



# The Next Generation 9-1-1 (NG9-1-1) Next Steps, Options and Your Decision





# Challenges to Existing 9-1-1 System

- 9-1-1 now
  - Nine, independent networks
  - Limited ability to process data
  - Decades old technology
  - CORE ANALOG TECHNOLOGY IS GOING AWAY
- Evolving telecommunications
  - Multiple service providers/technologies
  - New technologies/applications continually developed
  - Increased flexibility/mobility of citizens



## What is Next Generation 9-1-1?

- NG9-1-1 is the solution to existing challenges
  - Migration from circuit (analog) to packet switched (IP) technology
  - Unified network among PSAP; data transferability
  - Required to meet the demands of new telecommunications technologies
- Makes data available
  - About the caller, the incident, and among PSAPs and first responders



## Migration to NG9-1-1 in Virginia

- Has begun
  - Fairfax County and AT&T contract
    - Deployment of an ESInet and NG9-1-1 core services
    - Contract available to all localities
    - Recommendation of VA 9-1-1 Services Board
- Choice of NG9-1-1 provider is a local decision
- Code of Virginia section 56-484.16 requires migration by July 1, 2023



# Planning and Recommendation

- NG9-1-1 Migration Proposal
  - VITA-ISP developed document based on the Fairfax County contract
  - Includes information on:
    - The AT&T solution
    - PSAP's existing systems and readiness for NG9-1-1 deployment
    - Description of network availability, redundancy and diversity for each locality
    - Associated costs and financial support offered by the Virginia 9-1-1 services board



## Benefits of the AT&T ESInet™

- Nationally distributed architecture
  - Increased reliability of the network
- Interoperability among PSAPs
  - Allows data transfer with calls
- Integrated text to 9-1-1
- Dedicated Network Operations Center, management team and support
- Customer management portal
  - Initiate alternate routing plans
- Able to support future media; photos & video



## Role of GIS in NG9-1-1

- One of the most time consuming efforts of moving to an NG9-1-1 system will be the preparation of GIS data
  - Used to provide location validation and routing of 9-1-1 calls to the appropriate PSAP
- Synchronization of the MSAG with the GIS centerline and address point data
- MSAG/ALI analysis
  - 98% match rate goal
  - Other quality measures
- Utilizing internal resources where available



