Spectrum™ Technology Platform

Version 2019.1.0

Enterprise Tax Guide

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1 - Introduction

In this section

Enterprise Tax Module

Note: The Enterprise Tax Module processes only U.S. addresses.

The Enterprise Tax Module determines the tax jurisdiction for an address. The Enterprise Tax Module takes an address, standardizes it, then matches the address to an exact physical location, returning latitude/longitude coordinates with the correct tax jurisdictions for the address. This solution greatly reduces the inaccuracies associated with matching to 9-digit and 5-digit ZIP Codes. The Enterprise Tax Module can also calculate latitude and longitude coordinates for individual address locations, including the use of interpolation and offset.

For companies that deliver goods or services to locations that don't have a recognizable address, the Enterprise Tax Module can accept latitude/longitude coordinates as input to return the tax jurisdictions and corresponding GeoTAX Key values. Examples of this type of location include bill boards, street lights, communications towers, or new housing developments.

The Enterprise Tax Module uses a database of tax jurisdictions provided by TomTom. This data, which is collected through an ongoing research program and updated regularly, provides current jurisdictional boundary information down to the municipal and special tax district levels.

In addition to determining the tax jurisdiction for an address or location, with the optional Pitney Bowes Sales and Use Tax Rate file, the Enterprise Tax Module can return sales and use tax rates for each of the assigned tax jurisdictions as well as the total tax rate for the assigned locations. There is also the option to use other software, such as Vertex or Sovos, to cross-reference and supply tax rate data.

Components

The Enterprise Tax Module consists of:

- **Assign GeoTAX Info** - Takes an input address and returns census, latitude/longitude, and tax information about the address. Assign GeoTAX Info utilizes Pitney Bowes' GeoTAX technology.
- **Calculate Distance** - Returns the distance between two input coordinates.
- **Reverse GeoTAX Info Lookup** - Returns census and tax information about an input location. This service does not return an address for a location.

Enterprise Tax Databases

The Enterprise Tax Module provides you with several different databases along with the ability to include additional databases to match against your input addresses or geographic coordinates.

Database Name and Description	Required or Optional	Supplier
GeoTAX/Enterprise Tax Premium Master Files The master files are the main data files used by the Enterprise Tax Module. They identify all geographic components associated with a street address, such as the tax jurisdictions, latitude/longitude coordinates, census tract, and block group. These files, at over two gigabytes of data, are significantly larger than the postal file, but provide the greatest coding accuracy. **Note:** The **GeoTAX/Enterprise Tax Premium Database** is a required data set and is the master file for the Enterprise Tax Premium Module software. This data is not compatible with versions of the Enterprise Tax Module prior to version 9.0 SP3. The master files are available for download from the Pitney Bowes Software and Data Marketplace, as well as Pitney Bowes eStore.	Required	Pitney Bowes monthly/quarterly subscription
Point Data Files Point data products include Master Location Data (MLD), Centrus Points, HERE Points, and TomTom Points. The point data provides point-level geocoding for the most accurate placement of addresses throughout the U.S. The Master Location Data database provides the best available address point location for every mailable and deliverable address in the United States.	Optional	Pitney Bowes monthly subscription
State-Supplied Files State-supplied files are provided by individual state governments that the Enterprise Tax Module uses to override results from the master files. The Enterprise Tax Module provides you with the ability to override, at the state level, match results based upon information supplied by the states. By matching to the state-supplied files, you can remain compliant with tax jurisdiction assignment requirements mandated by new federal and state laws, such as the Mobile Telecommunications Sourcing Act and the Florida state Communications Services Tax Simplification Law. Currently, there are two file formats supported in the Enterprise Tax Module: the Florida-native format, and the national TS-158 format (ANSI Transaction Set No. 158). The state of Florida provides address files in both the TS-158 and its own native format. **Note:** This database option may not be available to all Enterprise Tax Module users. Individual states may restrict the use of state-supplied address files to licensed communications carriers or other business entities registered with the individual state. The Enterprise Tax Module first attempts to match to the state database. If the Enterprise Tax Module cannot find a state match, it attempts a match to the GeoTAX Auxiliary file, if loaded, then to the master files.	Optional	State Governments

Database Name and Description	Required or Optional	Supplier
GeoTAX Auxiliary File The GeoTAX Auxiliary file contains new addresses that have not yet been added to the master files. It provides the most up-to-date address data possible.	Optional	Pitney Bowes monthly subscription
Landmark Auxiliary File The Landmark Auxiliary File is a user-defined file that allows you to specify customized address information in your input records. The recommended primary use of this file is to match to your company's non-address locations such as well heads, transmission towers or any other descriptive location. The latitude/longitude coordinates that is part of the input needed to build this file allows companies to automatically keep track of any jurisdictional changes that affect these unique locations. Matching to this file requires that the input record information match exactly to the Landmark Auxiliary file contents. This also applies to street records if you choose to enter them in the Landmark Auxiliary file. **Note:** For more information, see **Creating a Landmark Auxiliary File** on page 155.	Optional	User-defined
User Auxiliary File User Auxiliary files are user-defined files that the Enterprise Tax Module uses to override results from the master files in street-level matching. If you have data that is more current than that in the master files, you can enter the new data into the auxiliary file and use it for your address matching. The Enterprise Tax Module returns matches made with a code that signifies the answer came from the auxiliary file. You can also return user-defined data from the auxiliary file with the match. **Note:** For more information, see **Creating a User-Defined Auxiliary File** on page 161.	Optional	User-defined

Database Name and Description	Required or Optional	Supplier
Boundary Files Boundary files provide additional data about locations of special tax districts: Special Purpose Tax Districts (SPD), Insurance Premium Tax Districts (IPD), Payroll Tax Districts (PAY), and User-Defined Boundary (USR) . • The **Special Purpose Districts** file (SPD.txb) provides you with return data on special purpose tax districts. Special purpose tax districts include such districts as Regional Transit Areas and Metropolitan Football districts. • The **Insurance Premium Districts** file (IPD.txb) is used by the insurance industry to determine sales tax on insurance premiums written in some states. This file allows insurers to correctly determine the rate due on each insurance policy. Boundaries vary by state and are based on fire and police district and municipal boundaries. • The **Payroll Tax Districts** file (PAY.txb) can help your company comply with state legislation that requires employers to deduct taxes from employee paychecks for special districts, such as taxes for emergency municipal services districts. Pitney Bowes provides you with the appropriate boundary file on separate media if you license any of the optional files. **Important:** The Enterprise Tax Module only uses one boundary file at a time. For more information, see the configuration options in **Assign GeoTAX Info** on page 12.	Optional	Pitney Bowes
User-Defined Boundary File A user-defined boundary file (usr.txb) is a file that you create to represent polygons that you want to match against, such as sales territories, insurance rating territories, or any geographic areas that are of interest to you. **Note:** For more information, see **Creating a User-Defined Boundary File** on page 164.	Optional	User-created
Pitney Bowes Sales and Use Tax Rate File You can optionally license the Pitney Bowes Sales and Use Tax Rate file to supply sales and/or use tax rate data for the general, automotive, construction or medical industries. Sales and use tax rates can be returned for each of the assigned tax jurisdictions as well as the total tax rate for the assigned locations.	Optional	Pitney Bowes

Database Name and Description	Required or Optional	Supplier
Sales Tax Cross-Reference Files Sales tax cross-reference files allow you to use the Enterprise Tax Module to determine tax jurisdictions for a given address, then use third-party software to determine the sales tax rates for those jurisdictions. The cross-reference files combine the U.S. Government Federal Information Processing Standards (FIPS) codes with the proprietary geocodes used by tax software from third parties. **Important:** When using a cross-reference file, the SPD file must also be loaded. • **PBS Vertex File—**The PBS Vertex file enables you to integrate the Enterprise Tax Module with tax compliance software from Vertex, Inc. With this file, the Enterprise Tax Module component AssignGeoTAXInfo can return the nine-digit Vertex jurisdiction code for an address. You can then match these codes to the Vertex tax tables, which tell you the tax rate for each jurisdiction. To use the PBS Vertex file you must have the PBS Vertex file from Pitney Bowes to build the cross reference. • **Sovos Files—**The Sovos files enable you to integrate the Enterprise Tax Module with tax compliance software from Sovos. With this file, the Enterprise Tax Module component AssignGeoTAXInfo can return the Sovos jurisdiction code for an address. You can then match these codes to the Sovos tax tables, which tell you the tax rate for each jurisdiction. The Sovos files are supplied by Pitney Bowes and support both the SUT and TWE Sovos versions.	Optional	Pitney Bowes
Payroll Tax Cross-Reference Files Payroll tax cross-reference files allow you to use third-party software to determine the payroll tax rates. The cross-reference files combine the U.S. Government Federal Information Processing Standards (FIPS) codes with the proprietary geocodes used by tax software from third parties. The Payroll System Tax Code file is a customized file that you build to return the payroll tax codes used by your payroll system. **Note:** For more information, see **Using a Payroll Tax Correspondence File** on page 150.	Optional	Pitney Bowes

Adding an Enterprise Tax Module Database Resource

Whenever you install a new database resource or modify an existing database resource you must define it in Management Console in order for it to become available on your system. This procedure describes how to add or modify Enterprise Tax Module database resources.

1. If you haven't already done so, install the dataset files on your system. For instructions on installing databases, see the *Spectrum™ Technology Platform Installation Guide*.

2. In Management Console, under **Resources**, choose **Spectrum Databases**.

3. To create a new database resource, click the Add button ✚. To make changes to an existing database resource, select it, then click the Edit button ✎. To delete a database resource, select it, then click the Delete button 🗑. You can also create a new database resource by copying an existing one, by clicking the Copy button ⧉.

4. If you are creating a new database, enter a name for the database resource in the **Name** field. The name can be anything you choose. If you are creating a new database by copying an existing one, rename the default name as needed. You cannot modify the name of an existing database resource, because any services or jobs that reference the database resource by its original name would fail.

5. In the **Pool size** field, specify the maximum number of concurrent requests you want this database to handle.

   The optimal pool size varies by module. You will generally see the best results by setting the pool size between one-half to twice the number of CPUs on the server, with the optimal pool size for most modules being the same as the number of CPUs. For example, if your server has four CPUs you may want to experiment with a pool size between 2 (one-half the number of CPUs) and 8 (twice the number of CPUs) with the optimal size possibly being 4 (the number of CPUs).

6. In the **Module** field, select `Enterprise Tax Module`. The **Type** field, `Enterprise Tax Module`, is selected by default.

7. Under **Required Databases**, specify the folder that contains the GeoTAX master files. You can either type in the path or click the Browse button 📁 to locate and select the top-level folder containing the dataset folders and files.

8. If you have **Optional Databases**, select the associated database field and either specify the path to the folder that contains the dataset files or click the Browse button 📁 to locate and select the top-level folder containing the dataset folders and files.

   Under **Enhanced Accuracy**, specify the folder that contains your point level files. To allow sharing your point level data with other Spectrum™ Technology Platform modules or services, the folder containing your point level files may be in a directory other than the default Enterprise Tax Module database install location.

For a state-supplied file or sales tax cross-reference file, use the dropdown menu to the left of the database input field to select the type of file, then enter the path to the top-level folder containing the dataset folders and files.

9. When you are done with your changes, click **Save**.

Database Search Order

The Enterprise Tax Module is able to process addresses using multiple databases at the same time. This allows you to find the best possible match from a variety of data sources and types of data (point as well as street segment data).

The Enterprise Tax Module processes these multiple data sources using a default search order. When Enterprise Tax Module matches an address exactly, it stops searching rather than continuing the search in additional databases. This saves on processing time. When an exact match is not found, Enterprise Tax Module continues searching all of the available data sources for candidate address matches. The candidates are then scored and the highest scoring match from all of the data sources is returned as the match. If multiple candidates receive an identical score when matched to either the Points or Streets files, you have the option to set what results should be returned.

The default search order for the Enterprise Tax Module is:

• Landmark Auxiliary file
• User Auxiliary file
• State-supplied file
• GeoTAX Auxiliary file
• Points file, if licensed
• Streets file

2 - Assign GeoTAX Info

In this section

Assign GeoTAX Info

Assign GeoTAX Info identifies the tax districts that apply to a given address. Specifically, Assign GeoTAX Info returns the following information about an address:

- Latitude/longitude coordinates
- FIPS state codes and county codes
- County names
- MCD/CCD codes and names
- CBSA/CSA codes and names
- Place FIPS and GNIS codes and names
- Incorporated or unincorporated status codes
- Cross-reference tax keys
- Result indicators
- Optionally, the relationship of an address to user-defined polygons

Assign GeoTAX Info optionally includes enhanced tax jurisdiction information for an address, including:

- **Insurance premium districts**—Areas designated for the collection of taxes imposed on insurance policy premiums based on the policy holder's address. Insurance premium districts are created by state governments.
- **Payroll tax districts**—Areas designated for the collection of taxes imposed on employers to support state or local government facilities and services based on the employee's and/or employer's address. Examples include taxes collected for districts to pay for schools, police, or other services. Payroll tax districts are created by state or local governments.
- **Payroll system tax codes**—Codes that represent specific jurisdictions that collect payroll tax. Using payroll system tax codes has advantages over using the payroll tax district information returned by Assign GeoTAX Info:

  - Assign GeoTAX Info uses an additional database to determine payroll tax codes, resulting in more accurate payroll tax determination.
  - Many payroll systems use specific codes to determine withholding amounts. Since you can customize the payroll tax codes returned by Assign GeoTAX Info, you can set up a process where Assign GeoTAX Info returns the exact payroll tax codes required by your payroll system instead of returning jurisdictional IDs that must then be translated into the codes used by your system.

- **Special purpose tax districts**—Areas designated for the collection of taxes imposed on residents to support specialized services for residents of the district based on the resident's address. Examples include services such as sewer service, transit service, or water resources. Special purpose tax districts are created by legislative action, court action, or public referendums. This

optional information requires the use of boundary files which require an additional license. Contact your Pitney Bowes sales representative for more information.

- **Sales and Use Tax Rates**—Using the optional Pitney Bowes Sales and Use Tax Rate file, Assign GeoTAX Info can return sales and use tax rates for each of the assigned tax jurisdictions as well as the total tax rate for the assigned locations.

Assign GeoTAX Info is part of the Enterprise Tax Module.

Determining Tax Rates with Assign GeoTAX Info

Assign GeoTAX Info determines tax jurisdictions that apply to a given location. There are several options for determining tax rates for a location: use the optional Pitney Bowes Sales and Use Tax Rate file, use other software, such as Vertex or Sovos, or develop a custom process.

> **Note:** As the Enterprise Tax Module transitions its administrative tasks to a web-based Management Console, labels for the options may use different wording than what you see in Enterprise Designer. There is no difference in behavior.

- Using Pitney Bowes Sales and Use Tax Rate file:
  a) On the **Assign GeoTAX Info** page, select the **Output** tab.
  b) Under **Include data**, select the **Tax Jurisdiction** checkbox. This option returns several tax jurisdiction fields. For more information on these fields, see **Tax Jurisdiction** on page 54.
  c) Use the **Tax district** dropdown menu and select **Special purpose districts**. This option returns the `SPDnDistrictCode` field that you will need to return the correct tax rates. For more information, see **Special Purpose Tax Districts** on page 67.
  d) Use the **Sales tax rate type** dropdown menu and select either: **General**, **Automotive**, **Construction** or **Medical**. This option returns tax rates for the selected industry. For more information, see **Sales and Use Tax Rates** on page 69.
- Using Vertex or Sovos Software:
  a) On the **Assign GeoTAX Info** page, select the **Output** tab.
  b) Under **Include data**, select the **Tax Jurisdiction** checkbox. This option returns several tax jurisdiction fields. The GeoTAXKey field contains the Vertex or Sovos code. For more information on these fields, see **Tax Jurisdiction** on page 54.
  c) Use the **Tax district** dropdown menu and select **Special purpose districts**. This option returns the `SPDnDistrictCode` field that you will need to return the correct GeoTAXKey. For more information, see **Special Purpose Tax Districts** on page 67.
  d) Use the **Sales tax cross-reference key** dropdown menu and select **PBS Vertex** to have Assign GeoTAX Info return a Vertex key, or select **Sovos** to have Assign GeoTAX Info return a Sovos key.
- Using a Custom Process:

If your organization has defined custom tax codes, you can use the jurisdiction information returned by Assign GeoTAX Info to look up the tax jurisdictions in your custom tables. To do this, you need to configure Assign GeoTAX Info to return the following fields:

- StateCode
- County.Code
- GNISCode or Place.Code
- SPDn.DistrictCode

To include these fields in the output:

a) On the **Assign GeoTAX Info** page, select the **Output** tab.
b) Under **Include data**, select the **Tax Jurisdiction** checkbox. This option returns several tax jurisdiction fields. For more information on these fields, see **Tax Jurisdiction** on page 54.
c) Use the **Tax district** dropdown menu and select **Special purpose districts**. This option returns the `SPDnDistrictCode` field that you will need to use with your custom look up table. For more information, see **Special Purpose Tax Districts** on page 67.

Address Matching

Assign GeoTAX Info takes a house address and matches it to the correct street segment. Using the house number, it determines the side of the street on which the house resides (usually based on an odd-even division). Knowing the correct side of the street is important because streets are often the boundaries between municipalities or other adjoining jurisdictions that may have different tax rates. Thus, two addresses on the same street, in the same city, within the same ZIP Code could exist in different jurisdictions and have different tax rates.

After Assign GeoTAX Info identifies the correct street segment, it determines the actual physical location of the house based on known latitudes/longitudes and other geographic data in the street segment database. Assign GeoTAX Info returns the coordinates of the house, along with other data.

Point-level matching

Point-level matching locates the center of the actual building footprint or parcel. This is the most accurate type of geocode.
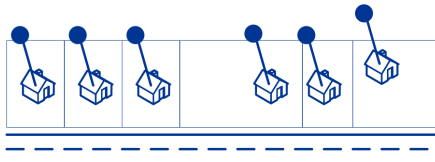
If you are licensed for the point-level data option, you do not need to execute any additional initialization or setup for your system to begin using the point-level data. The Enterprise Tax Module automatically processes your address lists through the point-level data.

When processing address lists, the Enterprise Tax Module first searches for a match in the point-level data. If it cannot find an exact match in the point-level data, the Enterprise Tax Module continues searching for a better match in the street network data. The Enterprise Tax Module returns the best match found, with preference given to matches from the point-level dataset.

> **Note:** Point data must be used in conjunction with a standard street data set.

Buffering

Use buffering to define areas that are close to the edges of a polygon, line, or point.

| Buffered Polygon (zone) | Buffered Line (corridor) | Buffered Point (circle) |

For example, if you work for an insurance company you may want to know if a potential customer's house is within 500 feet of a flood plain so that you can suggest that they buy flood insurance even though they are not actually within the flood plain. The following illustration shows this scenario using a buffered polygon. The dotted line indicates the boundary of the flood plain and the shaded area shows a 500-foot buffer zone around the boundary.
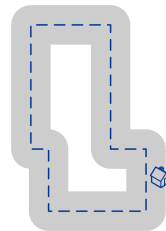
The buffer area extends on both sides of the boundary (inside and outside). When you use buffering, the output field BufferRelation indicates whether or not the point is in the buffered zone, and whether the point is inside or outside of the polygon, as shown in the following illustrations.
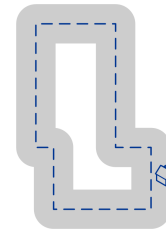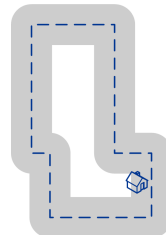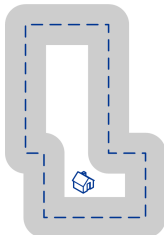
The point is inside the polygon and not in the buffer area.

The output field BufferRelation will contain "P".

The point is inside the polygon and in the buffer area.

The output field BufferRelation will contain "I".

The point is outside the polygon but in the buffer area.

The output field BufferRelation will contain "B".

Specify the size of polygon buffers using the BufferWidth input field to set it on a record-by-record basis and the Default Buffer Width option to set a default polygon buffer width for the job.

Input

The following table provides information about the format of Assign GeoTAX Info input.

Field Name	Format	Description
AddressLine1	String [100]	First address line
AddressLine2	String [100]	Second address line
AddressLine3	String [100]	Third address line
AddressLine4	String [100]	Fourth address line
BufferWidth	String [10]	Specifies the width of the polygon buffers to use for Boundary File processing. The buffer width is used to determine if a point is close to the edge of a polygon. The output field BufferRelation indicates whether or not the point is within the polygon's buffer area. For more information, see **Buffering** on page 15. This field overrides the value specified in the **Tax district boundary** default buffer width option. If you do not specify a buffer width in this input field, the default is used.
City	String [50]	City name
Country	String [var]	The country where the address resides. The data you enter in this field has no impact on processing. It is simply passed through to output. **Note:** Only US addresses are supported.
FirmName	String [var]	The company or firm name.

Field Name	Format	Description
PostalCode	String [9]	Nine-digit ZIP Code
StateProvince	String [50]	The state where the address resides. The data you enter in this field has no impact on processing. It is simply passed through to output.
UserBufferWidth	Long [10]	Specifies the width of the polygon buffers to use for User-Defined Boundary File processing. The buffer width is used to determine if a point is close to the edge of a polygon. The output field BufferRelation indicates whether or not the point is within the polygon's buffer area. For more information, see **Buffering** on page 15. This field overrides the value specified in the **Default buffer widths** option. If you do not specify a buffer width in this input field, the default is used.

Database Resource

For instructions on how to create a database resource, see **Adding an Enterprise Tax Module Database Resource** on page 9.

Option Name	Description
Database	Select the database resource to use in the tax determination process.

Matching Options

Matching options control the address search methodology and match results handling returned by Assign GeoTAX Info.

> **Note:** As the Enterprise Tax Module transitions its administrative tasks to a web-based Management Console, labels for the options may use different wording than what you see in Enterprise Designer. There is no difference in behavior.

