

POSITION DUTY STATEMENT

DOT PM-0924 (REV 08/2024)

CLASSIFICATION TITLE Research Data Analyst II	OFFICE/BRANCH/SECTION District 11/ Maintenance Division/Maintenance Staff Support	
WORKING TITLE Geographic Information System (GIS) Maintenance Analyst II	POSITION NUMBER 911-602-5731-918	REVISION DATE 11/23/2024

As a valued member of the Caltrans leadership team, you make it possible for the Department to provide a safe and reliable transportation network that serves all people and respects the environment.

GENERAL STATEMENT:

Under the general supervision of a Senior Landscape Architect (Sr.LA), the incumbent is the District 11 (D11) Division of Maintenance Geographic Information System (GIS) Analyst II for the District Vegetation and Water Management Program. The incumbent independently performs a wide variety of complex GIS work for mapping, displaying, and reporting the vegetation and water management work funded by Maintenance and providing geospatial information to the Headquarters (HQ) Maintenance Office of Vegetation and Wildfire Management on monthly, quarterly, and annual basis. Vegetation and Water Management Program work to be converted to GIS data includes Maintenance field activities reported in Integrated Maintenance Management System (IMMS) (primarily C, E and G Families), such as landscaped areas, vegetation management strips, natural vegetation areas, and tree work. The incumbent also is responsible for service contracts, interagency agreements, converting various units of measure to "acres treated" to align with the performance metrics in the Maintenance Strategic Plan (MSP), the Caltrans Strategic Management Plan (SMP), and the Governor's Wildfire and Forest Resilience Task Force. Furthermore, the incumbent has primary District responsibility for mapping, displaying, and converting the District Vegetation and Water Management Plan, and extracting information from IMMS for the continued development and maintenance of the Division's GIS Program.

The position assists in the implementation and maintenance of GIS databases, capabilities, and services for the Division of Maintenance and emergency response activities. The incumbent assists in the design, testing, integration, and deployment of spatial and non-spatial databases as well as GIS web-based applications for Vegetation Management Program and other sections in the Division of Maintenance, and Departmental use. The incumbent may have lead responsibilities, work on multidisciplinary teams, or have primary responsibilities for a project or support activity. The GIS Maintenance Analyst represents the District, Division and Department on various GIS steering committees and technical working groups on matters relating to vegetation management. The Governor's Wildfire and Forest Resilience Task Force includes a Monitoring and Reporting Working Group, CALFIRE Fire Resource and Planning (FRAP) enterprise GIS and governance efforts. The incumbent is a technical support liaison and promotes knowledge and use of GIS technology, data governance, and data quality best practices within the Division. The incumbent often works with sensitive and confidential data used for GIS analysis and products for the highest levels in the Department involving policy and strategic matters.

CORE COMPETENCIES:

As a Research Data Analyst II, the incumbent is expected to become proficient in the following competencies as described below in order to successfully perform the essential functions of the job, while adhering to and promoting the Department's Mission, Vision, Values, Strategic Imperatives and Goals. Effective development of the identified Core Competencies fosters the advancement of the following Leadership Competencies: Change Commitment, Risk Appetite, Self-Development/Growth, Conflict Management, Relationship Building, Organizational Awareness, Communication, Strategic Perspective, and Results Driven.

- **Managing Change:** Demonstrating support for organizational changes needed to improve the department's effectiveness; supporting, initiating, sponsoring and implementing change. (Cultivate Excellence - Innovation)
- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Initiative:** Ability to identify what needs to be done and doing it before being asked or required by the situation. Seeks out others involved in a situation to learn their perspectives. (Cultivate Excellence - Pride)
- **Problem-solving and Decision-making :** Identifies problems and uses logical analysis to find information, understand causes, and evaluate and select or recommend best possible courses of action. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Cultivate Excellence - Integrity)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Communication:** Expresses oneself clearly in all forms of communication. Gives feedback and is receptive to feedback received. Knows that listening is essential. Keeps others in the Division and other functional units informed as appropriate. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Planning and Results Oriented:** Organizes and executes work to meet organizational goals and objectives while meeting quality standards, following organizational processes, and demonstrating continuous commitment. (Cultivate Excellence - Innovation)

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- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Strengthen Stewardship and Drive Efficiency - Innovation)

TYPICAL DUTIES:

