



Public Safety GIS Position Qualifications Version 1.0

GEOGRAPHIC INFORMATION SYSTEMS (GIS) ANALYST

TYPE	TYPE 1	TYPE 2
DESCRIPTION	<p>The Type 1 GIS Analyst holds all the Type 2 responsibilities PLUS</p> <ol style="list-style-type: none"> 1. Producing, maintaining, and managing GIS resources, including supporting data, for an incident and is equipped with one or more of the technical specialties outlined below 2. The Type 1 GIS Analyst qualifications are focused on additional qualification needed for specialization in Hazards United States (Hazus), chemical biological nuclear radiological high yield explosives (CBRNE), and/or wildland fire. The specialty needed is determined by the incident's needs and should be provided by the resource requestor when ordering 3. Performs duties within a GIS Section or Branch and/or manages GIS Analysis 4. Maintains ownership and authority over the appropriate web maps and apps for the GIS Section or Branch. Provides governance and guidance on data management and dissemination. 5. Maintains skills and abilities with basic development tools including model builder, python, and web application configuration. <p>Below are specializations that may be specifically requested depending on the type of event. This list is not exhaustive but it represents three of the primary areas of specialization for Public Safety GIS Analyst that are most commonly requested and deployed.</p> <p>Hazus Specialization A GIS Analyst with expertise in Hazus is responsible for using Hazus to perform in-depth analysis for flood, earthquake, wind, and coastal surge.</p> <p>CBNRE Specialization A GIS Analyst with expertise in CBRNE is responsible for performing in-depth analysis for CBRNE incidents or events.</p> <p>Wildland Fire Specialization A GIS Analyst with expertise in Wildland Fire is responsible for performing in-depth analysis using fire behavior modeling prior to or during a wildland fire incident.</p>	<p>The Type 2 GIS Analyst is responsible for the following:</p> <ol style="list-style-type: none"> 1. Producing and/or maintaining GIS hardware, software, and data resources for an incident 2. Conducting GIS data analyses to enhance situational awareness and aid decision making 3. Building and supporting web maps and applications
CATEGORY	CRITERIA	CRITERIA
EDUCATION	Same as Type 2	Completion of a formal GIS-related educational or certificate program or Recognition of prior learning focusing on demonstrated knowledge and skills
NOTES: GIS-related education is available in a variety of formats including: GIS certificates, GIS degrees, and GIS on the job training		



Public Safety GIS Position Qualifications Version 1.0

TYPE	TYPE 1	TYPE 2
TRAINING	<p>Same as Type 2</p> <p>PLUS the following for Hazus Specialization</p> <ol style="list-style-type: none"> 1. E0170: Hazards United States-Multihazard (Hazus-MH) for Hurricanes 2. E0172: Hazus-MH for Flood 3. E0174: Hazus-MH for Earthquake 4. E0176: Hazus-MH for Floodplain Managers 5. E0179: Application of Hazus-MH for Disaster Operations 6. Virtual Course: Introduction to the Hazus-MH 2.0 Storm Surge Model available at www.fema.gov <p>PLUS, formal or on the job training consistent with GIS industry standards to include:</p> <p>CBRNE Specialization</p> <ol style="list-style-type: none"> 1. CBRNE modeling 2. Plume and blast modeling <p>Wildland Fire Specialization Wildland fire behavior modeling</p>	<p>Completion of the following</p> <ol style="list-style-type: none"> 1. IS-100: Introduction to Incident Command System (ICS) 2. IS-200: ICS for Single Resources and Initial Action Incidents 3. IS-700: National Incident Management System (NIMS) An Introduction 4. IS-800: National Response Framework, An Introduction 5. IS-922: Applications of GIS for Emergency Managers <p>Formal or informal training consistent with GIS industry standard certification or educational program to include:</p> <ol style="list-style-type: none"> 1. Geospatial database management 2. Editing and managing GIS resources 3. Creating and executing GIS queries 4. Familiarization with scripting applications such as model builder, python, and web application configuration 5. Acquisition and use of Remote Sensing products 6. Publishing of data for distribution via web maps and apps 7. Creation and management of web maps and associated applications
<p>NOTES: The Type 1 GIS Analyst qualifications are focused on additional qualifications needed for specialization in Hazus, CBRNE, and/or Wildland Fire.</p>		



