



# Next Generation 9-1-1 – The Future for Emergency Communications

VISION vision

Your Facilitator Today is:  
**Christy Williams, ENP**



# What is NG9-1-1 & Why Should We Care?

- Current State of 9-1-1
- Limitations of 9-1-1 Today
- What is Next Generation 9-1-1?
- Why do we Need Next Generation 9-1-1?
- How Will Next Generation 9-1-1 improve traffic safety?

vision



# It's Not Just 9-1-1 Anymore!

- With technology available today –we are moving to an Emergency Services Network environment.
- We will be sharing networks, bandwidth and data.
- Need to foster partnerships and leverage what we can do for one another.
- Policies & SOPs need to be developed

vision



# E9-1-1 Current Requirements

- **Wireline**
  - -No federal requirements
  - -Some state and local requirements
  - -Voluntary industry implementation
  
- **Wireless**
  - -Federal (FCC) requirements (Docket 94-102)
  
- **Multi-Line Telephones Systems (MLTS)**
  - -No federal requirements
  - some states have requirements
  
- **VoIP**
  - -Federal (FCC) requirements (Docket 05-196, 04-36)
  
- **ADA requirements for TTY**
  - Currently no provisions Video/IP relay services, text messaging?



# What We Have Now. . .

## Different Levels of Service

- **Wireline**
  - Most Reliable Location Technology
  - Selectively Routed to Correct Answering Point
  - Provides Call Back Number and Address
  
- **Wireless Phase I**
  - Provides Call Back Number
  - Provides Carrier Info and Tower Location
  - 83% of Counties Covered – 94% of Population
  
- **Wireless Phase II**
  - Provides Call Back Number
  - Carrier Info & Tower Location
  - Approximate Location based on X & Y Coordinates
  - 67% of Counties Covered – 86% of Population
  
- **VoIP**
  - IP calls to geographically appropriate PSAP using existing 9-1-1 network
  - Provides Call Back Number and Registered Address



# Today's 9-1-1 Challenges: The Digital Divide!

- Over 6,000 Public Safety Answering Points (PSAPs)
- Costly, aging equipment that needs replacement soon
- Need data bandwidth, modernized network → IP
- Caller location issues
- Need for more data to assist emergency responders
- Need for Interoperability with other agencies
- Funding needed to sustain & advance system

VISION



# What is NG9-1-1?

- An IP-Based Replacement for E9-1-1 Features and Functions
- Supporting all Sources of Emergency Access to the Appropriate PSAP
- Operating on Privately Managed, Multipurpose IP Networks
- Providing Expanded Multimedia Data Capabilities for PSAPs and Other Emergency Communications Entities.



# What is NG9-1-1?

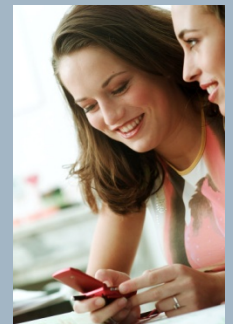
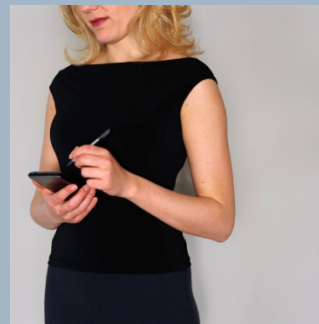
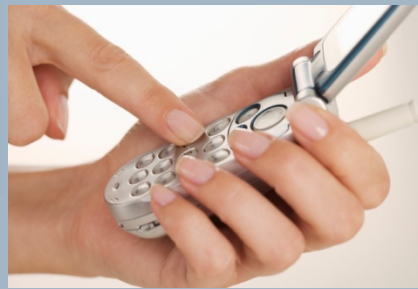
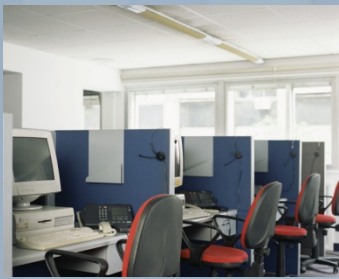
## NG9-1-1 is also...

A simple but pervasive open architecture that uses a secured, managed IP network and gateways, to manage new message sets supporting:

- Voice & Text Messaging
- Data
- Video, and
- ??? Whatever the Future Holds!



# NG 9-1-1 Motto



ANY DEVICE, ANY TIME,  
ANYWHERE!





