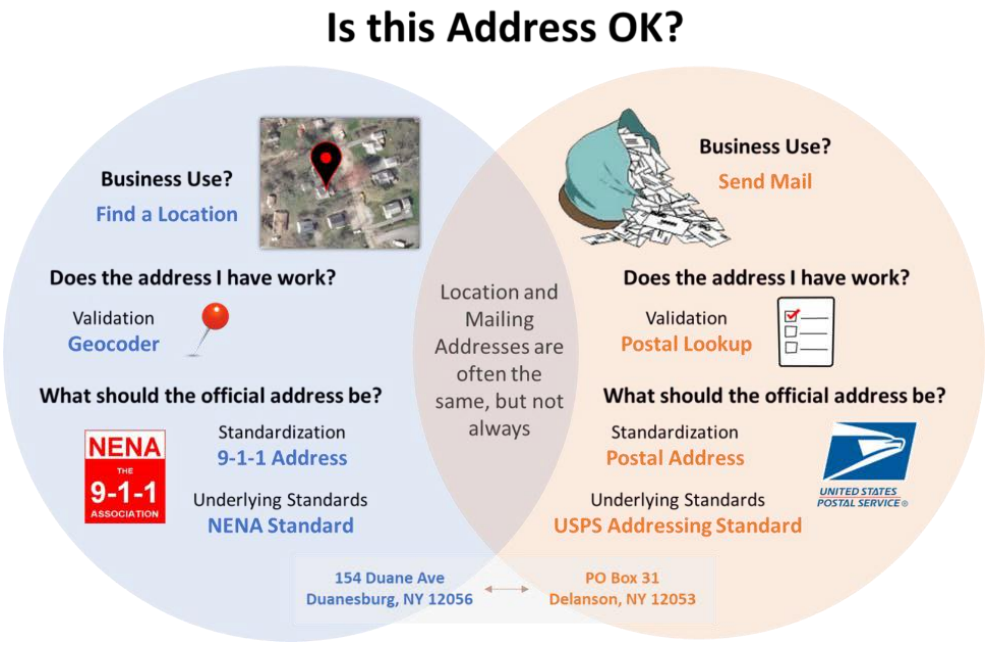
Spatial Location vs. Postal Address

Using an Address to identify a location and using an address to get mail delivered are two different things. Location addresses are at the heart of 9-1-1 systems, while postal addressing is the purview of the US Postal Service. The validation, standardization, underlying reference data, and data standards are different for these two use cases. That said, many times a location address and a postal address are the same. In our IT systems, location addressing, and postal addressing must be accounted for separately.

Address Geocoding and Address Matching are used to determine or estimate an address's physical location. Postal Address Verification/Validation is the process of checking that an address is recognized and/or deliverable by the United States Postal Service (USPS).



Spatial Location - Address Geocoding

This is the process by which spatial locations are determined for addresses in a database table, a spreadsheet, or entered by a user. Those input records are matched to discrete addresses (e.g., address matching) or street names and address ranges found within *spatial reference data sets* (e.g., address points and street centerlines). Real-world (x,y) coordinates are assigned to every matched address. These coordinates are derived from the spatial reference data sets. For location addresses in New York, the ITS NYS ITS Geospatial Services maintains the spatial reference data sets in cooperation with all the addressing authorities in the state. The NYS ITS Geospatial Services has configured a geocoding service to be quite flexible, accepting addresses which are misspelled, or using an alternate street or place name. When using a geocoder, the user can validate that the address will work to find a location. In this case, a valid address means that the address can be found within the spatial reference data. The user can also standardize the location address by using the official address returned from the spatial reference data set. The National Emergency Numbering Association (NENA) sets the standards for location address reference data.

Postal Address Verification/Validation

This is the process used to check the validity and deliverability of a mailing address. According to the USPS, an address is valid (or mailable) if it is Coding Accuracy Support System (CASS) certified, meaning that it exists within the comprehensive list of mailable addresses in their Address Management System. The USPS also provides many other valuable mailing services through their Web Tools API Portal.

Standardized/Normalized

In either use case, it may be beneficial for the addresses to be standardized or normalized. These words are used interchangeably. This process entails the consistent use of abbreviations, correcting spelling, official place name to Zip Code comparison, filling in missing elements of addresses, etc. Location addresses are standardized using NENA compliant reference data. Postal standardization is done using an official guide from the USPS.

In IT systems, address verification and standardization should be done at the earliest possible point in a workflow. Regardless of the use, it is preferable to get the address standardized while a person is typing it in the first time.