
Summer Internships currently available:

- [Office of Planning and Preliminary Engineering](#)
 - Regional and Intermodal Planning
 - Travel Forecasting and Analysis Division
 - Project Management Division
 - Data Governance Division (GIS)
- [Office of Highway Development](#)
 - Innovative Contracting*
 - Highway Hydraulics*
 - Plats and Surveys*
 - Highway Design Division*
 - Plan Review (Environ. Permitting)
 - Design Technical Service Division
 - * Includes Microstation/CADD
- [Office of Structures](#)
 - Structures Inspection and Remedial Engineering*
 - Structure Engineering Design Division*
- [Office of Environmental Design \(Baltimore\)](#)
 - Environmental Design
 - Water Resources
- [Office of Materials Technology \(Hanover\)](#)
 - Field Explorations
 - Pavement/Geotechnical
- New Products and Research
- Geology
- Soils Aggregate Technician
- Structural Materials & Pavement Markings
- Materials Management
- Asphalt Technology
- [Office of Traffic and Safety \(Hanover\)](#)
 - Traffic Engineering Design
 - Signal Mgt, Traffic. Analysis
 - The Director's Office
- [Office of Construction \(Hanover\)](#)
 - Construction Inspection opportunities
 - Positions available throughout the state
- [District 1 \(Salisbury\)](#)
 - Traffic
- [District 2 \(Chestertown\)](#)
 - Project Development
- [District 4 \(Hunt Valley\)](#)
 - Project Development
- [District 6 \(Lavale\)](#)
 - Project Development
- [District 7 \(Frederick\)](#)
 - Traffic

Note: Ctrl+Click on the above Offices will bring you to the Office page

▪ **TO APPLY - Required materials from each candidate**

Email the following application package by **March 1, 2019**:

1. Cover letter/Letter of interest
2. Complete the [2019 Intern Questionnaire](#) (Click this link)
3. Resume
4. Unofficial transcript (include current coursework)

Note: **Application materials MUST be combined in the specified order into a single pdf file identified with your first initial/last name — e.g., JSmith.pdf**

- Send your application packages to SHAInternships@sha.state.md.us
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Office of Planning and Preliminary Engineering

Location: Baltimore Headquarters, 707 N. Calvert St.

The **Office of Planning & Preliminary Engineering (OPPE)** coordinates transportation planning statewide and performs project planning activities. The **Regional and Intermodal Planning Division** is responsible for long range systems planning and the integration of SHA's program with local and regional transportation plans. The **Project Management Division** is responsible for managing major projects during the planning phase of projects. The **Travel Forecasting and Analysis Division** completes travel demand forecasts, evaluate traffic operational analyses. The **Data Governance Division (DGD)** houses the Enterprise Geospatial Technologies Team and the IT Team for the OPPE. *Position descriptions follows:*

Internships currently available: Regional & Intermodal Planning Division

Requirements: [Civil Engineering Major - Urban Planning/Planning](#)

The intern will have the opportunity to assist in coordinating and learning about various planning activities within specific regions and participate in the development and public involvement for the Consolidated Transportation Plan (CTP) and long-range plan. The intern may be required to assist in several statewide functional programs including: bicycle and pedestrian coordination, transportation enhancement program (TEP)/ transportation alternatives program (TAP), park and ride, and assist with preliminary studies focusing on areas such as safety, transit, and transit oriented development (TOD).

Intern duties would include but are not limited to: working with databases, preparing spreadsheets, drafting of customer responses, preparing, reviewing and analyzing statistical data, researching best practices, policies and laws, and assisting RIPD with the preliminary studies. Knowledge of GIS applications is preferable. Interns may accompany team members to on - site visits or attend field reviews and/or meetings for projects in pre-planning, planning or under design. The intern will represent MDOT at meetings and participate in liaison activities with State, MDOT, Metropolitan Planning Organizations (MPOs), and county and municipal elected officials and agencies. Depending on the assignments, the intern may have the opportunity to present results from preliminary studies to the SHA Senior Management and other State agencies or SHA/MDOT offices.

Final products may include *but are not limited to:* CTP updates, Long Range and Sector Plan review and summaries, briefing papers, database applications, and spreadsheets.

Internships currently available: Travel Forecasting and Analysis Division

Requirements: [Civil Engineering Major](#)

The intern will work with the Travel Forecasting and Analysis Division (TFAD) to develop traffic/travel demand forecasts, evaluate traffic operational analyses, and assist in the outreach to relevant planning stakeholders in and outside of MDOT SHA. Typical duties may include but are not limited to:

- Request traffic count and traffic safety data
- Perform field reviews and observations of traffic conditions, such as queues, driver behavior, etc

Continued

- Develop existing and future traffic volumes using traffic counts (requested by our office) and regional demand models, such as the MWCOG or BMC
- Perform traffic analysis to evaluate Level of Service (LOS) of proposed engineering concepts through microsimulation software such as Synchro/SimTraffic and VISSIM
- Develop “Title Sheet” traffic for use by other offices within MDOT SHA, such as the Office of Highway Development or Office of Materials Technology
- Review and comment on Traffic Impact Studies, such as for a business requesting access to State roadways
- Prepare reports, presentations, and attend meetings in support of the above – depending on the intern’s comfort level, they may present the project’s findings to stakeholders themselves

Additionally, the TFAD team will work with the intern to develop and finalize a short report (‘white paper’) on a topic of their choosing relevant to this office’s skillset. An example topic previously completed was the impacts of connected/autonomous vehicle technology on regional traffic.

Internships currently available: Project Management Division

Requirements: [Civil Engineering Major](#)

This position will serve in the **Project Management Division (PMD)**.

