



# Geocoding in *Wiz*

A guide to understanding match strategies

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Wolters Kluwer

# Wiz Geocoding Overview

The following topics will be addressed to help users understand *Wiz* geocoding techniques.

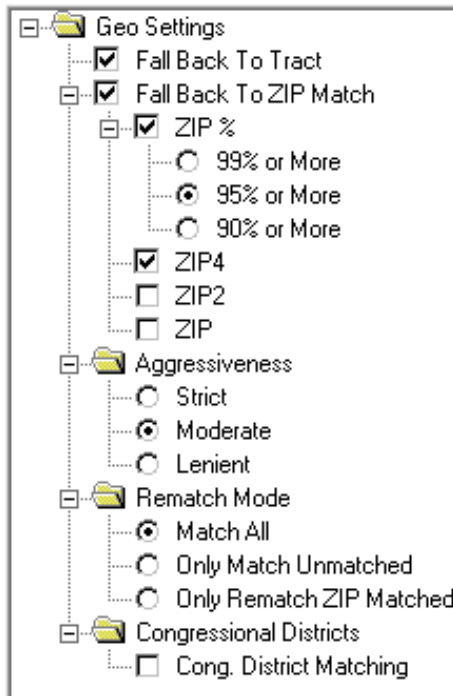
- Recommended Geocode Settings & Fallback Methodology
- Match Strategy Definitions
- Interpreting mmwStat and centroid Codes
- *Wiz* Geocoding vs. FFIEC Geocoding



# Wolters Kluwer's Recommended Geocode Settings & Fallback Match Strategies

Parcel and street level geocoding are the most accurate methods of geocoding. The geocoding methodology in *Wiz* will attempt to geocode each address first to a specific parcel and then to a street match if a parcel match is not attainable. If neither a parcel match or street match is possible, *Wiz* will attempt to geocode the address based on the fallback strategies configured by your institution.

## Wolters Kluwer's Recommended Settings



## Fallback Strategies

Fall Back to Tract	This selection allows the geocoder to match the address to a census tract when the street fails entirely within a single census tract, if the geocoder cannot match the loan record's street address.
Fall Back to Zip Match	Zip match selections allow the geocoder to match a record to a zip code in the geocoder's address reference database, if the geocoder cannot match the street address to a census tract.
--- Zip%	This selection will allow the geocoder to automatically centroid unmatched addresses to census tracts if the selected percentage of the Zip Code is within a single census tract.
-0.99	If 99% of the loan record's zip code falls within a single census tract, the geocoder will match the record to that census tract.
0.95	If 95% of the loan record's zip code falls within a single census tract, the geocoder will match the record to that census tract.
0.9	If 90% of the loan record's zip code falls within a single census tract, the geocoder will match the record to that census tract.
--- Zip 4	This selection will allow the geocoder to match unmatched addresses to the Zip+4 codes
--- Zip 2	This selection will allow the geocoder to match unmatched addresses to the Zip+2 codes
--- Zip	This selection will allow the geocoder to match unmatched addresses to the centroid (center) of the loan record's five-digit zip code.

# Parcel Match

When an address is geocoded to a parcel, the latitude and longitude for the address is assigned based on the center point of the parcel of land (or the center point of the structure's roof.) Relevant geocoding data points such as state, MSA, county and census tract are assigned based on this location.



mmwStat Code: B1  
Centroid Code: NA  
Accuracy: Approximately 99%

# Street Segment Match

When an address is geocoded to a street segment, latitude and longitude information is interpolated for an address based on its position on a street segment. State, MSA, county, census tract data is assigned based on that location.

The screenshot shows a web-based geocoding interface. At the top, there are tabs for 'Single' and 'Interactive'. Below are input fields for 'Working Address' and 'Input Address', both containing '650 Central Avenue' and 'Alameda ca 94501'. A 'Match To' section shows '650 CENTRAL AVE' and 'ALAMEDA, CA 94501'. There are buttons for 'Street Match' and 'ZIP Match'. A map below shows a street network with a red crosshair and a blue arrow pointing to a highlighted orange segment. A table at the bottom provides detailed data for the match.

	Range	City	St	ZIP	MSA	St	Cnty	Tract	BG	MCD	Place
Left	634 - 664	ALAMEDA	CA	94501	36084	06	001	4277.00	1	0	0
Right	635 - 649	ALAMEDA	CA	94501	36084	06	001	4277.00	1	0	0
Street	<b>CENTRAL AVE</b>										

mmwStat Code: B2  
Centroid Code: NA  
Accuracy: Approximately 98%

# Tract Match

If the *Wiz* geocoder is unable to match a specific street address to its address database but it can discern that the entire street is in one census tract, *Wiz* will geocode the address to that census tract.

mmwStat Code: B8  
 Centroid Code: NA  
 Accuracy: Approximately 98%

Working Address: 276 FARMINGTON DR, GRENADA, MS 38901  
 Input Address: 276 FARMINGTON DR, GRENADA, MS 38901

