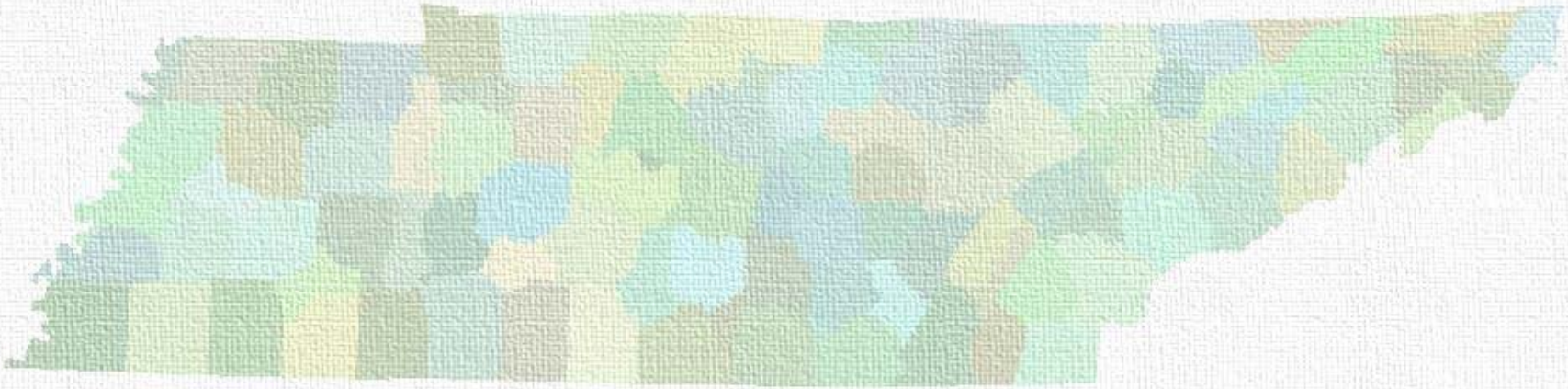
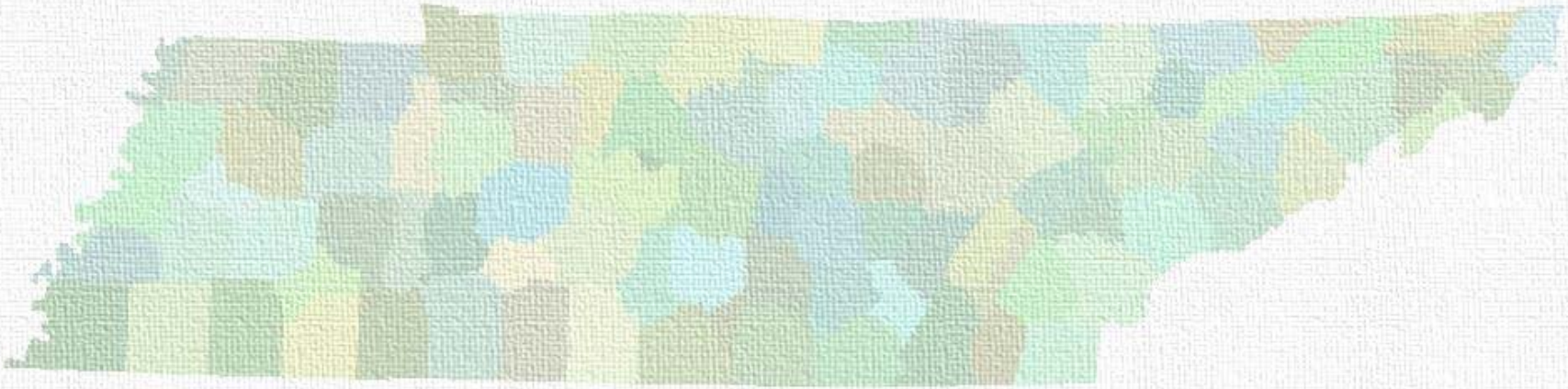