- Learn how major projects are developed from the formation of a purpose and need for the project to selecting an alternative to construct.
- Contribute to the planning stage of the project development process.
 - Work on design and project management tasks.
- Use Microstation and InRoads to perform geometric designs, performing cost estimates, scheduling, and assisting with the public involvement process.
- Learn about the extensive process used to obtain planning level approval for major projects, along with concepts that are developed from a full range of alternatives that result in one being chosen to be designed for construction.
- Learn how PMD works with various stakeholders, such as developers, local jurisdictions, and private citizens.

Internships currently available: Data Governance Division

Requirements: [Geospatial Sciences/Geography Major – GIS Concentration](#)

The Data Governance Division (DGD) houses the Enterprise Geospatial Technologies Team and the IT Team for the OPPE. DGD is responsible developing collecting data, maintaining and developing data, creating Maryland's roadway network, providing data governance and applications such as GIS to analyze data, and providing innovative planning and performance based planning and performance management for MDOT. The intern will have the opportunity to learn about various geospatial centric activities and initiatives within MDOT SHA.

Intern skillset should include but are not limited to:

- years’ experience with geospatial analysis
- Currently working towards or have bachelor’s degree or higher in geography, GIS, Remote Sensing or related field
- Understanding of ESRI ArcGIS Desktop / ArcGIS Online

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- Analytical and problem-solving skills
- Participates in resolving technical challenges
- Proficiency in basic computer applications, especially MS Office (Word, Excel, and Access)

Intern duties could include but are not limited to:

- Large scale GIS data development
- Development of basic web maps and applications using ArcGIS Online
- Assist in project planning and requirements gathering sessions
- Assist with field data collection as needed
- Learn the business analysis and product development lifecycle process within MDOT SHA
- Possible cross training on basic OPPE IT projects to help the division overall

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Office of Highway Development

Location: Baltimore Headquarters, 707 N. Calvert St.

The **Office of Highway Development** (OHD) is responsible for delivery of the Administration's Capital Program for construction and is divided into several operational divisions, including the Highway Design Division, Innovative Contracting Division, Highway Hydraulics Division, Design Technical Services Division, Plan Review Division and the Plats and Surveys Division. A position description for these divisions follows:

Internships currently available: Innovative Contracting Division

Requirements: Civil or Mechanical Engineering Major

The Innovative Contracting Division (ICD) oversees the engineering for facilities related programs as part of its responsibilities for the State Highway Administration (SHA). The SHA facilities are located throughout seven districts and the city of Baltimore. These facilities include more than 200 buildings that are comprised of office buildings, maintenance shops, salt storage structures, and support facilities (Fuel & Brine tank systems).

Engineers in this division may design and provide project management for capital projects, such as building renovations, office planning, HVAC replacements/updates, salt domes/barns, fire protection and security updates, utility and plumbing upgrades, septic system replacement, and stormwater management facility design.

The ICD is looking for students with a Civil or Mechanical Engineering major and basic knowledge of building systems preferred, to provide engineering design, management, and support for these types of projects. The duties of this individual may include, but not limited to, the following:

- Work with design project managers in developing new projects based on the needs of the Administration.
- Review and support on design plans, specifications, and estimates.
- Attend progress meetings and site visits of projects in construction

The selected candidate for this position may have knowledge on mechanical and buildings to assist in the fields of site development, building renovations, HVAC, and building renovations. The candidates should utilize Microsoft Word, Excel, and PowerPoint programs in their work responsibilities.

Internships currently available: Highway Hydraulics Division

Requirements: Civil or Environmental Engineering Major

The Highway Hydraulics Division (HHD) is responsible for engineering, inspection, and project management services for drainage, storm water management (SWM), erosion and sediment control (ESC), stream stabilization, and small stream crossings for The State Highway Administration (SHA) facilities and is responsible for ensuring permitting related to National Pollutant Discharge Elimination System (NPDES), SWM, and ESC requirements. The HHD is looking for a student with a Civil or Environmental Engineering major and interest in water resources with regards to transportation, to provide engineering design, drafting, and support for these types of projects. The duties of this individual may include, but not limited to the following:

- Field work to complete outfall inspections to support compliance with the NPDES, aid drainage complaint investigations, roadway project design criteria, dam safety issues investigations and verify construction activities of projects managed by the Division.
- Using computer software such as Microstation, InRoads Storm and Sanitary, StormCAD, excel, TR-55, and WinTR-20 to support engineers in storm drain and culvert design; water quality facility design, SWM best management practices, ESC facilities and stream restoration.
- Project submission support to various reviewing authorities; geographic information systems (interns would work on GIS efforts related to identifying drainage facilities and its condition to develop priority of repair.)
- Project review for compliance with environmental regulations; and database management related to HHD permit processes.
- Assist with SHA's ESC Training and Certification Program or PRD Storm Water Management Design, Map and Plans Training.

A minimum of one group project for all HHD interns will be assigned to be completed prior to the end of the summer. The group project will provide the opportunity to learn design and computation skills at a deeper level and develop coordination and cooperation skills that can lead to leadership opportunities.

Internships currently available: Plats and Surveys Division

Requirements: [Civil Engineering Major & Personal Vehicle](#)

The Plats and Surveys Division (PSD) plays a key role in the Planning, Design and Construction processes at MDOT, SHA, and other State Agencies. The early and continuous access to field surveys and right of way information is the basis for developing a good foundation for any project. PSD explores and uses state of the art technology such as aerial photogrammetry, GPS, RTK and robotic survey equipment to ensure the quality, accuracy and speed with which this information is delivered. Primary functions of PSD are the identification of topographic features and rights of way that can influence the design and costs of projects as well as property impacts that are developed and shown on SHA Right of Way Plats. As the custodian of field survey information, PSD maintains an up-to-date inventory of existing survey data.

