GIS TECHNICIAN

POSITION TITLE	Geographic Information System (GIS) Technician
REPORTS TO	District Engineer
FLSA	Non-Exempt
SALARY	Pay Level 13
DATE CREATED	November 9, 2009
DATE LAST REVISED	February 5, 2020

POSITION SUMMARY

The purpose of the position and primary responsibilities. Briefly describe the major purpose or objective of the job. Simply stated, what are we attempting to accomplish in this position?

Perform technical work in the development, investigation and maintenance of District geographic information systems (GIS), including field data collection, developing and maintaining data, map production, and geospatial analysis.

SUPERVISION AND ORGANIZATIONAL RELATIONSHIPS

The chart below lists specific supervisory responsibilities and organizational relationships.

Duties	YES OR NO	# OF FULL TIME EMPLOYEES
Supervise other employees	No	n/a
Instructs other employees in methods or procedures needed to carry out their job (how to carry-out their assigned duties)	No	n/a
Makes work assignments for others	No	n/a
Makes hiring and pay decisions	No	n/a
Recommends disciplinary action	No	n/a
Provide information to peers that they must carefully consider before making a decision	Yes	5
Provide information to supervisors/managers that they must carefully consider before making a decision	Yes	1

ESSENTIAL DUTIES

A list of essential duties which are the primary reasons why the position exists.

Essential Duties: Those duties that make up at least 5% of your time. Please provide enough detail so that someone who may not be familiar with the job will have a clear understanding of what it is that the job accomplishes.

Decisions Required: List the decisions the position makes to carry out the essential duties.

Frequency: Indicate how often does the incumbent perform each duty – D = daily, W = weekly, M = monthly, Q = quarterly, A = annually, or O = occasionally.

Percent of Time: Estimate how much of time is spent on each task. The percentages of all duties should equal 100% over a one-year period of time.

Required Response Time: Indicate how quickly the incumbent must respond to the task. This may be the time it takes to complete the task from start to end. This may be listed in minutes, hours, or days.

List of Essential Duties	Decisions Required	Frequency	% of Time Spent	Required Response Time
1. Create and maintain data dictionaries and program libraries, perform GPS data gathering on road and drainage related features, and conduct random field checks of data.	Field inventory input parameters and conditions. Data structure to achieve compatibility.	W	15	5-10 days
2. Design, develop, and maintain cartographic and tabular databases	Format and structure of databases and geospatial information for immediate and long-term needs.	D	20	5 days

3. Compile data from a variety of sources (plans, surveys, databases), and create and edit GIS digital data to generate graphical and database file.	Suitability of data. Data conversion needs. Interpretation of legal descriptions, surveys, and plats.	W	15	5 days
4. Produce maps and tabular reports from GIS databases, data and reports for asset reporting, and visual aids for public presentation.	Map layout and graphics to effectively convey information. Data or report format to meet users' needs.	W	15	2 days
5. Manipulate and analyze GIS data for various projects.	Analysis methods to generate needed results.	M	10	2 days
6. Collect, or assist in collecting, field data including traffic counts and pavement condition inventories.	Pavement condition severity and extent.	Q	5	2 days
7. Develop, document, and implement procedures for GIS applications, including computer file backup and disk maintenance for GIS applications.	File structure and naming conventions. Frequency and methods for data back-up.	A	5	5-10 days
8. Assist District employees and the public with GIS needs and maintain cooperative working relationships with GIS community.	Prioritizing requests for mapping and data.	D	10	1 day
9. Comply with federal, state, and district policies, procedures, and regulations	Field practices meet safety standards.	D	5	N/A

ON-CALL REQUIREMENTS

If the position is required to be on-call or take on-call shifts, please indicate any requirements or additional responsibilities that the incumbent is responsible for during the on-call shift.

List of On-Call Duties	Decisions Required	Frequency	% of Time Spent	Required Response Time (minutes)
None				

REQUIRED KNOWLEDGE AND SKILLS

This section identifies the types of knowledge and skill needed to perform the job at the entry level. List those required and not what might necessarily be acquired after being in the position for a number of years.

