

**NENA**

THE

**9-1-1**

ASSOCIATION

# 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

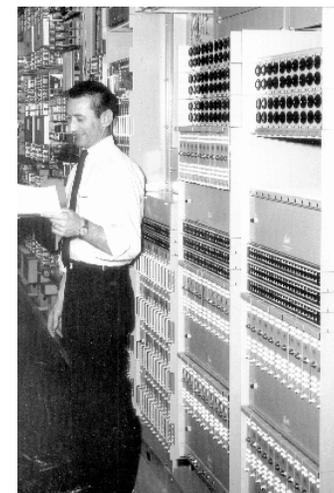
- Leadership and guidance on 9-1-1 and related issues
- Facilitate the creation of an IP-based Next Generation 9-1-1 system
- Establish technical & operations Standards
- Promotes 9-1-1 implementation and awareness



# Evolution of 9-1-1



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)

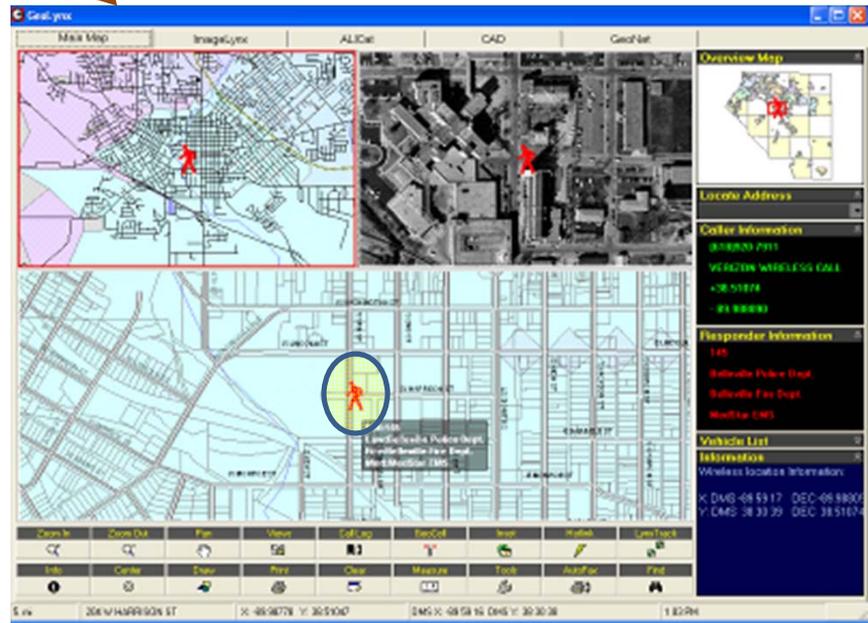
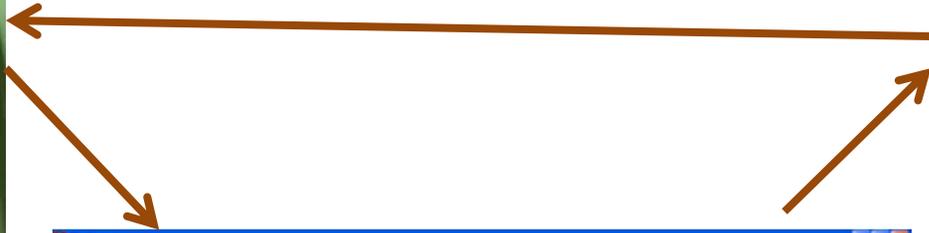


**Approximately 6000 Primary PSAP's in  
the U.S.**



# 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

**MaxResponder Mobile Module**

File | Map | Tools | Database | Window | Help

**Site** Pre-attack plan

Site | Alarms / Keys | Building | Dangers | POC | Response / Asset | Fire | Police | Haz Mat

**Materials/Chemicals Database** Hazardous Material Guide

Guide Number: **127** ID Number: **1088** Toxic Vapor: [ ]

