



CONNECTICUT

Guidance for Address Management in State Administrative Data



DAPACT



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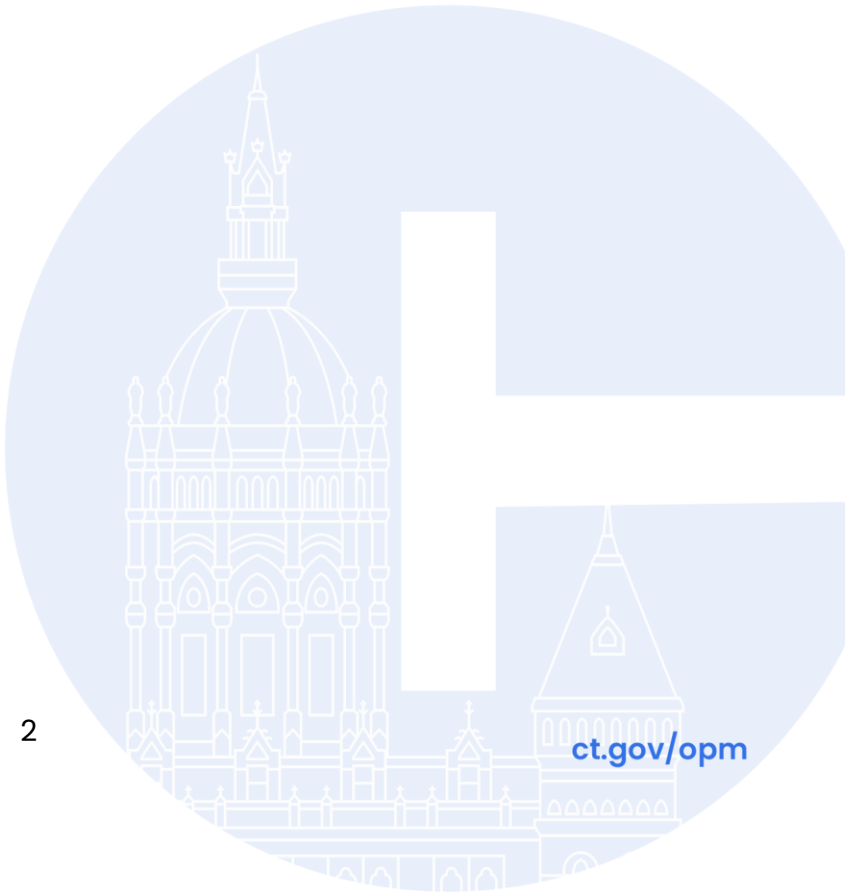
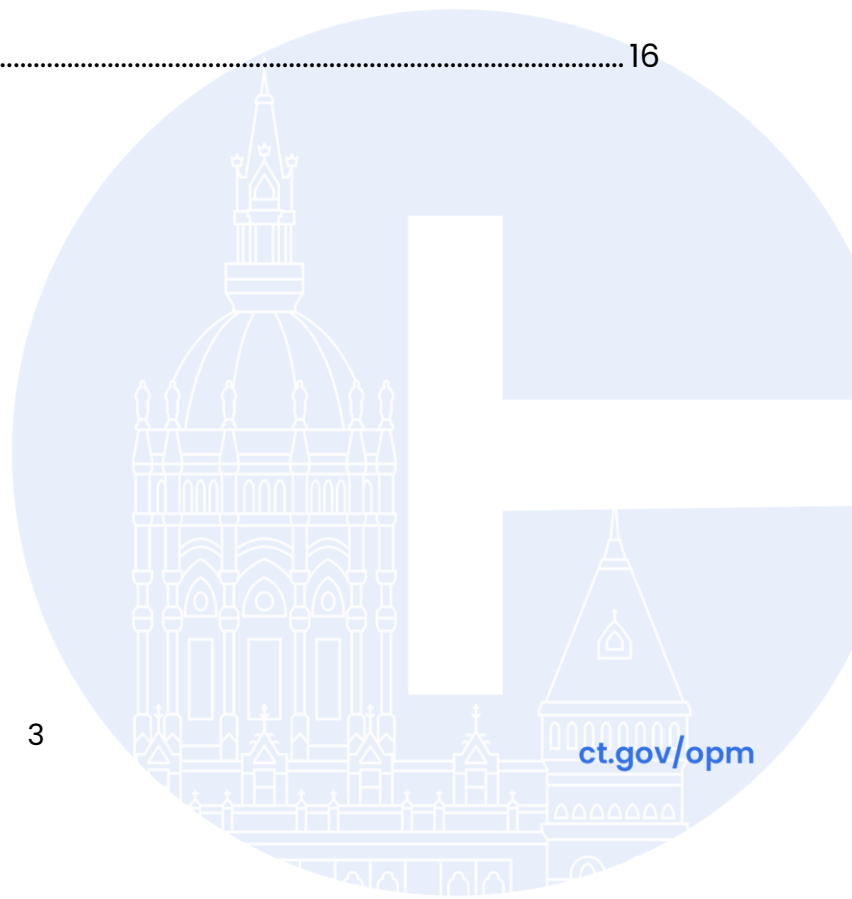