The Intern with the Plats and Surveys Division will work with a Survey Crew, completing topographic and metes and bounds surveys, and may spend time in the office learning how to process the data and/or developing right of way mosaics using Microstation and coordinate geometry programs.

Internships currently available: Highway & Community Design Divisions

Requirements: [Civil Engineering Major](#)

The **Highway & Community Design Divisions (HDD/CDD)** are responsible for the design, project management and advertisement of major projects (HDD), such as new roadways, major reconstruction or lane additions on highways, or new interchanges, as well as the system preservation projects (CDD) such as new roundabouts, intersection improvements or minor geometric improvements. The HDD is also responsible for the traffic barrier program and maintaining technical expertise of the office with regards to highway design. The CDD is responsible for the oversight of certain system preservation projects as well as the noise wall program at SHA. These two divisions work very close together, and are offering this internship opportunity jointly.

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Intern Projects/Duties:

Nature of Work / Job Duties – Attendance at partnering meetings, meeting minutes, and completion of contractor requests for information; Site reviews/field work/data retrieval; plan sheet drafting; use of Book of Standards; review of consultant scope of work; development of cost estimates; request letter/memo drafting; locate as-built plans; report editing; correspondence development; plan development, reproduction and distribution; development of waivers (bike/ADA); specification development; development of Maintenance of Traffic (MOT) concepts.

The selected candidate for this position may utilize Microstation and InRoads, as required, to assist in the development of engineering drawings and plans and may also utilize Microsoft Word, Excel, and PowerPoint programs in their work responsibilities.

Internships currently available: Plan Review Division

Requirements: [Civil or Environmental Engineering Major \(Preferred, not required\)](#)

The Plan Review Division (PRD) is responsible for reviewing and approving stormwater management plans and erosion and sediment control plans for all MDOT SHA construction projects. This approval authority is delegated to MDOT SHA by the Maryland Department of the Environment. The intern with the Plan Review Division would work with PRD staff to populate ArcGIS/ArcMap for projects under review. May also assist review staff with technical review or process tasks.

Internships currently available: Design Technical Services Division

Requirements: [Civil Engineering Major](#)

The Design Technical Services Division (DTSD) is responsible for coordinating the Plan, Specification & Estimate (PS&E) review for many projects in the capital program, reviewing estimates, specs, and plans, developing specs and standards, and management CADD standards. At PS&E, the final bid package for roadway plans is compiled and distributed for review and the estimate is finalized. This requires a great deal of coordination with the project managers, as well as with the Federal Aid section.

The DTSD interns may be assigned to AASHTO Review Team, the Standards/ Specifications Team, or a Plan Review Team. Activities may include reviewing PS&E package, reviewing plans and specifications for highway construction plans, developing specifications and drafting standards, reviewing plans for compliance with AASHTO.

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Office of Structures

Location: Baltimore Headquarters, 707 N. Calvert St.

The **Office of Structures'** (OOS) is a great place to gain "real world" experience, providing great professional value both within your career with the State Highway Administration (SHA) and beyond. The OOS manages a system of about 2500 bridges on the Maryland state highway system and provides oversight and assistance to the local owners of another 2500 bridges in the state.

Interns with SHA's Office of Structures (OOS) will be exposed to entry-level type activities in design and inspection. There will be a combination of office work and field work. Some knowledge of basic CADD skills is very useful, as are basic computer skills. Interns will be placed within an established team and would work on bridge and structure projects assigned to that team. The interns will report to the team leader and receive support from design engineers and technical staff. The teams are small, making it easy for a supervisory engineer to observe the skills of their interns, and make assignments in accordance with his/her abilities. A goal of the intern program will be to provide the interns with an understanding of what it is like to work in a design office that designs, maintains and repairs bridges, while they perform their assignments during the summer.

Internships currently available: Structures Inspection & Remedial Engineering

Requirements: [Civil Engineering Major](#)

The **Structure Inspection and Remedial Engineering Division** (S.I.R.E.) keeps state highway structures safe for the traveling public through continuous regular condition inspection above and below water of all existing structures. In addition, this division provides for structural analysis, routine and preventive maintenance, bridge painting and minor rehabilitation contracts to address structure needs. The evaluation of all permits for overweight moves and their effect on structures is also a full-time assignment to this area. A typical assignment in this division may be a field review to identify a problem, design a solution, and then oversee implementation of the remedial design. Interns may also be involved with performing hands-on forensic evaluations of structures, writing inspection reports and making repair recommendations, and rating existing structures to determine their load carrying capacities.

Internships currently available: Structures Engineering Division

Requirements: [Civil Engineering Major](#)

In the **Structures Engineering Division**, the intern will work with engineers applying structural engineering theories, principles, and standards to a variety of transportation structures. The team will be involved with the design of new bridges, bridge deck replacements, bridge rehabilitation and repairs, culverts, and retaining walls. The intern will assist the engineers in the analysis and design of the structures, foundation design, preparation of plans using CADD, and the development of construction cost estimates. There will also be opportunities for an intern to visit the field to see various types of bridge construction.

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Office of Environmental Design

Location: Baltimore Headquarters, 707 N. Calvert St.

The **Office of Environmental Design's** (OED) mission is to incorporate environmental design, compliance and stewardship as a fundamental and integral component of highway planning, design, construction and maintenance.

Internships currently available: Environmental Compliance Division

Requirements: Civil or Environmental Engineering Major OR Environmental Science Major OR GIS Major

The mission of the **Environmental Compliance Division** is to ensure that all SHA facilities and operations achieve sustainable multi-media environmental compliance with State, Federal, and Local environmental permits, laws and regulations.

