

CTCOG
P.O. Box 729
Belton, Texas 76513
254-770-2200 Voice
254-770-2399 FAX

Central Texas Council of Governments

9-1-1 Addressing Standards

*Accomplishing Together That Which We
Cannot Alone*

CTCOG 9-1-1 Rural Addressing Standards

The purpose of developing E 9-1-1 standards is to enable emergency service providers to quickly reach the location of a 9-1-1 call with the least amount of confusion. National Standards have been written for the enhanced 9-1-1 development. The commonly accepted standards for addressing, road naming, dispatch, etc. in use nationwide need to be evaluated by each local body performing the necessary work. Although most national standards may apply to our specific counties, it is necessary to configure the standards to meet the criteria of our specific area. Each county must adopt a rigorous set of standards.

Several decisions must be made such as: the geographical area to be included, the method of street naming and number assignment, and the extent of coordination with neighboring counties. The design of the E 9-1-1 Addressing system is something that should be thought about long before a GIS Contractor comes on board to begin an addressing effort.

Key individuals that may be included are: Postmasters, members of EMS, members of Fire Departments, members of Sheriff's Departments, member of tax departments, realtors, or utility company employees. These developments should be countywide based. It is imperative that a point of contact at the County level be available who can give impute to any unforeseen matters.

Road Naming Standards

It is much easier to complete a measured addressing project if road-naming activities are completed BEFORE house numbering is begun. The following are some Road Naming Standards that should be considered on the local level as to whether they meet your specific county needs.

- Roads should have unique names throughout an entire town, zip code and emergency service zone. Every distinct road should be a separate named road. This includes private roads.
- There should be no duplicate street names unless the boundaries of commonly used village names within the municipality can be specifically identified.
- A named road should be essentially continuous, without gaps.
- There should be no identical or similar sounding street names (e.g., Beach and Beech, Main and Maine, Flower and Flour, or even Beach and Peach)
- Avoid using directional or suffixes to distinguish separate, non-contiguous streets (e.g., Palm CT, Palm AVE, and Palm ST, N. Palm CT).
- Avoid special characters, such as hyphens, apostrophes, periods, or decimals, in street name and numbers.
- Streets within multi-structure complexes (e.g., business campus, multi-unit apartment complex) should be named and each structure should be individually addressed.
- Streets within mobile home parks should be named and each lot individually addressed.
- Road names should be assigned based on traffic patterns. Road networks are often like stream networks, with main stems of high traffic volume, and tributaries with less traffic volume should continue with the same name.
- The name of a road or street that has a historical reason for having its name should retain its name.
- The road with the most houses on it should retain its name, thus affecting the least amount of people.

- Road names should only change at substantial intersections or at town boundaries. Do not change road names on corners or in the middle of road section (it's confusing).
 - The street that has had the road name the longest should retain its name.
 - The name of the street that is used for the longest distance or is most likely to have the heavier traffic should retain its name.
 - When a road runs from one town to another it can change names at the town border.
 - There is no need for road names to correspond with official town highway numbers.
 - State and US highways should be assigned their highway names, with the format of the highway type ("US Route" or "NYS Route 97")
 - If a local name is already in use for a US or State Highway (e.g., Main ST), it can maintain the local name as it's official name. To avoid confusion, local names should only be assigned to US and State highways in towns where the highway appears to be and functions as a local road. Generally, the official highway name is preferred.
 - When neighboring towns agree to keep the same name of a road running between towns, the measuring and numbering should be consecutive.
 - Numbering along State Highways and US should follow the same rules for other named roads passing between towns. For long highways spanning many towns, it will not be practical to use sequential numbering for end to end. However, for a highway spanning just 2 or 3 towns the numbering will ideally be sequential for the full length of the highway to avoid any confusion between towns.
 - Many roads have alias names that they are known by. If desired, your GIS Contractor should be able to enter these aliases into the county's road dataset. However, every road must have a single, official name for Enhanced 9-1-1 purposes.
 - For roads that connect two other roads, but have a middle section that is little used or impassable (at least in winter) there are several options.
 - Driveways with 3 or more homes located off the same access drive should be given a Private Road name designation.
1. Assign a single name to the entire road and number the road sequentially starting at the more traveled end. This option is recommended when the middle section is passable and used most of the year.
 2. Assign different names to either end of the road and choose a point in the middle of the impassable section where the name changes. This option is appropriate only if the middle section is truly impassable. Each road's numbering would start from its intersecting road (where most or all traffic originates) and end at the middle point.
 3. Assign a single name to the road, but choose a point in the middle section where the road changes form "East" to "West" or from "North" to "South". For example, "East Burly Hill Road" and "West Burly Hill Road". These constitute two distinct numbering for each road would start at the intersecting road (where most or all traffic originates) and end at the middle point.
 4. Private Road naming must be chosen by either largest land owner along easement (driveway) or (and inside Bell County) a petition signed by the majority of owners located along easement (driveway). A Private Road name should be chosen by the owner/s that is not in use elsewhere in the county.
 5. Once a Private or County Road name has been assigned/chosen, a map requesting approval must be sent to the County Commissioner's Court and Judge. If located in Bell County notice must be sent to the County Engineer's Office as well for approval and sign placement and notification sent to the precinct Commissioner.

