Improving Routing with Access Roads

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Overview

- Henrico Fire operates 21 stations and responds to over 50,000 calls for service annually

- Completed in-house by the GIS Office with close communication with Henrico Fire

- In discussion for over three years
Henrico County, VA
Henrico County, VA

- 330,000 people
- 245 mi²
- 2400 miles of roads
- 130,000 Addresses
- Urban and rural areas
Address distribution
Routing data

- Street centerlines & Addresses
  - Managed by GIS Office
  - Updated daily
- Network dataset
- Service consumed by CAD for routing
What is an Access Road?

“All potentially navigable roadway that does not have a street name and has no address range.”
Why create Access Roads?

- Routing issues reported from fire
  - Could not see the structure
  - Could not get to address from the road
  - Inefficient routing

- More robust road network
Problem Scenarios

1. Addresses closer to different street name
2. Long driveways (>150ft)
3. Complex parcels
Wrong ‘nearest street’
Long driveway
Long driveway
Complex parcels
Complex parcels
Categories

- Access road (default)
- Parking Lot Lane
- Unpaved Driveway
- Paved Driveway
- Alley
Process

- Pilot project
- Selected target features
  - Different street name
  - Long driveways
  - Complex parcels
- Removed vacant parcels
- Used aerial imagery and street centerlines to digitize
  - Current ortho and oblique imagery
Process

- Added Access Roads to network dataset
- Incorporated into CAD
- Worked closely with Fire during testing
- Expanded project to entire county
Tools
Nearest roads Model
Results
Results

- Added 615 miles of ‘Access Roads’
- About 10,000 segments
- Estimate 800 hours of work
- 6 people working on it
Results

- A great product (that was a lot of work)
- Work is not done - continuously updated dataset

“Access roads data has allowed for optimal efficiency in getting ambulances and fire trucks on scene quickly.”

-Henrico Fire
Questions