Intern Projects/Duties: Nature of Work / Job Duties – Work with teams responsible for ensuring that all SHA facilities and operations achieve and maintain multi-media environmental compliance with State, Federal and Local environmental permits, laws, regulations, and Best Management Practices. The Division also provides environmental compliance resources, oversight/guidance, environmental technical expertise and environmental training programs for facility employees. ECD is also responsible for developing and implementing a comprehensive Environmental Management System (EMS) to ensure sustained compliance in conducting highway and facility operations

Internships currently available: Water Programs Division

Requirements: Civil or Environmental Engineering Major OR Environmental Science Major OR GIS Major

The mission of the **Water Resource Division** is to implement a well-coordinated and dynamic environmental restoration program that fully outlines the State Highway Administration's contribution to restoring the Chesapeake Bay and its surrounding watershed, by the year 2025

Intern Projects/Duties: Nature of Work / Job Duties –Support the mission of this Division by supporting the delivery of the TMDL Program. TMDL (Total Maximum Daily Loads) describes a measurement of the amount of a pollutant that a body of water can receive while still meeting water quality standards. SHA's water quality projects are part of the national [Clean Water Act](#) that requires states to establish a list of impaired waters and develop projects to help reduce pollutants and nutrients from entering streams and tributaries. Scientists calculate the maximum amount of pollution that a waterway can receive while still maintaining safe water quality in a measure called "Total Maximum Daily Load" (TMDL). In addition to tree planting, SHA is installing bio-swales, building new and retrofitting existing SWM facilities, restoring streams and stabilizing outfalls to meet NPDES MS4 and TMDL requirements. The intern will learn how to use GIS resources to identify existing and proposed facilities as well as track pollutant load reductions, site searches and impervious restoration.

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Office of Materials Technology

Location: 7450 Traffic Drive, Hanover, MD

Internships currently available: Geotechnical Engineering Assistant

Majors Requested: [Civil Engineering](#)

Intern Projects/Duties: The duties of the internship will involve assisting the staff of the Engineering Geology Division – Geotechnical Section with various duties as follows:

- Preparing field work requests and guidelines for soil and structure foundation surveys in order to obtain samples to determine properties and characteristics of soil and rock. Field work may include auger borings, Standard Penetration Test (SPT) borings, Cone Penetrometer Testing (CPT), Dilatometer Testing (DMT), Pressure meter Testing (PMT), and non-destructive geophysical testing.
- Performing geotechnical analyses including bearing capacity analysis, slope stability and seepage analysis, settlement/consolidation analysis.
- Preparing Geotechnical Reports: describing geotechnical related features of the project, subsurface information and soil characteristics; documenting geotechnical findings and evaluations; containing recommendations (including specifications and details) for embankment foundation treatment, fill and cut slope design, soil and subgrade treatment, groundwater control, subgrade drainage, alternative earth retaining structures and ground improvement techniques.
- Providing support to District Construction personnel during construction of the roadway and structure portions of projects to resolve urgent and emergency situations resulting from pavement and/or geotechnical problems. Reviewing significant features exposed during construction to compare actual conditions to those anticipated by design, and to make corrective recommendations as necessary. This typically involves solving problems related to drainage, excavation, compaction, foundations, landslides, sediment and erosion control, and ground improvement techniques. Preparing memos, technical reports, specifications and details to assist in processing Change Orders and Redlines.
- Evaluating chronic, urgent and emergency situations resulting from pavement and/or geotechnical problems. Providing services to District Maintenance teams to troubleshoot pavement and/or geotechnical problems. These services are typically provided to address landslides/slope failures, structural backfill, erosion, earth retaining and drainage structure failures, subsurface failures, etc. Preparing recommendations and details to monitor and solve geotechnical related maintenance issues. These recommendations generally require immediate responses as many of these hazards can result in safety related issues.
- Providing geotechnical engineering support and reviewing Geotechnical Reports on County, Access Permits Division and MTA projects within State jurisdiction.

The intern will report directly to the team leader and will conduct task assignments for all team staff engineers. Work will be conducted with close supervision initially, with general supervision as intern gains experience.

If you are looking for a rewarding career working with interesting people on challenging engineering projects leading to valuable professional development, the Engineering Geology Division is for you.

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Internships currently available: Pavement/Geotechnical Design Engineering Assistant

Majors Requested: [Civil Engineering](#)

Intern Projects/Duties: The intern will function as an engineering assistant on a design team. The team is responsible to providing pavement and geotechnical design recommendations for all highways constructed, maintained, or rehabilitated by Maryland SHA.

Duties will include

- Conduct field surveys to identify and quantify pavement and soil conditions
- Review existing records to identify historical pavement conditions and construction history
- Process field and office data to establish functional and structural condition.
- Develop preliminary designs
- Attend Meetings
- Perform task-oriented assignments to write recommendations.

In addition, the intern will gain experience with SHA's pavement management system and the process used to identify candidate projects for funding. The student will also be exposed to special studies conducted by the design team to evaluate problems/unique conditions on MD highways. This could include the evaluation of unique slope designs, embankments, slides, sinkholes, and other geological/engineering elements.

The intern will report directly to the team leader and will conduct task assignments for all team staff engineers. Work will be conducted with close supervision initially, with general supervision as intern gains experience.

