



Illinois Department of Transportation

Memorandum

To: DEPUTY SECRETARIES, DIRECTORS AND BUREAU CHIEFS
From: Dianna L. Taylor
Bureau Chief of Personnel Management
Subject: Technical Vacancy
Date: September 12, 2017

Attached are the Position Summary Sheet and Position Description for the vacant technical position listed below. Please post this vacancy announcement September 13, 2017 in the designated areas.

The deadline for applicants to submit their applications for consideration is **4:30 p.m. on Tuesday, September 26, 2017**. Applications will not be accepted after that time and date.

NOTE: A copy of each applicant's ACTIVE Illinois Professional Engineer License must accompany application for this position. Please be advised that if a high volume of applications are received, the applications may be screened to establish a smaller pool of applicants for interview. The screening will be based on the information contained in the application.

If you have any questions, please contact the Bureau of Personnel Management at 217/782-5594.

CE VII Surveys, Mapping & Modeling Section Chief
Bureau of Design & Environment
Office of Program Development
Springfield

Attachments
42227

Technical Applications [PM1080 rev 6/1/17](#)****must be received** by the Bureau of Personnel Management, Room 113, 2300 South Dirksen Parkway, Springfield, IL 62764 (Fax# 217/557-3134) or emailed to DOT.CO.BPM.EmploymentApplications@Illinois.gov by **Tuesday, September 26, 2017**, 4:30 p.m. Please include address, daytime phone and position for which applying if not already listed on application. Applicants will be notified in writing to schedule interviews.

NOTE: A copy of each applicant's ACTIVE Illinois Professional Engineer License must accompany application for this position. Please be advised that if a high volume of applications are received, the applications may be screened to establish a smaller pool of applicants for interview. The screening will be based on the information contained in the application.



**Illinois Department
of Transportation**

An Equal Opportunity Employer

Position Summary Sheet

Classification:	Civil Engineer VII	Salary:	\$7,640 - \$9,650 *
Position Title:	Surveys, Mapping, and Modeling Section Chief	Union Position:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Position Number:	PW117-23-65-305-00-01	IPR#:	42227

Office/Central Bureau/District/Work Address:

Office of Program Development / Bureau of Design and Environment / 2300 S. Dirksen Parkway, Springfield, IL

Description Of Duties:

This position is responsible for developing and implementing statewide policies and procedures for surveying, mapping, and modeling for transportation projects. This includes data and image acquisition and processing; control data for image orientation; data compilation and presentation of an end product such as topographic maps, orthophotos, or digital elevation or digital terrain models; and coordinating remote sensing for aerial photography, LiDAR, and conventional surveying. This position is also responsible for developing and implementing 3D Computer Aided Design and Drafting (CADD) modeling and Geographic Information Systems (GIS) layers for statewide use in transportation projects, determining best methods for data acquisition for mapping development; developing and maintaining manuals and providing associated Program Development training; and administration of consultant mapping and modeling contracts and agreements.

Special Qualifications:

Required:

- Current Illinois Professional Engineer license
- Valid driver's license
- Occasional statewide and out-of-state travel, which may require overnight stays

Desired:

- Ten years of experience in civil engineering, seven years of which should be responsible supervisory control in the planning and in the direction of highway engineering projects
- Comprehensive knowledge of the principles of civil engineering with specialized knowledge of photogrammetry, geodetic surveys, topographic mapping in digital format, CADD design software, and GIS
- Comprehensive knowledge of the laws controlling the activities administered, with emphasis in those related to surveys
- Ability to promote, establish and maintain harmonious relationships with staff and the general public
- Strong oral and/or written communication skills

Shift/Remarks:

8:00 am - 4:30 pm / Monday - Friday

THIS POSITION IS COVERED UNDER THE REVOLVING DOOR PROHIBITION (RDP) POLICY.

*Individual salary offers are computed based on an applicant's current position and experience level in comparison to the posted title as well as internal equity of staff in the organizational unit.

