

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE Research Data Specialist II	OFFICE/BRANCH/SECTION Environmental Program Project Management	
WORKING TITLE Environmental GIS Specialist	POSITION NUMBER 904-136-5758-XXX	REVISION DATE 10/17/2025

As a valued member of the Caltrans team, you make it possible to improve lives and communities through transportation.

GENERAL STATEMENT:

Within the Caltrans District 4 Division of Environmental Science & Engineering (ESE) and under the general direction of a Senior Environmental Scientist (Supervisory), the incumbent serves as ESE's GIS Singular Focal Point in support of project development and the delivery of transportation projects throughout the vibrant nine-county Bay Area. The GIS Specialist performs the more complex such as producing maps, conducting data analyses using various spatial applications, and providing technical support to ESE GIS users on the ArcGIS Enterprise platform. The incumbent uses more complex tools, including LiDAR and remote sensing imagery, to facilitate the assessment of the environmental impacts of transportation projects. Incumbent creates cartographic products used to visually communicate information about State Highway System projects to internal and external stakeholders.

The incumbent represents ESE on districtwide and statewide GIS user groups and maintains familiarity with the latest software, including ArcGIS Pro and web-based platforms. Develops data standards and templates for ESEE wide usage. Coordinates with the Headquarters Division of Environmental Analysis to disseminate environmental data layers and changes in practice. The incumbent understands and conforms with policies, standards, and guidance from Caltrans Enterprise Data and Geospatial Governance while staying up to date on industry trends and applicable technologies.

CORE COMPETENCIES:

As a Research Data Specialist 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.

- **Creativity and Innovation:** Thinks beyond the confines of traditional models to recognize opportunities, seek creative solutions and take intelligent risks. (Climate Action - Collaboration, Innovation)
- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Employee Excellence - Collaboration, Pride)
- **Reliability:** Ability to demonstrate dependability in meeting commitments, and providing a consistent work product. Takes responsibility for individual actions in order to meet deadline demands. (Employee Excellence - Integrity, 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. (Safety, Equity, Climate Action - Collaboration, Innovation)
- **Teamwork and Collaboration:** Sets team structure. Organizes, leads, and facilitates team activities. Promotes team cooperation and encourages participation. Capable of cross functionality and working well with others on a team to achieve personal goals, team goals, and organizational goals. Takes responsibility for individual actions in order to achieve consistent results. (Employee Excellence - Collaboration, People First, Pride)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Employee Excellence - Collaboration, Integrity, Pride)
- **Interpersonal Effectiveness :** Effectively and appropriately interacts and communicates with others to build positive, constructive, professional relationships. Tailors communication style based on the audience. Provides and is receptive to feedback. (Employee Excellence - Collaboration, Pride)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Employee Excellence - Innovation, Stewardship)
- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Safety, Climate Action - Innovation)

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TYPICAL DUTIES:

Percentage		Job Description
Essential (E)/Marginal (M) ¹		
25%	E	Under general direction, compile, integrate, and display more complex spatial data in coordination with the larger Division of Environmental Science & Engineering. Coordinate with Environmental Scientists and Engineers to produce GIS products and distribute environmental data to key groups. Lead development and implementation of enterprise level desktop and web-based GIS applications that perform spatial analysis, using GIS methodologies and techniques, to streamline the environmental process. Develop District 4 Environmental library or database application to house and maintain data across the Division. Research complex technical issues such as different programming languages and rapidly changing web-based solutions. Share and develop method of sharing environmental data layers with the Division of Design for incorporation into MicroStation and CADD software. Develop data standards for ESE, including template map formats and geodatabase protocols.
25%	E	Analyze the more complex GIS data to answer questions and develop projects and visuals as needed for public meetings or publication of environmental documents and reports. Display spatial data to communicate transportation needs and deficiencies related to climate change adaptation, sea level rise, fish passage, wildlife crossings, cultural resources, watershed management, and more. Consider different audiences' needs and the appropriate level of detail when creating visual displays.
15%	E	Design, develop, test, manage, and maintain GIS databases. Research and document methods on connecting to the Department's existing corporate data, establishing methods and techniques for editing and managing that will ensure data integrity, and establish methods for creating new GIS layers from tabular data (e.g., Survey 123). Coordinate with other Divisions to integrate and share data across different platforms.
15%	E	Support the more complex habitat modeling and other special projects, including the storage and display of data collected using unmanned aerial systems; identification of "wetland causeways" for the mapping of potential wildlife passage corridors; analysis of LiDAR data to assess potential fish passage barriers outside the state right of way; light pollution analyses; and use of remote sensing to identify potential rare plants or detect potential hazardous waste sites; and more.
10%	E	Coordinate with Caltrans programs and districts to collect, organize, validate, analyze, and store GIS data. Follow Caltrans GIS policies, standards, and guidance. Coordinate work with Enterprise Data and Geospatial Governance Group, District GIS coordinators, the District 4 Drone Committee, and Geospatial Information Systems group in the Division of Research, Innovation, and System Information. Provides direct support for District GIS data collection, analysis, quality assurance, updates, and training.
10%	M	Attend GIS or planning-related training and conferences to keep apprised of the latest advancements in GIS technology and practice, assess new transportation and demographic data, and learn more efficient GIS workflow or processes.