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1 Introduction

Addresses are one of the most important identifiers in government data. They provide a foundational reference point to understand where public services are needed or delivered. An address is the main information agencies use to communicate with residents. Beyond public-facing services, addresses also support internal government functions such as asset management, compliance monitoring, and program administration. Effective state operations depend on accurate and standardized data. Addresses that have been collected and managed in a standardized form enable robust analysis that strengthens program monitoring and policy evaluation. Conversely, inconsistent or incomplete address data limits agencies' ability to communicate with residents and undermines data analysis.

This guidance provides best practices for state agencies to ensure consistent management of address data. While this guidance may inform how agencies design or update their data collection processes, it is not intended to prescribe the layout of forms. The primary goal is to provide a common framework to increase the usability, accuracy, and consistency of the address data collected and managed across state systems.

2 Address Types

Location addresses: Physical address or the location of a structure, building, or place (e.g., a patient’s home, a clinic, a school, or a business). A location address is one that can be **geocoded**, meaning it can be translated into geographic coordinates and accurately identified on a map¹. Therefore, a location address can be used for legal notices, emergency services, navigation, but also for analyses such as spatial modeling, accessibility studies, service area analysis, demographic mapping, and resource allocation.

Mailing addresses: A mail reception point, intended for postal delivery which may not correspond to a physical location. While a mailing address can sometimes be the same as a location address, it may also include P.O. Boxes, military addresses, or rural postal routes that cannot be reliably geocoded.

Location Addresses		Mailing Address
123 Main Street, Hartford, CT 06016 (individual address)	456 Health Ave, Suite 200, Manchester, CT 06041 (a medical office)	P.O. BOX 789 Wolcott, CT 06716 (a Post Office Box)

¹ Learn more about geocoding: <https://gisgeography.com/geocoding/>

3 Address Formats

Mailing and location addresses serve different purposes. If both types need to be collected for a program, each address type should be recorded separately to avoid confusion and ensure accurate use. In cases where both addresses are the same, a collection form can provide an option, such as the customary “Check this box if your physical and mailing addresses are the same.” At the same time, the resulting dataset can include a column or field that indicates when the address is the same for mailing and location (physical) for a given record.

Poorly formatted addresses demand significant preprocessing and often cannot be used for analysis due to inconsistencies that cannot be resolved without significant manual cleaning. This type of improper data management adds barriers to workflows, slowing down or even limiting the ability to analyze datasets, track program progress and outcomes, or accurately map services.

The diagram illustrates a table with three columns: Addr, Location, and Zip. The table contains one row of data. Surrounding the table are callout boxes identifying specific formatting issues: 'Missing street type' points to the 'Addr' column; 'Address fields identified incorrectly' points to the 'Location' column; 'Zip code is missing leading 0' points to the 'Zip' column; and 'Additional information in address fields' points to the 'Location' column.