Internships currently available: Pavement Management

Majors Requested: [Civil Engineering](#)

Intern Projects/Duties: The duties of the internship will involve assisting the staff of the Pavement and Geotechnical Engineering Division – Pavement Management Section with various duties as follows:

- ARAN pavement condition data processing, including Wisecrux processing applying pattern recognition techniques in order to pick up pavement crack information from pavement images;
- Processing pavement construction and paving unit cost data and information to data fill Pavement Management Database.
- Development of pavement system preservation reports and Key Performance Areas (KPA) reports to provide updated rehabilitation progress and network level pavement condition information.
- Traveling across Maryland- working with district construction and maintenance personnel collecting pavement accomplishments and our field units collecting pavement condition data

Those taking advantage of this intern opportunity will report directly to the pavement management team leaders. Work will be conducted with close supervision initially, with progressively less supervision as you gain experience.

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Internships currently available: New Products & Research – Engineering Assistant

Majors Requested: [Civil Engineering](#)

Intern Projects/Duties: The candidate will function as an Engineering Assistant on the NP&RT. This employee will support OMT’s New Products and Qualified Product evaluations as well as the OMT Deputy Director. The employee is responsible for:

- Coordinating OMT’s New Product and Qualified Product evaluations submitted for use on SHA projects
- Supporting the NP&RT in data collection essential for New & Qualified Product evaluations, data collection for implementation, and developing Work Plans for product pilot programs. Evaluations include gaining knowledge with AASHTO, ASTM, and MSMT standards.
- Product Evaluation: Work with technical leads to evaluate product applications submitted by vendors and /or manufacturers. Develops reports and work plans as needed in the evaluation process.

Internships currently available: New Products & Research Engineering Assistant

Majors Requested: [Civil Engineering](#)

Intern Projects/Duties: This position will work with the current New Products & Research (NP&R) engineers on various project level tasks. Duties will include, but are not limited to project management, supporting research activities, attending project-level team meetings, and other miscellaneous office tasks.

- Assist with the coordination of OMT’s research projects, Experimental Features Program, Long Term Pavement Performance Program and New Products submitted for field evaluation and project expenditures.
- Reports – Review research reports, problem statements, NCHRP topics, monitor NTPEP programs for potential implementation. Work with technical leads at OMT in research projects and assist new products engineer when required.
- Material Research – Investigate specific research projects and products to determine if MD or any other state have conducted similar evaluations on a state or national level.

Internships currently available: Soils and Aggregate Technology Assistant

Majors Requested: [Civil Engineering](#)

Intern Projects/Duties: The Soils and Aggregate Technology Division (SATD) focuses its efforts on the evaluation and approval of all soils, aggregates, geotextiles and recycled materials used on MDSHA contracts. This includes laboratory testing, field quality assurance, special studies and troubleshooting. SATD works closely with the Materials Management Division to ensure coordination between the Office of Materials Technology and District personnel for quality assurance and acceptance of construction materials. We also work closely with construction personnel in the placement of these materials.

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SATD is seeking engineering interns for the Laboratory Operations Team. The activities of the Laboratory Operations Team include soils and rock aggregate testing and research in support of the planning, design, construction and maintenance of highway infrastructure projects statewide. The intern will be part of the SATD Laboratory Operations Team providing support to the Division Chief, Assistant Division Chief, as well as Soils and Aggregate Laboratory Team Leaders and other staff.

Duties: The intern will perform most of the work in the laboratory environment and some office and field duties/tasks. The duties/tasks will include the following:

- Applying commonly used soil and aggregate sampling and testing standards and procedures, such as the American Society of Testing and Materials and American Association of State Highway and Transportation Officials to characterize materials, including:
 - Atterberg Limit
 - Moisture Content
 - Specific Gravity
 - Material Classification
 - Grain Size Analysis
 - Soil Strength
 - Rock Strength
- Geotextile Testing and Acceptance
- Data Analysis
- Literature Review
- Technical Report Preparation and Review
- Approval of Soil and Aggregate Sources
- Assisting Field Operations Team in Field QA (Moisture and Density Equipment and Technician Verification)

Projects the intern will be expected to participate in:

- Aggregate Friction Research
- Soil Modulus Testing and Research
- MD SHA Active Construction Projects – Material Testing and Approval of Soil and Aggregate Sources
- MD SHA Preliminary Engineering Projects - Material Testing and Approval of Soil and Aggregate Sources
- Project Site and Plant Visits

Internship Learning Objectives include:

- Hands-on training in soils and aggregate technology in an environment that fosters professional growth
- Ability to interpret geotechnical engineering data as they pertain to highway infrastructure planning, design and construction
- Learning and applying methods of laboratory quality control and quality assurance, including sample and data management
- Becoming familiar with the culture, modes of communication, chain of command and protocols of working with industry, engineers, technicians, designers and project managers in a multicultural environment

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Internships currently available: Pavement Marking Engineering

Majors Requested: [Civil Engineering](#)

Intern Projects/Duties: The duties of the internship will involve assisting the staff of the Structural Materials & Pavement Markings Division – (**Pavement Marking Section**) with various duties as follows:

- Evaluating the properties of pavement marking materials used on Maryland roadways in the field.
- Supporting the pavement marking asset management with data entry into the computer system.
- Some field work may require night work, infrequent or out of town travel.
- Updating or creating charts to report Pavement marking production.
- Research efforts towards new or existing pavement markings
- Interested applicants should have a strong aptitude & interest in computers and engineering.

The intern will report directly to the team leaders and will conduct task assignments for all team staff engineers. Work will be conducted with close supervision initially, with general supervision as intern gains experience.