**Technical Application PM1080 (revised 6/1/17) is required. No previous version of the PM1080 will be accepted.

**ILLINOIS DEPARTMENT OF TRANSPORTATION
POSITION DESCRIPTION**

DATE:	August 10, 2017	POSITION:	Surveys, Mapping, and Modeling Section Chief
APPROVED BY:	<i>Maureen Addis</i>	OFFICE/DIVISION:	Office of Program Development Bureau of Design and Environment
CODE:	PW117-23-65-305-00-01	REPORTS TO:	Engineer of Design and Environment

Position Purpose

This position is responsible for developing and implementing statewide policies and procedures for surveying, mapping, and modeling for transportation projects. This includes data and image acquisition and processing; control data for image orientation; data compilation and presentation of an end product such as topographic maps, orthophotos, or digital elevation or digital terrain models; and, coordinating remote sensing for aerial photography, LiDAR, and conventional surveying. This position is also responsible for developing and implementing 3D Computer Aided Design and Drafting (CADD) modeling and Geographic Information Systems (GIS) layers for statewide use in transportation projects, determining best methods for data acquisition for mapping development, developing and maintaining manuals and providing associated Program Development training, and administration of consultant mapping and modeling contracts and agreements.

Dimensions

Personnel:	24 Total, 4 Direct
Annual Operating Budget:	\$1.5 M
Annual Value of Consultant Contracts:	\$100,000 - \$2.0 M
Design Value of Projects:	\$55 M Annually
Construction Value of Projects:	\$1.0 B Annually

Nature and Scope

This position reports to the Engineer of Design and Environment, as do the Section Chiefs of Systems and Services, Location and Environment, Policy and Procedures, Project Coordination and Implementation, and Preliminary Engineering, and an Executive Secretary II. Reporting to this position are the Unit Managers of Image Control, Project Compilation, and Technology Policy and Support, and an Executive Secretary I.

The incumbent operates within an environment of providing statewide support and services to the Districts, Central Offices and Bureaus, and other state agencies as needed or required. These services include developing and implementing statewide policies, procedures, and controls related to surveying; managing geodetic survey projects utilizing photographic, LiDAR, electronic, digital, or other data obtained from various data collection and surveying platforms; and creating an end product such as precise topographic maps, orthophotos, or digital elevation models or digital terrain models. The Section also produces the bare earth models / Digital Terrain Models (DTM's) used in design. DTMs produced by the Section are generally from Aerial Photogrammetry and LiDAR or a combination of the two.

One of the incumbent's greatest challenges is to ensure the Department keeps pace with the rapidly growing and changing fields of remote sensing, aerial surveying, geodetic surveys, and topographic mapping in digital format, so that products and services are accurate, precise, and in keeping with the technological advancements in these fields. Typical problems include coordinating with key district personnel on the newest techniques and products and ensuring statewide specifications are in compliance with standards set forth by the National Geospatial-Intelligence Agency.

The incumbent is personally responsible for ensuring precise topographic maps in digital format, for utilization with a CADD interactive, graphic system; precise topographic line maps; digital imagery and digital orthophoto maps; and for providing expertise in geodetic surveying from conventional equipment to GPS satellite surveying, mosaics and photography. In addition, the incumbent is responsible for contact printing, enlargements and reduction, and scanned imaging of photographic products. S/He is responsible for developing, updating and implementing policies, procedures, and civil cell libraries related to the development of accurate 3-D CADD design models. This includes ensuring that there are uniform procedures and policies in place throughout the life of a project- from planning to design and through construction and providing training as part of the Program Development (PD) Training. The incumbent will also develop GIS policy relating to design functions. Uniformity and consistency in presentation of information will greatly aid in the evaluation of proposed designs for various impacts. This information can be carried through construction to help protect resources. S/He is accountable for writing specifications for contracts with surveying and mapping consultants hired by the Department or the design consultant. All surveying, mapping, and modeling contracts are coordinated and reviewed through this Section.

