



*Virginia Information Technologies Agency*

# NG9-1-1 Town Hall Meeting for Contractors

VITA Integrated Services Program

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Chester, Virginia

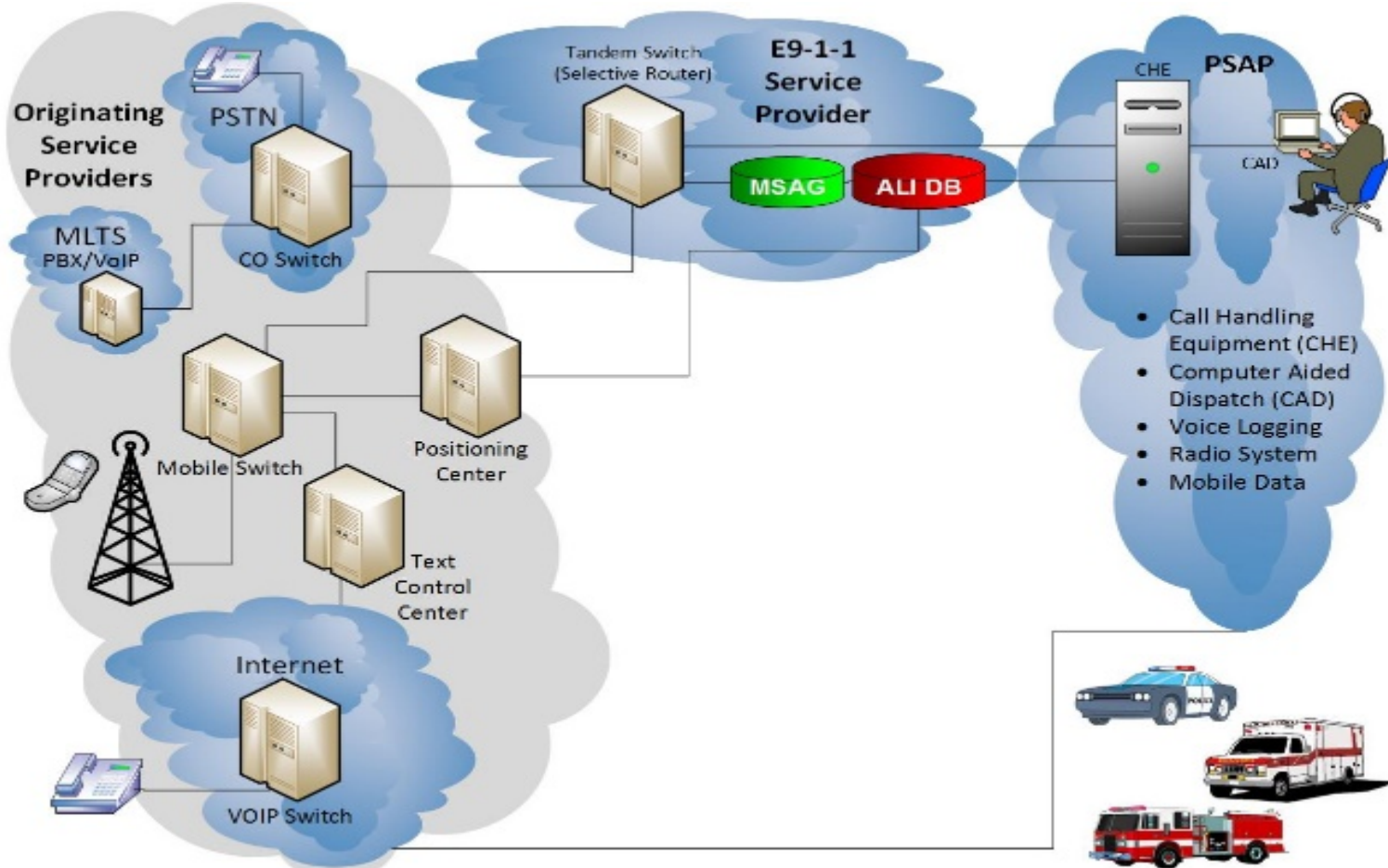