NEXT GENERATION 9-1-1 and GIS

Tennessee Information for Public Safety

Presented by OIR-GIS Services



Next Generation 9-1-1 and GIS

PROGRESS IN TENNESSEE

Building Relationships

- TN Emergency Communications Board (TECB)
  - Oversight and administration of 911 in TN
  - Established a partnership with OIR GIS Services in 2002
    - Local consumers and funding partners for TN Base Mapping Program
  - TECB GIS/Mapping Policies
    - 2004 – initiated funding to local emergency communication districts for developing/maint. GIS
    - 2005 – set deadline for local districts to have a functioning GIS (no statewide standard)
    - 2011 – required local districts to adopt TIPS GIS standards for NG911 (tied to local funding - $20K) and provide a copy/updates of data to OIR GIS Services

GIS and NG911

- Tennessee Information for Public Safety (TIPS)
  - GIS schema that conforms to National Emergency Number Association (NENA) Standards
    - Street Centerlines
    - Address Points
    - ESN Boundaries

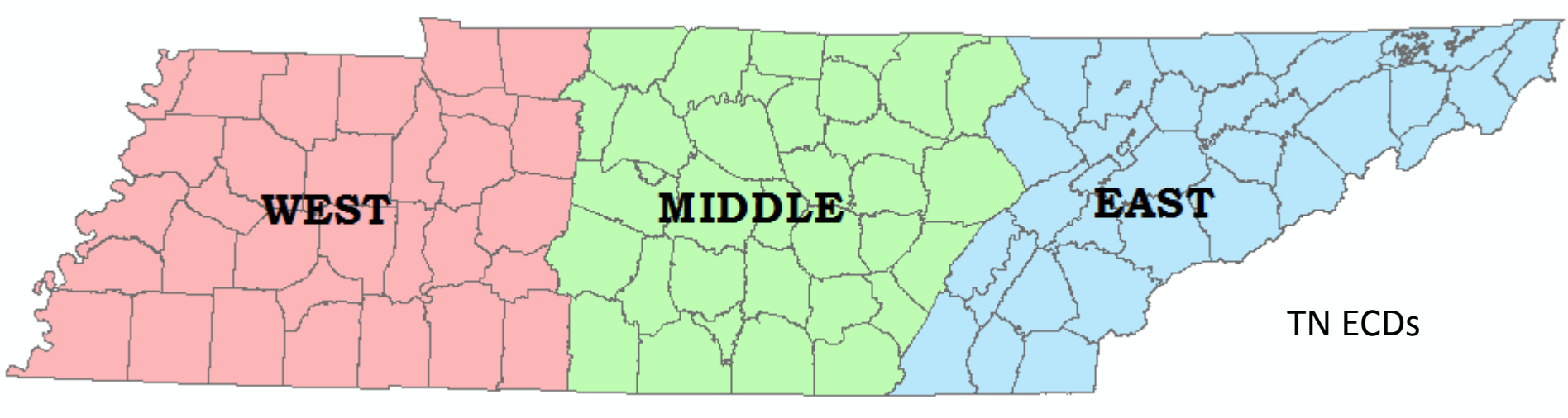
GIS and NG911

- TIPS Project Background
  - Due to the implications of GIS inaccuracies for NG911 the TN Emergency Communications Board (ECB) has adopted quality requirements based on NENA standards
  - TN ECB contracted with OIR GIS Services to administer the GIS portion of the project
  - 3 regional technicians were put in place to assist local emergency communication districts (ECD's)
  - Focus: Training/Education and enforcement of standards
- Since 2011
  - All 100 ECD's have converted local GIS data to the TIPS schema
  - A program has been installed in all ECD's to detect local changes which are sent weekly to OIR-GIS and loaded into a statewide SDE geodatabase

GIS for NG911

- Since 2011 - continued:
  - OIR GIS orchestrated Herculean task of matching all ESN (Emergency Service Number) boundaries
  - All 100 ECD's have seamless call routing (ESN) boundaries in State GIS database
    - Used for call routing only

