Geographic Information Systems (GIS) And Next Generation 9-1-1

GIS in the next generation 9-1-1 (NG9-1-1) environment is different than how GIS data is used in legacy 9-1-1 systems. The core of NG9-1-1 is an emergency services IP network or ESInet. An ESInet contains several NG9-1-1 core services that perform functions. This includes among other things, validating incoming 9-1-1 calls, routing 9-1-1 calls to the correct PSAP, and sending information about the location of the call to the call handling equipment (CHE), all of which use GIS data. Therefore, current and accurate GIS data must be provided to the ESInet to perform those functions.

Because NG9-1-1 relies on locally developed geospatial data for routing 9-1-1 calls for service, significant effort needs to be made by each locality to ensure that mission critical GIS data layers required for NG9-1-1 (public safety answering point boundaries, provisioning boundary, road center lines, address points and emergency service boundaries for law, fire, and ems) are evaluated and optimized for use. Each data set must be accurate, maintained on a regular, frequent basis and conform to established standards for NG9-1-1. For call routing to occur accurately, each locality's PSAP boundary layer must align with adjoining PSAP boundaries to assure there are no gaps or overlaps. For GIS data to work in the NG9-1-1 system, each locality's provisioning boundary must align with adjoining provisioning boundaries to assure there are no gaps or overlaps.

To guarantee the success of current 9-1-1, and NG9-1-1 service, localities must dedicate resources to assure GIS data is always current and accurate. The investment in GIS data to support NG9-1-1 also improves its use in other areas of locality operations such as; economic development, planning/zoning, tax assessments, emergency services and etc.

TALKING POINTS: GIS IN THE NG9-1-1 ENVIRONMENT

The following are intended to assist GIS and 9-1-1 professionals explain the importance of GIS in the NG9-1-1 environment.

* The Virginia 9-1-1 Services Board is implementing Next Generation 9-1-1 (NG9-1-1) in the Commonwealth.

* The 2016 session of the General Assembly approved the 9-1-1 Services Board as the standard setting body for NG9-1-1 in the commonwealth.

* At the center of NG9-1-1 is an Emergency Services IP Network or ESInet.

* The ESInet contains several NG9-1-1 core services that validate incoming 9-1-1 calls and route, 9-1-1 calls to the correct PSAP, also providing essential data to the PSAP. The National Emergency Number Association (NENA) has defined and standardized many of these functions.

* NG9-1-1 relies on locally developed geospatial data for routing calls. Significant effort is required to ensure the geospatial data is evaluated for use in NG9-1-1, and provisioning to the NG9-1-1 system.

* Localities must have resources and processes in place to ensure GIS data is current and accurate for the success of current 9-1-1 and NG9-1-1.

PREPARING GIS DATA FOR NG9-1-1

* Verify that a structured 9-1-1 addressing process is in place.

    Make sure updated address information is incorporated in GIS and communicated to other departments and agencies that rely on physical addresses.

* Improve 9-1-1 GIS data and ensure consistency.

* Utilize VGIN's GIS Data Report Card as a starting point in determining readiness of your GIS address point and road centerline data for NG9-1-1.
    NGS staff will review results with you and help you prepare for next steps.

* Work with neighboring jurisdictions to identify and resolve PSAP/provisioning boundary issues.
    Key personnel: GIS, public safety, emergency managers.

* Verify that local GIS data meets minimum standards.
    Refer to state and NENA standards. (https://vgin.maps.arcgis.com/)

* Verify that attribute tables are organized, can populate the fields required by NG9-1-1 standards, and are consistent.