



Request For Proposals

On-Call Civil & Site Engineering Services

RFP 001-2025

Town of Bladensburg
4229 Edmonston Road
Bladensburg, Maryland 20710

June 28, 2024

Prepared by:

BAI
Brudis & Associates, Inc.
Consulting Engineers

TO BE SUBMITTED WITH BID

**TOWN OF BLADENSBURG
ON-CALL CIVIL AND SITE ENGINEERING SERVICES
Bid Proposal Form**

TOWN OF BLADENSBURG
4229 Edmonston Road
Bladensburg, MD 20710

BID DUE: June 28, 2024
TIME: 3:00 p.m. EST

Brudis & Associates, Inc.

(Name of Bidder)

hereby submits the following proposal for ON-CALL CIVIL ENGINEERING SERVICES. Having carefully examined the Request for Proposals, related documentation, the proposed Consultant Agreement and **Addenda Numbered** N/A (indicate numbers or N/A if none issued), and having received clarification on all items of conflict or upon which any doubt arose, and understanding that all prices bid will remain in effect throughout the term of the contract, whether completed at one time or in interrupted phases, the undersigned proposes to furnish all labor, equipment, materials, etc., required by the documents for the entire work, all in strict accordance with the contract documents.

Provide unit and hourly pricing for specific tasks and personnel.

SPECIAL TERMS AND CONDITIONS

- A. Failure to properly and completely fill in all blanks may be cause for rejection of this proposal.
- B. In addition to completing this Bid Proposal Form with bid price, Bidder should provide an estimate of budget and resources required.
- C. It is understood that the proposal price will be firm for a period of 90 calendar days from the proposal opening date, and that, if the undersigned is notified of acceptance of this proposal within this time period, the Bidder shall execute a contract for the above stated compensation.

Brudis & Associates, Inc.

Name of Bidder


Signature

June 17, 2024

Date

Anthony Brudis, Principal

Name and Title of Individual Authorized to Bind Bidder

June 28, 2024

Town Of Bladensburg
4229 Edmonston Road
Bladensburg, Maryland 20710

**RE: Request for Proposals – On-Call Civil and Site Engineering Services
RFP 001-2025**

Dear Ms. Hedgpeth:

Brudis & Associates, Inc. (BAI) is pleased to submit our proposal to provide On-Call Civil and Site Engineering Services for the Town of Bladensburg.

As a multi-disciplined engineering firm, BAI is prepared to provide the necessary personal attention to properly address the services requested in a timely manner. Our technical staff has specialized expertise and experience in providing the various services requested by the Town of Bladensburg including any unexpected additional items. In addition, BAI staff is well versed in local, state, and federal agency requirements.

BAI is staffed with 80 engineers, technicians and administrative support personnel. The majority of our staff engineers are PE's and hold additional technical certifications, and many BAI staff members hold advanced degrees. This contract will be managed from our Columbia, Maryland office and BAI's resources on this contract will be augmented through the support services from our highly qualified and professional subconsultants:

- ▶ **Bengal Engineers LLC (BENGAL), MBE/DBE/SBE #21-269:** Survey and Utility Designation Services
- ▶ **DMY Engineering Consultants Inc. (DMY), MBE/DBE/SBE #14-473:** Geotechnical Services

We invite you to review our proposal and thank you for the opportunity to respond to your request for On-Call Civil and Site Engineering Services. Should you have any questions or wish to discuss BAI's qualifications further, please do not hesitate to contact us. The BAI team is extremely enthusiastic about performing the requested engineering services under this Town of Bladensburg contract and we look forward to providing an *Innovative, Quality, and Responsive* service.

Sincerely,

Brudis & Associates, Inc.



Anthony Brudis
Principal



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BRUDIS
& Associates
CONSULTING ENGINEERS

A

RESPONSIVENESS



ON-CALL CIVIL AND SITE ENGINEERING SERVICES
RFP 001-2025 | TOWN OF BLADENSBURG



COMPANY OVERVIEW

Brudis & Associates, Inc. (BAI) was established in 1992 and is headquartered in Columbia, Maryland with branch offices in Baltimore City, District of Columbia, Virginia, and Delaware. BAI will be responsible for the contract and for maintaining the overall management, coordination, technical engineering, scheduling, and staffing responsibilities. The contract will be managed and work will be completed in our office headquarters in Columbia, MD that is staffed with over 80 engineers, technicians, CMI staff and administrative support personnel.

As a consultant to federal, state, and local agencies and private corporations, BAI provides innovative cost-effective solutions to complex engineering problems. The key to our success is a highly qualified professional staff, effective management, and modern computer facilities. Our technical staff has extensive experience in transportation and traffic engineering, structure and facility engineering, water resources, and environmental engineering. BAI's staff engineers are registered PE's and hold additional technical certifications including Professional Traffic Operations Engineers (PTOE), regulatory permitting certifications for Erosion and Sediment Control, Designated Design-Build Professionals (DBIA), Project Management Professional (PMP), and Certified Quality Auditor (CQA). Additionally, staff engineers also hold advanced degrees (i.e., MS and PhD) in civil engineering, structural engineering, hydrology/hydraulics, environmental and transportation engineering. BAI's services include:

- ▶ **Roadway & Planning:** Transportation - Roadway Engineering and Geometrics (Widening, Reconstruction, Improvements), Streetscape, Intersection Improvements & Roundabouts, Bicycle Lanes, Pedestrian Access & Safety, Planning Studies, Sidewalk Engineering, Shared Use Pathways & Sidewalks, ADA Compliance Reviews & Designs, Neighborhood Conservation, Utility Coordination, Right-of-Way Impact Analysis, Truck Weigh/Inspection Stations; Facilities & Site - Site Development/Improvements, Recreational Park Planning, Parking Facilities, Pedestrian Connectivity, Pathways/Trails, Playground Facilities & Fields, K-12 & Higher Education Facilities, Water and Sewer Utility Design
- ▶ **Traffic & Data Collection:** Traffic Studies/Analysis - Safety/Capacity Analysis, Accident Analysis, Traffic Impact Studies, Lighting Engineering, Bicycle & Pedestrian Studies, Corridor Evaluation, Road Diet Evaluations, Signal Warrant, Speed Management, Congestion Mitigation, Safe Routes to School Program, Federal Highway Safety Programs (Research, Analysis & Traffic Support), Maintenance of Traffic Alternative Analysis, Travel Forecasting & Modeling; Traffic Design & ITS - Traffic Design, Traffic Signal Design, Maintenance of Traffic & TMPs, Traffic Calming, Intelligent Transportation System (ITS), Transportation System Management & Operations, Signing & Pavement Marking, Lighting Design; Data Collection & Asset Management - Machine & Manual Traffic Counts, Video Traffic Movement Counts, Roadway Asset Inventory Programs, GIS Database Development, Pavement Management Programs
- ▶ **Structures & Bridge:** Bridge Design & Inspection - Bridge Design (New Bridges, Rehabilitation/Widening, Replacements), Bridge Inspections, Culverts, Retaining Walls & Noise Barriers, Load Rating/Analysis, Pedestrian Bridges, Bridge Inspection; Facilities & Site - K-12 & Higher Education Facilities, Building Inspections & Renovations, Parking Garages, Marine Structures (Boat Ramps, Piers, Bulkheads)
- ▶ **Water Resources & Environmental:** Roadway Drainage - Stormwater Management (SWM), Erosion and Sediment Control (ESC), and Drainage Design, SWM Best Management Practices (BMPs) / Low Impact Development (LID), Drainage Assessment & Design; Water Resources - National Pollutant Discharge Elimination System (NPDES) & MS-4 Compliance, Total Maximum Daily Loads (TMDL) Requirements, Water Quality/Water Quantity Treatments, Pollutant Load Analysis; Hydrology & Hydraulics - Storm Drainage Systems, Bridge Scour Analysis, Floodplain Studies, Flood Control Analysis, Dam Breach Analysis, Outfall Analysis/Design, Watershed Assessments; Environmental - Environmental Permitting, GIS Analysis & Mapping, Stream Restoration/Stabilization Design
- ▶ **Construction Management & Inspection:** CMI - Inspection, Construction Management; Project Controls (Claims & Scheduling) - Construction Planning and Management (CPM) Scheduling, Claims Analysis Disputes Resolution, Change Order, Constructability, Shop Drawing, & Environmental Compliance Reviews

BAI will provide on-call civil and site engineering services required by the Town for period of three years with potential extensions task-by-task basis. Further, BAI will support the Town to design new facilities, municipal civil engineering projects, and support construction management. BAI will function as the Town's representative engineer on an as needed basis for scopes and services mentioned above.



CONTRACT MANAGEMENT

Contract Liaisons: Mahendra Bastakoti, PE (Primary) and Ray Dagher, PE (Secondary and QA/QC manager) will serve as liaisons for this contract. They have over 50 years of combined engineering experience in civil and site engineering design and management for various state, local and, cities/town projects.

BAI and subs will meet with the Town for on-call civil and site engineering tasks before starting work after NTP.

Contract Team: BAI will utilize the following MBE subconsultants on a task-by-task basis. BAI will manage, coordinate, and review all work performed by each MBE providing the following services:

- **Bengal Engineers LLC (BENGAL), MBE/DBE/SBE #21-269:** Survey and Utility Designation Services
- **DMY Engineering Consultants Inc. (DMY), MBE/DBE/SBE #14-473:** Geotechnical Services

Engineering Standards and Guidelines: BAI will perform all contract survey and engineering services in accordance with the current editions of all references, interim specifications, successor replacement references, etc.

SUPPORT & ADMINISTRATIVE

Documentation & Invoices: BAI will keep accurate records documenting time, materials, transportation and will establish/maintain project scopes, schedules, and budgets. BAI will submit one combined monthly invoice that includes progress reports, outstanding issues, time, expenses, materials, subconsultants.

Management & Compliance: BAI will provide expert management and scheduling for the Town Projects as the lead designer. BAI will also review drawings and permits associated with access management private developers. All work will be signed/sealed by a MD licensed PE, LA, and surveying by a MD PLS.

Emergency Response: Both contract liaisons will be available immediately without substitutions and requested services will be provided within 24-hours.

Coordination and Meetings: BAI will provide proactive communication and coordination across multiple disciplines throughout all stages of design with the Town and permit agencies.

TECHNICAL SCOPE OF SERVICES

Planning and Preliminary Design: BAI will develop or review conceptual designs, alternatives, reports, estimates, and recommendations. This may include development of project purpose/need, existing conditions, proposed alternatives, summary of impacts, construction costs, and apply context-driven practical design with design innovation.

Roadway/Sidewalk Design: BAI will prepare and review final design and construction documents (PS&E) for various roadway/sidewalk projects. BAI will prepare reports indicating the findings and recommendations. This includes 'Practical Design' and Value Engineering utilizing principles of Context Sensitive Solutions (CSS), Complete Streets, and "Thinking Beyond the Pavement" principles. Design will include horizontal and vertical alignments, typical sections, geometric improvements, grading, congestion relief, pavement widening, ADA compliance, realignments, pavement reconstruction and rehabilitation, capacity improvements, and bike and pedestrian safety.

Storm Drainage Systems: BAI will prepare storm drainage design as per Town/ or SHA drainage design standards guidelines. BAI will complete drainage plans, reports, estimates for the drainage projects.

ADA, Bicycle, Pedestrian Facilities: BAI will develop and review to enhance pedestrian and bicycle safety and apply practical design as countermeasures to reduce impacts and costs. This includes determining ADA Compliance (Level 1, 2 or 3) performing field visits, site evaluations, and right of entry agreements. Apply for ADA and bike waivers and prepare bicycle level-of-comfort (BLOC).

Structural Design: BAI has bridge and structure department to support for structure design projects as well as to support projects for structural components design and analysis. This may include design, analysis, inspection, reviews for retaining walls, box culverts, bridge rehabilitation or deck replacement, storm drain structures, foundations, buildings, etc.



