



The San Diego Association of Governments invites applications for the position of:

transportation modeler

A job at SANDAG is guaranteed to stimulate your mind, expand your skills, and accelerate your professional development. We are committed to recruiting highly talented individuals who are dedicated to working on important issues and passionate about making significant contributions that impact the lives of people all around the region. We look for people that have extraordinary leadership and vision; people that drive change and produce results; people who take ownership of projects and never settle for "good enough!"

SANDAG values and rewards continuous improvement. We offer a fulfilling work environment that will challenge your capabilities. And it is a place where you can take ownership for the next steps in your career while being supported with opportunities, tools, and resources that will allow you to be successful.

This position is open until filled.

The first review of applications will begin on December 15, 2017

Expected start date: late January/early February 2018



Transportation Modeling Division

As a premier multi-modal planning and project implementation agency, SANDAG relies on the quality and capacity of our Transportation, Demographic, Economic, and Land Use Modeling programs. A team of highly skilled professionals support a variety of projects including long-range coordinated transportation, economic, and land use plans, corridor studies, major transit investment studies, infrastructure development studies, and air quality plans.

As regional planning needs, travel behaviors, and socioeconomic conditions change, the demands and expectations of our modeling program also have increased. To meet these challenges, SANDAG has committed the resources necessary to develop and maintain a robust, agile, and integrated modeling infrastructure to support policy development and decision making. SANDAG has developed a nationally-recognized and highly sophisticated activity-based transportation model (ABM) and an active transportation (AT) model, and is in the process of developing an advanced, integrated, dynamic traffic assignment (DTA) model. SANDAG also is updating the ABM using the 2016/2017 San Diego household travel behavior survey and Transit onboard survey for the next Regional Transportation Plan.

Transportation Modeler Role

The Transportation Modeler will develop, maintain, and improve SANDAG transportation modeling tools including the activity-based model, active transportation model, and the dynamic traffic assignment model. This position also will coordinate project teams and modeling functions with other divisions and departments, committees, and outside agencies.

Job Responsibilities

This position is ideal for an experienced transportation modeler with current technical knowledge of modeling methods, software development, and maintenance. We anticipate significant career development will occur while working on the types of duties and responsibilities described below and through mentoring and close collaboration with senior staff and consultants. Examples of primary responsibilities may include:

- Perform various research, analysis, and technical duties related to the maintenance and improvement of complex models such as the activity-based (ABM) model, active transportation (AT) model, and dynamic traffic assignment (DTA) model used to support regional transportation planning.
- Ensure transportation modeling tools and analytical capabilities are credible and effective for policy analysis; participate in quality assurance and quality control processes; participate in processes to improve model transparency.
- Develop and maintain custom software applications to support travel forecast modeling; develop new software and scripts, refactor existing software, and create new architectures as modeling needs evolve.
- Participate in the development of Request for Proposals (RFP's), evaluate competitive project proposals and make recommendations for consultant selection; coordinate with project consultants and ensure projects are completed on schedule, within the prescribed budget, and with a high-level of effectiveness.
- Coordinate with Model Application staff to support transportation modeling and analysis required for long-range regional plans, transit system implementation and analysis, corridor studies, air quality conformity analysis, and major highway and transit investment studies.
- Coordinate the integration of transportation and land use models, and coordinate with economic and demographic research staff to determine data interactions and conduct model scenario testing.
- Coordinate with the Data Solutions team to maintain transportation databases; ensure current and accurate traffic and passenger count data are being used, gather and process traffic count data from Caltrans PeMS, Caltrans traffic census counts, local arterial counts, and transit ridership data, and existing and planned transit and highway network assumptions; coordinate the GIS process to update databases.
- Coordinate and collaborate on inter-departmental and inter-agency project teams assembled for transportation modeling, analyses, and planning; foster collaborative working relationships with local jurisdictions and the various transit and transportation agencies.
- Collect and process quantitative data from local, state, and federal agencies, including Census, American Community Survey (ACS), Public Use Microdata Sample (PUMS), California Household Travel Survey (CHTS), and NHTS (National Household Travel Survey); ensure quality control of data and surveys related to model development and improvements.

- Process model calibration and validation of third party data sources, such as INRIX speed data, Airsage origin to destination (OD) trips, ATRI truck data, and StreetLight OD data.
- Supervise, mentor, train, and provide career development opportunities for a small team of professional staff with expertise in transportation modeling (Senior level only).
- Prepare and present written, oral, and visual reports to policy and stakeholder committees, member agencies, community groups, private organizations, and members of the public; explain and interpret complex transportation modeling projects, and activities.

Experience and Qualifications

Numerous factors contribute to an individual's ability to be successful in any given role. For this position, we are searching for a candidate with an aptitude for analytical thinking and problem solving who is organized, flexible, and can be relied upon to meet deadlines while working on multiple projects. Excellent communication skills, the ability to work collaboratively, and the use of sound judgment are important.

The minimum education, training, and experience qualifications include a bachelor's degree with major coursework in transportation modeling, computer science, mathematics, statistics, engineering, planning, geography, or a related field and four years (Associate level) to five years (Senior level) of recent experience working in transportation modeling, planning, and software development. Some lead or supervisory experience is required for the Senior level. An advanced degree is desirable.

The following information describes the specific types of career experiences that are most relevant to this position.

