

## Research Analyst 1 (Geographic Information Systems)

### *Essential Task Rating Results*

1	Gather and compile geographic data from a variety of sources (e.g., censuses, field observations, satellite imagery, aerial photographs, Global Positioning System [GPS] data, and existing maps).
2	Identify and compile spatially-referenced database information to create maps.
3	Create metadata and support documentation for spatial datasets and work projects.
4	Review and edit attribute and spatial data as required to ensure the most accurate and up-to-date information is available for optimum analyses using Geographical Information Systems (GIS) editing tools and workflows (e.g., merge, create, modify, reshape).
5	Create and modify reports, maps, graphs, or diagrams using geographic information system software, related equipment and principles of cartography.
6	Operate and maintain Geographic Information System (GIS) equipment (e.g., computer hardware, software, plotters, and printers).
7	Design cartographic representations of Geographic Information System (GIS) data to complete mapping tasks in support of departmental needs.
8	Produce custom products (e.g., maps, scripts, tools, models, reports) for geospatial data in accordance with departmental needs.
9	Perform spatial analyses to address specific research questions using geoprocessing tools and methods (buffering, clipping, calculations, etc.).
10	Perform aerial imagery interpretation combined with other geospatial data to produce custom data products.
11	Develop standard data collection procedures and analyze existing procedures to ensure accuracy, consistency, and completeness of data used in reports or research projects.
12	Research source documents (e.g., parcel maps, legal descriptions, permits, historical maps) to assess the accuracy and completeness of data prior to input.
13	Evaluate data sources to determine any limitations in terms of reliability or usability to conduct research projects or in response to policy questions.
14	Perform data validation checks to ensure integrity and accuracy of the data to conduct research projects or in response to policy questions.
15	Create topological relationships between data layers to ensure quality control.
16	Georeference maps to real world coordinates to align data.
17	Create and modify maps using geographic information software, related technology, and the principles of cartography to display research results or in response to policy questions.
18	Prepare and format data from various sources (e.g., spreadsheets, Global Positioning System [GPS], text files, databases, Keyhole Markup language [KML]) for import into Geographical Information Systems (GIS) using various software (e.g., Enterprise GIS, ArcGIS, special-purpose programming language [SQL], Access, Excel, Google Earth).

19	Review the results of a Geographical Information Systems (GIS) analysis (e.g., spatial and tabular analysis) to verify the validity, quality, accuracy and significance.
20	Condense and summarize the results of a Geographical Information Systems (GIS) analysis using software (e.g., spreadsheet, database, statistical) to effectively display important findings in appropriate formats (e.g., graphs, charts, tables).
21	Retrieve electronic data from various sources (e.g., computer networks, File Transfer Protocol [FTP], email, the cloud, mobile devices) to store in a secure database or data warehouse.
22	Maintain and update databases containing information from departmental, local, state and federal agencies, non-governmental, and other sources to use in research projects and meet requirements of State and/or federal agencies.
23	Propose solutions to resolve issues (e.g., project management, design, data collection) with research projects to meet deadlines.
24	Collaborate with Geographical Information Systems (GIS) and non-GIS staff to identify the needs of the requestor and provide products (e.g., maps, data, spreadsheet, reports).
25	Respond to ad-hoc data requests from internal and external requestors.
26	Write correspondence (e.g., memos, letters, emails, telephone calls) to communicate with various departments and/or internal and external stakeholders.
27	Review and edit documents and written materials (e.g., letters, memos, reports, correspondence) to ensure accuracy and completeness.
28	Prioritize the handling of problems or issues related to the progress of work projects or assignments to determine the best course(s) of action to mitigate the impact of such issues and/or problems.
29	Determine work priorities, scope of assignments and establishes deadlines for work to ensure objectives are met effectively and in a timely manner.
30	Provide technical support to others regarding Geographical Information Systems (GIS) functionality, policies and procedures to ensure accuracy and understanding.
31	Develop tentative time schedules for projects to achieve project goals and objectives.