GIS in Public Safety
NENA & USDOT
Marc Berryman, ENP
What is NENA?

• NENA is a membership-based, volunteer-driven professional organization focused on:
  – 9-1-1 and emergency communications issues
  – 9-1-1 policy, technology, operations, and education

• 7,000+ Members
  – 48 chapters across the US and around the globe
NENA’s Goals

• Leadership and guidance on 9-1-1 and related issues
• Facilitate the creation of an IP-based Next Generation 9-1-1 system
• Establish technical & operations Standards
• Promotes 9-1-1 implementation and awareness
At 2 p.m. on Friday, Feb. 16, 1968 the first 911 call was placed from the mayor's office in Haleyville (Ala.).

January, 1980, Work began on two fully “Enhanced” 911 systems in Orange County (Fla.), and another in St. Louis (Mo.).

These systems had features we now know as E9-1-1 ("Enhanced" 911)
Approximately 6000 Primary PSAP’s in the U.S.
GIS in 9-1-1

Being able to plot the location of a wireless caller

With 80% of 9-1-1 calls being wireless, you need a GIS technology to help locate the caller
GIS in 9-1-1
“When someone calls 9-1-1 they expect to get help right away. We cannot, and will not, accept a system where these callers cannot be located as quickly as possible. We have the technology to solve this problem. All we need is the resolve and the commitment to make it happen.”

The Honorable Norman Y. Mineta
Secretary of Transportation at the Wireless E9-1-1 Summit Meeting Washington, DC April 8, 2002
Wireless Phase I and II implementation 3Q, 2012

County Color Codes
- White: No data available
- Red: No 9-1-1/Basic
- Yellow: Enhanced 9-1-1
- Light Blue: Started Phase I
- Dark Blue: Completed Phase I
- Light Green: Started Phase II
- Dark Green: Completed Phase II
Recommendation for developing a national database to include milepost information and other data for highways and railways within the United States
Standard for Public Safety answering Points (PSAPs) to notify North American Aerospace Defense Command (NORAD) of air events that may require a national response
Recommendation for PSAPs to development and implementation emergency communications protocols for railroad emergencies
Standard for PSAPs to development and implementation emergency communications protocols for pipeline emergencies
Moving to NG9-1-1

“Today’s 911 system is built on an infrastructure that does not support most of the features that Americans expect are part of an emergency response”


“In the past 15 years, advancements in modern communications technology have created the need for a more advanced system to access emergency care. While the existing 9-1-1 system has been a success story for more than 30 years, it has been stretched to its limit as technology advances.”

-National Emergency Number Association (NENA)
Public Expectations

- 9-1-1 knows my exact location
- Text, Multi-Media (Images, Video)
  - 95% of all mobile phones have camera
  - Over 150 million text messages daily
- 85% of calls today are downgraded to analog voice to work with E9-1-1
New sources of information

- Smartphones
- Vehicle Telematics
- Environmental Sensors
- Video Surveillances
- Intelligent Transportation Systems
More information to Responders
USDOT Next Generation 9-1-1 Initiative
December 2005

A DOT research and development project to define the system architecture and develop a transition plan that considers responsibilities, costs, schedule and benefits for deploying IP-based emergency services across the Nation

Major Goals and Objectives
The primary goal of the NG9-1-1 System is to save lives, health and property by improving emergency services access and response in the United States
Next Generation 9-1-1 (NG9-1-1) System Initiative

Proof of Concept Deployment Plan

Washington, D.C.
February 2008
What is NG 9-1-1

Non-proprietary system of *Standardized* data and formats operating on *Open System* specifications

Providing advanced capabilities for PSAPs and *Emergency Service Providers* (ESPs*)*
*Emergency Service Providers (ESP)*

- First Responders
  - Emergency Responders
    - Emergency Management
    - Hospitals
    - Search & Rescue
    - Community Emergency Response Teams
    - National Weather Service
    - Telecommunication Companies
    - Chemical, Oil, and Gas Companies
  - Law
  - 9-1-1 EMS
  - Fire
  - Public Health
  - HazMat
  - Port Authority
  - Federal Agencies
  - Parks Department
  - Media
  - Utilities
  - State, Local, Tribal Governments
  - Public Warning Systems
- Extended Emergency Enterprise
  - Transportation
  - Public Works
  - Schools
  - Urgent Care & Other Healthcare Facilities
  - Mental Health Services
  - Social Services
  - Victim Services
  - Chemical, Oil, and Gas Companies
  - Telecommunication Companies
  - Local, Tribal Governments

NENA: THE 9-1-1 ASSOCIATION
What is NG 9-1-1

Collaborative data sharing creating a **Common Operating Picture (COP)** among incident commanders

A **Common Operating Picture** enables more accurate and timely decision making thereby improving **Quality of Command (QoC)**

Improved **Operational Effectiveness** and thus the safety of field personnel and the public

**Bottom Line...Improved Public Safety!**
GIS in NG9-1-1

- NG9-1-1 Requires GIS data to Operate
- GIS data is used to validate all addresses
- GIS data needs to be down to a site specific point
  - Site Specific = Field Verified
- GIS will be used to route call to 9-1-1 and other entities
- GIS Data will be Locally Maintained
Ohio Location Based Response System (LBRS)

- Coordinated intelligent transportation and location information that meets the needs of 9-1-1, DOT, and local, state, and federal agencies

- Current, accurate, and accessible data that is collaboratively maintained by local and state resources
Thanks!!

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