

GEOSPATIAL FACT SHEET:

Next Generation 9-1-1 (NG9-1-1) Task Force

Moving Forward with NG9-1-1 GIS

The [previous NG9-1-1 Fact Sheet](#) discusses NG9-1-1's importance to the GIS community:

- a. 9-1-1 as a system is changing from older analogue networks to digital IT networks. In NG9-1-1, emergency call routing moves from a tabular database to a GIS-centric workflow.
- b. GIS data you may have, may need to update in quality or attributes, or may need to develop is required to drive geospatial call routing.
- c. Standards and the information documents and guidelines that aid in implementing NG9-1-1 come from: NENA, URISA, IETS, FGDC, NSGIC, and state governments.
- d. URISA has a NG9-1-1 Task Force working to educate public safety and GIS professionals about the role of GIS in NG9-1-1.

How do I figure out where I am at and what to do next?

NG9-1-1 means working with others. Talk to your neighboring locality GIS staff. Talk to your public safety answering point (PSAP) or emergency communication center (ECC). Check with state or region. Where is everyone at on NG9-1-1? Is there a path for you to follow?

Answering these questions will help you plan and set your timeline for GIS data readiness.

- a. Is there a legislative mandate for your locality, region, or state to move to NG9-1-1?
- b. Has your state or region or locality done a feasibility study to plan next steps for Next Generation Core Services (NGCS)? Did the study include GIS? Is NG9-1-1 framed as "get on the ESInet" or "ESInet with geospatial call routing?"
- c. Are regional or state partners implementing GIS data review or governance programs?
- d. Does your state or region or locality have an NGCS identified or under contract to provide your ESInet? Do they have GIS-specific documentation on their system or requirements?
- e. Is the Spatial Interface (SI) function be included in the NGCS, or is this something you, your region, or your state will have to implement?
- f. Are grants available to assist with NG9-1-1 GIS data readiness?

What is the spatial scale of my NG9-1-1 effort?

While many organizations are moving to NG9-1-1, sometimes the push is at the state level, sometimes at the regional level, and sometimes at the local level. Understanding what this looks like for your region will help you understand a path forward. If NG9-1-1 is not approached from the state level in your area, localities moving themselves to NG9-1-1 or coming together with their neighbors in smaller regions are very common.

What can I do if I work with GIS for a locality?

The answers to the above questions help set a timeline for your GIS data readiness. Until you need to load your GIS data into a SI of a NGCS, you have time to ready your GIS data by:

- a. Comparing your local data schemas to the [NENA NG9-1-1 GIS Data Model](#).
- b. Adding and populating required attributes.
- c. Improving address and road centerline completeness.
- d. Reducing unintentional address range overlaps in your road centerlines.
- e. Developing and automating extract, transform, and load (ETL) procedures to load the required fields into the [NENA NG9-1-1 GIS Data Model](#) template.
- f. Working with neighbors on edge-matched mutually agreed to NG9-1-1 geometry for PSAP and provisioning boundaries.
- g. Creating emergency service boundary layers with your PSAP and emergency response agencies.
- h. Reaching high match rates to 9-1-1 ALI and MSAG tabular databases.
- i. Make connections with others through groups like the URISA NG9-1-1 Task Force to help each other, understand issues, and develop solutions.

The scheduling and orchestration of ESInet deployment requires significant lead time. GIS preparation is just part of this. You may not have very much time to change your schema, script ETL processes, or improve data quality or match rates without impacting the ability of your PSAP or ECC to go live on schedule with geospatial call routing. In the end, ESInet deployment schedule may be the driver.

What can I do if I am with a regional or state entity?

The answers to these questions help you understand who will be involved with NG9-1-1 GIS work in your area and how you can contribute.

- a. Who provides and maintains the GIS data your 9-1-1 centers use?
- b. What is the condition of the current GIS address point and road centerline data? Are all of the required layers and attributes present?
- c. Can GIS data improvements and data development happen at a state or regional level, or must it be at the local level?
- d. Is anyone coordinating boundary work to insure edge matching without gaps and overlaps in PSAP and provisioning boundaries? What processes are in place?
- e. At what level can you support the GIS data improvements required for NG9-1-1?
- f. If there is a state NG9-1-1 mandate or program, are state GIS staff supporting it?
- g. Are the required GIS data layers being collected at the state level in one provisioning footprint to send to a SI or NGCS, or will each locality or regional GIS be working with the NGCS provider?

My locality, PSAP, ECC, or region does not have in-house GIS staff. What are my options?

a. There are many organizations and entities that could assist you including:

1. Large vendors that provide GIS services nation-wide.
2. Smaller regional or local contractors that provide GIS services in a smaller area.
3. Services offered by your NGCS.
4. Staff at your local regional development council or regional planning council.

In most cases, it will be your choice as to who you use and how you choose to fund it if grants are not available.

b. Think about what you want your contractor to do for you. Some tasks to consider include:

1. Long term maintenance your GIS address points and road centerline data as new features are created or existing features are changed, a need before and after NG9-1-1.
2. Improve your GIS address points and road centerlines ahead of NG9-1-1 deployment by making more complete, resolving common errors, and increasing match rate to 9-1-1 ALI and MSAG databases.
3. Changing out the schema you use for address points and road centerlines to the NENA NG9-1-1 GIS Data Model, adding needed fields, populating required fields, or other schema work.
4. Designing ETL processes to move your data from your local schema to a NENA-compliant NG9-1-1 GIS Data Model.
5. Provide on-call support as you work through your own data improvements.
6. Serving as your locality's GIS staff and working with your NGCS to load your GIS data into a SI.
7. Facilitate boundary meetings with neighbors to mutually agree to PSAP and provisioning boundary geometry and mapping them in GIS.

c. The options selected depend on many internal and external factors, but some choices are commonly seen together. For example, some localities may opt for long term maintenance with a project to improve data quality and change out the schema and serving as your locality's GIS staff and working with your NGCS to load your GIS data into a SI, while others may only want assistance with schema work or an ETL process from the current data to an NG9-1-1 schema.

What drives the schedule and my timeline?

Geospatial call routing in NG9-1-1 needs quality and prepared GIS data, but there is so much more to NG9-1-1 than GIS. Your co-workers or neighbors in the PSAP will be working with call handling software upgrades, construction, firewalls, and testing, among other things. In order to go live with i3 NG9-1-1 and geospatial call routing, all of these things plus GIS need to be complete.

Where can you go to find more information about NG9-1-1 in general and NG9-1-1 GIS in particular?

- a. NENA's [NG9-1-1 Guide for 9-1-1 Authorities](#) and core GIS resources:
 1. [NG9-1-1 GIS Data Model Standard and template](#)
 2. [Information Document for GIS Data Stewardship for NG9-1-1](#)
- b. You may want to do a deeper dive into other NENA [standards and information](#) including:
 1. NENA's Online [Glossary](#)
 2. [Standards for the Provisioning and Maintenance of GIS data to ECFF and LVFs](#)
 3. [Information Document for Development of Site/Structure Address Point GIS Data for 9-1-1](#)
 4. [Next Generation United States Civic Location Data Exchange Format \(CLDFX\)](#)
 5. Future products from [NENA's Data Management Committee Working Groups](#)
- c. Best practices documents and resources assembled by states and regions farther ahead in the process (but be aware that not everything they do may work for your situation)
 1. [Arizona](#)
 2. [Kentucky](#)
 3. [Minnesota](#)
 4. [North Carolina](#)
 5. Virginia [GIS](#) and [Deployment](#)
- d. URISA [website](#)
- e. United States [National 9-1-1 Office / 911.gov](#)