Percentage	Job Description
Essential (E)/Marginal (M) ¹	
35% E	Performs journeyman level GIS research and analysis on project development and asset management in support of the Maintenance Division in the development, validation, organization, and deployment of GIS services, databases, and products using GIS best practice methodologies and techniques. Assists or leads in the creation of intranet/internet-based GIS applications using ESRI ArcGIS platform (Enterprise Portal/ ArcGIS Online), Google, and/or other proprietary or open-source software and web applications to enhance office, division, and departmental open data sharing. Identifies and evaluates structure and unstructured data to develop avenues of further research, creates workflow efficiencies, uncovers patterns, forecasts trends, and assesses potential impacts associated with maintenance projects, Office of Vegetation and Wildfire Management (OVWM) activities, emergency incidents, and other Division/ Department activities as needed. Compiles, integrates, and maintains data to conduct spatial, quantitative, and qualitative analysis on maintenance/department activities, planned and/ or completed, regarding vegetation and wildfire management and additional variables as needed. Works with sensitive data and develops database structure and schema for various corporate datasets within OVWM and the Division. Creates GIS web services, applications, and high-quality cartographic products using standard practices and conventions. Products may be developed for use at departmental and public meetings, as well as in documents, briefings, and reports.
30% E	Provides internal end-user technical guidance, as well as analytical and consultative services to Caltrans, other governmental agencies, and consultants on matters concerning GIS procedures, products, and other advanced mapping and database management techniques. Processes GIS data, maps, and reports to align with departmental operations, policies, and standards. Conducts research and provides supporting documentation of department and division existing corporate datasets. Establishes and documents best practice methods and techniques for managing and editing data that will ensure data integrity, quality, accuracy, and interoperability. Assists and collaborates in operating and configuring server, web-based, and desktop-based GIS products and applications in support of OVWM and Division of Maintenance GIS infrastructure. Develops and promotes data quality management plans, data governance best practices, metadata standards and conducts data literacy promotional efforts and guidance for OVWM and the Division.
20% E	Serves as a Division representative on GIS User Steering Committees, technical working groups, and interagency working groups on matters relating to enterprise GIS data, data governance, data sharing, emergency response support, and/or other activities as needed. Participates in multidisciplinary teams involving technical projects. Assists with coordination activities with other technical and program area professionals in the implementation of solutions. Coordinates with the GIS team on the updating and management of GIS data, services, and application products. Establishes methods and techniques to create new GIS datasets from various non-spatial data sources. Assists in the maintenance and updating of geospatial datasets, databases, and web application for OVWM and the Division.
10% E	Attends meetings and meets with other parties/stakeholders. Participates in workshops discussing work conducted, workflow planning, attends trainings/conferences, and keep apprised of latest developments in GIS technology. Maintains proficiency in principles, concepts, and techniques as related to GIS through training and professional development to provide end-user support and assistance to Caltrans staff.
5% M	Prepares presentation materials using spatial analysis from GIS using Adobe Suite (InDesign, Illustrator, Photoshop, Acrobat Pro), Microsoft Word, and PowerPoint. Prepares reports and correspondence based on conclusions of the research and analysis performed using spatial analysis from GIS.

¹ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.

MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others.

SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

No supervision. The incumbent may act as a lead worker providing guidance to co-workers on complex assignments. May provide technical direction and guidance to maintenance staff in the field and/or involved in maintenance project studies. Serves as a staff GIS specialist working with counterparts in the Districts and other Headquarters units.

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KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

KNOWLEDGE OF: GIS including principles and procedures of digital spatial data entry, storage, analysis and output, programming techniques for geographic analysis, design and management techniques, cartographic design, and production techniques; methods and techniques including planning studies and investigations, statistical procedures, general principles, concepts, and technology used in research; an in-depth knowledge of the principles and concepts of computer mapping, techniques of spatial analysis that involve map overlays and proximity analysis, and with map projections and coordinate systems; arithmetic and statistical techniques to analyze numerical data; departmental policies and procedures; problem-solving techniques and processes to identify and resolve issues related to the completion of work assignments the Department's major work activity areas and its internal organization structure, especially as the maintenance program pertains to planning, designing, constructing, operating, and maintaining transportation infrastructure. Experience with Python programming language is recommended.

