A statewide street address composite geocoding service is available at https://geo.nj.gov/arcgis/rest/services/Tasks/Addr_NJ_cascade/GeocodeServer

**Background**

The Addr_NJ_cascade geocoding service is regularly updated with addresses from both the NJ Address Points & NJ Road Centerlines datasets. This service allows for general geocoding and reverse geocoding for street address and road intersection locations.

**Matching Hierarchy:**

- Address Point Street Addresses
  - Road Range Street Addresses
  - Road Intersections

**Supported operations (request types):**

- **Find Address Candidates**
  https://geo.nj.gov/arcgis/rest/services/Tasks/Addr_NJ_cascade/GeocodeServer/findAddressCandidates
  
  * Find possible address candidates for a single address

- **Reverse Geocode**
  https://geo.nj.gov/arcgis/rest/services/Tasks/Addr_NJ_cascade/GeocodeServer/reverseGeocode
  
  * Enter a location in x/y coordinates (different coordinate systems supported), and receive the closest address with coordinates.

- **Geocode Addresses (1 Or Many)**
  https://geo.nj.gov/arcgis/rest/services/Tasks/Addr_NJ_cascade/GeocodeServer/geocodeAddresses
  
  * Batch geocode 1 or many addresses at one time (up to 1000). Each address will automatically match to the best candidate in the preferred hierarchy (point->road range).
Find Address Candidates

- Use either parsed address variables (Street, City, State, ZIP) or concatenated address (SingleLine)
- Use * as the input for the Out Fields variable to ensure all output fields are returned (outFields)
- All addresses are returned by default in NJ State Plane coordinates. If requiring Latitude/Longitude coordinates, use the code 4269 in the Output Spatial Reference (outSR)
- Use JSON for the Format (f) variable to return the candidates in pjson

Example using URL Parameters:
https://geo.nj.gov/arcgis/rest/services/Tasks/Addr_NJ_cascade/GeocodeServer/findAddressCandidates?Street=125+W+State+St&Tre camino&St&City=Trenton&St&State=NJ&ZIP=08608&SingleLine=&category=&outFields=*&maxLocations=&outSR=4269&searchExtent=&location=&distance=&magicKey=&f=pjson

Example JSON request body:

```
{
    "SingleLine":"125 W State St Trenton, NJ 08608",
    "outFields":"*",
    "outSR":"4269",
    "f":"pjson"
}
```

Searching for Road Intersections:
- Use the SingleLine parameter as input.
- At a minimum include a city or zip code after the intersection name
- The following are acceptable intersection connectors: & @ | and at
- Example:  "SingleLine": "Vandeventer Ave & Nassau St, Princeton, NJ 08542", 

Find Address Candidates

Response Information
* Candidates are returned in order of scoring hierarchy
- **location (X/Y)** – gives the coordinates in the requested output coordinate system
- **score** – score of the candidate (0-100). 85 is required as a minimum match score
- **attributes-Match_addr** – the address that the input address was matched to
- **attributes-Loc_name** – the address locator that the address was matched to
  -> ‘Addr_NJ_pt_mc’ (Matched to an address point)
  -> ‘Addr_NJ_pt_sub’ (Matched to a subaddress point)
  -> ‘Addr_NJ_road’ (Geocoded to a road centerline range)
- **attributes-Addr_type** – type of address that was matched (either StreetInt or StreetAddress)

