CITY OF OVERLAND PARK
POSITION DESCRIPTION

TITLE:	Engineering Systems Specialist	**BAND/LEVEL**:	Tech IV
DEPARTMENT:	Public Works	**JOB NO**.:	3545
DIVISION:	Technical & Administrative Services	**DATE**:	11/5/2013
REPORTS TO:	Mgr, Technical & Administrative Services	**FLSA STATUS**:	NE
FULL-TIME: __X__	**PART-TIME**: _____ **SEASONAL**: _____	**COST CENTER**:	301

REPLACES: Engineering Systems Specialist **DATE**: 3/20/2013

JOB SUMMARY STATEMENT:
Performs installation, configuration, troubleshooting and repair of remote environmental monitoring equipment, and supervises technicians during maintenance and operation of the equipment. Operates Geographic Information System (GIS) hardware and software which operates on mixed UNIX/windows platforms. Generates and maintains GIS databases. Configures and maintains engineering-based computer systems applications. Performs land surveys. Researches property ownership and legal documents. Provides assistance to the public. Assists with emergency operations, including snow removal, as required.

DUTIES AND RESPONSIBILITIES:

1. Performs installation, configuration, troubleshooting and repair of remote environmental monitoring equipment. This equipment combines specialized computer hardware, radio telemetry, and digital and analog sensors to monitor and report in real time environmental conditions: rainfall, stream levels, temperature, wind, humidity, barometric pressure. This task requires careful attention to detail as monitoring sites are often located far from the base station, and are subject to harsh environmental conditions. Installation requires knowledge of stream dynamics, radio transmission characteristics, electronic equipment construction, land surveying, and electrical wiring. Repair requires working knowledge of electronic bench test equipment, including oscilloscopes, rf strength meters, digital multi-meters, induction ammeters, audio generators, fm deviation meters, and other more specialized test equipment. Repairs also require an ability to construct and repair electronic equipment – printed circuit boards and point to point wiring using soldering equipment.

2. Generates and maintains Geographic Information System (GIS) databases including storm drainage systems, environmental monitoring equipment. Uses GIS database to perform analysis of data, including storm routing, radio path survey, drainage basin characteristics, environmental parameter displays and reports.

3. Configures and maintains computer systems for other users which are used to operate engineering systems. These would include CAD, GIS, Engineering Project databases, design software, hydraulic and hydrologic modeling software, structural design software, and project tracking software. Must be familiar with Windows 9x, Windows NT (3.5-4.0), Windows 2000, Office 97/2000, AutoCad (12.-14 and 2000.), ArcView, ArcInfo, and how to configure these packages to coexist with specialized engineering software. Configures computer hardware to allow use of specialized engineering hardware – plotters, digitizers, gps units, and other devices which compete for hardware and network resources. Configures computers to operate on local and wide area networks, and to share network devices such as large format plotters, high-speed printers, and UNIX or Windows file servers. Configures networking devices for local and wide area networks so that all users can utilize information.

4. Operates GIS hardware and software which runs on a UNIX or Windows platform. Should have experience with UNIX architecture, and with device configuration for UNIX based computers.

5. Performs land surveying and topography surveys for storm sewer and street projects. Reviews plats, maps and construction plans. Computes surveying problems and calculations. Collects existing field data using a transit level or total station. Converts data to usable AutoCad data.

6. Researches property ownerships and legal documents. Investigates existing right-of-way and easements through documents located in the county courthouse or accessed through city and county computer records.

7. Creates new civil engineering procedures through the use of computer-aided drafting and design and other technology.

8. Prepares charts, maps, exhibits, videotapes, photographs and other information media for meetings and public hearings.

9. Assists the public by responding to questions or requests for information either in person, by phone or by electronic mail.

10. Assists with emergency operations, including snow removal, as required.

11. The employee must work the days and hours necessary to perform all assigned responsibilities and tasks. Must be available (especially during regular business hours or shifts) to communicate with subordinates, supervisors, customers, vendors and any other persons or organization with whom interaction is required to accomplish work and employer goals.

12. The employee must be punctual and timely in meeting all requirements of performance, including, but not limited to, attendance standards and work deadlines; beginning and ending assignments on time; and scheduled work breaks, where applicable.

GENERAL QUALIFICATIONS

EDUCATION & SPECIAL LICENSE(S)/CERTIFICATIONS:
Bachelor's degree preferred in Environmental Studies, Environmental Engineering, Civil Engineering or a similar course of study in the Earth Sciences with emphasis on environmental monitoring and measurement. Education and/or training in the use of GIS software, with Arc/Info experience most desirable. Possession of an appropriate, valid driver's license. Must have or obtain a commercial driver's license (CDL) within 12 months of employment with the City. Must maintain an insurable driving recording.

EXPERIENCE:
Two or more years of progressively responsible experience with computerized environmental monitoring systems, including some experience in computer programming and configuration, or an equivalent level of experience.

SKILLS:
1. Must be able to install, configure, troubleshoot and repair sophisticated electronic weather instrumentation, including radio telemetry, digital and analog environmental measuring devices, standalone field power systems, including periodic and/or solar charging systems.
2. Must be able to operate and configure computer software and hardware combinations used to monitor field environmental sensors and to generate reports and alarms. Should be capable of configuring internet web server software to make environmental data available to outside users.
3. CAD skills
4. GIS skills
5. Computer hardware and engineering/environmental software applications skills
6. Electronic equipment maintenance skills
7. Surveying skills
8. Good oral and written communication skills

MENTAL REQUIREMENTS:
1. Ability to install, maintain and troubleshoot environmental monitoring equipment.
2. Ability to analyze complex problems and recommend possible solutions.
3. Ability to compute mathematical calculations using in surveying, measuring and mapping.
4. Ability to understand computer commands and generated reports.
5. Ability to read plat sheets and maps.
6. Ability to translate accumulated field data and engineering information into legible construction plans.
7. Ability to work under distracting and environmentally stressful conditions when maintaining environmental monitoring systems or performing survey work.
8. Exhibit diplomacy and judgment when working with citizens, contractors or other public groups.

