

# GIS Preparation for NG911



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# Welcome!

What questions or concerns  
do you have about GIS for NG911?



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# Topics

- E911 GIS Needs
- NG911 Needs
- Kansas GIS Standards
- NENA GIS Standards
- Attribute Discussion
- Mapping Issues Discussion
- Conclusions



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# Previous NG911 Study - Kentucky

“Unlike the previous stages of 9-1-1 services that were centrally focused on the geography and operations of a single PSAP, NG9-1-1 necessitates the development and implementation of a seamless set of lines and polygons that span entire states and regions.”

The Commonwealth of Kentucky, August 1, 2009, NG9-1-1 Standards Report



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# Previous NG911 Study - Kentucky

“To be successful, there will need to be a highly accurate set of street centerlines and jurisdictional boundaries that are coordinated on a statewide level.”

The Commonwealth of Kentucky, August 1, 2009, NG9-1-1 Standards Report



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# Previous NG911 Study - Kentucky

“The PSAP’s will continue to have a central focus on the geographical features with their jurisdiction... Their critical responsibility however, is to recognize that their datasets are no longer standalone – they are part of a much larger mosaic that collectively represents their state and/or region.”

The Commonwealth of Kentucky, August 1, 2009, NG9-1-1 Standards Report



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# E911 GIS Needs

- Required:
  - Street Centerlines
  
- Optional (Helpful):
  - Address Points
  - Orthophotography



# E911 GIS Additional Layers

- Optional (System Dependent):
  - Response Polygon
    - 1 Emergency Service Number (ESN) layer OR
    - 3 (or more) EMS, Fire, Law Enforcement
  - Water features
  - Point layers (schools, hospitals, etc)
- Sometimes TIGER data and not very accurate or helpful to the dispatchers





# NG911 GIS Needs

- Required:
  - Street Centerlines
  - Emergency Service Data (combination of Emergency Service Agency Location and ESZ)
  - Site/Structure/Building (Address Points)



# NG911 GIS Needs

- Optional (Helpful):
  - Orthophotography
  - Cell Site Coverage Layer
  - Cell Site Location



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# NG911 GIS Needs

- Optional:
  - Hydrology
  - Railroad
  - Mile Marker
  - Highway Exit/Entrance
  - Electric Line
  - Petroleum/Natural Gas Lines and Shut Off Valves
  - Water Main
  - County Boundary
  - Zip Code Boundary
  - Municipal Boundary
  - Landmarks/Significant Structures
  - Building Footprints



# GIS Standards - Kansas

- Digital Color Orthophotography
- Hydrography
- Addressing Standard (includes Centerline)
- Utility
- Cadastral (not necessary for 911)
- Administrative Boundary



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# GIS Standards - NENA

- Centerline (USPS Publication No. 28 – Appendix C1)
- Railroad
- Hydrology
- Emergency Service Agency Location
  - Law, Fire, EMS
- Cell Site Location
- Mile Marker Location
- Site/Structure Location

NENA 02-010, Version 8.2, June 10, 2009

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# GIS Standards - NENA

- County Polygon
- Emergency Service Zone Boundary
- Municipal Boundary
- Emergency Service Agency Boundary
- Cell Site Coverage

NENA 02-010, Version 8.2, June 10, 2009



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# GIS Standards - NENA

- Orthophotography
- Satellite Imagery
  - National Map Accuracy Standard

NENA 02-014, Issue I, July 17, 2007



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# Known Issues between E911 and NG911 GIS Data



- Incomplete or Missing Attributes/Fields
  - Due to NOT being required within a E911 system
- Feature Overlap/Gap/Duplication
  - High between jurisdictions



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# NEW Attributes for NG 9-1-1

- ESN Left/Right
- Zip Code Left/Right
- Postal Community Name Left/Right
- County Name Left/Right



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# Centerline Fields

- Low Address Left / Right
- High Address Left / Right
- Prefix Directional
- Street Name
- Street Suffix
- Post Directional
- Road Class
- One Way
- Postal Community Name Left / Right
- Postal Code/Zip Code Left / Right
- MSAG Community Name Left / Right
- ESN Left / Right
- Segment ID
- County Name Left / Right
- County Code Left / Right
- Source of Data
- Date Updated
- Unique ID



# Address Points

- Site ID
- Site Address Number
- Street Name
- ESN
- MSAG Community Name
- Site Type
- Left/Right
- Source of Data
- Date Updated
- Unique ID



# ESN Boundaries

- Agency Name
- Unique ID
- Agency Type
- Agency ID
- Route
- ESN
- Source of Data
- Date Updated
- Effective Date
- County Name



# Standardization will...

take longer than  
we think...