Public Safety GIS Position Qualifications

Version 1.0

EXPERIENCE	<p>Same as Type 2 PLUS:</p> <ol style="list-style-type: none"> 1. Ability to administer web portals and cloud solutions for data dissemination and web mapping. 2. Skills in the use of python for GIS manipulation 3. Detailed working knowledge of model builder 4. Detailed working knowledge of configuring and launching web applications for use by decision makers <p>KSAs for Hazus Specialization:</p> <ol style="list-style-type: none"> 1. Ability to use Hazus-MH models including Earthquake, Flood, Hurricane, and Storm Surge models 2. Ability to apply Hazus-MH models to create maps, conduct analyses, and produce reports for use in situational awareness and decision making <p>KSAs for CBRNE Specialization:</p> <ol style="list-style-type: none"> 1. Ability to conduct infrastructure analysis 2. Ability to use and perform CBRNE hazard modeling 3. Ability to use plume and blast modeling tools and methods 4. Ability to serve as lead in conducting spatial analysis and production for all Consequence Management Area Assignments <p>KSAs for Wildland Fire Specialization:</p> <ol style="list-style-type: none"> 1. Knowledge of wildland fire behavior modeling tools and methods 2. Ability to use wildland fire behavior modeling tools and methods 3. Knowledge of wildland fire operations 4. Ability to apply wildland fire data to create maps, conduct analyses, and produce reports for use in situational awareness and decision making <p>Experience:</p> <ol style="list-style-type: none"> 1. Two years of experience working in or supporting a public safety agency 2. Three years of practical GIS experience 	<p>Knowledge, Skills, and Abilities (KSAs):</p> <ol style="list-style-type: none"> 1. Knowledge of and ability to use common location reference systems to include: United States National Grid (USNG), latitude/longitude, and other appropriate location languages in support of disaster operations 2. Ability to create a reference map 3. Ability to create paper maps to meet incident needs consistent with GIS industry practices 4. Ability to manage data sets with different projections and create GIS products 5. Ability to prepare data for use in GIS software 6. Ability to join GIS data 7. Ability to open and manipulate GIS attribute tables 8. Ability to create thematic maps using categorical or numerical data 9. Ability to create a map from Global Positioning System (GPS) point data or list of addresses 10. Ability to edit and join boundaries 11. Ability to manipulate and analyze raster-based data 12. Ability to digitize a paper map 13. Ability to query information on the map based on either attribute or the location of the feature(s) 14. Ability to create a report from GIS data 15. Ability to apply geoprocessing techniques to GIS features 16. Ability to create maps in multiple forms including bulk printing, map books, and paper files 17. Ability to evaluate different map types and data sources to understand limitations and present the most useful information 18. Ability to create and edit geospatial models for analytical processing 19. Ability to search and identify local historical hazard data to perform and visualize trend analysis 20. Ability to implement information sharing procedures/governance in order to coordinate activities among project stakeholders 21. Ability to implement continuity procedures 22. Ability to implement quality assurance/quality control procedures 23. Ability to utilize OGC compliant software and products to disseminate geospatial data and maps via the web to users 24. Ability to publish local data via webservices to cloud and server sites 25. Ability to perform data caching for web services 26. Ability to create and configure web maps 27. Ability to create and configure web applications 28. Ability to embed web maps inside of websites 29. Knowledge of web services data types as they relate to geospatial data (features services vs map services, etc. <p>Experience:</p>
-------------------	---	---



Public Safety GIS Position Qualifications Version 1.0

TYPE	TYPE 1	TYPE 2
		1. Two years of practical GIS experience. Practical experience can include, but is not limited to, producing maps for real world projects in any sector or discipline. Experience Continued: 2. Completion of a GIS Analyst Position Task Book (PTB) or equivalent documentation that validates and verifies (by the Agency Having Jurisdiction (AHJ)) the successful completion of all skills and demonstrates the ability to perform skills
	NOTES: 1. Reference maps include street maps, parcel maps, maps with addresses, and local area maps showing hazards. Categorical and thematic maps have information to support decision making. Examples of categorical and thematic maps include statistical maps, flood maps, and maps created from analyses. 2. In catastrophic disasters, jurisdictions may be able to use GIS Analysts from a range of organizations such as land or environmental management, fish and wildlife, parks and recreation, water management, county property appraisers, public works, and transportation agencies that meet the qualifications of the Type 2 GIS Analyst.	
PHYSICAL/ MEDICAL FITNESS	Same as Type 2	Ability to perform duties under moderate circumstances characterized by working consecutive 12-14 hour days under physical and emotional stress for sustained periods of time. This position may require work outdoors and in the field in disaster environments.
	NOTES: Moderate fitness or work capacity criteria should be consistent with the physical fitness levels defined in the NWCG Fitness and Work Capacity, National Fire Protection Association (NFPA) 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments, or equivalent physical and medical fitness criteria determined by the AHJ.	
CURRENCY	Operational incident experience and/or participation in exercises, drills, or simulations within three years from the time approved by the AHJ to serve as the GIS Analyst	Not Specified
	NOTES: Not Specified	
PROFESSIONAL AND TECHNICAL LICENSES AND CERTIFICATIONS	Same as Type 2	1. Completion of GIS industry standard certification program or equivalent 2. Maintain currency in the use and application of the latest GIS technology and certifications used in the industry
	NOTES: Not Specified	

ORDERING SPECIFICATIONS OR DESIGNATIONS

- Can be ordered as a single resource
 - Can be ordered in conjunction with a typed team (GIS Map Support Team)
 - Can be ordered in conjunction with a typed unit
1. Logistics for deploying this position (e.g., security, lodging, transportation, meals) should be discussed prior to deployment of this resource.
 2. This position can work up to 12 hours per shift, is self-sustained for 72 hours, and deployable for up to 14 days.



Public Safety GIS Position Qualifications Version 1.0

3. If ordering the Type 1 GIS Analyst, the requestor should specify the specialty needed based on the mission needs of the incident or event.

REFERENCES

1. National Fire Protection Association (NFPA) 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments, latest edition adopted
2. National Wildfire Coordinating Group (NWCG), National Incident Management System Wildland Fire Qualification System Guide, PMS 310-1, Physical Fitness Levels, October 2013
3. NWCG, Task Book for the Position of Geographic Information System Specialist, PMS 311-77, June 2009

NOTE

NONE