GIS in the NG9-1-1 Environment

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Why GIS in NG9-1-1 Environment

- Current analog telephone system is being replaced by IP digital network
  - Legacy 9-1-1 must be replaced
- NG9-1-1 will utilize GIS spatial data to locate callers
- Transformation to NG9-1-1 requires commitment, support and coordination from multiple players
  - Local
  - Regional
  - State
  - Vendors

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What's Current and What To Expect

- Some of the earliest GIS began in the mid 80's
- Recent GIS in several jurisdictions came about due to the implementation of Enhanced 9-1-1 in the late 90's to the last deployment in 2014
- Various levels of GIS in the Commonwealth
  - Stand alone departments with several employees
  - Part time employee with various duties
  - Contractor
- GIS spatial data will be critical to processing 9-1-1 calls in the NG9-1-1 environment

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9-1-1 Ecosystem
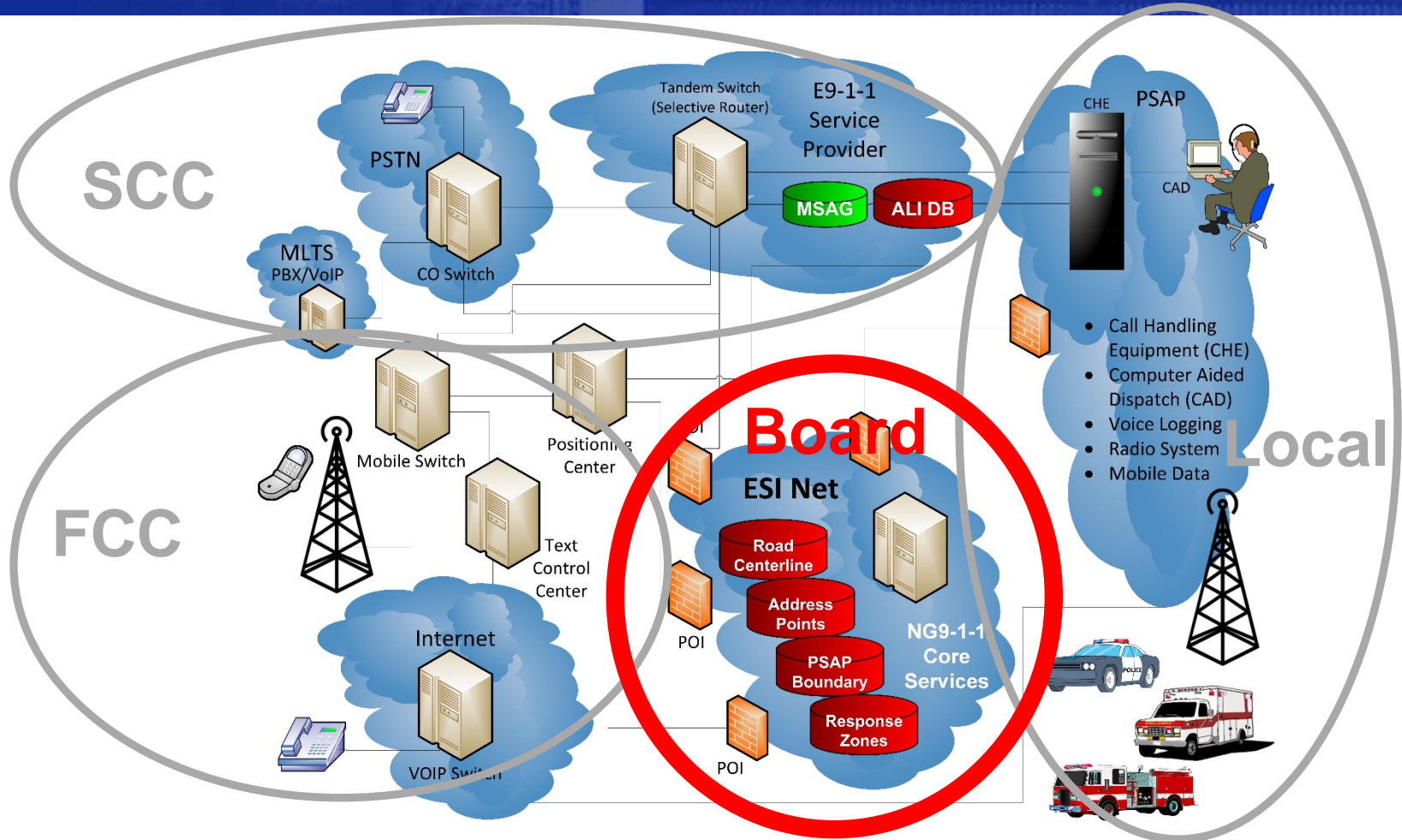
Role of GIS in 9-1-1; Present & Future

