

**POSITION DUTY STATEMENT**

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE Research Analyst II (Geographic Information Systems)	OFFICE/BRANCH/SECTION Performance/Traffic Data Branch	
WORKING TITLE Research Analyst II	POSITION NUMBER 913-350-7417-XXX	EFFECTIVE DATE 06/02/2015

As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

**GENERAL STATEMENT:**

Under the general supervision of the Staff Services Manager I, Traffic Data Branch, the Research Analyst II Geographic Information Systems (GIS) is responsible for research and independent analysis relative to statistical work in the day-to-day operations of the Traffic Census Program, Truck Weight Study Program, and the Mobility Performance Report (MPR). While the position has a strong emphasis on GIS-related activities, the position also requires that the incumbent work with other projects such as the MPR. Federal Highway Administration (FHWA) and Caltrans policies and procedures govern these programs.

**TYPICAL DUTIES:**

Percentage Essential (E)/Marginal (M) <sup>1</sup>	Job Description
40% E	Has primary responsibility and works independently to use GIS Arc Map, Arc GIS Server, and Arc Catalog to provide spatial analysis and display in complex MPR projects. Manipulates and integrates digital and non-digital data into the GIS environment. Performs research and analysis based on digital spatial data generated from the GIS. Work projects may be used by Division and Department management to influence decision making. Researches traffic census data collected at various locations on the State Highway System (SHS) for preparation of the Monthly Vehicle Miles of Travel Report for submittal to the FHWA and other interested parties. Scrutinizes and uploads monthly reports of this data and submits to the FHWA to support the national Traffic Monitoring Program and Truck Weight Study.
30% E	Provide technical assistance to division and district staff regarding data collection and development of GIS based maps that support a variety of transportation related program and plans. Incorporates program data from a variety of Traffic Operation sources into GIS Sources include the Truck Size Branch, Weigh-In-Motion (WIM) Branch, and Traffic Data Branch. For internal and external customers, uses postmile process applications to create new shapefiles and layers to apply to mapping products of Truck, WIM, All Vehicle Classifications, and Bottleneck maps. The incumbent is required to maintain electronic data management systems for input, storage and retrieval of vehicle travel, utilize database programs to generate, manage, analyze for accuracy and export data, and conduct succinct examinations when performing key database functions such as queries, field definitions, developing formulas, automated calculations and graphs.
20% E	Directs the production of the MPR bottleneck maps as project manager. Develops the Excel bottleneck workbook. Directs bottleneck workbook processing and completion with District Technical personnel to examine and evaluate District bottleneck data from Performance Management System (PeMS). Researches mapping with GIS personnel through creation of Keyhole Markup Language Zipped (KMZ), Portable Document Format (PDF), and Joint Photographic Experts Group (JPEG) map versions. Provides final version of maps in JPEG format to the MPR project manager. Works with Division's GIS Coordinator in meeting the GIS needs of the Division and in working with the Division of Research, Innovation, and System Information Office of GIS. The incumbent is required to employ research and statistical procedures to conduct data equipment comparisons, periodically analyze traffic data or anomalies and present findings in a professional and structured format. Initiate special traffic data collection projects by planning, designing and collecting the data and report the findings in a structured and professional format. Routinely research, analyze and prepare data for a variety of reports requested by California Air Resources Board, Caltrans Divisions, universities, local agencies, and private consultants.
10% E	Researches and develops speed monitoring data. Ensures compiled data provides accurate speeds on the SHS. Creates a speed report from various locations illustrating hourly speeds and statistical summaries to California Highway Patrol and FHWA. Other duties include contract

## POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

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administration and other general administrative duties such as assisting in the preparation of written reports, issue papers, spreadsheets, emails and correspondence as necessitated by and for management. Attends a variety of meetings to ensure continued data availability and quality. Incumbent may also be required to perform special assignments as directed by the Branch/Office/Assistant Division/Division Chief.

<sup>1</sup>ESSENTIAL 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.

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### SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

This position does not directly supervise other employees, but the incumbent is responsible for provide guidance to traffic data staff on a wide variety of traffic data issues.

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### KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge of the Department' mission & vision, goals and values; organizational structure; Director's Policies and Deputy Directives; Division principles; and Office/Branch functions, procedures and processes is desirable.