Addr	Location	Zip
123 Main N	Building #5 Hartford Apt 4 (updated)	6106

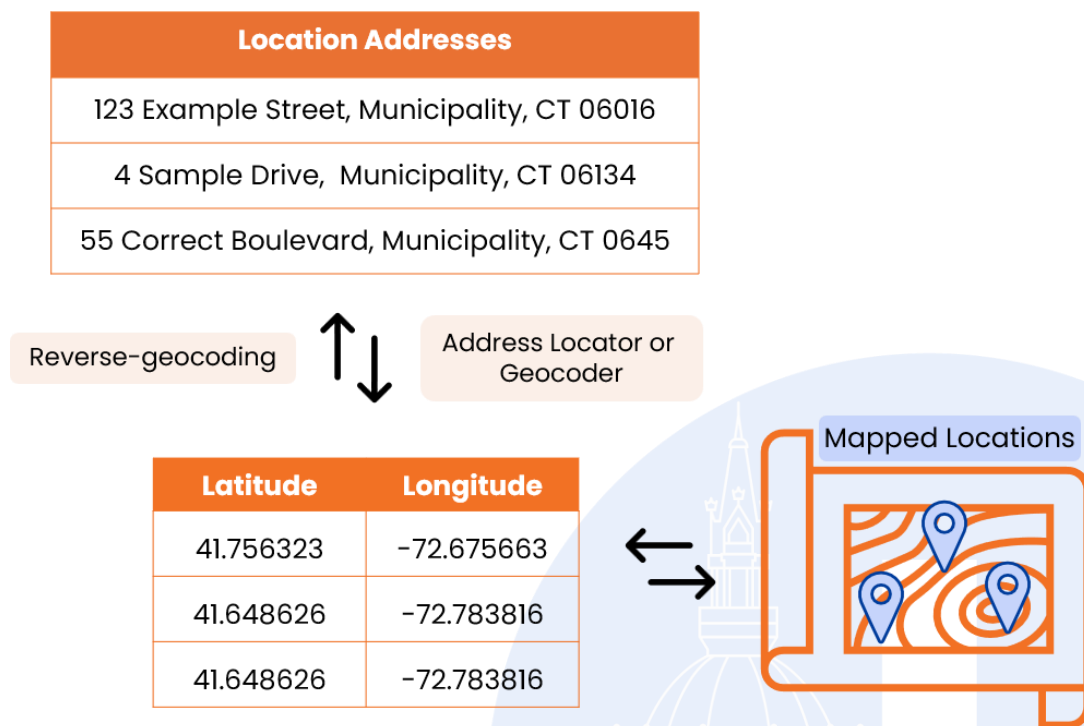
Missing street type (“Avenue”, “Street”)

Address fields identified incorrectly

Zip code is missing leading 0

Additional information in address fields

Properly formatted addresses enable agencies to analyze trends, visualize service delivery, identify gaps, and accurately aggregate or summarize records (or points) across geographies such as census blocks, tracts, zip codes, municipalities, or planning regions. Well-formatted location addresses require minimal preprocessing before geocoding. To achieve this, it is recommended to follow a schema or standard² as described in the next section.



² See Resources section for example schemas for formatting addresses.

4 Recommended Address Standards

This section defines the recommended structure for each address type, outlining the specific components and formatting standards for both location and mailing addresses.

4a Location Addresses:

At a minimum, a location address must contain the following components:

- ✓ **Street Address** (and subcomponents)
 - Address Number (e.g., 123)
 - Street Name (e.g., Main)
 - Street Type (e.g., Street, Ave, Blvd)
 - Street Type or Directionals, where applicable (e.g., N or North)
 - Building, Unit, Apartment, or Suite, where applicable (e.g., Apt 4B)
- ✓ **Municipality**
 - For CT, it is recommended to use one of the 169 municipal names. This is primarily important for location addresses, whereas mailing addresses may appropriately use other place names (e.g., Cos Cob, Ivoryton, Mystic, etc.). See resources section.
- ✓ **State**
- ✓ **6-digit ZIP Code** (ZIP+4 when available, e.g. 06105-9999)

Preferred Format: Multi-field Location Address

A multi-field address stores each component in a separate field. Because location addresses can include many additional details not shown in these examples, data stewards should review existing schemas to select one that responds to their use case³.

Loc_Street_Address		Loc_Municipality		Loc_State	Loc_ZIP	
123 North Main Street		Hartford		CT	06106	

Loc_Address_Number	Loc_Street_Name	Loc_Building	Loc_Floor_Unit	Loc_Municipality	Loc_State	Loc_ZIP
123	North Main Street	4	2	Hartford	CT	06106

Minimum Standard: Single-field Location Address

When using the single field option, data stewards should ensure that all necessary components are present to create a complete, standardized address that can be parsed and used for geocoding.