The incumbent accomplishes these accountabilities through the following staff:

Image Control Unit Manager who, with his/her staff, provides the ground control for data acquisition, maintains the statewide network of benchmarks which are used by the National Geodetic Survey to establish the survey datum nationwide, leads IDOT's Standing Committee of Survey Chiefs to seek input on and establish policies for survey procedures and technology application. S/He directs and performs high-order surveys for map control and extension of geodetic control on a statewide basis; schedules, acquires, and evaluates aerial photography; prepares digital aerial mosaics and photo plan sheets from aerial photography; provides all photogrammetric services for the Department; prepares specifications and mapping agreements; reviews, checks, and monitors consultant mapping agreements; schedules all mapping projects; maintains a complete file of all negatives; and maintains a geodetic file of all survey positions.

Project Compilation Unit Manager who, with his/her staff, prepares complex control diagrams and base sheets for line maps, digital orthophoto maps, and maps in digital format for utilization with a CADD system; prepares complex analytical strip and block aerotriangulation for stereo model control; performs compilation on digital stereoplotters for line, ortho, and digital maps; scans aerial photography to create digital images and digital orthophotos; and develops and maintains all mapping computer programs utilized by the Section.

Technology Policy and Support Manager who is accountable for the development and implementation of both CADD and GIS policies, software, and training programs utilized in the development and maintenance of construction, reconstruction, and rehabilitation of highways, intersections, and interchanges on the state highway system. The position is accountable for development, integration, and technical support of GIS and CADD technologies into the Department's core processes. This position is also accountable for managing the content and publishing revisions to the IDOT CADD Manual, and ensuring the integration of engineering policies into both CADD and GIS software utilized within the Department.

Executive Secretary I who, under direction of the Surveys, Mapping, and Modeling Section Chief performs responsible secretarial and administrative duties functioning independently within the framework of organizational policies and exercising initiative and independent judgment on the promulgation and interpretation of the bureau policies and programs.

The incumbent has wide latitude to identify and solve problems, and typically refers only the most sensitive or high profile issues to the Engineer of Design and Environment, and provides a recommendation for resolution. The incumbent will assist in development of the Section's budgetary needs, and works with the Systems and Services Section Chief on budget implementation, personnel, purchasing, and management improvement activities.

The incumbent has frequent internal contacts with District personnel and Central Offices and Bureaus regarding surveying, technology advancement and specification development, control surveying and mapping issues, CADD, GIS, and associated training needs. A valid driver's license and occasional travel are required.

The effectiveness of this position is measured by the timely completion of all required surveying and mapping work, which must be done according to specifications so that the accuracy and completeness will be assured; advancement of innovative technology and procedures related to various means of surveying, mapping and modeling, developing and maintaining associated policies, and the implementation of key activities.

Principal Accountabilities

1. Develops and implements statewide policies and procedures for surveying, mapping, and modeling for transportation projects.
2. Acquires, processes, and compiles data and images, control data for image orientation, topographic maps, orthophotos, or digital elevation or digital terrain models.
3. Coordinates remote sensing for aerial photography, LiDAR, and conventional surveying.
4. Develops and implements 3D CADD and GIS layers for statewide use in transportation projects, determining best methods for data acquisition for mapping development.
5. Develops and maintains manuals and provides associated Program Development training, and administration of consultant mapping and modeling contracts and agreements.
6. Provides timely and cost effective mapping services to the Central Offices and Districts, which are complete, accurate, and precise to fulfill their needs.
7. Maintains and upgrades the Surveys graphics system so that it will function in a timely and cost effective manner.
8. Advises and assists the Districts on the necessary field survey work to provide control for mapping and advises the same for geodetic surveying operations.
9. Coordinates with the Central Office bureaus and Districts to seek input on and establish policies for survey procedures and technology application.
10. Develops, maintains, and motivates staff to keep pace with the rapid technological changes in photogrammetry and photographic procedures and equipment.
11. Performs duties in compliance with Departmental safety rules. Performs all duties in a manner conducive to the fair and equitable treatment of all employees.
12. Performs other duties as required or assigned.