9-1-1 System	How GIS is Used?	Quality of GIS Data Needed	How Often Should GIS Data Be Updated?
Present; Every Jurisdiction in the Commonwealth is Serviced by Enhanced 9-1-1	• Creating Addresses • Locating 911 Callers • Locating CAD Incidents • AVL • Unit Recommendation	Preferred – Near Perfect, But Not Necessary	As Frequent as Possible
Future; NG9-1-1	• Creating & Maintaining Addresses • 9-1-1 Call Routing & Delivery • Service Order Validation	Critical – That GIS 9-1-1 data is Near Perfect	Near Real-Time

Role of GIS in NG9-1-1

- Your locality's 9-1-1 Center & GIS Department are critical components in today's 911 and the transition to NG9-1-1

- Mapping data and location information across jurisdictional boundaries will be critical to processing NG9-1-1 callers

- Data must be current and accurate

- Appropriate resources must be available for the success of NG9-1-1

- GIS will be MISSION CRITICAL

Core GIS Components to NG9-1-1

1. PSAP Coverage Boundary
   - May or may not be the same as the county/city boundary
   - There are many existing sources for boundary data
   - The boundary adoption/creation is a collaborative response among responders, PSAP & GIS for 9-1-1 call routing
2. Road Centerlines (RCL)
3. Address Points
   - Building Footprints

Boundaries for NG9-1-1

- Boundaries for NG9-1-1 are for routing the 9-1-1 call to the correct PSAP
- Don't get this confused by associating this with tax parcels, voter registrar or other boundaries
- Agreed upon PSAP boundaries without voids and overlaps are needed across the Commonwealth and between bordering states
- Regional agreement
- VITA ISP Regional Coordinators can assist in coordinating boundary workshops

![VITA — Virginia Information Technologies Agency]

Road Centerlines for NG9-1-1

- Need Aggressive Maintenance of GIS data at the locality

- VITA collects RCL data

- RCL will be a core component in NG9-1-1

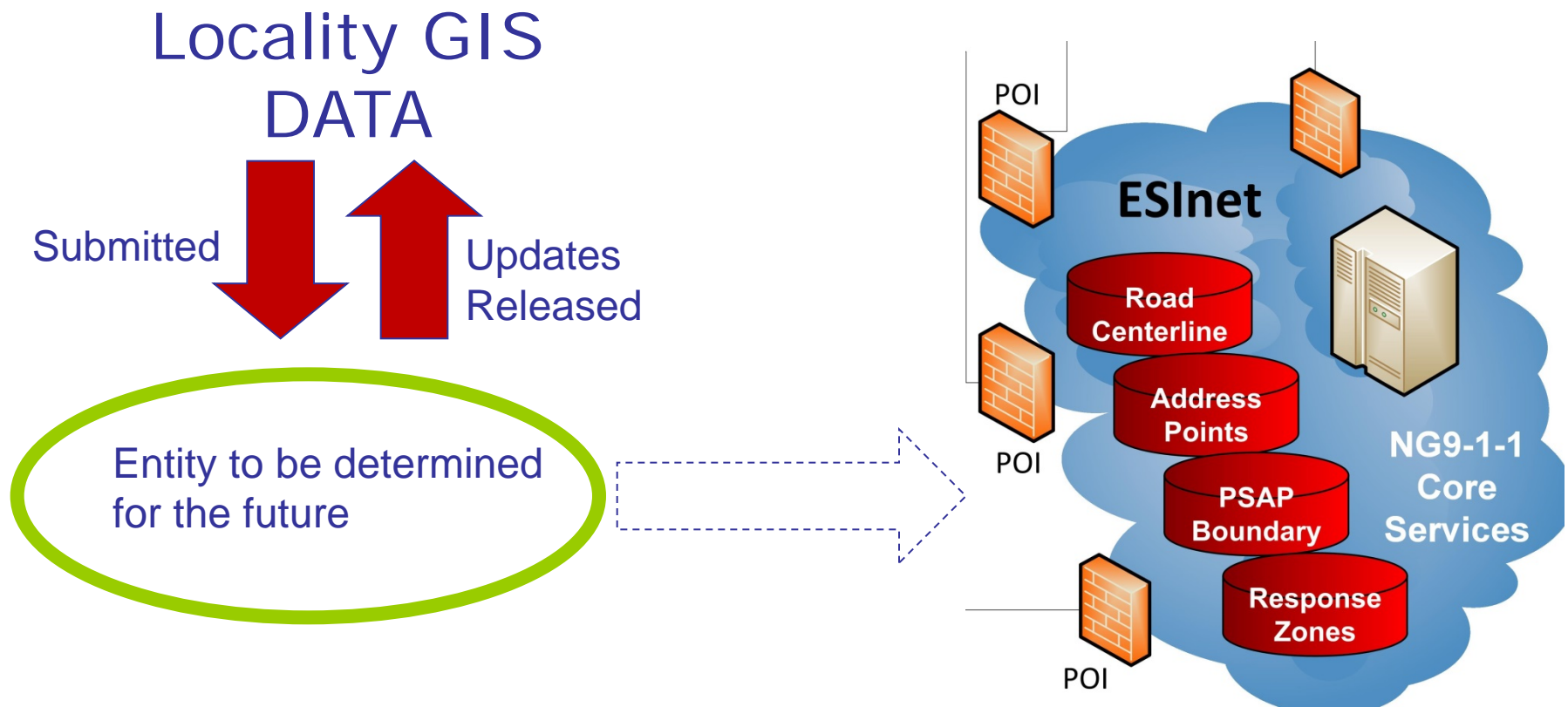- Maintenance of RCL locally and submission to NG9-1-1