Knowledge: refers to the possession of concepts and information gained through experience, training and/or education and can be measured through testing.

Skills: refers to the proficiency, which can be demonstrated and are typically manual in nature and/or can be measured through testing.

Duty #	Knowledge & Skills
2-7	Operate a computer with geographic information system, database, and asset management software.
2,3,4,5	Knowledge of GIS principles, geospatial analysis techniques, and cartography.
1,2	Considerable knowledge of resource grade GPS operation and data collection software, including methods and practices of field data collection.
1,2,5,6	Knowledge of road, traffic, drainage, or other public works assets/components and inventory/management parameters.
2-4	Knowledge of GIS data sources and metadata, including datums, coordinate systems, and projections.

2,3,7	Knowledge of computer/GIS data and file systems organization and management.
3	Read and interpret legal descriptions, surveys, and plats.
6,9	Safety regulations and procedures.
3,6,8	Dealing with the public, including maintaining composure in stressful situations.

EDUCATION REQUIREMENTS

What minimum level of education is needed to satisfactorily perform the job at entry level? Check the level that applies.

Education Level	Check if Required
Less than High School Diploma or equivalent (G.E.D.) (ability to read, write, and follow directions)	
High School Diploma or equivalent (G.E.D.)	X
Up to one year of specialized or technical training beyond high school	
Associate degree (A.S., A.A.) or two-year technical certificate	
Bachelor's Degree	
Other (explain)	

EXPERIENCE REQUIREMENTS

What minimum level of experience is needed to satisfactorily perform the job at entry level?

Specific Experience Required	Number of Years
Development, maintenance, and management of geographic information systems and data for public works applications or any equivalent combination of experience and training which provides the required knowledge, skills, and abilities.	Five (5)

SPECIAL REQUIREMENTS

List any registrations, certifications or licenses that are required to hold the position. Be specific and do not abbreviate words or use acronyms.

A valid Idaho driver's license
Certified traffic control flagger

MACHINES, TOOLS AND EQUIPMENT

List any machines, tools or equipment used in the work and show the frequency and time spent using each. The machines, tools and equipment must refer to the Essential Duties previously listed above.

Duty #	Machines, Tools & Equipment	Frequency/Time
1,6	Resource grade GPS receiver and data collection software.	Weekly/8 hours
2-5,8	Computer with GIS and related database software.	Daily/8 hours

DECISION MAKING AND JUDGEMENT

Describe three types of important decisions and judgments this positions makes regularly and independently in the performance of duties. Additionally, for what work does the position make the final decision? Provide examples. Lastly, does this position have authority to commit the organization to a course of action? Provide examples.

Adequacy and accuracy of data and mapping included in the District's GIS/Asset Management systems used for decision making.
Data structure and format of graphical and tabular data to provide compatibility for analysis and presentation to data, including consideration of long-term needs.
Computer file structure, naming convention, metadata, and storage to assure reliable, complete, and accurate information for GIS.

PHYSICAL ACTIVITIES/REQUIREMENTS

This section defines the physical activities and requirements that are absolutely necessary to be able to do in order to perform the job. Please list the frequency and the importance of each of the physical requirements listed in this section.

These physical activities/requirements will help in ensuring the Canyon Highway District No. 4 remains in compliance with the Americans with Disabilities Act.

Frequency How frequently is the activity performed?	**Importance** How important is the activity in accomplishing the job's purpose?
0 – Never	0 – Not important
1 – Annually	1 – Somewhat important
2 – Quarterly (at least 3 per year)	2 – Very Important
3 – Monthly (at least 8 per year)	3 – Extremely Important
4 – Weekly (at least 3 per month)	
5 – Daily (at least 3 per week)	