- Demonstrated knowledge of the principles and practices of transportation, traffic, and travel demand modeling and forecasting; knowledge of long-range transportation planning issues at a regional level is desirable.
- Demonstrated experience with advanced transportation modeling techniques, traffic simulation, and operational models; experience in the Activity-Based Model (ABM) and with integrated land use and transportation models also is desirable.
- Demonstrated experience developing transportation modeling applications using computer programming languages such as Java, Python, R, and SQL; experience developing and maintaining custom software applications to support modeling functions.
- Demonstrated experience using modeling software such as EMME and TransCAD to support large, complex model development and applications projects.
- Experience with data acquisition, compilation, and quality assurance/quality control methods; experience collecting and processing data from local, state, and federal agencies and validating third party data.
- Experience with relational database management such as SQL Server, including developing and querying data warehouses and business intelligence packages; experience updating and maintaining project databases, files, and records and documenting data.
- Experience using GIS software to design transportation-related databases and mapping applications; experience with ESRI software is preferable.
- Successful project management/project coordination experience, including participating in the development of RFPs, scopes of work, budgets, and schedules, consultant selection, and contract management.
- Experience supervising and evaluating the work of professional and technical employees; demonstrated ability to mentor and develop a team; experience providing administrative and professional leadership for assigned programs and projects (Senior level only).
- Ability to communicate highly technical information effectively, both orally and in writing; ability to prepare and deliver public presentations and recommendations regarding various program elements to upper management, Boards, community groups, and other audiences.
- Ability to research, analyze, and share information in support of policy decisions and the development of regional transportation systems.
- Demonstrated ability to establish and maintain effective working relationships with those contacted in the course of work including local, state, and federal transportation agencies, other government officials, and community groups; ability to gain cooperation and consensus through discussion and persuasion.
- The selected candidate can anticipate a driving record check upon hire, and approximately annually thereafter. The results of the check may determine whether the selected candidate will be permitted to drive for SANDAG business.



About SANDAG

SANDAG is one of the most recognized regional agencies in the nation with responsibilities that cover a broad range of complex, interrelated program areas connected by a quality of life theme. We are best known for our efforts related to transportation and this role continues to expand as we push beyond traditional boundaries to deliver a state-of-the-art transportation system for the region. In recent years, leadership in areas such as comprehensive land use and environmental planning, public safety, and modeling and data systems also have earned SANDAG much acclaim. With an employee group about 350 strong, we work for our Board of Directors - mayors, city council members, county supervisors, and other leaders representing the jurisdictions within the San Diego region and neighboring areas. They play the important role of making policy decisions that shape the future of the region. Our collaboration with stakeholders, partners, and the community, the precision of our data, the completeness of our reports and studies, and our sound recommendations are essential components of the regional decision-making process.

Salary and Benefits

SANDAG rewards the efforts of its employees with a comprehensive compensation package. Competitive salaries are supplemented with a flexible offering of health, financial security, and time-off benefits to meet the work and life needs of employees and their families.

This Transportation Modeler position will be filled at the Associate or Senior level depending on the qualifications and experience of the selected candidate. The annual salary ranges are: Associate Modeler - \$55,598 to \$92,516; Senior Modeler - \$70,959 to \$118,076.

Our benefits include traditional health, dental, and vision insurance as well as employee assistance, wellness, and work/life balance programs. Retirement and financial security benefits are provided through a pension plan and deferred compensation program. And to support the need to rest and rejuvenate, employees are provided with a bank of paid time off in addition to paid holidays.

How to Apply

We encourage all interested candidates to apply for this position by completing a SANDAG Employment Application form. Resumes, cover letters, and work samples may be submitted in addition to the Employment Application but are not a substitute for this document.

The Employment Application can be downloaded in PDF format from the SANDAG website. Alternatively, a copy can be requested by calling (619) 699-1900 or emailing hr@sandag.org. Completed applications and related materials can be submitted via email, fax, regular mail, courier, or delivered by hand. See our Careers / How to Apply webpage for additional information.

This position is Open until Filled. The first review of applications for the Transportation Modeler position will begin on December 15, 2017.

In compliance with the Americans with Disabilities Act (ADA), SANDAG will accommodate persons who require assistance in order to apply for a position at SANDAG. Applicants requiring an accommodation due to a disability during any stage of the recruitment and selection process, including requesting this document and related application materials in an alternative format, should make their needs known by contacting Human Resources at (619) 699-1900, (619) 699-1904 (TTY), fax (619) 699-6905, or hr@sandag.org.

Additional Application Requirement

To help us further evaluate the skills and experience of individuals interested in this position, applicants are asked to prepare a cover letter and respond to the Supplemental Questions below. The information can be up to 500 words per question and should be submitted with the Employment Application. This is considered a required component of the application; applications received without a response will be screened out of the selection process.

Supplemental Question

1. Describe a research project you were involved in that required the use of various sources of data. Explain the goal of the project, the types of data used, your role in the project, and the QA/QC process of data and results.
2. Describe a modeling, forecasting, or statistical analysis project you were involved in that required custom programming and scripting. Explain your role in the project.

Candidate Selection and Notification

All candidates will receive written confirmation that their application was received. The hiring manager will begin reviewing and evaluating applications within a few days of the first review date. The best qualified candidates will be invited to continue in the selection process. All candidates will receive written notification as to the final outcome of their application.

Further Information

The SANDAG website contains a wealth of information about our various project and program areas. The Careers section of the site lists all of our current Job Openings as well as information on how to apply for positions and Frequently Asked Questions about our recruitment process.

In compliance with the Immigration Reform and Control Act of 1986, applicants hired by SANDAG must show acceptable proof of identity and evidence of authorization to work in the United States.