Option Name	Description
Optional files: The following options enable the database resource(s) to use in the search process.	
Use GeoTAX Auxiliary file	Specifies whether or not Assign GeoTAX Info should attempt a match to the GeoTAX Auxiliary file. The GeoTAX Auxiliary file contains new addresses that have not yet been added to the Master File.
Use user auxiliary file	Specifies whether to attempt a match to a User Auxiliary file. User Auxiliary files are user-defined files that override results from the master files in street-level matching.

Option Name	Description
State supplied file	Specifies a state-supplied file to use for address matching. State-supplied files are provided by individual state governments. By matching to the state-supplied files, you can remain compliant with tax jurisdiction assignment requirements mandated by new federal and state laws, such as the Mobile Telecommunications Sourcing Act and the Florida state Communications Services Tax Simplification Law.

There are two supported file formats: the Florida-native format and the national TS-158 format (ANSI Transaction Set No. 158). The state of Florida provides address files in both the TS-158 and its own native format. The state of Washington provides address data in the TS-158 format.

Assign GeoTAX Info attempts to match to the state supplied file first. If a state match cannot be found, it attempts a match to the master files.

You must install the appropriate state-supplied file to use these options. For instructions, see the *Spectrum™ Technology Platform Installation Guide*.

None	Do not use a state-supplied file. (default)
Florida-Native	Use the Florida-native state-supplied file.
TS-158	Use the TS-158 state-supplied file.
Florida-Native with relaxed secondary matching	Use the Florida-native state-supplied file and allow the system to match input addresses with secondary information to records without secondary information.

Match modes	Match modes determine the leniency used to make a match between your input and the reference database. Select a match mode based on the quality of your input and your desired output. For example, if you have an input database that is prone to errors, you may want to select the relaxed match mode.

Exact	Requires a very tight match. This restrictive mode generates the fewest match candidates, which decreases the processing time. When using this mode, ensure that your input is very clean; free of misspellings and incomplete addresses.
Close	Requires a close match and generates a moderate number of match candidates. (default)
Relaxed	Allows a loose match and generates the most match candidates, which increases the processing time and results in more multiple matches. Use this mode if you are not confident that your input is clean; free of misspellings and incomplete addresses. This is the only mode that does not respect the street parity when making an address match.

Option Name	Description		
Search area preference	The search area options allow for searching the address' finance area or an expanded area specified by distance.		
	Finance area	Searches the entire finance area for a match. A finance area is a region defined by the U.S. Postal Service and typically consists of a set of contiguous ZIP Codes.(default)	
	Search within radius	Searches the area specified by the radius in miles. The search area can be extended up to a 99-mile radius from the centroid of the input ZIP Code to assist in finding a match when the input address contains limited or inaccurate city or ZIP Code information. The expanded area is confined to within the state's borders. Use the **Miles** input field to enter the search radius (1-99 miles).	
Expanded matching			
Check for First Letter Missing/Wrong	Looks for the correct first letter of a street address if the first letter is missing or incorrect. The Enterprise Tax Module searches through the alphabet looking for possible correct first letters to complete the street address.		
	Note: This feature is disabled by default and cannot be enabled in Exact mode.		
Allow Ranged Address Numbers	Matches to a house range input. Some business locations are identified by address ranges. For example, a shopping plaza could be addressed as 10-12 Front St. - this is how business mail is typically addressed to such a business location. When this feature is enabled, the address range is geocoded to the interpolated mid-point of the range.		
	Note: This feature is disabled by default and cannot be enabled in Exact mode.		
Firm name search	This option allows specifying the preferred way to match when both an address and firm name are provided. The matching method can be set to match to the address rather than the firm name or vice versa. If neither are specified, the default matching method is to match to the address line only.		
	Street Lookup Only		Searches only street records. (default)
	Prefer Street Name		Searches for street name, but if there isn't a match, will use the firm name.
	Prefer Firm Name		Looks up the firm name, but if there isn't a match, will use the street name.

Option Name	Description
Multi-match	A multi-match occurs when multiple equally-scored matches are found in either the Points or Streets files and cannot be resolved to a single best candidate. There are several choices for handling a multi-match outcome:

Reject multi-matches	No matches are returned. (default)
Resolve multi-matches	Return the first match candidate in the list.
Return all multi-matches	The information for all the match candidates is returned.

Geocoding Options

Geocoding is the process of determining the latitude/longitude coordinates of a given address. Address coordinates are used as the basis for determining the tax jurisdictions for an address. Geocoding options control how Assign GeoTAX Info determines address latitude/longitude coordinates.

> **Note:** As the Enterprise Tax Module transitions its administrative tasks to a web-based Management Console, labels for the options may use different wording than what you see in Enterprise Designer. There is no difference in behavior.

Option Name	Description

Latitude/Longitude placement: These options can be set for the geocode result.

Option Name	Description
Offset	Indicates the offset distance in feet from the street center line.

The offset distance is used in street-level geocoding to prevent the geocode from being in the middle of a street. It compensates for the fact that street-level geocoding returns a latitude and longitude point in the center of the street where the address is located. Since the building represented by an address is not on the street itself, you do not want the geocode for an address to be a point on the street. Instead, you want the geocode to represent the location of the building which sits next to the street. For example, an offset of 40 feet means that the geocode will represent a point 40 feet back from the center of the street. The distance is calculated perpendicular to the portion of the street segment for the address. Offset is also used to prevent addresses across the street from each other from being given the same point. The diagram below shows an offset point in relation to the original point.
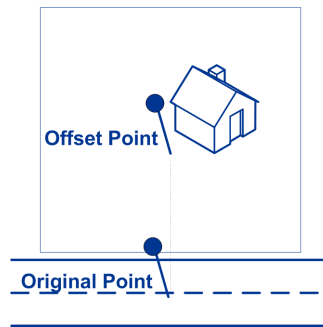
None	No offset. (default)
20	Twenty feet offset from street centerline.
40	Forty feet offset from street centerline. (recommended)
60	Sixty feet offset from street centerline.

Squeeze	Specifies if the street end points should be "squeezed" when determining the geocode of an address in street-level matching. When **Squeeze** is enabled, both street and end points are moved closer to the center of the segment by 50 feet. The diagram below compares the end points of a street segment to the squeezed end points of a street segment.

Option Name	Description
Latitude/Longitude format	Indicates the desired format for the returned latitude/longitude. One of the following:

	Degrees, minutes, seconds	For example, 90 00 00N180 00 00W.
	Decimal degrees	Latitude/longitude in decimal degrees. (default)
	Include decimal point	If not selected, the return value is similar to 90000000-180000000 or 090000000N180000000W. If selected, the return value is similar to 90.000000-180.000000 or 090.000000N180.000000W. (default)
	Use directional indicator (N,S,E,W)	If selected, the return value is similar to 090000000N180000000W or 090.000000N180.000000. (default)
	Use signed latitude/longitude	If selected, the return value is similar to 90000000-180000000 or 90.000000-180.000000

Expanded Geocoding options: These options enable additional geocoding functionality.

Address point interpolation	Address point interpolation uses a patented process that improves upon regular street segment interpolation by inserting point data into the interpolation process.

> **Note:** This feature is only for use with point-level geocoding.

A match is first attempted using the loaded points data. If an exact point match is found in the points data, then searching ceases and the point match is returned. If an exact point match was not found, the Enterprise Tax Module attempts to find high and low boundary address points to use for address point interpolation.

Option Name	Description
Minimum geocode quality	Sets the minimum level of accuracy for the geocode result.

	Do not fallback	Returns the centroid level requested and will not attempt to geocode to a higher level geographic centroid. (default)
	Street centroid	If an input street address cannot be found using the street number and name, the Enterprise Tax Module then searches the input ZIP Code or city/state for the closest match. If the Enterprise Tax Module is able to locate the street, it returns a geocode along the matched street segment rather than the geocode for the entered ZIP Code or ZIP + 4.
		When using street locator geocoding, if no exact matching house number is found, a match code of either `E029` (no matching range, single street segment found), or `E030` (no matching range, multiple street segment) returns. For example, if you enter Main St and there are both an E Main St and a W Main St within the input ZIP Code, then an `E030` returns and the location code returned is reflective of the input ZIP Code. The location code returned begins with a "`C`" when matched to a single street segment, indicated by `E029`. The Enterprise Tax Module does not change the street name on the output address.
	Geographic centroid	If a definitive match cannot be made, the next higher level geographic centroid will be returned.
		Note: This feature should only be used for exception processing or research. It should not be used in a production process.

Boundary matching: These options can be set when matching to a boundary file such as SPD, IPD, PAY, Place and MCD or user-defined.

Option Name	Description
Distance units	Specifies the units in which to measure distance. One of the following:

	Feet	Distances are measured in feet. (default)
	Meters	Distances are measured in meters.

Option Name	Description
Tax district boundary	Specifies the buffer width to use for tax district boundary files. The tax district boundary files are the Special Purpose District (SPD) file, the Insurance Premium District (IPD) file, the Payroll Tax District (PAY) file, and Place and MCD files.
	The distance units used are specified in the **Distance units** field.
	For more information about buffers, see **Buffering** on page 15.

Option Name	Description
User-defined boundary	Specifies the buffer width to use for user-defined boundary files. Specify the distance in the units of measurement specified in the **Distance units** option. For information about buffers, see **Buffering** on page 15. The default buffer width that you specify here can be overridden on a record-by-record basis using the BufferWidth input field. **Note:** To use buffers, the user-defined boundary file must support buffers.

Output Data Options

Data options control the data returned by Assign GeoTAX Info.

Option Name	Description
Output Data	
Include data	Select one or more of the following to obtain the type of data you want returned. If you do not want all of the fields in a record type returned, you can specify the individual fields to return by specifying them in the **Include extra fields** field. • Auxiliary File • Census • Latitude/Longitude • Parsed Elements • Payroll System Tax Codes • Tax Jurisdiction • User-defined Boundary For a description of the fields in each output group, see **Output** on page 31. **Note:** If you select **Payroll System Tax Codes**, select **Payroll Tax Districts** under **Tax district** to obtain the best payroll system tax code match possible.
Tax district	Indicates the type of tax district information returned. • Insurance Premium Tax Districts • Payroll Tax Districts • Special Purpose Tax Districts For a description of the fields in each output group, see **Output** on page 31.

Option Name	Description
Sales tax cross-reference key	If you use third-party tax compliance software from Vertex or Sovos, select which vendor you use. This controls the value returned in the GeoTAXKey output field. One of the following:

	None	Do not return either the Sovos or Vertex jurisdiction codes (default).
	Sovos	Return the Sovos jurisdiction code for the address.
	PBS Vertex	Return the Vertex jurisdiction code for the address. Select this option if you obtained a Vertex file from Pitney Bowes.

> **Note:** If you select **Sales tax cross-reference key**, select Special Purpose Districts under **Tax district** to obtain the best Sales tax cross-reference key match possible.

Option Name	Description
Sales tax rate type	Indicates the sales and use tax rate type to return or none:

	None	Do not return sales and use tax rates. (default)
	General	Return the General sales and use tax rates.
	Automotive	Return the Automotive sales and use tax rates.
	Construction	Return the Construction sales and use tax rates.
	Medical	Return the Medical sales and use tax rates.

> **Note:** If you select **Sales tax rate type**, select Special Purpose Districts under **Tax district** to obtain the best match possible to the tax rate file.

Option Name	Description
Include extra fields	Indicates the individual output fields you want returned. In Management Console, list fields separated by a comma. In Enterprise Designer, list fields separated by a pipe (|) between each field. You can use this field instead of the Output Record Type to limit the output to those fields that are important to your current data needs.

For a list of the fields included in each data type, see **Output** on page 31.

Output format

Option Name	Description
Output Casing	Specifies the casing of these output fields: County.Name, CBSA.Name, MCD.Name, Place.Name, IPDn.DistrictName, PAYn.DistrictName, SPDn.DistrictName, and PTCn.PayrollDescription.

One of the following:

	Mixed	Returns the output in mixed case (default). For example: Rensselaer.
	Upper	Returns the output in upper case. For example: RENSSELAER.

Preview

Preview is an interactive tool that allows you to input one or more address records and receive immediate results from Assign GeoTAX Info.

1. Under **Input Record 1**, enter your address and input parameter information in the appropriate fields.

    For the definitions of the input record fields, refer to **Input** on page 17.

2. To add additional input records, click the Add button ✚ . To import records, click the Import button ⬇. The input file can consist of input fields delimited by a comma, period, pipe, semicolon, space or tab. To delete all input records, click the Delete button 🗑 .

3. Click **Run Preview**.

    The results for each input record are displayed. For the definitions of the output fields, see **Output** on page 31.

Output

Address Match Results

The table below lists the fields returned from the address matching and geocoding process.

Note: Fields denoted by an asterisk "*" are always included in the output regardless of whether or not you choose the associated output data options (for example, census or tax jurisdiction data output options). Contents returned when available; otherwise, left blank.

Field Name	Max. Field Length with null terminator	Description
AddressMatch.DataTypeName[*]	20	Indicates the file from which the match was obtained. One of the following: • USPS • TIGER • TOMTOM - Streets • NAVTEQ - Streets • TOMTOM_POINT • CENTRUS_POINT • NAVTEQ_POINT • MASTER LOCATION - Master Location Data • STATE_FILE • USER_AUXILIARY • LANDMARK_AUXILIARY
AddressMatch.Firm[*]	41	The name of the business if the address is a business address.

Field Name	Max. Field Length with null terminator	Description
AddressMatch.GenRC*	2	General Return Code indicating the type of match.
		5 ZIP Code match
		9 ZIP+4 Code match
		A User Auxiliary file match
		C Street Centroid match
		F Geographic Fallback match
		G State-supplied file match
		I Intersection match
		L Landmark Auxiliary file match
		M Multiple match (multi-match)
		O Input Latitude/Longitude coordinates match
		P Address point match
		S Street address match
		U GeoTAX Auxiliary file match
		X Aborted processing or expired database
		Blank Did not match
AddressMatch.Lastline*	61	The complete matched last address line (city, state, and postal code).
AddressMatch.LocationCode*	5	The Location Code indicates the methodology used to complete the geocode and may also provide some information about the quality of the geocode.
		For the list of location codes, see **Location Codes.**
AddressMatch.MatchCode*	5	The Match Code indicates the portions of the address that matched or did not match to the reference file.
		For the list of match codes, see **Match Codes.**
AddressMatch.NumCandidates*	2	When there are multiple equally-scored matches, returns the number of multiple match candidates found.

Field Name	Max. Field Length with null terminator	Description
AddressMatch.PBKey	14	A unique address identifier that is returned when an address match is made using the Master Location Database. The pbKey™ unique identifier is used as a lookup key to a GeoEnrichment database, in order to return attribute data for the match. The AddressMatch.PBKey field has "P" as the leading character, for example: P00001XSF1IF.
AddressMatch.Urbanization*	31	Urbanization name. Used for addresses in Puerto Rico.
AddressMatch.Zip*	6	The matched address five-digit ZIP Code.
AddressMatch.Zip4*	5	The matched address four-digit ZIP Code extension.
Census.MatchCode*	2	The level of match obtained against the databases.

Census.MatchCode detail values:

5	ZIP Code level match
9	ZIP + 4 Code level match
A	User Auxiliary file match
C	Street centroid match
F	Geographic fallback match
G	State-supplied file match
I	Intersection match
L	Landmark Auxiliary file match
M	Multiple match (multi-match)
O	Input latitude/longitude coordinates match
P	Address point match
S	Street address match
U	GeoTAX Auxiliary file match
X	Aborted processing or expired database
Blank	Did not match

Field Name	Max. Field Length with null terminator	Description	
Census.MatchLevel[*]	19	The level of match obtained against the databases.	
		AbortedExpiredData	Aborted processing or expired database
		Aux2	GeoTAX Auxiliary file match
		Auxiliary	Auxiliary street match
		FallbackGeographic	Geographic fallback match
		Gov	State file address match
		Intersection	Intersection match
		LatLonInput	Input latitude/longitude coordinates match
		LandmarkAux	Landmark Auxiliary file match
		MultiMatch	Multiple match
		Point	Address point match
		Street	Street address match
		StreetCentroid	Street centroid match
		ZIP	ZIP Code level match
		ZIP+4	ZIP + 4 Code level match
		NoMatch	Did not match

Field Name	Max. Field Length with null terminator	Description
Confidence[*]	4	Indicates the confidence in the output provided; from 0 to 100. The higher the score, the higher the confidence in the match. Calculated based on the match results for individual output fields, using the following algorithm:

Census.MatchCode + LatLong.StreetMatchCode + LatLong.MatchCode

The maximum confidence score is 100, so if this calculation results in a value greater than 100, the Confidence score is returned as 100.

The following values are used:

- Census.MatchCode

  - 5 = 45
  - 9 = 75
  - A = 85
  - C = 55
  - F = 45
  - G = 85
  - I = 85
  - L = 85
  - M = 0
  - O = 85
  - P = 100
  - S = 85
  - U = 85
  - X = 0
  - null = 0

- LatLong.StreetMatchCode

  - H = 5
  - L = 15
  - S = -10
  - Z = -5
  - null = 0

Field Name	Max. Field Length with null terminator	Description

		• LatLong.MatchCode
		
		  • 2 = 0
		  • 4 = 10
		  • B = 0
		  • C = 0
		  • I = 10
		  • L = 15
		  • O = 15
		  • R = 15
		  • S = -10
		  • T = -2
		  • U = 15
		  • Z = -5
		  • null = -100

County.Code[*]	4	Extracted from the Census.BlockCode.
County.Name[*]	26	Name of the county.
GNISCode[*]	10	Unique nine-digit Geographic Names Information System (GNIS) code.
Standardized input address fields - for field information, see **Input Address** on page 40.		
MCD.DistanceToBorder[*]	10	Returns the distance in feet between the matched address point to the polygon defined by the Cousub.txb file.

Field Name	Max. Field Length with null terminator	Description
MCD.PointStatus[*]	2	An address can be compared to a Minor Civil Division (MCD)/county subdivision file (Cousub.txt). This output field returns the result for a comparison between the matched address point to the polygon defined by the Cousub.txb file. For more information on buffers, see **Buffering** on page 15. **Note:** The buffer distance for Cousub.txb is internally set to zero and cannot be modified. **P** The point is in the polygon. **I** The point is in the buffer area inside the polygon. **B** The point is in the buffer area and outside of the polygon. **blank** Polygon not found.
Place.Code[*]	6	Five-digit Federal Information Processing Standards (FIPS) place code. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality.
Place.ClassCode[*]	3	Place class code. Place class codes are used to determine the proper taxing jurisdictions
Place.DistanceToBorder[*]	10	Returns the distance between the matched address point to the polygon defined by the Place.txb file.
Place.IncorporatedFlag[*]	8	Indicates whether the address is located in an incorporated or unincorporated place. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality. **Inc** Incorporated place code. **Uninc** Unincorporated place code. **Unknown** Incorporation status unknown.

Field Name	Max. Field Length with null terminator	Description
Place.LastAnnexedDate*	8	Last annexed date, in the format MM/YYYY, representing the month and year of the most recent boundary change or the most recent available boundary information.
Place.LastUpdatedDate*	8	Last updated date, in the format MM/YYYY, reflecting the month and year when TomTom updated the database to reflect attribute (name change, FIPS change, etc.) or boundary edits to the Place.
Place.LastVerifiedDate*	8	Last verified date, in the format MM/YYYY, representing the month and year that TomTom verified municipality change information.
Place.Name*	41	The name of the "place" where the address is located. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality.
Place.PointStatus*	2	Returns the result for a comparison between the matched address point to the polygon defined by the Place.txb file. For more information on buffers, see **Buffering** on page 15. Note: The buffer distance for Place.txb is internally set to zero and cannot be modified. **P** — The point is in the polygon. **I** — The point is in the buffer area inside the polygon. **B** — The point is in the buffer area and outside of the polygon. **blank** — Polygon not found.
ProcessedBy*	4	Always returns GTX.
State.Abbreviation*	3	Two-character state abbreviation.

Field Name	Max. Field Length with null terminator	Description
StateCode[*]	3	Two-digit Federal Information Processing Standards (FIPS) state code extracted from the Census.BlockCode.

Input Address

Assign GeoTAX Info always returns the input address as part of the output. Any changes to the address information resulting from the address cleansing process will be returned to these fields.

Field Name	Max. Field Length with null terminator	Description
AddressLine1	101	Input address line 1.
AddressLine2	101	Input address line 2.
AddressLine3	101	Input address line 3.
AddressLine4	101	Input address line 4.
City	51	Input address city.
Country	25	Input address country.
FirmName	101	Input address firm name.
PostalCode	10	Input address postal code
StateProvince	51	Input address state.

Auxiliary File

The table below lists the output fields that contain Auxiliary file data. To include Auxiliary file data in the output, click the **Output** tab, then under **Include data**, select the **Auxiliary** check box. The following table lists the output fields that contain tax jurisdiction data.

Field Name	Max. Field Length with null terminator	Description
AuxiliaryData.AuxiliaryFile	301	Data retrieved as a result of an auxiliary match from the user-defined area of the auxiliary file.
AuxiliaryData.StateFile	201	Data retrieved as a result of a state match. Data content and format vary depending on the state file used.

Census

The census output fields contains census information from the U.S. Census, including Minor Civil Divisions (MCDs) and Census County Division (CCD) names and codes. MCDs are the primary political or administrative divisions of a county, representing many kinds of legal entities with a variety of governmental and administrative functions. CCDs are established in states where there are no legally established MCDs. The Census Bureau recognizes MCDs in 28 states and has established CCDs in 21 states. The District of Columbia has no primary divisions, and the city of Washington, DC is considered equivalent to an MCD for data presentation purposes.

Census data also contains the Federal Information Processing Standards (FIPS) codes for each state and county. The FIPS State Code and the FIPS County Code are both used by the Census Bureau to identify these geographic units.

