

## **GIS Specialist**

### **SUMMARY/PURPOSE**

To design, install, administer, and optimize the City's Geographic Information System (GIS) software and related components to achieve high levels of performance and security while delivering optimal GIS solutions. This involves maintaining the stability of the GIS environment through end user training, technical support, and maintenance.

### **SUPERVISION RECEIVED**

The supervisor provides continuing or individual assignments by indicating generally what is to be done, limitations, quality and quantity expected, deadlines, and priority of assignments. The supervisor provides additional, specific instructions for new, difficult, or unusual assignments, including suggested work methods or advice on source material available.

### **SUPERVISION GIVEN**

Does not have direct supervisory responsibility but does have significant oversight of employees or projects that require delegation and direction over the work of others.

### **ESSENTIAL DUTIES AND RESPONSIBILITIES**

1. Assist in the development of long-term strategies and planning for the GIS environment, upgrades, data integrity methodology, database development, and maintenance, as well as editing tools required to support those strategies while incorporating future growth.
2. Perform complex GIS analysis using tabular and spatial data.
3. Incorporate various formats of tabular and spatial data into the GIS database.
4. Develop automated editing tools to enhance GIS data updating, analysis, and retrieval procedures, while ensuring data integrity.
5. Plan and implement GIS server upgrades, maintenance fixes, and vendor-supplied patches.
6. Assist with the development of GIS standards and procedures.
7. Plan, assign, and review GIS projects and oversight of GIS project work performed by various City department staff to ensure efficient operations and that data integrity is maintained.
8. Provide GIS guidance, assistance, and training to all departments within the City of Duluth and act as a liaison to other departments, staff, and outside agencies in the area of GIS data availability and use.
9. Manage end user GIS accounts, permissions, and access rights in accordance with best practices regarding privacy, security, and regulatory compliance.
10. Conduct research on emerging products, services, protocols, and standards in support of GIS software procurement and development efforts, evaluate and recommend products/services for purchase.
11. Assist in overseeing the system security, data integrity, and operational efficiencies of the overall GIS foundation and data layers.
12. Participate in the planning and implication of procedures to ensure the GIS system maintenance is consistent with the City's goals, industry best practices, and regulatory requirements.
13. Coordinate and perform GIS functions and programs for the City.
14. Be an effective team member by exhibiting self-motivation, supporting other employees in handling tasks, interacting effectively and respectfully with others, showing a desire to contribute to the team effort, accepting assignments willingly, and completing tasks within agreed upon timelines.
15. Coordinate with various City departments, other government agencies, and community groups to develop methods of sharing resources, minimizing duplication, and simplifying procedures.
16. Provide training on new or modified procedures and policies to all affected parties.
17. In collaboration with the supervisor, organize and direct the work activities of assigned team, and determine work priorities, assignments, and work schedules.

18. Provide input on decisions regarding the hiring processes and onboarding procedures of personnel.
19. Establish and maintain positive working relationship with the supervisor and employees by maintaining two-way communication, producing consistent results, advocating for the team when appropriate, and offering expertise to improve processes, systems, and the organization.
20. Other duties may be assigned.

#### JOB REQUIREMENTS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed are representative of the knowledge, skills, and abilities required.

1. Education & Experience Requirements
  - A. Graduation from an accredited technical school in the field of Geographic Information Systems (GIS), Geography, Surveying, Cartography, Computer Science, or a related professional field of study with coursework in mapping, surveying, computer science, and spatial analysis, and five (5) years of full-time related professional experience; OR a Bachelor's Degree in GIS, Geography, Surveying, Cartography, Computer Science, or a related professional field of study with coursework in mapping, surveying, computer science, and spatial analysis, and three (3) years of full-time, related professional experience; OR a minimum of seven (7) years of related education and/or full-time, verifiable professional experience in GIS.
2. License Requirements
  - A. No specific licenses required.
3. Knowledge Requirements
  - A. Extensive knowledge of computerized mapping technology and software as it relates to GIS database management and GIS analysis and digital map production, including the ESRI Enterprise suite of applications.
  - B. Knowledge of database management (MS SQL preferred), software programming (Python, Arcade, VB Script preferred), and network management as it relates to GIS.
  - C. Knowledge in the use of various computer peripherals, including data acquisition and output devices such as printers, scanners, plotters, GPS equipment, etc.
  - D. Knowledge of surveying techniques and methods (experience interpreting legal descriptions preferred).
  - E. Knowledge of complex mathematics as it applies to GIS.
  - F. Knowledge of problem-solving and conflict-resolution techniques.
  - G. Knowledge of applicable safety requirements.
  - H. Knowledge of, or the ability to learn, City policies and procedures.
  - I. Knowledge of federal, state, and local laws, statutes, regulations, codes, and standards related to the area of responsibility.
  - J. Knowledge of effective leadership and personnel practices.
4. Skill Requirements
  - A. Skill in overseeing personnel assigned to GIS staff and GIS project work performed by various City department staff.
  - B. Skill in using various computer peripherals such as printers, scanners, plotters, GPS equipment, etc.
  - C. Skill in preparing written materials such as procedures, policies, plans, and recommendations.
  - D. Skill in the operation of office equipment including, but not limited to, general computer systems, job required software applications, the internet, and modern office equipment.
  - E. Skill in managing one's own time and the time of others.