Physical Activity	Frequency	Importance
Climbing: Ascending or descending ladders, stairs, scaffolding, ramps, poles and the like, using feet and legs and/or hands and arms. Body agility is emphasized. This factor is important if the amount and kind of climbing required exceeds that required for ordinary locomotion.	1	0
Balancing: Maintaining body equilibrium to prevent falling when walking, standing or crouching on narrow, slippery or erratically moving surfaces. This factor is important if the amount and kind of balancing exceeds that needed for ordinary locomotion and maintenance of body equilibrium.	3	2
Stooping: Bending body downward and forward by bending spine at the waist. This factor is important if it occurs to a considerable degree and requires full use of the lower extremities and back muscles.	3	2
Kneeling: Bending legs at knee to come to a rest on knee or knees.	3	2
Crouching: Bending the body downward and forward by bending leg and spine.	3	2

Crawling: Moving about on hands and knees or hands and feet.	0	0
Reaching: Extending hand(s) and arm(s) in any direction.	3	1
Standing: Particularly for sustained periods of time.	1	1
Walking: Moving about on foot to accomplish tasks, particularly for long distances.	1	2
Pushing: Using upper extremities to press against something with steady force in order to thrust forward, downward or outward.	0	0
Pulling: Using upper extremities to exert force in order to draw, drag, haul or tug objects in a sustained motion.	0	0
Lifting: Raising objects from a lower to a higher position or moving objects horizontally from position-to-position. This factor is important if it occurs to be a considerable degree and requires the substantial use of the upper extremities and back muscles.	1	1
Fingering: Picking, pinching, typing or otherwise working, primarily with fingers rather than with the whole hand or arm as in handling.	5	3
Grasping: Applying pressure to an object with the fingers or palm.	4	2
Feeling: Perceiving attributes of objects, such as size, shape, temperature or texture by touching the skin, particularly that of fingertips.	0	0
Talking: Expressing or exchanging ideas by means of the spoken work. Those activities in which they must convey detailed or important spoken instructions to other workers accurately, loudly, or quickly.	4	2
Hearing: Perceiving the nature of sounds with no less than a 4db loss @ 500 Hz, 1,000 Hz and 2,000 Hz with or without correction. Ability to receive detailed information through oral communication, and to make fine discriminations in sound, such as when making fine adjustments on machined parts.	4	2
Seeing: The ability to perceive the nature of objects by the eye. Seeing is important for hazardous jobs where defective seeing	5	3

would result in injury and also jobs where special and minute accuracy, inspecting and sorting exist. A high degree of visual efficiency, placing intense and continuous demands on the eyes by moving machinery and other objects are also considered important. Other important factors of seeing are acuity (near and far), depth perception (three-dimensional vision), accommodation (adjustment of lens of eye to bring an object into sharp focus), field of vision (area that can be seen up and down or to the right or left while eyes are fixed on a given point) and color vision (ability to identify and distinguish colors).		
Repetitive Motions: Substantial repetitive movements (motions) of the wrists, hands, and/or fingers.	5	3

WORKING CONDITIONS

The working conditions section defines the physical environment this position is subjected to while performing job duties. This section does not apply to conditions like an old office building but only those factors that have to do with the job itself. In this section, please place an X by the condition that applies and one under the frequency that is most appropriate. The condition should be unique to your job and not generally applicable to all employees with the organization. Please note, there is a choice for "Does Not Apply," if most of your work is in an office setting.

Condition	Less than 25% of the time	25-50% of the time	More than 50% of the time
Hazardous physical conditions (mechanical parts, electrical currents, vibration, etc.)	X		
Atmospheric Conditions (fumes, odors, dusts, gases, poor ventilation)	X		
Hazardous materials (chemicals, blood and other body fluids, etc.)	X		
Extreme temperatures	X		
Inadequate lighting	X		

Work space restricts movement	X		
Intense noise	X		
Travel	X		
Environmental (disruptive people, imminent danger, threatening environment)	X		
High-traffic areas (automobile traffic)		X	

CAREER PATH

Defines the Pay Steps within the position classification, and the minimum requirements for movement between steps. The Supervisor will draft a memo to the Director requesting approval to move an employee between steps. The memo will provide specific details describing the employee's accomplishments meeting the various qualifications for movement.

