

Department of Natural Resources
Position Description

Classification: Water Resources Engineer – Senior
Working Title: Contaminated Sediments Engineer

Working Location: One position each (three total) in Milwaukee, Green Bay, Ashland/Superior/Spooner

Position Summary: This position will serve as a sediment engineer in the Remediation and Redevelopment (RR) program responsible for providing direction for sediment investigation and design projects and review of detailed engineering plans for sediment remediation involving assigned sediment cleanups. These duties include project management, development and review of detailed engineering designs for removal, process and disposal of contaminated sediment; and review, collection and analysis of applicable post removal evaluation data to determine adequacy of removal for assigned sites.

This position will provide technical expertise to environmental consultants, responsible parties and other RR project managers when developing, coordinating and evaluating contaminated sediment remediation projects. Specific responsibilities will include: contaminated sediment site characterization; design and review of sediment assessment data; determination of level of removal necessary to meet water quality and human health protection needs; design and review of detailed engineering plans for sediment remediation; development and review of detailed engineering designs for removal, process and disposal of contaminated sediment; and review, collection and analysis of applicable post removal evaluation data to determine adequacy of removal. This position will also work with RR staff to develop a comprehensive contaminated sediment strategy across the state.

As an RR project manager, this staff person will work independently with other WDNR Program staff, as well as staff from other state and federal agencies, tribal entities, and other external partners and consultant engineers to provide guidance and consistency with regard to sediment assessment and cleanup actions. This position will also require interaction with stakeholders through participation in technical workgroups, communication and outreach efforts to promote the benefits of remediation of contaminated sediments.

Travel Requirements:

The incumbent is required to travel throughout the State and may also travel out-of-state periodically to represent the State of Wisconsin on job-related issues. Occasional overnight travel is required.

Scope of Authority:

This position reports to the Remediation and Redevelopment team supervisor in the assigned office. The position will work closely with Central Office and Regional staff throughout the state.

Responsibilities and Duties:

50% A. Coordination of Contaminated Sediment Projects

- A1. Develop site-specific plans based on engineering principals to evaluate contaminated sediment sites, including the use of field and laboratory analytical procedures, identification of sampling methods, use of sediment deposition and pollutant transport

models, comparison of sample results water quality and sediment quality criteria, and use of quality assurance and quality control plans.

- A2. Prepare detailed engineering plans for characterizing the extent of sediment contamination using sediment data, water chemistry data, hydraulic factors, sediment transport models and other engineering tools.
- A3. Prepare, or review, as appropriate, engineering plans for the removal or other remediation of contaminated sediment as necessary to meet water quality standards and to protect human health. Specific tasks include evaluating remediation options, including use of geographic information systems techniques, and identifying appropriate techniques for removal, processing and disposal of the contaminated sediments based on proven engineering design.
- A4. Review and approve site characterization reports and remediation plans prepared by engineering consultants, including those hired by the Department and those hired by the responsible party.
- A5. Coordinate directly, or oversee work by responsible parties, the implementation of approved engineered remediation plans. Specific tasks include review and approval of work plans, review and acceptance of periodic progress reports, and conducting site reviews.
- A6. Coordinate implementation and review of specific site evaluation activities to determine the adequacy of remediation activities based on engineering principals.

25% B. Coordination with Areas of Concern and Federal Remediation Programs

- B1. Coordinate with Department staff and other relevant Federal and State agencies and outside experts on contaminated sediment sites in the State that will require sediment remediation.
- B2. Prioritize and develop study plans and budgets, including cost benefit analysis for the top priority site for state funding. Study plans should include field activities, lab analysis and data analysis including the development of engineered remediation alternatives.
- B3. Work with Department staff and Federal agencies and experts to develop funding options to carry out selected studies and assure performance of all needed activities.

20% C. Technical Expert for Remediation of Contaminated Sediments

- C1. Prepare technical comments, develop engineering guidelines and/or review of technical articles and papers in order to support Department policies and procedures for sediment remedial actions.