Hydrology and Hydraulics (H&H): BAI will provide design, review, permitting and inspection necessary to secure applicable permits. Perform field investigations, condition assessments of existing structures, outfall stability, address maintenance issues or citizen drainage complaints. Culvert analysis (HY-8), stream/watershed modeling (HEC-RAS), floodplain determination, stream relocation, stream restoration, sediment transport, scour, stream geomorphology, fish and Aquatic Organism Passage (AOP); design of open/closed drainage systems: including ditch or riprap design, stabilization, freeboard; storm drain inlets, pipe sizing and capacity, outfall structures; HGL computations and development of storm drain profiles and schedules. BAI will submit to the Prince George's County DPIE for review, address comments for all necessary approvals.

Stormwater Management (SWM): BAI will submit design report and plans to the Prince George's County DPIE for review and will address the review comments from associated review agencies depending upon the nature of project.

Erosion & Sediment Control (ESC): BAI will complete design, will provide the design to the Town for review, and will address the review comments.

Lighting Engineering Design and Analysis: BAI develops designs for roadway and pedestrian lighting engineering, signing and pavement marking, signalization, MOT, traffic analysis reports with recommendations, traffic operations, and safety analysis. BAI will develop MOT plans for staged construction or detours for roadway closures and evaluate alternatives.

Geotechnical: Our subconsultant, DMY Consultants Inc. will provide geotechnical services, including performing soil borings for proposed stormwater management facilities, pavement borings, foundation borings for structures, pavement analysis and design. The work will include field explorations and laboratory testing such as soil sampling, infiltration testing, rock coring, standard penetration tests, etc..

FIELD SURVEYS

Surveying and Plats: Our subconsultant, Bengal Engineers LLC will perform, collect, and, review all surveying and right-of-way (ROW) services. Our team will obtain survey books, monumentation, and establish controls and datum horizontal (NAD 83/91) and vertical (NAVD 88). Perform topographic survey, aerial, GIS/GPS, or collect stream cross sections. Construction stakeout and as-built survey. Perform deed and plat research, develop property mosaics and boundary work maps, perform metes/bounds and right-of-way survey, and develop ROW plats.

PUBLIC INVOLVEMENT & OUTREACH

BAI will provide support as an extension to Town staff throughout the entire process to enhance public awareness and promote community "ownership" of projects. Provide attendance and support during informational workshops, public meetings, and virtual public meetings. Development of presentations or display boards, before & after visualizations, simulation models, brochures, website development, etc.

CONSTRUCTION PHASE SERVICES

BAI will attend pre-bid, pre-construction, utility meetings, and project field review. We will prepare bid justifications, review of shop drawings, change order requests, construction claims, expert testimony, value engineering reviews (VE), and constructability reviews. We will respond to contractor requests for information (RFIs), prepare addendum, red-line or green-line revisions.

CONTRACT DOCUMENTS

Develop and review all project deliverables including plans, cross sections, specs, special provisions, and estimates at each milestone (PI, Semi-Final, FR, and PS&E) in accordance with prevailing CAD standards using Microstation and OpenRoads Designer software by Bentley Systems. Utilize Estimator to develop cost estimates.



ENVIRONMENTAL PERMITTING

BAI will develop and review all environmental documentation necessary to obtain the required permits.

- ▶ **Wetlands/WUS:** Delineation of all wetlands, WUS, buffers, and potential mitigation. Preparation of JPA application and impact plates for alteration to any wetlands, waterways, floodplains or associated buffers.
- ▶ **Forest:** Prepare NRI/FSD, specimen tree identification, forest conversation plans, reforestation, roadside tree permits.

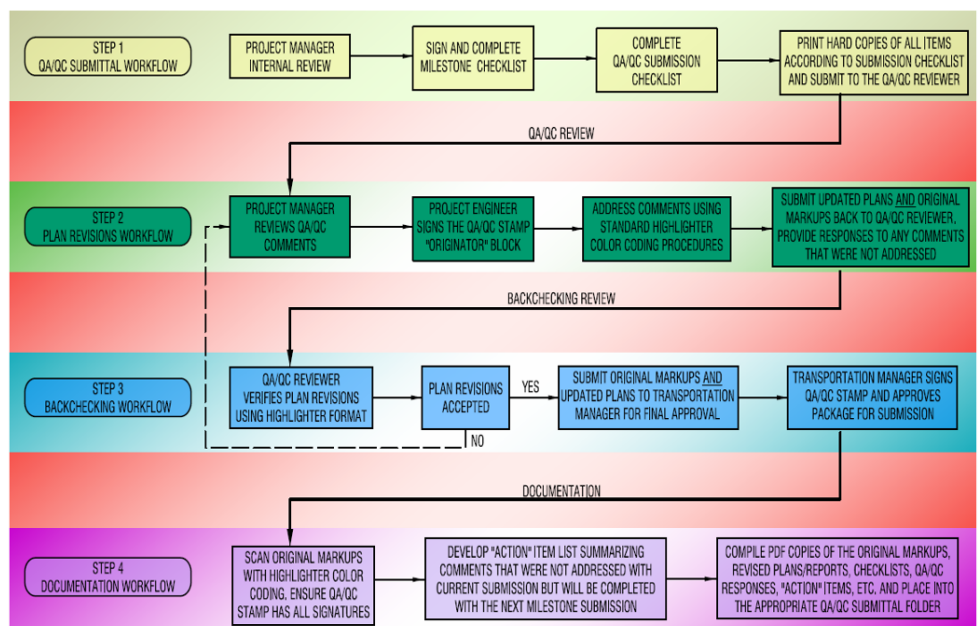
URGENT ON-CALL PROJECTS & INNOVATIONS

BAI and our subconsultants will respond to the Town’s request for urgent and special project request promptly within the same day and start working on the design immediately after the limited Notice to Proceed (NTP) with high priority to meet the urgent repair /maintenance and/or special projects related to public safety. One example of the project BAI completed decent size project is presented below with innovations implemented:

- ▶ **MD 404 Dualization Design/Build:** For SHA-OHD, BAI completed roadway, sidewalk, drainage, and traffic design and obtained environmental permits (Join Use Permit, JPA) on an accelerated 6-month design schedule. BAI obtained Letter of Intent (LOI) approval for SWM/ESC concept for the proposed improvements associated with MD 404 Dualization. All design work was completed within an accelerated 6-month schedule and required significant coordination with design consultants, SHA Offices, utility companies, permit agencies, stakeholders, etc. to ensure the applicable permits were issued prior to advertisement and award of the design-build project. As a result, BAI was awarded the Certificate of Appreciation by SHA-OOS for our H&H studies by “demonstrating a true spirit of teamwork, great responsiveness, willingness to listen, and moved quickly to produce high quality studies”.

QA/QC & CONSTRUCTABILITY

Ray Dagher, PE, will handle the role of QA/QC manager for the Town projects. Proper Quality Assurance/Quality Check (QA/QC) of engineering design in every phase helps to complete a project with high quality design within the allocated budget and schedule. Therefore, BAI will implement and enforce strict QA/QC program (including subs) during design and construction for all project deliverables. MD registered/certified PE, LA, or PLS will be involved for QA/QC at all stages of plan development, milestones, submittals including Value engineering (VE) and constructability reviews, bid costs, and bid ability. BAI has two expedited Plan Reviewers involved previously in Maryland Department of Environment and Maryland State Highway Administration Plan Review Division and worked for MDOT projects. The two reviewers will be assigned as independent reviewer for the Town projects for review and evaluation of design plans, specification, estimates, and reports prepared by BAI and subconsultants including supporting the Town to review of design documents prepared by others. Presented below is step-by-step QA/QC process we will implement in each and every Town projects to assure high quality deliveries on time. BAI’s QA/QC process is as follows.





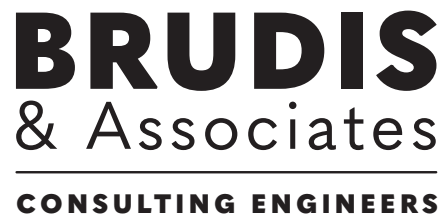
SUBCONSULTANTS



Bengal Engineers LLC (BENGAL) is an MDOT Office of Minority Business Enterprise certified DBE/MBE/SBE civil-engineering firm (MDOT Certificate No. 21-269) that provides engineering, surveying, and mapping services and Inspection Services. The core engineering services are centered on planning, assessment, feasibility, design reviews and permitting, inspection and compliance. The Environmental and Water Resources services include erosion control, new and retrofit design of stormwater management facilities, MDE small pond and MD code 378 pond, hydrologic/hydraulic (H&H) modeling, watershed analyses, MDE Simple and Full Dam Breach Analyses, storm drain systems, energy-dissipating devices, outfall stabilization, stream crossing or restoration, culverts/bridge hydraulics, Flood Risk Assessments & Mitigation, LOMRs and CLOMRs, Inundation Mapping, NPDES MS4 General Permitting Compliance and other environmental compliance issues. The Site Engineering services include low impact and sustainable site development and local, State, and Federal permitting assistance. The Utility Engineering services include conflict analysis, new and relocation design, CCTV pipe analysis and repair, plan reviews. The Field inspection services include monitoring installation of utility pipeline, erosion and sediment controls; Condition assessment, facility repair inspection, Outfalls/BMP performance rating recommendation and Storm Drain Inventory Field Verification. The Traffic Engineering services include design for Maintenance and Protection of Traffic, Roadway directional Signage Design, New and Improvements to Signal design, Pavement Marking and reconfigurations, Roadway Safety Audits (RSA), Guardrail inspection and design, speed studies, stop sign control design studies, Roundabout Designs, Traffic Impact Studies, Speed Studies, Turn Lane requirement Studies, Turn Lane length Exception Studies, crash fatality analysis and reports. The Land Surveying Services include Surveying and Mapping for facilities, Infrastructure, and transportation projects. The Structural Engineering Services include Concrete Inspections (post-tension concrete structural steel, masonry, wood construction), Shop Drawing (review of structural construction drawing in concrete and steel fabrications), Structural Analysis and Design (small buildings, foundations, slab on grade with document review and submission to client and reviewing agencies for approvals.



DMY Engineering Consultants Inc. (DMY) was founded in 2009 with the mission to provide cost effective engineering solutions to clients throughout the Mid-Atlantic region. DMY is a minority-owned firm, and is a certified MBE/DBE/SBE by MDOT (Certification No. 14-473). DMY's expertise lies in providing geotechnical site investigation, drilling, instrumentation, geotechnical design and analysis, laboratory testing, construction materials testing/inspection, facilities and building enclosure services, environmental services, construction management. DMY currently has eleven (11) Professional Engineers on staff, and those engineers are supported by a team of professionals including staff engineers, drillers, inspectors and administrative staff. DMY staff is highly experienced in managing and delivering complex geotechnical and construction testing/inspection projects on time and within budget constraints, and all staff uses a web-based electronic project management and report delivery system, DMY Manager®, to efficiently manage projects. DMY has an in-house drilling division that owns and operates a fleet of five (5) drilling rigs, allowing the firm to be on project sites quickly, and to meet the demands of projects with tight deadlines. DMY also has an accredited, in-house AASHTO-certified (AMRL) soils and concrete laboratory.



B

QUALIFICATIONS OF THE BIDDER



ON-CALL CIVIL AND SITE ENGINEERING SERVICES
RFP 001-2025 | TOWN OF BLADENSBURG



MAHENDRA BASTAKOTI, PE

Project Manager



Mr. Bastakoti is a Maryland Registered Professional Engineer with over 29 years of experience in water resources and environmental analysis and design. He specializes in hydrologic and hydraulic modeling, NPDES MS4 and TMDL criteria, water quality and quantity control, environmental permitting, and the design of stormwater management best management practices, erosion and sediment control, storm drain system outfalls,

culverts, and stream restoration. Relevant projects include:

New Windsor Wetland SWM Facility, Carroll County Resource Management.

