

The MSAG for Other Applications

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The Master Street Address Guide (MSAG) is a critical database for E9-1-1. Because of the manner in which it organizes address data by regional codes for emergency services, the same techniques can be used to create addressing databases that can be easily used for other government departments. This includes variations on the MSAG identifying voting districts, school districts, and flood plains among many others.

The MSAG

The MSAG is most simply described as a listing of all streets with their low and high address range and numeric codes identifying the emergency service providers for every address.

The MSAG is used by the telephone company to create the ALI (automatic location information) database. It is also used to “selectively” route the 9-1-1 CFS (call for service) to the proper PSAP (public safety answering point) for emergency dispatch.

ESZs & ESNs

The numeric code identifying each emergency service provider is called an ESN or emergency service number. This three-digit number corresponds to an ESZ, or emergency service zone, which is a geographic region consisting of unique law, medical, and fire response zones. Thus the ESZ is a GIS polygon formed by merging the polygons for fire, ambulance and law.

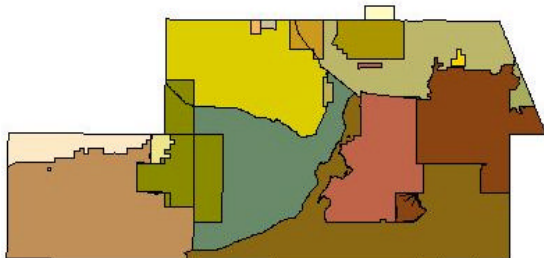


Figure 1. Cibola County Fire ESZs

The map of Cibola County shows the fire districts by color. You may note other boundaries in the fire

districts, corresponding to other emergency service zones, created by medical and law jurisdictions.

ESNs for Planned Growth

The map below of Harding County shows the two rural fire departments in red. It is apparent that these service areas extend out of Harding County into neighboring Quay, Union, and San Miguel Counties.

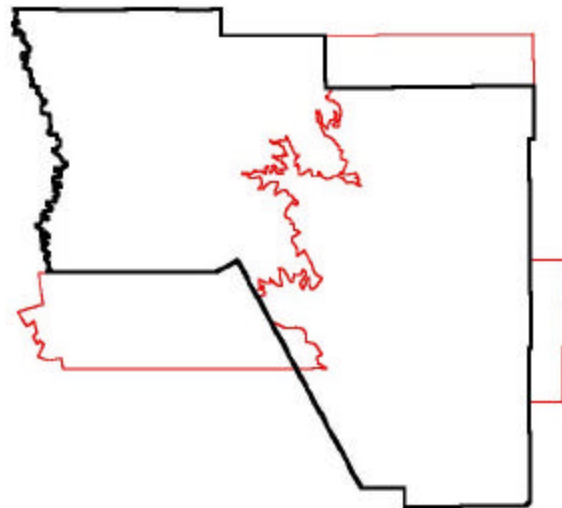


Figure 2. Harding County with Two Fire ESZs

When building the MSAG, you should anticipate future dispatch geography, such as a new fire department or impending changes in emergency medical services. You can draft these planned boundaries as new ESZs and assign ESNs to those regions. This reduces future MSAG maintenance.

Please Note:

Though you have assigned additional ESNs, when a call is made from the proposed region, the dispatcher will know the proper emergency responders because the table associating the ESNs to responders will reflect the existing arrangement. A new ESN table will be loaded when the new dispatch regions become available. All of this is accomplished without changing the MSAG.

Below are the two original ESZs for Harding County with an additional eight zones created after considering future community growth, improved dispatch with more detailed ESZ geography, and political input from other MSAG users.

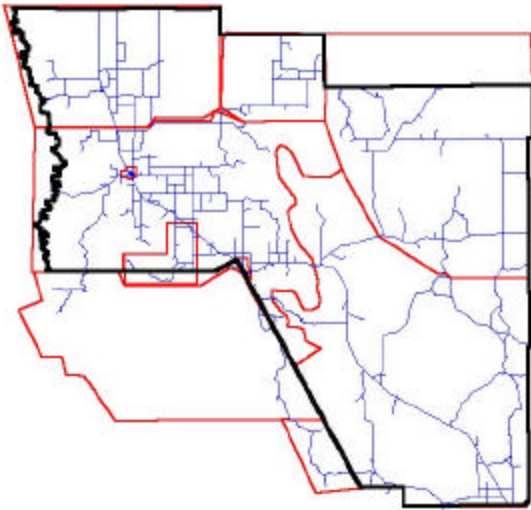


Figure 3. Harding County with more complex ESZs

Note how the road network in has been grouped into different geographic regions by the ESZs, thus giving the dispatcher a better idea of the region from which the CFS is being made. Mutual aid further complicates the boundaries, as do “no mans” land and response zones from federal agencies such as BLM, USFS, etc.

The above ESZ map has grown from two ESNs to 10 ESNs, and these boundaries have not been modified for any planned growth.

Other Emergency Service Regions

Larger communities should consider dispatch regions for emergency services other than fire, ambulance and law. Some communities have dedicated hazardous materials units with their own dispatch geography as well as different poison control centers that calls are automatically routed to. Some counties even have different helicopter “life-flight” zones representing different hospitals that provide separate regional services.

ESNs as Reporting Regions

Using ESN codes, it is very easy to tabulate where all emergency calls have been made. The ESN thus functions as a reporting tool, allowing the 9-1-1 CFS history to be reported on a map for a calendar year or other specified time period. Of course, the more detailed ESZ geography, the more informative the reporting. Map analysis of the 9-1-1 CFS history can be useful in planning the locations of future emergency facilities.

Civilian Use of MSAG

A civilian version of the MSAG with codes other than ESNs can be used for a wide range of purposes. Principally, the addressing guide is a handy tool for determining the geographic region where an address is found. These geographic regions can include commission districts, school districts, voting districts, flood plains, etc.

A sorted address listing by flood plain can allow users such as realtor to perform a quick but unofficial check on the location of a property. School district tables are also helpful for realtors.

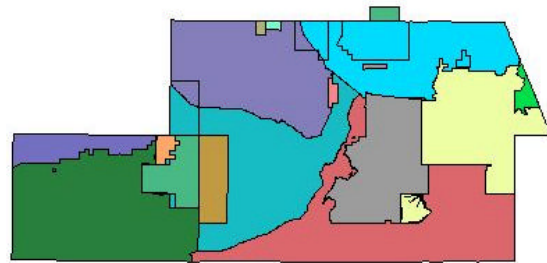


Figure 4. Cibola County with Commission Precincts

For new community residents, looking up an address to determine the voting precinct can save time and increase customer satisfaction.

Tips for Coding

Generally, the more physical features a boundary can follow, the better. Section lines, while common to mapping systems, are invisible boundaries, often without a fence or other physical reference. Of course, invisible boundaries cannot be found in the field.

You may run a boundary down the middle of a road, but this splits the coding into two polygons, the odd addresses in one polygon and even addresses into the other. This is acceptable in some circumstances, but it is more meaningful to split a road on a perpendicular feature such as a stream, power line, etc.

Summary

The techniques used to build an MSAG can also be used to create address guides for other government functions, reducing map requirements and easily sharing data with other users.