August 2011 **City of Rocklin**

GIS/ENGINEERING TECHNICIAN

DEFINITION

Under general supervision, performs a variety of paraprofessional engineering field and office duties in support of professional engineering staff, involving surveying, design of public works facilities, construction inspection and drafting; performs technical work related to using and maintaining the City GIS database; researches engineering topics and prepares basic engineering calculations; maintains plan files and engineering records; prepares reports; and performs related work as required.

SUPERVISION RECEIVED AND EXERCISED

Receives direct or general supervision from the Deputy Director, Public Services. Receives technical and functional direction from professional engineering staff. No direct supervision of staff is exercised. May exercise technical and functional direction over assigned staff.

CLASS CHARACTERISTICS

This single position class has responsibilities spanning the entire spectrum of paraprofessional engineering functions, including GIS-related responsibilities. Incumbents complete assignments in engineering, mapping, GIS, contract coordination, and preparation of specifications, plans and estimates. Incumbents in this class are expected to work with or without direct supervision, utilizing initiative and independent judgment.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS (Illustrative Only)

Management reserves the right to add, modify, change or rescind the work assignments of different positions and to make reasonable accommodations so that qualified employees can perform the essential functions of the job.

- Prepares or assists in the preparation of and/or interprets specifications, plans, estimates and reports pertaining to the construction, maintenance and operation of a variety of engineering, land development and capital improvement projects.
- Performs basic design and drafting duties in connection with streets, storm drains, traffic facilities and other projects.
- Performs field, office and computer-aided studies and prepares periodic and special reports based on findings from research, studies and surveys; and makes recommendations on findings.
- Receives, tags logs, and reviews submitted engineering plans, maps, and related documents for plan check; checks calculations used in designs and estimates; routes documents to consultants or developers for plan review; tracks status of plan

checks and original documents; advises parties of revisions; contacts inspectors following plan approval to initiate construction observation.

- Maintains engineering and traffic/transportation files, including plans, studies, inspections, surveys, maps and other data related to engineering and transportation projects; updates traffic maps and engineering drawings recorded in GIS.
- Establishes standards for digital mapping and determines the formats of digital files received from engineers and developers for digital submittals required by the City.
- Performs data processing tasks; uses GIS software programs, commands and compilation methods to generate and utilize spatial overlays.
- Updates and maintains the City's GIS databases according to established policies and procedures; corrects data and creates additional data sets integrated into GIS; updates digital data layers and creates corresponding maps.
- Scans and digitizes data; builds topology, enters data attributes, checks for errors, and verifies accuracy; makes required corrections; edits and refines GIS data.
- Performs quality control checks to assure integrity of GIS data and applications.
- May participate in planning special GIS mapping projects to assist City personnel with a variety of analyses and planning issues.
- May provide assistance to departments, clients and general public in obtaining information or maps; researches and compiles materials and maps; produces digital copies of City data; files, tracks and maintains release forms; maintains maps and records.
- Receives and responds to information requests from the public, engineering firms, developers, title companies and staff for plans, reports, permits and files; retrieves such documents as necessary to comply with requests.
- Maintains and updates department records, tracking lists, permit records, and files of engineering plans, including grading, encroachments, improvements, storm drain, landscaping and final maps.
- Prepares project specifications, job-cost estimates, bid sheets, purchase orders, project plans and contracts for small to medium engineering projects; inspects work on assigned projects.
- Utilizes Computer-Assisted Drafting software to create and modify engineering drawings, sketches, plot plans, site lay-outs, topographic maps, improvement plans and illustrative graphics.
- Operates survey instruments in the performance of control, preliminary, and construction surveys, monument checks and related projects.
- Conducts field review to assess all pertinent issues of the assigned project.
- Performs other duties as assigned.

QUALIFICATIONS

Knowledge of:

- Civil engineering principles, practices and methods applicable to office and field work involving the design, construction and maintenance of public works projects.