Project Manager who worked with the Carroll County Bureau of Resource Management (BRM), in partnership with the Town of New Windsor, to work to meet the requirements of the NPDES permit. BRM wanted a detailed design of a new wetland facility adjacent to the Maryland Midland Railroad tracks. Significant erosion has been observed at this outfall, threatening the infrastructure. The goal is to provide water quality treatment, channel protection, and management of the 2- and 10- year storms back to forest/meadow conditions.

Monterey Avenue Sidewalk, Anne Arundel County DPW, Odenton, Maryland.

Project Manager to enhance walking conditions and drainage along Monterey Avenue between Odenton Road and June Drive by developing plans and constructing improvements including, but not limited to, the following: curb; gutter; sidewalk; handicap ramps; stormdrain appurtenances (manholes, pipes, inlets, underdrains); roadway pavement (subgrade, surface / base asphalt, milling); stormwater management; pavement markings; signing; and other roadway appurtenances. Total project length was approximately 2,500 LF.

MD 210 Pedestrian and Bicycle Study, MDOT SHA OPPE. Project Manager responsible for improvement pedestrian and bicyclist safety and connected by providing much needed facilities along the MD 210 corridor. Calculated the project's total impervious area requiring treatment (IART) for each of the proposed improvements. Performed preliminary analysis of current SWM, watershed description, land use, soil type(s), hydrology, runoff curve numbers, and preliminary ESD sizes. Developed concept drainage design for improvements identified with preliminary SWM facility sizing and locations, and a stormwater management report with cost estimates for the concept designs. Also provided oversight of the environmental studies and reports, a desktop inventory, and assistance with the environmental technical reports, and drafting.

Gateway Harbor SWM Pond Improvements, City of Bowie DPW. Project Manager who retrofitted existing facility to treat more impervious area and achieve toward City's NPDES/MS4 permit goals. The proposed design concept is a wet pond with extended detention that will provide additional storage and treatment. The proposed concept recommends excavating existing pond bottom and creating forebays to achieve the goal. The goal and commitment are to provide support to the City to maximize impervious area credit in the most cost-effective way, secure design approvals and permitting, and prepare final construction and bid documents.

MD 413 Bike Path Drainage Revisions, MDOT SHA, Westover, Maryland. Project Manager responsible for drainage analysis and report, SWM/E&S design additions, and environmental delineation, survey, and permitting. The additional out of scope activities include: preparing a drainage report detailing the existing/proposed drainage system; designing outfall protection downstream of all proposed culverts; performing hydraulic modeling on the existing storm drain systems at all POI locations; preparing SWM profiles; SWM facility number request; and preparation of as-built data tables. It is assumed that MD 413 will need to remain open for traffic for any culvert replacement crossing MD 413. The current proposal includes maintenance of traffic design and plans development along MD 413 for up to 15 pipe culvert replacements.

Mohrs Lane Retaining Wall, Baltimore County DPW. Project Manager for drainage design and stormwater management (SWM) for the construction of a 160' grade separation retaining wall along to reduce grading impacts to an existing wetland area. Assisted the county during the bid phase services and provided construction phase support services and overall coordination, project management, and QC reviews.

Professional Registration

2010 / Maryland
Registered Professional
Engineer #39910

MDE Responsible
Personnel Certification
#RPC007735

MDOT Erosion and
Sediment Control Yellow
Card #78082562

MDOT Traffic Control
Manager

Education

MS / 2007 /
Environmental
Engineering

BSCE / 1994 / Civil
Engineering

Relevant Experience: 29



BAI RAY DAGHER, PE
QA/QC



Mr. Dagher is an experienced professional engineer with over 39 years of experience. Mr. Dagher has successfully prepared construction plans, specifications, and cost estimates for improvement projects, which have involved safety grading, open channel and closed drainage, regulatory and environmental permitting; pedestrian safety; utility identification; stakeholder coordination, right-of-way, ADA compliance and erosion and sediment control. In addition, Mr. Dagher has significant experience in project management including quality control, subconsultant coordination, project scheduling and staff assignments. Relevant projects include:

Washington Avenue Feasibility Study, Charles County DPW, Charles County, Maryland. QA/QC Manager responsible for developing a feasibility study and concept roadway design plans for intersection improvements along Washington Avenue in La Plata, Maryland. The feasibility study included the possibility of providing dedicated left-turn lanes at the intersections of Talbot Street, Cecil Street, Hawthorne Drive, and Shining Willow Way. The scope also included the preparation of a detailed report containing preliminary roadway alignment sketches for each of these intersections with Washington Avenue; evaluation of existing tax maps and identifying proposed right of way needs, evaluation and identification of Stormwater Management needs and possible location for BMP facilities; Identification environmental impacts and utility impacts; evaluation of left turn warrant analysis, storage length calculations, identification of required permits and development of cost estimates for each intersection improvement.

Traffic Engineering Services, Statewide, MDOT/SHA. QA/QC Manager for open-end traffic engineering services agreement. Tasks have involved traffic signal design, traffic signal warrant studies, highway signing and lighting and detailed traffic engineering studies. Responsible for coordination of task assignments, project schedules, technical engineering, and staffing.

MD 32 at Johnsville Road and Bennett Road Intersection Improvements, MDOT/SHA, Carroll County, Maryland. QA/QC Manager responsible for the construction plans, specifications, and cost estimates for intersection improvements to MD 32 (Sykesville Road) at Johnsville Road and Bennett Road. Responsible for horizontal geometry for widening to add turn lanes, superelevation, relocation of traffic barrier, environmental site design (ESD) including bio-swales swales for stormwater management, quantity control pond, erosion and sediment control, open channel and closed drainage modifications, and regulatory compliance.

Monterey Avenue Sidewalk, Anne Arundel County, Maryland. QA/QC Manager responsible for developing design plans improvements along Monterey Avenue between Odenton Road and June Drive. The design involved horizontal alignment, vertical alignment, typical sections, pavement details, roadway plans, roadway cross sections development, curb/sidewalk layout plans, stormdrain plan and profiles, addition of ADA compliant and ramps, stormwater management and erosion and sediment control design per Anne Arundel County DPW and AASCD requirements. Involved preparation of public display boards and participation in public information meetings.

Town of Chesapeake Beach Safe Routes to School (SRTS), Town of Chesapeake Beach, Maryland and SHA. QA/QC Manager responsible for developing complete construction documents for ADA compliant sidewalk along MD 261 (Bayside Road) and Old Bayside Road as part of the MDOT-SHA SRTS program. Involved design of approximately 1/2 mile long sidewalk, curb & gutter, ADA ramps, pedestrian bridge, two retaining walls, stormwater management and storm drain. Involved coordination with the Town, County, and state review agencies for permitting as well as to obtain NEPA Programmatic Categorical Exclusion (PCE).

Office Street / Courtland Street Improvements, Town of Bel Air, Maryland. QA/QC Manager responsible to develop preliminary through final design plans to provide a safe, efficient, convenient, and aesthetically pleasing environment around the Court House, and improve two roadways (Office Street and Courtland Street) that run parallel to the Court House. Designs include roadway and lane configuration improvements, reduction of vehicular lanes, parking reconfiguration, green space expansion, permeable pavements, drainage, SWM/ESC, rain gardens, pedestrian ramps, signing/pavement marking, traffic control, new benches, lighting, and wrought iron fences.

Professional Registration

1997 / Maryland
Registered Professional
Engineer #22717

Education

MSCE / 1988 / Civil
Engineering
BSCE / 1982 / Civil
Engineering

Relevant Experience: 39



SHAYAQ AHMED, PE, PTOE

Project Engineer



Mr. Ahmed is a registered professional engineer with more than 20 years of engineering experience. His expertise includes highway design, horizontal and vertical alignments, sidewalks and ADA compliance/upgrades, bicycle lanes, traffic and feasibility studies, the establishment of right-of-way needs, signing and pavement markings, erosion and sediment control, stormwater management, maintenance of traffic plans, as well as quantities and cost estimates. Mr. Ahmed is also knowledgeable and experienced in AASHTO and MUTCD criteria. Relevant projects include:

ADA Pedestrian Design Services-FY 18/19/20, SHA. Project Engineer responsible for the evaluation and upgrade of existing sidewalk ramps and traffic barriers for a stretch of various existing roadway segments in Montgomery and Prince George's Counties. Completed a field verification of existing sidewalk ramps for ADA compliance and provided recommendations for upgrades to meet the latest ADA criteria, removal, and reconstruction of curb and gutter at sidewalk ramp improvement locations. Evaluated existing traffic barriers per MDOT SHA/AASHTO criteria and subsequent design of the necessary barrier replacements needed to meet current MDOT SHA standards, and length of need calculations. Also developed right-of-entry agreements, quantities, estimates, and special provisions.

Dorsey Run Road Improvements, Howard County DPW. Project Manager for the roadway design to upgrade 1.2 miles of Dorsey Run Road from an existing 2-lane rural roadway to a major collector with two 12-foot travel lanes, a 6' buffer, a 10-foot shared-use path, and a 6-foot sidewalk. Also coordinating the preliminary bridge replacement design options for the bridge type, span, girder depth, and waterway opening for optimum hydraulic performance since flooding of the Dorsey Run Bridge is a frequent issue. Impacts on the floodplain and stream, ROW, and coordination with the CSX railroad are all design constraints that are being considered in the design.

Regional Agricultural Center – Center Design, St. Mary's County Government, Charlotte Hall, Maryland. Project Engineer responsible for professional consulting services for the St. Mary's County Government (County) to obtain concept design services for a new Regional Agricultural Center. Responsibilities included conducting a thorough evaluation of the site to understand the best use of the property to locate the requested amenities and to determine all constraints on the development of the site. Performing a desktop review of critical environmental/historical features, preliminary concept layouts, site feasibility and impacts evaluation, cost estimates, and documenting the findings in a feasibility study report.

MD 413 Bike Path – Drainage Revisions, Westover, Maryland. Project Engineer for preparing a drainage report detailing the existing/proposed drainage system, designing outfall protection downstream of all proposed culverts, performing hydraulic modeling on the existing storm drain systems at all POI locations, preparing SWM profiles, SWM facility number request, and preparation of as-built data tables. It is assumed that MD 413 will need to remain open for traffic for any culvert replacement crossing MD 413. Responsibilities include maintenance of traffic design and plan development along MD 413 for up to 15 pipe culvert replacements.

Areawide Geometric Improvements, MDOT SHA, Montgomery and Prince George's County, Maryland. Project Engineer responsible for the development of minor intersection/roadway geometric improvement plans for an areawide improvement project. The project consisted of seven intersections/roadway segments involving minor geometric improvements to improve the safety of pedestrian and vehicular traffic. The scope of the work included a topographic survey, utility designation, roadway geometric design, SWM exemption documentation, development of ADA sidewalk improvement plans, and signing and marking plans. The project also included the development of 100% design plans and estimates for the construction.

Professional Registration

2009 / Maryland
Registered Professional
Engineer #37639

2019 / Professional Traffic
Operations Engineer
#4590

MDE Responsible
Person Certification #
RPC021827

Education

MSCE / 2004 / Civil
Engineering

BSCE / 2000 / Civil
Engineering

2015 / Pedestrian Safety
Enforcement Operations

2015 / Earthwork
Excavation Series,
National Highway Institute

Years of Experience: 20



BILLY BRUDIS, PE, DBIA

Project Engineer



Mr. Brudis has more than 15 years of experience in project management, civil/site design for government facilities involving feasibility studies, site surveys, operational analysis, design development from schematic through final construction PS&E, regulatory and environmental permitting, pedestrian safety, utility identification/relocation, and stakeholder coordination.

Projects have involved site development, geometric and roadway design, parking and capacity improvements, ADA compliance, stormwater management (SWM) using BMP and LID facilities, environmental site design (ESD), open channel and closed drainage, erosion and sediment control (ESC), safety grading, maintenance of traffic (MOT), athletic field and recreational areas. Relevant projects include:

MD 410 at MD 212 Intersection Improvements, Prince George's County, Maryland.