Material	Guide No	ID No
Accumulators, pressurized, pneumatic or hydraulic	126	1956
▶ Acetal	127	1088
Acetaldehyde	129	1089
Acetaldehyde ammonia	171	1841
Acetaldehyde oxime	129	2332
Acetic acid, glacial	132	2789
Acetic acid, solution, more than 10% but not more	153	2790
Acetic acid, solution, more than 80% acid	132	2789

**Reports:** Trf Clr

Chemical Name  
 Guide Number  
 ID Number

Reset list [ ]

Reports Sort Text

Guide NAERG

**Table of Isolation and Protective Action Distances [Small]**

First Isolate in all Directions		Then, Protect persons Day		Night	
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Meters	Feet	kilometers	miles	kilometers	miles

**Small Spills** From a small package or a small leak from a large package.

**Table of Isolation and Protection Action Distances [Large]**

First Isolate in all Directions		Then, Protect persons Day		Night	
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Meters	Feet	kilometers	miles	kilometers	miles

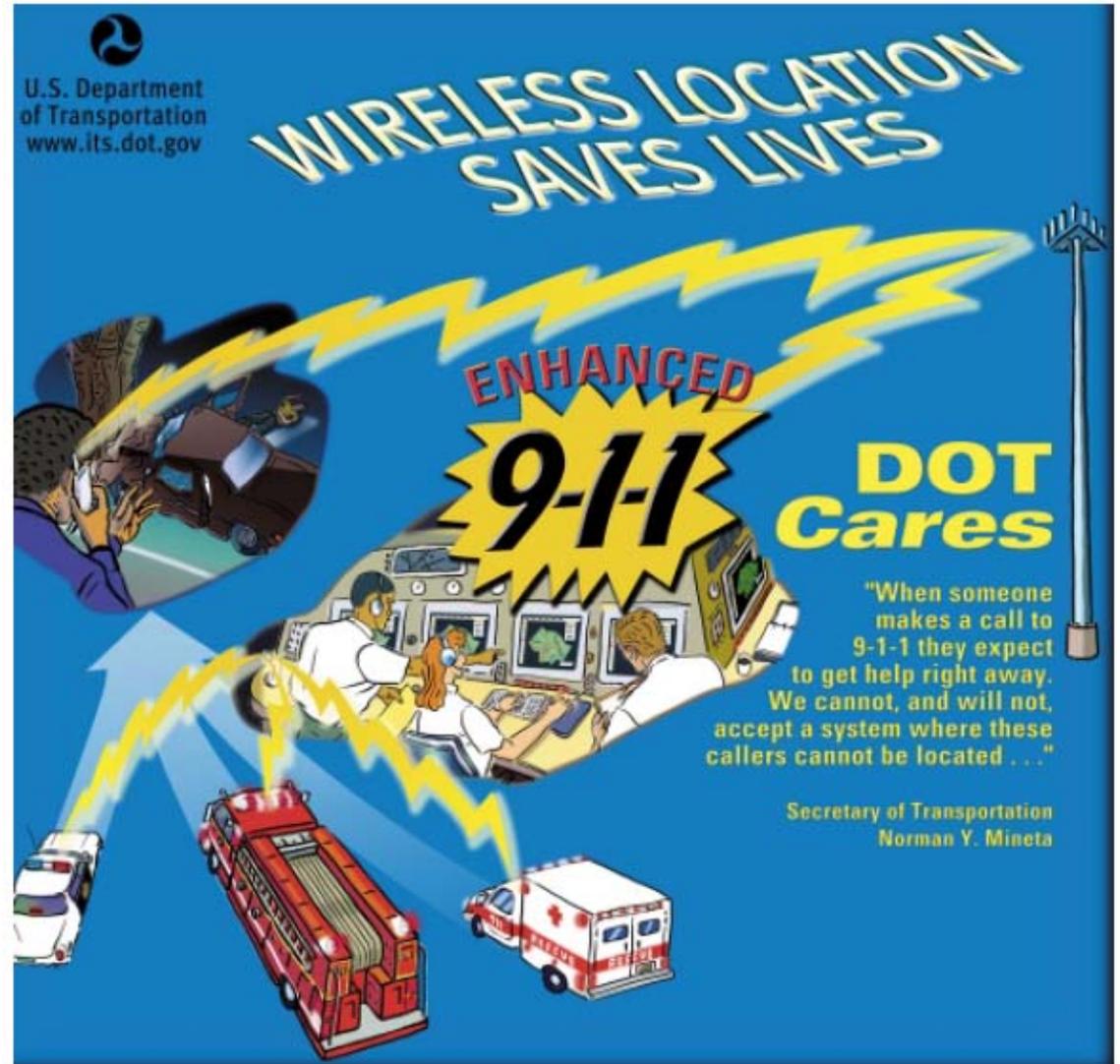
**Large Spills** From a large package or from many small packages.