Example JSON response body:
```json
{ "spatialReference": { 
  "wkid": 4269,
  "latestWkid": 4269 
},
  "candidates": [ {
    "address": "125 East State Street, TRENTON, NJ, 08608",
    "location": {"x": -74.763168465793626, 
      "y": 40.220093105346265 },
    "score": 90.870000000000005,
    "attributes": { 
      "Loc_name": "Addr_NJ_pt_mc",
      "Score": 90.870000000000005,
      "Match_addr": "125 East State Street, TRENTON, NJ, 08608",
      "House": "125",
      "PreDir": "East",
      "PreType": "",
      "StreetName": "State",
      "SufType": "Street",
      "SufDir": "",
      "BldgSubAddrType": "",
      "BldgSubAddrUnit": "",
      "SubAddrType": "",
      "SubAddrUnit": "",
      "City": "TRENTON",
      "State": "NJ",
      "ZIP": "08608",
      "Street_ID": "02CB095C-1708-11E3-B5F2-0062151309FF",
      "X": 416839.4975069999,
      "Y": 505194.53772999998,
      "User_fld": "885421",
      "Addr_type": "StreetAddress",
      "Side": ""
    }
  }
}
```
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*Questions about this document can be directed to njgin@oit.state.nj.us

"ToAddr": "" } ]

Geocode Addresses (Batch Geocode)

*Supports batch geocode requests with up to 1000 records

- (addresses) Input address records to be geocoded
  -> For each record use either Street, City, State, ZIP or SingleLine for address attributes
  -> Optional: use the OBJECTID attribute and pass a unique ID for each input address (Must be an integer)

- (outSR) All addresses are returned by default in NJ State Plane coordinates. If requiring Latitude/Longitude coordinates, use the code 4269 in the Output Spatial Reference

- (f) For JSON output, use ‘pjson’ in the format parameter

Example SingleLine Input w/ JSON

https://geo.nj.gov/arcgis/rest/services/GeocodeServer/addrjson

Example JSON request body:

```json
{
  "addresses": {
    "records": [
      {
        "attributes": {
          "OBJECTID": 1,
          "SingleLine": "72 S Clinton Ave, Trenton, NJ 08609"
        }
      },
      {
        "attributes": {
          "OBJECTID": 2,
          "SingleLine": "160 Nassau St, Princeton, NJ 08542"
        }
      }
    ]
  }
}
```
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"f":"pjson"
}

Geocode Addresses (Batch Geocode)

Response Information
*All input addresses are returned, regardless of whether they have matched
- **location (X/Y)** – gives the coordinates in the requested output coordinate system
- **score** – score of the candidate (0-100). 85 is required as a minimum match score
- **attributes**-
  - **Match_addr** – the address that the input address was matched to
  - **Loc_name** – the address locator that the address was matched to
    -> ‘Addr_NJ_pt_mc’ (Matched to an address point)
    -> ‘Addr_NJ_pt_sub’ (Matched to a subaddress point)
    -> ‘Addr_NJ_road’ (Geocoded to a road centerline range)
- **attributes**-
  - **Addr_type** – type of address that was matched (either StreetInt or StreetAddress)

Example JSON response body:

```json
{
  "spatialReference": {
    "wkid": 4269,
    "latestWkid": 4269
  },
  "locations": [
    {
      "address": "72 S Clinton Ave, TRENTON, NJ, 08609",
      "location": {
        "x": -74.754868818016135,
        "y": 40.218486083150658,
        "m": 0
      },
      "score": 100,
      "attributes": {
        "ResultID": -1,
        "Loc_name": "Addr_NJ_road",
        "Status": "T",
        "Score": 100,
        "Match_addr": "72 S Clinton Ave, TRENTON, NJ, 08609",
        "Side": "R",
        "X": 420955.359868818016135,
        "Y": 504602.39163999999,
        "User_fld": "0",
        "Addr_type": "StreetAddress"
      }
    }
  ]
}
```
Reverse Geocode

- **(location)** Input location with coordinates and associated coordinate system
- **(distance)** Radius threshold around input coordinates in which to look for addresses. Units are in Feet
- **(outSR)** All addresses are returned by default in NJ State Plane coordinates. If requiring Latitude/Longitude coordinates, use the code 4269 in the Output Spatial Reference
- **(f)** For JSON output, use ‘pjson’ in the format parameter

**Example JSON request body:**

```json
{
    "location": {
        "x": -74.65722696392,
        "y": 40.350405203324,
        "spatialReference": { "wkid": 4269 }
    }
    "distance": "100",
    "outSR": "4269",
    "f": "pjson"
}
```