



GeoComm Web GIS Services Data Requirements and Submission Form

Overview

This document describes the overall GIS data requirements when using GeoComm's Web GIS Services to host and publish locally authoritative GIS data for use within RapidSOS Premium. It is meant to be filled out by the agency's GIS Data Provider to ensure the GIS data is configured accurately and according to user preferences.

Objectives of this document:

- Validate the data meets minimum requirements
- Document layer names and field mappings (when required, i.e. for location validation)
- List the specific layers and label fields that will be used as "supplemental layers"

Overall Checklist

- Does the data meet GIS data functionality requirements?
- Does the data meet GeoComm's GIS data configuration requirements?

What happens after filling out this document?

- 1) You submit this form to GeoComm.
- 2) An end user account is created within GeoComm's GIS Data Hub, and credentials emailed to access the system.
- 3) You upload your GIS data to GeoComm's GIS Data Hub.
- 4) If it passes basic QC checks, GeoComm configures the services for use in RapidSOS Premium, and the services are provided to RapidSOS to integrate into Premium.

Note: If your agency is part of a current NG9-1-1 preparation or deployment effort, it is likely your GIS data has been reviewed for alignment with the NENA NG9-1-1 GIS Data Model (NENA-STA-006). If your GIS data is aligned with that standard, it is very likely that it is highly optimized for use within the cloud-based mapping system.

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GIS data layers and configuration

For a cloud-based mapping system, GIS data generally falls into two categories:

- Data used to validate locations via geocoding (call plotting and searching)
- Data that is displayed on the map for visual reference purposes, and to access details about that feature (e.g. click on a fire hydrant to see flow capacity).

Location Validation Layers

- Road Centerline Layer
- Site/Structure Address Point Layer

Display Layers

- No specific layer/field requirements. For advice, such as display field usage, see the cloud-based mapping system requirements document.

Configuration

The basic configuration is these two services. This allows for location validation and display of locally authoritative GIS data. Individual cloud-based mapping applications may have requirements for additional services to optimize that applications functionality.

- Map Service: contains all layers configured into a single basemap
- Geocode Service: required to interface with location validation layers
- 2 additional services that can be toggled on and off (Ready 3). These services can contain a single layer of map information (e.g. parcel layer) or multiple layers (e.g. all utility or recreation layers), but the toggle for a given service will turn all of the associated layers on/off at once.

For an additional fee, GIS data can be configured into additional services above and beyond what is outlined above.

Not included in scope

- Correction of errors or discrepancies in the GIS data found in the setup and configuration process
- Display of locally flown aerial imagery.

GeoComm Web GIS Services Data Requirements

GeoComm Web GIS Services is a SaaS GIS data hosting solution which delivers locally authoritative GIS data to cloud-based mapping systems. For GeoComm to perform this service, it requires that GIS data is provided to GeoComm, along with this form.

When you are ready to submit this completed form along with your GIS data, please email this address RapidSOS@geocomm.com and a GIS Analyst will reply granting you access to GeoComm's GIS Data Hub to upload data for configuration and processing.

From here on down, please fill out this document and submit it zipped up with the associated GIS data and MSAG and ALI (if MSAG and ALI are available):

Site Contact Info: (The person we should contact for GIS data related issues)	
Site Name:	
Contact Name:	
Contact Phone #:	
Contact Email:	
Agency Name:	
Street:	
City, State, Zip:	

GIS Data Requirements Checklist

The GIS data provided must meet the following requirements. If there are any requirement issues present, a form will be sent back with a note to fix issues. GIS data requirement issues will cause a delay in processing the data.

Please place a check in each box to indicate that your GIS data meets the following GIS Data Requirements listed:

Data Meets Requirement	Requirement
<input type="checkbox"/>	Required GIS layers and fields are present (see "Required Layers" below)
<input type="checkbox"/>	GIS layers do not have z-values or m-values enabled
<input type="checkbox"/>	GIS data is in a file geodatabase format, with MSAG and ALI tables in the same geodatabase (if those tables are available) compressed in a .zip file
<input type="checkbox"/>	GIS data layers are in a standard ArcGIS-supported projection and are not using a custom projection
<input type="checkbox"/>	Only alphanumeric or underscore ('_') characters are supported in layer names or table names. Underscores ('_') or numbers may not be used to start a layer name.
<input type="checkbox"/>	Only alphanumeric or underscore ('_') characters are supported in field names in layers or tables. Underscores ('_') or numbers may not be used to start a field name.