- C2. Maintain up-to-date knowledge of the best methodology for the study and management of in place pollutants. Attend technical sessions and workshops regarding in place pollutants and their transport.
- C3. Maintain up-to-date knowledge of contaminated sediment sampling and site characterization and correspond with municipal and industrial personnel, legislators, state and federal officials and the general public regarding all program objectives as the need arises. Tasks for this objective include informal and formal talks, developing engineering guidelines, review of technical papers on engineered sediment technologies and contact with the public.
- C4. Prepare letters and attend meetings and/or phone contacts as necessary concerning all work objectives.
- C5. Develop technical documents and other information necessary to implement Wisconsin's sediment remediation program.

5% D. Professional Development & Organizational Responsiveness

- D1. Review and keep abreast of changes in scientific knowledge of position-related activities and in technology and management practices for water pollution control.
- D2. Participate in job-related training as directed by supervisor.
- D3. Prepare forms and reports as necessary and in a timely manner.

Knowledge, Skills, and Abilities:

Upon Appointment:

- Degree in environmental engineering, water resources engineering, or its equivalent in professional engineering work experience and technical writing skills.
- Knowledge and experience of sediment transport, sediment deposition, contaminant release from deposited sediment, field sampling techniques for the measurement of sediment and water column contaminants. This should include methods to take sediment cores, interstitial water, detection of low level contaminants, sample handling, estimation of sediment and atmospheric flux rates and partition coefficients. This may also include knowledge of fluvial geomorphology.
- Competent use of personal computers and proficient use of Microsoft Office, ArcGIS (i.e. Arc Map), Excel, Access, or other spread sheets for data storage, statistical analysis and display.
- Ability to perform statistical analysis with emphasis upon data analysis for applications related to determining environmental risk and natural resources management.

- General knowledge of state and federal water and remedial regulatory program requirements, particularly water quality standards and the federal Clean Water Act, federal TSCA requirements, federal Superfund provisions, and state and EPA approval procedures for remediation, handling and disposal of hazardous materials.
- Methods used in environmental monitoring, particularly those used to collect and sample contaminated sediment and water quality and quantity.
- Principles of quality management and quality assurance techniques related to collection, handling, and laboratory analysis of sediment and water quality sampling data.
- Knowledge of issues related to contaminants in the environment, particularly toxicity of organic and inorganic compounds to humans, wildlife and impacts on the environment, synergistic effects of multiple compounds and stressors.
- Knowledge of the uses and applications of spatial models especially those that relate to contaminated sediment and nearshore and hydrologic processes, including fluvial geomorphological processes.
- Principles of collaborative problem solving.
- Excellent verbal and written communication skills and the ability to speak before groups at technical sessions and public meetings.
- Knowledge of cost benefit analysis and evaluation of alternative design approaches for site remediation.
- Ability to review, assess and approve feasibility and design plans and documentation of work submitted by consultant engineers.

Full Performance:

- Full understanding and application of Department of Natural Resources policies, procedures and management systems, particularly working knowledge of state and federal water and hazardous materials program regulatory requirements, particularly water quality standards developed under state administrative rules and the federal Clean Water Act, including those in chapters NR 102, NR 104 and NR 105, contaminated sediment site characterization and remediation requirements in chapter NR 347 and the NR 700 series of Wisconsin administrative rules, federal TSCA requirements, federal Superfund provisions, and state and EPA approval procedures for remediation, handling and disposal of hazardous materials.
- Understand and implement the elements of quality management and quality assurance techniques related to collection, handling, and laboratory analysis of sediment and water quality sampling data.

Equipment Used in Performing in the Position

- Computer, fax machine, printing equipment, calculator, copy machine, telephone, field monitoring equipment, cameras, video camera, etc.
- The position may participate in water quality and sediment monitoring activities which involves the use of hand held sampling equipment, operation of a boat, ability to work on or near water.

