Job Description

Job title	Senior Information Systems Engineer (Confidential)

GENERAL PURPOSE

Under general direction, provides advanced-level professional, technical, and analytical support to District technology programs in assigned area; on an ongoing basis, leads a team of internal staff and external consultants on projects; monitors system performance to ensure performance and reliability standards are met; collaborates with team members to integrate systems across multiple operating platforms and technologies; performs specialized duties in support of an assigned technology program area; and performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS

This is the advanced-level classification in the Information Systems Engineer Confidential series responsible for performing the most complex work assigned to the series. Incumbents regularly work on tasks which are varied and complex, requiring considerable discretion and independent judgment. Positions in this classification rely on experience and judgment to perform assigned duties. Assignments are given with general guidelines and incumbents are responsible for establishing objectives, timelines, and methods to deliver services and complete assignments. Work is typically reviewed upon completion for soundness, appropriateness, and conformity to policy and requirements.

A confidential employee is an employee who is required to develop or present management positions on collective bargaining, or whose duties normally require access to confidential information.

SUPERVISION RECEIVED AND EXERCISED

Receives general direction from assigned supervisory or management personnel. Exercises functional or technical direction over and provides training to lower-level staff.

TYPICAL DUTIES AND RESPONSIBILITIES
The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to this position.

<u>All Technology Program Areas:</u>

➢ Leads a project team on assigned projects, coordinating and inspecting the work of professional and technical staff and providing advanced technical guidance and training as needed; determines project requirements, business needs, purpose or justification, identifies stakeholders, and functional area participation; refines project requirements, scope, objectives, deliverables, acceptance criteria, constraints, assumptions, and alternative solutions; estimates activity costs and overall project budget; identifies roles and responsibilities; determines information and communication needs of stakeholders.

➢ Provides daily work instructions, guidance, and performance feedback to team members; gives input for team member performance appraisal.

➢ Refines project requirements; creates work breakdown structures; performs definition, sequencing, resource estimates, and duration estimating of project activities for overall schedule development.

➢ Follows the change management process and performs all necessary technical and project management duties needed for successful project implementation.

➢ Develops and enforces the methodology by which District information technology projects are defined, documented, and delivered; reviews and provides guidance to business units during the research and selection phase for all major project implementations; works with the information systems staff to establish and enforce architectural standards that form the basis of all technology projects.

➢ Serves as advanced-level responder to client service issues using multiple diagnostic techniques; isolates problems with a significant impact on user groups, such as the system's lack of availability or unreliability; identifies critical system outages or failures among multiple systems; independently resolves issues or confers with colleagues and management on resolution options.

➢ Provides status updates to clients and colleagues on technology problem resolution, identifying the nature of the problem, recommended solution, any cost impacts, and anticipated date of resolution.

➢ Uses multiple devices to monitor systems evaluating reliability, conformance to performance metrics, and overall availability; identifies system deficiencies or additional resource requirements and makes recommendations on resolution of same.

➢ Develops and implements modified or enhanced systems that increase their effectiveness, efficiency, reliability, and availability; implements, tests, and evaluates the effectiveness of solutions.

➢ Installs, configures, maintains, troubleshoots, and monitors hardware, software, and tools; configures and maintains system patches.

➢ Installs system security hardware, software, and related devices; monitors security system to identify any breaches to the system; activates procedures and responses to system security issues; assesses assigned technology area for potential exposure to risk and provides recommendations to mitigate risk; documents security-related actions.

➢ Prepares technical documentation for assigned technology program areas; updates as needed; maintains statistical data; prepares analyses and reports.

➢ Works with vendors, users, application developers, and management to obtain information and develop an understanding of needs and recommends potential solutions utilizing relational technology.

➢ Conducts research and stays current on new trends and innovative solutions for technology programs; recommends new technologies that would improve the District's operational effectiveness or services to client departments.

➢ Ensures staff observe and comply with all District and mandated safety rules, regulations, and protocols.

➢ Performs related duties as assigned.

When Assigned System or Network Responsibilities:

➢ Serves as systems administrator for major computer/server platforms or other major system/communication networks; authorizes or executes the creation of system objects, including data directories, files, subsystems, job and message queues, and communication and work station devices; establishes and maintains user and other authorization files; maintains system security to ensure system and data integrity; monitors and tunes the system for optimal performance; analyzes system capacity issues and recommends system upgrades or replacements; manages and participates in the installation of system upgrades and fixes; maintains data and directories.