Address Points

- Locality created address points are submitted to ISP GIS Analysts
- Every addressable structure should have an address point
- Address point layers serve many purposes in the 9-1-1 world
  - Routing 9-1-1 calls to the correct PSAP
  - Plotting 9-1-1 call locations on a map
  - Providing valuable attribute information to emergency response personnel

Address Points Continued

- Information on <u>Addressing Best Practices</u> may be found on the VITA-ISP website

- Some jurisdictions may have multiple addressing authorities

- Coordination of addressing authorities will be necessary to insure consistency, avoid duplication insure updates are made, etc...

- Review and update local ordinances and/or processes for assigning addresses if necessary

Update Process

Locality GIS DATA

Submitted

Updates Released

Entity to be determined for the future

POI

POI

POI

ESInet

Road Centerline

Address Points

PSAP Boundary

Response Zones

NG9-1-1 Core Services

Is Your GIS Data READY For NG9-1-1

- GIS Health Checkup

- MSAG-ALI-GIS Analyses
  – MSAG-Master Street Addressing Guide
  – ALI-Automatic Location Identifier
  – GIS- (Road Centerlines and Address Points)
- Conducted by VITA-ISP and also is available from various vendors

Data Analyses

- Analysis necessary to determine if the locality GIS data is ready for use in a NG9-1-1 environment
- What the Results Include:
  - Reports on data matches
  - Inconsistencies for review
  - Mapped results of analyses
- Review and data correction is a local responsibility
  - VITA can assist
  - Check with your Regional Coordinator for grant opportunities

After The Analysis Is Completed

- Workflows are necessary to resolve any inconsistencies identified

- Make improvements
  - Data development and/or data cleanup

- Ongoing maintenance is CRITICAL
  - Organizational coordination workflows
    - Data creation, transformation, aggregation, submission
    - QA/ QC (checking, reporting, correcting)

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Conclusion

- NG9-1-1 is still evolving, but there are actions that need to be started now

- Perform a MSAG/ALI/GIS Analysis and correct data, as necessary

- Ensure processes and workflows provide the best data possible

- Begin discussions of PSAP Boundaries with neighboring localities

- Stay involved in the process

GIS Steering Committee

![Virginia Information Technologies Agency]

Mission Statement

The purpose of the GIS Steering Committee is to develop/collect materials that provide education about, promote and support the use of GIS in Virginia local governments, focusing on support for NG9-1-1, through a structure that is appropriate for the jurisdiction and most effectively uses GIS technology.

Committee Structure

- Steering Committee
  - 7 Members
    - 5 GIS Managers
    - 1 County/City administrator
    - 1 Vendor
- Feedback Workgroup
  - 7 Members
    - One from each ISP region
    - Variety of jurisdiction sizes and GIS systems
- Working on the top 5 highest priority tasks

Questions

Regional Coordinator's Coverage Areas

Legend
- RC Regions
- **ISP Regions**
  - 1 (Keys)
  - 2 (Ozeki)
  - 3 (Various)
  - 4 (Addington)
  - 5 (Hornbaker)
  - 6 (Parsons)
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