March 8, 2018



# Agenda

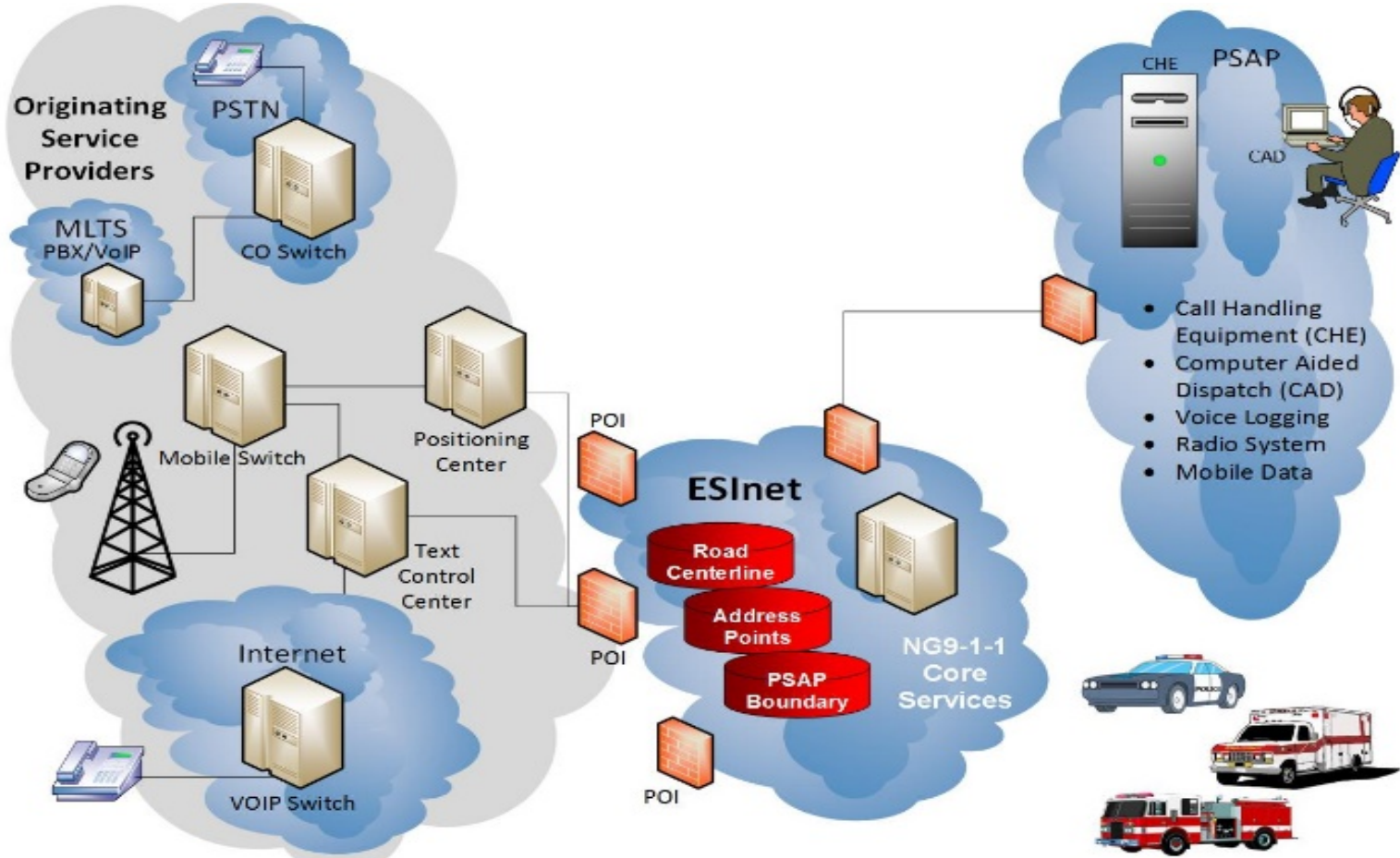
- Welcome and Introductions
- Deployment Plan & Scheduling
- AT&T Solution & Contract Vehicle
- PSAP/GIS Migration Proposal
- GIS Data Preparation
- Next Steps
- Guiding Principles

