PSAP Boundary Development

PSAP Boundary Layer

- 2019 NG911 GIS strategic plan priority
- Who is responsible
- Support from PEMA
- When do we need it

NG911 system for 911 call delivery

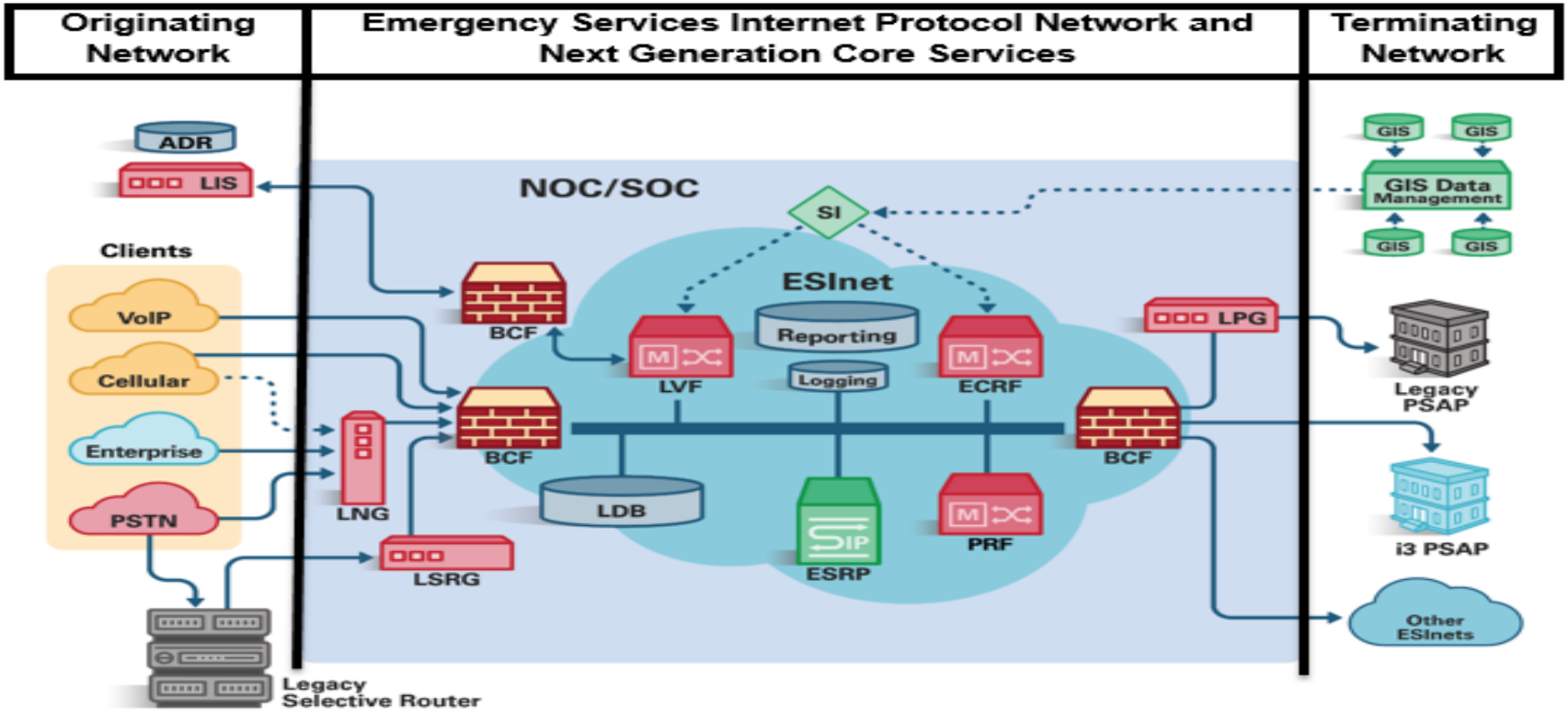

Figure 1. Commonwealth of PA Logical NG911 System Model

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NG Core Services

The National Emergency Number Association (NENA) i3 architecture standard for NG911 provides the structure of software elements and related databases that define NGCS functionality. The NGCS define the core services that are needed to process an emergency call on the NG911 network.

