

STATE OF SOUTH DAKOTA CLASS SPECIFICATION

Class Title: Traffic Data Technician

Class Code: 040415

Pay Grade: GG

A. Purpose:

Manages permanent traffic and pavement collection systems along with managing and conducting manual traffic studies of an assigned area of the state to ensure consistent accumulation of effective data for use in daily maintenance plans and long-range construction planning.

B. Distinguishing Feature:

Traffic Data Technicians modify, install, calibrate, program, and maintain specialized vehicle data collection devices, telemetry systems, microprocessor-based electronic equipment, and solar systems; and monitor and evaluate data collected.

Transportation Analysts manage an assigned automated system by maintaining currency and validity of data; and prepare reports on that data for use in the planning process.

C. Functions:

(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)

1. Installs electronic equipment to collect data and establish a database from which long-range construction plans are developed, and to provide resources to highway maintenance managers for daily maintenance plans.
 - a. Selects most effective sites within designated areas for placement of electronic devices.
 - b. Prepares plans for installations and alterations, including roadway patterns, required devices, wire, cable, power and telephone sources, and personnel.
 - c. Monitors installations with commercial service agencies and highway maintenance personnel, and provides work direction at the installation sites.
 - d. Installs electronic equipment and wiring, and establishes connections to electrical and telephonic sources.
 - e. Calculates power consumption requirements and creates alternative power sources.
 - f. Installs electronic equipment and conducts and evaluates systems diagnoses.
 - g. Installs and tests weigh-in-motion devices in roadways.
2. Provides technical assistance in the selection and placement of electronic equipment and evaluation of data to help other agencies and businesses and to test new equipment.
 - a. Teaches designated personnel how to select, install, and maintain electronic devices.
 - b. Conducts special studies on traffic movement for other agencies and businesses.

- c. Installs, modifies, and evaluates new and specialized equipment; and records performance to establish systems histories in compliance with federal mandates.
3. Maintains, calibrates, and repairs electronic equipment and mobile communications equipment to ensure efficient operation of systems and consistent data.
 - a. Develops preventive maintenance procedures for sites and equipment.
 - i. Conducts operational tests on systems and installations.
 - ii. Calibrates electronic sensors.
 - iii. Rewires connections and replaces devices.
 - b. Troubleshoots defective computer boards and replaces chips and circuitry.
 - c. Diagnoses problems with electronic equipment and mobile radio equipment, determines corrective action, and ensures repairs.
 - d. Calibrates and tests equipment using radar guns, voltage meters, oscilloscopes, and inductance meters.
 - e. Maintains and evaluates maintenance records.
 - f. Recommends upgrade, modification, or replacement of equipment.
 4. Monitors and evaluates data for consistency to ensure validity of reported statistics.
 - a. Accesses permanent counter sites via computer link and monitors screen patterns for inconsistencies.
 - b. Evaluates collected data for trends by comparing to prior reports and eliminating construction interruptions and community events.
 - c. Submits data reports to appropriate agencies.
 - d. Resets, repairs, or replaces counters and monitors data output until it stabilizes.
 5. Maintains an electronics workshop within the assigned region to provide a point of contact for managers and entities within the region as well as a work and storage area.
 - a. Maintains an inventory of electronic equipment and parts, receives shipments, signs invoices authorizing payment, and records parts and equipment used.
 - b. Maintains records of activities.
 - c. Provides technical assistance to other agencies and businesses in the region.
 6. Performs other work as assigned.

D. Reporting Relationships:

Typically reports to a Transportation Analyst or Engineering Manager. Does not formally supervise, but may provide work direction.

E. Challenges:

Challenged to install, modify, and maintain a variety of electronics equipment. This is difficult because of the constant advances in technology, the adaptations that must be made, and the evaluation and recordkeeping required. Also challenged to provide consistent, viable data, which requires close contact with community events, construction projects, and other detractors within the assigned region as well as maintenance of data-collecting systems.

Typical problems include designing power sources for sites where no utilities are

available, maintaining multiple reporting sites over a large area, diagnosing malfunctions in equipment, and calculating correct quantities of equipment and supplies for installations.

F. Decision-making Authority:

Decisions include prioritization of work; most effective placement of reporting sites; preventive maintenance and monitoring procedures; if data is accurate; when, where, and how to conduct special studies; whether equipment is repairable; what supplies to purchase; and how to modify, reconfigure, or rebuild equipment to function more efficiently.

Decisions referred to a higher authority include assignment of projects to the area and purchase of capital assets.

G. Contact with Others:

Daily contact with department personnel to discuss assignments, resolve problems, and exchange data. Weekly contact with highway patrolmen, public safety personnel, county highway superintendents, city street superintendents or engineers, and Bureau of Indian Affairs and National Parks personnel regarding work schedules and coordination of equipment and personnel for special projects.

H. Working Conditions:

Travels and works throughout an assigned region; exposed to high-volume traffic, electrical shock, corrosive chemicals, and inclement weather; and works on towers.

I. Knowledge, Skills, and Abilities:

Knowledge of:

- electronic technology, hazards, and safety precautions;
- electronic equipment and computer hardware, and the installation, operation, and maintenance of;
- telemetry;
- schematics;
- electrical and alternative power sources;
- data collection, trends, and analysis;
- applicable department policies, procedures, and record keeping requirements;
- mathematics sufficient to calculate linear feet, kilowatts, volts, etc.;
- Federal Communication Commission (FCC) rules and regulations.

Ability to:

- draw or read schematics and install various electronic equipment and computer hardware;
- establish connections to electrical and telephonic sources;
- calculate power consumption requirements and create alternative power sources;
- communicate sufficiently to explain work to other agencies and businesses;
- provide work direction to temporary assistants;

- teach others how to select, install, and maintain electronic devices;
- diagnose and repair electronic and mobile radio equipment;
- calibrate electronic equipment using radar guns, voltage meters, oscilloscopes, and inductance meters;
- analyze data for consistency and trends;
- work without direct supervision and prioritize work activities based on department policies;
- maintain a remote shop and an inventory of parts and supplies.