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

This is not a supervising position. The GIS Specialist will be expected to maintain professional relationships with all Department employees.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Requires knowledge of techniques and methodologies of Geographic Information Systems including principles and procedures of digital spatial data entry, storage, analysis and output, programming techniques for geographic analysis, data base design and management techniques, cartographic design, and production techniques. Requires knowledge of research methods and techniques including planning studies and investigations, statistical procedures, general principles, concepts, and terminology used in research. Requires an in-depth knowledge of the principles and concepts of geography, cartography, and computer mapping, techniques of spatial analysis that involve map overlays and proximity analysis, and familiarity with map projections and coordinate systems. The incumbent must be knowledgeable of the Department's major work activity areas and its internal organization structure, especially as the environmental analysis program pertains to planning, designing, constructing, operating, and maintaining transportation infrastructure.

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

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complex spatial analyses as required for natural resource management, land use, and transportation planning. Must have the ability to design effective cartographic products using standard mapping practices and conventions. Must have the ability to independently analyze and interpret data, and prepare research and statistical reports. Must be able to reason logically and creatively and use analytical techniques to resolve or provide information regarding complex research and analysis projects. Must be able to adapt and perform spatial analysis techniques and methods to complex environmental problems involving geographic information. Must be able to establish and maintain cooperative working relationships, dealing with tact and persuasion and be able to communicate both orally and in writing. Broad knowledge of geographic analysis techniques and applications; database design and management techniques; and concepts of and terms used in engineering and planning. Working knowledge of Microsoft Office, including Outlook. Some coursework and demonstrated knowledge in ecology, biology, or natural systems preferred.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Decisions made by the incumbent will directly affect Caltrans' ability to satisfy federal or state planning and programming requirements. Mapping errors could result in an underestimation of environmental impacts and contribute to an increase in mitigation costs or permitting timelines. Errors in implementation could adversely affect Caltrans' ability to develop context sensitive solutions and minimize the environmental impacts of transportation projects.

PUBLIC AND INTERNAL CONTACTS

Public - The incumbent will have some external contacts, including state and federal regulatory agency staff, and may infrequently interact with the general public, such as at public meetings. Internal - The incumbent will primarily work with internal Caltrans staff, including ESE, other Divisions, and Headquarters.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Employee may be required to sit for long periods of time using a keyboard and computer monitor. The incumbent will be expected to manage several projects/tasks simultaneously in consultation with the direct supervisor.

WORK ENVIRONMENT

This position is eligible for telework under Caltrans' hybrid telework program. District 4 is currently in the office two days per week (minimum), but this is subject to change at any time. While at the District Headquarters, employees will work in a climate controlled office under artificial lighting. The selected candidate will be required to commute to the headquartered location. The incumbent may be required to conduct field work and collect data outdoors adjacent to the traveled way, sometimes over uneven terrain. The incumbent will be expected to familiarize themselves with Caltrans' standards for field and office safety.

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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