

11.

Time Functions and Worker Activities: (Do not include duties done on an "Out-of-Class" basis.)

%

- 40 Working independently with minimal direction and supervision, prepare engineering drawings and specifications for water utility projects with an increasing emphasis on project management, project development, and decision making. Using computer aided design software, independently develop designs for water pipeline projects, pump stations, reservoirs, pressure reducing stations, and other projects as assigned. Coordinate design activities with developers, private entities, other engineering units, City Engineering, City Planning, and other governmental entities as necessary. Prepare and evaluate project construction cost estimates. Develop project planning budgets, evaluate project feasibility, and complete life cycle cost analysis of proposed projects and improvements. Identify and submit applicable permit applications. Prepare and coordinate delivery of all necessary contract documents. Prepare and distribute applicable public notifications. Prepare and coordinate real estate acquisition procedures.
- 15 Conduct basic engineering research. Prepare narrative and statistical reports, maps, and other materials as necessary. Gather and evaluate GPS field data as needed. Work with Utility Mapping section as needed to maintain utility records and update the Utility's GIS records. Complete quality control reviews of completed designs and completed construction documents. Develop and implement wellhead protection plans for Utility wells. Perform special engineering studies including evaluation of existing and alternative construction materials and methods. Suggest and develop pilot study projects based on prospective opportunities identified through Utility studies or evaluations. Collect and analyze design and construction lessons-learned and prepare annual revisions to the City of Madison Standard Construction Specifications for Water Main Construction. Perform related work as required and assigned.
- 15 Manage and administer construction contracts as assigned. Review, negotiate, and approve change order requests. Review requests for information from the field. Evaluate and approve contractor payment requests. Review and approve construction schedules and progress toward completion. Prepare summary field reports as necessary and assigned. Prepare final assessments as required by the contract. Close out completed contracts. Work closely with field personnel to apply Utility standards and details of construction to meet Utility requirements. Answer questions from the field, resolve design discrepancies, provide field engineering for proposed changes, and coordinate implementation of those changes.
- 15 Independently organize, coordinate, and author Utility standard operating procedures as directed and assigned. Provide engineering support to other sections of the Water Utility as assigned. Independently gather and organize data and information on current policy and procedures. Develop flow charts and decision matrix to characterize and document procedures. Using the information gathered, engineer and optimize standard procedures and processes to make them more efficient and effective. Take the initiative to identify, prepare and distribute efficiency tools to increase computer aided design consistency, efficiency and accuracy.
- 5 Independently, or as part of a project team, assist with engineering analysis of the distribution system to allow higher level engineers and managers to make multifaceted long term system capital improvement decisions and establish budgets. Analyze the system for well supply capacity and need. Evaluate system performance and recommend improvements to optimize operations while conserving water and energy.
- 10 Answer technical questions from the public, contractors, property owners, and elected officials about engineering considerations and plans. Attend public hearings and other public information meetings alone or with higher-level engineers and provide project-related information as requested. Perform related work as required and assigned.

12. Primary knowledge, skills and abilities required:

Knowledge of the principles, theories, and practices of civil engineering, particularly as they relate to the design and construction of public works projects. Provide necessary project follow-through to completion. Knowledge of the City's contracting and budgeting processes. Ability to independently make accurate cost estimates and engineering computations and document them. Ability to read maps and locate facilities in the field. Ability to operate GPS equipment. Ability to perform GIS functions, computer aided design, database development and management, and spreadsheet analysis. Ability to exercise independent professional expertise quickly and efficiently in the resolution of engineering problems. Ability to independently collect, analyze, and compile data and prepare technical reports. Ability to communicate effectively, both orally and in writing. Ability to develop and maintain effective working relationships and day-to-day communication with managers, supervisors, co-workers, contractors, the general public and other parties. Ability to maintain accurate records. Ability to inspect or assign others to inspect public works construction projects. Ability to maintain adequate attendance.

Training and Experience:

Graduation from a 4-year accredited college or university with a degree in civil engineering or a closely related field and at least one year experience at the Engineer 2 position or equivalent. Other combinations of training and/or experience which can be demonstrated to result in the possession of the knowledge, skills, and abilities necessary to perform the duties of this positions will also be considered.

13. Special tools and equipment required:

Computer equipment and software
GPS equipment
Water quality analysis equipment

14. Required licenses and/or registration:

Possession of a valid certificate of Engineer-in-Training or ability to obtain one within the probationary period.

Possession of a valid driver's license.

15. Physical requirements:

Ability to work at a computer workstation and desk for long periods of time, to operate a motor vehicle, to get to and around construction sites and be on site in all weather conditions, and to carry a 25-pound backpack over rough terrain.

16. Supervision received (level and type):

General supervision by Water Utility Design and Construction Engineer 4 and the Principal Engineer.

17. Leadership Responsibilities:

This position:

- is responsible for supervisory activities (Supervisory Analysis Form attached).
- has no leadership responsibility.
- provides general leadership (please provide detail under Function Statement).

18. Employee Acknowledgment:

- I prepared this form and believe that it accurately describes my position.
- I have been provided with this description of my assignment by my supervisor.
- Other comments (see attached).

Employee's Signature:

Date

19. Supervisor Statement:

- I have prepared this form and believe that it accurately describes this position.
- I have reviewed this form, as prepared by the employee, and believe that it accurately describes this position.
- I have reviewed this form, as prepared by the employee, and find that it differs from my assessment of the position. I have discussed these concerns with the employee and provided them with my written comments (which are attached).
- I do not believe that the document should be used as the official description of this position (i.e., for purposes of official decisions).
- Other comments (see attached).

Supervisor's Signature: Alan L. Larson, P.E.

Date:

I have reviewed this form and agree with the general description of the position

General Manager's Signature: Thomas Heikkinen

Date:

Note: Instructions and additional forms are available from the Human Resources Dept., Room 501, City-County Bldg. or by calling 266-4615