

New Jersey Road Centerline Data

Updates

Posted: January 25, 2017

January 25, 2017

Statewide – All divided highways, where the primary travel direction was set to both, were revised to one-way increasing by NJDOT contractor (Michael Baker International). For the State Highway 35 Z route segments, the direction was revised by NJOGIS to one-way decreasing, since the Z route runs against the traffic flow direction.

Statewide – Missing roads that were found during the US Census Bureau Block Boundary Suggestion Project (BBSP) were added by OGIS in the following counties: Atlantic, Bergen, Burlington, Cape May, Cumberland, Gloucester, Mercer, and Monmouth.

Statewide - NJDOT's Contractor (Michael Baker International) used field roadway inventory operations to add new segments, update existing segments, and update linear referencing/straight line diagram routes. OGIS reviewed work performed by Baker and ran validation queries to assist in finding errors. Any errors found were correct by OGIS.

NJ Turnpike was revised between Exit 6 (PA Turnpike Extension) and Exit 8A (Jamesburg) as a result of the recent turnpike reconstruction and expansion project. Revisions were started by NJDOT's contractor (Michael Baker International) and completed by NJOGIS. Revisions include revised and additional lanes, interchanges, and service roads.

Several county, municipal and other registered users suggested updates and new road segments using the NJ Roads Web Editor application. Submissions were reviewed by OGIS and updates were made to roads database where appropriate.

Validation queries were run against both the maintenance and production model of the road database to find and correct errors.

Routine adding of new segments and revision of existing segments throughout the state by OGIS.

March 09, 2015

Morris County - Several new road segments were added, existing geometry revised, and address ranges updated using MODIV addresses. Zip codes were updated using MODIV addresses & United State Postal Service zip code checker. Segment name table values were revised or deleted, and other attribute info was revised by Morris County

Montgomery Township, Somerset County - Several new road segments were added, existing geometry revised, and address ranges updated using municipal address points, Zip codes were updated using municipal address points & United State Postal Service zip code checker. Segment name table values were revised or deleted, and other attribute info was revised by OGIS using data supplied by the municipality.

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Wyckoff Township, Bergen County - Russell Avenue address ranges were revised to correspond with MODIV addresses, existing geometry revised, and segment names revised or deleted.

Mercer County - Duplicate segment name records were removed by OGIS using the delete duplicates tool. For the section of State Highway 33 that runs between Nottingham Way in Hamilton Township and Main Street in Robbinsville Township, the local road name of Nottingham Way was removed. In this area.

August 26, 2014

Based on a review by the Hudson County Division of Planning, several county routes were re-designated as local roads.

Highway route names and shields were corrected for route segments on and leading to the George Washington Bridge.

Missing route names were populated for approximately 40 highway route segments.

Corrections were made to road names and address range values in several municipalities using parcels/MOD4 data and other information sources.

New and modified road segments were added in Raritan Township and Flemington Borough in Hunterdon County.

New local road segments were added in East Brunswick based on information from the Middlesex County Office of Planning, Division of Transportation.

June 26, 2014

New roads were added and existing road names corrected in Piscataway Township, Middlesex County as per municipal source.

Highway names, shields and numbers were corrected in the Tran_road_centerline_NJ feature class and Tran_road_geocode_NJ table on routes leading to Holland Tunnel.

Names, shields and numbers were corrected in the Tran_road_centerline_NJ feature class and Tran_road_geocode_NJ table for US Highways 1, 9 and 46 at the George Washington Bridge.

Geometry and attributes were corrected in the Tran_road_centerline_NJ feature class and Tran_road_geocode_NJ table for State Routes 29 and 165 in Lambertville.

New roads were added and existing road names corrected in the Tran_road_centerline_NJ feature class and Tran_road_geocode_NJ table for Mercer County as per local sources.

STATUS field values in the Tran_road_centerline_NJ feature class were changed to "Under Construction" for eastbound lane segments for the General Pulaski Skyway over a two year time period.

New roads were added and existing road names corrected in the Tran_road_centerline_NJ feature class and Tran_road_geocode_NJ table at the Richard Stockton College campus in Galloway Township, Atlantic County as per local source.