Layers Used for Geocoding (Location Validation)

Certain layers are needed for the map to effectively validate locations and plot 9-1-1 calls through forward and reverse geocoding. For each GIS data layer used for geocoding, there are required, recommended, and optional fields.

- Required fields – fields that must be present and populated for the software to function at a base level, validating civic address locations (coming through the ALI feed, or manually typed into the search by the telecommunicator)
- Recommended fields – fields that are not necessary but would enhance the functionality of the software (to use alias table functionality, or symbolize roads based on road classification)
- Optional fields – fields that are not necessary but would still enhance the functionality even more (e.g., refine searches by Neighborhood Community)

Layer & Field Mapping Tables

1. For each of the layers below, please replace <<Layer Name>> with the name of the Layer as it appears within the submitted File Geodatabase.
2. For each **REQUIRED** Attribute Field below, please replace the <<Field Name>> under the **Source Attribute** column with the name of the field as it appears within the Layer submitted in the File Geodatabase.

Example

Road Centerline		Roads		
Priority	Attribute Field	Description	Source Attribute	Purpose
REQUIRED	Full Street Name	A single field containing combined street name attributes	Road_Name	to plot and search for addresses (when used with address range fields) and to display road names on the map
REQUIRED	Parsed Street Name	Fields containing Prefix, Street Name, Type, and Suffix street name attributes. Note: By default, parsed street name will be used for labeling. If an alternate field should be used for labeling, please note here.	St_Prefix St_Name St_Suffix St_Postfix	

Figure 1 - Example Completed Field Mapping Worksheet

Road Centerline		<<Layer Name>>	
Priority	Attribute Field	Description	Source Attribute
RECOMMENDED	Full Street Name	A single field containing combined street name attributes	<<Field Name>>
REQUIRED	Parsed Street Name	Fields containing Prefix, Street Name, Type, and Suffix street name attributes. Note: By default, parsed street name will be used for labeling. If an alternate field should be used for labeling, please note here.	<<Field Names>>
RECOMMENDED / REQUIRED if using alias tables	Unique ID	A field containing unique ID attributes maintained by agency that corresponds with the alias table unique IDs	<<Field Name>>
REQUIRED	Left and right address ranges	Four fields containing left from, left to, right from, and right to address attributes	<<Field Names>>
RECOMMENDED	ESN	Left and right fields containing Emergency Service Number (ESN) attributes for each side of the road	<<Field Names>>
REQUIRED	MSAG Community	Left and right fields containing MSAG community name attributes for each side of the road	<<Field Names>>
RECOMMENDED	Road Classification	A field containing road class attributes. This field is necessary to configure different styles based on road classification.	<<Field Name>>
OPTIONAL	Incorporated Municipality	Left and right fields containing incorporated municipality name attributes for each side of road	<<Field Names>>

OPTIONAL	Unincorporated Community	Left and right fields containing unincorporated municipality name attributes for each side of road	<<Field Names>>
OPTIONAL	Neighborhood Community	Left and right fields containing neighborhood community name attributes for each side of road	<<Field Names>>
OPTIONAL	Postal Code	Left and right fields containing postal code attributes for each side of road	<<Field Names>>
OPTIONAL	Postal Community	Left and right fields containing postal community name attributes for each side of road	<<Field Name>>
OPTIONAL	One-Way	A field containing any of the following one-way attributes	<<Field Name>>
OPTIONAL	Speed Limit	A field containing numeric speed limit attributes in mph	<<Field Name>>
OPTIONAL	Other Attributes	Any additional attribute fields that would be helpful for call takers	<<Field Name>>

Site/Structure Address Points		<<Layer Name>>	
Priority	Attribute Field	Description	Source Attribute
OPTIONAL	Address Number Prefix	A field containing alphanumeric characters preceding the house number (example N in the house number N123)	<<Field Name>>
REQUIRED	Address Number	A numeric field containing house number (prefix and suffix must be in separate fields)	<<Field Name>>
OPTIONAL	Address Number Suffix	A field containing alphanumeric characters following the house number (example ½ in the address 101 ½)	<<Field Name>>
REQUIRED	Street name	A field containing street name attributes in a single field or parsed into multiple fields	<<Field Names>>
OPTIONAL	Unique ID	A field containing a unique alphanumeric attribute for each address point	<<Field Name>>
RECOMMENDED	RCL Unique ID	A field containing the road centerline's unique alphanumeric attributes based on the road segment the address is obtained from (REQUIRED if using alias tables) Must match "Unique ID " field in Road Centerlines table above	<<Field Name>>
RECOMMENDED	ESN	A field containing ESN attributes for the address point	<<Field Name>>