- Basic design practices of basic public works infrastructure.
- Principles and practices of technical civil engineering drafting and surveying support.
- Engineering plan types, review practices, and permit filing and approval procedures.
- Principles of surveying, mapping, global positioning systems, and satellite imaging.
- Principles of cartographic technology and GIS application software.
- Drafting and surveying equipment, computers, principles, techniques and practices.
- Construction practices and methods.
- Applicable Federal, State, and local laws, codes, and regulations, including administrative and department policies and procedures; State Subdivision Map Act.
- Technical report writing practices and procedures.
- Records management principles and practices.
- Business arithmetic and basic statistical techniques.
- Modern office practices, methods and computer equipment.
- Computer applications related to the work.
- English usage, grammar, spelling, vocabulary, and punctuation.
- Techniques for dealing effectively with the public, vendors, contractors and City staff, in person and over the telephone.
- Techniques for providing a high level of customer service to public and City staff, in person and over the telephone.

Skill in:

- Preparing, reading, and interpreting a variety of engineering plans, technical drawings, specifications, and subdivision maps, cost estimates, technical reports, and graphic materials.
- Modifying engineering drawings, topographic maps, improvement plans and illustrative graphics using Computer-Assisted Drafting (CAD) software.
- Performing responsible technical engineering support work with accuracy, speed, and minimal supervision.
- Performing standard engineering design under the direction of professional engineering staff.
- Reading, understanding, developing, manipulating, and analyzing geographic information in a variety of data formats and projections.
- Performing effective computer cartographic design, layout, and production for a variety of different subject matters.
- Effectively utilizing GIS application software.
- Performing responsible field and office work.
- Interpreting complex construction plans and specifications.
- Using engineering, drafting and surveying instruments and equipment.
- Applying technical research methodologies and writing technical reports.
- Making and recording accurate field engineering observations.
- Interpreting, applying and explaining policies and procedures.
- Entering and retrieving data from a computer with sufficient speed and accuracy to perform assigned work.
- Preparing accurate and precise technical reports.

- Making accurate mathematic computations.
- Maintaining accurate records and files of work performed.
- Understanding and carrying out oral and written instructions.
- Organizing work, setting priorities and meeting multiple deadlines.
- Operating modern office equipment including computer equipment and software programs.
- Using English effectively to communicate in person, over the telephone and in writing.
- Using tact, initiative, prudence and independent judgment within general policy, procedural and legal guidelines.
- Establishing and maintaining effective working relationships with those contacted in the course of the work.

Education and Experience:
Any combination of training and experience that would provide the required knowledge, skills and abilities is qualifying. A typical way to obtain the required qualifications would be:

Equivalent to completion of the twelfth (12^{th}) grade supplemented by a minimum of fifteen (15) units of technical or college-level courses in civil engineering, drafting, surveying, mathematics, or related field and three (3) years of experience in field or office engineering technical support or drafting which has provided familiarity with engineering drafting, surveying, map checking, construction inspection, materials testing, basic engineering design, and GIS.

License:

- Valid California class C driver's license with satisfactory driving record.

PHYSICAL DEMANDS

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer; to inspect various commercial and residential development sites, including traversing uneven terrain, climbing ladders, stairs and other temporary or construction access points; to attend meetings and to operate a motor vehicle; vision to read printed materials and a computer screen and make inspections; and hearing and speech to communicate in person and over the telephone. Finger dexterity is needed to access, enter and retrieve data using a computer keyboard or calculator and to operate standard office equipment. Positions in this classification occasionally bend, stoop, kneel, reach, climb, push and pull drawers open and closed to retrieve and file information. Positions in this classification occasionally lift, move, and carry objects that typically weigh up to 40 pounds.

ENVIRONMENTAL ELEMENTS

Employees work partially in an office environment with moderate noise levels and controlled temperature conditions, and partially in the field and are occasionally exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, confining workspace, chemicals, mechanical and/or electrical hazards, and hazardous physical substances and fumes. Employees may interact with upset staff and/or public and private representatives, and contractors in interpreting and enforcing departmental policies and procedures.

FLSA STATUS: Non-exempt