Adopting and Standardizing a System for Addressing

Municipalities planning to commence an enhanced 9-1-1 project should establish a single locatable addressing system that is adopted for all addressing purposes including emergency service provision, postal delivery, municipal record keeping, and utility service orders.

5.28' Address Increment

NENA Standards recommend that communities adopt a 5.28' increment. This increment would allow for 1,000 unique numbered addresses per 1-mile length of road (there are 5,280 feet in a mile). This increment makes it very easy for an emergency service provider in the event of an emergency to look at the address and quickly figure out how far down the road the house is located. For example, if an ambulance were dispatched to 500 Alpine Lane (using a 5.28' address increment) the emergency vehicle would know to travel exactly one half mile down Alpine Lane to locate number 500. Similarly, if an emergency service provider is dispatched to 957 Alpine Lane, they would immediately know that they must travel just under a mile and look on the left side of the street for the emergency address site number 957. Obviously, this kind of addressing increment can save a great deal of time during an emergency situation.

Another benefit of the 5.28' increment is that structures can be assigned an address every 10.5' on each side of the driveway. Very few driveways, even in congested areas are located that close together. This means that many addressees are developed, mainly for navigational purposes, but also for future development needs of a community. Therefore, it is very important to select a numbering increment that not only supports your current addressing needs, but the future development needs of your community. If the appropriate measured numbering system is selected; a community will never need to be re-addressed to accommodate future development.

52.8' & 50' Address Increments

Although not generally recommended by NENA, these address increments are occasionally chosen to meet the specific needs of a community. Communities should be careful to ensure that this numbering increment meets both their present needs AND the needs they anticipate for future sub-division and development AND the needs of timely emergency response. Oftentimes the logic for utilizing the larger 50' increments is in consideration of more rural areas, where, in theory, the amount of development is expected to be far less than the urban areas. Therefore, in these rural areas it is oftentimes considered overkill to generate so many numbers. Unfortunately, when this larger increment is chosen, the easy address-based navigation is diminished by a less than quick to figure out math equation. In other words, it is much simpler to figure out that a house addressed utilizing the 5.28' increment and given the address 500 Alpine Lane is approximately one half mile down the road. It is not so easy to apply the same logic to a house addressed utilizing the 50' increment. Communities should very carefully consider what is gained in response time (since that is the point of re-addressing) by choosing a 50' or greater increment.

Evens on the Right - Odds on the Left

All structures should be numbered with even numbers on the right and odd numbers on the left. This parity should be strictly followed to aid in the efficient response of emergency crews. This parity sometimes becomes confusing in the case of a Cul-Du-Sac, circular streets, trailer parks, etc. Be sure your GIS Consultant has an automated system of checking the parity of each mapped and addressed structure. Without a built-in and digitally automated means of performing QA/QC on the address parity, the address data is bound to end up with parity errors.

Addressing Standards

The following are recommendations to consider as county addressing standards. Each of these recommendations should be specifically looked at to see if they make sense in your county and if so, they should be implemented as part of your countywide addressing standards.

- Official street numbers should proceed from a logical point of origin and should be in proper numerical sequence in relation to other lots with frontage on the same street/road. It is recommended that a county adopt a standard numbering sequence that goes from East to West and South to North.
- Odd numbers should be assigned to left side of the street and even numbers should be assigned to the right side of the street.
- Address numbers should be assigned to all structures which are inhabited or which have or may have phone service (including telephone booths) and not to lots and parcels. Many lots have more than one structure and thus require more than one address.
- Corner lots should be assigned a number according to the frontage of the main entrance and/or where the driveway meets the road - **not** where the mailbox is located.
- The logical/grammatical order of address elements should follow USPS conventions: street number, pre-directional, primary street name, suffix, post-directional, and secondary number, if any (e.g., 100 W Main ST SE Apt 201).
- Multi-unit structures should be given one primary number (e.g., 101 Main ST or 103 Main ST) and apartments or suites should be given numbers or letters as secondary location indicators (e.g., 111 Main ST, APT A, or 111 Main ST, APT 101).
- Primary street numbers should not be longer than six characters.
- There should be **no** fractional addresses (e.g., 101 1/2 Main ST).
- Alphanumeric primary or secondary address numbers should not be used (e.g., EOI Main ST).
- Hyphenated primary or secondary address numbers should not be used (e.g. 41-65 Bell ST).
- Significant leading zeros in primary and secondary numbers should not be used (e.g., 0145 Main ST).
- One letter road names should not be used (e.g., B Street or Z Lane).
- Common practice is to number from east to west, and from south to north.
- Where one road starts and ends at points on a second road (creating a loop), the numbering along the two roads should be in the same direction.