REQUIRED	MSAG Community	A field containing MSAG community name attributes for the address point	<<Field Name>>
RECOMMENDED	Place Type	A field containing place type attributes.	<<Field Name>>
OPTIONAL	Building	A field containing an alphanumeric attribute if a building # is needed	<<Field Name>>
OPTIONAL	Floor	A field containing an alphanumeric attribute if a floor # is needed	<<Field Name>>
OPTIONAL	Unit*	A concatenated field containing unit description and unit number attributes	<<Field Name>>
OPTIONAL	Unit description*	A field containing unit, Suite, etc. attributes	<<Field Name>>
OPTIONAL	Unit number*	A field containing alphanumeric attributes (Ex. 1A)	<<Field Name>>
OPTIONAL	Landmark name	A field containing common landmark name attributes (e.g., Walmart)	<<Field Name>>
OPTIONAL	External Resource	A field containing external link to GIS data resources such as websites or files	<<Field Name>>
OPTIONAL	Other Attributes	Any additional attribute fields that would be helpful for call takers	<<Field Name>>

Ready 1 - GIS Data Layers

Certain layers are needed for the map to effectively validate locations and plot 9-1-1 calls through forward and reverse geocoding. GeoComm will conduct an analysis of the GIS data outlined above in the Layers Used for Geocoding (Location Validation) section. Those layers as well as the MSAG and ALI (if provided) will be analyzed for accuracy and synchronization.

Ready 2 - GIS Data Layers

Ready 2 includes one Map Service and one Geocode service. The geocode service will be configured to search Road Centerlines and Address points. Configuration and label fields for those layers will be taken from the tables above in the Layers Used for Geocoding (Location Validation) section. Beyond Road Centerlines and Site/Structure Address Points, a subset of layers will be included to create a Basemap Service. Those additional GIS Layers include:

- County Boundary (if provided)
- City Boundary (if provided)
- State Boundary (if provided)
- Lakes and Rivers (if provided)
- Parcels (if provided)
- Mile Markers (if provided)
- Points of Interest (if provided)
- Areas of Interest (if provided)
- Hydrants (if provided)
- Railroad Centerlines (if provided)

For these additional layers in the basemap service, please indicate the following information.

GIS Data Layer Name	Field to use for labeling purposes
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>

Ready 3 - GIS Data Layers

Ready 3 includes the ability to add two additional Map Services. Those services will be constructed as follows.

Additional Service 1 - Responder/Service Boundaries

The polygon boundary layers listed below, when included in a cached basemap service, can make the overall basemap cluttered and hard to read. It is for this purpose that they will be placed in a separate service with the ability to toggle the group of boundaries on and off.

- Emergency Service Zone Boundaries
- Fire Responder Boundaries
- EMS Responder Boundaries
- Law Responder Boundaries
- PSAP Boundaries

GIS Data Layer Name	Field to use for labeling purposes
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>
<<Layer Name>>	<<Field Name>>

Additional Service 2 - Supplemental Layers

We want your map to be a rich and detailed view of available GIS layers, however keep in mind that an excess of data may have a performance impact on the mapping application.

Supplemental layers work well for data that isn't needed on every call and would otherwise clutter up your basemap. Examples:

- Recreational trails - hiking or walking trails
- Utilities (e.g. water, sewer, storm water features)

Please supply the Layer Name and Description of any additional supplemental layers you've submitted.

Additional Layers Included	Description	Field to use for labeling purposes
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
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<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>
<<Layer Name>>	<<Description>>	<<Field Name>>

Map Display

GeoComm provides a color palette carefully designed to facilitate an easy, yet effective user experience for RapidSOS Premium customers. Considerable research has gone into developing an eye catching and user-friendly map, which:

- does not produce a harsh glow from the computer screen found with other, brighter color palettes.
- uses accent colors to “pop” and grab the user’s attention.
- limits the use of red and green, which are particularly hard for those with colorblindness to see easily.
- uses fill patterns to give visual indication of the item in addition to colors, where applicable, to help differentiate features for those with colorblindness.

Map Updates

After the initial publishing of your data, map updates can be submitted at intervals per the term of your subscription. **Updated map data must be provided in the same format, with the same layer names, and with the same attribute fields as the original data submission.** If changes have been made to any of these elements (or new layers or attribute fields need to be added) please contact GeoComm Technical Support at 866-837-7379.