The table below lists the output fields that contain census data. To include census file data in the output, click the **Output** tab, then under **Include data**, select the **Census** check box.

> **Note:** Fields denoted by an asterisk "*" are always included in the output regardless of whether or not you choose to include census data in the output. Contents returned when available; otherwise, left blank.

Field Name	Max. Field Length with null terminator	Description
Census.Block	4	Census Block ID.
Census.BlockGroup	2	Census Block Group code.

Field Name	Max. Field Length with null terminator	Description	
Census.MatchCode[*]	2	The level of match obtained against the databases.	
		5	ZIP Code level match
		9	ZIP + 4 Code level match
		A	User Auxiliary file match
		C	Street centroid match
		F	Geographic fallback match
		G	State-supplied file match
		I	Intersection match
		L	Landmark Auxiliary file match
		M	Multiple match (multi-match)
		O	Input latitude/longitude coordinates match
		P	Address point match
		S	Street address match
		U	GeoTAX Auxiliary file match
		X	Aborted processing or expired database
		Blank	Did not match

Field Name	Max. Field Length with null terminator	Description	
Census.MatchLevel[*]	19	The level of match obtained against the databases.	
		AbortedExpiredData	Aborted processing or expired database
		Aux2	GeoTAX Auxiliary file match
		Auxiliary	Auxiliary street match
		FallbackGeographic	Geographic fallback match
		Gov	State file address match
		Intersection	Intersection match
		LatLonInput	Input latitude/longitude coordinates match
		LandmarkAux	Landmark Auxiliary file match
		MultiMatch	Multiple match
		Point	Address point match
		Street	Street address match
		StreetCentroid	Street centroid match
		ZIP	ZIP Code level match
		ZIP+4	ZIP + 4 Code level match
		NoMatch	Did not match
Census.Tract	7	Six-digit tract number extracted from the Census.BlockCode.	
County.Code[*]	4	Extracted from the Census.BlockCode.	
County.Name[*]	26	Name of the county.	
MCD.Code	6	Minor Civil Division/Census County Division (MCD/CCD) Code.	
MCD.Name	41	Minor Civil Division/Census County Division (MCD/CCD) name.	

Field Name	Max. Field Length with null terminator	Description
MCD.PointStatus[*]	2	An address can be compared to a Minor Civil Division (MCD)/county subdivision file (Cousub.txt). This output field returns the result for a comparison between the matched address point to the polygon defined by the Cousub.txb file. For more information on buffers, see **Buffering** on page 15. **Note:** The buffer distance for Cousub.txb is internally set to zero and cannot be modified. **P** — The point is in the polygon. **I** — The point is in the buffer area inside the polygon. **B** — The point is in the buffer area and outside of the polygon. **blank** — Polygon not found.
MCD.DistanceToBorder[*]	10	Returns the distance in feet between the matched address point to the polygon defined by the Cousub.txb file.
MCD.Confidence	4	Provides the percentage overlap of the geocode to the MCD polygon layer. The returned percentage value describes the probability that the point falls in the MCD.
CBSA.Code	6	Core Based Statistical Area (CBSA) code.
CBSA.Name	76	Core Based Statistical Area (CBSA) name.

Field Name	Max. Field Length with null terminator	Description
CBSA.MetroFlag	2	Indicates if the CBSA is a "Metropolitan Statistical Area" or a "Micropolitan Statistical Area".
		Y Metropolitan Statistical Area - A Core Based Statistical Area associated with at least one urbanized area that has a population of at least 50,000. The Metropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.
		N Micropolitan Statistical Area - A Core Based Statistical Area associated with at least one urban cluster that has a population of at least 10,000, but less than 50,000. The Micropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.
CBSAD.Code	6	Core Based Statistical Area Division (CBSAD) code.
CBSAD.Name	73	Core Based Statistical Area Division (CBSAD) name.
CSA.Code	4	Combined Statistical Area (CSA) code.
CSA.Name	78	Combined Statistical Area (CSA) name.
State.Abbreviation[*]	3	Two-character state abbreviation.
StateCode[*]	3	Two-digit Federal Information Processing Standards (FIPS) state code extracted from the Census.BlockCode.

Latitude/Longitude

The table below lists the output fields that contain latitude and longitude data. Latitude/Longitude data contains the coordinates for the address and additional information about how the latitude and longitude for the address was determined. To include latitude/longitude data in the output, click the **Output** tab, then under **Include data**, select the **Latitude/Longitude** check box.

> **Note:** Fields denoted by an asterisk "*" are always included in the output regardless of whether or not you choose to include latitude/longitude data in the output. Contents returned when available; otherwise, left blank.

Field Name	Max. Field Length with null terminator	Description
Latitude	8	Seven-digit number in degrees and calculated to four decimal places (in the format you specified).
Latitude.Directional	2	Latitude directional.
		N North
		S South
LatLong	23	Returned latitude/longitude, in the format you specified (up to 22 alphanumeric characters).

Field Name	Max. Field Length with null terminator	Description
LatLong.MatchCode	2	Latitude/Longitude General Return Code. Denotes the level for which the geocode was determined.

2	ZIP + 2 centroid
4	ZIP + 4 Code centroid
B	Block group centroid
C	City centroid
I	Intersection
L	Match using the Landmark Auxiliary file
O	Latitude/longitude was input
R	Address-level based on street address
S	State centroid
T	Census tract centroid
U	Address-level match using the GeoTAX Auxiliary file
Z	ZIP Code centroid based on a five-digit ZIP code
null	No latitude/longitude determined

Field Name	Max. Field Length with null terminator	Description
		If `AddressMatch.GenRC` is "P" (point match), then the following are possible values:

0	Latitude/Longitude coordinates from User Dictionary.
2	Latitude/Longitude coordinates from Parcel Centroid.
4	Latitude/Longitude coordinates from Address Point.
5	Latitude/Longitude coordinates from Structure Centroid.
7	Latitude/Longitude coordinates from manually-placed Point.
8	Latitude/Longitude coordinates from Front Door Point.
9	Latitude/Longitude coordinates from Driveway Offset Point.
A	Latitude/Longitude coordinates from Street Access Point.
B	Latitude/Longitude coordinates from Base Parcel Point.
C	Latitude/longitude coordinates from Backfill Address Point.
D	Latitude/longitude coordinates from Virtual Address Point.
E	Latitude/longitude coordinates from Interpolated Address Point.

Field Name	Max. Field Length with null terminator	Description
LatLong.MatchLevel[*]	14	A description of the value returned in the `LatLong.MatchCode` field.

ZIP+2	ZIP + 2 centroid
ZIP+4	ZIP + 4 centroid
Block	Block group centroid
CityCentroid	City centroid
Intersection	Intersection match
LandmarkAux	Match using the Landmark Auxiliary file
LatLonInput	Input Latitude/Longitude coordinates was used
Rooftop	Exact address match
StateCentroid	State centroid
Tract	Census tract centroid
Auxiliary	Address-level match using the GeoTAX Auxiliary file
ZIP	ZIP Code centroid
Point	Point-level match. One of the following:

- User Dictionary
- Parcel Centroid
- Address Point
- Structure Centroid
- Manually-placed Point
- Front Door Point
- Driveway Offset Point
- Street Access Point
- Base Parcel Point
- Backfill Address Point
- Virtual Address Point
- Interpolated Address Point

Field Name	Max. Field Length with null terminator	Description
LatLong.StreetMatchCode[*]	2	Output street address return code.

H	House number not found on street	
L	Latitude/longitude not determined on auxiliary match	
S	Street not found in ZIP Code	
Z	ZIP Code not found in street address database	
N	Street-level matching option not selected	
null	The street was successfully matched	

Field Name	Max. Field Length with null terminator	Description
LatLong.StreetMatchLevel[*]	16	Street level match used to determine the latitude/longitude

FullMatch	Successful match
HouseNotFound	House number not found on street
LatLongNotFound	Latitude/longitude not determined on auxiliary match
StreetNotFound	Street not found in ZIP Code
ZipNotFound	ZIP Code not found in street address database
NotUsed	Street-level matching option not selected

Field Name	Max. Field Length with null terminator	Description
Longitude	8	Seven-digit number in degrees and calculated to four decimal places (in the format specified).
Longitude.Directional	2	Longitude directional.

E	East
W	West

Parsed Elements

The parsed elements output fields contain standard street address line information as individual units, such as street suffixes (for example AVE, ST, or RD) and leading directionals (for example N and SE).

To include parsed elements in the output, click the **Output** tab, then under **Include data**, select the **Parsed Elements** check box.

Field Name	Max. Field Length with null terminator	Description
AddressMatch.UnitType	5	The type of unit, such as apartment, suite, or lot.
AddressMatch.UnitNumber	12	Apartment number. For example, 123 E Main St APT **3**
AddressMatch.HouseNumber	12	Building number for the address.
AddressMatch.PreDirectional	3	Leading directional. For example, 123 **E** Main St Apt 3
AddressMatch.Street	41	The name of the street, not including any directionals or suffixes. For example, the word "Main" in this address: 123 E **Main** St Apt 3
AddressMatch.StreetType	5	The street type of the matched location. For example, AVE for Avenue.
AddressMatch.PostDirectional	3	Street directional that follows the street name. For example, the "N" in this address: 456 Washington **N**.

Payroll System Tax Code

The table below lists the output fields that contain Payroll System Tax Code (PTC) data. For more information about payroll tax districts, see **Assign GeoTAX Info** on page 12. To include this data in the output, click the **Output** tab, then under **Include data**, select the **Payroll System Tax Codes** check box.

> **Note:** Assign GeoTAX Info returns up to six payroll tax codes per address.

Field Name	Max. Field Length with null terminator	Description
NumberPTCsFound	2	The number of payroll tax codes found for this address.
PTC*n*.MatchCode	2 per PTC	Indicates the level of match obtained for the address. In order from most specific match to least, the possible match codes are: **P** The address was matched to a specific Payroll District ID. This is the most specific match. **G** The address was matched to a GNIS Code. **F** The address was matched to a county's FIPS code. **S** The address was matched to a state's FIPS code. This is the least specific match.
PTC*n*.PayrollCode	16 per PTC	A code that represents a taxing authority in a payroll application. This is a user-defined code. The specific codes are determined by the payroll application that utilizes the data returned by Assign GeoTAX Info.
PTC*n*.PayrollDescription	41 per PTC	A description of the purpose of this payroll code.
PTC*n*.PayrollFlag	7 per PTC	A user-defined flag from the PTC database.
StateCounty	33	The state abbreviation and county name.

Tax Jurisdiction

Tax jurisdiction data contains information about the "place" for the location. A "place" is a geographic area defined on the basis of population criteria that vary by state; or, an area recognized as significant because it is located in an incorporated municipality. Places are used to determine tax jurisdiction.

The table below lists the output fields that contain tax jurisdiction data. To include tax jurisdiction data in the output, click on the **Output** tab, then under **Include data**, select the **Tax Jurisdiction** check box.

> **Note:** Fields denoted by an asterisk "*" are always included in the output regardless of whether or not you choose to include tax jurisdiction data in the output. Contents returned when available; otherwise, left blank.

Field Name	Max. Field Length with null terminator	Description
Confidence.SurfaceType	3	Indicates the confidence surface type. Setting a non-zero buffer width enables confidence generation. To determine a confidence level, a confidence surface is first generated. The confidence surface provides the smallest possible area wherein an address is likely to be located.

0	Undefined
1	The search failed - the address was not found.
2	Intersection confidence surface generated.
3	Interpolated street segment.
4	Point-level match.
5	State confidence surface generated.
6	County confidence surface generated.
7	City confidence surface generated.
8	Reserved
9	A ZIP Code confidence surface generated.
10	A ZIP+2 confidence surface generated.
11	A ZIP+4 confidence surface generated.
12	Reserved
13	A street centroid confidence surface generated.

Field Name	Max. Field Length with null terminator	Description
GeoTAXKey	10	The value in this field varies depending on the option you specified in the **Sales tax cross-reference key** option: If you specified **Sovos**, GeoTAXKey contains the proprietary codes used in Sovos tax compliance software. You can use this code in your Sovos application to find out the tax rate for the jurisdiction. The Sovos jurisdiction code formats are as follows: • Sovos SUT - 2-digit SUT state code, 5-digit ZIP Code, 2-digit SUT geocode • Sovos TWE - variable-length TWE geocode If you specified **PBS Vertex**, GeoTAXKey contains the proprietary Vertex® jurisdiction code (comprised of a two-digit Vertex® state code, three-digit FIPS county code, and four-digit Vertex® city code). You can use this code in your Vertex® application to find out the tax rate for the jurisdiction.
GeoTAXKey.MatchCode	2	Return code denoting the level of match obtained against the PBS Vertex or Sovos cross reference files. **E** Exact match using five fields: FIPS state code, FIPS county code, FIPS or GNIS place code, ZIP Code, and FIPS place name. **P** Partial match using four fields: FIPS state code, FIPS county code, FIPS or GNIS place code, and ZIP Code. **A** Alternate match using two fields: ZIP Code, FIPS place name. **N** Record is default coded based on valid state code. **null** No matching record found.

Field Name	Max. Field Length with null terminator	Description	
GeoTAXKey.MatchLevel	12	A description of the value returned in the `GeoTAXKey.MatchCode` field.	
		Exact	Exact match. See description in `GeoTAXKey.MatchCode`.
		Partial	Partial match. See description in `GeoTAXKey.MatchCode`.
		Alternate	Alternate match. See description in `GeoTAXKey.MatchCode`.
		DefaultCode	Record is default coded. See description in `GeoTAXKey.MatchCode`.
		NoMatch	No matching record found.
GNISCode[*]	10	Unique nine-digit Geographic Names Information System (GNIS) code.	
Place.ClassCode[*]	3	Place class code. Place class codes are used to determine the proper taxing jurisdictions	
Place.Code[*]	6	Five-digit Federal Information Processing Standards (FIPS) place code. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality.	
Place.IncorporatedFlag[*]	8	Indicates whether the address is located in an incorporated or unincorporated place. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality.	
		Inc	Incorporated place code.
		Uninc	Unincorporated place code.
		Unknown	Incorporation status unknown.

Field Name	Max. Field Length with null terminator	Description
Place.LastAnnexedDate[*]	8	Last annexed date, in the format MM/YYYY, representing the month and year of the most recent boundary change or the most recent available boundary information.
Place.LastUpdatedDate[*]	8	Last updated date, in the format MM/YYYY, reflecting the month and year when TomTom updated the database to reflect attribute (name change, FIPS change, etc.) or boundary edits to the Place.
Place.LastVerifiedDate[*]	8	Last verified date, in the format MM/YYYY, representing the month and year that TomTom verified municipality change information.
Place.Name[*]	41	The name of the "place" where the address is located. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality.
Place.PointStatus[*]	2	Returns the result for a comparison between the matched address point to the polygon defined by the Place.txb file. For more information on buffers, see **Buffering** on page 15. **Note:** The buffer distance for Place.txb is internally set to zero and cannot be modified. **P** The point is in the polygon. **I** The point is in the buffer area inside the polygon. **B** The point is in the buffer area and outside of the polygon. **blank** Polygon not found.
Place.DistanceToBorder[*]	10	Returns the distance between the matched address point to the polygon defined by the Place.txb file.
Place.Confidence	4	Provides the percentage overlap of the geocode to the Place polygon layer. The returned percentage value describes the probability that the point falls in the specified Place.

User-Defined Boundary File

The table below lists the output fields that contain data returned from user-defined boundary files. To include this data in the output, click the **Output** tab, then under **Include data**, select the **User-defined Boundary** check box.

> **Note:** Assign GeoTAX Info can return up to 10 user-defined areas for each input address.

Field Name	Max. Field Length with null terminator	Description
NumberUserBoundariesFound	3	The number of user-defined polygons found for the address.
UserBoundary*n*.BoundaryDescription	51 per User Boundary	A description of the polygon.
UserBoundary*n*.BoundaryID	11 per User Boundary	The ID of the polygon as specified in the user-defined boundary file.
UserBoundary*n*.BufferRelation	2 per User Boundary	Indicates where in the polygon the address resides in relation to the edge of the area. Buffer width is specified by the option **User-defined boundary** . One of the following: **P** The address is inside the polygon at a distance from the edge that is greater than the specified buffer width. **I** The address is inside the polygon but is close to the edge. **B** The address is outside the polygon but is close to the edge. For more information, see **Buffering** on page 15.
UserBoundary*n*.DistanceToBorder	10 per User Boundary	Indicates the distance from the address to the border of the polygon. The distance is in the units specified by the option **Distance Units** .

Field Name	Max. Field Length with null terminator	Description
UserBoundary*n*.SupplementalBoundaryID	11 per User Boundary	A supplemental ID as specified in the user-defined boundary file.
UserBoundary*n*.BoundaryConfidence	4 per User Boundary	Provides the percentage overlap of the geocode to the User-defined boundary polygon layer. The returned percentage value describes the probability that the point falls in the User-defined boundary area.

Insurance Premium Tax Districts

The table below lists the output fields that contain Insurance Premium Tax Districts (IPD) data. To include IPD data in the output, click the **Output** tab, then use the **Tax district** drop-down menu and select **Insurance premium districts**.

> **Note:** Assign GeoTAX Info returns multiple districts for IPDs, SPDs, and PAYs.

Field Name	Max. Field Length with null terminator	Description
NumberIPDsFound	3	The number of Insurance Premium Tax Districts found for the address
IPD*n*.BoundaryBuffer.BufferRelation	2 per IPD	Indicates where in the district the address resides in relation to the edge of the district. Buffer width is specified by the option **Tax district boundary** . One of the following: **P** The address is inside the district at a distance from the edge that is greater than the specified buffer width. **I** The address is inside the district but is close to the edge. This indicates that the address is in the buffer area. **B** The address is outside the district but is close to the edge. This indicates that the address is in the buffer area. For more information, see **Buffering** on page 15.
IPD*n*.BoundaryBuffer.DistanceToBorder	10 per IPD	Indicates the distance from the address to the border of the district.
IPD*n*.BoundaryConfidence	4 per IPD	Provides the percentage overlap of the geocode to the IPD boundary polygon layer. The returned percentage value describes the probability that the point falls in the IPD boundary area.

Field Name	Max. Field Length with null terminator	Description
IPD*n*.DistrictID	11 per IPD	IPD ID.
IPD*n*.DistrictName	61 per IPD	IPD name.
IPD*n*.DistrictType	7 per IPD	IPD district type.
IPD*n*.UpdateDate	7 per IPD	IPD update date (MMYYYY).
IPD*n*.VersionDate	7 per IPD	IPD compiled date (MMYYYY).
IPD*n*.Notes	21 per IPD	Tax code descriptions. For example: 01, 33, A, B
IPD*n*.ChangeDate	7 per IPD	IPD change date.
IPD*n*.EffectiveDate	7 per IPD	MMDDYY - Identifies when district becomes active - State supplied For example: 010108
IPD*n*.ExpirationDate	7 per IPD	MMDDYY - Identifies when district becomes inactive - State supplied For example: 063009
IPD*n*.FireRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.FireFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semi colon as a delimiter. 3;7 = "3% or 7%"

Field Name	Max. Field Length with null terminator	Description
IPD*n*.CasualtyRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.CasualtyFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.VehicleRate	21 per IPD	Format is dependent on associated flag Possible Values: .13, 15.00 or 3;7
IPD*n*.VehicleFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.MarineRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.MarineFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.HealthRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.HealthFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"

Field Name	Max. Field Length with null terminator	Description
IPD*n*.LifeRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.LifeFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.OtherRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.OtherFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.MinimumRate	21 per IPD	Format is dependent on associated flag Possible Values: .13, 15.00 or 3;7
IPD*n*.MinimumFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"

Payroll Tax Districts

The table below lists the output fields that contain Payroll Tax District (PAY) data. For more information on payroll tax districts, see **Assign GeoTAX Info** on page 12. To include this data in the output, click the **Output** tab, then use the **Tax district** drop-down menu and select **Payroll tax districts**.

> **Note:** Assign GeoTAX Info returns multiple districts for IPDs, SPDs, and PAYs.

Field Name	Max. Field Length with null terminator	Description
NumberPAYsFound	3	Number of PAYs returned.
PAY*n*.BoundaryBuffer.BufferRelation	2 per PAY	Indicates where in the district the address resides in relation to the edge of the district. Buffer width is specified by the option **Tax district boundary** . One of the following: **P** The address is inside the district at a distance from the edge that is greater than the specified buffer width. **I** The address is inside the district but is close to the edge. This indicates that the address is in the buffer area. **B** The address is outside the district but is close to the edge. This indicates that the address is in the buffer area. For more information, see **Buffering** on page 15.
PAY*n*.BoundaryBuffer.DistanceToBorder	10 per PAY	Indicates the distance from the address to the border of the district. The distance is in the units specified by the option **Distance units** .
PAY*n*.BoundaryConfidence	4 per PAY	Provides the percentage overlap of the geocode to the PAY boundary polygon layer. The returned percentage value describes the probability that the point falls in the PAY boundary area.

Field Name	Max. Field Length with null terminator	Description
PAY*n*.DistrictID	11 per PAY	PAY district ID.
PAY*n*.DistrictName	61 per PAY	PAY district name.
PAY*n*.DistrictType	7 per PAY	PAY district type.
PAY*n*.ID	11 per PAY	PAY ID.
PAY*n*.MunicipalEMSTax	2 per PAY	PAY municipality emergency municipal services tax. The values for Pennsylvania are: **Y** Levies the tax **N** Does not levy the tax All other states are null.
PAY*n*.MunicipalIncomeTax	2 per PAY	PAY municipality income tax. The values for Pennsylvania are: **R** Resident **N** Non-resident **B** Both **X** None All other states are null.
PAY*n*.SchoolDistrictEMSTax	2 per PAY	PAY school district emergency municipal services tax. The Values for Pennsylvania are: **Y** Levies the tax **N** Does not levy the tax All other states are null.