- Location Validation Function (**LVF**) for validation of location information against geographic information system (GIS) information
- Emergency Call Routing Function (**ECRF**) and Emergency Call Routing Proxy (**ESRP**) for call routing and call processing
- Border Control Function (**BCF**) for security and control of the 9-1-1 calls and information presented to and from the ESInet
- Other elements supporting policy routing, logging, bridging, and other IP services.

NENA GIS Data Model

- NENA NG911 GIS Data Model (Required Layers)
  - PSAP boundaries
  - Emergency service boundaries
  - Road Centerlines
  - Site/Structure Address Points
  - Provisioning boundaries

PSAP Boundary

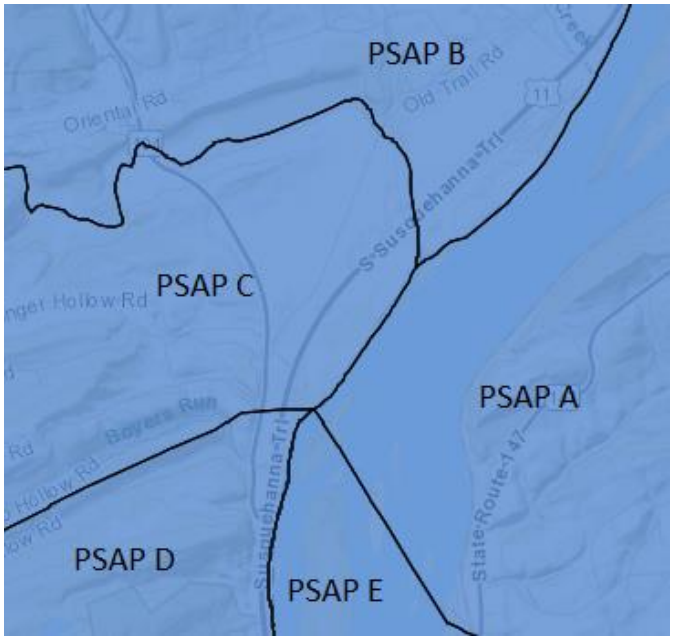
- The primary use for the PSAP boundary is to route 911 calls in an NG911 environment
- It is a functional boundary
- Defines the geographic area of a PSAP that has primary responsibilities for an emergency request
- May contain data for one county, multiple counties, or partial areas of one or more counties
- Used by the ECRF to determine the primary PSAP for an incoming 911 call
- Topologically clean (no gaps, no overlaps, no slivers)

PSAP Boundary Schema

- Based on NENA GIS Model
- Fieldname, descriptive name, Type, Width
- Mandatory or Optional
- Some fields may be populated after the NG911 service provider is selected

PSAP Boundary Development

- Coordination and Collaboration
  - 911 coordinators or designee
  - Neighboring county 911 coordinators or designee
  - Regional work group
  - PEMA
- Common Boundary
- Coordination Layer
- Ask Questions
- Offer Help