# Proposed Deployment Schedule

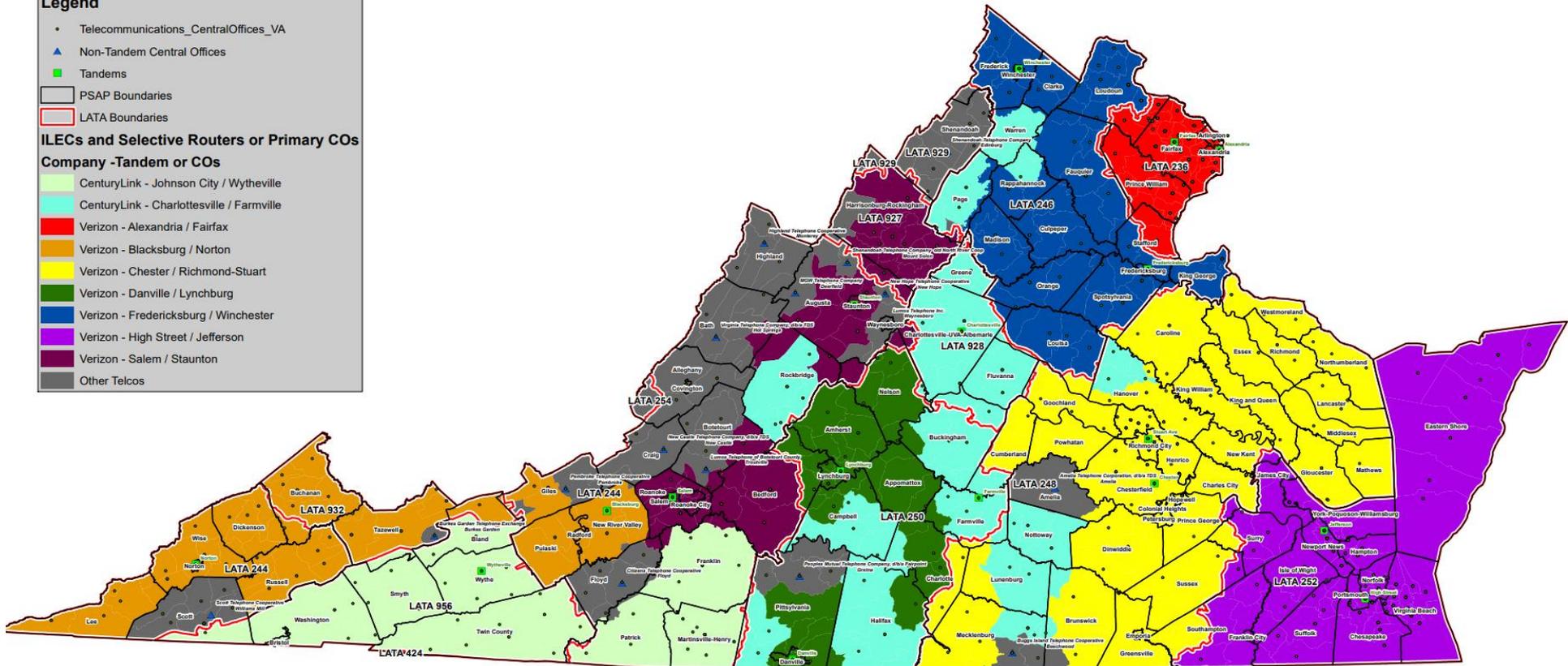
**Legend**

- Telecommunications\_CentralOffices\_VA
- ▲ Non-Tandem Central Offices
- Tandems
- PSAP Boundaries
- LATA Boundaries

**ILECs and Selective Routers or Primary COs**

**Company -Tandem or COs**

- CenturyLink - Johnson City / Wytheville
- CenturyLink - Charlottesville / Farmville
- Verizon - Alexandria / Fairfax
- Verizon - Blacksburg / Norton
- Verizon - Chester / Richmond-Stuart
- Verizon - Danville / Lynchburg
- Verizon - Fredericksburg / Winchester
- Verizon - High Street / Jefferson
- Verizon - Salem / Staunton
- Other Telcos





# Proposed Deployment Schedule

Selective Routers	Provider	Population	Time Period
Fairfax/Alexandria	Verizon	2,494,184	January 2019 – June 2019
High St Portsmouth/Jefferson	Verizon	1,662,247	July 2019 – December 2019
Stuart/Chester	Verizon	1,660,182	January 2020 – June 2020
Charlottesville/Farmville	CenturyLink	403,369	July 2020 – December 2020
Fredericksburg/Winchester	Verizon	343,031	July 2020 – December 2020
Danville/Lynchburg Church St	Verizon	320,247	July 2020 – December 2020
Staunton/Salem	Verizon	453,065	January 2021 – June 2021
Shenandoah County ECC	Shentel	43,175	January 2021 – June 2021
Covington	Ntelos	21,556	January 2021 – June 2021
New Castle	TDS Telecom	5,158	January 2021 – June 2021
Floyd County	Citizens	15,651	January 2021 – June 2021
Monterey-Highland Telephone	Highland Telephone	2,216	January 2021 – June 2021
Blacksburg/Norton	Verizon	340,101	July 2021 – December 2021
Johnson City/Wytheville	CenturyLink	338,311	July 2021 – December 2021



## Deployment Funding

- Equipment and systems
  - Funding provided by the 9-1-1 Board
- Connectivity
  - Funding provided by the 9-1-1 Board
- Legacy 9-1-1 charges
  - Covered by the 9-1-1 Board
- Monthly recurring charges
  - Difference between current and future charges covered by 9-1-1 Board for 24 months

