

HRSD

Position Description: Hydraulic Analysis Manager

Section I. Position Reference Information

a.	Department	Engineering
b.	Division	Planning and Analysis
c.	Position Title	Hydraulic Analysis Manager
d.	Immediate Supervisor	Chief of Planning and Analysis
e.	Work Center	Planning and Analysis
f.	Grade	9e-9

Section II. Position Summary

Under broad guidance, the Hydraulic Analysis Manager is responsible for:

- a. Managing the Regional Hydraulic Model (RHM), which includes model calibration using master metering data, updating the model geodatabase from locality and HRSD data
- b. Performing hydraulic analyses to evaluate system capacity and conveyance infrastructure sizing
- c. Ensuring HRSD policies are consistently applied throughout the Service Area
- d. Serving as a liaison between HRSD and Localities
- e. Ensuring the regional sanitary sewer system is in compliance with all capacity related regulatory requirements
- f. Reviewing and providing guidance on all proposed development within the HRSD Service Area
- g. Strategic planning of the Regional Wastewater System
- h. Providing strategic planning, risk management and professional services for internal and external customers

Section III. Examples of Position Duties

- a. Coordinates and analyzes the Regional Sanitary Sewer System to provide facility sizing recommendations for new and/or existing pump stations, pressure reducing stations, pipelines, storage facilities, and treatment plants
- b. Support HRSD Operations on diversion, emergency, and system optimization analyses
- c. Troubleshoots and resolves model discrepancies and/or issues
- d. Performs special studies and designs related to long term planning and system capacity
- e. Evaluate infrastructure investment alternatives using business case evaluations
- f. Reviews and approves plans for new connections and/or potential infrastructure conflicts
- g. Issues pressure and flow acceptance letters
- h. Supervises plan reviewers
- i. Support HRSD in delivering capital improvement projects
- j. Monitors regional growth and forecasts future infrastructure investments
- k. Works with the Data Analysis group to evaluate system performance and ensure the model is calibrated with the latest data
- l. Works with the Localities to ensure the latest data, including new pump stations, pump curves, and Rainfall Dependent Inflow and Infiltration (RDII) data are integrated into the model geodatabase
- m. Provides the hydraulic analyses for system capacity, treatment plant capacity, and nutrient compliance diversions
- n. Provides modeling support and training for the Localities

- o. Coordinates with public and private agencies on regional issues such as climate change, sea level rise, and resiliency planning
- p. Reviews of data from the Federal Facilities that are under Order by HRSD
- q. Performs other duties as assigned

Section IV. Position Contacts

- a. Standing Teams, Committees, Boards, and Organizations
 - 1. Required
 - a) Member – Engineer Selection Teams
 - b) Member – Cross Functional Teams, as assigned
 - c) Member – Division Quality Steering Team
 - 2. Desired
 - a) Member –Relevant Professional Organizations
 - b) Member – Relevant User Groups

b. Internal Contacts

<i>Contact</i>	<i>Purpose</i>	<i>Frequency</i>
Chief of Planning and Analysis	Receive guidance on priorities, feedback on performance, and direction for specific projects	Daily
Data Analysis Manager	Coordinate data input into the RHM to ensure that it is updated and working properly	Daily
Operations - Interceptor Systems	Receive feedback on the performance of the RHM, provide modeling for new facility sizing, coordinate new connections and potential infrastructure conflicts	Daily
Engineering	Coordinate with Project Managers on facility sizing	Daily
GIS Manager	Provide and receive input on updates to the Hydraulic Model	Weekly
Operations	Provide modeling support for facility sizing and system diversions	Weekly
Compliance Assurance	Ensure that the RHM is in compliance with regulatory requirements	Weekly

c. External Contacts

<i>Contact</i>	<i>Purpose</i>	<i>Frequency</i>
Virginia DEQ	Compliance with State Regulations	As Needed
Localities	Provide modeling assistance and receive updated data for entry into the RHM. Coordination on new developments and projects upcoming within the Locality.	As Needed
Consulting Engineers	Provide data for new facility sizing. Coordination on proposed developments and infrastructure.	As Needed