AS087

Scale 1 : 378,856

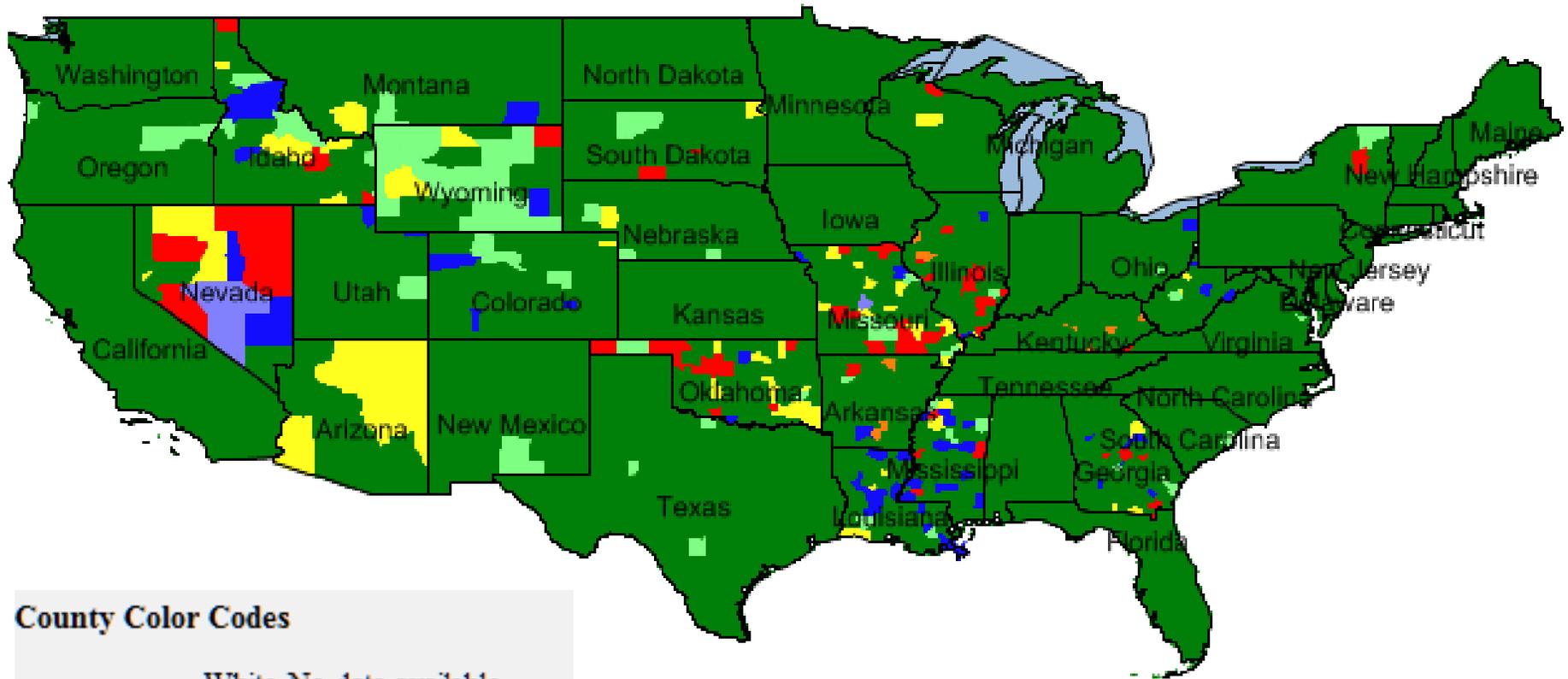
Map Tips

***“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



# NENA Milepost Operational Information Document (OID)

*Recommendation for  
developing a national  
database to include  
milepost information  
and other data for  
highways and  
railways within the  
United States*



NENA Milepost Operational Information Document  
Document 56-502  
December 16, 2004



**NENA Standard  
For  
NORAD/FAA Notification:  
Airborne Events**

*Standard for Public  
Safety answering Points  
(PSAPs) to notify North  
American Aerospace  
Defense Command  
(NORAD) of air events  
that may require a  
national response*



NENA Standard for NORAD/FAA Notification: Airborne Events  
Document 56-002 Version 2, May 6, 2008



# **NENA Railroad & PSAP Interaction Operations Information Document (OID)**

*Recommendation  
for PSAPs to  
development and  
implementation  
emergency  
communications  
protocols for  
railroad  
emergencies*



NENA Railroad & PSAP Interaction Operations Information Document  
NENA 56 – 507  
April 28, 2009, Version 1



**NENA**  
**Pipeline Emergency Operations**  
**Standard/Model Recommendation**

*Standard for PSAPs  
to development  
and  
implementation  
emergency  
communications  
protocols for  
pipeline  
emergencies*



NENA Pipeline Emergency Operations Standard/Model Recommendation

Document 56-007, November 11, 2010

Standards Advisory Committee Approval date, October 25, 2010