Tract match (Batch): Match To: FARMINGTON DR, GRENADA, MS 38901

Street Match | ZIP Match

Map: Street

9503, 9505, 9501

Range	City	St	ZIP	MSA	St	Cnty	Tract	BG	MCD	Place
Left ?-?	GRENADA	MS	38901	99999	28	043	9501.00	3	0	0
Right ?-?	GRENADA	MS	38901	99999	28	043	9501.00	3	0	0
Street: FARMINGTON DR										

# Understanding ZIP Code Centroids

ZIP Codes are used to identify mail delivery routes and provide a specific geographic region. The region identified becomes increasingly accurate based on the number of digits of provided for any given ZIP Code.

Malden, MA **02148-7601**

A full 9-digit ZIP Code can generally be used to find a very specific geographic areas which can provide enough information to determine census tract level accuracy.

Centroiding is the process of identifying the center point of a region and assigning geographic information (state, county, MSA and census tract) for that location. Since the information returned does not represent the latitude and longitude of the specific street address, accuracy rates can vary depending on the type of ZIP Code centroid.

*Wiz* offers institutions the option of geocoding with the following centroid types.

- ZIP %
- ZIP4
- ZIP2
- ZIP

# ZIP % Match

ZIP % matches are derived from a spatial calculation using ZIP Code and census tract data. *Wiz* calculates how much a ZIP Code overlaps with a census tract boundary. The ZIP % geocode setting allows *Wiz* users to select the percentage of overlap between ZIP Code and a census tract boundaries they are tolerant of accepting for a ZIP % match to be assigned to a street address.

*Wiz* allows intuitions to select from three percentages; ZIP 99%, ZIP 95% and ZIP 90%.

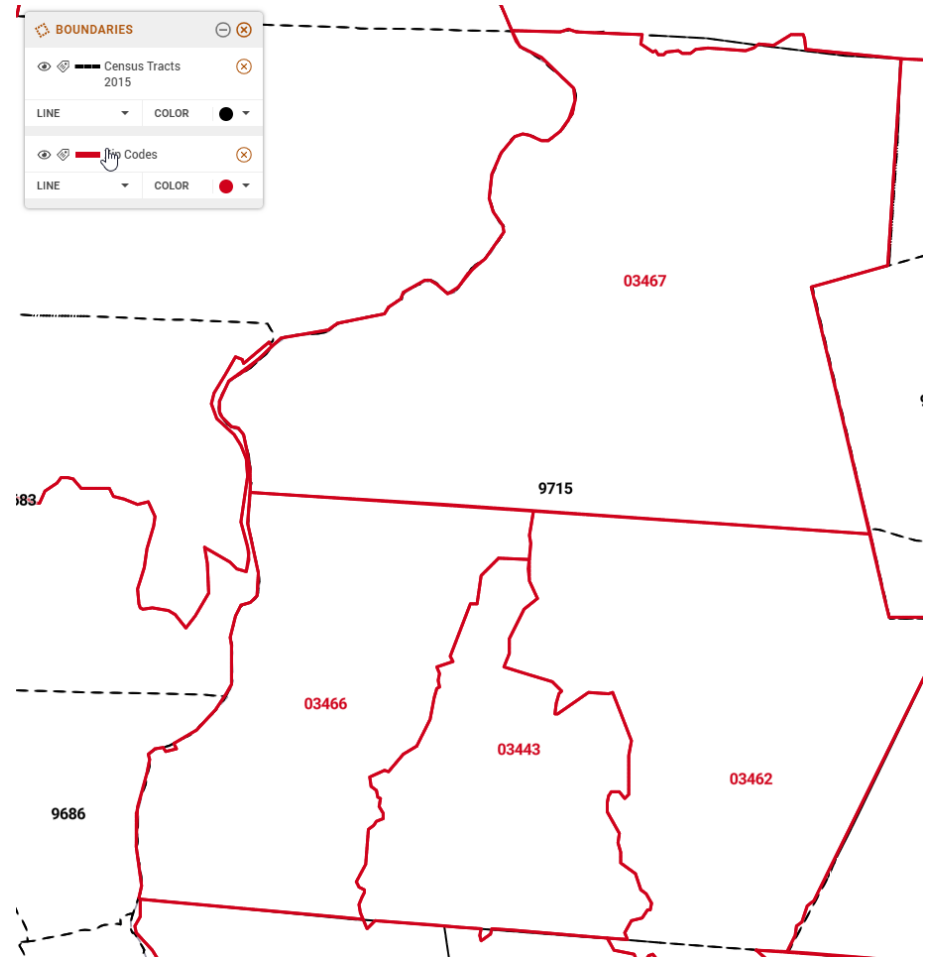
ZIP % Setting	% of ZIP Code Overlap with Census Tract	mmwStat Code	Centroid Code	Approximate Accuracy
ZIP 99%	99%	14	A	99%
ZIP 95%	95%	14	B	95%
ZIP 90%	90%	14	C	85%