# Legacy E9-1-1 Network



- Call Handling Equipment (CHE)
- Computer Aided Dispatch (CAD)
- Voice Logging
- Radio System
- Mobile Data

# NG9-1-1 Network





## Deployment Plan

- Local decision what to deploy
- Fairfax County contract with AT&T recommended
- VITA will not be conducting another RFP
- Deployment needs to be by selective router region to manage costs
- 36-month deployment by population
- Significant preparatory work may be required



# Deployment Plan

(continued)

Selective Routers	9-1-1 Service Provider	Population
Fairfax/Alexandria	Verizon	2,494,184
High St Portsmouth/Jefferson	Verizon	1,662,247
Stuart/Chester	Verizon	1,660,182
Staunton/Salem	Verizon	453,065
Charlottesville/Farmville	CenturyLink	403,369
Fredericksburg/Winchester	Verizon	343,031
Blacksburg/Norton	Verizon	340,101
Johnson City/Wytheville	CenturyLink	338,311
Danville/Lynchburg Church St	Verizon	320,247
Shenandoah County ECC	Shentel	43,175
Covington	Ntelos	21,556
New Castle	TDS Telecom	5,158
Monterey-Highland Telephone	Highland Telephone	2,216



# Deployment Plan

(continued)

- Gantt chart

ID	Task Name	Q4 17				Q1 18			Q2 18			Q3 18			Q4 18				Q1 19					
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar				
1	Develop State Level Plan	█																						
2	Socialize State Level Plan with Stakeholders					█																		
3	Board Approval of Plan																							
4	Develop PSAP Specific Plans					█																		
5	Outreach/Education					█																		
6	NG9-1-1 Deployment Decision											█												
7	Funding Requests/Determinations											█												
8	NG9-1-1 Deployments																		Continue through 2022 →					



# Deployment Plan

(continued)

- Overall Budget
  - Transitional costs – limited in duration

Category	Amount
NG9-1-1 non-recurring cost	\$476,000
Special construction costs	\$31,830,516
GIS data preparation	\$3,246,226
Originating service provider (OSP) transition cost	\$5,000,000
Legacy 9-1-1 service provider transition costs	\$5,000,000
Project management assistance	\$1,750,000
Data analytics expansion	\$59,500
Total	\$47,362,242





# Deployment Plan

(continued)

- Overall Budget
  - Recurring costs – annual ongoing costs

Category	Amount
NG9-1-1 recurring costs	\$10,749,443
Originating service provider (OSP) recurring cost	\$5,000,000
Data analytics recurring costs	\$561,404
Total	\$16,310,847

- Sufficient funding exists within \$69M planned by the Board, borrowing authority and existing local funding



# Deployment Plan

(continued)

- 9-1-1 is a local service so decision is local
- Local decision impacts neighboring localities, entire state and surrounding
- Use of Fairfax County contract only a recommendation
- Locality can issue own RFP for services
- VITA will not be conducting a procurement
- Still much to learn
- PSAP migration proposal next major step



# Schedule

Selective Routers	9-1-1 Service Provider	Population	Time Period
Fairfax/Alexandria	Verizon	2,494,184	4Q-2018
High St Portsmouth/Jefferson	Verizon	1,662,247	2Q-2019
Stuart/Chester	Verizon	1,660,182	4Q-2019
Charlottesville/Farmville	CenturyLink	403,369	2Q-2020
Fredericksburg/Winchester	Verizon	343,031	2Q-2020
Danville/Lynchburg Church St	Verizon	320,247	2Q-2020
Staunton/Salem	Verizon	453,065	4Q-2020
Shenandoah County ECC	Shentel	43,175	4Q-2020
Covington	Ntelos	21,556	4Q-2020
New Castle	TDS Telecom	5,158	4Q-2020
Monterey-Highland Telephone	Highland Telephone	2,216	4Q-2020
Blacksburg/Norton	Verizon	340,101	4Q-2021
Johnson City/Wytheville	CenturyLink	338,311	4Q-2021