Field Name	Max. Field Length with null terminator	Description
PAY*n*.SchoolDistrictIncomeTax	2 per PAY	PAY school district income tax. The values for Pennsylvania are: **R** Resident **N** Non-resident **B** Both **X** N The values for Ohio are: **R** Resident **X** None All other states are null.

Special Purpose Tax Districts

The table below lists the output fields that contain Special Purpose Tax Districts (SPD) data. For more information on special purpose tax districts, see **Assign GeoTAX Info** on page 12. To include Special Purpose Tax Districts data in the output, click the **Output** tab, then use the **Tax district** drop-down menu and select **Special purpose districts**.

> **Note:** Assign GeoTAX Info returns multiple districts for IPDs, SPDs, and PAYs.

Field Name	Max. Field Length with null terminator	Description
NumberSPDsFound	3	Number of SPDs returned.
SPD*n*.BoundaryBuffer.BufferRelation	2 per SPD	Indicates where in the district the address resides in relation to the edge of the district. Buffer width is specified by the option **Tax district boundary** . One of the following: **P** The address is inside the district at a distance from the edge that is greater than the specified buffer width. **I** The address is inside the district but is close to the edge. This indicates that the address is in the buffer area. **B** The address is outside the district but is close to the edge. This indicates that the address is in the buffer area. For more information, see **Buffering** on page 15.
SPD*n*.BoundaryBuffer.DistanceToBorder	10 per SPD	Indicates the distance from the address to the border of the district. The distance is in the units specified by the option **Distance units** .
SPD*n*.BoundaryConfidence	4 per SPD	Provides the percentage overlap of the geocode to the SPD boundary polygon layer. The returned percentage value describes the probability that the point falls in the SPD boundary area.

Field Name	Max. Field Length with null terminator	Description
SPD*n*.CompiledDate	7 per SPD	SPD compiled date.
SPD*n*.DistrictCode	4 per SPD	3-digit district type code.
SPD*n*.DistrictName	61 per SPD	SPD name.
SPD*n*.DistrictNumber	6 per SPD	SPD district number.
SPD*n*.EffectiveDate	7 per SPD	SPD effective date.
SPD*n*.UpdateDate	7 per SPD	SPD update date.
SPD*n*.VersionDate	7 per SPD	SPD version date.

Sales and Use Tax Rates

The table below lists the output fields that contain the sales and use tax rate data.

To include this data in the output, click the **Output** tab, then use the **Sales tax rate type** drop-down menu and select one of the following:

• **General**,
• **Automotive**,
• **Construction**, or
• **Medical**

The following table describes the Sales and Use Tax Rate output fields.

Field Name	Max. Field Length with null terminator	Description
TaxRate.RC	2	Tax Rate return code denoting the level of match obtained against the Pitney Bowes Sales and Use Tax Rate file:
		E Exact match, using all 5 fields
		P Partial match, using 4 fields
		A Alternate match, using 3 fields
		N Record is default-coded based on valid state code.
		Blank No matching PB Software Sales and Use Tax Rate record found.
Municipal.SalesTaxRate	11	Municipality sales tax rate for the selected tax rate type.
County.SalesTaxRate	11	County sales tax rate for the selected tax rate type.
State.SalesTaxRate	11	State sales tax rate for the selected tax rate type.
SPD*n*.SalesTaxRate	11 per SPD	Sales tax rate for up to 10 Special Purpose Districts (SPD).

Field Name	Max. Field Length with null terminator	Description
TaxRate.SalesTotal	11	The sum of the individual Municipal, County, State and SPD sales tax rates.
Municipal.UseTaxRate	11	Municipality use tax rate for the selected tax rate type.
County.UseTaxRate	11	County use tax rate for the selected tax rate type.
State.UseTaxRate	11	State use tax rate for the selected tax rate type.
SPD*n*.UseTaxRate	11 per SPD	Use tax rate for up to 10 Special Purpose Districts (SPD).
TaxRate.UseTotal	11	The sum of the individual Municipal, County, State and SPD use tax rates.

Error Reporting

The table below defines the error reporting output fields.

> **Note:** Fields denoted by an asterisk "*" are always included in the output. Contents returned when available; otherwise, left blank.

Field Name	Max. Field Length with null terminator	Description
GTX.ErrorCode*	3	This field contains a return code if the GeoTAX engine experiences an abnormal termination.

> **Note:** This field contains the same set of codes returned by the standalone GeoTAX software and is intended for users who have migrated from GeoTAX to Spectrum™ Technology Platform.

The first character indicates the file (or set of files affected).

Blank	Matcher terminated normally
A	User Auxiliary file problem
CE	coubsub.txb file problem
CI	Confidence engine problem
D	Boundary file
F	User-defined boundary file problem
G	Address Matching engine problem
L	Licensing problem
S	State file problem
U	GeoTAX Auxiliary file problem
X	Combination of Street and state file problem
Z	zip.gsb file problem

The second position is one of the following:

E	Fatal issue, program terminating
F	Expired database
I	Informational

Field Name	Max. Field Length with null terminator	Description
GTX.ErrorDescription[*]	81	If the GeoTAX engine experiences an abnormal termination, this field contains a text description of the reason. It is blank if GeoTAX terminated normally. **Note:** This field contains the same set of descriptions returned by the standalone GeoTAX software and is intended for users who have migrated from GeoTAX to Spectrum™ Technology Platform. SI-"TS158 FILES NOT FOUND" SI-"TS158 FILES VINTAGE OR INCOMPLETE DB ERROR" SI-"STATE FILES NOT FOUND" SE-"STATE AND TS158 FILES NOT FOUND" SE-"STATE NOT FOUND AND TS158 VINTAGE ERROR" SI-"STATE FILES VINTAGE OR INCOMPLETE DB ERROR" SE-"STATE VINTAGE ERROR AND TS158 NOT FOUND" SE-"STATE AND TS158 FILES VINTAGE OR INCOMPLETE DB ERROR" GI-"STREET FILES NOT FOUND" XI-"STREET AND TS158 FILES NOT FOUND" XI-"STREET NOT FOUND AND TS158 FILES VINTAGE ERROR" XI-"STREET AND STATE FILES NOT FOUND" XE-"STREET STATE AND TS158 FILES NOT FOUND" XE-"STREET AND STATE NOT FOUND AND TS158 VINTAGE ERROR" XI-"STREET NOT FOUND AND STATE VINTAGE ERROR" XE-"STREET AND TS158 NOT FOUND AND STATE VINTAGE ERROR" XE-"STREET NOT FOUND AND STATE AND TS158 VINTAGE ERROR"

Field Name	Max. Field Length with null terminator	Description
		GI-"STREET FILES VINTAGE OR INCOMPLETE DB ERROR" XI-"STREET VINTAGE ERROR AND TS158 NOT FOUND" XI-"STREET AND TS158 FILES VINTAGE OR INCOMPLETE DB ERROR" XI-"STREET VINTAGE ERROR AND STATE NOT FOUND" XE-"STREET VINTAGE ERROR AND STATE AND TS158 NOT FOUND" XE-"STREET AND TS158 VINTAGE ERROR AND STATE NOT FOUND" XI-"STREET AND STATE FILES VINTAGE OR INCOMPLETE DB ERROR" XE-"STREET AND STATE VINTAGE ERROR AND TS158 NOT FOUND" XE-"STREET STATE AND TS158 VINTAGE ERROR"
		LF-"INVALID FUNCTION PASSED TO GTDBLIO : "AI-"GENIO ERROR:FILE = G1GTAUX , FUNC = ,ST =" UI-"GENIO ERROR: FILE =G1GTAX2 , FUNC = , ST = " XF-"The (DB Vintage) database has expired!" XF-"The (SPD file Vintage) SPD File has expired!"
		DI- "UNABLE TO VALIDATE BOUNDARY LICENSE" DI-"UNABLE TO OPEN BOUNDARY FILE" DI- "BOUNDARY FILE NOT FOUND" FI- "UNABLE TO VALIDATE USER BOUNDARY LICENSE" FI- "UNABLE TO OPEN USER BND FILE" FI- "USER BND FILE NOT FOUND"
GTX.WarnCode[*]	3	This field contains warning codes returned by the GeoTAX engine. It is blank if no warnings were issued. A value of WN indicates a database will expire next month. **Note:** This field contains the same set of codes returned by the standalone GeoTAX software and is intended for users who have migrated from GeoTAX to Spectrum™ Technology Platform.

Field Name	Max. Field Length with null terminator	Description
GTX.WarnDescription[*]	81	A text description of any warnings returned by the GeoTAX engine. **Note:** This field contains the same set of descriptions returned by the standalone GeoTAX software and is intended for users who have migrated from GeoTAX to Spectrum™ Technology Platform.
Status	2	Reports the success or failure of the match attempt. **null** Success **F** Failure. Some examples of failures are your license expired or you did not select any output record types and fields for Assign GeoTAX Info to return.
Status.Code	12	If Assign GeoTAX Info could not process the address, this field will show the reason. Currently there is one possible value for this field: Invalid Address.

Field Name	Max. Field Length with null terminator	Description
Status.Description	64	If Assign GeoTAX Info could not process the address, this field will show a description of the failure. One of the following:
		TS158 FILES NOT FOUND TS158 FILES VINTAGE OR INCOMPLETE DB ERROR STATE FILES NOT FOUND STATE AND TS158 FILES NOT FOUND STATE NOT FOUND AND TS158 VINTAGE ERROR STATE FILES VINTAGE OR INCOMPLETE DB ERROR STATE VINTAGE ERROR AND TS158 NOT FOUND STATE AND TS158 FILES VINTAGE OR INCOMPLETE DB ERROR
		STREET FILES NOT FOUND STREET AND TS158 FILES NOT FOUND STREET NOT FOUND AND TS158 FILES VINTAGE ERROR STREET AND STATE FILES NOT FOUND STREET STATE AND TS158 FILES NOT FOUND STREET AND STATE NOT FOUND AND TS158 VINTAGE ERROR STREET NOT FOUND AND STATE VINTAGE ERROR STREET AND TS158 NOT FOUND AND STATE VINTAGE ERROR STREET NOT FOUND AND STATE AND TS158 VINTAGE ERROR STREET FILES VINTAGE OR INCOMPLETE DB ERROR STREET VINTAGE ERROR AND TS158 NOT FOUND
		STREET AND TS158 FILES VINTAGE OR INCOMPLETE DB ERROR STREET VINTAGE ERROR AND STATE NOT FOUND STREET VINTAGE ERROR AND STATE AND TS158 NOT FOUND STREET AND TS158 VINTAGE ERROR AND STATE NOT FOUND STREET AND STATE FILES VINTAGE OR INCOMPLETE DB ERROR STREET AND STATE VINTAGE ERROR AND TS158 NOT FOUND STREET STATE AND TS158 VINTAGE ERROR

Field Name	Max. Field Length with null terminator	Description
		INVALID FUNCTION PASSED TO GTDBLIO : GENIO ERROR: FILE = G1GTAUX , FUNC = , ST = GENIO ERROR: FILE = G1GTAX2 , FUNC = , ST = The (DB Vintage) database has expired! The (SPD file Vintage) SPD File has expired! UNABLE TO VALIDATE BOUNDARY LICENSE UNABLE TO OPEN BOUNDARY FILE BOUNDARY FILE NOT FOUND UNABLE TO VALIDATE USER BOUNDARY LICENSE UNABLE TO OPEN USER BND FILE USER BND FILE NOT FOUND

3 - Calculate Distance

In this section

Calculate Distance

Calculate Distance takes two sets of latitude/longitude coordinates as input, calculates the distance between the coordinates, and returns the distance between the two points.

Calculate Distance is part of the Enterprise Tax Module.

Input

Calculate Distance takes latitude and longitude information as input.

The table below defines the Calculate Distance input data.

Field Name	Description
FirstLatitude	Latitude of the first point for which you want distance returned.
FirstLatitude.Directional	First latitude directional. **N** North **S** South
FirstLongitude	Longitude of the first point for which you want distance returned.
FirstLongitude.Directional	First longitude directional. **E** East **W** West
SecondLatitude	Latitude of the second point for which you want distance returned.

Field Name	Description	
SecondLatitude.Directional	Second latitude directional.	
	N	North
	S	South
SecondLongitude	Longitude of the second point for which you want distance returned.	
SecondLongitude.Directional	Second longitude directional.	
	E	East
	W	West

Options

The table below defines the output data and format options.

Option Name	Description	
Input latitude/longitude format	Indicates the format of the input latitude/longitude. The options are:	
	Degrees, minutes, seconds	For example 90 00 00N180 00 00W.
	Decimal degrees	Latitude/longitude in decimal degrees.

Select **Decimal degrees** to activate the following options:

	Include decimal point	If not selected, indicates that the input value is similar to 90000000-180000000 or 090000000N180000000W. If selected, indicates that the input value is similar to 90.000000-180.000000 or 090.000000N180.000000W.
	Use directional indicator (N,S,E,W)	If selected, indicates that the input value is similar to 090000000N180000000W or 090.000000N180.000000.
	Use signed latitude/longitude	If selected, indicates that the input value is similar to 90000000-180000000 or 90.000000-180.000000)

Option Name	Description
Return distance in	Indicates the measurement units returned for distance calculation: • Feet • Kilometers • Meters • Miles (default)

Preview

Preview is an interactive tool that allows you to input one or more records and receive immediate results from Calculate Distance.

1. Under **Input Record 1**, enter your geocode information in the appropriate fields.
   For the definitions of the input record fields, refer to **Input** on page 78.

2. To add additional input records, click the Add button ✛ . To import records, click the Import button ⬇. The input file can consist of input fields delimited by a comma, period, pipe, semicolon, space or tab. To delete all input records, click the Delete button 🗑 .

3. Click **Run Preview**.
   The results for each input record are displayed. For the definitions of the output fields, see **Output** on page 80.

Output

Calculate Distance always returns the Confidence field to indicate the confidence in the output provided.

If Calculate Distance fails to process the data, it returns the fields Status, Status.Code, and Status.Descriptions. These fields provide information on why Calculate Distance failed to process the data. Some examples of failures are your license expired or you did not select any output record types and fields for Calculate Distance to return. The following table provides the record-level qualifiers and data outputs for Calculate Distance.

Field Name	Max. Field Length with null terminator	Description
Distance	9	Distance between the two input coordinates in the units of measurement that you specified.
Status	2	Reports the success or failure of the match attempt:
		null Success
		F Failure
Status.Code	2	Reason for failure or error. If `Status = F`, `Status.Code = Failure`.
Status.Description	64	Description of the problem. If `Status = F`, `Status.Description = Unable to compute distance`.

4 - Reverse GeoTAX Info Lookup

In this section

Reverse GeoTAX Info Lookup

Reverse GeoTAX Info Lookup allows latitude/longitude coordinates to be supplied as input and identifies the tax districts that apply to the given coordinate. Specifically, Reverse GeoTAX Info Lookup can return the following information about a location:

- FIPS state codes and county codes
- State and county names
- MCD codes and names
- Place codes and names
- Boundary file districts
- Cross-reference tax keys
- The relationship of the input coordinates to user-defined polygons
- Sales and use tax rates, if licensed for the Pitney Bowes Sales and Use Tax Rate File

Reverse GeoTAX Info Lookup optionally includes enhanced tax jurisdiction information for a location, including:

- **Insurance premium districts**—Areas designated for the collection of taxes imposed on insurance policy premiums, based on the policy holder's address. Insurance premium districts are created by state governments.
- **Payroll tax districts**—Areas designated for the collection of taxes imposed on employers to support state or local government facilities and services, based on the employee's and/or employer's address. Examples include taxes collected for districts to pay for schools, police, or other services. Payroll tax districts are created by state or local governments.
- **Payroll system tax codes**—Codes that represent specific jurisdictions that collect payroll tax. Using payroll system tax codes has advantages over using the payroll tax district information returned by Reverse GeoTAX Info Lookup:

  - Reverse GeoTAX Info Lookup uses an additional database to determine payroll tax codes, resulting in more accurate payroll tax determination.
  - Many payroll systems use specific codes to determine withholding amounts. Since you can customize the payroll tax codes returned by Reverse GeoTAX Info Lookup, you can set up a process where Reverse GeoTAX Info Lookup returns the exact payroll tax codes required by your payroll system, instead of returning jurisdictional IDs that must then be translated into the codes used by your system.

- **Special purpose tax districts**—Areas designated for the collection of taxes imposed on residents to support specialized services for residents of the district, based on the resident's address. Examples include services such as sewer service, transit service, or water resources. Special purpose tax districts are created by legislative action, court action, or public referendums. This optional information requires the use of boundary files which require an additional license. Contact your Pitney Bowes sales representative for more information.

Using the optional Pitney Bowes Sales and Use Tax Rate file, Reverse GeoTAX Info Lookup includes tax rate data for a location, including:

Tax rate type:

- General
- Automotive
- Medical
- Construction

Sales and/or use tax rates for:

- State
- County
- Municipality
- Up to 10 SPDs
- Total Rate - the sum of the individual state, county, municipality and SPD rates.

Required input format

The required format for the input coordinates is as follows:

Field Name	Format
InputLatitude	00.000000 or without the decimal point 00000000
InputLongitude	000.000000 or without the decimal point 000000000, or
	00.000000 or without the decimal point 00000000

Reverse GeoTAX Info Lookup is part of the Enterprise Tax Module.

Database Resource

For instructions on how to create a database resource, see **Adding an Enterprise Tax Module Database Resource** on page 9.

Option Name	Description
Database	Select the database resource to use in the reverse geocoding lookup process.

Geocoding Options

Reverse geocoding information lookup is the process of taking an input latitude/longitude coordinate and returning jurisdictional tax information. The geocoding options specify the distance units and buffer distance to use when matching to a boundary file.

Option Name	Description
Database	Select the database resource to use in the reverse geocoding lookup process.
Boundary matching: The following options can be set when matching to a boundary file such as SPD, IPD, PAY, Place and MCD, or user-defined.	
Distance units	Specifies the units in which to measure distance. One of the following:
	Feet — Distances are measured in feet. (default)
	Meters — Distances are measured in meters.
Default buffer widths	
Tax district boundary	Specifies the buffer width to use for tax district boundary files. The tax district boundary files are the Special Purpose Districts (SPD) file, the Insurance Premium Districts (IPD) file, the Payroll Tax Districts (PAY) file, and Place and MCD files.
	Specify the distance in the **Tax district boundary** field. The distance units used are specified in the **Distance units** field.
	The default buffer width that you specify here can be overridden on a record-by-record basis using the BufferWidth input field.
	For more information about buffers, see **Buffering** on page 15.
User-defined boundary file	Specifies the buffer width to use for user-defined boundary files. The distance is in the units of measurement specified in the **Distance units** option. For information about buffers, see **Buffering** on page 15. The default buffer width that you specify here can be overridden on a record-by-record basis using the BufferWidth input field.
	Note: To use buffers, the user-defined boundary file must support buffers.

Output Data Options

Data options control the data returned by Reverse GeoTAX Info Lookup.

Option Name	Description
Include data	Select one or more of the following to obtain the type of data you want returned. Reverse GeoTAX Info Lookup groups the output fields into record types. If you do not want all of the fields in a record type returned, do not select the check box, and list only those fields you want returned in **Include extra fields** . • Auxiliary • Census • Payroll System Tax Codes • Tax Jurisdiction • User-defined Boundary For a description of the fields in each output group, see **Output** on page 90. **Note:** If you select **Payroll System Tax Codes**, select **Payroll Tax Districts** under **Tax district** to obtain the best payroll system tax code match possible.
Tax district	Indicates the type of tax district information returned. If you do not want all of the fields in a tax district returned, do not select the check box, and list only those fields you want returned in **Include extra fields**. • Insurance premium districts • Payroll tax districts • Special purpose districts For a description of the fields in each output group, see **Output** on page 90.

Option Name	Description
Sales tax cross-reference key	If you integrate Reverse GeoTAX Info Lookup with third-party tax compliance software from Vertex or Sovos, select which vendor you use. This controls the value returned in the `GeoTAXKey` output field. One of the following:

None	Do not return either the Sovos or Vertex jurisdiction codes (default).
Sovos	Return the Sovos jurisdiction code for the address.
PBS Vertex	Return the Vertex jurisdiction code for the address. Select this option if you obtained a Vertex file from Pitney Bowes.

> **Note:** If you select **Sales tax cross-reference key**, select Special Purpose Districts under **Tax district** to obtain the best Sales tax cross-reference key match possible.

Option Name	Description
Sales tax rate type	Select the desired Sales tax rate type or none:

None	Do not return sales tax rates. (default)
General	Return the General sales tax rates.
Automotive	Return the Automotive sales tax rates.
Construction	Return the Construction sales tax rates.
Medical	Return the Medical sales tax rates.

> **Note:** If you select **Sales tax rate type**, select Special Purpose Districts under **Tax district** to obtain the best match possible to the tax rate file.

Option Name	Description
Include extra fields	Indicates the individual output fields you want returned. List fields with a pipe (|) between each field. You can use this field instead of the Output Record Type to limit the output to those fields that are important to your current data needs.
	For a list of the fields included in each data type, see **Output** on page 90.

Output Format

Output format options control how Reverse GeoTAX Info Lookup formats output data.

Option Name	Description
Casing	Specifies the casing of these output fields: `County.Name`, `MCD.Name`, `Place.Name`, `IPDn.DistrictName`, `PAYn.DistrictName`, `SPDn.DistrictName`, and `PTCn.PayrollDescription`.

One of the following:

Mixed	Returns the output in mixed case (default). For example: Boulder.
Upper	Returns the output in upper case. For example: BOULDER.

Preview

Preview is an interactive tool that allows you to input one or more records and receive immediate results from Reverse GeoTAX Info Lookup.

1. Under **Input Record 1**, enter your geocode and input parameter information in the appropriate fields.

   For the definitions of the input record fields, refer to **Required input format** on page 84.