PHYSICAL REQUIREMENTS:
1. Ability to transverse rough terrain.
2. Ability to travel to remote field locations, public buildings or other work sites.
3. Hand/eye coordination to operate surveying equipment and install monitoring equipment.
4. Ability to draw engineering plans with CAD or by manual drafting.
5. Exposure to extreme environmental conditions.
6. Exposure to vehicle fumes and noise.
7. Ability to visually review maps, plans and plats.

SEE ESSENTIAL FUNCTIONS BELOW FOR ADDITIONAL PHYSICAL REQUIREMENTS

SUPERVISORY RESPONSIBILITY (Direct & Indirect):
Supervises construction personnel in the installation of environmental monitoring stations, and maintenance personnel responsible for continuing maintenance operations.

The preceding job description has been designed to indicate the general nature and level of work performed by employees within this classification. It is not designed to contain or be interpreted as a comprehensive inventory of all duties, responsibilities, and qualifications required of employees assigned to this job.

ESSENTIAL FUNCTIONS

ACTIVITY	DURATION	DESCRIPTION
Standing	Occ. - Const.	even and uneven surfaces
Walking	Occ. - Const.	even and uneven surfaces
Sitting	Occ. - Const.	motor vehicle operation / office environment
Driving	Occasional	motor vehicle operation; automatic transmission
Bending	Occ. - Freq.	Measuring / using misc. instruments
Stooping	Occ. - Freq.	Measuring / using misc. instruments
Twisting	Occasional	Misc. instrument use and material handling
Kneeling	Occasional	Misc. instrument use and material handling
Squatting	Occasional	Misc. instrument use and material handling
Crawling	Occasional	crawling in / through pipes
Stairs	Occasional	inlets
Ladders	Occasional	inlets

LIFTING	WEIGHT	HEIGHT	FREQUENCY	DURATION	DESCRIPTION
Monument casting	75 lbs.	ground to waist	variable	occasional	two person lift
sledge hammer	10 lbs.	floor to shoulder	variable	occasional	two hand lift
traffic cones	25 lbs.	0-49 inches	variable	occasional	one or two hand lift
traffic barracade	22 lbs.	0-49 inches	variable	occasional	one or two hand lift
Carbite blade	61 lbs.	0-24 inches	variable	occasional	two person lift
Material spinner	100 lbs.	0-24 inches	variable	occasional	two person lift
Tailgate doghouse	95 lbs.	0-61 inches	variable	occasional	two person lift
Backing plate	150 lbs.	0-24 inches	variable	occasional	two person lift
Rubber blade	90 lbs.	0-24 inches	variable	occasional	two person lift

CARRYING	WEIGHT	DISTANCE	FREQUENCY	DURATION	DESCRIPTION
Monument casting	75 lbs.	up to 20 ft.	variable	occasional	two person carry
Sledge hammer	10 lbs.	up to 20 ft.	variable	occasional	one or two hand carry
Traffic cones	25 lbs.	up to 20 ft.	variable	occasional	one or two hand carry
Material spinner	100 lbs.	0-25 feet	variable	occasional	two person carry
Traffic barracade	22 lbs.	up to 20 ft.	variable	occasional	one or two hand carry
Rubber blade	90 lbs.	0-10 feet	variable	occasional	two person carry
Carbide blade	61 lbs.	0-10 feet	variable	occasional	two person carry
Backing plate	150 lbs.	0-10 feet	variable	occasional	two person carry
Tailgate doghouse	95 lbs.	0-25 feet	variable	occasional	two person carry

PUSHING/PULLING	FORCE	FRQUNCY/DUR	DESCRIPTION
160 lb. man hole cover - 5 ft.	73 lbs.	occasional	1 or 2 hands
Material spinner	100 lbs.	occasional	two person push/pull - 20 inches
Snow plow	40 lbs.	occasional	two hand push/pull

REACHING	DURATION	DESCRIPTION
Below Knee Height	occasional	use of varioius tools
Below Waist Height	occasional	use of varioius tools
Forward > 2 Feet	occasional	use of varioius tools
Above Shoulder Height	occasional	use of varioius tools
Lateral Reach	occasional	use of varioius tools

FINE MOTOR	DURATION	DESCRIPTION
Gripping	occ. - freq.	misc. tool usage; computer utilization; handling materials
Pinching	occ. - freq.	misc. tool usage; computer utilization; handling materials
Wrist Flexion & Extension	occ. - freq.	misc. tool usage; computer utilization; handling materials
Wrist Lateral Deviations	occ. - freq.	misc. tool usage; computer utilization; handling materials
Pronation & Supination	occ. - freq.	misc. tool usage; computer utilization; handling materials

OTHER IDENTIFIED ESSENTIAL FUNCTIONS:

1) **Use of computer / keyboard / mouse device**
2) **Ability to drive and inspect necessary roads during snow event**
3) **Computer software would require some degree of visual color discrimination**

The position of Engineering Systems Spec. is variable in nature related to the frequency and duration of all essential functions. Depending on the type of project that is ongoing, there will be time periods when an individual working in this position will spend up to 8 hours working in an office environment and within several days or a week will spend up to 8 hours in the field standing, walking, inspecting, measuring, etc. Therefore, it is difficult to identify an exact frequency and duration of many of the above identified tasks.