NENA Executive Board approval date, November 11, 2010



# 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”*

*Congressional Research Service Report for Congress,  
Emergency Communications: The Future of 911, November 21, 2008*

***“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 mobiles 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

Phone #: (111) 111-1111 Ticket #: 274 Last Updated: 4 Dec 2009

Summary Phone #: (111) 111-1111 Ticket #: 274 Last Updated: 4 Dec 2009

Summary People Houses

Sam: Hearin

First La

\* Joe Sm

Jane Sm

Sam Sm

Albert Br

House

\* Home

Beach Con

\* Phone num house.

Location

Address: 10 Main St - Ocala, FL

Name: Home

Incoming call is from a phone associated with this house.

Structure

Color: Gray

Siding: Vinyl

Bedrooms (#): 3

Floors (#): 2

Bedroom one or more above the

Location(s):

Gas Valve: left side near garage

Notes

Access: Drive way is hidden b

Alarm ADT alarm

Company:

Number of 4

Residents:

Summary People Houses Other Map View

< Previous Person Phone #: (781) 856-1395 Ticket #: 100115 Last Updated: 18 Nov 2009

Summary People Houses Other Map View

My wife scares me sometimes

First	Last	Sex	Age	Med	Rescue	Photo	Alerts
* Todd	Piatt	M	42	♥	⚙️	📷	⚠️
* Kimberly	Piatt	F	42	♥			
* Benjamin	Piatt	M	7			📷	
* Jacob	Piatt	M	1				
* William	Piatt	M	6	♥			

House Address

\* House 17 Foley Dr - southborough, MA - 01772

\* Phone number of incoming call is associated with this person and/or house.