Section V. Position Accountabilities and Expectations

- a. Compliance – All work is performed within HRSD guidelines and complies with Federal, State and Local Government regulations
- b. Financial Management – Expenditures are justified and in alignment with fiscal year budget
- c. Process – Design, review and analysis of projects helps HRSD achieve its mission and environmental goals

- d. Human Resources Management – Training and development is visibly supported; team environment is such that employees are treated with fairness, respect, and courtesy; other staff are motivated to contribute ideas to improve quality and services
- e. Customer Satisfaction – Zero customer complaints; schedules and reports are provided to customers/partners within a timely manner; RHM is updated regularly
- f. Timeliness – Meets deadlines for project completion, report submission and change implementation

Section VI. Working Conditions

- a. Must be able to work at a middle manager level in a team-oriented culture
- b. Must be able to work in an industrial environment
- c. Must be able to travel outside HRSD, and drive to various HRSD work centers and sites within the HRSD service area
- d. Must be available to work overtime and/or unusual hours as necessary
- e. Must be available by telephone during non-scheduled work hours

Section VII. Physical Requirements

- a. Must have the physical dexterity to accomplish the duties defined herein
- b. Work involves walking, climbing, standing, stooping or bending and at times may be in an OSHA designated noise environment (> 85 decibels)
- c. Must be able to perform light lifting (25 – 50 pounds)
- d. Must be able to work around hazardous materials, chemicals, fumes, moisture, heat, noise, gases, odors, and in confined spaces
- e. Work involves exposure to and handling of wastewater

Section VIII. Other

- a. Medical certification of physical requirements may be required
- b. Must be currently authorized to work for any U.S. employer

Section IX. Qualification Standards

- a. Education
 - 1. Required
BS degree in appropriate engineering field such as civil, mechanical or environmental
 - 2. Desired
Masters degree in Hydraulics
- b. Experience
 - 1. Required
Four years experience focused on the design and operation of water/wastewater infrastructure, to include hydraulic modeling and project management
 - 2. Desired
Relevant engineering experience in design and construction relating to operation and maintenance of sewerage facilities, hydraulic modeling, and GIS
- c. Training Levels
Personnel in this category are fully qualified at Grade 9 with appropriate BS degree, P.E. License and 4 years of experience. While a fully qualified selection is desired, the following training levels and years of experience are established for personnel who are not fully qualified and do not possess the required PE license:

- Grade 9a - BS degree plus 4 years relevant experience **or** MS degree and 2 years relevant experience
- Grade 9b - BS degree and 3 years relevant experience **or** MS degree and 1 year relevant experience
- Grade 9c - BS degree and 2 years relevant experience **or** MS degree and no experience
- Grade 9d - BS degree and 1 year relevant experience
- Grade 9e - BS degree and no experience

NOTE: Master's Degree in Engineering is equivalent to two years of experience

- d. Professional Memberships
 - Desired
 - Active participation in professional organizations such as ASCE, WEF or AWWA
- e. Job-specific Technical Competencies
 - 1. Required
 - a) Knowledge of project management techniques
 - b) Knowledge of industry standard civil design and analysis assumptions
 - c) Knowledge of pipeline and pump station design
 - d) Ability to use MS Office products and a variety of other industry-specific programs (ArcGIS, MIKE Urban) at an advanced level of proficiency
 - e) Ability to evaluate designed engineering plans for compliance with HRSD standards and reasonable engineering practice
 - f) Ability to perform complex hydraulic calculations
 - g) Ability to schedule, craft, & generate detailed interceptor system studies in a structured logical sequence
 - h) Ability to determine needed data and explain data requirements to those responsible for retrieving it
 - i) Ability to compare computer model output to field conditions and effectively analyze and report results
 - j) Ability to read and interpret construction plans, details and specifications
 - 2. Desired
 - a) Knowledge of GIS and geodatabases
 - b) Knowledge of pressurized hydraulic models
 - c) Knowledge of wastewater demand computation methods and assumptions
 - d) Knowledge of City and County general design preferences for wastewater design
 - e) Knowledge of State Sewage Collection and Treatment (SCAT) Regulations.
- f. Special Licenses
 - Required
 - a) Virginia Professional Engineer License to be fully qualified
 - a) Valid driver's license from state of residence
- g. HRSD Universal Competencies