2. To add additional input records, click the Add button ➕ . To import records, click the Import button ⬇ . The input file can consist of input fields delimited by a comma, period, pipe, semicolon, space or tab. To delete all input records, click the Delete button 🗑 .

3. Click **Run Preview**.
   The results for each input record are displayed. For the definitions of the output fields, see **Output** on page 90.

Output

Input Latitude/Longitude

Reverse GeoTAX Info Lookup always returns the input coordinates as part of the output. The input latitude/longitude fields are returned as input from the data. Reverse GeoTAX Info Lookup does not change these input values.

Field Name	Max. Field Length with null terminator	Description
InputLatitude	12	Input latitude.
InputLongitude	12	Input longitude.

Auxiliary File

The table below lists the output fields that contain Auxiliary file data. To include Auxiliary file data in the output, click the **Output** tab, then under **Include data**, select the **Auxiliary** check box. The following table lists the output fields that contain tax jurisdiction data.

Field Name	Max. Field Length with null terminator	Description
AuxiliaryData.AuxiliaryFile	301	Data retrieved as a result of an auxiliary match from the user-defined area of the auxiliary file.
AuxiliaryData.StateFile	201	Data retrieved as a result of a state match. Data content and format vary depending on the state file used.

Census

The census output fields contains census information from the U.S. Census, including Minor Civil Divisions (MCDs) and Census County Division (CCD) names and codes. MCDs are the primary political or administrative divisions of a county, representing many kinds of legal entities with a variety of governmental and administrative functions. CCDs are established in states where there are no legally established MCDs. The Census Bureau recognizes MCDs in 28 states and has established CCDs in 21 states. The District of Columbia has no primary divisions, and the city of Washington, DC is considered equivalent to an MCD for data presentation purposes.

Census data also contains the Federal Information Processing Standards (FIPS) codes for each state and county. The FIPS State Code and the FIPS County Code are both used by the Census Bureau to identify these geographic units.

The following table lists the output fields that contain census data. To include auxiliary file data in the output, click the **Output** tab, then under **Include data**, select the **Census** check box.

Field Name	Max. Field Length with null terminator	Description
County.Code	4	Three-digit Federal Information Processing Standards (FIPS) county code extracted from the Census.BlockCode. **Note:** This field is always included in the output regardless of whether or not you choose to include census data in the output.
County.Name	26	Name of the county. **Note:** This field is always included in the output regardless of whether or not you choose to include census data in the output.
MCD.Code	6	Minor Civil Division/Census County Division (MCD/CCD) Code.
MCD.Name	41	Minor Civil Division/Census County Division (MCD/CCD) name.

Field Name	Max. Field Length with null terminator	Description
MCD.PointStatus	2	An address can be compared to a Minor Civil Division (MCD)/county subdivision file (Cousub.txt). This output field returns the result for a comparison between the matched geocode location to the polygon defined by the Cousub.txb file.

For more information about buffers, see **Buffering** on page 15.

> **Note:** The buffer distance for Cousub.txb is internally set to zero and cannot be modified.

P	The point is in the polygon.	
I	The point is in the buffer area inside the polygon.	
B	The point is in the buffer area and outside of the polygon.	
blank	Polygon not found.	

Field Name	Max. Field Length with null terminator	Description
MCD.DistanceToBorder	10	Returns the distance in feet between the matched address point to the polygon defined by the Cousub.txb file.
StateCode	3	Two-digit Federal Information Processing Standards (FIPS) state code extracted from the Census.BlockCode.

> **Note:** This field is always included in the output regardless of whether or not you choose to include census data in the output.

Payroll System Tax Code

The following table lists the output fields that contain Payroll System Tax Code (PTC) data. For more information on payroll tax districts, see **Reverse GeoTAX Info Lookup**.To include this data in the output, click the **Output** tab, then use the **Tax district** drop-down menu and select **Payroll tax districts**.

> **Note:** Reverse GeoTAX Info Lookup returns up to six payroll tax codes per input location.

Field Name	Max. Field Length with null terminator	Description
NumberPTCsFound	2	The number of payroll system tax codes found for this location.
PTC*n*.MatchCode	2 per PTC	Indicates the level of match obtained for the location. In order from most specific match to least, the possible match codes are: **P** The address was matched to a specific Payroll District ID. This is the most specific match. **G** The address was matched to a GNIS Code. **F** The address was matched to a county's FIPS code. **S** The address was matched to a state's FIPS code. This is the least specific match.
PTC*n*.PayrollCode	16 per PTC	A code that represents a taxing authority in a payroll application. This is a user-defined code. The specific codes are determined by the payroll application that utilizes the data returned by Reverse GeoTAX Info Lookup.
PTC*n*.PayrollDescription	41 per PTC	A description of the purpose of this payroll code.
PTC*n*.PayrollFlag	7 per PTC	A user-defined flag from the PTC database.
StateCounty	33	The state abbreviation and county name.

Tax Jurisdiction

Tax jurisdiction data contains information about the "place" for the location. A "place" is a geographic area defined on the basis of population criteria that vary by state; or, an area recognized as significant because it is located in an incorporated municipality. Places are used to determine tax jurisdiction.

The following table lists the output fields that contain tax jurisdiction data. To include tax jurisdiction data in the output, click on the **Output** tab, then under **Include data**, select the **Tax Jurisdiction** check box.

Field Name	Max. Field Length with null terminator	Description
GeoTAXKey	10	The value in this field varies depending on the option you specified in the **Sales tax cross-reference key** option:
		If you specified **Sovos**, GeoTAXKey contains the proprietary codes used in Sovos tax compliance software. You can use this code in your Sovos application to find out the tax rate for the jurisdiction. The Sovos jurisdiction code formats are as follows:
		• Sovos SUT - 2-digit SUT state code, 5-digit ZIP Code, 2-digit SUT geocode
		• Sovos TWE - variable-length TWE geocode
		If you specified **PBS Vertex**, GeoTAXKey contains the proprietary Vertex® jurisdiction code (comprised of a two-digit Vertex® state code, three-digit FIPS county code, and four-digit Vertex® city code). You can use this code in your Vertex® application to find out the tax rate for the jurisdiction.

Field Name	Max. Field Length with null terminator	Description
GeoTAXKey.MatchCode	2	Return code denoting the level of match obtained against the PBS Vertex or Sovos cross reference files.
		E — Exact match using five fields: FIPS state code, FIPS county code, FIPS or GNIS place code, ZIP Code, and FIPS place name.
		P — Partial match using four fields: FIPS state code, FIPS county code, FIPS or GNIS place code, and ZIP Code.
		A — Alternate match using two fields: ZIP Code, FIPS place name.
		N — Record is default coded based on valid state code.
		null — No matching record found.
GeoTAXKey.MatchLevel	12	A description of the value returned in the GeoTAXKey.MatchCode field.
		Exact — Exact match. See description in GeoTAXKey.MatchCode.
		Partial — Partial match. See description in GeoTAXKey.MatchCode.
		Alternate — Alternate match. See description in GeoTAXKey.MatchCode.
		DefaultCode — Record is default coded. See description in GeoTAXKey.MatchCode.
		NoMatch — No matching record found.
GNISCode	10	Unique nine-digit Geographic Names Information System (GNIS) code. **Note:** This field is always included in the output regardless of whether or not you choose to include census data in the output.

Field Name	Max. Field Length with null terminator	Description
Place.ClassCode	3	Place class code. Place class codes are used to determine the proper taxing jurisdictions **Note:** This field is always included in the output regardless of whether or not you choose to include tax jurisdiction data in the output.
Place.Code	6	Five-digit Federal Information Processing Standards (FIPS) place code. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality. **Note:** This field is always included in the output regardless of whether or not you choose to include tax jurisdiction data in the output.
Place.IncorporatedFlag	8	Indicates whether the address is located in an incorporated or unincorporated place. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality. **Note:** This field is always included in the output regardless of whether or not you choose to include tax jurisdiction data in the output. **Inc** Incorporated place code. **Uninc** Unincorporated place code. **Unknown** Incorporation status unknown.
Place.LastAnnexedDate	8	Last annexed date, in the format MM/YYYY, representing the month and year of the most recent boundary change or the most recent available boundary information. **Note:** This field is always included in the output regardless of whether or not you choose to include tax jurisdiction data in the output.

Field Name	Max. Field Length with null terminator	Description
Place.LastUpdatedDate	8	Last updated date, in the format MM/YYYY, reflecting the month and year when TomTom updated the database to reflect attribute (name change, FIPS change, etc.) or boundary edits to the Place. **Note:** This field is always included in the output regardless of whether or not you choose to include tax jurisdiction data in the output.
Place.LastVerifiedDate	8	Last verified date, in the format MM/YYYY, representing the month and year that TomTom verified municipality change information. **Note:** This field is always included in the output regardless of whether or not you choose to include tax jurisdiction data in the output.
Place.Name	41	The name of the "place" for the location. A "place" is a geographic area defined on the basis of population criteria that vary by state. Or, an area recognized as significant because it is located in an incorporated municipality. **Note:** This field is always included in the output regardless of whether or not you choose to include tax jurisdiction data in the output.
Place.PointStatus	2	Returns the result for a comparison between the matched geocode location to the polygon defined by the Place.txb file. For more information on buffers, see **Buffering** on page 15. **P** The point is in the polygon. **I** The point is in the buffer area inside the polygon. **B** The point is in the buffer area and outside of the polygon. **blank** Polygon not found.
Place.DistanceToBorder	10	Returns the distance in feet between the matched address point to the polygon defined by the Place.txb file.

User-Defined Boundary File

The following table lists the output fields that contain data returned from user-defined boundary files. To include this data in the output, click the **Output** tab, then under **Include data**, select the **User-defined Boundary** check box.

> **Note:** Reverse GeoTAX Info Lookup can return up to 10 user-defined areas for each input location.

Field Name	Max. Field Length with null terminator	Description
NumberUserBoundariesFound	3	The number of user-defined polygons found for the address.
UserBoundary*n*.BoundaryDescription	51 per User Boundary	A description of the polygon.
UserBoundary*n*.BoundaryID	11 per User Boundary	The ID of the polygon as specified in the user-defined boundary file.
UserBoundary*n*.BufferRelation	2 per User Boundary	Indicates where in the polygon the location resides in relation to the edge of the area. Buffer width is specified by the option **User-defined boundary** . One of the following: **P** The geocode is inside the polygon at a distance from the edge that is greater than the specified buffer width. **I** The geocode is inside the polygon but is close to the edge. This indicates that the address is in the buffer area. **B** The geocode is outside the polygon but is close to the edge. This indicates that the address is in the buffer area. For more information, see **Buffering** on page 15.
UserBoundary*n*.DistanceToBorder	10 per User Boundary	Indicates the distance in feet from the input location to the border of the polygon.

Field Name	Max. Field Length with null terminator	Description
UserBoundary*n*.SupplementalBoundaryID	11 per User Boundary	A supplemental ID as specified in the user-defined boundary file.

Insurance Premium Tax Districts

The following table lists the output fields that contain Insurance Premium Tax Districts (IPD) data. For more information on insurance premium tax districts, see **Reverse GeoTAX Info Lookup** on page 83. To include IPD data in the output, click the **Output** tab, then use the **Tax district** drop-down menu and select **Insurance premium districts**.

> **Note:** Reverse GeoTAX Info Lookup returns multiple districts for IPDs, SPDs, and PAYs.

Field Name	Max. Field Length with null terminator	Description
NumberIPDsFound	3	The number of Insurance Premium Tax Districts found for the location.
IPD*n*.BoundaryBuffer.BufferRelation	2 per IPD	Indicates where in the district the location resides in relation to the edge of the district. Buffer width is specified by the option **Tax district boundary** . One of the following: **P** The location is inside the district at a distance from the edge that is greater than the specified buffer width. **I** The location is inside the district but is close to the edge. This indicates that the location is in the buffer area. **B** The location is outside the district but is close to the edge. This indicates that the location is in the buffer area. For more information, see **Buffering** on page 15.
IPD*n*.BoundaryBuffer.DistanceToBorder	10 per IPD	Indicates the distance in feet from the location to the border of the district.
IPD*n*.DistrictID	11 per IPD	IPD ID.
IPD*n*.DistrictName	61 per IPD	IPD name.

Field Name	Max. Field Length with null terminator	Description
IPD*n*.DistrictType	7 per IPD	IPD district type.
IPD*n*.UpdateDate	7 per IPD	IPD update date (MMYYYY).
IPD*n*.VersionDate	7 per IPD	IPD compiled date (MMYYYY).
IPD*n*.Notes	21 per IPD	Tax code descriptions. For example: 01, 33, A, B
IPD*n*.ChangeDate	7 per IPD	IPD change date.
IPD*n*.EffectiveDate	7 per IPD	MMDDYY - Identifies when district becomes active - State supplied For example: 010108
IPD*n*.ExpirationDate	7 per IPD	MMDDYY - Identifies when district becomes inactive - State supplied For example: 063009
IPD*n*.FireRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.FireFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semi colon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.CasualtyRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7

Field Name	Max. Field Length with null terminator	Description
IPD*n*.CasualtyFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.VehicleRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.VehicleFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.MarineRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.MarineFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.HealthRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.HealthFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.LifeRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7

Field Name	Max. Field Length with null terminator	Description
IPD*n*.LifeFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.OtherRate	21 per IPD	Format is dependent on associated flag Possible Values: .13, 15.00 or 3;7
IPD*n*.OtherFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"
IPD*n*.MinimumRate	21 per IPD	Format is dependent on associated flag For example: .13, 15.00 or 3;7
IPD*n*.MinimumFlag	6 per IPD	P - Percentage; .1 = 10%, .0575 = 5.75% F - Flat Fee dollar amount M - Multiple Percentages has a semicolon as a delimiter. 3;7 = "3% or 7%"

Payroll Tax Districts

The following table lists the output fields that contain Payroll Tax District (PAY) data. For more information on payroll tax districts, see **Reverse GeoTAX Info Lookup**. To include this data in the output, click the **Output** tab, then use the **Tax district** drop-down menu and select **Payroll tax districts**.

> **Note:** Reverse GeoTAX Info Lookup returns multiple districts for IPDs, SPDs, and PAYs.

Field Name	Max. Field Length with null terminator	Description
NumberPAYsFound	3	Number of payroll tax districts found for the location.
PAY*n*.BoundaryBuffer.BufferRelation	2 per PAY	Indicates where in the district the location resides in relation to the edge of the district. Buffer width is specified by the option **Tax district boundary** . One of the following: **P** The location is inside the district at a distance from the edge that is greater than the specified buffer width. **I** The location is inside the district but is close to the edge. This indicates that the location is in the buffer area. **B** The location is outside the district but is close to the edge. This indicates that the location is in the buffer area. For more information, see **Buffering** on page 15.
PAY*n*.BoundaryBuffer.DistanceToBorder	10 per PAY	Indicates the distance in feet from the location to the border of the district.
PAY*n*.DistrictID	11 per PAY	PAY district ID.
PAY*n*.DistrictName	61 per PAY	PAY district name.

Field Name	Max. Field Length with null terminator	Description
PAY*n*.DistrictType	7 per PAY	PAY district type.
PAY*n*.ID	11 per PAY	PAY ID.
PAY*n*.MunicipalEMSTax	2 per PAY	PAY municipality emergency municipal services tax. The values for Pennsylvania are: **Y** Levies the tax **N** Does not levy the tax All other states are null.
PAY*n*.MunicipalIncomeTax	2 per PAY	PAY municipality income tax. The values for Pennsylvania are: **R** Resident **N** Non-resident **B** Both **X** None All other states are null.
PAY*n*.SchoolDistrictEMSTax	2 per PAY	PAY school district emergency municipal services tax. The Values for Pennsylvania are: **Y** Levies the tax **N** Does not levy the tax All other states are null.

Field Name	Max. Field Length with null terminator	Description
PAY*n*.SchoolDistrictIncomeTax	2 per PAY	PAY school district income tax. The values for Pennsylvania are: **R** Resident **N** Non-resident **B** Both **X** N The values for Ohio are: **R** Resident **X** None All other states are null.

Special Purpose Tax Districts

The following table lists the output fields that contain Special Purpose Tax Districts (SPD) data. For more information on special purpose tax districts, see **Reverse GeoTAX Info Lookup**. To include Special Purpose Tax Districts data in the output, click the **Output** tab, then use the **Tax district** drop-down menu and select **Special purpose districts**.

> **Note:** Reverse GeoTAX Info Lookup returns multiple districts for IPDs, SPDs, and PAYs.

Field Name	Max. Field Length with null terminator	Description
NumberSPDsFound	3	Number of Special Purpose Tax Districts found for the location.
SPD*n*.BoundaryBuffer.BufferRelation	2 per SPD	Indicates where in the district the location resides in relation to the edge of the district. Buffer width is specified by the option **Tax district boundary** . One of the following: **P** The location is inside the district at a distance from the edge that is greater than the specified buffer width. **I** The location is inside the district but is close to the edge. This indicates that the location is in the buffer area. **B** The location is outside the district but is close to the edge. This indicates that the location is in the buffer area. For more information, see **Buffering** on page 15.
SPD*n*.BoundaryBuffer.DistanceToBorder	10 per SPD	Indicates the distance in feet from the address to the border of the district.
SPD*n*.CompiledDate	7 per SPD	SPD compiled date.
SPD*n*.DistrictCode	4 per SPD	3-digit district type code.

Field Name	Max. Field Length with null terminator	Description
SPD*n*.DistrictName	61 per SPD	SPD name.
SPD*n*.DistrictNumber	6 per SPD	SPD district number.
SPD*n*.EffectiveDate	7 per SPD	SPD effective date.
SPD*n*.UpdateDate	7 per SPD	SPD update date.
SPD*n*.VersionDate	7 per SPD	SPD version date.

Sales and Use Tax Rates

The table below lists the output fields that contain the sales and use tax rate data.

To include this data in the output, click the **Output** tab, then use the **Sales tax rate type** drop-down menu and select one of the following:

- **General**,
- **Automotive**,
- **Construction**, or
- **Medical**

The following table describes the Sales and Use Tax Rate output fields.

Field Name	Max. Field Length with null terminator	Description
TaxRate.RC	2	Tax Rate return code denoting the level of match obtained against the Pitney Bowes Sales and Use Tax Rate file:
		E Exact match, using all 5 fields
		P Partial match, using 4 fields
		A Alternate match, using 3 fields
		N Record is default-coded based on valid state code.
		Blank No matching PB Software Sales and Use Tax Rate record found.
Municipal.SalesTaxRate	11	Municipality sales tax rate for the selected tax rate type.
County.SalesTaxRate	11	County sales tax rate for the selected tax rate type.
State.SalesTaxRate	11	State sales tax rate for the selected tax rate type.
SPD*n*.SalesTaxRate	11 per SPD	Sales tax rate for up to 10 Special Purpose Districts (SPD).

Field Name	Max. Field Length with null terminator	Description
TaxRate.SalesTotal	11	The sum of the individual Municipal, County, State and SPD sales tax rates.
Municipal.UseTaxRate	11	Municipality use tax rate for the selected tax rate type.
County.UseTaxRate	11	County use tax rate for the selected tax rate type.
State.UseTaxRate	11	State use tax rate for the selected tax rate type.
SPD*n*.UseTaxRate	11 per SPD	Use tax rate for up to 10 Special Purpose Districts (SPD).
TaxRate.UseTotal	11	The sum of the individual Municipal, County, State and SPD use tax rates.

Error Reporting

The table below defines the error reporting output fields.

Field Name	Max. Field Length with null terminator	Description
GTX.ErrorCode	3	This field contains a return code if the GeoTAX engine experiences an abnormal termination.

Note: This field contains the same set of codes returned by the standalone GeoTAX software and is intended for users who have migrated from GeoTAX to Spectrum™ Technology Platform.

The first character indicates the file (or set of files affected).

Blank	Matcher terminated normally
A	User Auxiliary file problem
CE	coubsub.txb file problem
CI	Confidence engine problem
D	Boundary file
F	User-defined boundary file problem
G	Address Matching engine problem
L	Licensing problem
S	State file problem
U	GeoTAX Auxiliary file problem
X	Combination of Street and state file problem
Z	zip.gsb file problem

The second position is one of the following:

E	Fatal issue, program terminating
F	Expired database
I	Informational

Field Name	Max. Field Length with null terminator	Description
GTX.ErrorDescription	81	If the GeoTAX engine experiences an abnormal termination, this field contains a text description of the reason. It is blank if GeoTAX terminated normally. The maximum length is 80.

Note: This field contains the same set of descriptions returned by the standalone GeoTAX software and is intended for users who have migrated from GeoTAX to Spectrum™ Technology Platform.