➢ Evaluates, recommends, installs, and configures operating systems; tests gateways to facilitate data transport between various systems and applications; researches, diagnoses, and resolves problems to minimize system downtime; documents system and network configuration and standards; establishes, monitors, and adjusts system backup and recovery procedures and schedules.

➢ Monitors and optimizes disk storage; recommends and/or makes program modifications to enhance system performance; reviews, develops and/or recommends software to aid in the automated management of system performance; recommends naming standards to enhance the use of systems functions.

➢ Provides advanced support for the network infrastructure that support the sharing of data across computer/server platforms and systems; designs data bus architectures, data interfaces, cable/cable layout and installation specifications, and other network and communications devices and protocols.

➢ Provides complex analysis using network analyzers, system logs, and auditing tools to ensure efficient data transmission and adequate network redundancies; designs and installs multi-platform interfaces; configures, tests, tunes, and maintains network integrity and security to achieve optimal performance.

➢ Performs advanced management and coordination of telephone and voice communications services; researches, evaluates and recommends the selection of telecommunications service providers; evaluates service performance; manages provider relationships.

<u>When Assigned Database Responsibilities:</u>

➢ Serves as database administrator for major database/application platforms and systems. Ensures database and applications availability to system users; provides, controls, grants, and revokes user access; develops standards and strategies for maintaining database usability, consistency, accuracy, timeliness, security, and availability; monitors users to ensure compliance with operational and security procedures; manages database and file space allocations; makes recommendations on strategies to meet future storage requirements.

➢ Provides complex analysis to monitor systems performance; participates in the resolution of production problems that involve database/application issues; troubleshooting of locking issues, resource contention, analysis of queries, log files and trace files; responsible for performance tuning of application tiers and databases; performs process and query optimization.

➢ Provides support to information systems staff in planning, designing, and implementing business intelligence reporting and applications development with conceptual, logical, and physical database design; creates, maintains, and modifies database structure, tables, files, views, indexes and programs; oversees the migration of database components between development, test and production environments. Archives, reloads, migrates data.

➢ Oversees and performs administration and development tasks to extract, transform, and load from internal and external data sources using specialized data management tools into the District's enterprise data warehouse.

➢ Oversees and performs database/systems interface duties, including design, development, and implementation; establishes data validation standards, defines field descriptions; data security parameters and related functions; produce interface error reporting and end user notification; responsible for continuous oversight of scheduled jobs.

When Assigned Data Modeling and Analytics Responsibilities:

- Lead data-related technical projects; work with business stakeholders to analyze and understand data requirements and solutions; convert requirements into functional/technical specifications; developing a strategy for design and building of BI solutions; perform ad hoc data investigations and analysis.
- Creates conceptual, logical and physical data models and determines the most appropriate data representation for consumption by various business units, to include relational, dimensional, object, key-value (such as column families), charts and graphs, etc.
- Deliver insightful, consumable, and actionable reports, scorecards, dashboards, key performance indicators, metrics, and other analytical outputs to improve business performance.
- Have joint accountability with data stewards and database administrators to develop, maintain, and conform to data governance policies around information management; enforces access restrictions and employs data encryption and masking where necessary and/or required by law.
- Enforces data management standards; maintains the District's enterprise data catalog.
- Provides quality control and assurance for all managed data, working with the business and technical team members to address data quality or reporting issues.
- Commissions and decommissions data sets; ensures compliance with the District's established data retention policies.
- Processes data and information according to District or regulatory guidelines.
- Designs, provides ongoing management and support of the District's reporting environments, data warehouse, and data transformation systems.

REQUIRED QUALIFICATIONS

Knowledge of:

- Principles and practices of providing functional direction and training.
- Principles and practices of leadership.
- Principles and techniques for working with groups and fostering positive team interaction to ensure effective teamwork.
- Change management principles and practices.
- Principles and practices of project management/project life cycle.
- Principles, methods, and techniques in the design and operation of information systems in assigned technology area which may include, but is not limited to, infrastructure, network, communications, database, or communication control.
- Methods and techniques of troubleshooting systems and devices in assigned technology area.

➢ Principles and practices of systems analysis and design for the development and management of technology systems.

➢ Methods and techniques of installing, configuring, administering, and monitoring a diverse range of physical and virtual systems.

➢ Methods and techniques of evaluating system effectiveness and responding accordingly.

➢ Security and monitoring devices, and procedures necessary to maintain the integrity and security of data in networked systems.