- F. Skill in completing assignments accurately and with attention to detail.
- G. Skill in mediation and dispute resolution.[KC1]
- H. Skill in using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

5. Ability Requirements

- A. Ability to create and maintain a positive working environment that welcomes diversity, ensures cooperation, and promotes respect by sharing expertise with team members, fostering safe work practices, and developing trusting work relationships.
- B. Ability to communicate and interact effectively with members of the public.
- C. Ability to communicate effectively both orally and in writing.
- D. Ability to recognize, analyze, and solve a variety of problems.
- E. Ability to organize and prioritize work while meeting multiple deadlines.
- F. Ability to handle difficult and stressful situations with professional composure.
- G. Ability to work successfully as a member of a team and independently with minimal supervision.
- H. Ability to train and lead others.
- I. Ability to interpret and apply laws, contracts, regulations, policies, and procedures.
- J. Ability to enforce safety rules and regulations.
- K. Ability to maintain confidential information.
- L. Ability to demonstrate dependability, responsibility, and consistency in job performance.
- M. Ability to attend work as scheduled and/or required.

Physical Demands

The work is sedentary. Typically, the employee may sit comfortably to do the work. However, there may be some walking, standing, bending; carrying of light items such as papers, books, small parts; driving an automobile, etc. No special physical demands are required to perform the work.

Work Environment

The work environment involves everyday risks or discomforts requiring normal safety precautions typical of places such as offices, meeting and training rooms, libraries, and residences or commercial vehicles (e.g., use of safe work practices with office equipment, avoidance of trips and falls, observance of fire regulations and traffic signals, etc.). The work area is adequately lighted, heated, and ventilated.

HR: CK	Union: Basic	EEOC: Professionals	CSB: 11/01/2022	Class No: 3213
WC: 8810	Pay:	EEOF: Admin/Finance	CC:	Resolution:

## ~~GEOGRAPHIC INFORMATION SYSTEMS (GIS) SPECIALIST~~

### GIS Specialist

#### SUMMARY/PURPOSE

~~:- To provide technical support~~ design, install, administer, and maintain ~~optimize the functions of the City of Duluth's City's~~ Geographic Information System (GIS) ~~operations~~ software and related components to achieve high levels of performance and security while delivering optimal GIS solutions. This involves maintaining the stability of the GIS environment through end user training, technical support, and maintenance.

#### ~~Functional areas:~~

#### 1. SUPERVISION RECEIVED

The supervisor provides continuing or individual assignments by indicating generally what is to be done, limitations, quality and quantity expected, deadlines, and priority of assignments. The supervisor provides additional, specific instructions for new, difficult, or unusual assignments, including suggested work methods or advice on source material available.

#### SUPERVISION GIVEN

Does not have direct supervisory responsibility but does have significant oversight of employees or projects that require delegation and direction over the work of others.

#### ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Assist in the development of long-term strategies and planning for the GIS environment, upgrades, data integrity methodology, database development, and maintenance, as well as editing tools required to support those strategies while incorporating future growth.
  2. Perform complex GIS analysis using tabular and spatial data.
  3. \* A. Incorporate various formats of tabular and spatial data into the GIS database.
  4. \* B. Develop automated editing tools to enhance GIS data updating, analysis, and retrieval procedures, while ensuring data integrity.
  - \* C. Verify data integrity of new Plan and existing implement GIS data.
  - \* D. Ensure data integrity of relational databases containing GIS data.
  5. \* E. Assist in the server upgrades, maintenance, installation fixes, and upgrading of GIS hardware and software vendor-supplied patches.
  6. F. Assist with the development of GIS standards and procedures.
  - \* G. Provide GIS assistance and training to City of Duluth staff.
  7. \* H. Plan, assign, and review GIS projects and operations of assigned staff oversight of GIS project work performed by various City department staff to ensure efficient operations and that data integrity is maintained.
  8. \* I. Act Provide GIS guidance, assistance, and training to all departments within the City of Duluth and act as a liaison to other departments, staff, and outside agencies in the area of GIS data availability and use.
    - J. Perform related duties as assigned.
- ~~2. When assigned, organize and direct the activities of personnel.~~
- ~~\* A. Determine priorities, assign work to personnel, and coordinate schedules to ensure completion of work.~~
  - ~~\* B. Assist in the hire, transfer, suspension or discharge of assigned personnel.~~
  - ~~\* C. Establish work standards and evaluate the work of employees.~~

- \* ~~D. Monitor work sites to ensure compliance with established methods, guidelines, and procedures.~~
- \* ~~E. Train personnel in correct and safe operating procedures.~~
- \* ~~F. Recommend adjustments or other actions in employee grievances.~~
- \* ~~G. Disseminate instructions to employees through bulletins and other communications.~~
- 9. Manage end user GIS accounts, permissions, and access rights in accordance with best practices regarding privacy, security, and regulatory compliance.
- 10. Conduct research on emerging products, services, protocols, and standards in support of GIS software procurement and development efforts, evaluate and recommend products/services for purchase.
- 11. Assist in overseeing the system security, data integrity, and operational efficiencies of the overall GIS foundation and data layers.
- 12. Participate in the planning and implication of procedures to ensure the GIS system maintenance is consistent with the City's goals, industry best practices, and regulatory requirements.
- 13. Coordinate and perform GIS functions and programs for the City.
- 14. Be an effective team member by exhibiting self-motivation, supporting other employees in handling tasks, interacting effectively and respectfully with others, showing a desire to contribute to the team effort, accepting assignments willingly, and completing tasks within agreed upon timelines.
- 15. Coordinate with various City departments, other government agencies, and community groups to develop methods of sharing resources, minimizing duplication, and simplifying procedures.
- 16. Provide training on new or modified procedures and policies to all affected parties.
- 17. In collaboration with the supervisor, organize and direct the work activities of assigned team, and determine work priorities, assignments, and work schedules.
- 18. Provide input on decisions regarding the hiring processes and onboarding procedures of personnel.
- 19. Establish and maintain positive working relationship with the supervisor and employees by maintaining two-way communication, producing consistent results, advocating for the team when appropriate, and offering expertise to improve processes, systems, and the organization.
- 20. Other duties may be assigned.

## **JOB REQUIREMENTS**

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed are representative of the knowledge, skills, and abilities required.

### **1. Education & Experience Requirements:**

- A. ~~A. — Minimum of a Bachelor's Degree in~~ Graduation from an accredited technical school in the field of Geographic Information Systems (GIS), Geography, Surveying, Cartography, Computer Science, or a related professional field of study with ~~course-work~~ coursework in mapping, surveying, computer science, and spatial analysis, AND and five (5) years of full-time related professional experience; OR a Bachelor's Degree in GIS, Geography, Surveying, Cartography, Computer Science, or a related professional field of study with coursework in mapping, surveying, computer science, and spatial analysis, and three (3) years of full-time, related professional experience; OR a minimum of three years of GIS work experience (experience with ESRI products preferred), OR five years of seven (7) years of related education and/or full-time, verifiable workprofessional experience at a journey-levelin GIS technician position, OR equivalent combination of verifiable education and experience which demonstrates possession of the knowledge, skills and abilities listed below.

### **2. License Requirements**

- A. No specific licenses required.