ABILITY TO: Utilize various types of digital data and techniques and methodologies associated with web, desktop, server, and mobile frameworks; use office automation tools, handle various administrative matters and responsibilities; prepare reports and present information publicly; research, gather, compile, and analyze structured and unstructured data; conduct and interpret descriptive statistical analyses using appropriate software to test research hypotheses and to formulate conclusions and recommendations; prepare research and statistical reports; analyze written and numerical data regarding general governmental problems; speak and write effectively; develop and evaluate alternatives, recommendations, solutions, and conclusions or approaches to research problems; manage a workload consisting of multiple projects and assignments; complete work under critical timelines to meet project objectives and deadlines; be objective and flexible to adapt to changes in priorities and work assignments; and gain and maintain the confidence and cooperation of others, collaborate, and work in multidisciplinary teams. Based on experience and expertise, the incumbent must have the ability to identify spatial data needs for complex analyses and assess adequacy of existing data to meet these needs; develop procedures for collection and integration of disparate digital and non-digital data sources, design and test complex data base structures for storage and manipulation of spatial data, perform complex spatial analyses as required for pavement management, roadway rehabilitation, emergency operations, roadside management, storm water, major maintenance, and telecommunications; independently analyze and interpret data and prepare research and statistical reports; adapt and perform spatial analysis techniques and methods to complex maintenance problems involving geographic information.

ANALYTICAL REQUIREMENTS: The incumbent must be able to analyze business needs to determine requirements, analyze requirements to determine alternative solutions, analyze alternative solutions to determine preferred solution, and analyze application design and development methodologies and tools to improve efficiency and cost effectiveness. Incumbent must have the ability to make neat and accurate computations and engineering notes and to prepare reports; effectively communicate orally, and in writing; establish and maintain friendly and cooperative relations with those contacted in the course of the work; identify conflicts or issues and communicate those issues with appropriate staff; work with other functional groups to resolve conflicts and develop solutions; multi-task and adjust priorities to keep up with variable workloads and circumstances; and work independently effectively and efficiently on assigned tasks.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The incumbent is responsible for independent action and initiative in carrying out assigned duties. This action is in direct support of maintenance program in Caltrans. Decisions based on the information provided by incumbent are directly related to effectiveness of the Office and Division in meeting their goals, objectives, and fiscal responsibilities. Lack of knowledge, understanding, good judgment, and adequate analyses could result in misleading information being given to Caltrans decision-makers. The results could be inappropriate Caltrans decisions or misleading perceptions of California transportation effort. Failure to follow through on duties and assignments may result in missing mission critical maintenance activities, schedule delays, inaccurate reporting and over expenditure or loss of Federal and/or State funds.

PUBLIC AND INTERNAL CONTACTS

The incumbent must establish and maintain working relationships with personnel in the Division of Maintenance, other Headquarters and District maintenance staff, as well as engineers, planners, surveyors, environmental scientists, and other GIS users in various Divisions within the Department. There are frequent contacts with GIS users from public agencies and the private sector to coordinate statewide efforts and share experience and knowledge.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent must be able to sustain mental acumen needed to conduct necessary research, analysis, and synthesis of issues, and make well-reasoned recommendations. The workload is subject to frequent and unexpected changes that could affect scheduling or completion of assignments. As a result, incumbent must be able to handle multiple tasks, adapt to changes in priorities, complete tasks or projects with short notice, and work with others in a cooperative manner. The incumbent may be required to sit for long periods of time using a keyboard and video display terminal. The incumbent must behave in a fair and ethical manner towards others and demonstrate a sense of responsibility and commitment to public service. The incumbent also values cultural diversity and other individual differences in the workforce.

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WORK ENVIRONMENT

The work environment is fast-paced and requires considerable flexibility in managing time, priorities, and assignments. It can be demanding and/or difficult. Incumbent is required to travel to District Offices, other meeting facilities, and/or to the Offices of other State or Federal agencies across the State. The incumbent works in an office building in San Diego. While at the base of operation, the incumbent works in a climate-controlled office under artificial lighting. On occasion the incumbent is required to travel and conduct field work for data collection. Possession of a valid driver's license is required to operate a State owned or leased vehicle.

This position may be eligible for telework. The amount of telework is at the discretion of the Department and is based on Caltrans's evolving telework policy. Caltrans supports telework, recognizing that in-person attendance may be required based on operational needs. Employees are expected to be able to report to their worksites with minimum notification if an urgent need arises. The selected candidate will be required to commute to the headquartered location as needed to meet operational needs. Business travel may be required, and reimbursement considers an employee's designated headquartered location or primary residence and may be subject to CalHR regulations or applicable bargaining unit contract provisions. All commute expenses to the headquartered location will be the responsibility of the selected candidate.

I have read, understand and can perform the duties listed above. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

I agree that by providing my electronic signature for this form, I agree to conduct business transactions by electronic means and that my electronic signature is the legal binding equivalent to my handwritten signature. I hereby agree that my electronic signature represents my execution or authentication of this form, and my intent to be bound by it.

EMPLOYEE (Print)

EMPLOYEE (Signature)

DATE

I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

SUPERVISOR (Print)

SUPERVISOR (Signature)

DATE

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