

Internship ID# SM16TSM

NEW JERSEY DEPARTMENT OF TRANSPORTATION

INTERNSHIP OPPORTUNITY

Internship/Semester: Summer 2016

Internship Type: Credit-Bearing or Non-Paid

Intern Level: Undergraduate, Graduate

Suggested Background and/or Knowledge

Microsoft skills in Office Word, Excel, and Access. Some background in Transportation or Traffic Engineering recommended, but not required. Interest towards Traffic Engineering and Operations field.

NJDOT Division/Unit/Program Area Offering the Internship

Division of Mobility and Systems Engineering/Transportation Systems Management.

Description of the NJDOT Division/Unit/Program Area Offering the Internship

Division of Mobility and Systems Engineering, Transportation Systems Management is the hub of Intelligent Transportation Systems (ITS) and Advanced Traffic Systems (ATS) design, deployment, and operations. With the state-of-the-art facility at Woodbridge (Statewide Traffic Management Center (STMC)), other Traffic Operation Centers in North and South, Arterial Management Center (AMC) in Trenton, ITS Design Standards for the State (Fiber, Central Traffic Control Systems, Advanced Traffic Control Systems (ATCS), Dynamic Message Signs (DMS) and Variable Message Signs (VMS), Advanced Traveler Information Systems (ATIS), 511, Traffic Signal Optimization, Adaptive Traffic Signal Systems (ATSS), and Incident Management Response Teams (IMRT). The unit works with multiple jurisdictional identities to streamline the flow of traffic, and optimally manage the utilization of existing capacity of our roadway system for a reasonably comfortable travel of our customers.

Internship Location

NJDOT Headquarters
1035 Parkway Avenue
Trenton, NJ 08625

Internship Project Description

Adaptive Traffic Signal System, Traffic Signal Optimization Program, and Arterial Management Center: The traffic signal optimization program looks at various signalized arterial corridors in the state, spanning from 5-40 intersections on the Congestion Management System (CMS). The initiative optimizes the corridor using the latest traffic simulation models (Synchro, HCS2010) and standards (MUTCD, ITE, HCM) ensuring safety and mobility along the corridor. The Adaptive Traffic Signal System is a computerized corridor that comes back to the Arterial Management Center (AMC). From the AMC, the engineers manage the operation of the signalized roadway including, but not limited to, traffic data analysis, equipment functions, and incident management. The current Adaptive systems in the AMC include Sydney Coordinated Adaptive Traffic System (SCATS) & InSync and the current Computerized Traffic Signal Systems (CTSS) with Time of Day (TOD) plans in the AMC include IQ Central & Streetwise. The intern will be helping the staff operate/manage the arterials along the roadway/network and help in the design and review. This may include some supervised field work. This will allow for exposure to the field of Intelligent Transportation Systems.

Estimated Project Duration and Suggested Weekly Work Schedule

4 days a week preferred, but negotiable.

Internship Learning Objectives/Marketable Skills

The intern will gain many marketable skills – some tangible ones being – expanding the knowledge base on traffic operations, traffic signal optimization, using traffic software such as Highway Capacity Software (HCS), Synchro 7 & 8, and traffic standards such as Manual on Uniform Traffic Control Devices (MUTCD), International of Transportation Engineers (ITE) 6th Edition, Highway Capacity Manual (HCM), Adaptive Traffic Signal Systems, presentations to state officials, and project management. The intern will also develop skills in real world problem solving. The internship will also provide a sense of achievement to individuals who envision helping to alleviate or reduce some of the traffic problems we have in the state. This internship will also gain an insight into the real-time traffic signal control system – the Adaptive Systems, a hot topic in Intelligent Transportation Systems, along with some exposure in the development of the system (Systems Engineering document, etc).

Intern will be trained in the following areas(s)

Adaptive Traffic Signal Systems; Computerized Traffic Signal Systems; Traffic Data Analysis; Standards including MUTCD, HCM, ITE 6th Edition; Spreadsheet Development with Macros (Excel); Traffic Engineering Problem Solving; Methodology of Data Collection; Engineering Writing.