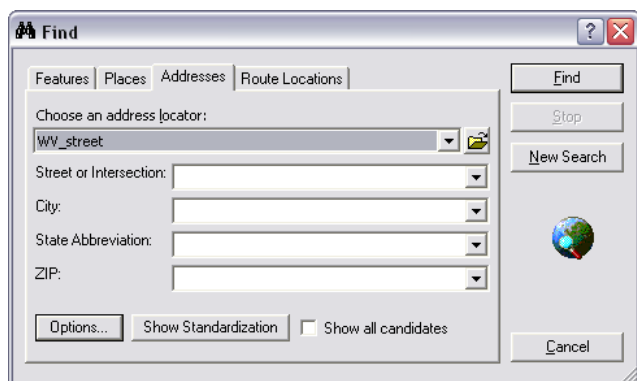The West Virginia GIS Technical Center, in cooperation with the WV Statewide Addressing and Mapping Board (WVSAMB) and the WV Division of Homeland Security and Emergency Management (WVDHSEM), has created statewide address locator services for building sites (points) and streets. The address locators are based on data from the Statewide Addressing and Mapping System (SAM, E-911) maintained by WVDHSEM. Locator services are important for many users in order to locate and place address data on a map.

The WV Site locator service matches address information to the building point (centroid) and is the most spatially accurate locator service for West Virginia in the Nation. However, the accuracy of this service is dependent upon the completeness and accuracy of the data in the Statewide Addressing and Mapping System. It is currently estimated that the WV Site locator service has a 50% match success rate. However, the site address matching rate should improve as counties update their addressing information and the reference data becomes more complete. The locator service reference data is updated and published on a quarterly basis to incorporate new addressing data from the SAM.

Users can access the locator services via ArcGIS desktop software or Web Map Services to geocode an individual address or table of addresses. Users can also integrate the locator services in their own web applications and create customized programs to improve address matching. For example, cascading multiple address locators together increases the chance of a successful address match. Likewise, city or zip code information submitted by a user can be cross-validated with other reference data to improve match accuracy. Other West Virginia map locator services can complement the new address locators such as geographic names, parcels, coordinates, and road mile markers (coming soon!). The WV GIS Technical Center is working hard to make public data more accessible and user friendly to the general public and GIS community.   We welcome your thoughts and comments on this service and any ideas you may have for its improvement!

Locator Service in ArcGIS: Using the Find tool in ArcMap Desktop Software to locate individual addresses using the WV Street Address Locator Service. The results will return a location event right on your map!

Locator service in Web Application: The WV Flood Hazard Application utilizes a cascade of three locator services to find the best address match: (1) WV Site, (2) WV Street, and (3) Nationwide Locator. This custom application utilizes the published ArcGIS Locator Service to return an event your map.

Process Steps Used by WVGISTC to Create WV Geocoding Services

1. **Build Reference Data**
   1.1. Extract SAMS Reference Data: Execute program in Statewide Addressing and Mapping System (SAMS) to extract site and street files for each county.
   1.2. Create Statewide Site and Street Reference Data Layers: Run python scripts to join street, city, and zip code tables. Append 55 county reference files into single site and street reference files. Delete null records.
   1.3. Enhance Reference Data: Add city and zip codes to records missing this information.

2. **Build Address Locators**
   2.1. Select Locator Styles:
       2.1.1. Street Locator: Street, city, state abbreviation, and zip code fields required – "US Streets with City, State, and Zip"
       2.1.2. Site Locator: Street and zone (zip code) fields required - "US One Address with Zone"
   2.2. Create locator services from reference data using ESRI ArcCatalog.

3. **Publish, Update, and Enhance Address Locators**
   3.1. Publish locator services are as ArcGIS Services
   3.2. Periodically update new address locators from statewide addressing and mapping system
   3.3. Write computer programs to enhance Address Locators
       3.3.1. Cascading Locator Services: Finds the best address match with multiple locator services. A search for an address match is performed by cascading from the most accurate (site address) to least accurate locator services (street address) until the best match is made.
       3.3.2. User Input Checks: Programs are written to improve the match success by cross-referencing city and zip code fields.

User Access to Locator Services

- **Search Addresses**
  - Single or Batch Search: Using address locators, search for an individual address or perform a batch search, locating a group of addresses.
  - Geocode using ArcGIS desktop software or by accessing ArcGIS services via customized programs

- **Sample Applications**
  - Flood Hazard Tool (www.mapwv.gov/flood)
  - Thiessen polygons can be generated from site addresses to identify utility zones, broadband service areas, etc.

- **Contact Information:** Kevin Kuhn, WV GIS Technical Center, email: kevin.kuhn@mail.wvu.edu, phone: (304) 293-9462
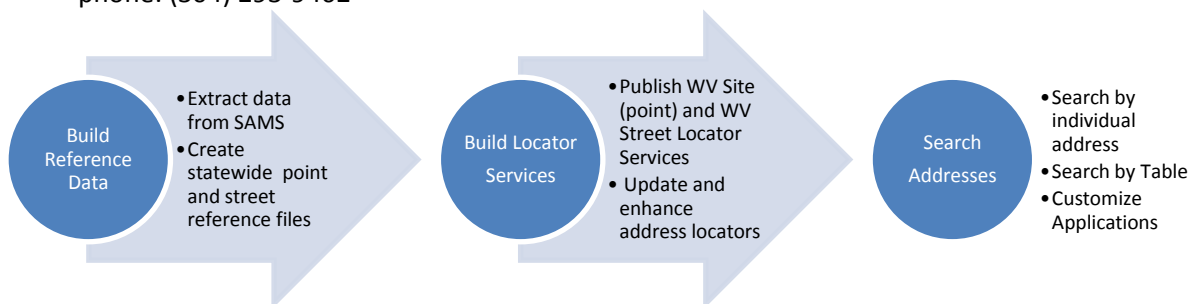

Figure 3. Steps to build locator services for users to search addresses individually or by a group of addresses