➢ Principles, practices, and methods of network architecture, design, and administration, including connectivity, protocols, interfaces, and security measures.

➢ Methods of managing and administering server-based operating systems.

➢ Principles and practices of database design, administration, management, and functionality.

➢ Methods and techniques of creating conceptual, logical and physical data models.

➢ Principles and practices of quality assurance.

➢ Methods and techniques of assessing business requirements and developing strategies for solutions in assigned technology area.

➢ Principles, methods, protocols, and techniques in the design, installation, and operation of data, voice, and video communications systems, equipment, and devices.

➢ Federal, state, and local laws, codes, and regulations in assigned areas of responsibility.

➢ Standard programming languages and utilities similar to those used by the District.

➢ District and mandated safety rules, regulations, and protocols.

➢ Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors, and District staff.

➢ The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.

➢ Modern equipment and communication tools used for business functions and program, project, and task coordination, including computers and software programs relevant to work performed.

Ability to:

➢ Effectively lead the work of project teams to accomplish technology program goals and objectives.

➢ Provide professional-level support to systems in assigned technology areas.

➢ Troubleshoot a diverse range of systems hardware and software and make or recommend modifications.

➢ Install, configure, maintain, and manage networked systems hardware and software including servers.

➢ Monitor systems performance and recommend changes to optimize system reliability and availability.

➢ Performs database management and administration tasks including tuning, storage, and backup and recovery measures.
➢ Develop and implement security measures in assigned technology area.
➢ Configure, maintain, and manage data, voice, and video communication networks and infrastructure to achieve optimal technical performance and user support.
➢ Analyze and define user requirements and recommend efficient, cost-effective hardware, software, and network/communication solutions.
➢ Conduct analysis and feasibility studies; analyze complex problems, evaluate alternatives, and make sound recommendations.
➢ Apply critical thinking techniques for a broad range of situations.
➢ Conduct comprehensive research on a diverse range of technology topics.
➢ Provide technology and analytical solutions which improve business performance.
➢ Enforce data management standards in assigned technology areas.
➢ Prepare clear, concise, and accurate documentation, user guides, reports of work performed, and other written materials.
➢ Use modern, state-of-the-art precision and diagnostic instruments, computers, and specialized software to test, calibrate, and diagnose complex telecommunication systems, devices, and equipment.
➢ Independently organize work, set priorities, meet critical deadlines, and follow-up on assignments.
➢ Use tact, initiative, prudence, and independent judgment within general policy, procedural, and legal guidelines.
➢ Effectively use computer systems, software applications relevant to work performed, and modern business equipment to perform a variety of work tasks.
➢ Communicate clearly and concisely, both orally and in writing, using appropriate English grammar and syntax.
➢ Establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

Experience:
Any combination of experience and education that provides the required knowledge and abilities is qualifying, along with the specific licenses/certifications as outlined below:

➢ Six (6) years of progressively responsible professional experience in supporting an information systems program in assigned technology area, or (2) years as an Information Systems Engineer II with the District.

Education:

➢ Equivalent to a bachelor's degree from an accredited college or university with major coursework in information technology, computer science, or a closely related field.

Licenses/Certifications:

- A valid California driver's license and the ability to maintain insurability under the District's Vehicle Insurance Policy.
- Microsoft certification may be required in certain assigned areas.
- Oracle certifications may be required in certain assigned areas.
- Cisco certifications are required in certain assigned areas.

PHYSICAL DEMANDS

The physical demands described here are representative of those that must be met by employees to successfully perform the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer; vision to read printed materials and a computer screen; to operate a motor vehicle and visit various District sites; and hearing and speech to communicate in person and over the telephone. This is primarily a sedentary office classification although standing in work areas and walking between work areas may be required. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate standard office equipment. Positions in this classification occasionally bend, stoop, kneel, reach, push, and pull drawers open and closed to retrieve and file information. Employees must possess the ability to lift, carry, push, and pull materials and objects up to 40 pounds.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Employees work in an office environment with moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

This job description has been reviewed and approved by all levels of management in cooperation with the union (if applicable):

Approved by:	*Board of Directors*
Date adopted:	*October 2, 2019*
Date modified:	
FLSA determination:	*Exempt*

Job Description Acknowledgment

I have received, reviewed, and fully understand the job description for Senior Information Systems Engineer (Confidential). I further understand that I am responsible for the satisfactory execution of the essential functions described therein, under any and all conditions as described.

Employee Name (print): _____ *Date:* _____

Employee Number: _____

Employee Signature: _____