Road Signs and Address Number Standards

Road Signs

Naming roads and mapping them is among the first steps in an addressing process. Placing road signs is one of the final tasks. To assist both emergency service personnel and the general public, signs must be visible and maintained. A frequent complaint about a road sign is that they are often hidden by tree branches. Annual trimming can eliminate this problem. *There are several varieties of signs that are suitable for public road use. The most common is the green background with reflective white lettering. However, regardless of color, the important issue is to ensure the letters are tall enough to be easily seen day or night.*

Sizes

Lettering on street name signs should be at least 4 inches high, supplementary letting to indicate the type of street (e.g., Street, Avenue, Road, etc.) or section of city (e.g., NW) may be in smaller lettering, at least 2 inches high.

For rural areas: Municipalities should use 9 inch high blade in lengths of 24, 30, 36, or 42 inches with 6 inch high letter for street names, 4 inches for other.

For urban areas: Municipalities should use 9 inch high blade in lengths of 24, 30, 36, or 42 inches with 4 inch high letter for street names, 3 inches for other.

Placement

In business districts and on principal arteries, Street Name signs should be placed at least on diagonally opposite corners so that they will be on the far right hand side of the intersection for traffic on the major street. They should be mounted with their faces parallel to the streets they name. In residential districts at least one Street Name sign should be mounted at each intersection. In rural districts signs should be placed to identify important roads not otherwise marked.

On intersection approaches a supplemental Street Name sign may be erected separately or below an intersection related warning sign. When combined with a yellow diamond sign, the color should be a black message on a yellow background. The preferred mounting method for street signs is post-top mounting brackets. Hardware for mounting signs to posts should be subsidiary to other items. The minimum vertical clearance should be 8 feet to the bottom of the sign for post-top mountings.

Materials

The most commonly used materials for blades is either extruded aluminum with a 0.25 inch flange thickness and 0.090 inch web (min.) or flat sheet aluminum with a minimum thickness of 0.125 inches. However, other materials can be used, if they achieve the same level of visibility.

Colors

The signs should have a reflectorized white or silver text (stick on reflective letters) on a reflectorized green background, the colors should conform with those found in standard color tolerance charts as approved by the U.S. Department of Transportation Federal Highway Administration.

Lettering

Letters and digits should conform to standard alphabets for highway signs printed by the federal highway administration. Conventional abbreviations are acceptable except for the street name itself. A symbol or letter designation may be included to identify the governmental jurisdiction. If used, the length of the designation should not exceed the height of the sign, and should be positioned to the left of the street name.

Displaying Address Numbers:

Structures in cities are much easier to mark than those in rural areas where the structures are often obscured by trees or are so far off the road as to not be visible. To ensure that all house numbers are visible, it may be necessary to make special provisions for posting numbers in rural areas. Listed below are recommended standards for displaying address numbers:

1. First preference should be to put a number on the front of every structure.
2. Mailboxes should be marked with the house number if the box is in front of and on the same side of the street as the house.
3. Where mailboxes are not in front of the house or structure to be marked, a number should be displayed on the structure, if it is visible from the road.
4. If the structure is not visible from the road and no mailbox is beside the driveway leading to the structure, a sign or number post should be erected to display the number. This sign or number post could display the number either vertically, from top to bottom, or horizontally.

5. In areas of snowfall, it is very important that the structure number be placed high enough that it will not be obstructed by snow during an average winter.

Notification for new roads:

Once a name, whether private or county, has been established and approved. All emergency responding agencies should be sent a map showing location information, road name or number and coordinating addresses (if assigned) with the date of notification placed in the ArcGIS map data. A copy of the notification letter should be kept as well. The Post Office and Telephone Company that services the new road should be notified of its location and address ranges in addition.

Be Open to Hire a GIS Consultant

It is imperative that before you write a request for proposals (RFP) or begin the process of hiring a GIS Consultant to perform Addressing and Data Development, that the county have all standards outlined. Without identifying on a local level, which standards the county has chosen, you cannot hope to hold a GIS Consultant to any consistent set of rules. Once done it is important to look for a GIS Consultant that has a proven track record of completing large scale E-911 data development projects in a timely manner. **Check all consultant references carefully!!**