Internships currently available: Structural Materials and Metals & Coatings Engineering

Majors Requested: [Civil Engineering](#)

The duties of the internship will involve assisting the staff of the Structural Materials & Pavement Markings Division – (**Structural Materials and Metals & Coatings Section**) with various duties as follows:

- Evaluating the properties of structural materials used on Maryland roadways in the lab and field (Bridges, Sign Structures, Etc.).
- Work will include a mix of time in the office creating spreadsheets & data entry, lab testing of structural materials, and field quality assurance inspection of metals & coatings materials.
- Some field work may require night work, infrequent or out of town travel.
- Interested applicants should have a strong aptitude & interest in computers, mechanics, welding, testing & **not be afraid of heights**.

The intern will report directly to the team leaders and will conduct task assignments for all team staff engineers. Work will be conducted with close supervision initially, with general supervision as intern gains experience.

Internships currently available: Asphalt Technology

Majors Requested: [Civil Engineering](#)

Intern Projects/Duties: The intern will function as an engineering assistant in asphalt laboratory. The team is responsible to finish materials testing using Asphalt Mix Performance Testing (AMPT) machine and Semicircular bending (SCB) testing in the lab.

Duties will include

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- Perform laboratory testing using above equipment
- Prepare the asphalt mixes and perform volumetric analysis
- Analyze the test results using FlexMat and FlexPave software.
- Help setting base line criteria for pavement failures
- Co-ordinate with Pavement Design group to analyze the historical pavement performance data

In addition, the intern will gain experience with SHA's materials testing and results analysis process on advanced research projects. The student will be given an opportunity to learn about the pay factor system SHA use to pay for quality work.

The intern will report directly to the team leader and will conduct task assignments for laboratory engineer. Work will be conducted with close supervision initially, with general supervision as intern gains experience.

Internships currently available: Materials Management

Major's Requested: [Civil Engineering](#) and/or [Information Technology \(database development\)](#)

Intern Projects/Duties:

The intern will participate in the data entry, analysis, review and preparation of various material testing and inspection reports by utilizing a web-based Material Management System (MMS) and other in-house built applications that directly support the Office of Materials Technology (OMT) business processes. The intern will also participate in the review of various database design activities including but not limited to troubleshooting existing bugs/fixes, logical design of a new database structure, review of existing and new logical designs and application development in an MS Access platform to support the material acceptance and clearance business processes of OMT. The Materials include soils, aggregates, asphalt, concrete, cement, structural materials and pavement markings etc. The intern will gain experience with material quality assurance concepts through:

1. Project management and oversight activities
2. Advanced database modeling/design concepts
3. Review of design documents and preparation of formal reports
4. Close interaction and collaboration with various professionals including senior engineers, database developers, project managers etc.

Nature of work and expectations:

The intern will be assigned to the Materials Management Section of OMT and will work under the direct supervision of the Materials Management Systems Team leader. All work will be performed in an office setting by using various computerized tools including Microsoft Office Suite products (MS Access, MS Excel, MS Word etc.) and other database related tools such as SQL Developer. The ideal intern should possess strong data management, analysis and reporting skillsets by using the above-mentioned tools. In addition, the ideal candidate should possess excellent written and verbal communication skills to effectively and efficiently accomplish assignments by collaborating with other MMS team members, OMT lab quality personnel and customers from other MDOT SHA offices.

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Internships currently available: Field Exploration Division

Major(s) Requested: Civil Engineering focusing in Geotech

Objective: To assist with career development through real work experiences that provide interns with opportunities to explore their interests and develop professional skills and competencies. Also, allowing interns to experience all aspects of Field Exploration Division through various project phases.

Intern Projects/Duties: The Field Explorations Division provides all field-testing services for preliminary engineering and network level evaluation. This includes pavement, bridge, soils, foundation, traffic and other special testing. The intern will support the office and field team with various duties as follows:

- Provide quality control of field work requests and subsurface field data
- Develop final project deliverables utilizing Bentley software suite and SHA specific software
- Coordination and cataloging of subsurface sample deliveries and storage for statewide projects
- Processing and development of production reports for network level performance
- Occasional travel to various project sites statewide to monitor projects for criteria compliance and progress
- Attend preliminary project meetings

In addition, the intern will gain exposure to various in situ testing methods, geotechnical analysis of field data, environmental requirements for subsurface work. The scholar may also gain exposure to bridge deck testing and network level pavement data collection.

The intern will report directly to the Assistant Division Chief and will conduct all task assignments for all drilling team staff. Work will be conducted with close supervision initially, with general supervision as the intern gains experience.

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Office of Traffic and Safety

Location: 7491 Connelley Drive, Hanover, MD

The Office of Traffic and Safety (OOTS) plays a major role in assuring that state highways operate safely and efficiently. OOTS provides a wide range of traffic engineering, traffic operations, and traffic safety support to SHA's Districts and other units that enable them to carry out their highway responsibilities. It also houses SHA's motor carrier agency and serves as the lead agency for Maryland's traffic safety programs. The **Traffic Engineering Design Division (TEDD)** is a major design division in OOTS responsible for engineering, design, production, oversight and scheduling of all Traffic Control Devices (TCD's), Intelligent Transportation Systems (ITS's), TCD structures statewide. **Traffic Development and Support Division** contributes to the development and organizational support of new and expanded traffic engineering and safety functional programs and practices. The **Director's Office** is the heart of OOTS, with policy and decision making at the forefront of daily duties. Positions include:

Internships currently available: Traffic Engineering Design Division

Majors Requested: [Civil Engineering – Traffic Engineering](#)

TEDD is responsible for the design, manage, administration and coordination of traffic control devices design statewide. Working with various offices/divisions inside and outside of SHA, TEDD provides a traffic control devices engineering solution to meet the requested functional requirements. In addition, TEDD reviews and approves traffic control device design on developer's project statewide.

