

PRINCIPAL ENGINEER 1
PRINCIPAL ENGINEER 2

CLASS DESCRIPTION

General Responsibilities:

This is responsible supervisory, administrative, and professional engineering work within the Engineering Division. Incumbents have responsibility for: 1) the planning, design, and administration of public works projects and contracts; 2) field inspection, surveying, and construction administration of Engineering Division public works construction projects; 3) design of landfill modifications and issues related to ground water quality; or 4) other comparable units. Work involves the regular coordination of major projects and activities that cross Engineering Division, division/department and/or governmental lines. The work is performed under the direction of the City Engineer, Assistant City Engineer, and/or Principal Engineer 2, is characterized by independent judgment and major program and project responsibilities, and is reviewed through periodic conferences and reports.

This is not intended to be a progression series. Employees may be hired as a Principal Engineer 1 or 2 based on the needs of the Engineering Division and qualifications of the candidates. Advancement to a Principal Engineer 2 is normally accomplished through competition and is based on the needs of the Division.

Principal Engineer 1

The work at this level involves prioritizing and budgeting projects; supervising assigned office and/or field staff; letting and administering contracts; coordinating activities with other Engineering Division units, City departments, private developers/contractors, and the public; and maintaining professional standards.

Principal Engineer 2

The work at this level is characterized by the increased size and complexity of the projects managed; the increased level of coordination and engineering expertise required; the substantial amount of internal design supervision involved; and the frequency with which the position(s) represent the City Engineer in a variety of governmental, public, and/or legislative forums and activities.

Examples of Duties and Responsibilities:

Principal Engineer 1

Supervise unit staff including professional engineers and other types of professional, technical, and field staff. Participate in hiring and promotion decisions and provide training, work review and evaluation, discipline, resolution of grievances and other supervisory responsibilities.

Maintain an ongoing list of potential public works projects in the area(s) of responsibility based on citizen complaints, aldermanic requests, field reports and other sources of information. Perform Capital Improvement budgeting for the area(s) of responsibility. Determine project priorities and budget estimates and recommend to the City Engineer in conjunction with the annual Capital Budget process. Review and monitor project expenditures throughout the year and recommend budget or project adjustments as necessary.

Determine project scope and, based on current workload and the nature of the project, assign to internal project engineers or use external consulting firms for project design. Coordinate project scheduling for Board of Public Works, Common Council, public input, construction, etc.

Hold regular meetings with staff to review progress and resolve procedural and design problems during developmental phases. Review all project designs and specifications for adherence to professional standards; cost effectiveness; completeness; coordination with other entities; and compliance with all applicable federal, state and local regulations, laws and procedures. Sign off on project designs prepared by staff not yet certified as professional engineers.

Prepare requests for consulting proposals, respond to inquiries, conduct interviews as necessary, and assist in the selection of consultants for particular projects. Develop contracts between the City and the consultant and negotiate and prepare contract amendments. Act as principal contact for the City on projects being designed by consultants.

Train new staff in proper engineering design procedures and other procedures and techniques pertinent to Engineering Division and City requirements, approval processes and programs.

Review and update design procedures and guidelines, including those used in the Madison General Ordinances.

Prepare grant requests and administer grants for eligible City projects and functions in the area(s) of responsibility. Coordinate state and federally-funded projects. Oversee the preparation of environmental assessments and necessary reports and records.

Oversee local, state and federal floodplain and wetland regulation enforcement and compliance; parking lot, drainage, and erosion control plan review and compliance; onsite detention or variance review and compliance; and sanitary sewer extension request review. Follow up on problems associated with reviews and approvals.

Represent the City Engineer on work groups and at neighborhood meetings requiring engineering expertise. Attend public hearings and meetings to provide information concerning proposed projects. Provide information and respond to Aldermanic requests.

Oversee the public works construction project inspection and surveying functions. Assign personnel to various geographic areas and/or projects. Provide professional assistance and/or review as needed and deal directly with more complicated situations involving plan changes, change orders, negotiations with contractors or developers, etc.