Civil Engineer responsible for Quality Control/Quality Assurance for the preparation of construction documents for the \$1.5 million capacity and safety improvement project located in Chillum, Prince George's County. Design services included reconstruction of an existing signalized intersection to add a second left-turn lane along westbound MD 410 for vehicles turning onto southbound MD 212. The main purpose of the project was to improve the operating efficiency of the intersection. Responsible for QA/QC and project oversight to ensure the project was finished within the budget and schedule by performing design reviews prior to each milestone, constructability reviews, value engineering, and overall project coordination.

Hamilton Street Corridor Improvements, City of Hyattsville, Maryland.

Project Engineer responsible for the preparation of complete construction plans for the \$1M urban streetscape project. The design included geometric realignment, traffic calming, curb/gutter, sidewalk retrofitting, bicycle lanes and on-street parking, landscaping, pedestrian lighting, concrete bus pads, signing/pavement markings, MOT, public involvement, cost estimates, construction specifications, drainage, sustainable SWM, ESC, and ROW.

MD 410 from MD 201 to Mustang Drive, Prince George's County, Maryland.

Civil Engineer responsible for Quality Control/Quality Assurance for the preparation of construction documents for a \$3.1 million safety and spot improvements project along MD 410 in Riverdale, Maryland because of pedestrian fatalities. The project included traffic calming measures by eliminating one through lane to accommodate a bike lane and continuous pedestrian sidewalk in both directions of MD 410. Other improvements included the installation of a new traffic signal and crosswalks at MD 410 and Riverdale Rd/58th Avenue, SWM facilities, upgrading traffic barriers, and signing and pavement marking upgrades to the latest MD-MUTCD requirements. Responsible for QA/QC and project oversight to ensure the project was finished within the budget and schedule by performing design reviews prior to each milestone, constructability reviews, value engineering, and overall project coordination.

Environmental Compliance Engineering Services, Carroll County Department of Land & Resource Management.

Project Engineer for QA/QC review of several NPDES MS-4 related tasks under the multi-year on-call contract to provide analysis and development of designs for new and retrofit stormwater management best management practices (BMPs); floodplain and dam safety analysis and permitting; erosion and sediment control; landscape and forest conservation compliance; County, USACE, and MDE permitting; and GIS services using ArcGIS. Tasks included the anti-beaver trash rack at Krimgold Park, and stormwater management retrofit projects at Trevanion Terrace, Elmer Wolfe Elementary School, and Carroll County Health Center.

Tanyard Springs Park Feasibility Study, Anne Arundel County DPW.

Quality Control manager for the feasibility report and concept plans for the proposed park and future elementary school. Identified site constraints and challenges and developed concept site layouts for the functionality, layout, site limitations, and accommodations for the developments. Park amenities include multi-purpose grass fields, a baseball/softball diamond, a playground, a basketball court, a pavilion, and 200 parking spaces. The layout of the amenities incorporates the long-term plan for one of the multi-purpose fields to be replaced by the future school building. Stormwater management concepts utilized ESD to the MEP, and concept plans incorporated recommendations based on the findings of crash and capacity analyses to mitigate safety and operational issues.

Professional Registration

2012 / Maryland
Registered Professional
Engineer #42451

2019 / Designated
Design-Build Professional,
DBIA

Education

BSCE / 2008 / Civil
Engineering

Years of Experience: 15



REDEAT LODAMO, PE, PTOE

Roadway Engineer



With 23 years of experience, Mr. Lodamo's expertise includes the development of complete construction plans for projects involving geometric design, roadway alignment/reconstruction, intersection improvements, bicycle lanes, ADA sidewalks/paths/trails, sight distance improvements, streetscape/traffic calming, utility coordination, and public participation. He also has provided

analysis and design for green spaces, stormwater management and regulatory permitting, erosion and sediment control, water quantity and water quality control, safety grading, and environmental compliance. Relevant projects include:

MD 410 at MD 212-Schematic, SHA, Hyattsville, Maryland. Roadway Engineer who provided supplemental schematic design services to add additional improvements to MD 410 at MD 212 intersection improvement project.

I-81 at Showalter Rd Interchange, SHA, Hagerstown. Roadway Engineer who provided transportation engineering design services for the development of construction documents for improvements the IS-81 Interchanges at Showalter Road to improve traffic operation.

MD 41 Corridor Study, SHA, Baltimore County, Maryland. Roadway Engineer who provided professional transportation engineering design services for three intersections along MD 41 (Perring Pkwy) in Baltimore County, Maryland. The intersections are MD 41 (Perring Pkwy) at Hillsway Ave/McClearn Blvd, MD 41 (Perring Pkwy) at Oakleigh Road, and MD 41 (Perring Pkwy) at Taylor Ave. The studies will be in accordance with the draft MD 41 Corridor Study (dated 7/11/23) proposed improvements.

Monterey Avenue Sidewalk, Anne Arundel County DPW. Roadway Engineer responsible for developing the design for 2,500 of sidewalk and roadway improvements along Monterey Avenue to improve the roadway, pedestrian accessibility, and drainage. Designed new ADA compliant sidewalk and ramps, curb & gutters, and full depth paving, milling, and resurfacing to rehabilitate the existing roadway. Developed stormwater management, and erosion and sediment control design per Anne Arundel County DPW and AASCD requirements. Prepared public display boards and participated in the public information meeting and coordinated with the many stakeholders involved.

MD 180 Drainage Improvements, MDOT/SHA, Frederick, Maryland. Roadway Engineer for highway widening project that involved a new bridge along eastbound MD 180 (south of the existing bridge over US 15/340), widening and resurfacing of the existing roadway, improvements to the existing closed and open drainage system, construction of ESD practices to meet water quality and ponds for quantity control, ADA/bicycle accommodations including new sidewalk and ADA ramps, and intersection improvements. Responsible for the design and plan preparation for eight bio-swales, a micro-bioretenion, two dry ponds, storm drain and culvert upgrades, and erosion and sediment control plans.

Queenstown Parking Lot Expansion, Anne Arundel County DPW. Roadway Manager for the estimated \$1.1M design of the asphalt parking lot expansion project on an existing softball field at Queenstown Park. Included lighting plans, signing, and striping plans, stormwater management, and construction phase services. Developed two concept alternatives with estimated costs for each option. Designed a single entrance and exit road to the new parking lot, the reconstruction of an existing ADA concrete ramp, and the expansion of a walking path. Presented the project design to the local community at a public meeting.

Odenton Library Community Park, Anne Arundel County DPW. Roadway Engineer responsible for preparation of complete construction documents for development of community park. Provided complete site design including site layout for various park amenities, such as ¼ mile asphalt trail, parking lot expansion, playground, pavilion, bocce court, horseshoe court, pedestrian boardwalk for stream crossing, and viewing decks. Permitting services included grading permit through the County and SCD, various modification approvals for stream impact, forest clearing, flood plain impacts, and preparation of amended plats for forest conservation easements.

Professional Registration

2011 / Maryland
Registered Professional
Engineer #40229

MDE Responsible
Personnel Certification
#RPC017130

2022 / Professional Traffic
Operations Engineer
#5261

Education

MSCE / 2011 / Civil
Engineering

BSCE / 1999 / Civil
Engineering

Relevant Experience: 23



PUSKAR KAR, PE, PTOE

Roadway Engineer



Mr. Kar has a proven track record in successfully delivering projects, programs, engineering, and management functions dealing with planning, design, and construction of Civil Engineering and Site Development projects. His duties have involved performing engineering studies, operations analysis, feasibility, preliminary engineering including preparation of

conceptual designs and major quantities cost estimates and performing detailed designs of new construction and reconstruction projects in utilizing Design/Bid/Build and Design/Build procurement. Relevant projects include:

MD 5 Intersection Improvements at Burch Hill Road/Earnshaw Drive & Moores Road Concept Development Study, MDOT/SHA, Clinton, Maryland.

Roadway Engineer who evaluated the project impacts and developed conceptual design drawings for two design options at the intersections of Burch Hill Drive/Earnshaw Drive at MD 5 and Moores Road at MD 5, which are equipped with Intersection Control Beacons (ICBs) but are currently not operational. Investigated the existing conditions at both intersections and within the proposed project improvements limits; evaluated the sight distances needs, impacts/restrictions of vertical grades on sight distances at J-turn locations; identified any safety concerns and possible solutions; identified environmental impacts; utility impacts, right-of-way needs. Performed field investigations to observe site topography, potential environmentally sensitive areas, sight distances, visible utility conflicts, and other existing site conditions.

MD 201 Urban Reconstruction Project, Bladensburg, and Riverdale Park.

Lead Design Engineer for the \$20M urban reconstruction project that reduced existing lane and shoulder widths to install exclusive bike lanes and sidewalks, enhancing pedestrian and bicycle safety and accessibility to transit. Prepared the geometric design, final engineering plans, specifications, and itemized cost estimate. Additionally, the project improved existing storm drains and stormwater management systems, existing traffic signing, pavement markings, and traffic signal and intersection lighting upgrades.

MD 103 Sidewalk from Long Gate Parkway to Ellicott Mills Middle School Concept Development Study, SHA.

Roadway Engineer for the development of a conceptual design for the missing sidewalk segment and associated improvements, required permits, and a timeline to identify, program, and allocate funds for these improvements' final design and construction. The purpose of the project was to improve the accessibility and mobility of pedestrians between Ellicott Mills Middle School and Long Gate Parkway. The improvements included new ADA-compliant sidewalks, curb ramps, and crosswalks.

Queenstown Parking Lot Expansion, Anne Arundel County DPW.

Roadway Engineer for oversight implementing BAI's Quality Management Plan QA procedures throughout the project, including but not limited to review of the scope of work and fee proposal, weekly project progress updates, QC reviews of milestone submittal documents to perform design checks for compliance with design codes and accuracy, backchecking of comment resolution. This project's scope included expanding the Queenstown Park parking lot. Queenstown Park is a 26.5-acre park featuring one multipurpose field, two baseball fields, basketball courts, roller hockey courts, a playground, a pavilion, two small parking lots, and walking trails. This project expanded the Department of Recreation and Parks site improvements to add additional parking on the existing softball field.

MD 4 Side Path, St. Mary's County DPWT.

Roadway Engineer who developed concept design of 1/3 mile of side path for use by bicyclists and pedestrians along MD 4. This concept design included three major tasks: liaising with stakeholder communication, identifying and minimizing potential impacts of the proposed improvements while maximizing the utility of the side path, and designing the side path. An 8-ft paved side path with a 5-ft buffer would have significantly impacted right-of-way, wooded areas, overhead utility poles, and parking lots of the adjacent businesses, so the design was changed to minimize these impacts and costs while maximizing the utility of the path. A retaining wall was proposed to reduce the volume of earthwork and the right-of-way needs.

Professional Registration

2006 / Maryland
Registered Professional
Engineer #35297

2019 / Professional Traffic
Operations Engineer
#4593

05/2023 Maryland
Responsible Personnel
Certification # 023022

Education

MSCE / 2004 / Civil
Engineering

BE / 2001 / Civil
Engineering

Relevant Experience: 22



ANKUR PATEL, PE

Water Resources Engineer



Mr. Patel has successfully applied his knowledge in a professional setting to independently function in the preparation of roadway plans, roadway and pipe profiles, design details, site grading, construction sequencing and MOT plans, stormwater management facility inspection, H&H computational methods, storm drain design, stormwater management design, and erosion and sediment control design. Mr. Patel is experienced with H&H modeling programs Win TR-55, Win TR-20, HY-8, HEC-RAS, HEC1, Hydraulic Toolbox, ABScour, AutoCAD and MicroStation. He is experienced in conducting site investigations, SWM maintenance inspections, water quality sampling, asset inspection (inlets, manholes, storm drains, culverts, etc.) and inventories, and compiling on-site design to populate / update GIS databases. Relevant projects include:

Mattapany Road, St. Mary's County Government. Water Resources Engineer prepared and provided drainage and stormwater computations for review by DPWT. This included the submittal of plans, reports, and drainage area maps. Stormwater management design shall be in accordance with the Maryland Stormwater Design Manual, as amended in 2009 to address the Stormwater Management Act of 2007.