Intern Projects/Duties: An intern in TEDD will work with team leader and one or more experienced engineers. The duties of this individual may include, but not limited to the following:

- Drafting, designing and reviewing of traffic control device plans using the principles of engineering;
- Field investigation and preliminary project information collection
- Development of cost estimates
- Development the report, memo, and/or correspondence
- Assist with milestone distribution
- Maintaining and managing project files

Requirement of Candidates:

- Candidates should have good research skills, ability to think analytically and strong written communication and math skills.
- Experience using computer-based word-processing, spreadsheet and database management is beneficial.
- Experience using Microstation or AutoCADD to assist in the development of engineering drawings
- A valid driver's license and willingness to perform fieldwork is essential.

Continued

Internships currently available: Traffic Development & Support Division

Majors Requested: [Civil Engineering](#) – [Traffic Engineering](#)

TDSD contributes to the development and organizational support of new and expanded traffic engineering and safety functional programs and practices. Its teams provide guidance, expert advice and day to day support for the overall statewide traffic engineering, management, and safety programs. Intern will assist engineers in the following: Traffic Engineering Studies, Work Zone Safety, Roundabout Reviews, Automated Speed Enforcement, Highway-Rail Crossing Safety, MUTCD Guidelines, Ped. And Bike Standards, Signal System Timing, Crash Studies, Advanced Intersection Studies, TE/TC Research

Internships currently available: The Director's Office

Majors Requested: [Civil Engineering](#) – [Traffic Engineering](#)

This position will include supporting the Deputy Directors and the Directors.

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Office of Construction

Location: Hanover Construction Headquarters, 7450 Traffic Drive, Hanover, MD

Note: Positions available throughout the State of Maryland

The **Office of Construction** (OOC): Provides oversight statewide for SHA's Construction Program, sets policy and support all SHA offices that contribute to building a safe, mobile highway system that enhances Maryland's communities, economy and the environment.

Internships currently available: Construction Inspection Division (CID)

Requirements: [Civil Engineering Major or Construction Management](#)

Note: Students who are underclassmen at a school that offer Civil engineering as a major and can not specify the major until they are upperclassmen are also eligible.

- Must commit to 40-hours per week.
- Must have a valid State driver's license and a reliable vehicle.

Position: Construction Inspector

This program offers paid hands-on experience while working outdoors with CID project engineers. The work will entail inspecting bridges and highways to ensure contract specifications are followed throughout SHA's seven districts.

Nature of Work / Job Duties:

This is the entry level of work performing a variety of technical engineering support tasks. Specific duties depend on job assignments and may include, in a learning capacity: inspecting construction and maintenance projects; performing tests on soils and materials; evaluating methods for maintenance operations; serving on a survey crew; contract specifications and construction notes; calculating quantities for construction projects and maintenance activities; reading plans, maps, or right of way plats; and collecting and recording traffic and planning data.

Interns work under the continuing supervision of an engineer or higher-level engineering technician. Working conditions vary, depending on assignments; and are performed in the office or in the field during survey and inspection assignments with exposure to varying weather conditions and rough terrain with requirements for walking, standing, bending, and lifting loads weighing up to 40 lbs. This position may also be required to work nights and weekends. This work may require working in close proximity with traffic on Maryland highways; requires hand/eye coordination in the efficient operation of computers and other office machines, survey and other equipment.

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District 1/ Dorchester, Worcester, Somerset & Wicomico Counties

Location: 660 West Road Salisbury, MD 21802

Internships currently available: District 1, Traffic

Majors Requested: [Civil Engineering Major](#)

Intern Projects/Duties:

- Investigate and respond to inquiries concerning various aspects of highway safety and traffic operations sent in by citizens, various elected officials, Secretary of Transportation and the Administrator, etc. via phone, email or letter.
- Attend various public informational and technical meetings related to SHA design and construction projects. This may include reviewing and commenting on Traffic Signal, Signing, Marking, or Temporary Traffic Control Plans for these projects.
- Assist in conducting Traffic Analysis and Traffic Operational Studies. This may include reviewing crash patterns along our roadways or calculating the Level of Service (LOS) of a roadway and developing improvements recommendations.
- Perform Traffic Signal Warranting Studies
- Conduct Sign Inventories and conduct speed studies
- Maintain and update computerized reports used by traffic engineers

PLEASE NOTE: The position is located on the Eastern Shore, and is not reasonably commutable from the Baltimore or DC area.

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District 2/ Caroline, Cecil, Kent, Queen Anne's, and Talbot Counties

Location: 615 Morgnec Road, Chestertown, MD 21620

Internships currently available: Project Development – Engineering Systems Team & Utilities Team

Majors Requested: [Civil Engineering Major](#)

Position Description: District 2 Project Development is responsible for the design and preparation of system preservation projects in Caroline, Cecil, Kent, Queen Anne and Talbot County, Maryland. System preservation projects include: Intersection Capacity Improvements; Safety and Spot Improvements; Sidewalk and Drainage Improvements, Safety and Resurfacing, and District Engineer's Quick Action. In addition, Project Development includes the District Utility Section responsible for utility design review and coordination and inspection of construction occurring through Utility and Access Management (developer) permits.

An intern in Project Development would work with an experienced engineering team leader and one or more civil engineers and technicians of varied experience.

Intern Projects/Duties:

- Learn basic roadway and geometric design (horizontal and vertical alignments, ADA pedestrian and bicycle facilities, storm drain design, pavement design, roadside barriers design, etc.) using MicroStation and InRoads software through on-the-job training
- Learn cost estimating, scheduling, project management and permit submission for both in-house and consultant led design projects
- Assist with field investigations and plan reviews
- Develop milestone reports as well as Sidewalk/Bicycle Waivers
- Assist with project milestone distribution/submittals and attend public informational meetings
- Review utility plans and assist in utility inspections

Requirement of Candidates:

- Candidates should possess the ability to think analytically, as well as strong written communication and math skills.
- Experience using Microstation, computer-based word-processing, spreadsheet and database management is beneficial.
- A valid driver's license and willingness to perform field work is essential.