Smart911

Medical

Allergies: Food A

Rescue Help: Hearing

Residence

Home 10 Main St -

# 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



**RITA**

U.S. Department of Transportation

Research and Innovative Technology Administration



*Intelligent Transportation Systems*  
U.S. Department of Transportation



## **Next Generation 9-1-1 (NG9-1-1) System Initiative**



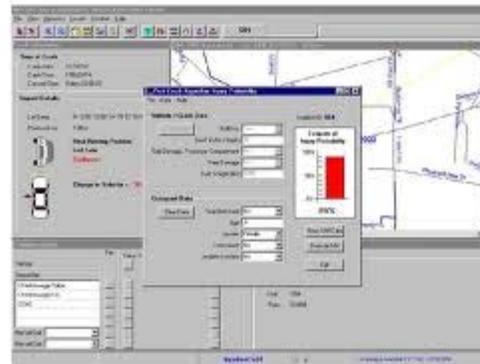
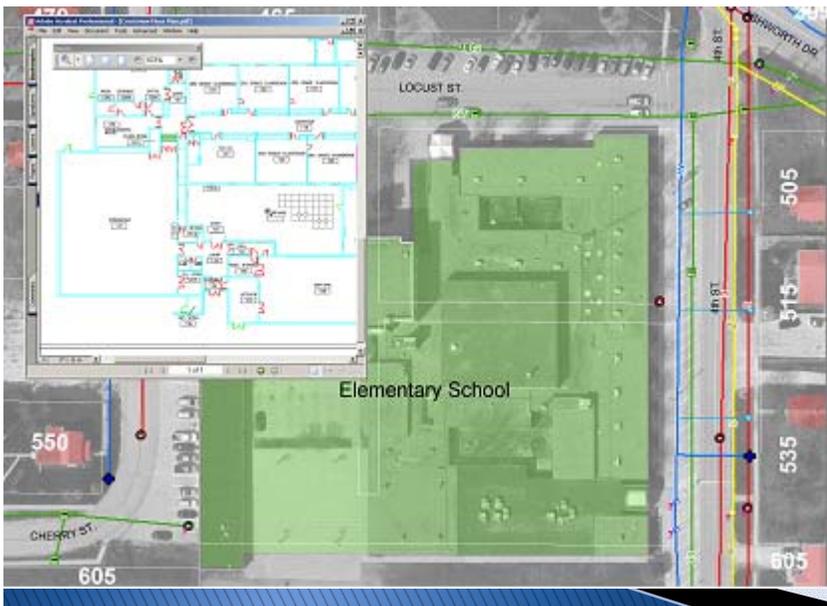
## **Proof of Concept Deployment Plan**