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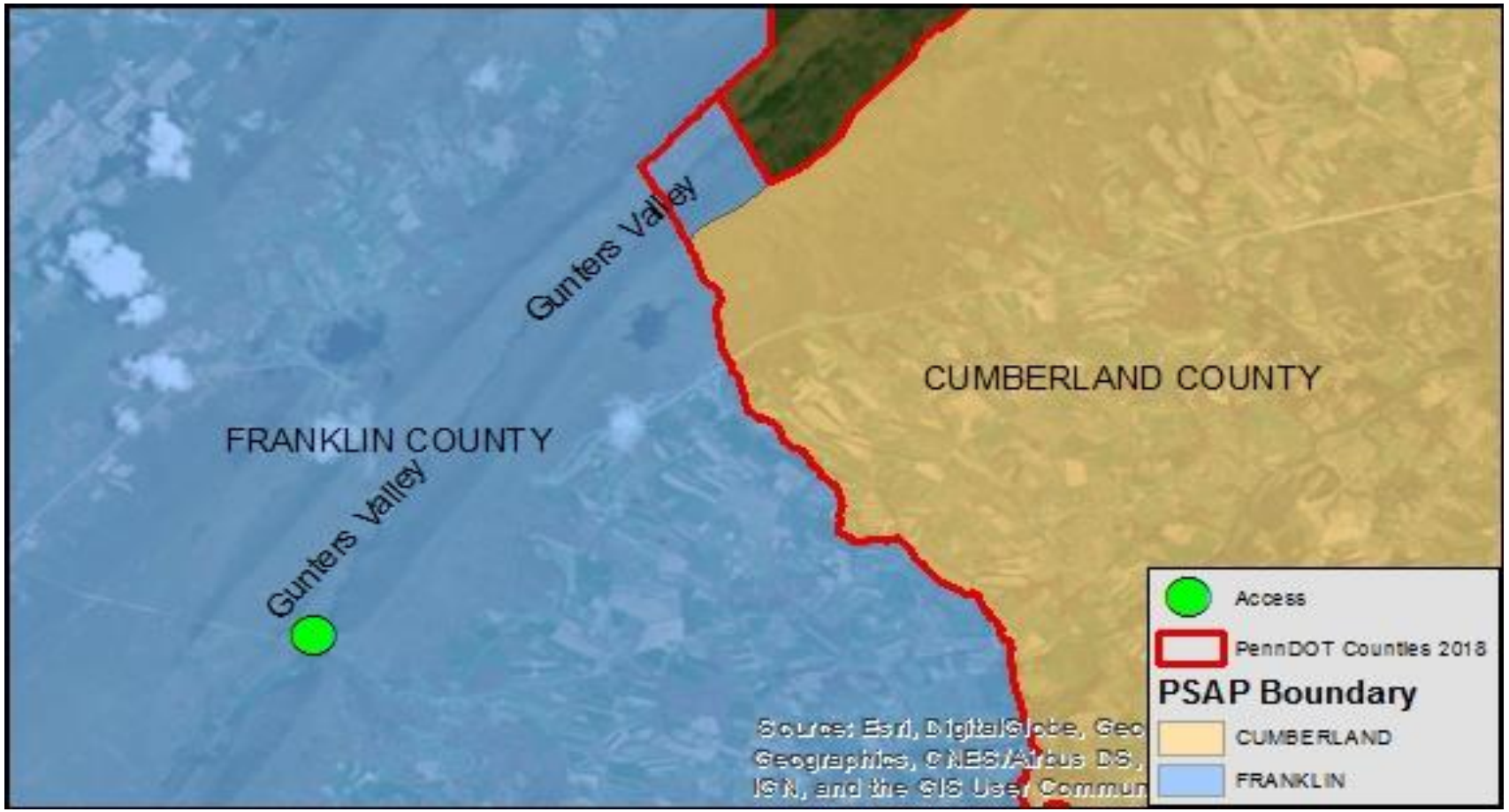
PSAP Boundary Delineation

- Extent based on MSAG, call area, legacy wireline telecommunication boundaries such as local exchange carriers (LEC) or Local access transport area (LATA) boundaries
- Radio dispatch coverage area
- CAD2CAD agreement
- Natural or manmade geographic features like mountain ridges, water bodies, levees etc.

