



Street Address Mapping for Next-Generation 9-1-1

The Office of Cyber Security (OCS) has embarked on a major project to create the detailed GIS data needed for Next-Generation 9-1-1 dispatch. NG911 systems, unlike current 911 systems, are not configured around wired telephone service, but rather use Internet protocol to support new types of communication to Public Safety Answering Points (PSAPs), including text messaging, photos, video, or automated sensors in addition to wired or wireless phone calls. Current systems primarily use lookup tables to match a caller's phone number to a street address for locating the caller and identifying the corresponding emergency responders. In NG911 systems, the lookups are done via GIS based on lat/long coordinates transmitted from the network or wireless device. In order for the PSAP to determine the address of the transmitted coordinates, as well as the relevant police, fire, and EMS zones, caller coordinates are used to drill through GIS data layers and make a "spatial match."

The transition to NG911 presents significant challenges because address data is not uniformly available across the state and, where it exists, is not always sufficiently accurate to support NG911. Two typical examples appear below, on the second page.

OCS received grant funding from the National Telecommunications and Information Administration to create address data in support of mapping broadband availability. In an effort to leverage these funds to support the transition to NG911, OCS has conducted outreach to the 911 community. Given that the community recognizes the lack of uniformly good data and many counties pay local telephone carriers to license address lookup data, the initial response has been positive.

The project has two stages: Stage 1 will be to use the grant funds to contract for assistance in taking state and locally available data and establishing accurate address points at structures. Stage 2 will involve working with NENA (national 911 standards-setting organization) to improve its standards for subaddresses (e.g., apartments, suites, mobile home lots) and supplemental address points (e.g., secondary entrance points, driveway locations). It is anticipated that adoption of these standards could also be promoted through the OIEC grant process to enable counties to fund data collection and maintenance.

As the improved data becomes available, OCS intends to assemble a "NG911 GIS data bundle" of existing OCS products (aerial imagery, streets, boundaries) and addresses so that all PSAPs will have consistent, high quality data. This will be far less costly than the current scattered, uncoordinated approach to supplying data and will permit smooth handoffs when calls are transferred among PSAPs. In addition, the address data can support a myriad of other government services when made available to other agencies. New York is positioned to be the first state to establish statewide NG911 GIS data.

Finally, the US Census Bureau is very interested in our strategy for creating accurate address data and has committed to partnering with New York on a pilot project. A kickoff meeting was held in Albany on December 12, 2011, and the Director of the Census Bureau's Geography Division, Timothy Trainor, was here to participate.



Example 1 – note missing address points, poor accuracy (points not on structures), and multi-unit condo and apartments represented by single address points.



Example 2 – note many missing points and parcel-based farm point far from corresponding residence.