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Change history was enabled with inclusion of the change history feature class (Tran_road_ctr_change_NJ) and crosswalk table (Tran_road_ctr_history_NJ) in the file geodatabase version only.

March 14, 2014

QAQC processes were performed for road name attribute edits as follows:

- Removal of honorific road names (with few exceptions) in the feature class and geocoding table
- Removal of duplicative and mis-conflated local road names in the feature class and geocoding table
- Correction of local road name rankings in feature class (L1_NAME, L2_NAME, PRIME_NAME) where found to be in error
- Correction of misspelled local road names in the feature class and geocoding table
- Correction of mis-parsed road name elements in the geocoding table

QAQC processes will continue until all known road name issues are corrected.

January 31, 2014

A comprehensive update and re-structuring of the road centerlines data set is available for download in ArcGIS version 10.x file geodatabase format. A shapefile is also available for download, but includes only the new feature class.

DATA MAINTENANCE

Additions and corrections, mostly for road name attributes, are on-going. The necessity for these modifications is a result of the complexity of the data source integration process from the road centerlines project development phase and subsequent NJDOT road inventory updates. The next data release, integrating a large amount of the attribute modifications, will be published in early March. A following round of modifications will be from local source updates collected in 2013. Future updates will be published on a monthly basis.

NJOIT-OGIS is currently developing an integrated custom toolset to edit and process the road centerlines data for use by NJOIT-OGIS and NJDOT staff. Consequently, within the next few months, data maintenance should proceed far more efficiently. NJOIT-OGIS will then develop online tools for other data providers and stakeholders to supply updates to the maintenance stream.

DATA SCHEMA

Feature class (FC) and table (T) structures have been significantly re-organized to better match how data are most commonly used. Objects were also renamed to follow cross-department standardized naming conventions implemented by state agencies.

The Road_Centerline_NJ feature class and Road_Labeling_NJ table, from the preceding version of the data, have been combined into a new feature class named *Tran_road_centerline_NJ* (FC). This was implemented to provide full text for all possible alternative names directly within the feature class. Users can now see attributes and label roads with name variants without table joins, adding ease of use and increasing desktop application performance.

- Attributes have been added to provide feature-level information regarding the review status:

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- The UPDATEDATE field shows the most recent date a feature has been edited and can be used to determine the differential between published versions of the data.
- The FEATSTATUS denotes progress through internal New Jersey Office of Information Technology, Office of GIS (NJOIT-OGIS)/New Jersey Department of Transportation (NJDOT) data review processes and allows publication of “draft” geometry, for the purpose of expediency, in addition to “final” geometry.
- The identifier used for table joins and relates, formerly SEG_ID, is now SEG_GUID. The data type for SEG_GUID is “guid” or globally unique identifier. This change was necessary to support editing workflows.
- A new table has been added to the data model, *Tran_road_crosswalk_NJ* (T), to allow translation of the SEG_ID from previous releases into the SEG_GUID values. Any user-derived datasets that use the SEG_ID as the primary/foreign key can be converted to SEG_GUID using the crosswalk table.
- STATE_L, STATE_R attributes have been added to further support geocoding and the possible future expansion of the spatial extent of the data beyond New Jersey.
- Parsed road name elements have been removed from the feature class and are now found in a separate table, *Tran_road_geocode_NJ* (T). This table is designed specifically to support robust geocoding. This table carries separate records for every name variant associated with a given segment (SEG_GUID). An upgrade to the custom Address Locator geocoding tool is included with this update. The geocoder was re-built to use all 7 parsed name elements, whereas the previous geocoder used 5 elements. The upgrade should provide more reliable results. This locator was built using a customized geocoding style for ArcGIS 10.x, which is available on request from OGIS.

Tran_road_ctr_change_NJ (FC) and *Tran_road_ctr_history_NJ* (T) are new to this edition of the data. The segments in the feature class represent deprecated geometry. They are uniquely identified by SEG_GUID_ARCH (ARCH – archived) and coded as either “modified” or “removed.” For modified geometry, the history table correlates the SEG_GUID_ARCH to SEG_GUID_NEW, which in turn can be related to SEG_GUID in *Tran_road_centerline_NJ*. The history table also includes a crosswalk to correlate SEG_ID, the segment identifier used in the previous version of the road centerlines data, to SEG_GUID_ARCH for users who created table relates in the previous version.