Use Case



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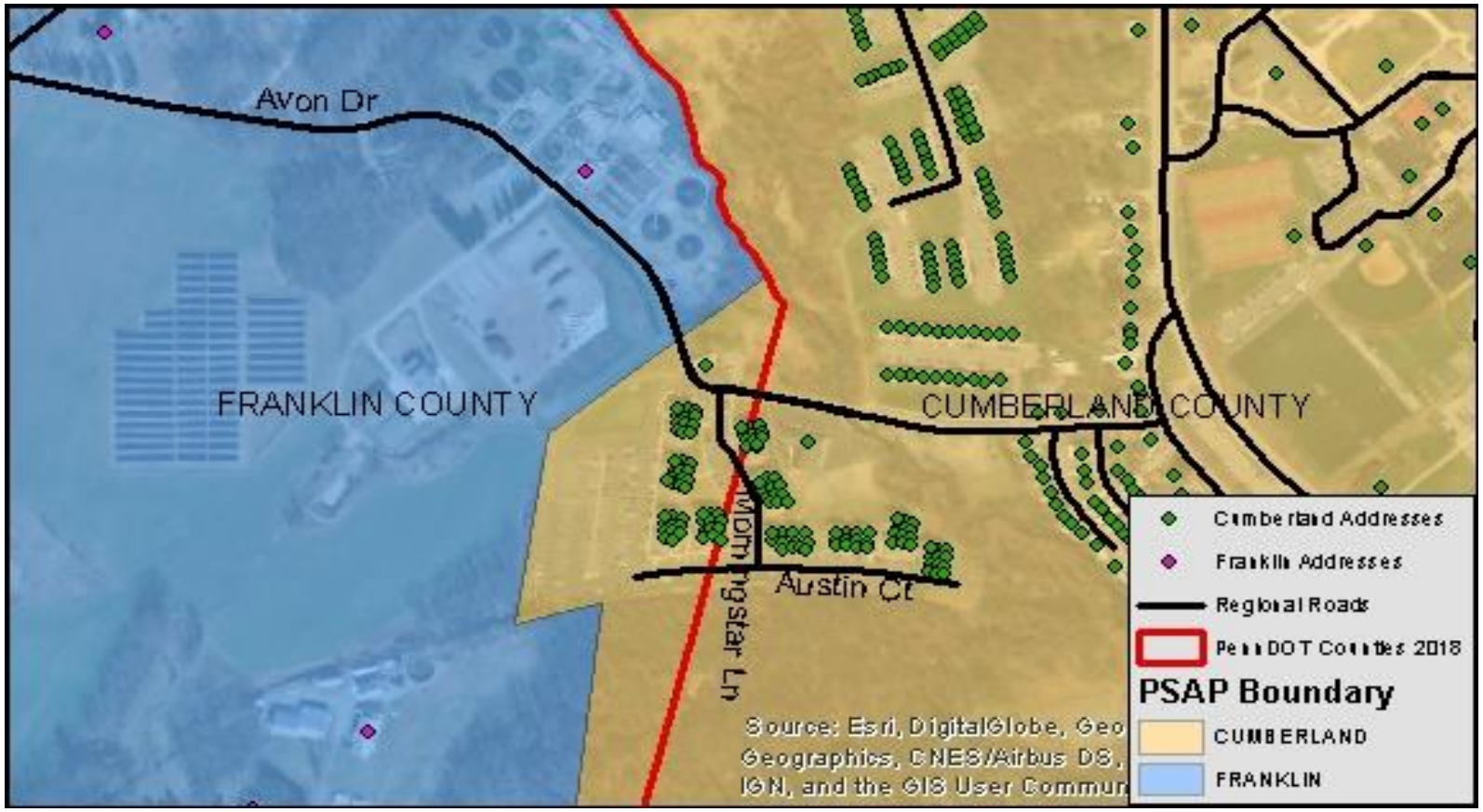
Use Case