SI-"TS158 FILES NOT FOUND"
SI-"TS158 FILES VINTAGE OR INCOMPLETE DB ERROR"
SI-"STATE FILES NOT FOUND"
SE-"STATE AND TS158 FILES NOT FOUND"
SE-"STATE NOT FOUND AND TS158 VINTAGE ERROR"
SI-"STATE FILES VINTAGE OR INCOMPLETE DB ERROR"
SE-"STATE VINTAGE ERROR AND TS158 NOT FOUND"
SE-"STATE AND TS158 FILES VINTAGE OR INCOMPLETE DB ERROR"

GI-"STREET FILES NOT FOUND"
XI-"STREET AND TS158 FILES NOT FOUND"
XI-"STREET NOT FOUND AND TS158 FILES VINTAGE ERROR"
XI-"STREET AND STATE FILES NOT FOUND"
XE-"STREET STATE AND TS158 FILES NOT FOUND"
XE-"STREET AND STATE NOT FOUND AND TS158 VINTAGE ERROR"
XI-"STREET NOT FOUND AND STATE VINTAGE ERROR"
XE-"STREET AND TS158 NOT FOUND AND STATE VINTAGE ERROR"
XE-"STREET NOT FOUND AND STATE AND TS158 VINTAGE ERROR"

Field Name	Max. Field Length with null terminator	Description
		GI-"STREET FILES VINTAGE OR INCOMPLETE DB ERROR" XI-"STREET VINTAGE ERROR AND TS158 NOT FOUND" XI-"STREET AND TS158 FILES VINTAGE OR INCOMPLETE DB ERROR" XI-"STREET VINTAGE ERROR AND STATE NOT FOUND" XE-"STREET VINTAGE ERROR AND STATE AND TS158 NOT FOUND" XE-"STREET AND TS158 VINTAGE ERROR AND STATE NOT FOUND" XI-"STREET AND STATE FILES VINTAGE OR INCOMPLETE DB ERROR" XE-"STREET AND STATE VINTAGE ERROR AND TS158 NOT FOUND" XE-"STREET STATE AND TS158 VINTAGE ERROR"
		LF-"INVALID FUNCTION PASSED TO GTDBLIO : " AI-"GENIO ERROR: FILE = G1GTAUX , FUNC = , ST = " UI-"GENIO ERROR: FILE = G1GTAX2 , FUNC = , ST = " XF-"The (DB Vintage) database has expired!" XF-"The (SPD file Vintage) SPD File has expired!"
		DI- "UNABLE TO VALIDATE BOUNDARY LICENSE" DI- "UNABLE TO OPEN BOUNDARY FILE" DI- "BOUNDARY FILE NOT FOUND" FI- "UNABLE TO VALIDATE USER BOUNDARY LICENSE" FI- "UNABLE TO OPEN USER BND FILE" FI- "USER BND FILE NOT FOUND"
GTX.WarnCode	3	This field contains warning codes returned by the GeoTAX engine. It is blank if no warnings were issued. A value of `WN` indicates a database will expire next month. **Note:** This field contains the same set of codes returned by the standalone GeoTAX software and is intended for users who have migrated from GeoTAX to Spectrum™ Technology Platform.

Field Name	Max. Field Length with null terminator	Description
GTX.WarnDescription	81	A text description of any warnings returned by the GeoTAX engine. **Note:** This field contains the same set of descriptions returned by the standalone GeoTAX software and is intended for users who have migrated from GeoTAX to Spectrum™ Technology Platform.

5 - Reports

In this section

Summary Reports

Assign GeoTAX Info Summary Report

A pre-configured report can be generated for a job. This is supported for a job run through either the Assign GeoTAX Info or the Reverse GeoTAX Info Lookup stage. The report summarizes general information about the job, such as the settings, number of records processed, performance statistics, and the database used. It also contains detailed statistics about the results of the job.

The summary report contains the following sections for Assign GeoTAX Info and Reverse GeoTAX Info Lookup except where noted.

Job Summary

This section contains information about the software and databases used for the job.

- **Software Version**—The version of the underlying software used by Assign GeoTAX Info. Note that this is not the same as the Spectrum™ Technology Platform version number.
- **Input Mode**—The type of input data.

  - `Address Input`— Indicates the data was generated from a job using the Assign GeoTAX Info stage.
  - `Latitude-Longitude Input`—Indicates the data was generated from a job using the Reverse GeoTAX Info Lookup stage.

- **Street Database Vendor**—The street database vendor used for matching.
- **Street Database Version**—The version of the Street portion of the Master File database. For information on the Master File, see **Enterprise Tax Databases** on page 4.
- **Cross Reference Database Version**—The version of the cross-reference database used in this job. Cross-reference databases are used to determine jurisdiction codes for use with third-party tax software. For information on the Cross Reference databases, see **Enterprise Tax Databases** on page 4.

Address Matching Summary

> **Note:** This section of the summary is not provided for jobs using the Reverse GeoTAX Info Lookup stage.

This section describes the input address match counts.

- **Total Match Attempts**—Address matches attempted in this job.
- **Total Records Matched**—Input addresses that were matched to known locations.

• **Total Unmatched Records**—Input addresses that could not be matched to known addresses.

Address Matching Levels

> **Note:** This section of the summary is not provided for jobs using the Reverse GeoTAX Info Lookup stage.

This section lists the counts and percentages of the types of address matches performed by Assign GeoTAX Info.

• **User-Defined Auxiliary File Matches**—The number of address matches made to the user-defined auxiliary file. For information on a user-defined auxiliary file, see **Enterprise Tax Module** on page 4.
• **GeoTAX Auxiliary File Matches**—The number of address matches made to the GeoTAX Auxiliary file. For information on the GeoTAX Auxiliary file, see **Enterprise Tax Module** on page 4.
• **State File Matches**—The number of address matches made to a state-supplied files.
• **Landmark Auxiliary Matches**—The number of address matches made to the Landmark Auxiliary file.
• **Point-Level Matches**—The number of address matches made using point-level data.
• **Address-Level Matches**—The number of addresses matches made to an approximate location on a street segment.
• **Street Intersection-Level Matches**—The number of address matches made to a street intersection.
• **Street-Centroid Level Matches**—The number of address matches that were made along the matched street segment.
• **ZIP + 4-Level Matches**—The number of address matches made to an area defined by a ZIP + 4 Code.
• **ZIP-Level Matches**—The number of address matches made to an area defined by a 5-digit ZIP Code.
• **Fallback Geographic Matches**—The number of address matches that were made to a city or state centroid.

Standardized Address Quality

This section describes the changes that were made to addresses in order to validate them.

• **Original Address Unchanged**—None of the address elements were changed to obtain a match.
• **Original Last Unchanged**—The last line (city, state, ZIP Code) was unchanged but other elements were changed to obtain a match.
• **Corrected state abbreviation**—The state abbreviation was corrected to obtain a match. For example, ROCHESTER NY changed to ROCHESTER MN.
• **Corrected prefix direction**—The predirectional of a street name was changed to obtain a match. For example, E MAIN ST changed to W MAIN ST.
• **Corrected street name**—The name of the street was changed to obtain a match. For example, MAIN ST changed to MAINE ST.
• **Corrected street suffix**—The street suffix was changed to obtain a match. For example, MAIN ST changed to MAIN AVE.

- **Corrected city name**—The name of the city was corrected to obtain a match. For example, LOS ANGLES changed to LOS ANGELES.
- **Corrected postfix direction**—The postdirectional of a street was changed to obtain a match. For example, MAIN ST NW changed to MAIN ST SW.
- **Corrected ZIP code**—The ZIP Code as corrected to obtain a match. For example: 1071 MAPLE LN BATAVIA IL 49423 Changed to: 1071 MAPLE LN BATAVIA IL 60510.
- **Corrected ZIP + 4 code**—The four digits that appear after the "-" in a ZIP + 4 were corrected to obtain a match. For example, 60510 changed to 60510-1135.

Unmatched Address Records

This section lists the number of unmatched addressees and the reasons why the addresses were not matched. For information about these codes, see **Match Codes for No Match - Definitions for "Ennn" return codes**.

Latitude/Longitude Matching

> **Note:** This section of the summary is not provided for jobs using the Reverse GeoTAX Info Lookup stage.

This section lists the counts and percentages of the types of geocodes determined by Assign GeoTAX Info. This section describes how precisely Assign GeoTAX Info determined latitude/longitude coordinates of an address. These counts are based on match codes. For more information, on match codes, see **Latitude/Longitude** on page 47.

- **Total Lat/Long Matches**—Addresses that Assign GeoTAX Info determined latitude/longitude coordinates. Addresses included in this count have any value other than null in the **LatLong.MatchCode** output field.
- **Total Lat/Long Unmatched**—Addresses that Assign GeoTAX Info was unable to determine latitude/longitude. Addresses included in this count have a value of null in the **LatLong.MatchCode** output field.
- **GeoTAX Auxiliary-level Matches**—The count of geocodes determined using the GeoTAX Auxiliary File.
- **Landmark-Level Matches**—The count of geocodes determined using the Landmark Auxiliary File.
- **Point-level Matches**—The count of geocodes that represent the actual location of the address using point-level data. This is the most accurate type of geocode.
- **Address-Level Matches**—The count of geocodes made to the actual location of the address. Addresses included in this count have a value of R in the **LatLong.MatchCode** output field.
- **ZIP + 4-Level Matches**—The count of geocodes made that represent the center of the ZIP + 4 code in which the address is located. Addresses included in this count have a value of 4 in the **LatLong.MatchCode** output field.
- **Census Block Group-Level Matches**—The count of geocodes that represent the center of the address's Census block group. Addresses included in this count have a value of B in the **LatLong.MatchCode** output field.

- **ZIP + 2-Level Matches**—The count of geocodes that represent the center of the address's ZIP + 2 code. Addresses included in this count have a value of 2 in the **LatLong.MatchCode** output field.
- **Census Tract-Level Matches**—The count of geocodes that represent the center of the address's Census tract. Addresses included in this count have a value of T in the **LatLong.MatchCode** output field.
- **ZIP Code-Level Matches**—The count of geocodes that represent the center of the ZIP Code in which the address is located. Addresses included in this count have a value of Z or 5 in the **LatLong.MatchCode** output field.
- **City-Centroid Level Matches**—The count of geocodes that represent the center of a city.
- **State-Centroid Level Matches**—The count of geocodes that represent the center of a state.

Census Matching

This section describes how precisely Assign GeoTAX Info determined an address location within the statistical areas defined by the U.S. Census.

- **Census Tracts Determined**—Addresses that Assign GeoTAX Info determined a census tract. Addresses included in this count have a value in the **Census.Tract** output field.
- **Census Tracts Not Determined**—Addresses that Assign GeoTAX Info was unable to determine a census tract. Addresses included in this count have no value in the **Census.Tract** output field.
- **State Codes Determined**—Addresses that Assign GeoTAX Info determined a state. Addresses included in this count have a value in the **StateCode** output field.
- **State Codes Not Determined**—Addresses that Assign GeoTAX Info did not determine a state. Addresses included in this count have no value in the **StateCode** output field.
- **County Codes Determined**—Addresses that Assign GeoTAX Info determined a county. Addresses included in this count have a value in the **County.Code** output field.
- **County Codes Not Determined**—Addresses that Assign GeoTAX Info did not determine a county. Addresses included in this count have no value in the **County.Code** output field.
- **Census Block Group Determined**—Addresses that Assign GeoTAX Info determined a block group. Addresses included in this count have a value in the **Census.BlockCode** output field.
- **Census Block Groups Not Determined**—Addresses that Assign GeoTAX Info was unable to determine a block group Addresses included in this count have no value in the **Census.BlockCode** output field.
- **CBSA Codes Determined**—Addresses that Assign GeoTAX Info determined a core based statistical area (CBSA). Addresses included in this count have a value in the **CBSA.Code** output field.
- **CBSA Codes Not Determined**—Addresses that Assign GeoTAX Info did not determine a core based statistical area (CBSA). Addresses included in this count have no value in the **CBSA.Code** output field.
- **MCD/CCD Codes Determined**—Addresses that Assign GeoTAX Info determined a Minor Civil Division/Census County Division code. Addresses included in this count have a value in the **MCD.Code** output field.

- **MCD/CCD Codes Not Determined**—Addresses that Assign GeoTAX Info was unable to determine a Minor Civil Division/Census County Division code. Addresses included in this count have no value in the **MCD.Code** output field.

Tax Jurisdiction Matching

This section describes how accurately Assign GeoTAX Info determined an address place. The place information is used to determine tax jurisdictions.

- **Place Codes Determined**—Addresses that Assign GeoTAX Info determined a place code. Addresses included in this count have a value in the **Place.Code** output field.
- **Place Codes Not Determined**—Addresses that Assign GeoTAX Info was unable to determine a place code. Addresses included in this count have no value in the **Place.Code** output field.
- **Place Names Determined**—Addresses that Assign GeoTAX Info determined a place name. Addresses included in this count have a value in the **Place.Name** output field.
- **Place Class Codes Determined**—Addresses that Assign GeoTAX Info determined a place code. Addresses included in this count have a value in the **Place.ClassCode** output field.

  - **Incorporated Places**—Addresses that reside in an incorporated municipality. Addresses included in this count have a value of Inc in the **Place.IncorporatedFlag** output field.
  - **Unincorporated Places**—Addresses that reside in a place that is not an incorporated municipality. Addresses included in this count have a value of Uninc in the **Place.IncorporatedFlag** output field.

- **Place Last Annexed Date Found**—Places that Assign GeoTAX Info determined the last date of annexation. Addresses included in this count have a value in the **Place.LastAnnexedDate** output field.
- **Place Last Verified Date Found**—Places that Assign GeoTAX Info determined the last date that the place data was verified by the data provider. Addresses included in this count have a value in the **Place.LastVerifiedDate** output field.
- **Place Last Updated Date Found**—Places that Assign GeoTAX Info determined the date that the place data was last updated by the data provider. Addresses included in this count have a value in the **Place.LastUpdatedDate** output field.

GeoTAX Key Matching

This section describes how accurately Assign GeoTAX Info determined GeoTAX keys. A GeoTAX key is used in conjunction with software from a third party to determine tax rates. If you do not choose to return a GeoTAX key, this section is blank.

- **GeoTAX Cross Reference Match Attempts**—Addresses that Assign GeoTAX Info attempted to match to an cross reference file. These files are used to determine codes for use with third party tax software.
- **Unsuccessful GeoTAX Cross Reference Matches**—Addresses that Assign GeoTAX Info attempted to determine a code but was unable.
- **Successful GeoTAX Cross Reference Matches**—Addresses that Assign GeoTAX Info determined a code using a cross reference file. Addresses included in this count have a value in the **GeoTAXKey** output field.

- **Exact Matches Achieved**—Addresses matched exactly to a GeoTAX key. For more information about GeoTAX key match levels, see the description of the GeoTAXKey.MatchCode output field under **Tax Jurisdiction** on page 54.
- **Partial Matches Achieved**—Addresses partially matched to a GeoTAX key. For more information about GeoTAX key match levels, see the description of the GeoTAXKey.MatchCode output field under **Tax Jurisdiction** on page 54.
- **Alternate Matches Achieved**—Addresses matched to a GeoTAX key using an alternate, less accurate, method. For more information about GeoTAX key match levels, see the description of the GeoTAXKey.MatchCode output field under **Tax Jurisdiction** on page 54.
- **Default Matches Achieved**—Addresses matched to a GeoTAX key only at the state level. For more information about GeoTAX key match levels, see the description of the GeoTAXKey.MatchCode output field under **Tax Jurisdiction** on page 54.

Tax District Matching

This section describes the number of matches to specific types of tax districts. The specific type of tax districts displayed in this section vary based the district type selected in the **Tax district** field.

> **Note:** If you specify a buffer width in the **Tax district buffer** field, a single location could be counted in more than one district due to buffering. For more information about buffering, see **Buffering** on page 15.

- **Successful Payroll Tax File Matches**—Addresses that Assign GeoTAX Info determined a payroll tax code using the Payroll Tax District boundary file. For more information on Payroll Tax Districts, see **Payroll Tax Districts** on page 64.
- **Unsuccessful Payroll Tax File Matches**—Addresses that Assign GeoTAX Info was unable to determine a payroll tax code using the Payroll Tax District boundary file. For more information on Payroll Tax Districts, see **Payroll Tax Districts** on page 64.
- **Locations in Special Purpose Districts**—Addresses that reside in at least one Special Purpose District. For more information on Special Purpose Districts, see **Special Purpose Tax Districts** on page 67.
- **Locations in 1 Special Purpose District**—Addresses that reside in a single Special Purpose District. Addresses included in this count have a value of 1 in the **NumberSPDsFound** output field.
- **Locations in 2 Special Purpose Districts**—Addresses that reside in two overlapping Special Purpose Districts. Addresses included in this count have a value of 2 in the **NumberSPDsFound** output field.
- **Locations in 3 or 4 Special Purpose Districts**—Addresses that reside in three or four overlapping Special Purpose Districts. Addresses included in this count have a value of 3 or 4 in the **NumberSPDsFound** output field.
- **Locations in 5+ Special Purpose Districts**—Addresses that reside in five or more overlapping Special Purpose Districts. Addresses included in this count have a value of 5 or greater in the **NumberSPDsFound** output field.
- **Locations in User-Defined Districts**—Addresses that reside in at least one user-defined district. For more information on user-defined districts, see **User-Defined Boundary File** on page 58.

- **Locations in 1 User District**—Addresses that reside in one user-defined district. Addresses included in this count have a value of 1 in the **NumberUserBoundariesFound** output field.
- **Locations in 2 User Districts**—Addresses that reside in two overlapping user-defined districts. Addresses included in this count have a value of 2 in the **NumberUserBoundariesFound** output field.
- **Locations in 3+ User Districts**—Addresses that reside in three or more overlapping user-defined districts. Addresses included in this count have a value of 3 in the **NumberUserBoundariesFound** output field.

Generating a Summary Report

This procedure describes how to add a report to a job.

1. In Enterprise Designer, on the bottom left side of the window under Palette, click **Reports**. A list of available reports appears.
2. Drag the Assign GeoTAX Info icon to the canvas. You do not need to connect the icon to anything.
3. Double-click the report.
4. Select the stages that you want to contribute to the report.
5. If you want an output format other than PDF, such as html or txt, perform these steps:
   a) Click the **Parameters** tab.
   b) Clear the **Use default reporting options** check box and select the desired output format.
6. Click **OK**. On the toolbar, click the **Run Current Flow** (arrow) button. The `Execution Details` window displays.
7. When the Status field shows `succeeded`, under Reports, click **AssignGeoTAXInfo**. The Summary Report displays.

Appendix

In this section

A - Match and Location Codes

In this section

Match Codes

Match Codes indicate the portions of the address that matched or did not match to the reference file. If a match could not be made, the Match Code begins with "E" and the remaining digits indicate why the address did not match (see **Match Codes for No Match - Definitions for "Ennn" return codes** on page 132). The digits do not specifically refer to which address elements did not match, but rather why the address did not match. These fields are always included in the output from Assign GeoTAX Info.

Match Code Definitions

Code	Description
Ahhh	Same as Shhh, but indicates match to an alias name record or an alternate record.
Chh	Street address did not match, but located a street segment based on the input ZIP Code or city.
D00	Matched to a small town with P.O. Box or General Delivery only.
Ghhh	Matched to an auxiliary file.
Hhhh	House number was changed.
Qhhh	Matched to USPS range records with unique ZIP Codes. CASS rules prohibit altering an input ZIP if it matches a unique ZIP Code value.
Rhhh	Matched to a ranged address.
Shhh	Matched to USPS data. This is considered the best address match, because it matched directly against the USPS list of addresses. S is returned for a small number of addresses when the matched address has a blank ZIP + 4.
Thhh	Matched to a street segment record.
Uhhh	Matched to USPS data but cannot resolve the ZIP + 4 code without the firm name or other information.

Code	Description
Xhhh	Matched to an intersection of two streets, for example, "Clay St & Michigan Ave." The first hex digit refers to the last line information, the second hex digit refers to the first street in the intersection, and the third hex digit refers to the second street in the intersection. **Note:** The USPS does not allow intersections as a valid deliverable address
Yhhh	Same as Xhhh, but an alias name record was used for one or both streets.
Z	No address given, but verified the provided ZIP Code.

Definitions for 1st-3rd hex digit match code values

The table below contains the description of the hex digits for the match code values.

Note: The third hex digit is only populated for intersection matches or as part of the Extended Match Code.

- For intersection matches, use the table below for the 3rd hex digit definitions.
- For Extended Match Code, see **Definitions for Extended Match Code (3rd hex digit values)** on page 128.

Code	In first hex position means:	In second and third hex position means:
0	No change in last line.	No change in address line.
1	ZIP Code changed.	Street type changed.
2	City changed.	Predirectional changed.
3	City and ZIP Code changed.	Street type and predirectional changed.
4	State changed.	Postdirectional changed.
5	State and ZIP Code changed.	Street type and postdirectional changed.

Code	In first hex position means:	In second and third hex position means:
6	State and City changed.	Predirectional and postdirectional changed.
7	State, City, and ZIP Code changed.	Street type, predirectional, and postdirectional changed.
8	ZIP + 4 changed.	Street name changed.
9	ZIP and ZIP + 4 changed.	Street name and street type changed.
A	City and ZIP + 4 changed.	Street name and predirectional changed.
B	City, ZIP, and ZIP + 4 changed.	Street name, street type, and predirectional changed.
C	State and ZIP + 4 changed.	Street name and postdirectional changed.
D	State, ZIP, and ZIP + 4 changed.	Street name, street type, and postdirectional changed.
E	State, City, and ZIP + 4 changed.	Street name, predirectional, and postdirectional changed.
F	State, City, ZIP, and ZIP + 4 changed.	Street name, street type, predirectional, and postdirectional changed.

Definitions for Extended Match Code (3rd hex digit values)

Extended additional information is returned about any changes in the house number, unit number and unit type fields in the matched address, as well as whether there was address information that was ignored. This additional information is provided in a 3rd hex digit that is appended to match codes for address-level matches only - A, G, H, Q, R, S, T or U (see **Match Codes** on page 126).

Note: A typical match code contains up to 4 characters: a beginning alpha character followed by 2 or 3 hex digits. The third hex digit is only populated for intersection matches or as part of the Extended Match Code.

For information about the 3rd hex digit values for:

- Intersection matches, see **Definitions for 1st-3rd hex digit match code values** on page 127
- Extended Match Codes, see the table below.

"Address information ignored" is specified when any of these conditions apply:

- The output address has extra information (for example, a mailstop) in the address line.
- The output address has a second address line (AddressLine2).
- The input address is a dual address (two complete addresses in the input address). For example, "4750 Walnut St. P.O Box 50".
- The input last line has extra information that is not a city, state or ZIP Code, and is ignored. For example, "Boulder, CO 80301 USA", where "USA" is ignored when matching.

The table below provides descriptions of the Extended Match Code 3rd hex digit return values.