### 3. Knowledge Requirements:

- A. ~~H—A.~~ Extensive knowledge of computerized mapping technology and software as it relates to GIS database management and GIS analysis and digital map production, including the ESRI Enterprise suite of applications.
- B. ~~H—B.~~ Knowledge of database management, (MS SQL preferred), software programming (Python, Arcade, VB Script preferred), and network management as it relates to GIS.
- H ~~———— C.~~ ~~Knowledge of various computer programming languages (C++, Visual Basic, Arc Macro Language) and operating systems (various versions of Windows, Linux, Unix).~~
- C. ~~H—D.~~ Knowledge in the use of various computer peripherals ~~and,~~ including data acquisition and output devices such as printers, scanners, plotters, ~~digitizers,~~ GPS equipment, etc.
- D. ~~H—E.~~ Knowledge of surveying techniques and methods. (experience interpreting legal descriptions preferred).
- E. ~~H—F.~~ Knowledge of complex mathematics as it applies to GIS ~~including Algebra, Geometry and Trigonometry.~~
- F. Knowledge of problem-solving and conflict-resolution techniques.
- G. Knowledge of applicable safety requirements.
- H. Knowledge of, or the ability to learn, City policies and procedures.
- I. Knowledge of federal, state, and local laws, statutes, regulations, codes, and standards related to the area of responsibility.
- J. Knowledge of effective leadership and personnel practices.

### 4. Skill Requirements:

- A. ~~H—A.~~ Skill in ~~supervising~~overseeing personnel assigned to GIS staff. and GIS project work performed by various City department staff.
- B. ~~H—B.~~ Skill in using various computer peripherals such as printers, scanners, plotters, ~~digitizers,~~ GPS equipment, etc.
- H ~~———— C.~~ ~~Skill in effectively communicating and maintaining working relationships with employees of the City of Duluth, other agencies and the general public.~~
- C. ~~D.~~ Skill in preparing written materials such as procedures, policies, plans, and recommendations.
- D. Skill in the operation of office equipment including, but not limited to, general computer systems, job required software applications, the internet, and modern office equipment.
- E. Skill in managing one's own time and the time of others.
- F. Skill in completing assignments accurately and with attention to detail.
- G. Skill in mediation and dispute resolution.[KC1]
- H. Skill in using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

### 5. Ability Requirements:

- H ~~———— A.~~ ~~Ability to research, analyze and solve problems.~~
- A. ~~H—B.~~ Ability to create and maintain a positive working environment that welcomes diversity, ensures cooperation, and promotes respect by sharing expertise with team members, fostering safe work practices, and developing trusting work relationships.
- B. Ability to communicate on a one-to-one basis and before groups for the purpose of obtaining and providing information and interact effectively with members of the public.
- C. ~~H—C.~~ Ability to understand and carry out written and verbal instructions communicate effectively both orally and in writing.

- D. ~~H—D.~~ Ability to ~~occasionally lift objects up to 50 pounds~~ recognize, analyze, and solve a variety of problems.
- E. ~~H—E.~~ Ability to ~~occasionally bend, kneel, stoop, crouch or crawl~~ organize and prioritize work while ~~installing hardware and software~~ meeting multiple deadlines.
- F. ~~H—F.~~ Ability to handle difficult and stressful situations with professional composure.
- G. Ability to work ~~at successfully as a computer for extended periods~~ member of a team and independently with minimal supervision.
- H. ~~H—G.~~ Ability to train and lead others.
- I. Ability to interpret and apply laws, contracts, regulations, policies, and procedures.
- J. Ability to enforce safety rules and regulations.
- K. Ability to maintain confidential information.
- L. Ability to demonstrate dependability, responsibility, and consistency in job performance.
- M. Ability to attend work ~~on a regular basis~~ as scheduled and/or required.

\* ~~Essential functions of the job~~

H ~~Job requirements necessary on the first day of employment.~~

#### Physical Demands

The work is sedentary. Typically, the employee may sit comfortably to do the work. However, there may be some walking, standing, bending; carrying of light items such as papers, books, small parts; driving an automobile, etc. No special physical demands are required to perform the work.

#### Work Environment

The work environment involves everyday risks or discomforts requiring normal safety precautions typical of places such as offices, meeting and training rooms, libraries, and residences or commercial vehicles (e.g., use of safe work practices with office equipment, avoidance of trips and falls, observance of fire regulations and traffic signals, etc.). The work area is adequately lighted, heated, and ventilated.

HR: <del>CTCK</del>	Union: Basic	EEOC: Professionals	CSB: <del>20011204</del>	Class No: 3213
WC: 8810	Pay: <del>133A-</del> <del>136E!</del>	EEOF: Admin/Finance	CC: <del>20020422</del>	Resolution: <del>02-</del> <del>0248R</del>