Maintain files and records pertaining to construction projects. Review final contract inspection documents and certify for payment.

Coordinate contracts for soil compaction and asphalt pavement testing. Participate in the selection of consultants. Administer contracts including recordkeeping, billing review and payment recommendations. Determine supplies and equipment necessary for the unit and prepare necessary budget submission and justification materials.

Perform related work as required.

Principal Engineer 2

Perform all of the duties as a Principal Engineer 1 for one of the Engineering Division units.

Manage major engineering projects involving multiple Engineering Division units, and other City or governmental units. Coordinate the planning, scheduling, administration and construction of such projects from budgeting through design and construction phases. Hold monthly meetings to update other City agencies on current project schedules and coordinate the solicitation and integration of project components from various sources. Coordinate City projects with other jurisdictions.

Represent the Engineering Division and the City in a variety of forums. Negotiate contracts and agreements as necessary, provide input on legislation and regulations, and perform other related functions relative to engineering and environmental concerns.

Investigate major problems relative to complex public works projects and recommend solutions and/or alternatives to the City Engineer. Coordinate the implementation of solutions and communicate, as needed, to all affected parties.

Assist the City Engineer and Assistant City Engineer in the prioritization and budgeting of projects on a division-wide bases. Perform special studies and project reviews as necessary.

Perform related work as required.

QUALIFICATIONS

Knowledge, Skills and Abilities:

Principal Engineer 1

Thorough knowledge of civil engineering principles and practices, particularly as they relate to the design, construction, and maintenance of public works projects in the area(s) of specialization. Thorough knowledge of public works engineering objectives, purposes, professional standards, methods and principles. Knowledge of computer-assisted design processes and techniques and computer applications relative to the area(s) of responsibility. Working knowledge of the full range of supervisory principles and practices, labor relations and personnel management. Thorough knowledge of the City's processes and procedures relating to project approval and contract awarding and administration. Knowledge of budgetary principles and procedures. Ability to communicate technical issues and data to

citizens, other governmental employees, and elected officials by written and verbal means. Ability to prepare technical reports and act on study conclusions. Ability to prepare and/or review construction plans and specifications and interpret plans in the field. Ability to plan, supervise, schedule, and review the work of lower-level professional, technical and field staff. Ability to adjust employee grievances. Ability to establish and maintain effective work and public relations. Ability to develop new techniques and approaches relative to the area(s) of specialization and to provide professional leadership. Ability to communicate, both orally and in writing, including making presentations to groups. Ability to organize engineering data, prepare and review cost estimates, recommend project priorities, and present findings and recommendations. Ability to schedule public works projects and coordinate all related details. Ability to negotiate contract provisions and oversee the work of consultants. Ability to maintain adequate attendance.

Principal Engineer 2

All of the above, and

Working knowledge of budgetary principles and procedures. Ability to plan, supervise, schedule, and review the work of other agencies.

Training and Experience:

Generally, positions in this classification will require:

Principal Engineer 1

Three years of advanced-level professional engineering experience including at least two years equivalent to the Engineer 4 level in the City of Madison and two years of experience supervising lower level staff. Such experience would normally be gained after graduation from an accredited college or university with a degree in civil engineering or a closely related field. 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 these positions will also be considered.

Principal Engineer 2

Two years of professional project and staff supervision equivalent to that gained as a Principal Engineer 1 for the City of Madison. Such experience would normally be gained after graduation from an accredited college or university with a degree in civil engineering or a closely related field. 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 these positions will also be considered.

Specific training and experience requirements will be established at the time of recruitment.

Necessary Special Qualifications:

Possession of a valid Certificate of Registration as a Professional Engineer in the State of Wisconsin upon appointment.

Ability to meet the transportation requirements of the position.

Department/Division	Classification	Comp. Group	Range
Engineering	Principal Engineer 1	18	15
Engineering	Principal Engineer 2	18	16

Approved: _____
Brad Wirtz
Human Resources Director
Date