The structure of the linear referencing system (LRS) table, now named *Tran_road_LRS_NJ* (T), has not changed. Attributes for the Mile Marker Signs (MMS) LRS have been populated in the table. MMS m-values were derived from physical locations of mile marker signs along State, US and Interstate highways. The TPK LRS for the New Jersey Turnpike and Garden State Parkway will be populated in a future release.

DATA UPDATES

NJDOT made significant updates to their roadway network data over the past two years that were incorporated into *Tran_road_centerline_NJ* (FC). These updates are based on field inventories of routes and fall into six broad categories:

- Physical realignment of segment(s) for ramps
- Addition of new ramps or intersections
- Removal of segments
- Update to existing geometry (better fit to orthophotos or changes to route measures)
- Mid-route (SRI) alignment changes that force re-mileposting of subsequent segments
- Attribute changes (no change to geometry)

Several attribute changes are included in this update.

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- SYMBOLTYPE domain has been expanded to include ramp designation by the highway served. This expansion supports more robust cartographic symbology. For example, Interstate Ramps can be shown with the same line color as Interstate Highways, but with a different line weight, if desired.
- PRIME_NAME now carries the primary local name (L1_NAME) if one exists, otherwise it carries the highest order highway name (H1_NAME). The previous version of the data prioritized highway name over local name. For example, in Camden County, the previous release of the data carried "State Hwy 41", however this edition carries "Kings Hwy" in the PRIME_NAME field.
- ZIPNAME_L and ZIPNAME_R reflect the names of ZIP code areas on each side of road segments. This was added to support more robust geocoding.
- TRAVEL_DIR carries attribute values for bi-directional and one-way roads.

August 2, 2012

A new field was added to the *Road_Centerline_NJ* feature class and shapefile named SYMBOLTYPE (text, 25 characters). It replaces the ROUTE_TYPE field which was moved to the LRS table where it relates closely to the Standard Route Identifier (SRI) and other New Jersey Department of Transportation (DOT) maintained attributes. Like the ROUTE_TYPE field, the SYMBOLTYPE field can be used to store information to support cartography and analysis. However, SYMBOLTYPE is more closely based on commonly known route designations, and matches highway route and local road alignments according to the authority for each roadway.

In the SYMBOLTYPE field, Highway Authority Routes, such as the New Jersey Turnpike, are the highest order routes. The SYMBOLTYPE field designates the entire length of the New Jersey Turnpike as 'Highway Authority Route'. However, in the ROUTE_TYPE field, DOT regards 'Interstate', 'US Highway' and 'State Highway Route' designations as taking precedence over 'Highway Authority Route'. Thus the ROUTE_TYPE field splits the designation for the New Jersey Turnpike: the northern section carries 'Interstate' where Interstate 95 is coincident with the Turnpike.

Another example of difference between the SYMBOLTYPE and ROUTE_TYPE fields is the attribution for the Atlantic City Brigantine Connector (ACBC). The SYMBOLTYPE field has been attributed to reflect the alignment of the route according to the South Jersey Transportation Planning Organization, which is the authority for that route. The attribution for the ACBC in the ROUTE_TYPE field differs significantly.

Additionally, many segments attributed as Ramps in the ROUTE_TABLE field have been changed in the SYMBOLTYPE field for how they are more commonly regarded. More of these will change as they are reviewed.

The linear referencing system (LRS) table is now available with the file geodatabase and shapefile downloads. It includes milepost values for the Straight Line Diagram (SLD), Parent (PAR) and Flipped (FLP) versions. The Mile Marker Signs (MMS) and Turnpike (TPK) versions are not yet available. The ROUTE_TYPE field has been added to the table.

Corrections were made to parsed and concatenated name attributes in the feature class and shapefile, and the Alternate Names and Labeling tables to normalize references to different highway types. Additional attribute updates were made to include secondary and tertiary route number and marker shield records for coincident highway segments. These updates have not yet been propagated to the legacy versions or the Tiburon version, which is now available for download.