Physical Requirements and Environmental Factors

The position has no physical requirements; however, there will be times when the incumbent may participate in field activities including water and sediment monitoring. This could involve driving automobiles or trucks, walking to remote sites, using hand held instruments, lifting and carrying equipment, and/or wading in streams or lakes or working from a boat. Some field work may be strenuous. The position is required to do some travel statewide and occasional travel across state lines; therefore, the incumbent must have the ability to travel to locations throughout the state and across the United States, especially in the Midwest. Accommodations can be made for these activities through the incumbent's supervisor if the incumbent has physical limitations.

Telework Evaluation

Limited telework options may be available for this position.

Appendix Competencies

Decision Making: Able to analyze situations fully and accurately to reach productive decisions. Consults appropriate parties when necessary and identifies the key concerns and/or issues that need to be addressed in order to make the best decision possible, at the correct level of the decision hierarchy. Calculates and evaluates the long-term consequences of decisions. The desired outcomes for this competency are excellence and credibility in decisions made. Makes fair decisions on clearly based objective criteria rather than personalities.

Service Excellence: Makes customer service a top priority and constantly seeks to improve customer service. Is responsive to changes in what customers want and need. Delivers on promises made to customers and follows up appropriately. The desired outcomes for this competency is a strong connection to our customers.

Effective Communication: Able to express ideas in a clear, concise and effective manner, whether speaking or in writing. Uses correct grammar and sentence structure in communications. Is a good listener, even when differing viewpoints are expressed. Openly shares information and keeps all relevant parties updated. The desired outcomes for this competency are a shared mind set and pool of meaning.

Interpersonal Relationships: Builds and maintains effective working relationships with others both internally and outside the organization; takes a positive and productive approach to resolving any conflicts which may arise. Exemplifies the commitment to the DNR's core value of respect; to work with people, to understand each other's views and to carry out the public will, maintain integrity, and treat everyone with fairness, compassion and dignity. The desired outcome for this competency is strategic unity built on trust.

Leadership: Fosters and encourages support from his/her team to accomplish objectives, follow procedures, and accepts suggestions; inspires confidence and respect; motivates people to achieve agency goals and objectives; promotes respect, honesty, integrity, and fairness to all. Enforces standards/rules fairly and consistently and leads with courage. The desired outcomes for this competency are accountability through ownership of the work, staff alignment with the agency direction, and full engagement of all employees.

Effective Problem Solving - Employs analytical abilities, pragmatism, and other tools to resolve complex problems in a variety of situations. Delivers accurate and technically proficient work. Demonstrates sound professional judgment in analyses and decisions. Works to understand a complex situation, issue, or problem by breaking it down into smaller pieces and traces implications or consequences. Shows enthusiasm for technical and intellectually complex tasks and solving problems.

Takes Action & Shows Initiative - Works well independently and is self-motivated to take action to meet critical organizational/program/unit goals. Sets and monitors own objectives and standards. Initiates appropriate actions and follows through without prompting or close supervision. Demonstrates strong work ethic. When needed, puts in the hours necessary to complete the tasks at the highest level of quality possible. Displays the stamina necessary to work an irregular, demanding schedule.

Networking & Organizational Agility - Relates well to all kinds of people up, down, and sideways, external and internal to the organization. Builds appropriate rapport and utilizes own networks and relationships across the organization to break down barriers between functions and/or work units to accomplish work and focus on customers more effectively. Maintains frequent contact with key players across the organization and within the program/region/unit. Manages relationships by creating 'win-win' opportunities and seeks mutual benefit for all individuals involved.

Honors Commitments - Evokes trust from others by keeping commitments, recognizing individual contributors, setting a personal example and building shared goals, values and vision. Known to be honest. Demonstrates personal integrity and high ethical standards in all transactions. Conducts department transactions with honesty and professional ethics. Seeks to achieve results that are in the best interest of the organization. Models and reinforces behavior in self and others and demonstrates fairness and respect for others.