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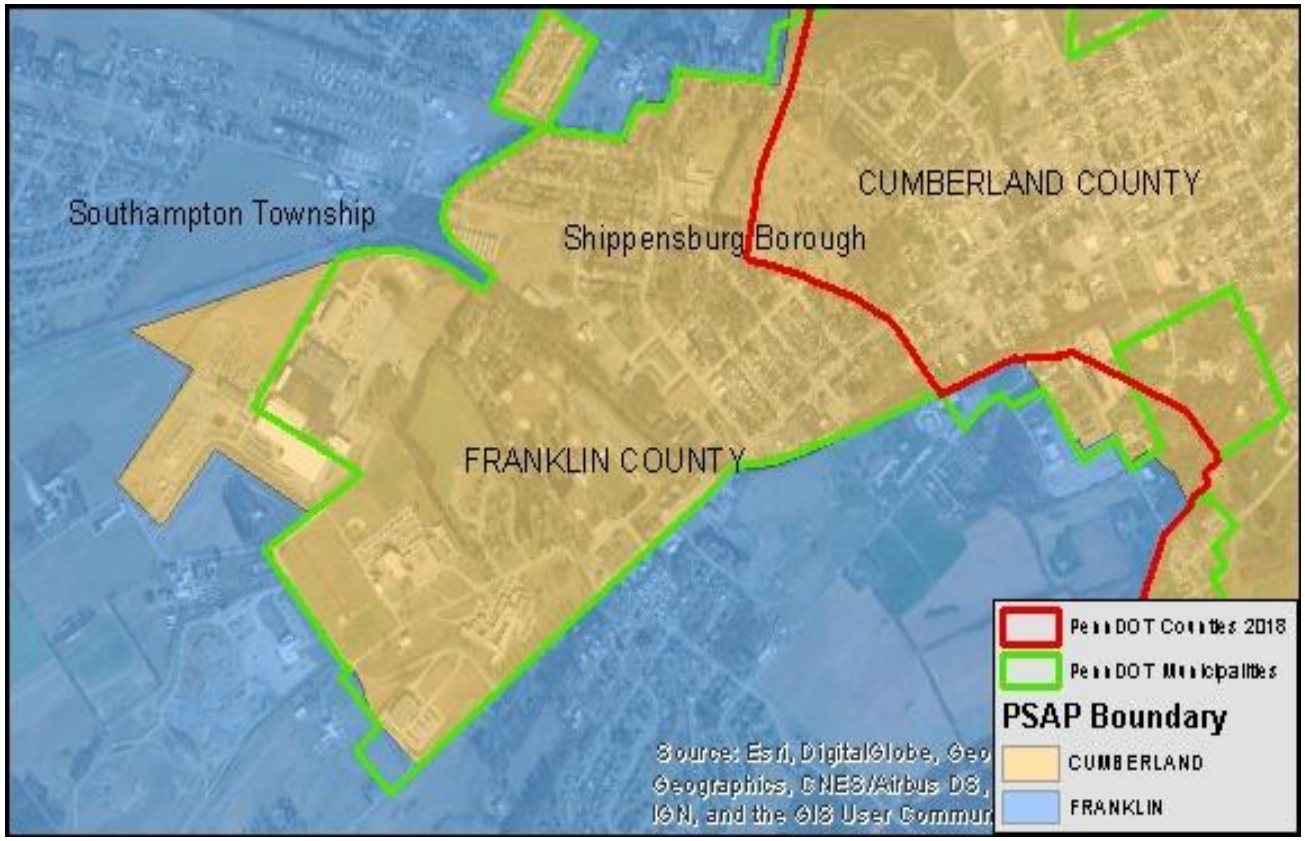
Use Case



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Phased Approach

- Initial development
- Refinement
- Preparing for NG911 requirements
- Long term maintenance

Things to remember

- Takes time and Resources
- PSAP boundary is functional
- Coordination and collaboration is critical
- There will be exceptions
- Its an Iterative process
- We learn as we develop

References

- NENA Standard for NG911 GIS Data Model (NENA-STA-006.1-201X) https://dev.nena.org/higherlogic/ws/public/download/13408/NENA-STA-006%20NG911%20GIS%20Data%20Model_SFN.pdf
- NENA Standards for the Provisioning and Maintenance of GIS data to ECRF and LVFs (NENA-STA-005.1.1- 2017) https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/NENA-STA-005.1.1-2017_ECRF-L.pdf
- NENA GIS Data Collection and Maintenance Standards (02-014) https://cdn.ymaws.com/www.nena.org/resource/resmgr/Standards/NENA_02-014.1_GIS_Data_Colle.pdf

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