## AT&T Solution

- Selected by Fairfax County through Competitive Procurement
- Extensive ESInet experience
- Implements NENA i3 standard
- Nationally distributed, geodiverse system
- Six core solution using West technology
- Additional aggregation points including one in Northern Virginia
- Comprehensive in-state Carrier POIs

# AT&T Solution

(Continued)

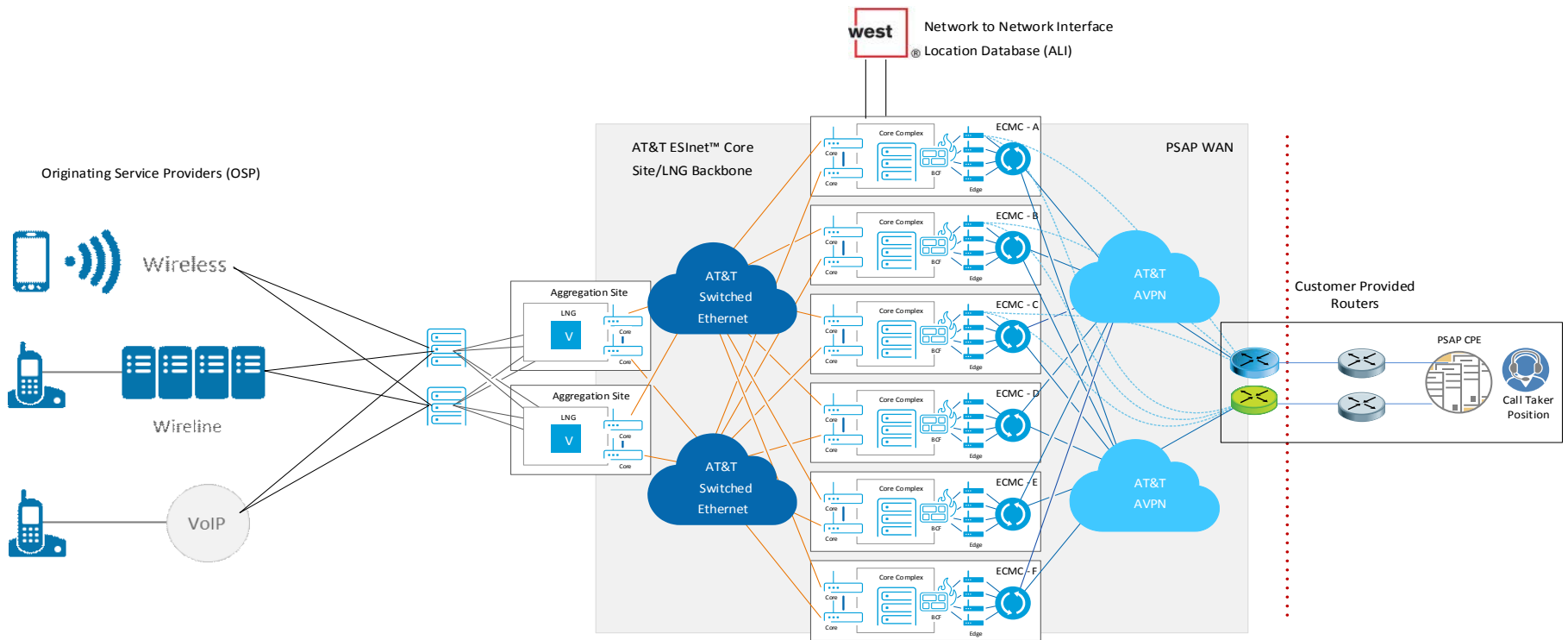
- Services based
- End-to-end management
- 99.999% available
- No single point of failure
- Redundant ALI database
- Interim Solutions





# AT&T Solution

(Continued)





# AT&T Solution

(Continued)

## Legacy Premise Gateway

- This solution uses SIP for Voice to the PSAP Gateway.
- Gateway converts the media to CAMA and is passed off to the PSAP.
- PSAP would use a legacy ALI dip.
- ALI dip would use the standard Serial connection (in this case to the ESInet routers) to retrieve ALI/ESN ELT information.