GIS for NG911

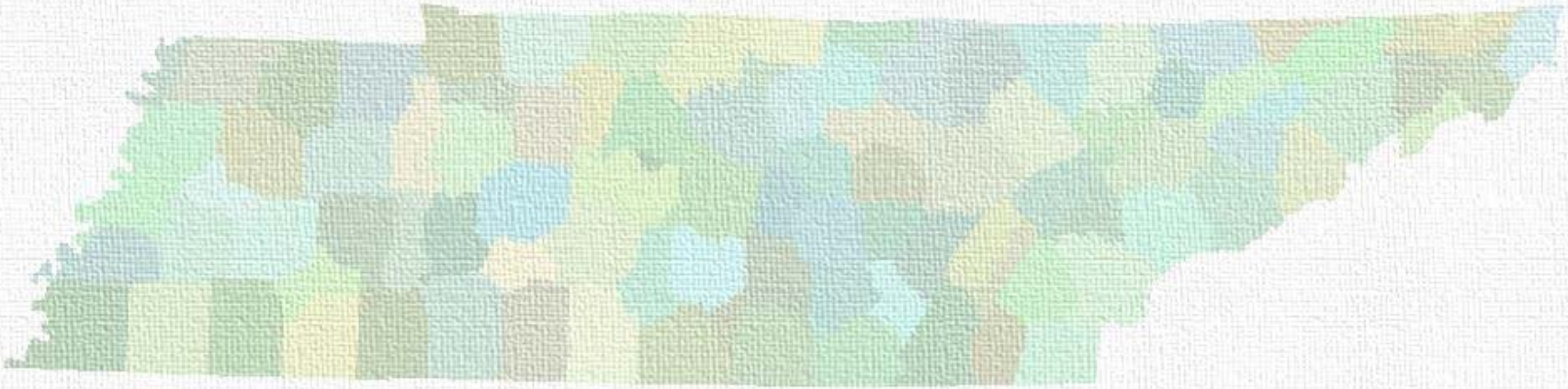


- The Stats:
  - 100 ECDs broken up by region
    - 94 counties
      - Overton and Pickett Co in Middle TN are combined into one district
    - 6 municipal ECDs
      - 5 of which are in East TN
      - 1 in Middle TN

GIS for NG911

- Future
  - The statewide TIPS geodatabase will be replicated between Nashville and Seattle/Phoenix
    - Phoenix is backup database
  - A company based in Seattle validates the address and street data against ALI records
  - Data then sent back to TN for use in 911 system
    - Used for initial call routing

NetTN TENNESSEE BROADBAND
The Options are Endless



Standards and QC Metrics

QUALITY STANDARDS

TIPS Feature Classes

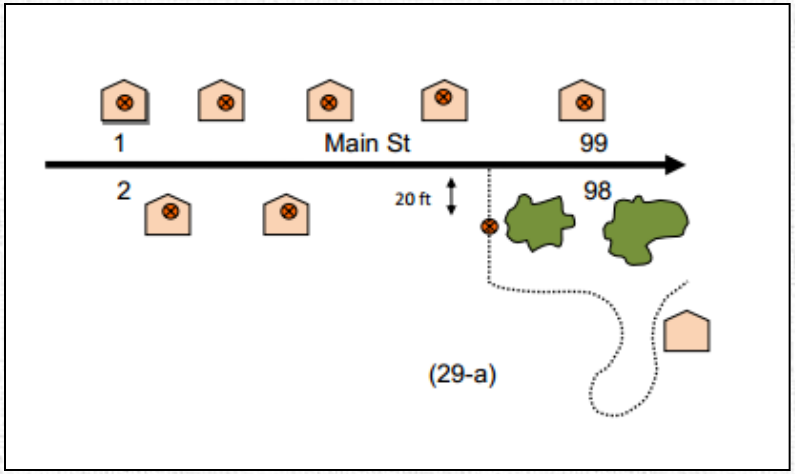
- Address Points and Centerlines
  - Maintained by local districts
  - Updates/changes sent weekly via ETL process and integrated into statewide SDE geodatabase
- ESNs
  - Changes directed by ECDs via interactive website
    - Updated as needed
  - Edits maintained by State
    - Not all districts have ability to maintain topology

Quality Standards

- Street Centerlines Must:
  - Fall within 10 feet or less of the centerline 95% of the time as visible in ortho photography
  - Accurately reflect block address ranges as related to address points
  - Match the ALI (Automatic Location ID) database to a 98% rate
  - Have abbreviations of all street prefixes, suffixes incorporated according to NENA standards
  - Be split at each intersection, and each segment shares a beginning or end node
  - Be split at ESN call routing boundaries, city boundaries, county boundaries, and attributed with respective information
    - OIR-GIS has created a centerline ESN intersection point dataset showing each location where a centerline crosses from one ECD to another according to the agreed upon call routing boundaries
    - All centerlines should be snapped to these intersection points, creating a seamless statewide centerline dataset