All new employees will enter at Step 1 until they qualify for movement to a higher step. The time requirement in Step 1 will be waived for prior experience once training and skills levels are satisfactory to advance directly to Steps 2, 3 or 4 based on meeting all qualifications for the advancement.

Existing employees may be placed higher than Step 1 for lateral transfers or promotions provided that they meet all of the qualifications for the higher Step.

The listed requirements of training, skills and time within each Step are the minimum qualifications for that Step. Advancement to the next Step in the career path requires fully completing all of the listed training, skills and time requirements of the previous, current and next Step.

STEP 1

Training 1	• CHD4: First Aid/AED • ICRMP: District Personnel Policy Review • ICRMP: District Vehicle Use Policy Review • ICRMP: District Driver Safety Courses • Flagger Certification
Skills 1	• Proficiency with general computer applications and GIS software. • Demonstrated oral and written communications skills. • Treating the public and staff with diplomacy and tact.

	• Maintains all electronic files in accordance with code and policy. • Gathers data from subdivision plans, legal documents, other County agencies and project related data sources, such as engineers, contractors and developers. • Establish and maintains cooperative working relationships with geographic data suppliers, engineers, contractors, developers, the general public and other District employees. • Perform GPS gathering and random field checks of data. • Enter base map data into computer, using GIS and related software. • Edit digitized data to create a database file. • Produce maps and tabular reports from GIS databases.
Time 1	Complete all training, acquire all listed skills within 1 year of employment or advancement to this position.

STEP 2

Training 2	Maintain all training certifications required in Step 1 plus the following: • ICRMP: Harassment Courses • ICRMP: Ethics in Government • ICRMP: Public Records Law
Skills 2	All Step 1 requirements plus the following: • Design, develop, and maintain cartographic and tabular databases. • Digitize specified graphic data from source maps, surveys, etc. • Manipulate encoded data for special projects. • Compile information to be digitized from a variety of sources. • Prepare visual aids for public presentations. • Collects pavement condition inventories. • Perform and/or oversees computer file backup and disk maintenance for GIS applications. • Assist District employees with GIS needs. • Assist District employees and the public concerning information recorded on maps.
Time 2	Complete all training, acquire all listed skills and serve at least 1 year in the prior Step to be eligible to advance to this step.

STEP 3

Training 3	Maintain all training certifications required in Step 2 plus the following: • At least 2 courses, seminars, webinars and/or podcasts approved by supervisor
Skills 3	All Step 2 requirements plus the following: • Collects, or assists in collecting, field data including traffic count report information. • Maintain data dictionaries and program libraries. • Develop and documents procedures for specific GIS applications • Produce data and reports for asset reporting. • Assist in topographic survey and construction staking.
Time 3	Complete all training, acquire all listed skills and serve at least 1 year in the prior Step to be eligible to advance to this step.

STEP 4

Training 4	Maintain all training certifications required in Step 3 plus the following: • PRIMA: Cyber Threats • At least 2 courses, seminars, webinars and/or podcasts approved by supervisor • Road Scholar Certification
Skills 4	All Step 3 requirements plus the following: • Interpret legal descriptions and create graphically in GIS. • Analyses GIS data to conduct various studies related to road related assets, safety, land use, and other GIS data. • Analyzes internal processes and recommends procedural or policy changes. • Operate autonomously as the GIS Technician
Time 4	Complete all training, acquire all listed skills and serve at least 1 year in the prior Step to be eligible to advance to this step.

STEP 5

Training 5	Maintain all training certifications required in Step 4 plus the following: • At least 2 courses, seminars, webinars and/or podcasts approved by supervisor

	• Road Master Certification • Associates Degree or equivalent 2-year program certification in GIS.
Skills 5	Application of the skills received in the training noted above
Time 5	Complete all training, acquire all listed skills and serve at least 3 years in Steps 1 through 4 of this position to be eligible to advance to this Step.

STEP 6 ("acting" appointment in excess of 90 days)

Training 6	N/A
Skills 6	Fulfill all of the obligations of the vacant position being filled
Time 6	N/A