Loc_Address
567 Proper Lane, Unit 21, Mansfield, CT 06268

³ See Resources section for more on schemas.

4b Mailing Addresses:

When a mailing address is equal to the physical address, they will contain the same address components. In cases when they are not, it is recommended that the “mailing street address” component be maintained as a single field while the rest of the components (mailing municipality, mailing state, and mailing ZIP code) can be stored as separate fields.

Mailing street addresses can contain information that does not consistently parse into subcomponents like a location address. Those mailing types, such as P.O. Boxes, military addresses, or rural postal routes, are generally not used for geocoding. However, geographic analysis of mailing addresses can still be performed, such as in-city or in-state versus out-of-city or out-of-state mailing. Separated fields for municipality, state, and ZIP for mailing addresses provides a schema segmentation that enables these type analyses.

Preferred Format: Multi-field Mailing Address

Mail_Street_Address	Mail_Municipality	Mail_State	Mail_ZIP
P.O. Box 2471	Danielson	CT	06239

5 Privacy

While a physical address by itself is generally not considered Personally Identifiable Information (PII), it can become sensitive depending on how it is used and what other data it is combined with. A standalone address (e.g., “123 Main Street, Hartford, CT”) does not inherently identify a person, however, it can uniquely identify an individual when associated with other data such as a name, phone number, or account details. Therefore, personal addresses⁴ require specific handling to protect personal identity without dismissing the acknowledgment that a location exists.

For this reason, many privacy regulations treat address information as PII in certain contexts. For example, an address is classified as both directory information and PII under the [Family and Educational Rights and Privacy Act](#) (FERPA), and disclosure is limited under the HIPAA [safe harbor rules](#). Section 14 of [Public Act 25-3](#) limits disclosure of address information outside of public agencies in Connecticut, unless certain exemptions are met. In addition, [Section 1-217](#) of Connecticut’s General Statutes restricts the release of

⁴ Public addresses refer to the locations of institutions, organizations, or public facilities such as schools, government offices, libraries, or service centers and can be disclosed or shared as part of normal operational or reporting activities. Personal residential addresses include the home addresses of residents, staff, students, or clients.

addresses for designated classes of individuals. Data stewards must carefully review all policies and laws regarding data sharing in their area of work.

Context matters. In small communities, rural areas, or situations where a location is uniquely associated with a household, even an address without a name may be sufficient to infer identity. Because of this, address data (as with other highly granular information) must be handled with particular care when included in public datasets or reports.

Agencies that regularly report sensitive information typically apply suppression rules based on small-numbers policies or other guidelines for presenting data with low counts⁵. These techniques help prevent re-identification, such as determining an individual's case by piecing together individual data elements within a report or dataset, and support efforts to avoid privacy risks while maintaining the analytical value of address data.

⁵ For example, Connecticut's Department of Education's suppression guidelines: <https://edsight.ct.gov/relatedreports/BDCRE%20Data%20Suppression%20Rules.pdf>

6 Implementation of this Guidance

- Review datasets and collection forms to ensure that each address type is separated.
- Evaluate existing datasets to identify incomplete or incorrect addresses and flag for revision.
- Review privacy laws and any agency policies and procedures, such as suppression guidelines, before sharing any data.
- Do not share full address data combined with personal identifiable information.
- Use aggregation techniques such as spatial aggregation⁶ to contain locations in larger geographies and avoid exposing distinct locations. Agencies may have an established recommended geography for aggregation.
- Consult with the CT Office of Policy and Management's Data and Policy Analytics Unit for any data sharing procedures.
- Coordinate with the State's GIS Office for support with geocoding services.
- Contact your agency's BITS' Customer Success Manager for advanced implementation of validation tools in your forms.

⁶ Spatial aggregation means grouping addresses into larger geographic units like ZIP codes or census tracts. Learn more at: <https://www.geowgs84.ai/gis-glossary/aggregation>

7 Resources

Federal

FGDC: Address Data Standard	https://www.fgdc.gov/standards/projects/address-data
NENA NG9-1-1 GIS Data Model	https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/nena-sta-006.2a_ng9-1-1_gis.pdf
USDOT National Address Database	https://www.transportation.gov/gis/national-address-database
USPS Postal Addressing Standards	https://pe.usps.com/text/pub28/welcome.htm
USPS Address Format Examples	https://faq.usps.com/s/article/What-are-some-Examples-of-How-to-Format-Different-Types-of-Addresses
USPS General Delivery Guidance	https://faq.usps.com/s/article/What-is-General-Delivery

