "Geocoding" at the
    top of the page.

2. On the right side
    of the page, click
    "Non-Parsed
    Postal Address
    Geocoding"

Overview

Geocoding is the process of converting non-spatial locational data into its corresponding spatial representation, most typically converti into geographic coordinates (latitude and longitude). The Texas A&M, NAACCR, NCI Geocoder represents the current version of resear software, and is continually being improved. The services available on this site allow a user to process a single address (parsed or non-pe database of records in batch.

If you encounter any problems or find any cases where the software fails, we would like to hear about it so we can work to improve the Please let us know.

Available services

Non-Parsed Postal Address Geocoding
Geocode a single non-parsed postal address

3. Input the address highlighted below into the dialog boxes you see on the page, "Non-Parsed Postal Address Geocoding." Make sure to choose TwoThousandTen for the year of census data to intersect with because you used 2010 Census data when you initially geocoded the database. When it is input correctly, click "Geocode."

	A	B	C	D	E	F
1	Brand	StoreNumber	StreetAddress	City	State	Zip
11	Starbucks	76864	35 Corpoter Dr	Haverhil	MA	
12	Starbucks	9991	11 Webb Place	Dover	NH	03820-2403
13	Starbucks	76677	11 Andrews Rd	Somerswort	NH	03878-1042
14	Starbucks	7570	90 Pleasant Valley St Unit 17	Methuen	MA	01844-7289
15	Starbucks	16926	203 S Broadway	Salem	NH	03079-3377
16	Starbucks	76855	67 Pleasant Valley St	Methuen	MA	01844-7202

4. Scroll down until you see the heading, "Possible Geocode Results". This output gives you the information that is also displayed in your output database Look at the category, "Feature Matching Geography Type;" it says "Building Centroid". Return to your database and look at the information under the "GeocodeQualityType" field and see if it also says "building centroid." The data from the non-parsed postal address geocoding provides an insight to how an individual record was geocoded or would be geocoded. In this case, it was geocoded to a building centroid, which is the optimal outcome. This means the geocoder found the exact building that the Starbucks is located and placed a point (lat/long) in the center of that building.

Possible Geocode Results

Possible geocode output #1

Latitude	42.76442
Longitude	-71.21494
Quality	QUALITY_BUILDING_CENTROID
Geocode Quality Type	BuildingCentroid
Match Score	99.207100591716
Feature Matching Result Type	Success
Feature Matching Geography Type	BuildingCentroid
Interpoloation Type	ArealInterpolation
Interpoloation SubType	ArealInterpolationGeometricCentroid
MatchedLocationType	LOCATION_TYPE_STREET_ADDRESS
Display On	Google Maps, Bing Maps, Yahoo Maps
Compare To	Google Maps, Bing Maps, Yahoo Maps

5. Additionally, scroll down to see the Census Information, which provides the census tract, county, and state numbers for that particular address.

Census Information

Census Year	1990	2000	2010
Census Block			1021
Census Block Group			1
Census Tract			1004.00
Census County FIPS			015
Census Place FIPS			
Census MSA FIPS			1122
Census MCD FIPS			66660
Census CBSA FIPS			14460
Census CBSA Micropolitan			0
Census MetDiv			40484
Census State FIPS			33

VII.   Additional review

Unfortunately, not all records are geocoded to the specificity of a building centroid. Recall, the geocoded result can only be as good as the information provided. If a street address is not provided, then the record may be geocoded to the next largest geographic area, most likely the zip code.   However, it is also possible that the record was inputted incorrectly. If the records were originally presented in a handwritten fashion, the digitized version may contain spelling errors. There may also be information that was not provided by the original recorder.

	A	B	C	D	E	F	W
1	Brand	StoreNumber	StreetAddress	City	State	Zip	GeocodeQualityType
2	Starbucks	11854	96 Calef Highway	Epping	NH	03042-2224	BuildingCentroid
3	Starbucks	79420	139 Portsrmuoth Ave	Exeter			Unmatchable
4	Starbucks	3872	1450 Greeland	Greeland	NH		StateCentroid
5	Starbucks	13448	271 Lafayette Rd	Seabrook	NH	03874-4512	BuildingCentroid
6	Starbucks	10325	1855 Wooddury Avenue	Portsmouth	NH		CityCentroid
7	Starbucks	7459	1 Market Square Suite 17D	Portsmouth	NH	03801-4011	AddressRangeInterpolation
8	Starbucks	11182	1116 Min St	Haverhil	MO	01830	USPSZipAreaCentroid
9	Starbucks	7329	23 Market Square	Newburyport	MA	01950-2571	BuildingCentroid
10	Starbucks	7907	306 Highway 1 M150	Kittery	ME	03904	USPSZipAreaCentroid
11	Starbucks	76864	35 Corpoter Dr	Haverhil	MA		StateCentroid
12	Starbucks	9991	11 Webb Place	Dover	NH	03820-2403	AddressRangeInterpolation

1. Take a look at the geocode quality type of the first twelve records in your database and identify which ones have a type that is a larger geographic area than a zip code (ex: city, unmatched, state, county).
2. Using the Non-Parsed Postal Address geocoder, input two records, with the criteria in the previous step, as it is written in the database, to see if the geographic type matches.
3. Try correcting the record so its geographic match is at the most, a zipcode. Optimally, try to correct the record so it matches with a building centroid. *Tip: input the incorrect address into Google and see if it automatically corrects the address. If it does, input the corrected address into the non-parsed postal address geocoder.
4. Once you have corrected these addresses, update your database so that it not only displays the correct address, but information regarding the geocode quality types and census information.