# ZIP % Match: How the Calculation Works

ZIP % overlap calculation with census tract  
9715.00:

- ZIP Code: 03467 overlaps 98.156% with 9715.00
- ZIP Code: 03466 overlaps 99.826% with 9715.00
- ZIP Code: 03443 overlaps 98.740% with 9715.00



# ZIP4 & ZIP2 Centroids

- ZIP4 Centroid

The four-digit extension of a standard ZIP Code translates to a well-defined geographic area *within* a five-digit ZIP Code. It is represented by all nine digits of a ZIP Code, for example Malden, MA [02148-7601](#). With the ZIP4 setting enabled in the geocoders fallback match strategies, *Wiz* will geocode the address to the center point of the geographic area identified by the nine-digit ZIP Code.

mmwStat Code: 14

Centroid Code: 4

Accuracy: Approximately 90%

- ZIP2 Centroid

The two-digit extension of a standard ZIP Code translates to a slightly larger geographic area *within* a five-digit ZIP Code. It is represented by the first seven digits of a ZIP Code, for example Malden, MA [02148-7601](#). With the ZIP2 setting enabled *Wiz* will geocode the address to the center point of the geographic area identified by the seven-digit ZIP Code.

mmwStat Code: 14

Centroid Code: 2

Accuracy: Approximately 68%

# ZIP Centroids

This match strategy uses the five-digit ZIP Code from the input address and geocodes to the geographical center of ZIP Code. ZIP matching is the least accurate means of geocoding an address and is therefore not a recommended match strategy for regulatory grade geocoding.

When all other geocode match options fail, ZIP matching can be used to geocode an address to the center point of a five-digit ZIP Code, for example Malden, MA [02148](#)-7601.

mmwStat Code: 14

Centroid Code: 5

Accuracy: Approximately 30%

# MMWStat Codes & Definitions

Code	Description
1 (B1 / R1)	The address entered received a best match from parcel database
2 (B2 / R2)	The address entered received a best match from address database
3 (B3 / R3)	The address entered received an intersection match
5 (B5 / R5)	The address entered matched to an alternate name for the street
6 (B6 / R6)	The location of this address is known but has not been added to the parcel database. The address entered matched to a temporary placeholder from parcel database.
7 (B7 / R7)	The location of this address is known but has not been added to the address database. The address entered matched to a temporary placeholder from address database.
8 (B8 / R8)	The street name entered is correct, but the street number is not listed within the list of available ranges for this street. Because the entire street is contained within a single census tract, the address entered was matched to that tract.
9 (B9 / R9)	The street name entered is correct (to an alternate name), but the street number is not listed within the list of available ranges for this street. Because the entire street is contained within a single census tract, the address entered was matched to that tract.
10	The state abbreviation entered is incorrect. This address cannot be geocoded.
11	The city name entered does not exist in the state that you entered. This address cannot be geocoded.
12	The street address entered is incomplete or incorrectly formatted. This address cannot be geocoded.
13	You are not licensed to geocode in the state that you entered. Please review your license agreement to determine which geographies your institution is licensed for.
14	The street name entered does not exist in the city that you entered. This address cannot be geocoded.
15	The street name entered is correct, but the street number is not within the correct range for this street. This address cannot be geocoded.
16	There are more than one street segment with the given address number. This address cannot be geocoded
17	The address contains two valid streets that do not intersect. This address cannot be geocoded
18	The city name entered is not covered by Wolters Kluwer's databases
99	The record was Manually geocoded

# Centroid Codes & Definitions

Code	Description
F	Initialization failed
4	ZIP +4 Match
2	Zip +2 Match
5	ZIP Match
A	99% of the ZIP Code is within a single Census Tract
B	95% of the ZIP Code is within a single Census Tract
C	90% of the ZIP Code is with in a single Census Tract

# Wiz Geocoding vs. FFIEC Geocoding

- The biggest difference between geocoding in *Wiz* and the FFIEC website is that the FFIEC provides *only* parcel, street and manual geocoding
- *Wiz* provides users with optional match strategies to increase an institution's hit rate during the batch geocoding process (Tract matches, ZIP %, and ZIP centroiding ZIP4, ZIP2 & ZIP)
- *Wiz* provides users with a set of suggested geocoding settings that will allow users to utilize supplemental match strategies while still ensuring the highest possible accuracy rates
- *Wiz* provides recommended geocoding settings. Users maintain the flexibility configure the geocoder with their own geocoding settings based on their institution's accuracy/risk tolerance.
- Like the FFIEC geocoder, *Wiz* allows users to manually geocode a record using a street map. *Wiz* users also can interactively geocode an address by selecting the desired state, city and street combination to select a specific street segment to geocode a record to.

*(Coming to CRA Wiz SaaS and HMDA Wiz in 2022!)*