Washington Military Department
Emergency Management Division
Enhanced 9-1-1 Program

GIS INTEGRATION IN NEXT GENERATION

9-1-1
AGENDA

- 9-1-1 History Lesson
- Understanding the Standards (with regard to GIS)
- Determine the status of the PSAPs
- Create an Implementation Plan
- “Herding the Cats” or Working as a Team
- Updating (Maintaining) the System
HISTORY OF “CALLING” FOR HELP
Hello Mabel, this is Joe. Can you get me the Police!? 

Like Superman...

Run to the nearest phone booth!

The personal landline where you direct the call
Enhanced 9-1-1. We know where you are!

Send Images
Send Videos

And you know where you are!

To: 9-1-1
I need help!

VOIP – Register your location
DO YOU KNOW WHERE YOU ARE?

WHAT'S YOUR LOCATION?

9-1-1
WHY STANDARDS FOR NG911 GIS?

- Allow exchange of data with local, regional, state and federal agencies.
- Allow Interoperability
- Allows call transfers anywhere
- Must take place for NG9-1-1 to work
More than voice (audio)
- Text
- Email
- Image/Video

Systems are IP based (Internet)

IP Security

Phones move and transmit their location

GIS is at the core
Next Generation 9-1-1 requires GIS Data
Wide range of needs for address data statewide
Build to the highest level requirements (9-1-1), able to support lower requirements.
- Support 9-1-1 dispatch
- Be available for other widespread uses
- Support high-quality geocoding
- Stripped of personal information
STANDARDS FOR GIS IN NG911

- FGDC U.S. Thoroughfare, Landmark and Postal Address Data Standard
  - Breaks out the address into smaller components
  - Joint developed by URISA & NENA
  - Includes subaddresses

- NENA Standards
  - Civic Location Data Exchange Format (CLDXF)
  - Allows some abbreviations
  - Out for Public Review

- Mapping Standard for Address Points Lacking
  - Where to place point & how many
  - NENA Standing up a Working Group
CONVERSION TO NENA STANDARDS

Before

<table>
<thead>
<tr>
<th>ADDRUNITS</th>
<th>APUNIT</th>
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</thead>
<tbody>
<tr>
<td>124 WASHINGTON BLVD SW BLDG F15</td>
<td>2-7 FL3</td>
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</table>

After

<table>
<thead>
<tr>
<th>AddressNumber</th>
<th>StreetName</th>
<th>PostType</th>
<th>PostDirectional</th>
<th>Building</th>
<th>Floor</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>124</td>
<td>WASHINGTON</td>
<td>BLVD</td>
<td>SW</td>
<td>BLDG F15</td>
<td>FL 3</td>
<td>2-7</td>
</tr>
</tbody>
</table>
STATUS OF THE PSAPS

- Get to know the Counties and PSAPs - Road Trips!!!
- Determine that “Lowest Common Denominator” (Broad spectrum of capabilities)
- Understand how the NG911 Standards will affect the PSAPs and existing systems.
- Participate in local, state and national committees. (NSGIS, URISA, WAGIC, NENA)
- Learn how to support technically and financially. (Contract vs. Non-Contract, vendor vs. self-supporting)
- Learn the lingo: PSAP, MSAG, ALI, AVL, E911, NG911... (NENA Glossary -> 144 pages)
GIS LAYERS FOR NG911

- Road Centerline (required)
- Railroads (optional)
- Hydrology (optional)
- Emergency Service Agency Location (required)
- Emergency Service Agency Boundary (required)
- Cell Site Locations/ Coverage Areas (required)
- Road Mile Markers (optional)
- Site/Structures (optional)
- County Boundaries (required)
- Emergency Service Zones Boundary (required)
- Municipal Boundaries (required)
- Imagery (optional)
GIS CHALLENGES
GIS CHALLENGES

What’s the address here?
What’s the address here?
HERDING THE CATS

- Washington State
  - 39 Counties
  - 69 PSAPs

- “Home Rule” State

- Advisory Committee
  - NG911 Subcommittee
  - GIS Subcommittee
  - Policy Review Subcommittee
  - Training Subcommittee
  - Communications Subcommittee
  - Public Education Subcommittee
  - Strategic Planning Subcommittee

- National Organizations and Committees
  - APCO
  - NENA
  - NSGIC
  - URISA

- The Vendors
  - CAD
  - Servers
  - Routing
Enhanced 9-1-1 Program

The Washington State Enhanced 9-1-1 (E911) Program came about as a result of passage of a 1991 voter referendum directing enhanced 911 emergency communications systems to be available statewide by Dec. 31, 1998. The referendum provided for a state E911 coordination office. This office would facilitate local planning and installation of such systems.

Funding provisions were included in the referendum for county and state excise taxes to support implementation of E911 plans and systems. The state used state 911 excise taxes to help fund those counties that could not implement E911 with excise taxes collected by their own county.

The E911 Unit of the Emergency Management Division works with counties and communications' companies to ensure the E911 system is operational and available to all in the State of Washington.

Related Links

- E911 recognition
- E911 Publications
- Enhanced 911 Training
- Enhanced 911 Training - TTY
- Enhanced 911 Training - Dates and Location
Financial Support

The Enhanced 911 program offers financial support and reimbursement for E911 related expenses. In this section you will find the policies, laws and forms related to applying for financial support.

For more information, contact either the Customer Service Supervisor or the Financial Program Manager.

Technical Support

The Enhanced 911 program provides technical support for counties on database and Geographic Information Systems (GIS).

9-1-1 and Wireless Phones

The E-911 Program Office worked with the wireless phone carriers to develop a system to route the wireless 9-1-1 calls by cell site. Calls from those sites that are aimed at the major highways, route to the Washington State Patrol. Calls from sites aimed at local jurisdictions are now routed to the 9-1-1 centers who dispatch for the local police departments. Over 97 percent of wireless 9-1-1 calls are now being routed to the police agency that provides service for the area from which the 9-1-1 calls are made.

Be Informed About Your Phone Set

Wireless Phones Can Create Problems for Both You and 9-1-1

Wireless Phone Emergency Lock Out and Accidental Misdials

National Emergency Number Association (NENA) Master Glossary of 9-1-1 Terminology
UPDATING AND MAINTAINING THE SYSTEM: NOW & IN THE FUTURE
ADDRESS UPDATE WORKFLOW - THEN

New Address → Validated against MSAG → Valid? → Yes: New Address & Range added to the MSAG (if needed) → No: New Address → Validated against MSAG

Process being used in most counties.
New Address

Validated against MSAG

Valid?

Yes

New Address & Range added to the MSAG (if needed)

No

New Address & Range added to GIS (if needed)

Process being used in King County
Simplified process to be used in the future.

“Tabular” MSAG goes away, MSAG now “Spatial”

New Address → Validated against GIS DB → Valid?
Yes → GIS DB
No → New Address & Range added to GIS (if needed)
Dan Miller
E911 GIS Manager
Washington Military Department
Information Technology Division

Building 20B
Aviation Drive
Camp Murray, WA 98430
(253) 512-7464

dan.miller@mil.wa.gov

http://www.emd.wa.gov/e911/e911_index.shtml