VIII. Multiple Census years

We plan to append multiple census years as a feature in the future. However, many cases need to be geocoded to multiple years. For instance, a case diagnosed in 2009, at a minimum, needs to be geocoded to the 2000 Census boundaries for county-level rates but the 2010 Census boundaries for county and tract-level poverty codes.

To obtain additional census years, a user does not have to re-geocode. They use the "Point-in-Polygon Census Intersection" option available under the *Services* tab. You will select "Batch Census Intersection".

Overview

The Point-in-Polygon Census Intersection Web Services allow you to associate census variables with geographic coordi services available on this site allow a user to process a single coordinate as well as a database of records in batch.

If you encounter any problems or find any cases where the software fails, we would like to hear about it so we can wo Please **let us know**.

Available services

Single Census Intersection
Find the Census block, blockgroup, tract, county, and state for a single geographic point

Batch Census Intersection
Find the Census information for a database of geographic points

Census Intersection Web Service APIs
Use one of the web service APIs to obtain Census information from your desktop or web applications

Other informative items

Census Intersection Technical Details
Details about the reference data sources and Census variables returned

Point-in-Polygon is administered similarly to the geocoding batch process as outlined below:

In a nutshell, to upload and associate Census data with a database of coordinates you will need to perform four steps:

Step 1 - Upload your data files and validate that we can open and read them
Step 2 - Choose which data in your files you want to process
Step 3 - Identify the fields of your data so we know which column is what
Step 4 - Enter your information about your project
Step 5 - Choose your processing options and start the process
Step 6 - Review your process status

You have fewer fields that need to be defined—the unique ID, latitude, longitude, and state. It should autopoulate if you are using an output file from the geocoder.

Input Fields

Id	AUTO_UNIQUE_ID_2017-07-18_rshermannaaccrorg_Geocoder-Train ▼
Latitude	Latitude ▼
Longitude	Longitude ▼
State	State ▼

☑ Output

At Step 5, the user selects which census geography to append from a dropdown box and then hits the "Start Process" button.

Please note, the user needs to save each overlayed dataset with a different name because the census fields are overwritten. Review the "Census Year" variable to confirm which data has been appended. Instead of using the address fields, you define the longitude and latitude. The sample data set has long and lat or you can gecoode the sample dataset and use the geocoder defined long and lat.

IX. Additional important geocoding options

A user will initially upload a batch of cases for geocoding. A certain percentage will be ungeocodable or have a small area match status of "Needs Review". These unmatched cases need to be pulled into a separate dataset and re-geocoded in batch mode using "Exhaustive Search". This will return all potentially matched addresses for a user to review.

To access "Exhaustive Search," a user clicks on the 'If you are brave' link during Step 5 of geocoding.

This takes you a variety of options. Click "Use Exhaustive Search" to return a list of all potential underlying street/parcel addresses. This list is output under the variable name **OutputGeocodes** and is populated with JSON string containing all the valid geocodes returned for an address. A user will need to parse out the multiple addresses. NOTE: NAACCR is in the process of developing an interface that will handle these multiple addresses and allow a user to sort, filter, review, and manually select (or disregard) the proper addresses. This interface will be available in the Fall of 2017.

On this page, users can change the minimum match score. The default score is 88. This means that any record with a match score below 88 returns no geocoded data and is considered a "NO MATCH" for County-level data. Any record with a score higher than 88 but lower than 98 "Needs review" before using geocoding results for small area analysis (tract-level and below data). The "Needs Review" cases should be run though using "Exhaustive Search" for manual review. Any record with a score higher than 97 is considered a "Match" at both the county and small area-level.

Database
Geocoder-Train.csv

Table
Geocoder-Train

Process Options

☑ Use Attribute Relaxation ②
☑ Use Substring Matching ②
☑ Use Soundex Matching ②
☐ Use Uncertainty Hierarchy ②
☑ Use Exhaustive Search ②
☐ Include Reference Geometry ② (Greatly increases file size)
☐ Limit Minimum Match Score to: ▢

You can also review and select from the underlying reference data sources available.

Year of Census data to intersect with

`TwoThousandTen ▾`

Reference Sources

Address Points
☑ Navteq Address Points 2012
☑ Navteq Address Points 2016
☑ Navteq Address Points 2016
☑ Open Address Points ☑ Set Minimum Confidence Level to: `7` ⑦

Parcels
☑ National Parcel Geometries (US Wide)
☑ Parcel Geometries (Los Angeles only)
☑ Parcel Centroids (Los Angeles only)
☑ County Parcel Geometries (NY only for now)

Users can also set minimum confidence levels for the Open Address Source data matches. The Open Address Source pulls data from a variety of source, and NAACCR has set the hierarchy as listed here, with 1 being the highest confidence in the source data. If the parameter is unchanged, the recommended default of 7 or below will be used. This selection is only available when you are including "Open Address Points" as an underlying source file.

1	Government Site - high confidence
2	Contains gov but not .gov site - fairly high confidence
3	.US site - fairly high confidence
4	website contains "cityof" - medium confidence
5	website contains "county" - medium confidence
6	.edu site - medium confidence
7	no identifiable confidence points in website
8	no source website

If you need to remove any selections and reset to the default, go to the bottom on the "Brave" page and click the "Whoops" option. This is also the location of the "Start" button once you have made your special selections.

Whoops - Click here to return to the default process settings or click the start process button below to use the settings you chose above.

`<< Previous - Step 4`

`Start`