Monterey Avenue Sidewalk, Anne Arundel County DPW. Water Resources Engineer for the assessment of the existing drainage system and proposed plans to address all inadequate and substandard aspects of the drainage systems on the project for approximately 2,500 feet of new sidewalk and roadway improvements. Provided inlet and hydraulic computations and outfall stabilization for the proposed storm drains. Implemented environmental site design to the maximum extent practicable (MEP) through retrofitting an existing SWM pond to achieve water quality targets.

MD 717 over Western Branch, MDOT SHA. Water Resources Engineer provided additional professional engineering design services to prepare the preliminary engineering design for the maintenance of traffic design, a drainage report and revisions to stormwater management (SWM) for MD 717 (Water Street) Over Western Branch. Prepared a drainage report detailing the existing/proposed drainage system, designing outfall protection, and eliminating the sheet flow to conservation area due to the concerns of long-term feasibility of sheet flow and associated maintenance. Addressed the elimination of sheet flow to the conservation area an alternate SWM location has been identified within the existing SHA Right-of-Way.

Gateway Harbor SWM Pond Improvements, City of Bowie. Water Resources Engineer for storm drain analysis, HGL computation, and outfall protection designs. The facility was originally designed and constructed as a stormwater management (SWM) facility in 1989 to provide extended detention for the 2-year storm and flood control for the 10- and 100-year storm events for the adjacent commercial and residential development. Outfall analysis within the project limit that was impacted due to proposed stream restoration design. Coordinated with MDE and Prince George's County Department of Permitting, Inspection and Enforcement (PG DPIE) floodplain section to obtain existing condition floodplain information.

Queenstown Parking Lot Expansion, Anne Arundel County DPW. Water Resources Engineer for evaluation of the feasibility of stormwater management (SWM) treatment for the proposed existing parking areas to meet environmental site design (ESD) to the maximum extent practicable (MEP) per the County's regulations. Proposed a bioretention facility in the parking lot and an infiltration basin adjacent to the parking lot to provide quality treatment and achieve quality control. Completed the design and processed permitting through the AA County Inspection & Permits (IP) for grading, SWM and Erosion and Sediment Control.

Regional Agricultural Center Concept Design, St. Mary's County Government. Water Resources Engineer for design of public water connection and private septic system for the proposed 8,926 SF public building in Charlotte Hall, MD. Prepared the concept plan to identify existing/proposed conditions, design constraints, preferred concept layout, anticipated drainage/SWM requirements, anticipated utility/environmental impacts, right-of-way/easement requirements, anticipated permits, and preliminary cost estimates. Responsible for inspection, certification, and as-built drawings for the stormwater management facility.

Professional Registration

2018 / Maryland
Registered Professional
Engineer #52748

2018 / MDOT SHA Yellow
Card Certificate #18-558

MDE Responsible
Person Certification #
RPC029382

Education

BSCE / 2013 / Civil
Engineering

Years of Experience: 11



ARUN GURUNG, PE

Water Resource Engineer



Mr. Gurung has over 10 years of experience in water resources engineering, specializing in hydrologic modeling, erosion & sediment control, drainage, stormwater management, and stream restoration. His expertise includes stormwater management and drainage design, hydrologic and hydraulic analyses of bridges and culverts, and design of streams/channels and best management

practices (BMP) with environmental site design (ESD) facilities. His software expertise includes hydraulic and hydrologic modeling programs and techniques including TR-20, TR-55, HEC-2, HEC-HMS, ABSCOUR, HEC-18 and HY-8 as well as AutoCAD Civil 3D, MicroStation (Inroads), Hydraflow Hydrograph/Storm Sewers, HEC-RAS, and ArcView GIS. Relevant projects include:

Professional Registration

2018 / Maryland
Registered Professional
Engineer #52748

Education

BSCE / 2013 / Civil
Engineering

Years of Experience: 10

Black Walnut Point Shore Erosion Control, Maryland DGS. Tilghman Island, Maryland. Water Resource Engineer for erosion and sediment control to provide erosion control to a long stretch of eroding shoreline along the Chesapeake Bay waterfront saving the existing access road causeway from breaching. Conducted all necessary civil design services including permitting, assisting Maryland DGS, Department of Natural Resources (DNR) in bidding.

St. Clement Shores Drainage System Improvements, St. Mary's County Government DPWT. Water Resource Engineer for design improvement along St. Clement Shores to identify and design of the existing ditches, storm drains and outfalls in Leonardtown, MD to alleviate ponding issues in St. Clements Shores. The task included drainage invert revisions, outfall assessments, providing recommendations pertaining to the drainage issues and securing permits from the county, SCD, MDE, DNR, Metcom, LUGM.

Salisbury Salt Dome, MDOT SHA. Water Resource Engineer in the design of erosion and sediment control plans, notes details and all associated stormwater management design and calculation. Provided services for the design of ESD facilities and erosion and sediment control plans that involves permitting through SHA Pan Review Division (PRD) and Highway Hydraulic Division (HHD). The project involved replacement of the existing timber salt dome structure with a tension fabric structure.

IS-70 Drainage Outfall Improvements, MDOT SHA. Water Resource Engineer in the design to repair and replace existing drainage structures and pipe outfalls and remedy slope failures along pipes along the project corridor at three outfall locations. Prepared detailed design for the pipe replacement, outlet ripraps for erosion and sediment control, embankment slope failure stabilization plan and permitted through SHA PRD and HHD.

MD 26 at Marriottsville Road, MDOT SHA. Water Resource Engineer who provided services for drainage design and layout based on the proposed roadway layout. Prepared stormwater management computations and reports and design erosion and sediment control measures for the proposed improvements. Took the plans through PRD and HHD submittal and permitting.

MD 66 at MD 64, MDOT SHA. Water Resource Engineer who developed the conceptual erosion and sediment control plan and stormwater management plan for the proposed improvement to the intersection of MD 66 and MD 64. Utilized field survey and GIS data to determine the drainage areas and study points. Performed stormwater management computations and developed SWM concept layouts showing the proposed environmental site design (ESD) locations. Carried out hydraulic and hydrologic calculation to calculate pre and post development runoff condition and performed outfall study/analysis.

MD 17 ADA Improvement Final Design, MDOT SHA. Water Resource Engineer who designed conceptual layout and design for the storm drain improvement and performed stormwater management calculation and design for the required ESDv treatment due to the proposed improvements. Carried out outfall analysis and prepared stormwater management reports that supported the concept design for both erosion and sediment control and stormwater management requirements. Prepared plans and submitted for PRD/HHD review and approval.



GREGORY STEVENS

Environmental Scientist



Mr. Stevens specializes in conducting wetland delineations, ecological habitat mapping, waterway quality assessments, habitat assessments, endangered species surveys, and mapping products for submittal. Experience in Terrestrial and Wetland Science, ArcGIS, ERDAS, AutoCAD, MS Office, Flora/Fauna, and GIS data management. Relevant projects include:

MD 413 Bike Path Phase 2C, Somerset County, Maryland. Environmental Expert to complete / review of environmental and cultural resource services to satisfy a multitude of regulations including, but not limited to, wetlands identification and delineations, stream bank stabilization/restoration plans, erosion and sediment pollution control, terrestrial and aquatic habitat analysis, National Environmental Policy Act compliance, threatened and endangered species coordination, Phase I, II, and III environmental site assessments, Natural Resources Inventory, Forest Stand Delineations, and public involvement/community coordination. Greg coordinated with DNR and SHA for wetland/waterways impacts and coordinated/addressed the review comments. Greg coordinated/reviewed Joint Permit Applications. We will collaborate with MES and relevant stakeholders during these investigations and document the findings in reports, databases, permit applications, etc.

Black Walnut Point Shore Erosion Control, Tilghman Island, Talbot County, Maryland. Environmental Scientist responsible for consulting and agency correspondence regarding wetland mitigation measures. Advised mitigation of Phragmites eradication area using standards developed by the Great Lakes Phragmites Collaborative, and direct participation in those studies (2008- 2012) which became the subject matter for Msc. Thesis. These standards have been adopted by federal and state, including Maryland. Defined the ecological communities present, advising the best management practices to achieve restorative outcome efficiently.

Mohrs Retaining Wall, Railroad Crossing near US Route 40 and Philadelphia Avenue, Baltimore County Maryland. Environmental Scientist who inspected prior delineations and met with State Agency representatives. Corrected the extent of the streams bank full width and ordinary high watermark to that of the surrounding fringing wetland areas.

MD 413 Bike Path Phase 2A/2B, Somerset County, Maryland. Environmental Scientist responsible for concept drainage design activities, concept stormwater management (SWM), concept erosion and sediment control (ESC), and the Chesapeake Bay Critical Area Commission (CBCA), Joint Permit Application (JPA), and NEPA Permitting. This scope of work was to provide professional transportation engineering design services for developing Modified PI, SF plans, and other documents for constructing a bike path along MD 413.

Sorenson Bridge Replacement & Entrance, Carroll County, Maryland. Environmental Scientist responsible for E&S design and environmental permitting services. Prepared and submitted concept stormwater management design for review, including submittal of plans, reports, and drainage area maps. Stormwater management design was following the Maryland Stormwater Design Manual. Stormwater Management design provided the required Water Quality storage volume (WQv), Environmental Site Design volume (ESDv), Recharge storage volume (Rev), and Channel Protection storage volume (Cpv). Updated environmental resources and water quality mapping in the SWM report to incorporate offsite SWM facilities.

Professional Registration

OSHA Hazardous waste operator
CPR/ AED first responder
USACE Certified Wetland Delineator

Education

MS / 2012 / Geographic Information Systems
MS Certificate / 2012 / Water Resources Conservation
BS / 1995 / Environmental Science
BS Certificate / 1995 / Energy Management

Relevant Experience: 13



QIANG LI, PHD, PE, PTOE

Traffic / Lighting Engineer



Dr. Li has over 24 years of experience in traffic engineering, transportation planning, and GIS applications. His experience includes traffic design and studies, travel demand modeling, traffic modeling and simulation, traffic control and management, operation research, GIS applications for transportation, and transportation asset management. Experience with Synchro, HCS+T7F, and Signal 2000 (TEAPAC), MicroStation, AutoCAD, GuidSign, and AutoTurn, CORSIM, VISSIM5, and SIMTRAFFIC, CUBE and TransCAD, ArcGIS, MapInfo, and TransCAD, Data Mining and Analysis, and Software Development for Transportation Applications. Relevant projects include:

Three Notch Trail Crosswalk Beacons, St. Mary's County DPWT. Traffic Engineer responsible for design of Rectangular Rapid Flashing Beacons (RRFB) for three trail crossings along the segment of Three Notch Trail. A field run survey is utilized to prepare the RRFB design plans. Various traffic characteristics, including daily traffic, spot speed, sight distance, and traffic control devices, were collected and analyzed to meet the requirements of RRFB. Because the sight distance approaching the crosswalk at one of the three crossings is low, an additional RRFB in advance of the crosswalk was proposed per IA-21 to increase visibility of pedestrian crossings. The RRFB plans with the specifications and cost estimate (PS&E) were developed for RRFB Installations.

Signal Warrant and Traffic Safety Studies, St. Mary's County DPW&T. Traffic Engineer responsible for traffic signal warrant and traffic safety studies at the intersections of Pegg Road and Westbury Blvd in Lexington Park, MD. The studies include data collection and analysis (TMC, speed and crash data), field inspections include sight distance, traffic control devices, pedestrian and bicycle amenities, transit, and parking, traffic safety and crash analysis to determine safety hazards or constraints, determination of trip generation/distribution, traffic capacity analysis for existing and future conditions using Synchro, identify traffic operational deficiencies and propose mitigation, analyze and test traffic signal warrants, assess impact of signalization, develop safety improvement recommendations, and prepare the study report.

