

THE SIF – A SPECIALIZED GEOGRAPHIC INFORMATION SYSTEM

In NG9-1-1 the Spatial Information Function (SIF) relies on specialized GIS capabilities and interfaces to support emergency call routing and location validation for NG9-1-1.

The creation of a SIF requires a new level of commitment to GIS at the state and local levels including the development of new capabilities and workflows for GIS professionals to support the provisioning of GIS data to the SIF.

THERE IS NO NG9-1-1 WITHOUT GIS.



WHAT LOCAL GIS COORDINATORS CAN DO TO PREPARE FOR NG9-1-1

Learn about how NG911 works.

Forge relationships with local 9-1-1 personnel and stakeholder groups:

- PSAP Managers
- Local Addressing Authorities
- Street Authorities
- Telephone Service Providers
- County and City GIS Professionals
- NG9-1-1 Service Providers

All must be involved in the design and maintenance of the NG9-1-1 system for it to be successful.

Build first-cut data sets and enlist 911 personnel in data maintenance.

Ensure centerlines and address data meet or exceed the State's LBRS standards.

GIS – THE REAL “G” IN NG9-1-1

The use of IP-enabled devices such as PCs, Tablets, Smart Phones, VOIP, and Vehicle Telematics are now the communications norm and citizens expect to be able to place a 9-1-1 call and receive help regardless of the technologies they choose. But legacy 9-1-1 systems are based on circuit switched telephony designed to carry voice only calls, and not the digital data these devices are capable of sending. So instead of a dispatcher being able to locate your phone by its GPS coordinates you must be able to communicate your location to the dispatcher.

Next Generation 9-1-1 (NG9-1-1) is a major redesign in the way 9-1-1 calls are delivered, which when fully implemented will rely on digital networks and geographic information to route calls to the appropriate Public Safety Answering Point (PSAP) based on location information provided by the caller's device. But having an accurate location does not mean emergency responders will be able to locate a caller unless the geographic information underpinning the system is:

- AVAILABLE** – The data exists and is readily accessible
- MAINTAINED** – Updated and Synchronized nightly
- AUTHORITATIVE** – Maintained by regulation or statute
- ACCURATE** – +/- 5 FT
- INTEGRATED** – Aggregated, Normalized and Seamless

NG9-1-1 READINESS

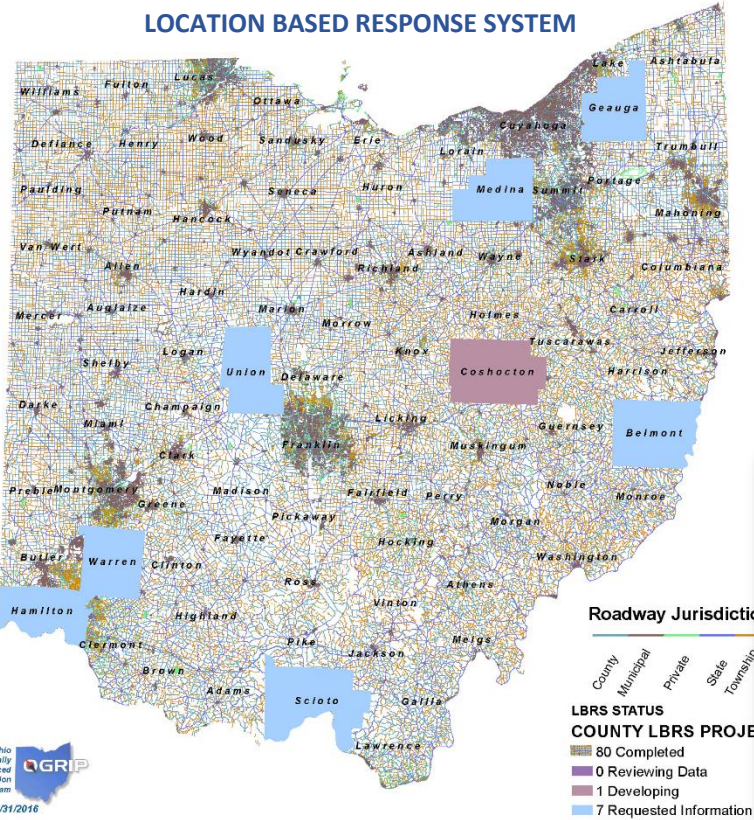
Most GIS data available to support NG9-1-1 is deficient in at least one of these areas, several are deficient in all five. A NG9-1-1 implementation requires specialized knowledge of spatial technologies, and few GIS departments have the necessary policies, procedures or infrastructure necessary to support the NG9-1-1 Spatial Information Function (SIF).