Quality Standards

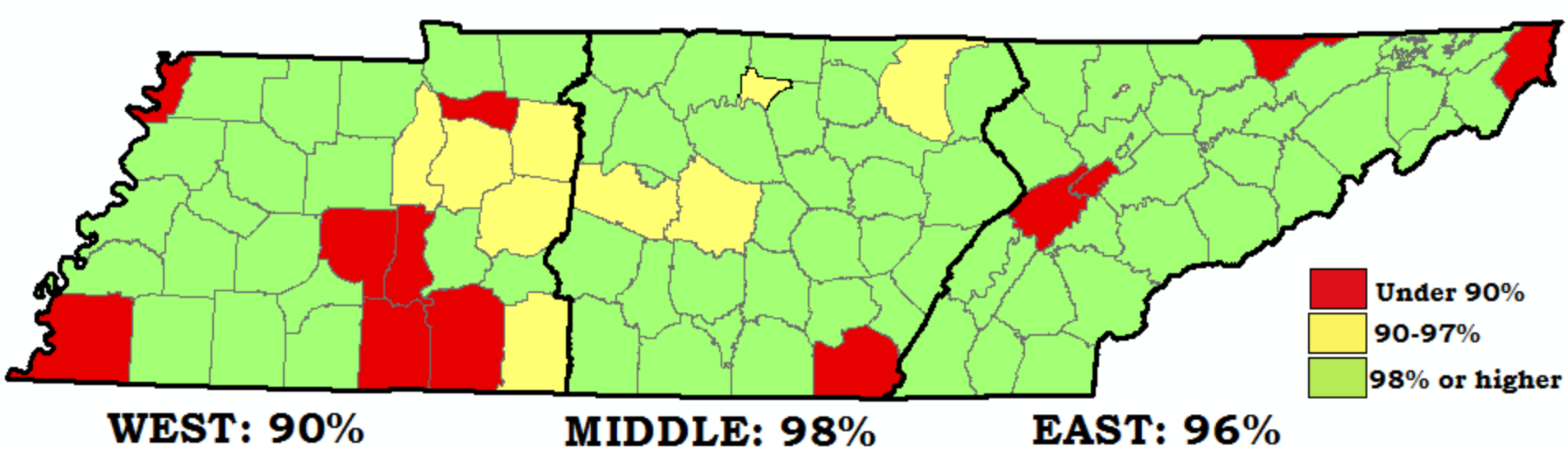
- Address Points Must:
  - Be located either on the structure or on the driveway
  - Have unique attribution, such as address number or sub address (128 A Monroe St)
  - Match ALI to a 98% or higher rate



Quality Control Process

- We run quality checks on the data
  - ECD's are using these to improve the overall quality of their local GIS data
- Quality checks:
  - Address Anomalies: Compares centerlines to addresses
  - Hi Low and Parity Anomalies: Check centerline address ranges
  - Address Overlaps: Check centerline ranges for overlaps
  - Topology
  - Compare ALI (Automatic Location ID) table to centerlines
  - Compare ALI table to address points
- ALI comparisons are currently top priority

Current Progress



- ALI to Centerline comparison on 10/01/2013
  - Overall average is 95%
- ALI to Address points comparisons are just beginning
  - Insufficient data to create map
  - ECDs directed to be at 98% or higher by 12/01/2013

Timetable for NG911 Rollout

- 12/1/2013
  - 98% match for centerlines/points to ALI database
- 12/1/2013 – 3/1/2014
  - Test/Implement GeoDB replication between Nashville and Seattle (TCS)
- 3/1/2014
  - Target date for initial NG911 rollout

Other Uses for TIPS

- Dept of Transportation
  - TIPS geometry used to update TRIMS database for Map 21 and HPMS requirements – work in progress
- TNMap enterprise GIS geocoding service
  - Used primarily by State agency ArcMap users
- Geocoding/Mapping to support GIS Web Apps
- Broadband Mapping: working with ConnectedTN
- US Census – initial discussions re: TIGER/LUCA

Thanks!