NASPAX Buse Road Corridor and Intersection Traffic Studies, NASPAX and St. Mary's County DPW&T. Traffic Engineer for the traffic studies to identify safety and operational issues, evaluate vehicular circulation considering planned changes at the Navy Base, assess the traffic impacts of the proposed alternatives, and develop conceptual design alternatives. Evaluated replacement of signalized intersections with new roundabouts along the corridor, analyzed signal timing, roadway safety, and signal operations. Simulated traffic modeling, evaluated alternatives of roadway improvements along with the operational and environmental impacts to accommodate the closure of the intersection. Prepared a traffic study report with the results of the analysis and preliminary phased estimates for the design and construction of the recommended design.

Intersection Traffic Study and Signal Design, Frederick County DPW. Traffic Engineer responsible for the traffic studies and design for Boyers Mill Road at Pinehurst Road Intersection. The task has two phases, traffic study and signal design. The traffic studies include review existing conditions to identify traffic safety and operation issues, traffic capacity/LOS analysis, crash analysis, signal warrant study, development and evaluation of improvement alternatives - signalization, roundabout, geometric changes, etc., and preparation of the study report. The second phase is to prepare semi-final and final portable signal plans as well as PS&E package, bidding documents preparation, and construction assistant.

Odenton Library Passive Park Feasibility Study, Anne Arundel County DPW. Traffic Engineer for the feasibility study concept plans for a passive park on the lot adjacent to the Odenton Library. The traffic impact study was completed that considered generated trips and growth rates, traffic patterns, queue lengths, signing, lighting, signalization, and crash statistics. Utilized traffic modeling to analyze the capacity of the existing and proposed conditions for a determination of delay and LOS alternatives, and developed alternatives for improving/mitigating safety and operational issues related to the proposed park.

Professional Registration

2003 / Maryland
Registered Professional
Engineer #29533

2020 / Professional Traffic
Operations Engineer
#4808

Education

PhD / 1997 /
Transportation
Engineering

MSCE / 1996 / Civil
Engineering

BSCE / 1984 / Electrical
Engineering

Relevant Experience: 24



J. MICHAEL GOOD, PE, PMP, CQA

Structural Engineer



Mr. Good is a Professional Engineer and Project Manager with over 30 years of extensive and diverse experience in project management and quality control; new and rehabilitative bridge design; and bridge inspection, including element level hands-on condition assessment in accordance with the National Bridge Inspection Standards (NBIS), Structure Inventory and Appraisal (SI&A) criteria, and Pontis. He is experienced in value engineering, repair and rehabilitation of vertical structures, and construction management. Responsibilities include transportation project development; project management, including schedule and budget oversight; quality assurance and quality control (QA/QC); structural design and bridge inspection oversight; design team development; subconsultant coordination; proposal development; invoicing; client interaction and support. Relevant projects include:

Bridge Condition Inspections for State, County and Local Bridges, MDOT/SHA, Howard, Anne Arundel, and Washington Counties, Maryland.

Project Manager for coordination of inspection activities including routine biennial bridge safety inspections of bridges. Work includes NBIS hands-on inspection and documentation of bridge decks, superstructures, and substructures. Provide QC of field data and inspection reports generated using Bentley's AssetWise prior to submitting them to the County for approval. Work also includes coordination of the inspection of a 28-span bridge in Anne Arundel County involving lane closures, coordination with USCG and underside inspection from bucket boat.

Patapsco River Bridge Replacement Phase II, Maryland Department of General Services (DGS). Project Manager for the design of a 130' new pedestrian/equestrian bridge that provides connectivity to a multi-use recreational trail. Evaluated structure alternatives and the selected design was a low water box culvert crossing. The multi-cell culvert crossing will have a 10' wide trail section with railing/curbs for pedestrians, equestrians, bicycles, and park maintenance vehicles.

Salisbury Salt Dome, MDOT SHA Office of Highway Design, Salisbury, Maryland. Senior Structural Engineer for oversight of the structural inspection of the concrete walls and determined they were in poor condition with large spalls, wide horizontal and vertical cracks, and rust staining throughout. Since the existing concrete walls have limited-service life remaining and would require significant and costly repairs to retain, recommended replacement of the dome. Assessed two options for new structures and prepared a preliminary design report that repaired the options.

Dorsey Run Road Improvements, Howard County DPW. Senior Structural Engineer underway for the preliminary bridge replacement design options for the bridge type, span, girder depth, and waterway opening for optimum hydraulic performance. Flooding of the Dorsey Run Bridge is a frequent issue, and the bridge is being designed to improve the drainage issues. Impacts on the floodplain and stream, right-of-way acquisition, and coordination with the CSX railroad are all considerable design constraints that are being considered in the design. The roadway is being improved from a 2-lane rural roadway to a major collector include a shared-use path and sidewalk.

Lehigh Gorge Substructure Rehabilitation, Pennsylvania Department of Conservation and Natural Resources (DCNR). Project Manager & Senior Structural Engineer Conduct field visit to verify design requirements and obtain data for contract document preparation; Provide oversight and quality control for contract document preparation. Project includes repair of stone masonry abutment stem walls, wing walls, and an 80'-long +/- retaining wall, as well as an assessment of the timber deck and railings to determine repair/replacement needs.

Ritter Road Bridge Repair, Baltimore Gas & Electric Company, Baltimore County, Maryland. Task Manager who prepared proposal and performed a detailed review of the Client's terms and conditions for inclusion in the contract for development of contract documents for the superstructure replacement and substructure repairs of the existing bridge carrying a privately-owned driveway over Dogwood Run, which BGE uses to access remote areas of their power and gas supply lines. Provided oversight for the design of repairs and preparation of contract documents consisting of drawings, specifications and an engineer's estimate.

Professional Registration

1998 / Maryland
Registered Professional
Engineer #23457

2011 / Project
Management Professional
(PMP), #1416308

2022 / ASQ Certified
Quality Auditor (CQA),
#73118

Education

BS / 1993 / Architectural,
Civil Engineering

Relevant Experience: 30



VLADIMIR ANTONOV, PLS

Surveyor

Mr. Antonov is a Professional Land Surveyor with over 15 years of experience performing and managing a broad range of surveying projects in Maryland and over 40 years overall. He has demonstrated success in completing projects on schedule and under budget. He is highly accomplished in simultaneously managing multiple projects, including boundary, ALTA/ACSM, topographic, horizontal and vertical control, land development, zoning, and construction surveys, while utilizing the latest technology. Relevant projects include:

Water Main Replacements (Multiple), WSSC Water, Maryland. Chief Surveyor who has created survey control for the multiple Water Main Projects in NAD83 and NGVD29 coordinate systems. He surveyed designated utility lines and created a utility map of the project area from the completed control points.

He staked out the Test hole locations and surveyed utility lines. He prepared Test hole reporting showing the horizontal and vertical locations of the utility.

BCS 2009-11E, Planning, Preliminary and Final Engineering Design and Construction Management Services, MDOT SHA, Maryland. Chief Surveyor who performed background research and identified existing easements and right-of-way boundaries. He coordinated with utility companies to locate and map underground utilities. He performed field investigations, and detailed data collection for survey design, including boundary, ALTA/ACSM, topographic, horizontal, and vertical control utilizing the latest technology. He ensured that the survey data was accurate and precise. He has demonstrated success in completing projects on schedule and under budget.

Consultant(s) for Modeling and Analysis, Planning, Surveying, and Engineering Services (Prince George's County, Maryland). Chief Surveyor who managed and performed detailed topographic surveys, boundary surveys, existing drainage infrastructure, cross-sectional surveys for watercourses as required for watershed analysis, and design of stormwater management and storm drain conveyance system. He emphasizes data accuracy, cost-effectiveness, and project schedule.

REACH Partnership School, Baltimore City, Maryland. Chief Surveyor who performed background research on the boundary survey and identified any discrepancies. He managed and performed accurate site assessments and collected detailed data for topographic surveys and utility surveys, including water, sewer, storm, electrical conduits, and communication cables utilizing a robotic total station, GPS, etc. He performed quality control and delivered the existing survey drawing to support the design process.

Restoring School Playground and Recreation Area, St. Mary's Catholic School, Landover Hills, Maryland. Chief Surveyor who managed and performed background research and field investigations and collected detailed survey data, horizontal, and vertical control utilizing a robotic total station, GPS, etc. He identified existing contours, slopes, and drainage patterns, including vegetation, structures, etc. He confirmed land ownership, easements, property boundaries, and public right-of-way. He determined the location of water, sewer, gas, and other relevant utilities. He performed quality control and delivered the existing survey drawing to support the design process.

Professional Registration

2007 / Registered
Professional Land
Surveyor MD #22075

Education

MS / 1984 / Engineering
Survey

BS / 1982 / Mathematics
and Programming

Relevant Experience: 40



DMY **XIN CHEN, PE**
Geotechnical Engineer

Dr. Chen serves as Principal Geotechnical Engineer. He has more than 18 years of geotechnical engineering, pavement design, pavement management, project management, & program management experience. Dr. Chen has extensive experience in geotechnical and geological subsurface exploration for site characterization using auger boring, split-spoon sampling, Standard Penetration Test (SPT), Cone Penetration Test (CPT), Dilatometer Test (DMT), etc. Dr. Chen also has extensive experience in geotechnical laboratory testing including soil compaction, permeability measurement, consolidation test, direct shear test, unconfined compression test, and triaxial test. Dr. Chen has extensive experience in providing geotechnical engineering recommendations on highway transportation projects such as design shallow foundations, immediate foundation, and deep foundations, slope stability analysis, soil slope stabilization solutions such as Reinforced Soil Slope and imbricated stone wall, soil improvement solutions such as geosynthetic reinforcement, dynamic soil compaction, stone column, wick drains, compaction grouting, and micropiles; retaining wall structures such as concrete cantilever wall, gravity wall and Mechanical Stabilized Earth wall. Dr. Chen is proficient in engineering software such as slope stability analysis, pile design, and settlement analysis software including GSTABL (Slope Stability), DRIVEN (Pile Design), FoSSA (Settlement), MSEW (Mechanically Stabilized Earth Wall), ReSSA (Reinforced Soil Slope), EMBANK (Settlement), LPILE (Pile Design), PYWALL (Retaining Wall Lateral Analysis), gINT (Geotechnical Subsurface Information Database), etc.

Prince George's County Correction Center, Upper Marlboro, Maryland. Geotechnical Engineer who reviewed existing information such as as-built plans, previous geotechnical report, construction records, photos/pictures, etc. Performed a subsurface exploration program (field and laboratory testing), evaluated field and laboratory data, conducted geotechnical analyses, and prepared three options to address the issues. Prince George's County Correction Center is a two-floor building built in 1984. The facility experienced issues with drainage, wall cracking, and floor settlement. Scope was to obtain the subsurface condition and to investigate the potential cause(s) of settlement of floor at the Housing Unit H-12.

MDOT MD 210 at Livingston Road/Kerby Hill Road Interchange, Prince George's County, Maryland. Geotechnical Engineer. This Design-Build (DB) project (\$83M) involves the design and construction of a grade separated interchange at the intersection of MD 210 with Livingston Road/Kerby Hill Road. He was responsible for developing Geotechnical Performance Specification, oversaw the preliminary geotechnical exploration, prepared the geotechnical data report, and reviewed Design-Builder's geotechnical submittals.

WSSC Water Main Basic Ordering, Montgomery County, Maryland. Geotechnical Engineer hired by JMT to provide geotechnical related services for the task orders issued under the WSSC Water Main Basic contract. The project is to replace the water mains. Scope includes drilling, field exploration and investigation, laboratory testing, and geotechnical analysis. Dr. Chen coordinated all geotechnical engineering activities and oversaw the activities of staff engineers during the geotechnical site assessment, laboratory testing and issued final geotechnical reports.

Howard County Pavement Management System, Howard County, Maryland. Geotechnical Engineer who was the project manager to oversee the pavement surface data collection using automatic pavement data collection vehicle, QA/QC pavement condition index (PCI), prepare pavement condition summary report, develop pavement Maintenance, Repair & Rehabilitation recommendations, and implement Pavement Management System (PMS) for Howard County Bureau of Highway, Maryland for 1000 lane miles roadway.