- Develop and evaluate alternatives, consult with and advise interested parties on traffic data issues
  - Ability to develop personal computer base spreadsheets and databases
  - Knowledge of relational database concepts
  - Must be able to organize data and use statistical techniques in the initiation, coordination, and monitoring of data collection functions
  - Knowledge of software such as Adobe PageMaker and Photoshop
  - Knowledge and ability of general computer usage, including Internet Explorer, Chrome, and Mozilla Firefox
  - Knowledge of techniques and methodologies of GIS
  - Knowledge of Arc GIS/Info and other GIS related software programs
  - Aptitude in creatively presenting GIS data interactively for management presentations and reports
  - Must be self-motivated and able to work independently with a minimum of direction and supervision
  - Ability to gather, compile, analyze and interpret cartographic data and relate it to transportation related data
  - Ability to research and perform analysis using mapped and tabular data
  - Statistical procedures and research methods including the ability to analyze and interpret numerical and written data.
  - Statistical procedures used to estimate traffic data
  - Techniques used to evaluate and determine the validity of collected traffic volumes, speeds and classifications and analyze problems associated with traffic data collection
  - Database management tools, such as Microsoft Access, Microsoft Excel, and Oracle8i or 9i for input storage and retrieval of large amounts of transportation statistical data
  - Microsoft Office Suite (primarily Word, Excel, Access, and PowerPoint)
  - Use a variety of techniques to analyze and manage complex administrative issues
  - Reason logically and creatively; develop and compare alternatives
  - Develop and implement processes and procedures
  - Exercise good judgment
  - Establish and maintain project priorities
  - Complete assignments in a timely and efficient manner
  - Act as a team or conference leader
  - Maintain a high level of confidentiality
  - Demonstrate computer literacy through the use of Microsoft Word, Excel, and Visio to create letters, memos, tables, databases, spreadsheets, and organization charts
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### RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

As a member of the Traffic Data Branch, the incumbent is responsible for maintaining a high level of service to other Headquarters units, Districts, private partners, and the public. Failure to perform assigned tasks properly may result in sanctions against the State by the Federal government up to, and including, the loss of program funding. Improper reporting of data will affect other Caltrans programs since it is a basic element of most highway programs. Basic knowledge of Caltrans policies, strong analysis skills, and understanding of GIS are important. 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 efforts. Such data is used for a multitude of state and federal programs and other highly sensitive uses and thus data accuracy must be maintained. Truck weight and vehicle classification data is used in planning, designing

# POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

and implementing transportation projects of all kinds. Misleading or inaccurate data traffic information cannot only jeopardize funding, but can result in the Department making ineffective and costly decisions that could erode confidence in the Department/s ability to carry out its mission, to "provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability."

## PUBLIC AND INTERNAL CONTACTS

Daily internal contacts with headquarters and Districts units in Transportation Planning, Traffic Operations, Maintenance, Traffic Data and various offices involved with procuring or using traffic data. External contacts include FHWA, California Highway Patrol, local agencies, private engineering, and planning firms and the public.

## PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Physical requirements for this position include the ability to sit for long periods of time using a telephone, computer keyboard, mouse, and monitor. The work may occasionally require bending, minor lifting, and kneeling.

Mental requirements for this position include the ability to multi-task, to adapt to changes in priorities, and to complete tasks on short notice. The position requires the ability to organize and analyze large volumes of data and information.

Emotional requirements for this position include interaction with many individuals and the ability for employees to work together in a cooperative manner. Consider and respond appropriately to the needs, feelings and capabilities of other people in different situations. Adapt behavior and work methods to new information, changing conditions, and/or unexpected problems.

## WORK ENVIRONMENT

The incumbent will work in a cubicle within a shared room on the 4th floor of a 6-story building. The work hours are Monday through Friday, and will be set sometime between 6:30 a.m. and 5:00 p.m.

The incumbent will work in a climate-controlled office under artificial light. However, due to periodic problems with heating and air conditioning, the building temperature may fluctuate.

Occasionally the incumbent will be required to travel and work outdoors. While on such an assignment, the employee may be required to spend numerous hours driving and be exposed to any or all of the following: dirt, noise, uneven surfaces, extreme heat or cold. The employee may also be required to travel by air.

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.)

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