July 3, 2012

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MAINTENANCE AND UPDATE PROCESS

A cooperative maintenance and update process is being developed whereby the New Jersey Office of Information Technology – Office of GIS (OGIS), DOT and a network of trusted data sources will collaborate to maintain and update the road centerlines. The network of data sources, primarily comprised of local public safety personnel and county agencies, will be developed to upstream information and data regarding new and modified roads to OGIS.

OGIS will verify and add the information and data to the road centerlines and send them to DOT for final verification. If updates include road geometry, DOT will replace the initial data update with field-verified data.

Road centerline updates will be released on a monthly basis to ensure new and modified roads are added quickly to satisfy local and emergency management needs. Online tools are being developed by OGIS to provide the network of trusted data sources with efficient tools to develop and send data updates and modifications. All new and modified roads will be documented via a change tracking table.

DATA ACCESS AND DISTRIBUTION

In addition to the data download options, the following public map services will be provided within the next update cycle:

- ArcGIS Server map service
- ArcGIS Server feature service
- Web Map Service (WMS)
- ArcGIS Server cached basemap

OTHER DATA FORMATS

The data are also being provided in three additional versions. These include two legacy versions that mimic the table layouts of Tele Atlas and Tom Tom road centerlines data used by government agencies over the past several years. One of the legacy version feature classes (*Road_ctr_legacy_NJ*) is formatted specifically for geocoding purposes and includes duplicate road segments with alternate road names, for use in systems that can only read road names from one set of name fields. The other legacy version feature class (*Road_ctr_legacydisp_NJ*) is formatted for display purposes and does not contain coincident geometry, but has alternate road names in separate fields. Not all attribute fields are populated in the legacy versions, but all attributes required for geocoding are populated. Both legacy versions are available in File Geodatabase 9.3 and Shapefile formats.

Another version (*Road_ctr_tiburon_NJ*) will be formatted for use for the Tiburon computer-aided dispatch system that is utilized by some emergency management agencies. It is similar to *Road_ctr_legacy_NJ* in that it will have duplicate road segments and only one set of fields for road names, but will have a slightly different table structure. This data set will also include road centerlines sourced directly from US Census Bureau TIGER road centerlines data for counties adjacent to New Jersey in New York, Pennsylvania and Delaware.

OGIS is providing these additional versions to make the period of transition to the enhanced New Jersey Road Centerlines data easier for agencies that have dependencies on the legacy formatted data. Due to difficulties in transformation between the various versions, it is not anticipated that all legacy versions will continue to be updated as the underlying data are updated. In particular, the *Road_ctr_legacydisp_NJ* feature class is not likely to be maintained long term. Users should transition off of this and onto *Road_Centerline_NJ* as soon as is feasible.

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ADDITIONAL NOTES

Over 6,000 miles of road segments were added to the preexisting NJ Roadway Network data from TIGER and county data sources. These include alleys, which were added as a new route type.

A new geocoding service will be provided through the ArcGIS Server REST API with the next update. In the interim, users may want to utilize the locator that is bundled with the downloadable data or load the legacy version (*Road_ctr_legacy_NJ*) of the road centerlines data into their current geocoding service. As an alternative, a free service from ArcGIS.com is available at <http://www.arcgis.com/home/item.html?id=8b980709e0534bb39784dc42f550d554>.

A major component of the roads enhancement was to compile primary and alternate road names from DOT, TIGER and county data sources. Review and confirmation of primary and alternate name attributes has not yet been completed for:

- Atlantic City Expressway
- Atlantic City Brigantine Connector
- US Highways
- State Highways
- County Routes
- Local Roads

Over the next several months, the following data development tasks will be completed:

- Review and confirmation of highway and county route primary and alternate names
- Add new and modified ramps from DOT ramp inventory project
- Review and reconcile other DOT updates and modifications
- Add and modify road geometry and attributes from county and regional agency reviews
- Review and reconcile primary and alternate local road names where redundant, inconsistent or incorrect