



Midland County E911 Addressing

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Program Background

- GIS implemented with an enterprise approach in 2006
- Initial development would be in support of public safety
 - These areas had money that to contribute to GIS
 - Emergency Management, Central Dispatch, Ambulance Services, Fire Departments
 - Public opinion would support developing new technologies that support public safety
- First major data development project was to acquire address points, roads, and supporting data layers



Need for County Addressing

Upon completion of a needs assessment concerning GIS, deficiencies were discovered in regard to addressing

- The lack of a address point layer
- Disparate data
 - Three different departments were maintaining a road layer
 - Roads with/out address range attributes
 - Multiple databases working independent of each other
 - Lack of spatial accuracy
- Existing data was not comprehensive enough to benefit departments that were looking to utilize GIS



County Addressing

Where to begin?

- Began by identifying what datasets existed vs. being developed from scratch
 - Address Points – did not exist
 - Roads – existing however limitations were inherent
- Evaluated current use of data to identify supporting datasets that may be beneficial to develop concurrently
 - Building Points
 - Driveways



Development of County Addressing

Assumed Benefits Gained

- Create comprehensive dataset that serves all the stakeholders
- Promote cost sharing amongst stakeholders
- Create an environment that advances community coordination
 - Gave opportunity for stakeholders to participate in the project
 - Not only on this project but also the stakeholders will gain the confidence to participate in future development
- Develop efficiencies in the business processes throughout the county



Overview

Overview of Point Address Development

- Develop effective project plan
- Spatially adjust road centerlines
- Field collect address locations
- QA/QC Routines/ Revisit Flagged Address Points



Planning

Develop partnership to promote effective planning that addresses all potential needs

- Review stakeholder needs (county, emergency services, central dispatch, mosquito control, etc.)
- Develop standards and best practices to meet needs
- Identify source data (imagery, parcels, other address data)
- Execute pilot or sample
- Modify process as required



Adjust Centerlines

Spatially adjust existing E 911 CAD centerline file

- Adjust centerlines to imagery to improve spatial accuracy
- Add new centerline segments where required and populate with appropriate E 911 attributes.
- Adjustment process does not modify existing E 911 data such as road name, prefix, suffix, range, response districts, etc.
- Spatial modifications that trigger changes to E 911 data are reported to Midland County for review and update.



Collect Addresses

Field collect address location and attribute information

- Field teams consist of Driver and Collection Tech
- Team drives roads and collects address points, building points and relevant attribute information
- Collection includes signage, shared driveways, field notes and more
- Post collection reviews made to identify potential errors that are flagged for second site field visit



Collection Tools

Address collection is conducted using a range of assets to improve efficiency and quality

- Collection device includes GPS unit logging to ArcGIS software on laptop computer
- Custom ArcGIS application used to streamline data entry, promote standards and force spatial relationships
- ArcGIS loaded with Road Centerlines, Aerial Imagery, Hydrology, Parcels and other relevant source data



QA/QC Routines

Automation, database checks and manual inspection used for QA/QC

- Defined process promotes standardization
- Automation provides consistency and spatial integrity
- Post processing flags any potential errors resulting from daily field collection
- Flagged errors visited second time for verification
- Final database checks and spatial relationships preformed



Considerations

- Understand the various systems that will utilize the data
 - ArcGIS Suites
 - CAD Software
 - Other Departments existing applications (RoadSoft)
- Define how data will be represented
 - Address points located at the intersection of the road centerline and the driveway
 - Offset the Address points if using Intersect function to notify correct emergency response units
 - Many Response boundaries are delineated by street centerlines, this may cause the CAD to incorrectly select the adjacent response unit



Considerations

- Addresses cont.
 - How to handle Apartments/Condo's etc
 - One point for each unit
 - One to one, One to Many?
 - House on the corner is addressed to one road yet the driveway comes off the other road
- Road centerlines
 - One line or two for divided highways
 - Overpass, will the line work intersect, consider future routing applications during the planning process
- Driveways, State Trails, Building Footprints, Roads in Adjacent Counties



Considerations

- Use of parcel layer can assist with properly assigning addresses to areas that have two or more houses on a single driveway
- What scale of addressing are you collecting
 - Residential, Businesses
 - Billboards, pole barns, field pumps
- Attributes
 - Number
 - Location of address
 - Shared Driveway



Benefits

- Field collection results in a comprehensive inventory and understanding of point address data
- Eyes in the field identify potential addressable structures, signage, shared driveways, utility infrastructure and other information not discernable using other sources
- Field collected information such as signage can provide foundation for mitigation strategies focused on improving emergency response



Questions

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