THE MIAMI CONSERVANCY DISTRICT

JOB DESCRIPTION:
Title: Manager, Water Resources & Hydrology
Laor Category: Exempt

SUMMARY: The Manager of Water Resources and Hydrology leads the planning, analysis, and management of water resource programs. Oversees data collection and reporting, supervises technical staff, manages budgets and projects, and serves as a key technical expert on water resource conditions across the watershed, working collaboratively with internal teams and external stakeholders.

The position plays a critical role flood protection, water quality and quantity monitoring, water stewardship, and public communication, ensuring data-driven decision-making and proactive response to hydrologic conditions. The role ensures data-driven decision-making, supports regional planning and policy, and contributes to effective public communication of water resource conditions and trends.

ESSENTIAL DUTIES AND RESPONSIBILITIES: (include the following. Other duties may be assigned.)

Responsibilities:

Leadership & Supervision

- Supervises and mentors 4-5 hydrology staff, including field and technical personnel.
- Working closely with the Hydrology Field Supervisor, the Manager establishes team priorities, conducts regular check-ins, and supports staff development and cross-training.
- Coordinates work across departments, including Field Operations, Engineering, Communications, and Water Stewardship.
- Develops and manages annual budgets for water resource programs.
- Approves purchases, manage accounts payable processes, and monitor expenditures.
- Plans for capital equipment needs and long-term replacement schedules that support the hydrology team and water resource programs.

Hydrologic Monitoring & Analysis

- Oversees collection, validation, and analysis of water data including surface and groundwater, precipitation, and streamflow data. Makes recommendations for streamlining data collection processes and implements improvements.
- Monitors real-time hydrologic conditions (e.g., streamgages, observation wells, weather forecasts).
- Analyzes trends including precipitation, water levels, water quality, aquifer storage, stream and river conditions, watershed and flood events.
- Maintains and ensures quality of hydrologic databases and systems (e.g., Aquarius or similar platforms).
- Identifies trends, anomalies, and emerging conditions that may impact flood risk, water supply, or watershed health.

High Water Forecasts and Planning

- Provides technical oversight and real time hydrologic reporting to inform operational decisions including but not limited to high water and flood events.
- Monitors forecasts (e.g., National Weather Service / River Forecast Center) and assess risk.
- Communicates with internal teams to support timely operational decisions (e.g., action level triggers, gate closures, dam storage).
- Prepares and distributes high water status reports (e.g., pre-during-post events with daily or more frequently as needed).

Data Management & Reporting

- Tracks and reports hydrologic statistics (e.g., rainfall totals, flood events, storage levels) to maintain high water records.
- Interprets hydrologic data to support internal decision-making and external understanding of water resource conditions.
- Ensures data accuracy, accessibility, and timely distribution to internal and external stakeholders and the public.
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- Oversees preparation and publication of key reports, including Annual Water Quantity and Quality reports, Nutrient Trend Reports, Monthly Precipitation Reports, and quarterly and annual Board reports;recommends improvements.
- Collaborates with communications staff to translate data into clear, accessible information for non-technical audiences.

Watershed Assessment & Strategic Analysis

- Contributes to evaluation of watershed conditions, including identification of trends, risks, and data gaps.
- Supports development of frameworks or approaches to assess the overall "state of the watershed."
- Identifies emerging water resource issues (e.g., water quality concerns, climate variability, land use impacts).
- Recommends enhancements to monitoring plans to optimize resources.

Project & Program Management

- Leads water resource studies and special projects, including multi-year and grant-funded initiatives.
- Develops and manages contracts, budgets, timelines, and deliverables for technical projects.
- Oversees water monitoring programs, including sampling, testing, and well maintenance.
- Plans for infrastructure and equipment replacement (e.g., monitoring wells, gages, samplers, and instrumentation).
- Evaluates and implements improvements to monitoring systems, data collection, and analysis methods.

Grants & Funding Support

- Provides technical input and support for grant applications and externally funded projects.

- Assists in aligning technical work with funding opportunities and program priorities.
- Supports implementation and reporting requirements for grant-funded initiatives.

Watershed Planning & Program Integration

- Supports integration of hydrologic data into watershed planning, land use considerations, and resource management decisions.
- Collaborates with internal teams to evaluate water resource impacts of projects, programs, and land management activities.

Interagency Coordination & Partnerships

- Serves as liaison with external agencies (e.g., USGS, USEPA, universities, and state offices).
- Manages cooperative agreements, including annual contracts and technical coordination.
- Supports and advises regional partners by providing data, analysis, and technical guidance.
- Contributes to collaborative initiatives that advance watershed protection and management goals.

Public Communication & Outreach

- Presents technical information to stakeholders, Board members, and the public.
- Supports media inquiries and public education efforts regarding water conditions and trends.
- Collaborates with communications staff on messaging, public information, and outreach materials.

Technical Expertise & Compliance

- Provides subject matter expertise on surface and groundwater, watersheds, hydrology, and water conservation and protection practices.
- Provides technical input to support MCD permits, policy development, regulatory review, and regional water resource advocacy efforts.
- Ensures compliance with applicable standards, agreements, and best practices.

Program Evaluation & Innovation

- Supports development and tracking of program metrics and performance indicators.
- Contributes to development of tools to communicate water resource conditions (e.g., apps, dashboards, report cards).
- Evaluates and implements emerging technologies, tools, and methods for monitoring and analysis.

Qualifications:

Education & Experience

Bachelor's degree in Hydrogeology, Hydrology, Natural Resources, Environmental Science, or related field required. Minimum of five (5) years of progressively responsible experience in water resources management or hydrology. Must have supervisory or project management experience. Equivalent combination of education and experience may be considered.

Knowledge, Skills, and Abilities

Strong knowledge of groundwater systems, hydrology, and water quality analysis. Experience with hydrologic data systems, databases, and data visualization tools. Ability to analyze complex data and translate findings into actionable insights. Strong project management, organizational, and budgeting skills. Excellent written and verbal communication skills, including public presentation. Ability to work collaboratively with internal teams and external partners.

Technical Skills

Proficiency in data management systems, spreadsheets, and reporting tools. Experience with hydrologic monitoring and sampling equipment, and field instrumentation. Familiarity with programming or data processing tools is a plus.

Certifications & Licenses

Valid driver's license required.

Work Environment & Physical Requirements

Work is primarily performed in an office environment with periodic fieldwork. Field activities may include exposure to inclement weather, water environments, and uneven terrain. Occasional work outside normal hours may be required during high water or emergency events.