Washington, D.C.  
February 2008

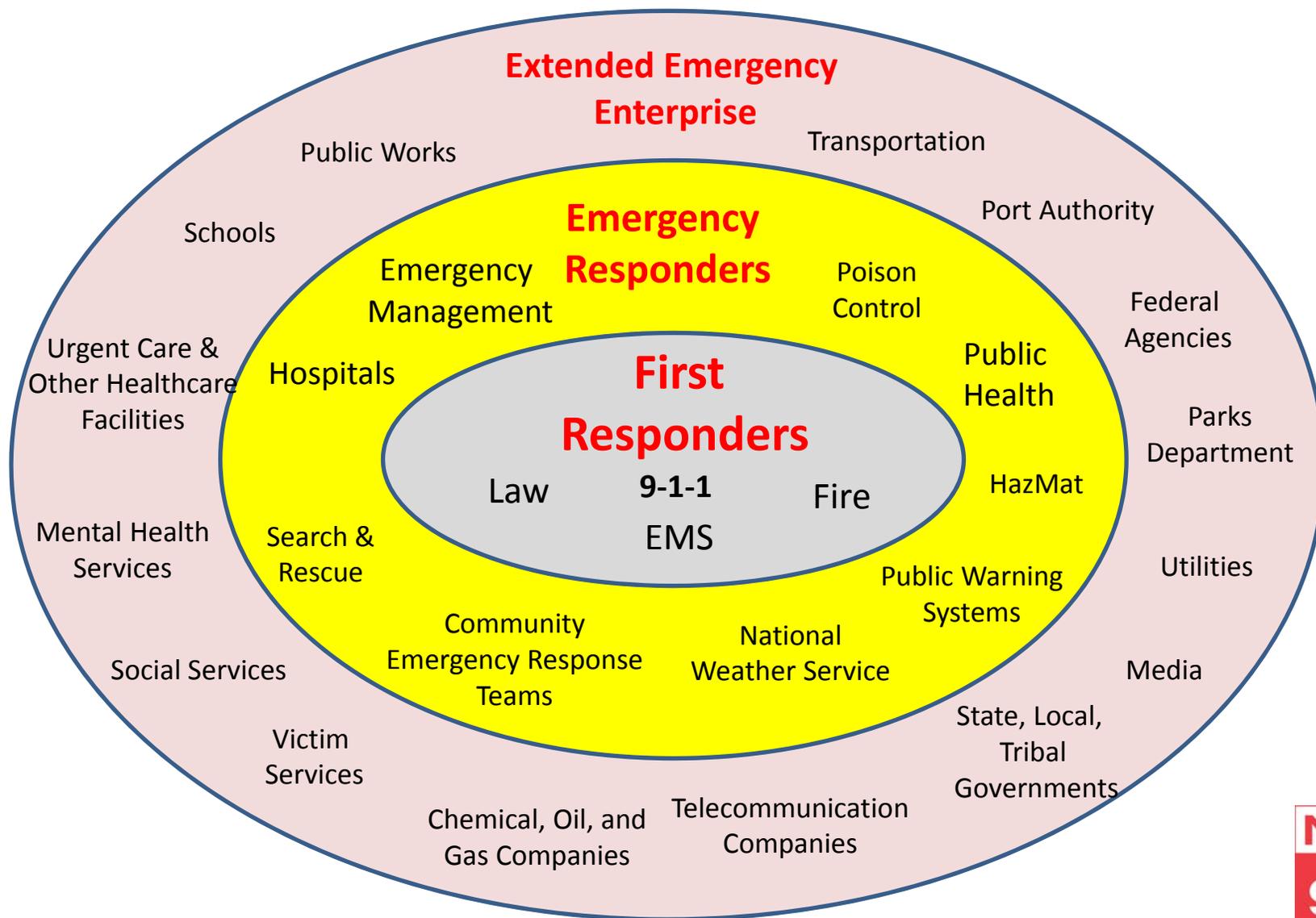
# What is NG 9-1-1

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)



# 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

(ROADTYPE) M
(ROADNUMBER) 296
(ST_NAME) LINDEN
(ST_TYPE) PL
(LMUNI) MARION
(RMUNI) MARION
(COORDINATE) 2
(DIR) B
(SPEEDLIMIT) 25
(DIV_CODE) 0
(LANES) 2
(RAMPCODE) N
(LSN) LINDEN PL
(PAVEMENT) P
(LEFTFROM) 292
(LEFTTO) 320
(RIGHTFROM) 293
(RIGHTTO) 319
(UNKLEFT) 1
(UNKRIGHT) 0
(SEGLENGTH) 144.776
(SEGID) 36060
(RSTATE) OH
(LSTATE) OH
(RCOUNTY) MAR
(LCOUNTY) MAR
(DOTMPBEG) -999
(DOTMPEND) -999
(MPBEG) 0
(MPEND) 0.027
(LENGTH3D) 144.816
(NLFIDNEW) MMARMR00296**C
(NLFIDOLD) MMARMR00238**C
(LNAME) LINDEN
(LTYPE) PL
(RNAME) LINDEN
(RTYPE) PL
(CARDINAL) 1
(TWP_CODE) 0
(JURISDICT) M
(DISPLAY) M
(LEFTZIP) 43302
(RIGHTZIP) 43302

# Thanks!!

Marc Berryman, ENP

[marcberryman@GIS-NG9-1-1.net](mailto:marcberryman@GIS-NG9-1-1.net)