# Any Device

## Person Initiated:

- Video or Photo from Cell Phone
- Text Messaging/Instant Messaging

## Non-Person Initiated:

- Highway Cameras/Security Cameras
- Alarms
- Sensors
- Personal Medical Devices
- Telematics
- Consumer Electronics in Cars



# Any Time

- Interoperability
- Disaster Planning & Evacuation Route Planning
- Special Events Call Management
- Overflow and Alternate Routing
- Data Management

vision



# Anywhere

- Location Determination
  - Tracking IP address and GPS
- IP-based or compatible devices will send their location as part of the emergency call or text message.
- Passing Info to First Responders
- Virtual PSAP
  - Dynamic Staffing
  - Disaster Call Management



# IP Networks Supporting NG9-1-1

- Use IP networks as they develop (9-1-1 or other existing public safety network)
- County, regional, state, national
- Link together as a network of networks, nationally and beyond
- NG9-1-1 functions run on the IP networks and must meet NG9-1-1 standards
- Security issues must be addressed
- Expanded data access with wide area/national emergency communications capabilities

vision



# Why is it Time for NG9-1-1?

- Resolving Infrastructure Limitations
- Equal Access for Hearing Impaired
- More Functionality
- Fast Data Sharing with PSAPs, and other emergency service providers & responders
- Instant GPS (caller location)
- Need for National and International Interoperability
- Interoperability between N11s and 800#s
- Prepare for Unpredictable Future Services
- ANY DEVICE, ANY TIME, ANYWHERE. . .

VISION



# Major Issues for NG9-1-1 Migration

- Funding evolution
- Policy evolution, jurisdiction issues
- Standards and technology development
- PSAP/Emergency response operational modifications
- Leadership at all levels of government
- Collaboration with other entities (public & private)
- Wide-ranging education needs
- Regulation & legislative changes



# NG9-1-1: Jurisdictional Issues

- Federal – Coordination, Development and Deployment
  - Coordinate National 9-1-1 Initiatives/Standards
  - Fund Research & Development of NG Technologies
  - Fund Initial Deployment of Critical Infrastructure (tie federal grant funding to meeting national requirements)
- State/Regional – Manage and Deliver
  - Manage Infrastructure with Strong State E9-1-1 Coordination Function
  - Deliver Calls and Data to the PSAPs
- Local – Data and Service
  - Develop and Maintain Local Data
  - Provide Emergency Services



# Stakeholders in Transition

- General public – emergency callers
- 9-1-1 Authorities/State 9-1-1 agencies/Local PSAPs
- First Responders
- Public safety and industry organizations – APCO, NENA, CTIA, etc.
- Local/State/Federal Governments
- Standards Development Orgs – SDO's
- 9-1-1 System Service Providers, Vendors, Equipment Manufacturers and distributors
- Originating Service Providers and national call centers (telematics, TRS, VRS, other N-1-1s, etc.)

This will require significant cooperation!



# Partnering & Sharing Data

- Need to start forming relationships now with other public safety
- Need to consider working with 3<sup>rd</sup> party vendors of data that would be helpful in the 9-1-1 PSAP
- Partners can share costs
- Partners can share data
- Collaborations can assist with educational efforts
- Collaborations can assist with politics

vision



# Challenges of Partnerships

- Not as easy as it sounds. . .
  - Everyone wants to see data from others
  - Not everyone wants to share their data
  - May be issues with privacy
- Governance - “Control” or perceived control
- Funding
- Policies - SOPs
- Technology Choices
- Security





# Challenges of Data Sharing

- Standard Format
- Confidentiality
- Who will Manage?
- Quality Control
- Data Storage
- Information Overload!
  - Rights Management



vision



# What's In In For Me?

- 9-1-1 is building out an IP network throughout the state
- Opportunity to share costs and services with other efforts
- Ability to get additional information to first responders during traffic accidents
- Goals of interoperability are met with ESI Nets that 9-1-1 is building
- Bottom down approach allows for regional planning TODAY!



# Working Together To Make NG9-1-1 A Reality

- Assist efforts to update statutes and regulations to enable NG9-1-1 (state and federal)
  - HR 4829 & Companion Senate Bill 3115 to reauthorize national 9-1-1 office and appropriate funding for grant program
  - Resolving legal & jurisdictional issues through statutes/regs
- Help secure funding for NG9-1-1 (state/federal)
- Education: Promote NG9-1-1 within membership of public safety and state/local government organizations
  - Publications and meetings

VISION



# And That's Just the Beginning!

- After the 9-1-1 call is placed, help is dispatched to a responding agency by the 9-1-1 dispatcher. . .

- Contact:

**Christy Williams, ENP**  
**[cwilliams@nctcog.org](mailto:cwilliams@nctcog.org)**

# EMS and Fire Responses



**Perry Bynum,  
Haltom City Fire Rescue**



# Current 911 Call Problems

- Callers are often confused about the accident
- Callers can have difficulty telling you where they are
- Callers can be excited and information is difficult to extract

# 911 Calls for Accidents





# NG911 Advantages for First Responders

- First responders need more information like:
  - What is the location?
  - How many people are hurt?
  - Is anyone trapped?
  - Are there any hazardous materials involved?



# Responder Responses

- Lack of information can endanger responders
- Lack of information can result in delayed care (not sending enough resources)
- Location problems can delay responses

vision



# Advantages of NG911

- Location, Location, Location...
  - NG911 could obtain GPS from Callers Phones more accurately
- Caller can send Pictures of accident
  - Gives responders better image of incident
  - Gives telecommunicator better scene image
- Callers unable to talk could text info