What is NG9-1-1?

- Internet Protocol (IP)
- Also supports texts, photos, video
- Works with any connected device
- Interoperable at county, region, state and federal

GIS Data Layers in a NG9-1-1

- REQUIRED GIS data layers:
  - Road Centerlines
  - PSAP Boundary
  - Emergency Service Boundary (must include separate layers for Law, Fire, and Emergency Medical Service)
  - Site/Structure Address Points
- Absolutely necessary for:
  - Location Validation Function (LVF)
  - Emergency Call Routing Function (ECRF)
  - Call taking
  - Dispatch operations
Basic Call Flow in NG9-1-1

Report to Congress – Oct 2018

• NG911 will allow the nation’s 911 systems to:
  • meet the communication needs and expectations of the public
  • deliver reliable, resilient, redundant emergency communication services to communities nationwide
  • enable seamless integration with the Nationwide Public Safety Broadband Network (NPSBN)—which is being implemented under the auspices of the First Responder Network Authority (FirstNet)—creating a unified digital public safety communications ecosystem

Source: Next Gen 911 Cost Estimate report to Congress – OCT 2018

Report to Congress – Oct 2018

• Because NG911 relies on GIS data for call routing, the GIS data must be highly accurate. The PSAP or 911 authority responsible for the data must ensure that the data is of such quality to achieve a 98 percent or greater match rate with its legacy Master Street Address Guide (MSAG) and its GIS street centerline data before migrating to NG911. To accomplish this, the PSAP or 911 authority must have skilled GIS personnel on staff.

Source: Next Gen 911 Cost Estimate report to Congress – OCT 2018
Report to Congress – Oct 2018

- The NG911 lifecycle cost estimate range, shared between localities, States and federal agencies, is between 13.5 and $16 billion...and the cost estimate range for NG911 deployment is between $9.5 and $12.7 billion. The time period for the implementation estimate is ten years, assuming no scheduling delays, no funding delays, and no deviations from the recommended implementation path.


Source: Next Gen 911 Cost Estimate report to Congress – OCT 2018

National Estimated GIS Costs

<table>
<thead>
<tr>
<th>Cost Type</th>
<th>State Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>$2.4 million</td>
</tr>
<tr>
<td>Services</td>
<td>$5.4 million</td>
</tr>
<tr>
<td>Staff</td>
<td>$1.07 billion</td>
</tr>
<tr>
<td>Software</td>
<td>$86 million</td>
</tr>
<tr>
<td>Grand Total</td>
<td>$1.7 billion</td>
</tr>
</tbody>
</table>

Source: Next Gen 911 Cost Estimate report to Congress – OCT 2018

Address Point Considerations

- Complex property sites
- Multiple points per address allowed
  - Primary site address
  - Sub-address (e.g. apartment units)
  - Commercial sites, schools, marinas many other examples
- Stacked points vs. distributed
- Cost considerations
- Phase in approach
- About 6 million addresses and sub-addresses in Wisconsin.
GIS Data Standards

- Required for NG9-1-1 to work
- NENA has published a NG9-1-1 GIS data standard
  - NENA-STA-010, NENA Detailed Functional and Interface Standards for the NENA i3 Solution, Appendix B
  - NENA-STA-006, NENA Standards for NG9-1-1 GIS Data Model
- Standards will:
  - Allow exchange of data with local, regional, state and federal agencies
  - Allow interoperability
  - Allow call transfers to anywhere
- Finalized on June 16, 2018
  - https://www.nena.org/page/NG911GISDataModel

GIS Management

- A centralized management framework has to be created to collect data
- A partnership must be established between all stakeholders
  1. local and tribal governments or 911 authority
  2. Telecommunication companies (e.g., Verizon, AT&T, TDS, etc.)
  3. CAD vendors
  4. Elmont Terminal
  5. State of Wisconsin
- GIS standards have to be created and enforced
- Process, workflows and quality control have to be implemented
- GIS Management is a required function but non-mission critical component of NG911

Questions