PLEASE NOTE: The position is located on the Eastern Shore of Maryland, near Delaware, and is not reasonably commutable from the Baltimore or DC area.

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District 4/ Baltimore & Harford Counties

Location: 320 West Warren Road, Hunt Valley, MD 21030

Internships currently available: Project Development – Engineering Systems Team

Majors Requested: [Civil Engineering Major](#)

Position Description: District 4 Project Development is responsible for the design and preparation of system preservation projects in Baltimore and Harford County, Maryland. Projects are developed for the following programs: Intersection Capacity Improvement; Safety and Spot Improvement; Safety and Resurfacing; Bicycle and Sidewalk Retrofit; and District Engineer’s Quick Action. In addition, Project Development includes the District Utility Section responsible for utility design review and coordination and inspection of construction occurring through Utility and Access Management (developer) permits within District 4.

An intern in Project Development would work with an experienced engineering team leader and one or more civil engineers and technicians of varied experience.

Requirement of Candidates:

- Experience using Microsoft Office software
- Good time-management and analytical thinking skills
- Valid driver’s license and willingness to perform fieldwork

Intern Opportunities:

- Learn basic roadway and geometric design (horizontal and vertical alignments, ADA pedestrian and bicycle facilities, pavement design, roadside barriers design, etc.) using MicroStation and InRoads software through on-the-job training
- Learn cost estimating, scheduling, project management and permit submission for both in-house and consultant led design projects
- Accompany team members on site visits to assess the condition of roadway facilities
- Accompany team members attending partnering meetings and on-site coordination for projects in construction
- Interact with other SHA offices and divisions to understand their role in the project development process
- Attend project milestone meetings and review project documents and provide comments
- Assist in utility plan reviews and attend inspections

Internships currently available: District 4 Traffic

Majors Requested: [Civil Engineering Major](#)

Intern Projects/Duties:

- Investigate and respond to inquiries concerning various aspects of highway safety and traffic operations sent in by citizens, various elected officials, Secretary of Transportation and the Administrator, etc. via phone, email or letter.

Continued

- Attend various public informational and technical meetings related to SHA design and construction projects. This may include reviewing and commenting on Traffic Signal, Signing, Marking, or Temporary Traffic Control Plans for these projects.
- Assist in conducting Traffic Analysis and Traffic Operational Studies. This may include reviewing crash patterns along our roadways or calculating the Level of Service (LOS) of a roadway and developing improvements recommendations.
- Perform Traffic Signal Warranting Studies
- Conduct Sign Inventories and conduct speed studies
- Maintain and update computerized reports used by traffic engineers

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District 6/ Allegany, Garrett, & Washington Counties

Location: 1251 Vocke Road, Lavale, MD 21502

Internships currently available: Project Development – Engineering Systems Team

Majors Requested: [Civil Engineering Major](#)

Position Description: District 6 Project Development is responsible for the design and preparation of system preservation projects in Allegany, Garrett, & Washington Counties, Maryland. Projects are developed for the following programs: Intersection Capacity Improvement; Safety and Spot Improvement; Safety and Resurfacing; Bicycle and Sidewalk Retrofit; and District Engineer’s Quick Action. In addition, Project Development includes the District Utility Section responsible for utility design review and coordination and inspection of construction occurring through Utility and Access Management (developer) permits within District 6.

An intern in Project Development would work with an experienced engineering team leader and one or more civil engineers and technicians of varied experience.

Requirement of Candidates:

- Experience using Microsoft Office software
- Good time-management and analytical thinking skills
- Valid driver’s license and willingness to perform fieldwork

Intern Opportunities:

- Learn basic roadway and geometric design (horizontal and vertical alignments, ADA pedestrian and bicycle facilities, pavement design, roadside barriers design, etc.) using MicroStation and InRoads software through on-the-job training
- Learn cost estimating, scheduling, project management and permit submission for both in-house and consultant led design projects
- Accompany team members on site visits to assess the condition of roadway facilities
- Accompany team members attending partnering meetings and on-site coordination for projects in construction
- Interact with other SHA offices and divisions to understand their role in the project development process
- Attend project milestone meetings and review project documents and provide comments
- Assist in utility plan reviews and attend inspections

PLEASE NOTE: The position is located in Western Maryland (north of West Virginia) and is not reasonably commutable from the Baltimore or DC area.

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District 7/ Carroll, Fredirk & Howard Counties

Location: 1251 Vocke Road, Lavale, MD 21502

Internships currently available: District 7 Traffic

Majors Requested: [Civil Engineering Major](#)

Intern Projects/Duties:

- Investigate and respond to inquiries concerning various aspects of highway safety and traffic operations sent in by citizens, various elected officials, Secretary of Transportation and the Administrator, etc. via phone, email or letter.
- Attend various public informational and technical meetings related to SHA design and construction projects. This may include reviewing and commenting on Traffic Signal, Signing, Marking, or Temporary Traffic Control Plans for these projects.
- Assist in conducting Traffic Analysis and Traffic Operational Studies. This may include reviewing crash patterns along our roadways or calculating the Level of Service (LOS) of a roadway and developing improvements recommendations.
- Perform Traffic Signal Warranting Studies
- Conduct Sign Inventories and conduct speed studies
- Maintain and update computerized reports used by traffic engineers

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