Input Addressline	Output Addressline	Extended Code	Description
4750 WALNUT ST STE 200	4750 WALNUT ST STE 200	0	Matched on all address information on line, including Unit Number and Unit Type if included.
4750 WALNUT ST C/O JOE SMITH	4750 WALNUT ST	1	Matched on Unit Number and Unit Type if included. Extra information on address line ignored. Extra information not considered for matching moved to AddressLine2.
4750 WALNUT ST UNIT 200	4750 WALNUT ST STE 200	2	Matched on Unit Number. Unit Type changed.
4750 WALNUT ST UNIT 200 C/O JOE SMITH	4750 WALNUT ST STE 200	3	Matched on Unit Number. Unit Type changed. Extra information on address line ignored. Extra information not considered for matching moved to AddressLine2.
4750 WALNUT ST STE 2-00	4750 WALNUT ST STE 200	4	Unit Number changed or ignored.
4750 WALNUT ST STE 2-00 C/O JOE SMITH	4750 WALNUT ST STE 200	5	Unit Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to AddressLine2.

Input Addressline	Output Addressline	Extended Code	Description
4750 WALNUT ST STE 400	4750 WALNUT ST STE 400	6	Unit Number changed or ignored. Unit Type changed or ignored. In this example, Suite 400 is not valid for the input address, but the address match is not prevented because of an invalid unit number.
4750 WALNUT ST UNIT 2-00 C/O JOE SMITH	4750 WALNUT ST STE 200	7	Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
47-50 WALNUT ST STE 200	4750 WALNUT ST STE 200	8	Matched on Unit Number and Unit Type if included. House number changed or ignored.
47-50 WALNUT ST STE 200 C/O JOE SMITH	4750 WALNUT ST STE 200	9	Matched on Unit Number and Unit Type if included. House number changed or ignored. Extra information not considered for matching moved to `AddressLine2`.
47-50 WALNUT ST UNIT 200	4750 WALNUT ST STE 200	A	Matched on Unit Number. Unit Type changed. House Number changed or ignored.
47-50 WALNUT ST UNIT 200 C/O JOE SMITH	4750 WALNUT ST STE 200	B	Matched on Unit Number. Unit Type changed. House Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
47-50 WALNUT ST STE 20-0	4750 WALNUT ST STE 200	C	House Number changed or ignored. Unit Number changed or ignored.
47-50 WALNUT ST STE 20-0 C/O JOE SMITH	4750 WALNUT ST STE 200	D	House Number changed or ignored. Unit Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
47-50 WALNUT ST UNIT 20-0	4750 WALNUT ST STE 200	E	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored.

Input Addressline	Output Addressline	Extended Code	Description
47-50 WALNUT ST UNIT 2-00 C/O JOE SMITH	4750 WALNUT ST STE 200	F	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.

The table below provides the descriptions for the Extended Match Code 3rd hex digit return values:

> **Note:** For Landmark Auxiliary file matches, the 3rd hex digit is always "0".

Code	In 3rd hex position means:
0	Matched on all address information on line, including Unit Number and Unit Type if included.
1	Matched on Unit Number and Unit Type if included. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
2	Matched on Unit Number. Unit Type changed.
3	Matched on Unit Number. Unit Type changed. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
4	Unit Number changed or ignored.
5	Unit Number changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
6	Unit Number changed or ignored. Unit Type changed or ignored.
7	Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
8	Matched on Unit Number and Unit Type if included. House Number changed or ignored.

Code	In 3rd hex position means:
9	Matched on Unit Number and Unit Type if included. House Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
A	Matched on Unit Number. Unit Type changed. House Number changed or ignored.
B	Matched on Unit Number. Unit Type changed. House Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
C	House Number changed or ignored. Unit Number changed or ignored.
D	House Number changed or ignored. Unit Number changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.
E	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored.
F	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2`.

Match Codes for No Match - Definitions for "Ennn" return codes

The table below describes the values returned when the application cannot find a match or an error occurs.

Code	"nnn" values	Description
Ennn		Indicates an error, or no match. This can occur when the address entered does not exist in the database, or the address is badly formed and cannot be parsed correctly. The last three digits of an error code indicate which parts of an address the application could not match to the database.
	nnn = 000	No match made.
	nnn = 001	Low level error.

Code	"nnn" values	Description
	nnn = 002	Could not find data file.
	nnn = 003	Incorrect GSD file signature or version ID.
	nnn = 010	No city and state or ZIP Code found.
	nnn = 011	Input ZIP not in the directory.
	nnn = 012	Input city not in the directory.
	nnn = 013	Input city not unique in the directory.
	nnn = 014	Out of licensed area. Only occurs if using Group 1 licensing technology.
	nnn = 015	Record count is depleted and license has expired.
	nnn = 020	No matching streets found in directory.
	nnn = 021	No matching cross streets for an intersection match.
	nnn = 022	No matching segments.
	nnn = 023	Unresolved match.
	nnn = 024	No matching segments. (Same as 022.)
	nnn = 025	Too many possible cross streets for intersection matching.
	nnn = 026	No address found when attempting a multiline match.

Code	"nnn" values	Description
	nnn = 027	Invalid directional attempted.
	nnn = 028	Record also matched EWS data, therefore the application denied the match.
	nnn = 029	No matching range, single street segment found.
	nnn = 030	No matching range, multiple street segments found.

Location Codes

The Location Codes indicate the methodology used to compute the geocode and may also provide some information about the quality of the geocode.

A Location Code of ""E" indicates a location code is not available. This usually occurs when you have requested ZIP Code centroids of a high quality, and one is not available for that match. It can occur infrequently when the Enterprise Tax Module does not have a 5-digit centroid location. An "E" location code type may also be returned when the input address cannot be standardized and there is no input ZIP Code. In this case, do not assume the ZIP Code returned with the nonstandardized address is the correct ZIP Code because the Enterprise Tax Module did not standardize the address; therefore, the Enterprise Tax Module does not return geocoding or Census Block information.

Location Codes

Location codes indicate the locational accuracy of the assigned geocode. Note that an accurately placed candidate is not necessarily an ideal candidate. Examine the match codes and/or result codes in addition to location codes to best evaluate the overall quality of the candidate.

Address Location Codes

Location codes that begin with an "A" are address location codes. Address location codes indicate a geocode made directly to a street network segment (or two segments, in the case of an intersection).

An address location code has the following characters.

1st character	Always an "A" indicating an address location.
2nd character	May be one of the following:
	C	Interpolated address point location
	G	Auxiliary file data location
	I	Application infers the correct segment from the candidate records
	P	Point-level data location

	R	Location represents a ranged address
	S	Location on a street range
	X	Location on an intersection of two streets
3rd and 4th character	Digit indicating other qualities about the location.	

<p>3rd and 4th character — actually rendered as: 3rd and 4th character | Digit indicating other qualities about the location.</p>

Location Codes

Code	Description
AGn	Indicates a geocode match to a GeoTAX Auxiliary or Landmark Auxiliary file where n is one of the following values:
n = 0	The geocode represents the center of a parcel, building or landmark.
n = 1	The geocode is an interpolated address along a segment.
n = 2	The geocode is an interpolated address along a segment, and the side of the street cannot be determined from the data provided in the auxiliary file record.
n = 3	The geocode is the midpoint of the street segment.
APnn	Indicates a point-level geocode match representing the center of a parcel or building, where nn is one of the following values:

Code	Description
nn = 02	**Parcel centroid** Indicates the center of an accessor's parcel (tract or lot) polygon. When the center of an irregularly shaped parcel falls outside of its polygon, the centroid is manually repositioned to fall inside the polygon as closely as possible to the actual center.
nn = 04	**Address points** Represents field-collected GPS points with field-collected address data.
nn = 05	**Structure point** Indicates a location within a building footprint polygon that is associated with the matched address. Usually, residential addresses consist of a single building. For houses with outbuildings (detached garages, sheds, barns, etc.), the structure point will typically fall on the primary structure. Condominiums and duplexes have multiple, individual addresses and may have multiple structure points for each building. Multi-unit buildings are typically represented by a single structure point associated with the primary/base address, rather than discrete structure points for each unit. Shopping malls, industrial complexes, and academic or medical center campuses are commonly represented by a single structure point associated with the primary/base address for the entire complex. When multiple addresses are assigned to multiple buildings within one complex, multiple structure points may be represented within the same complex.
nn = 07	**Manually placed** Address points are manually placed to coincide with the midpoint of a parcel's street frontage at a distance from the center line.

Code	Description
nn = 08	**Front door point** Represents the designated primary entrance to a building. If a building has multiple entrances and there is no designated primary entrance or the primary entrance cannot readily be determined, the primary entrance is chosen based on proximity to the main access street and availability of parking.
nn = 09	**Driveway offset point** Represents a point located on the primary access road (most commonly a driveway) at a perpendicular distance of between 33-98 feet (10-30 meters) from the main roadway.
nn = 10	**Street access point** Represents the primary point of access from the street network. This address point type is located where the driveway or other access road intersects the main roadway.
nn = 21	**Base parcel point** The Centrus point data includes individual parcels that may be "stacked". These stacked parcels are individually identified by their unit or suite number, and Enterprise Tax Module is able to match to this unit number and return the correct tax jurisdictions. If an input address is for a building or complex without a unit number, the "base" parcel information returns and will not standardize to a unit number or return additional information such as tax jurisdictions.
nn = 22	**Backfill address point** The precise parcel centroid is unknown. The address location assigned is based on two known parcel centroids.
nn = 23	**Virtual address point** The precise parcel centroid is unknown. The address location assigned is relative to a known parcel centroid and a street segment end point.

Code	Description
nn = 24	Interpolated address point The precise parcel centroid is unknown. The address location assigned is based on street segment end points.
AIn	The correct segment is inferred from the candidate records at match time.
ASn	House range address geocode. This is the most accurate street interpolated geocode available.

AIn, ASn and ACn share the same values for the 3rd character "n" as follows:

Code	Description
n = 0	Best location.
n = 1	Street side is unknown. The Census FIPS Block ID is assigned from the left side; however, there is no assigned offset and the point is placed directly on the street.
n = 2	Indicates one or both of the following: • The address is interpolated onto a TIGER segment that did not initially contain address ranges. • The original segment name changed to match the USPS spelling. This specifically refers to street type, predirectional, and postdirectional. **Note:** Only the second case is valid for non-TIGER data because segment range interpolation is only completed for TIGER data.
n = 3	Both 1 and 2.
n = 7	Placeholder. Used when starting and ending points of segments contain the same value and shape data is not available.

Code	Description
ARn	Ranged address geocode, where "n" is one of the following:
n = 1	The geocode is placed along a single street segment, midway between the interpolated location of the first and second input house numbers in the range.
n = 2	The geocode is placed along a single street segment, midway between the interpolated location of the first and second input house numbers in the range, and the side of the street is unknown. The Census FIPS Block ID is assigned from the left side; however, there is no assigned offset and the point is placed directly on the street.
n = 4	The input range spans multiple USPS segments. The geocode is placed on the endpoint of the segment which corresponds to the first input house number, closest to the end nearest the second input house number.
n = 7	Placeholder. Used when the starting and ending points of the matched segment contain the same value and shape data is not available.
AXn	Intersection geocode, where n is one of the following:
n = 3	Standard single-point intersection computed from the center lines of street segments.
n = 8	Interpolated (divided-road) intersection geocode. Attempts to return a centroid for the intersection.

Street centroid location codes

Street centroid location codes indicate the Census ID accuracy and the position of the geocode on the returned street segment. A street centroid location code has the following characters.

1st character	Always "C" indicating a location derived from a street segment.
2nd character	Census ID accuracy based on the search area used to obtain matching Street Segment.
3rd character	Location of geocode on the returned street segment.

The table below contains the values and descriptions for the 2nd - 3rd characters in the street centroid location codes.

Character position	Code	Description
2nd Character		
	B	Block Group accuracy (most accurate). Based on input ZIP Code.
	T	Census Tract accuracy. Based on input ZIP Code.
	C	Unclassified Census accuracy. Normally accurate to at least the County level. Based on input ZIP Code.
	F	Unknown Census accuracy. Based on Finance area.
	P	Unknown Census accuracy. Based on input City.
3rd Character		
	C	Segment Centroid.

Character position	Code	Description
	L	Segment low-range end point.
	H	Segment high-range end point.

ZIP + 4 Location Codes

Location codes that begin with a "Z" are ZIP + 4 centroid location codes. ZIP + 4 centroid location codes indicate the quality of two location attributes: Census ID accuracy and positional accuracy. A ZIP + 4 centroid location code has the following characters.

1st character	Always "Z" indicating a location derived from a ZIP centroid.
2nd character	Census ID accuracy.
3rd character	Location type.
4th character	How the location and Census ID was defined. Provided for completeness, but may not be useful for most applications.

The table below contains the values and descriptions for the 2nd- 4th characters in the ZIP + 4 location codes.

Character Position	Code	Description
2nd Character		
	B	Block Group accuracy (most accurate).
	T	Census Tract accuracy.

Character Position	Code	Description
	C	Unclassified Census accuracy. Normally accurate to at least the County level.
3rd Character		
	5	Location of the Post Office that delivers mail to the address, a 5-digit ZIP Code centroid, or a location based upon locale (city). See the 4th character for a precise indication of locational accuracy.
	7	Location based upon a ZIP + 2 centroid. These locations can represent a multiple block area in urban locations, or a slightly larger area in rural settings.
	9	Location based upon a ZIP + 4 centroid. These are the most accurate centroids and normally place the location on the correct block face. For a small number of records, the location may be the middle of the entire street on which the ZIP + 4 falls. See the 4th character for a precise indication of locational accuracy.
4th Character		
	A	Address matched to a single segment. Location assigned in the middle of the matched street segment, offset to the proper side of the street.

Character Position	Code	Description
	a	Address matched to a single segment, but the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	B	Address matched to multiple segments, all segments have the same Block Group. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	b	Same as methodology B except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	C	Address matched to multiple segments, with all segments having the same Census Tract. Returns the Block Group representing the most households in this ZIP + 4. Location assigned to t he middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	c	Same as methodology C except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.

Character Position	Code	Description
	D	Address matched to multiple segments, with all segments having the same County. Returns the Block Group representing the most households in this ZIP + 4. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	d	Same as methodology D except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	E	Street name matched; no house ranges available. All matched segments have the same Block Group. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	F	Street name matched; no house ranges available. All matched segments have the same Census Tract. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	G	Street name matched (no house ranges available). All matched segments have the same County. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	H	Same as methodology G, but some segments are not in the same County. Used for less than .05% of the centroids.

Character Position	Code	Description
	I	Created ZIP + 2 cluster centroid as defined by methodologies A, a, B, and b. All centroids in this ZIP + 2 cluster have the same Block Group. Location assigned to the ZIP + 2 centroid.
	J	Created ZIP + 2 cluster centroid as defined by methodologies A, a, B, b, C, and c. All centroids in this ZIP + 2 cluster have the same Census Tract. Location assigned to the ZIP + 2 centroid.
	K	Created ZIP + 2 cluster centroid as defined by methodologies A, a, B, b, C, c, D, and d. Location assigned to the ZIP + 2 centroid.
	L	Created ZIP + 2 cluster centroid as defined by methodology E. All centroids in this ZIP + 2 cluster have the same Block Group. Location assigned to the ZIP + 2 centroid.
	M	Created ZIP+2 cluster centroid as defined by methodology E and F. All centroids in this ZIP + 2 cluster have the same Census Tract. Location assigned to the ZIP + 2 centroid.
	N	Created ZIP + 2 cluster centroid as defined by methodology E, F, G, and H. Location assigned to the ZIP + 2 centroid.
	O	ZIP Code is obsolete and not currently used by the USPS. Historic location assigned.

Character Position	Code	Description
	V	Over 95% of addresses in this ZIP Code are in a single Census Tract. Location assigned to the ZIP Code centroid.
	W	Over 80% of addresses in this ZIP Code are in a single Census Tract. Reasonable Census Tract accuracy. Location assigned to the ZIP Code centroid.
	X	Less than 80% of addresses in this ZIP Code are in a single Census Tract. Census ID is uncertain. Location assigned to the ZIP Code centroid.
	Y	Rural or sparsely populated area. Census code is uncertain. Location based upon the USGS places file.
	Z	P.O. Box or General Delivery addresses. Census code is uncertain. Location based upon the Post Office location that delivers the mail to that address.

Geographic Centroid Location Codes

Location codes that begin with "G" are geographic centroid location codes. Geographic centroids may be returned if the geographic centroid fallback option is enabled and an address-level geocode could not be determined. Geographic centroid location codes indicate the quality of a city, county, or state centroid.

1st character	Always "G" indicating a location derived from a geographic centroid.

2nd character	Geographic area type. One of the following:	
	M	Municipality (for example, a city)
	C	County
	S	State

B - Payroll Tax Correspondence File

Using a Payroll Tax Correspondence File

Payroll system tax codes are proprietary codes used by some payroll tax applications to represent specific jurisdictions or combinations of jurisdictions. If you have licensed this option, you can use a payroll tax correspondence (PTC) file to determine the payroll system tax codes for a given address.

To use a payroll system tax code database, customize the PTC file and then install the file.

1. Customize the PTC file.

   After you receive your initial PTC file, modify it using a text editor of your choice. Specifically, you need to modify the following:

   • **Description**—A meaningful description of the code that represents business rules within your organization.
   • **Flags**—Flags indicate the payroll codes you want Assign GeoTAX Info to return. Possible flag values are:
   • **N**—No, do not return this payroll tax code. Continue searching the PTC file for other matching records. A blank flag has the same effect as "N".
   • **D**—Done. Return this payroll system tax code and stop searching the PTC file for other matching records.
   • **Any other value**—Any other value indicates to return the code. Typically, the letter Y (for "yes") is used. Use other flags if you like. For example, if there is an area with two codes, one for a work location and the other for the worker's residence, you could use flags of "W" and "R" so that the output field PTCn.PayrollFlag returned by Assign GeoTAXInfo indicates the type of location.

   The following table shows how to use flags.

   > **Note:** Each record in the PTC file can contain up to six payroll system tax codes and their associated descriptions and flags. In the following example, the first three codes are on the first record and the second three are on the second.

Record	Description	Payroll System Tax Code	Flag
1	HARBORCREEK TWP	123ABC	D
	HARBOR CREEK SD	456DEF	D
	HARBORCREEK TWP (M + SD)	789GHI	N

Record	Description	Payroll System Tax Code	Flag
2	DAYTON BORO	592UID	Y
	ARMSTRONG SD	143XMA	Y
	DAYTON BORO (M + SD)	592JKT	N

In this example, the first record in the PTC file contains tax codes for a municipality called Harbor Creek Township and a school district called Harbor Creek School District. There is a separate code that represents points that are in both the Harbor Creek Township and the Harbor Creek School District. The second record in the PTC file contains codes for Dayton, a school district called Armstrong, and points located in both Dayton and the Armstrong School District.

This example returns the payroll system tax codes for the individual taxing jurisdictions for a given address, not the codes that represent the combined jurisdictions.

For addresses located in both the Harbor Creek Township and Harbor Creek School District, Assign GeoTAX Info returns the following:

• PTC1.PayrollDescription=HARBORCREEK TWP
• PTC1.PayrollCode=123ABC
• PTC1.PayrollFlag=D
• PTC2.PayrollDescription=HARBOR CREEK SD
• PTC2.PayrollCode=456DEF
• PTC2.PayrollFlag=D

For addresses located in both Dayton and the Armstrong School District, Assign GeoTAX Info returns the following:

• PTC1.PayrollDescription=DAYTON BORO
• PTC1.PayrollCode=592UID
• PTC1.PayrollFlag=Y
• PTC2.PayrollDescription=ARMSTRONG SD
• PTC2.PayrollCode=143XMA
• PTC2.PayrollFlag=Y
• For addresses located in just Dayton but not the Armstrong School District, Assign GeoTAX Info returns the code 592UID and its associated flag and description. For addresses located in just the Armstrong School District but not Dayton, Assign GeoTAX Info returns the code 143XMA and its associated flag and description.

> **Note:** For a listing of output fields returned for payroll system tax codes, see **Payroll System Tax Code** on page 53.

The following table describes the PTC file layout.

Position	Length	Name
1	9	(required) Key Value. Lookup key into the file. Must be one of the following. • 5 character jurisdiction ID from the Pay.txb boundary file. This file contains polygons for special areas, such as school districts. • 9 character GNIS code. • 5 character county key made up of the State and County FIPS codes. • 2 character State FIPS code.
10	2	(optional) State
12	30	(optional) County

The payroll code and payroll description fields are paired. Each pair has a corresponding flag field. The flag field determines if GeoTAX returns data for the corresponding payroll code and description fields. GeoTAX does not return the fields if the flag is N or blank. This lets you create meaningful flags based on your business rules.

Position	Length	Name
42	15	Payroll code 1
57	40	Payroll description 1
97	15	Payroll code 2
112	40	Payroll description 2
152	15	Payroll code 3
167	40	Payroll description 3
207	15	Payroll code 4

Position	Length	Name
222	40	Payroll description 4
262	15	Payroll code 5
277	40	Payroll description 5
317	15	Payroll code 6
332	40	Payroll description 6
372	1	Flag 1
373	1	Flag 2
374	1	Flag 3
375	1	Flag 4
376	1	Flag 5
377	1	Flag 6

2. Install the PTC file. For instructions on installing the PTC file, see the *Spectrum^{TM} Technology Platform Installation Guide*

PTC file updates are provided at intervals defined in your contract. When you receive the PTC update files, enter flags for the modified records and then run Enterprise Tax Module database load utility to merge the updated PTC file with your existing file. For instructions, see "Installing Payroll Tax Correspondence Files" in the *Spectrum^{TM} Technology Platform Installation Guide*. This process maintains the existing user-defined flags you have already associated with the PTC data.

C - User-Defined Data Files

In this section

Creating a Landmark Auxiliary File

The Landmark Auxiliary File provides you a way to specify customized address information in your input records. The recommended primary use of this file is to match to your company's non-address locations such as well heads, transmission towers or any other descriptive location. The latitude/latitude that is part of the input needed to build this file allows companies to automatically keep track of any jurisdictional changes that affect these unique locations. Matching to this file requires that the input record information match exactly to the Landmark file contents. This also applies to street records if you choose to enter them in the Landmark file.