MDSHA TMDL Design-Build Project, Statewide, Maryland. Geotechnical Engineer who was responsible for initiating, managing, tracking progress for 20 plus TMDL sites. He developed geotechnical field investigation plan and planning report. Coordinated and supervised all geotechnical field investigations including drilling and field boring logging. Performed engineering calculations (e.g., slope stability analysis using Slide) and prepared subsurface investigation report and final geotechnical reports for all sites. The project was to provide design and construction of retrofit SWM Facilities and stabilization of Outfalls to meet requirements of the Chesapeake Bay TMDL in Maryland.

Professional Registration

Maryland Registered
Professional Engineer
#37166

Education

PhD / 2004 / Civil and
Geotechnical Engineering

MS / 2011 / Business
Administration

MS / 2000 / Civil and
Geotechnical Engineering

BS / 1997 / Civil and
Geotechnical Engineering

Years of Experience: 18

BRUDIS
& Associates
CONSULTING ENGINEERS



RELEVANT EXPERIENCE



ON-CALL CIVIL AND SITE ENGINEERING SERVICES
RFP 001-2025 | TOWN OF BLADENSBURG



ON-CALL ENGINEERING SERVICES

Anne Arundel County, Maryland

Under a multi-year, open-end engineering agreement, BAI was responsible for civil, drainage, structural engineering, site development, and recreational planning services for the Anne Arundel County DPW. Tasks include:

Odenton Library Community Park Feasibility Study & Phase I Design.

Completed a feasibility study then developed concept site design plans for phase I of a community recreation park on the lot adjacent to the Odenton Library. Identified possible site constraints and challenges and created a preliminary concept for a new passive park that included functionality, layout, physical site limitations, and practicality as well as provide amenities requested by the local community. Determined projected population served by the proposed park and the ease which County residents would have travelling to and from the site, and the impact of additional traffic on the surrounding roadways. Project challenges included steep slopes, critical area, woodlands, wetlands, utilities, historical significance, and maintenance of amenities after construction. Developed three (3) concept layout plans and cost estimates for the community park, which incorporated a mixture of desired amenities. Conducted a virtual public meeting to present all alternatives of the feasibility study and the selected concept, which was received well by the client and stakeholders.

Following the study, developed phase 1 of the selected alternative into full construction plans for the estimated \$6.3M project. Amenities with phase I of the project include a new parking lot, reconfiguration/expansion of the Odenton Regional Library parking lot, a playground, pickle ball court, view decks, park pavilion & gazebo, pedestrian/emergency access bridge crossing Spring Branch, ADA compliant pedestrian path, lighting along desired paths, parking, courts, etc. The park design was prepared in accordance with County codes/guidelines, MDE, DNR, MDOT SHA, AASHTO, and ADA criteria as applicable.

Monterey Avenue Sidewalk. Responsible for sidewalk and roadway improvement design documents, including ADA compliance. Provided roadway rehabilitation and new sidewalk design, which included curb/gutter, driveway aprons, utility identification, R/W designation, typical section, full depth paving, milling and resurfacing to rehabilitate existing roadway. Stormwater management (SWM) was addressed by implementing environmental site design (ESD) to the maximum extent practicable (MEP) through retrofitting an existing SWM pond located near project. Through the pond retrofit, it was possible to achieve water quality target for the project and provide substantial water quality treatment upgrade to the contributing 26 acres. SWM report included detailed calculations, mapping, supporting documentations. Pond plans included layout, grading, profiles, section, and details. Also developed erosion/sediment control plans and maintenance of traffic details.

Client: Anne Arundel County DPW
Contact: Kyle Autry, 410-222-7500
pwautr19@aacounty.org

- Project Highlights:**
- Highway Engineering
 - Structural Engineering
 - Traffic Engineering
 - Hydrology/Hydraulic Engineering
 - Feasibility Studies
 - AASHTO Compliance
 - Topographic Survey
 - Signing, Lighting, Pavement Markings
 - R/W Determination
 - ADA Compliance
 - Stormwater Management
 - Erosion/Sediment Control
 - Maintenance of Traffic
 - Environmental Permitting
 - Wetland Delineation
 - Geotechnical Investigations
 - Architectural Design
 - Construction Inspection
 - Utility Coordination
 - MS-4/NPDES Program
 - Public Presentations
 - Plans/Specifications/Estimates
 - Construction Phase Services





Jennifer Road Parking Lot Expansion. Responsible for feasibility study including concept designs to add parking and associated improvements to serve the Jennifer Road Detention Center (JRDC). Existing parking spaces inside JRDC were severely reduced by a construction project and the reduced spaces were to be accounted for in this study. Completed a study and developed parking lot concepts to evaluate utilization of available vacant area to accommodate increase in parking demand and to account for the loss in space inside JRDC. Conducted a field investigation, identified potential impacts, evaluated drainage, and prepared feasible concept layouts, stormwater management (SWM) for each alternative, and anticipated cost estimates. After coordination and careful consideration, two (2) parking lot layouts were proposed. The first layout provided the maximum number of parking spaces (50 spaces) with 90-degree parking (\$1.25M construction) and the second layout with minimum impacts / least costly with 45-degree parking provided 30 spaces (\$580k construction). ITE's "Guidelines for Parking Facility Location and Design" was used for the determination of parking layout.

B&A Trail Bridge over Joyce Lane. Provided a structural condition inspection of damaged areas, inspection report, and subsequent repair designs and cost estimate for the 85' single span prefabricated steel truss pedestrian bridge on the B&A Trail. The inspection was led by a NBIS-certified and Registered Professional Engineer, and provided recommendations for the current bridge to be completed to allow it to be back in service. Also provided an alternative solution for a better bridge solution for the existing site conditions and significantly reduce future maintenance and repair. Since the existing truss span was longer than required, BAI recommended modifications to the existing truss to shorten the span length and eliminate the narrow under clearance which caused the current distressed conditions. Provided structural analysis, design, plans and details for modifications to the existing truss and new concrete abutments to accommodate the shorter span, a project with \$275k construction estimate.



Shoreland Drive Pump Station. Conducted a structural damage assessment inspection and report for the existing sewer pump station building in Glen Burnie. Inspected the large settlement wall cracks at the one-story masonry concrete structure with brick veneer and recommended patching and sealing of cracks in several areas, and removal/reconstruction of brick and interior masonry in other areas, a total of \$16k repair project. Determined that none of the defects found presented danger of imminent failure or stability of the building structure, and that the damages were caused by inadequately sized wall footings and improper soil compaction during construction.

Jug Bay Farm Preserve Masterplan Feasibility Report. Prepared concept plans and feasibility report for the expansion of park amenities and masterplan to include an education and research center and associated amenities. Analyzed the existing and proposed site conditions, proposed amenities layouts, design constraints, stormwater management and drainage needs, parking needs, traffic patterns, anticipated environmental impacts, utility impacts, required permits, and conceptual construction cost estimates. The main purpose of the project is to equip Jug Bay Wetland Sanctuary with overnight facilities to support their short- and long-term research, education, stewardship, and training goals.

Davidsonville US Storage Tank. Developed the design and bid ready documents for the construction of a 40,000-gallon underground storage tank at the Maryland Farm Bureau property. Developed the civil/site design plans, erosion and sediment control plans, and structural plans for to support the tank including buoyancy checks for empty and full tank weights for the storage tank buried with a small, graded pad at grade. Also provided construction phase services including attendance at pre-bid meeting, responses to pre-bid questions, pre-construction and construction progress meeting attendance, shop drawing review/approvals, RFI's, and final inspection.

Tanyard Springs Park Feasibility Study. Prepared two alternatives, concept plans, and a feasibility report for a new 14.69-acre community park in the Tanyard Springs development (Phase 1) and a future phased development for a new elementary school on the same property (Phase 2). Analysis identified possible site constraints and challenges and create a preliminary concept for a new park that included functionality, layout, physical site



limitations, practicality as well as provide amenities requested by the local community, and accommodations for Phase 2 development. The proposed Park includes a mixture of passive (low maintenance/cost) and active recreational activities/amenities. Desired park amenities included a baseball field, two multi-purpose grass-fields, basketball court, playground, picnic areas, benches, park pavilion, ADA compatible walking trails, parking lot(s) for 200 spaces, bicycle racks, restrooms, water fountains. Developed two concepts that included desired amenities with cost estimates for each option, and the layout of the amenities incorporates the long term plan for one of the multi-purpose fields to be replaced by the future school building. Also presented the concepts at a stakeholder meeting.



Quiet Waters Visitor Center. Inspected the structural components and connections for the Quiet Waters Visitor Center. Inspected structural components to include floor joist to beam connections, roof framing, stair framing, and exterior deck framing. Prepared a complete report of the field inspection findings that documents defective conditions found, locations of defective areas with photographs. The report includes recommended options for repair and/or replacement of the defective structural elements, and construction cost estimates for recommendations.

Fire Suppression Tanks FY22. Provided design consulting services for the visual inspection, testing, repair and/or replacement of 50 Fire Suppression Tanks (underground) in communities throughout the County that are maintained by the County Fire Department. Evaluated each tank to recommend necessary repairs and if replacements were needed. Provided an inspection/test report for each tank that documented defective conditions found, findings of the field visit, site research, material condition evaluation, any surface public utilities, the results of the tank tightness tests, and the estimated repair costs.

Hancock Resolution Chimney. Provided design of removing the timber beam from the chimney. There was plywood under the fireplace as temporary shoring for casing the chimney hearth but the beam under the framing in the chimney is a fire code violation. Designed a temporary column to support the beam, cutting the beam back from the chimney, removal of the timber from the chimney, and permanent footing / column.

Queenstown Park Parking Lot Expansion. Developed the design for the expansion of the parking lot on an existing softball field at Queenstown Park, a 26.5-acre park. Prepared two concept alternatives with estimated costs for each for the redesign of the existing asphalt parking lot closest to the basketball courts to accommodate more parking and convert an area close to the softball field for the new parking area. Added a single entrance and exit road to the new parking lot, demolished and reconstructed the existing ADA concrete ramp adjacent to the existing parking lot, and expanded the walking path. Also designed the lighting plans and the signing and striping plans for the parking lots. Developed construction plans and project manual for the selected alternative.



Proposed a bioretention facility in the parking lot and an infiltration basin adjacent to the parking lot to provide quality treatment and achieve quality control. Since the project site is within close proximity of Baltimore/Washington International Airport, all landscape and SWM design had to meet Maryland Aviation Administration (MAA) design guidelines. Also prepared power point slides for the public meeting, presented the project to the local community and participated in Q&A to answer questions from the public regarding the project during and after the public meeting.



COMPREHENSIVE ENGINEERING SERVICES

St. Mary's County, Maryland

BAI is responsible for multiple task assignments providing transportation planning, preliminary and final engineering design for highway drainage, facilities, traffic engineering, construction inspection & management (CIM), cost estimating, engineering report preparation, public outreach, and on-site engineering support services. The contract included multiple and concurrent task assignments involving the crash analysis and safety studies, capacity analysis and congestion mitigation, traffic signal timing, signal warrant studies, roundabout analysis, lighting analysis, traffic impact analysis review, maintenance of traffic alternatives analysis (MOTAA), computer modeling, developer plan review, minor geometric survey and design, traffic control device inventory and design, work zone traffic control design, development of improvement concepts, traffic data collection including turning movement counts, classifications counts, vehicle delay, queueing, pedestrian and bicycle counts, field investigations, CADD/drafting, on-site engineering services. Selected task assignments included:

Animal Shelter CIM Services. BAI served as an Owner's Representative during the design and permitting phases and support the administration of the design/build project to construct the Animal Shelter, barn/stable area to accommodate larger animals, select elements of the Sheriff's Department K-9 Section, and an adoption center on a 9-acre lot of uncleared land. Reviewed the design for conformity to requirements, constructability, and code/regulatory functionality. Provided on-site construction management support services for the construction phase. Kept records of inspections, completion of all required special inspections, and testing and correction of discrepancies with the contract documents.