### PSAP IMPACTS

- No impacts to PSAP call handling
- No impacts to PSAP operations

## Transitional SIP (RFAI)

- This solution uses SIP for voice.
- The ESInet router hands off to the PSAP LAN/WAN equipment (Router or firewall)
- The CPE receives the voice via SIP.
- The PSAP would use a legacy ALI dip.
- This dip would use the standard Serial connection (as above) to retrieve ALI/ESN ELT information.

### PSAP IMPACTS

- Call handling CPE hardware and/or software upgrades may be required
- Call handling CPE SIP software license may be required
- No impacts to PSAP operations
- RFAI (Request for Assistance Interface) provides a transitional step from legacy environment to an IP environment.
- (ESIF-NGES-2009-028R17.doc)

## i3

- This solution uses all the i3 standards for Voice and Data
- 9-1-1 call routing is based off the customer provided GIS data.
- The ESInet router hands off to the PSAP LAN/WAN equipment (Router or firewall)
- The CPE receives voice via SIP
- Location data delivered via SIP using PIDF-LO, and would perform all the i3 protocols such as LoST and HELD.

### PSAP IMPACTS

- Call handling CPE hardware and/or software upgrades may be required
- Call handling CPE SIP software license may be required
- Call handling demarcation router and/or firewall may be required
- Other operational impacts



# AT&T Solution

(Continued)

Selective Routers	2018		2019		2020		2021		2022
	Q2	Q4	Q2	Q4	Q2	Q4	Q2	Q4	Q2
Fairfax/Alexandria									
High St Portsmouth/Jefferson									
Stuart/Chester									
Charlottesville/Farmville									
Fredericksburg/Winchester									
Danville/Lynchburg Church St									
Staunton/Salem									
Shenandoah County ECC									
Covington									
New Castle									
Monterey-Highland Telephone									
Blacksburg/Norton									
Johnson City/Wytheville									





# PSAP Migration Proposal

- Collaborative Effort
  - Local PSAP/GIS/IT
  - VITA
  - AT&T/E9-1-1 Service Provider/CHE Maintenance
- Delayed or Cancelled if PSAP RFP
- Provides all information to PSAP about costs/funding, process and schedule
- Intended to help PSAP determine how this solution would be provided



# PSAP Migration Proposal

(continued)

- Sections of Plan
  - PSAP Systems (CHE, CAD, etc.)
    - Identifies current versions, etc.
    - Assess NG9-1-1 readiness and required upgrades
  - GIS Data Preparation
    - Updated ALI/MSAG/GIS analysis
    - Spatial Interface process
    - Administrative Readiness
  - Call Routing
    - Method of Routing
    - Geospatial routing readiness



# PSAP Migration Proposal

(continued)

- Sections of Plan

(continued)

- Network

- Redundancy/Diversity
    - Special construction required
    - Schedule of deployment

- Cost Estimates/Funding

- Non-recurring
    - Recurring
    - Projected funding from the Board



## GIS Data Preparation

- Virginia GIS standards
  - Address Points, Road Center Line, PSAP and Emergency Service Boundaries
- ALI / MSAG / GIS
  - 2016 / 2018
  - 98% agreement / match rate
- Authoritative GIS provider designation
- PSAP Boundary agreement



## GIS Data and Call Routing

- GIS data transfer to service provider
- Service provider *provisions* GIS data to functional elements
  - Location Validation Function (LVF)
  - Emergency Call Routing Function (ECRF)
- ECRF uses location of caller to determine correct PSAP
- Ongoing data maintenance



## Next Steps

- VITA/AT&T to start meeting with PSAPs
  - PSAPs with diversity issues
  - Starting with first to deploy in March
- MSAG/ALI request to Verizon/CenturyLink for updated analysis
- Draft PSAP migration proposal delivered as completed
- NG9-1-1 Deployment Decision
- Support and outreach thru entire process



## Guiding Principles

- 9-1-1 is an essential, local/regional, public safety service
- Need to address ALL of 9-1-1 not just NG
- Full stakeholder engagement is needed
- Services must not be degraded
- Economies need to be leveraged
- Doing nothing is NOT an option