» Refer to your migration proposal for specific costs



# NG9-1-1 Budget

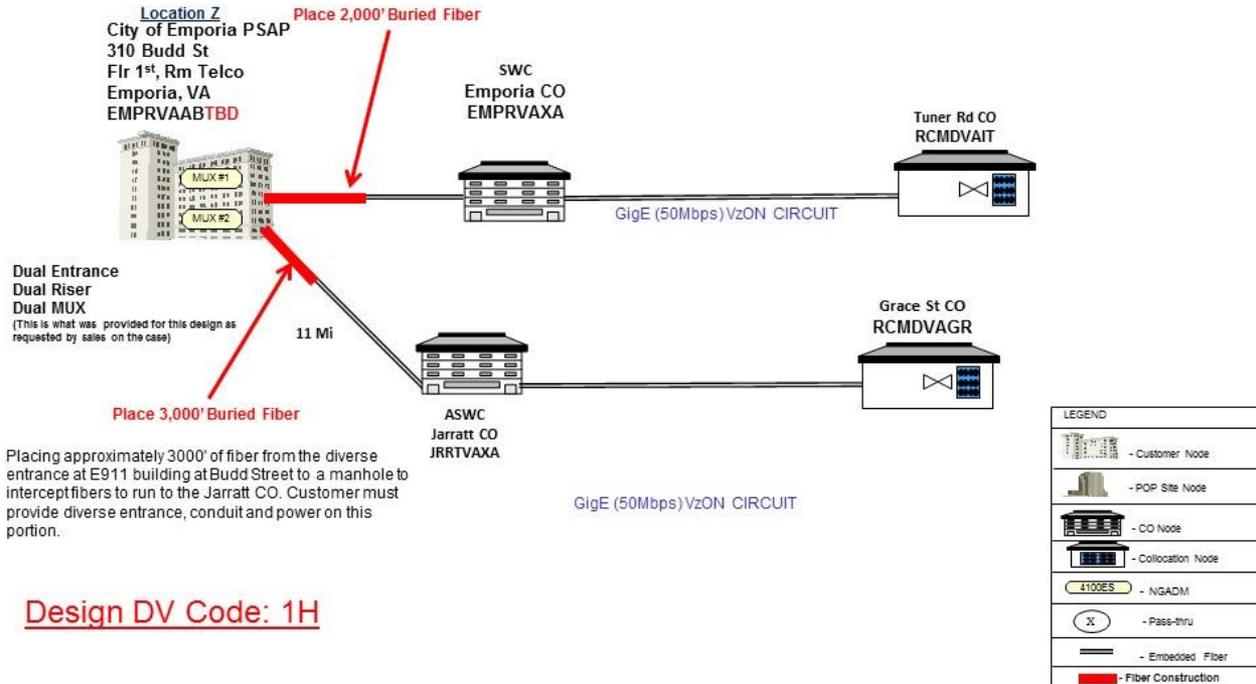
<b>NG9-1-1 Cost by Type</b>	
NG9-1-1 Costs	\$452,000.00
CHE i3	\$2,925,000.00
CHE Replacement	\$10,650,000.00
Text to 9-1-1	\$2,220,000.00
ECaTS Expansion	\$117,000.00
Racks	\$24,000.00
Diversity	\$22,533,751.15
GIS Data	\$160,100.00
Legacy 9-1-1	\$991,320.60
Monthly Delta	\$13,541,843.28
<b>Total</b>	<b>\$53,615,015.03</b>

# Diversity Diagram

Customer is responsible for any internal routes and conduits necessary. Customer is also responsible for any negotiations with building management.

Placing approximately 2000' of fiber and fiber panel from the Emporia CO building to the E911 center on Budd Street. Customer must provide diverse entrance, conduit and power on this portion.

AT&T / City of Emporia PSAP  
 Custom Bid: 2017-942887  
 VzON GigE (50Mbps) Diverse Mated Pair



Placing approximately 3000' of fiber from the diverse entrance at E911 building at Budd Street to a manhole to intercept fibers to run to the Jarratt CO. Customer must provide diverse entrance, conduit and power on this portion.

Design DV Code: 1H

	Customer Name: AT&T / City of Emporia	GCNE Engineer:	
	Service: VzON GigE(50Mbps) Diverse Mated Pair	Field Engineer:	
Case # 2017-942887	Case Type: Custom Bid	Issue Date: 07/20/17	Platform: Fuji FW4100ES

Fig 25





## Monthly Recurring Charges

- Current monthly 9-1-1 Service Charge = around \$xxx
  - Based on current landline subscriber counts
- Proposed AT&T Monthly 9-1-1 Service Charge = not to exceed \$xxx
  - Includes all the services and benefits mentioned
- A monthly difference of \$xxx
  - 9-1-1 board will cover this difference in expense for 24 months after deployment



## NG9-1-1 Monthly Recurring Cost

- Currently Monthly Recurring Cost
  - \$743,997.88 per month
  - \$8,927,974.56 annualized
- AT&T Monthly Recurring Cost
  - \$1,254,640.28 per month
  - \$15,055,683.36 annualized
- Difference
  - \$510,642.40 monthly
  - \$6,127,708.80 annualized



## Path Forward

- Documents to review
  - NG9-1-1 Migration Proposal
  - Existing Fairfax County contract
  - Proposal Acceptance Letter (PAL) = funding request
  - AT&T Participation Agreement (PA)
- Decisions and Options
  - Proceed utilizing the Fairfax contract
  - Execute an RFP
  - Search for & review other procurement options



## 9-1-1 Board's Guiding Principles

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