> **Note:** A file template for Windows and Unix/Linux systems is available to more easily create a Landmark Auxiliary file. The template file is available in the data installation folder delivered with Enterprise Tax Module:
>
> • **On Windows:** *InstallationDirectory*\server\modules\gtx\data\LANDMARK.GAX
> • **On Unix/Linux:** *InstallationDirectory*/server/modules/gtx/data/landmark.gax
>
> Where *InstallationDirectory* refers to the folder where you installed the Spectrum^{TM} Technology Platform server.

Landmark Auxiliary file requirements

The Landmark Auxiliary file requirements include:

• The file must be a fixed-width text file: On Windows and UNIX, the text file must be ASCII
• The file must have a .gax extension on Windows and UNIX
• The file must have less than 500,000 records
• The file must follow the column field order and lengths specified in **Landmark File Layout**.

Record types

You can include two types of records in your Landmark Auxiliary file: Landmark and Street Records.

A **Landmark record** represent a single site. To be a valid landmark record, the record must have the following fields:

• ZIP Code
• Name of the landmark - placed in the street name field
• Beginning latitude of the landmark
• Beginning longitutde of the landmark

In addition, a Landmark record may NOT have the following fields:

• Street type abbreviation
• Pre-directional abbreviation
• Post-directional abbreviation
• Low house number

- High house number

A **Street record** contains a range of one or more addresses on a street. To be a valid street record the record must have the following fields:

- ZIP Code
- Street name
- Street type abbreviation, if part of the address
- Pre-directional abbreviation, if part of the address
- Post-directional abbreviation, if part of the address
- Low house number within the street segment
- High house number within the street segment
- Beginning longitude of the street segment
- Beginning latitude of the street segment

In addition, a Street record may NOT have the following fields:

- Secondary address information, such as unit numbers
- Mailstops
- Private mail boxes (PMBs)

During processing ignores any record that does not comply with the preceding requirements.

Landmark Auxiliary file organization

You must comply with the following organizational rules when creating your Landmark Auxiliary file.

- Use semicolons in the first column to indicate a row is a comment, not a data record; Enterprise Tax Module ignores rows that begin with a semicolon.
- Order the records within the file by descending ZIP Code then descending street name for optimal performance.
- All records must represent one or both sides of a street.
- All records must represent segments that are straight lines. Records cannot represent a non-straight segment.
- If house numbers are present in the record, the house number range must be valid according to USPS rules documented in Publication 28.
- The numeric fields, such as ZIP Codes, must contain all numbers.
- Latitude and longitude values must be in millionths of decimal degrees.
- Records cannot contain PO Box addresses.

Default values

Enterprise Tax Module uses the following defaults if you do not include the values in the Landmark Auxiliary file:

- House number parity = B (both odds and evens)
- Segment direction = F (forward) or A (ascending), these are interchangeable.
- Side of street = U (unknown)

Landmark Auxiliary file layout

Field	Description	Required For Street Segment Match	Required For Landmark Match	Requires Exact Match	Length	Position
ZIP Code	5-digit ZIP Code	X	X	X	5	1-5
Street name	Name of the street or landmark	X	X	X	30	6-35
Street type abbreviation	Street type. Also called street suffix. See the USPS Publication 28 for a complete list of supported street types.			X	4	36-39
Predirectional	USPS street name predirectional abbreviation. Supported values are N, E, S, W, NE, NW, SE, and SW.			X	2	40-41
Postdirectional	USPS street name postdirectional abbreviations. Supported values are N, E, S, W, NE, NW, SE, and SW.					
Reserved	Reserved				4	44-47
Low house number	Low house number of the address range.	X			11	48-58
High house number	High house number of the address range.	X			11	59-69
House number parity[1]	Parity of the house number in the range: • E - Even • O - Odd • B - Both				1	70

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[1] For even and odd house number parity records, this specifies on which side of the street the house lays. For records containing both even and odd house numbers, the odd house numbers are on the specified side of the street, and the even house numbers are on the other side. This is a factor when using street offset.

Field	Description	Required For Street Segment Match	Required For Landmark Match	Requires Exact Match	Length	Position
Segment direction	Direction the house numbers progress along the segment from the viewpoint of the segment's starting coordinate: • F - Forward (default) or A - Ascending • R - Reverse or D - Descending				1	71
Reserved	Reserved				1	72
FIPS state	US government FIPS state code.				2	73-74
FIPS county	US government FIPS county code.				3	75-77
Census tract	US Census tract number.				6	78-83
Census block group	US Census block group number.				1	84
Census block ID	US Census block ID number.				3	85-87
Reserved	Reserved				5	88-92
State abbreviation	USPS state abbreviation				2	93-95
County name	Name of the county.				25	95-119
MCD code	Minor Civil Division code.				5	120-124
MCD name	Minor Civil Division name.				40	125-164
CBSA code	Core Based Statistical Area code.				5	165-169
CBSA name	Core Based Statistical Area name.				49	170-218
Reserved	Reserved				5	219-223

Field	Description	Required For Street Segment Match	Required For Landmark Match	Requires Exact Match	Length	Position
City Name	City name. Overrides the city/state preferred city name upon a return.				40	224-263
Reserved	Reserved				237	264-500
User-defined data	User-defined data.				300	501-800
Record ID Number	User-defined unique record identifier.				10	801-810
Side of street	Side of the street for the address: • L - Left side • R - Right side • B - Both sides • U - Unknown side (default) This is from the viewpoint of the segment's starting coordinate.				1	811
Beginning longitude	Beginning longitude of the street segment in millionths of degrees.	X	X		11	812-822
Beginning latitude	Beginning latitude of the street segment in millionths of degrees.	X	X		10	823-832
Ending longitude	Ending longitude of the street segment in millionths of degrees.				11	833-843
Ending latitude	Ending latitude of the street segment in millionths of degrees.				10	844-853

Matching to the Landmark Auxiliary file

Enterprise Tax Module performs the following steps when matching an input address to a Landmark Auxiliary file.

1. Enterprise Tax Module determines if there is a Landmark Auxiliary file present. If more than one Landmark Auxiliary file is present, Enterprise Tax Module attempts to match against the first

file. Enterprise Tax Module ignores any additional Landmark Auxiliary files for matching, regardless if Enterprise Tax Module found a match to the first auxiliary file.

If a record within the Landmark Auxiliary files is invalid, Enterprise Tax Module returns a message indicating the auxiliary file has an invalid record. Enterprise Tax Module continues to process input addresses against the Landmark Auxiliary file, but will not match to the invalid auxiliary file record.

2. If the Landmark Auxiliary file is present, Enterprise Tax Module first attempts to match to it. If more than one type of auxiliary file is present, the search order is:

- Landmark Auxiliary file
- User Auxiliary file
- State-supplied file
- GeoTAX Auxiliary file

    Note: Enterprise Tax Module only matches your input address to your Landmark Auxiliary file if there is an exact match. Therefore, your input address list should be as clean as possible; free of misspellings and incomplete addresses.

3. If Enterprise Tax Module finds an exact record match to the Landmark Auxiliary file, it standardizes the match to USPS regulations and returns the output of the auxiliary file match.

    Note: You cannot update the Landmark Auxiliary file while Enterprise Tax Module is running. If you want to update the auxiliary file, you need to terminate Enterprise Tax Module before attempting to replace or edit the file.

Record type matching rules

When attempting a match against the Landmark Auxiliary file, GeoTAX abides by the following rules:

Landmark record match

- The input data must contain both a ZIP Code and address line, and they must exactly match the values on the auxiliary record.
- The input address cannot have any other data, such as a house number, unit number, or Private Mail Box (PMB).

    Note: Enterprise Tax Module only matches the ZIP Code against the auxiliary file. GeoTAX does not verify that the ZIP Code of the input address record is correct for the city and state. You should validate this information in your input address before processing against the auxiliary file.

Street record match

- The input house number must fall within or be equal to the low and high house number values of the auxiliary record.
- The input house number must agree with the parity of the auxiliary record.
- The input ZIP Code must exactly match the ZIP Code of the auxiliary record.

Creating a User-Defined Auxiliary File

To enter data in a user-defined auxiliary file, you can use your own editor or data entry program. If you are running on Windows, you can use the Auxiliary File Editor available on the *GeoTAX Utilities CD*. The *GeoTAX Utilities CD* can be downloaded from the **www.g1.com/Support** web site. Select the **GeoTAX** product page; the utilities download and document links are provided on the **Subcomponents** panel.

Sort the records by ascending ZIP Code, street name, street type, directional, low house range, and descending high house range to minimize the time required to street-level match.

The auxiliary file has a block size of 8K, key length of 47 bytes, and record length of 800 bytes. The sample file SEQAUX illustrates the layout of the file.

The following table describes the layout of the auxiliary file. After you create a file with this layout, install the file using the Enterprise Tax Module database load utility. For instructions, see the Spectrum™ Technology Platform Installation Guide.

Position	Field Name	Description	Length
Input Key Area (Must be Unique)			
1-5	G1GTAUX-ZIP-CODE	ZIP Code	5
6-35	G1GTAUX-STREETNAME	Street name	30
36-39	G1GTAUX-STREET-TYPE	Street type	4
40-41	G1GTAUX-PRE-DIR	Predirectional	2
42-43	G1GTAUX-POST-DIR	Postdirectional	2
44-47	G1GTAUX-SEQ	Sequence number, from 0001-9999	4
Output Area			

Position	Field Name	Description	Length
48-58	G1GTAUX-OUTPUTRANGE-FROM	First number in the house number range (right adjusted, blankfilled)	11
59-69	G1GTAUX-OUTPUTRANGE-TO	Last number in the house number range (right adjusted, blankfilled)	11
70	G1GTAUX-OUTPUTODD-EVEN	• O = Odd • E = Even	1
71	G1GTAUX-OUTPUTASC-DESC	• A = Ascending • D = Descending	1
72	Reserved		
73-74	G1GTAUX-STATE-CODE	FIPS State Code	2,0
75-77	G1GTAUX-COUNTYCODE	FIPS County Code	3,0
78-83	G1GTAUX-CENSUSTRACT	6-digit Census Tract number	6,0
84	G1GTAUX-BLOCKGROUP	1-digit Block Group	1
85-92	Reserved		8
93-94	G1GTAUX-STATE-ABBV	USPS state abbreviation	2
95-119	G1GTAUX-COUNTYNAME	County name	25

Position	Field Name	Description	Length
120-124	G1GTAUX-MCD-CODE	5-digit MCD Code	5,0
125-164	G1GTAUX-MCD-NAME	MCD Name	40
165-168	G1GTAUX-MSA-CODE	4-digit MSA Code	4,0
169-218	G1GTAUX-MSA-NAME	MSA Name	50
219-223	G1GTAUX-PLACE-CODE	5-digit Place Code	5,0
224-263	G1GTAUX-PLACENAME	Place Name	40
264-265	G1GTAUX-PLACECLASS-CODE	2-digit Place Class Code	2
266	G1GTAUX-PLACE-INCFLAG	• U - Unincorporated • I - Incorporated	1
267-273	G1GTAUX-PLACE-LASTANNEXED	Place last annexed date, in the format MM/YYYY	7
274-280	G1GTAUX-PLACE-LASTUPDATED	Place last updated date, in the format MM/YYYY	7
281-287	G1GTAUX-PLACE-LASTVERIFIED	Place last verified date, in the format MM/YYYY	7
288-296	G1GTAUX-PLACE-GNIS	GNIS Code	9
297-500	Reserved		204

Position	Field Name	Description	Length
501-800	G1GTAUX-AUX-AREA	User-defined data	300

Creating a User-Defined Boundary File

User-defined boundary files define areas of interest to your organization, such as sales territories or insurance rating territories. Assign GeoTAX Info uses this data to determine if an address falls within an area of interest. For example, you can create a boundary file that defines your sales territories. Assign GeoTAX Info can then determine the tax jurisdictions that apply to an address and the sales territory of that address.

> **Note:** User-defined boundary files in Assign GeoTAX Info allow you to perform basic "point-in-polygon" spatial analysis. Point In Polygon provides additional point-in-polygon features.

1. Create an ESRI shapefile (.SHP) or MapInfo data interchange format file (.MIF) with the boundaries you want. Your .SHP or .MIF file can have up to three columns of user-defined data. The first and second columns are 10 bytes long and the third column is 50 bytes long. For information on .SHP and .MIF files, see **User-Defined Centrus Databases**.
2. Use the Boundary File Conversion utility to convert your .SHP or .MIF file to a .TXB file. The Boundary File Conversion utility is available on the *GeoTAX Utilities CD*. The *GeoTAX Utilities CD* can be downloaded from the **www.g1.com/Support** web site. Select the **GeoTAX** product page; the utilities download and document links are provided on the **Subcomponents** panel.
3. Load the User-Defined Boundary file using the appropriate database load procedure based on your platform. The filename that should be entered for the User-Defined Boundary file is *usr.txb*.

D - Type Codes

In this section

Type Codes

The returned type code is referenced from an installed tax district file and indicates the type of tax district or tax jurisdiction for the address location.

This appendix provides the definitions for the following tax district files' type codes:

- **Special Purpose Districts (SPD)**
- **Insurance Premium Districts (IPD)**
- **Payroll Tax Districts (PAY)**

Special Purpose Districts (SPD)

Type	Descriptions
AMB	AMBULANCE DISTRICT
ASC	SALES AND USE TAX
ATA	ADVANCED TRANSPORTATION AUTHORITY
ATD	AIRPORT TAX DISTRICT
BSD	BASEBALL STADIUM DISTRICT
CAD	COUNTY ASSISTANCE DISTRICT
CCD	CRIME CONTROL DISTRICT
CFA	COUNTY FINANCE AUTHORITY
CMB	COMBINED DISTRICT
CTY	CITY TRANSACTIONS
DVD	DEVELOPMENT DISTRICT
EDD	ECONOMIC DEVELOPMENT DISTRICT
EDZ	ECONOMIC DEVELOPMENT ZONE

Type	Descriptions
ESD	EMERGENCY SERVICES DISTRICT
FCD	FIRE CONTROL DISTRICT
FPA	FLOOD PROTECTION AUTHORITY
FPD	FIRE PROTECTION DISTRICT
FSD	FOOTBALL STADIUM DISTRICT
HBZ	HOSPITAL BENEFIT ZONE
HSA	HOUSING AUTHORITY
HSD	HEALTHCARE SERVICES DISTRICT
HSP	HOSPITAL DISTRICT
IMP	IMPROVEMENT DISTRICT
IRD	INDIAN RESERVATION
LFW	LFW/CDC
LIB	LIBRARY DISTRICT
MSD	MUSEUM DISTRICT
MTA	METRO TRANSPORTATION AUTHORITY
OSA	OPEN SPACE AUTHORITY
PFD	PUBLIC FACILITY DISTRICT
POL	POLICE DISTRICT
PRD	PARK AND RECREATION DISTRICT
PSI	PUBLIC SAFETY IMPROVEMENT

Type	Descriptions
RCT	RACE TRACK
RDA	REVENUE DEVELOPMENT AREA
RMA	ROAD MAINTENANCE AUTHORITY
RTA	REGIONAL TRANSPORTATION AUTHORITY
RTD	RESTAURANT TAX DISTRICT
SAD	SPORTS DISTRICT
SCD	SCIENCE AND CULTURAL DISTRICT
SUT	SALES AND USE TAX
TDD	TRANSPORTATION DEVELOPMENT DISTRICT
TED	TOURISM COMMUNITY ENHANCEMENT DISTRICT
UNI	SCHOOL DISTRICT
URA	URBAN RENEWAL AUTHORITY
WCD	WATER COMMISSION DISTRICT
ZOO	ZOO DISTRICT

Insurance Premium Districts (IPD)

State	Type	Descriptions
AL	FIRE	Fire District
AL	NT-MUN	Non-Taxing Municipality
AL	PREM	Premium Tax District

State	Type	Descriptions
AZ	PRIV	Private Fire District
AZ	PUB	Public Fire District
DE	FIRE	Fire District
FL	FIRE	Fire District
FL	POLICE	Police District
GA	PREM	Premium Tax District
IL	FIRE	Fire District
KY	COUNTY	County
KY	MUNI	Municipality
KY	USD	Urban Services District
LA	PREM	Premium Tax District
MN	FIRE	Fire District
ND	FIRE	Fire District
NJ	FIRE	Fire District
NY	FIRE	Fire District
SC	FIRE	Fire District
SC	NT-MUN	Non-Taxing Municipality
SC	PREM	Premium Tax District
TX	PROP	Windstorm Surcharge on Property Line

Payroll Tax Districts (PAY)

Type	Descriptions
JED	Joint Economic Development District
MTA	Mass Transit Authority
MUN	Municipality
UNI	School District

E - Class Codes

In this section

Class Codes

This appendix lists definitions for the FIPS Class Codes.

Class C—Incorporated Places

Class Code	Description
C1	Identifies an active incorporated place that is not also recognized as an Alaska Native Village Statistical area, and does not also serve as a primary county division; that is, it is included in and is part of a primary county division. For example, the city of Hammond, Indiana is within and part of North township; the city of Austin, Texas is within and part of several census county divisions in several counties; Hammond and Austin are coded C1.
C2	Identifies an incorporated place that also serves as a primary county division because, although the place is coextensive with a minor civil division (MCD), the Census Bureau, in agreement with State officials, does not recognize the MCD for presenting census data because the MCD is a nonfunctioning entity; applies to Iowa and Ohio only. For example, the city of Dubuque, Iowa is coextensive with Julien township, which does not function as a governmental unit and may not be well-known even to local residents; the city is assigned code C2, and the township, Z8. This subclass is new for FIPS 55-3. Also see subclass C5.
C3	Identifies a consolidated city; that is, an incorporated place that has consolidated its governmental functions with a county or MCD, but continues to include other incorporated places that are legally part of the consolidated government. For example, the city of Columbus, Georgia is consolidated with Muscogee County, which continues to exist as a nonfunctioning legal entity in the State; however, the town of Bibb City continues to exist as a separate active incorporated place within the consolidated government and, therefore, Columbus is treated as a consolidated city. At the time of publication, there are seven consolidated cities in the United States: Athens-Clarke County, Georgia; Butte-Silver Bow, Montana; Columbus, Georgia; Indianapolis, Indiana; Jacksonville, Florida; Milford, Connecticut; and Nashville-Davidson, Tennessee. This subclass is new for FIPS 55-3.
C4	Identifies an alternate authoritative common name of any member of the other subclasses of Class C. The entity code of the legal name is referenced in the ``Other Name Code'' of the record, and in the entry for the legal name, the Other Name Code references the alternate. For example, the entity in California whose legal name is San Buenaventura (subclass C1) is commonly known as Ventura, which is coded C4.

Class Code	Description
C5	Identifies an incorporated place that also serves as a primary county division; that is, it is not included in any adjacent primary county division of class T or Z. For example, Boston, MA, is legally a primary division of the county and recognized as an incorporated place and, therefore, is coded C5. Also see subclass C2.
C6	Identifies an incorporated place that is coincident with or approximates an Alaska Native Village statistical area. The Other Name Code references the Alaska Native Village statistical area; see code E6.
C7	Identifies an independent city. At the time of publication, independent cities exist in only four States: Maryland (Baltimore City), Nevada (Carson City), Missouri (St. Louis City), and Virginia (41 cities). These cities also serve as county equivalents, and all but Carson City also serve as primary county divisions.
C8	Identifies the portion of a consolidated city that is not within another incorporated place; see subclass C3. The Census Bureau identifies these nonfunctioning entities by taking the name of the consolidated city and appending in parentheses the word remainder. For example, Columbus (remainder) identifies the portion of the Columbus, Georgia consolidated city that is not also in Bibb City. This code is new for FIPS 55-3.
C9	Identifies an inactive or nonfunctioning incorporated place.

Class U—Unincorporated Places (Except Those Associated with Facilities)

Type	Descriptions
U1	Identifies a census designated place (CDP) with a name identical to the authoritative common name that describes essentially the same population. Also see code M2.
U2	Identifies a CDP with a name not identical to an authoritative common name of essentially the same area. If there is an alternate authoritative common name, it is referenced in the Other Name Code field. For example, Suitland-Silver Hill, Maryland is the name of a locally delineated CDP recognized by the Census Bureau which is a combination of two communities Suitland and Silver Hill and, therefore, because it is not the authoritative name of the area, is coded U2; Sierra Vista Southeast, Arizona is a CDP that includes the built-up area adjoining the city of Sierra Vista on the southeast, but is not an authoritative name for that area and, therefore, is coded U2. Also see code M2.
U3	Identifies (a) an alternate, authoritative common name of a population essentially described by a specific CDP with a different name (the Other Name Code references the CDP), or (b) a community wholly or substantially within the boundaries of a CDP with a different name (the Part of Code references the CDP). For example, Silver Hill and Suitland are coded U3 and cross-referenced to the CDP of Suitland-Silver Hill (see code U2).

Type	Descriptions
U4	Identifies a populated place wholly or substantially within the boundaries of an incorporated place with a different name; the Part of Code identifies the incorporated place. For example, Harlem and Greenwich Village, which are part of New York city, and Hollywood, which is part of Los Angeles, California, are coded U4.
U5	Dropped. Only one place the CDP of Arlington, Virginia was in this subclass in FIPS PUB 95-2; it has been recoded as U1 as a place and as Z3 as a subclass in FIPS 55-3 as a county subdivision.
U6	Identifies a populated place located wholly or substantially outside the boundaries of any incorporated place or CDP with an authoritative common name recognized by the U.S. Geological Survey.
U8	Identifies a populated place located wholly or substantially outside the boundaries of an incorporated place or CDP but whose name has not been verified as authoritative by the U.S. Geological Survey.
U9	Identifies a CDP that is coincident with or approximates the area of an Alaska Native Village statistical area. The Other Name Code references the Alaska Native Village statistical area; see code E2. This code is new for FIPS 55-3.

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