State

Connecticut 9-1-1 Address Points	https://data.ct.gov/Public-Safety/Connecticut-9-1-1-Address-Points/m6xx-nb28/about_data
Geocoder	Available for state agencies per request: opm.giso@ct.gov
Municipalities (Spatial)	https://geodata.ct.gov/datasets/ctmaps::ct-municipalities-with-fips/explore
Municipalities (Tabular)	https://data.ct.gov/Government/CT-Municipalities/genm-yp9m
Post Offices in Connecticut	https://portal.ct.gov/SOTS/Register-Manual/Section-VII/Post-Offices-in-Connecticut
Statewide Parcel Data	https://geodata.ct.gov/datasets/82a733423a244c43a9d4bf552954cea9_0/explore
Town Name Conversion Table	Available by request at opm.giso@ct.gov

Privacy & Legal

Connecticut Data Privacy Act	https://portal.ct.gov/ag/sections/privacy/the-connecticut-data-privacy-act
HIPAA De-identification Guidance	https://www.hhs.gov/hipaa/for-professionals/special-topics/de-identification/index.html

Other Tools

Census Geocoder	https://geocoding.geo.census.gov/geocoder/
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Appendix: Additional Considerations

A1 Collection Forms

A. Reducing Manual Data Entry Errors

To reduce data entry errors and improve standardization, data collection forms have minimal free-text input. For example, it is recommended to use dropdown menus or autocomplete options for information such as municipality and state. Reducing manual typing helps prevent misspellings, inconsistent naming, and other variations that degrade data quality.

B. Address Validation Services

Agencies may choose to incorporate address validation services into their data collection forms to improve accuracy and reduce errors at the point of entry. Several tools are available that can verify addresses, standardize formatting, and flag incomplete or undeliverable locations. However, some services may still produce errors such as misinterpreting addresses near town boundaries. Therefore, collection forms should allow the user to review suggested corrections and indicate when a validation result is incorrect.

Common validating options include:

- **USPS Address Validation (Addresses API)**⁷: A free service provided by the U.S. Postal Service that checks whether a mailing address is valid and standardized according to USPS records. Agencies can request access to the USPS Web Tools API to integrate validation into online forms or internal systems.
- **Commercial address validation services and built-in validation within form platforms**: Software platforms may offer address verification, standardization, geocoding, and features such as autocomplete or spatial accuracy scoring. Consider forms and case-management systems that include address validation modules or plugins to enforce formatting rules, reduce typos, and ensure standardized entry.

A2 Edge Cases

Some situations require capturing location-related information when a standard physical or mailing address is not available. These scenarios include individuals experiencing homelessness or having no fixed address, as well as other non-standard or descriptive locations. The following considerations outline recommended approaches for handling these cases.

⁷ <https://developers.usps.com/apis>

A. Do not force non-standard locations into standard address structures

Non-addressable locations (such as rural routes, descriptive locations, or situations without a fixed address) should not be forced into a street/number/unit format. Systems should provide alternative fields for capturing non-standard information to preserve data quality.

B. Use a location description when an address does not exist

For non-fixed or non-traditional addresses, systems should allow the use of a location description. Data stewards must determine whether their collection system should accept location information with inherent uncertainty. Location descriptions may include:

- Cross streets (e.g., Main St & Elm St)
- Landmarks (e.g., library)
- Coordinates (e.g., dropping a pin on a map to capture latitude and longitude)

C. Use of proxy or alternate addresses and controlled values or standardized flags

In certain administrative or service contexts, agencies may need to use proxy addresses to maintain contact or support program operation such as a shelter address, a local post office providing general delivery services, or a program-assigned mailing location. These proxy addresses should be clearly flagged so that they are not misinterpreted as physical location addresses.

Using controlled values can support equity by ensuring that individuals with a non-fixed or non-traditional address are not excluded from analysis due to inconsistent data entry. To avoid ambiguity, agencies should use predefined values rather than free-text for address-related exceptions, such as No Fixed Address (NFA), Transient, Unknown, General Delivery⁸.

⁸ General Delivery is a mail service for those without a permanent address, often used as a temporary mailing address (see Resources).