Start  
NOW!



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# Mapping Issues

- Overlaps
- Gaps
- Duplicate Features



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# Mapping Issues - Overlap

ESN Boundary

Area "exists" in both counties

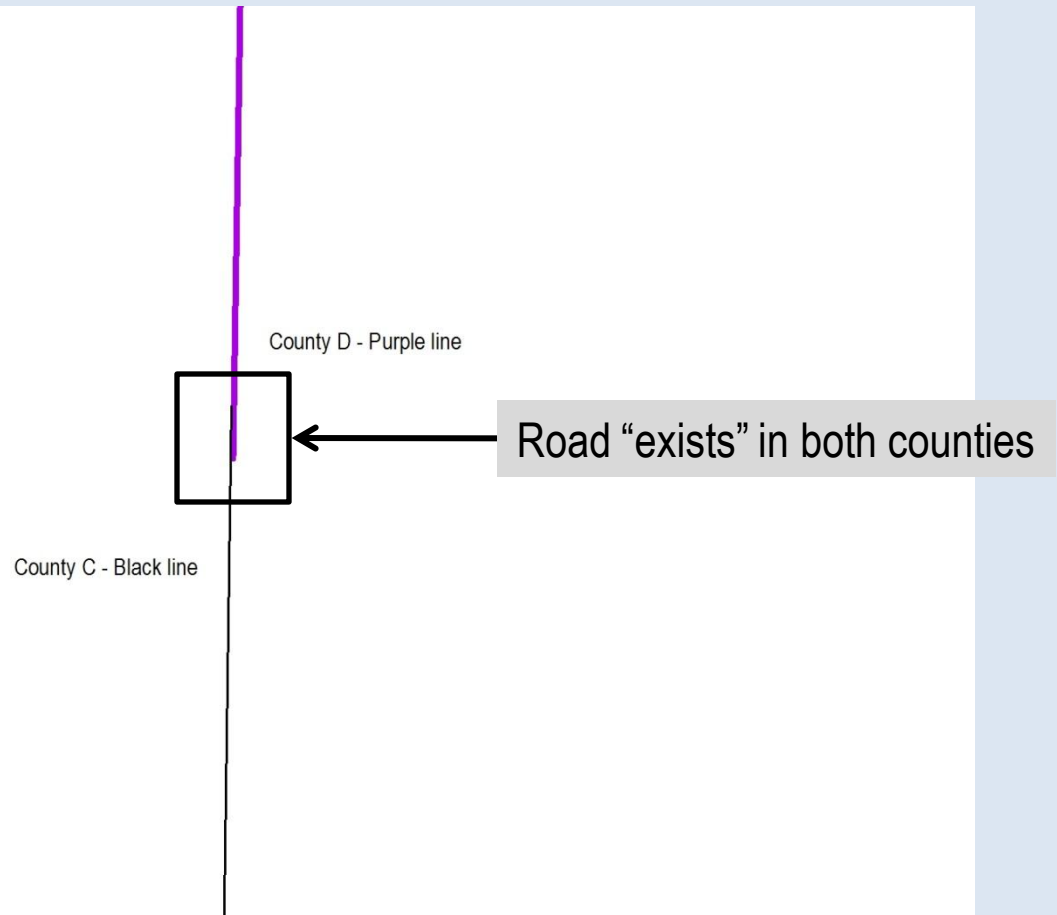
County A - Red line

County B - Green line



# Mapping Issues - Overlap

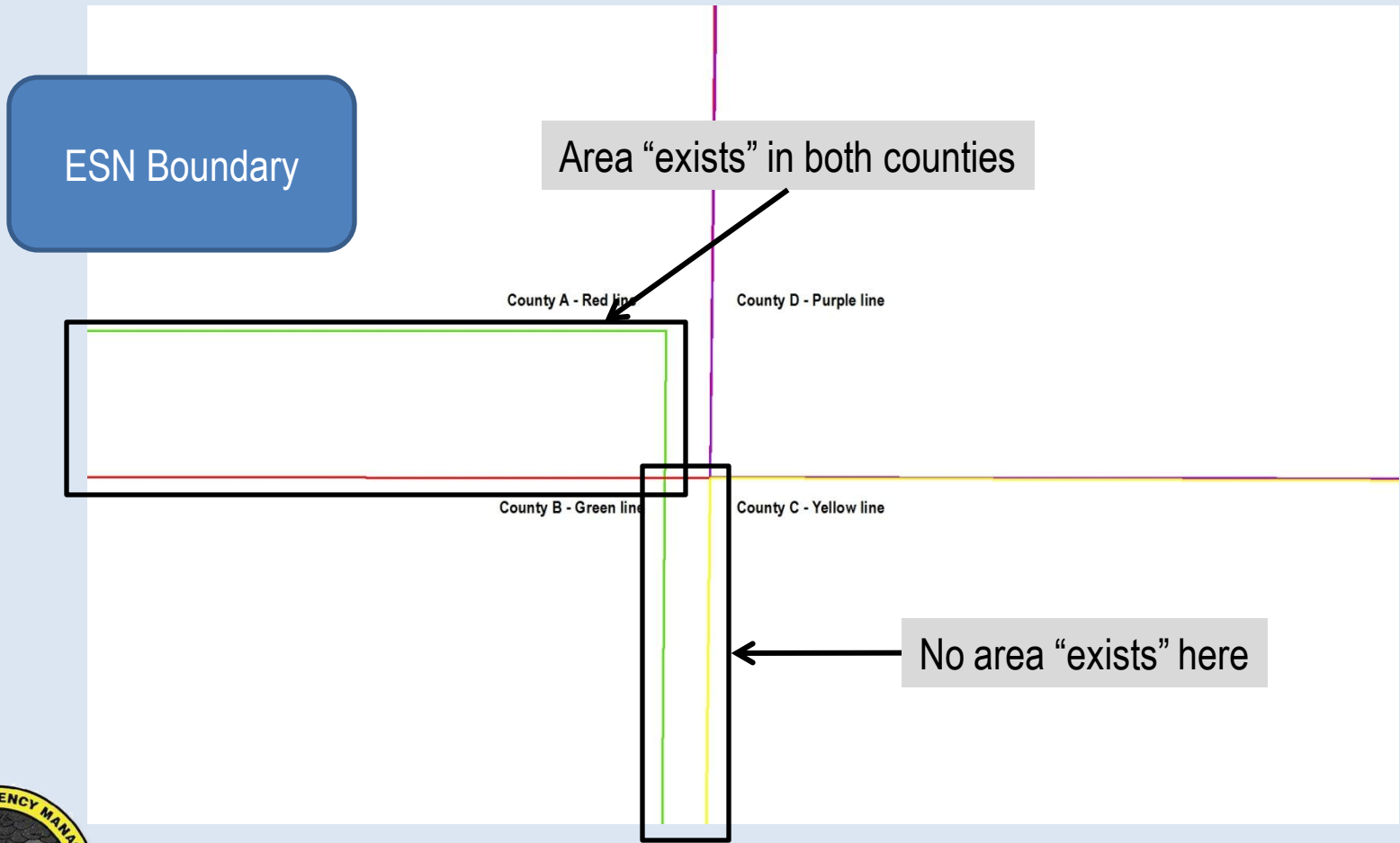
Centerline



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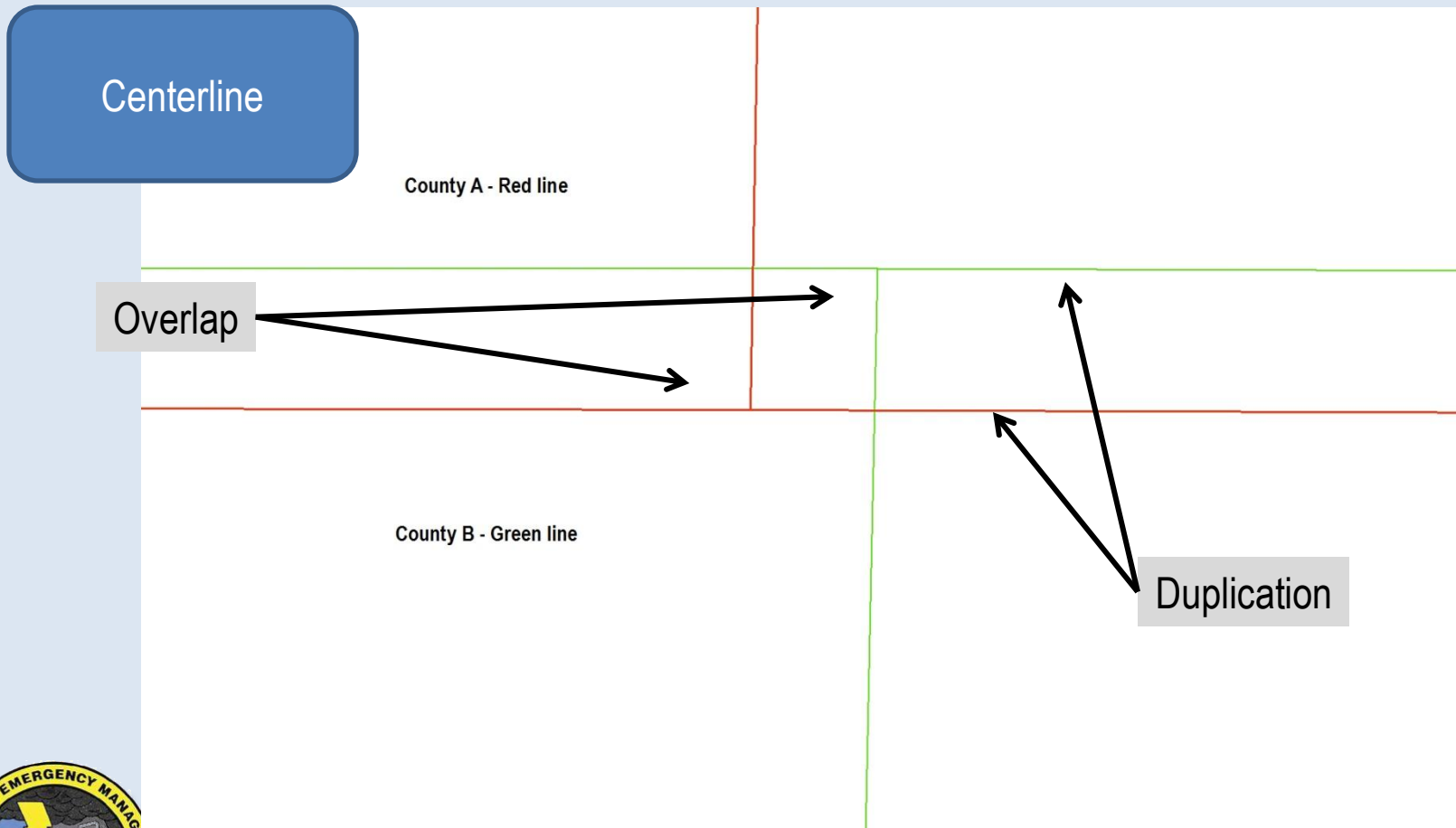


# Mapping Issues – Gap & Overlap



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# Mapping Issues - Duplication



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# Conclusion

- A ton of work is in OUR future!
- Don't panic...no estimate on when NG 9-1-1 will be fully implemented
- NENA standards must be shared with GIS/9-1-1 communities at the local level AND training **MUST** be provided



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# Conclusions

- Synchronization of current GIS data with MSAG and TN Listing must happen soon
- The 911 Coordinating Council **MUST** provide GIS standards to local jurisdictions and vendors ASAP
- Council should consider vetting GIS vendors and provide an approved vendor list



# NENA Documentation on GIS

- 02-010 v8.2 Data Formats for ALI, MSAG & GIS
- 02-014 – GIS Data Collection & Maintenance
- 71-501 – Synchronizing GIS with MSAG & ALI
- 71-001 v1 – NG9-1-1 Additional Data
- NENA NG 9-1-1 GIS Standards should be released soon for public comment





# Thank You!

Jessica Frye

GIS Coordinator

Kansas Adjutant General's Department

785-274-1610

[jessica.p.frye@us.army.mil](mailto:jessica.p.frye@us.army.mil)



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