In Ohio the transition activities of over three-hundred 9-1-1 centers could be supported by creating a statewide SIF capability; relieving the need for local government to develop duplicative SIF infrastructure, support staff, procedures and policies.

RECOMMENDED STEPS FOR A NG9-1-1 TRANSITION

- Establish a program to support GIS/SIF data development, integration, conversion and synchronization.
- Establish model NG9-1-1 data governance policies and procedures for data creation, maintenance and sharing.
- Implement a hosted GIS/SIF database and editing solution for local government.
- Establish cooperative agreements and partnerships clearly defining roles and responsibilities of partner agencies for data sharing and maintenance.

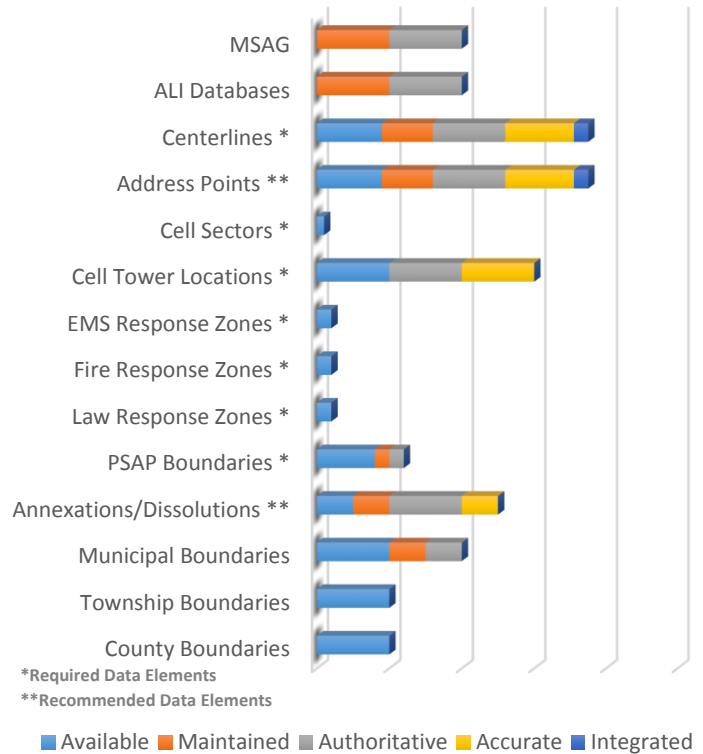
LOCATION BASED RESPONSE SYSTEM



The graphic to the left provides an overview of the readiness of State and Local government to provide LBRs centerline and address data support for the transition to NG9-1-1 with locally developed and maintained data.

The chart to the right provides an overview of the readiness of State and Local government to provide integrated GIS/SIF support for the transition to NG9-1-1.

State Level NG 9-1-1 GIS/SIF Component Status



Road Centerlines	Address Points	ALI	MSAG	ESB Polygons	PSAP Polygons	Authoritative Polygons
	Address Points to Centerlines	ALI to Centerlines	Valid MSAG Addresses to Centerlines			
	Address Points to ALI			ESB Polygons Attributes to ALI	PSAP Polygons Attributes to ALI	
Road Centerlines to MSAG	Address Points to MSAG	ALI to MSAG		ESB Polygons Attributes to MSAG	PSAP Polygons Attributes to MSAG	
Road Centerlines to ESB Polygons	Address Points to ESB Polygons	Geocoded ALI to ESB Polygons	Geocoded Valid MSAG Addresses to ESB Polygons		PSAP Polygons to ESB Polygons	Authoritative Polygons to ESB Polygons
Road Centerlines to PSAP Polygons	Address Points to PSAP Polygon	Geocoded ALI to PSAP Polygons	Geocoded Valid MSAG Addresses to PSAP Polygons	ESB Polygons to PSAP Polygons		Authoritative Polygons to PSAP polygons
				ESB Polygons to Authoritative Polygons	PSAP Polygons to Authoritative Polygons	

The table to the left lists 25 data synchronization checks that need to be performed and reconciled prior to provisioning GIS data to the SIF.