U4 Light Revisions. BAI provided traffic engineering support to assist St. Mary's County in the development and upgrades to its lighting standards, guidance, and criteria. BAI provided research and collected various standards, recommended practices, and guidelines from neighboring jurisdictions and industry-accepted practices. BAI outlined applicable standards to update and upgrade lighting guidance and standards. BAI prepared a technical memorandum summarizing recommendations for photometric analysis procedures, lighting criteria, light pole heights, and luminaire criteria/requirements and develop U/4 drawing(s) to encompass all standards, guidance, and tables.

Regional Agricultural Center (RAC). Provided concept through final design services for a new Regional Agricultural Center in Charlotte Hall, Maryland. Conducted a thorough evaluation of the site to understand the best use of the property to locate the desired improvements and to determine all constraints on the development of the site. Services included a review of critical environmental/ historical features, preliminary concept layouts (2), site feasibility and impacts evaluation, and prepared a feasibility study report. The feasibility report and concept site plans were submitted to the Planning Commission for Concept Site Plan approval through the Technical Evaluation Committee (TEC) review process. Developed the design for the site layout, alignment for the access road and parking lot, maintenance of traffic during each phase of construction. Also

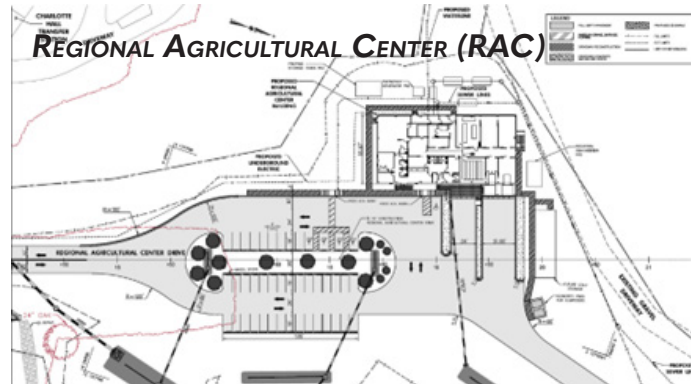
Client: St. Mary's County DPW&T
Contact: Donald Mills, Deputy Director, 301-475-4200 X3526

Project Highlights:

- Traffic Engineering
- Signal Warrant Analysis
- Accident Investigations
- Safety/Capacity Analysis
- OD Studies
- Corridor Analysis
- ADA Compliance
- Traffic Control Devices
- Traffic Impact Studies
- Signal Optimization
- Highway Lighting
- APS Signals
- Congestion Mitigation
- ITS Applications
- CSIL Studies
- Highway Signing
- Pavement Markings
- Signal Timing/Phasing
- Synchro/SimTraffic Computer Modeling
- Travel Demand Models
- System Management
- MUTCD Compliance
- Pedestrian Safety
- Roundabout Analysis
- Geometric Design
- Public Outreach
- Work Zone Safety
- Cost Estimating
- Construction Plans
- MicroStation/CADD
- MBE/DBE Compliance
- QA/QC Reviews



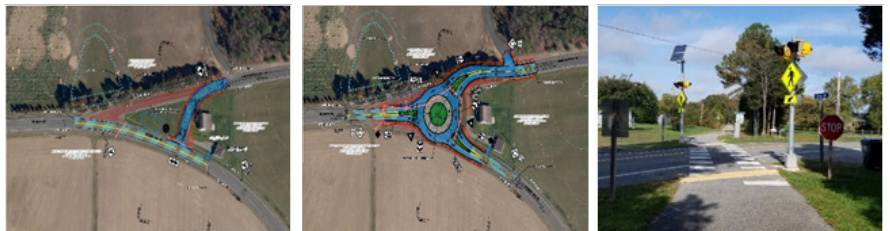
developed stormwater management including design of eight (8) facilities to meet environmental site design (ESD) to maximum extent practicable (MEP) requirements, and prepared erosion and sediment control plans. Provided the preliminary structural and foundation designs for the building that included the roof, wall, staircases, and floor framing, and foundations. Provided final design and project management services. BAI assembled the project design team to provide all services needed for the project and management all disciplines of the project including architecture, MEP, geotechnical engineering, survey, water/septic, and landscape designs. BAI coordinated with St. Mary's Co. DPW&T, the USDA consultant, and the full project team as necessary.



Pegg & Westbury Signal Warrant Study. Collected traffic data including turning movement counts (TMCs) and crash data, conducted a field inspection, then assessed the magnitude and nature of the safety problems at the intersection. BAI analyzed and tested traffic signal warrants using the most recent version of the MDMUTCD, conducted capacity analysis, and assessed the impact of signalization in the intersection. Determined the resulting LOS of the intersection under current traffic conditions and signal build year using Synchro and developed cost-effective safety recommendations to address the safety deficiencies and citizen complaints to improve traffic operation at the intersection.

St. Johns Road at Sandy Bottom Road.

Intersection Improvements. BAI was responsible for traffic engineering analysis and review specific to safety and operational problems with the intersection due to high volumes of traffic associated with Wildewood Sub connection to Lawrence-Hayden Road. Sandy Bottom Road connects to St. Johns Road at a skewed angle from the south direction and does not have any major traffic control devices. BAI provided concept design layouts for the geometric improvements at the intersection. St. Johns Road is a 2-lane 2-way roadway with 2' +/- shoulders running in the west-north direction with a posted speed limit of 40 mph and Sandy Bottom Road is a 2-lane 2-way roadway without shoulders with a posted speed limit of 30 mph within the project limits. The concepts developed were in accordance with AASHTO and County Standards and included:



- ▶ **Roundabout Concept** - layout of a three-legged, single-lane roundabout to accommodate a WB-62 design vehicle based on MDOT SHA and FHWA roundabout guidelines.
- ▶ **T-intersection Concept** - realignment of the existing intersection to provide a T-intersection. The concept layout will be evaluated based on AASHTO, County, and MDOT SHA standards.

BAI prepared concept cost estimates for each concept following the guidelines for a major quantity estimate per the current MDOT SHA Highway Construction Cost Estimating Manual and utilized recent bid history for the unit prices.

Transportation Master Plan. BAI was responsible for traffic engineering studies/analysis, corridor analysis, transportation planning, review of improvement options at identified high crash locations, review of safety and operations problems, and public involvement in the development and updates for the Countywide Comprehensive Transportation Master Plan. The project involved:

Public Involvement: BAI prepared a Stakeholder Engagement Plan for engagement with County Administration, other agencies, and the public. The Plan included the intent, the means, and the methods of initiation, engagement, documentation, communication, and use of the results of this engagement, and schedule. The plan included two public surveys, one prior to the first workshop and one (1) after the second workshop (virtual) for feedback from that activity.

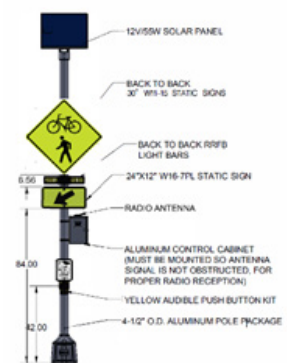


Data Collection: BAI collected and organized available information on traffic counts (pre/post-COVID-19), roadway inventory data, transit data, and functional classification maps for county infrastructure and pedestrian and bicycle networks. The information was collected by BAI or organized from existing information from local agencies (MDOT SHA and MTA, County Agencies, and Local MPOs).

Engineering Analysis and Planning: BAI utilized the data collected to update and revise the transportation network models for travel conditions and travel demand. The analysis included accident history and identified potential high accident locations on the roadway network. Determined strategies for Traffic Demand Management that may reduce the need for roadway capacity capital improvements while maintaining the economic vitality of the County. The final plan included:

- ▶ A toolbox of strategies and overarching policies to mitigate transportation safety issues to “Get to Zero” incorporated in the updated plan including examples of potential conceptual solutions from that toolbox to specific locations.
- ▶ Summary of benefits to improved or new roadways and intersections improvements considering the CSMC Vision Statement and existing plans and planning documents such as the C-SMMPO studies including The Complete Streets Plan.
- ▶ Analysis of the new or modified transit routes or service areas, including the impacts of proposed rapid transit in Charles County. Review existing plans and propose designating signed bicycle and buggy routes, and planned trails, and designate interim networks to link destinations and connections.
- ▶ Provide recommendations for signing and pavement marking policies for permanent and interim routes.
- ▶ Evaluation and recommendation of existing linear corridors, right-of-way, greenways, stream corridors, utility easements, and other potential locations for future trail development to improve connectivity.
- ▶ Recommendations on policies for improving connectivity for all modes including bike paths and multi-use trails. Recommendations for potential locations complete streets and sidewalk improvements to improve interconnectivity for all modes, including a Safe Routes to School Study
- ▶ Analysis for innovations improving safety and efficiency at both the Town and Village Center level and the overall transportation network level. Discuss strategies for Traffic Demand Management that may reduce the need for roadway capacity capital improvements while maintaining or improving the economic vitality of the County. Development of GIS maps visually depicting recommendations.

Three Notch Trail Crosswalk Beacons. BAI provided surveying and design services for crosswalk beacons for the existing crosswalks along Three Notch Trail at Morganza-Turner Road, Baptist Church Road, and Mechanicsville Road. The professional services included conducting field data collection and topographic surveying to determine sight distance at each trail crossing, obtaining and analyzing traffic data including vehicle/ pedestrian/ bicycles volume, traffic speed, and crash data to select the proper beacon type, and designing a beacon system for each site following MDOT guidelines for crosswalk beacons, considering traffic data considering sight distance, vehicle and pedestrian volume, roadway type and configuration, traffic speeds, pedestrians with visual disabilities, and skewed crosswalk. and determining if audio systems should be used at any or all locations. BAI also developed design plans, specifications, and cost estimates for the installation of the Rectangular Rapid Flashing Beacons systems and associated equipment with placement guidance and construction. The itemized cost estimates included the installation of beacon devices, system operation, management, equipment, and materials.



MD 4 and Wildewood Parkway Traffic Impact Study. BAI developed a traffic impact study (TIS) for the MDOT SHA access permit associated with the proposed roadway improvement located at the intersection of MD 4 (St. Andrews Church Road) at Wildewood Parkway in St. Mary’s County. BAI understands that this improvement will include the addition of the fourth (north) leg to the intersection of MD 4 and Wildewood Parkway. The deliverable for this TIS will include a traffic analysis in the immediate vicinity, considering traffic capacity, safety, traffic signal control, and multimodal issues. The TIS will be completed in accordance with MDOT SHA Guideline for Traffic



Impact Studies. BAI collected the intersection turning movement counts and performed field investigations to measure sight distance and identify traffic control devices, pedestrian and bicycle amenities, transit, and parking. BAI analyzed traffic crash data obtained from SHA and the County to determine safety hazards or constraints within the study area. BAI determined the site trip generation/distribution within the study area. Existing, background and total traffic analyses were completed utilizing CLV, HCS, and Synchro for capacity and Level of Service. The final traffic impact study report was prepared to summarize development-generated impacts. The TIA report was submitted to MDOT SHA and St. Mary's County for review, comment, and approval.

MD 4 Side Path. BAI prepared concept designs for the 1,836' long side path for use by bicyclists and pedestrians along MD 4. This project included three major tasks: liaising with stakeholders with upcoming projects within the vicinity of this project; identifying and minimizing the potential impacts of the proposed improvements while maximizing the utility of the side path; and design of the side path per MDOT SHA's Accessibility Policy & Guidelines for Pedestrian Facilities along State Highways. Following the pedestrian and bicycle facilities' best practices guidelines, an 8'-wide paved side path with a 5' buffer space behind the curb was considered to prepare an initial layout for the side path minimizing any future reconstructions in future. This layout resulted in a significant right-of-way impact including physical impacts on the existing wooded areas, overhead utility poles, and parking lots of the adjacent businesses. The buffer width was reduced where necessary to minimize these impacts. Developed a cost estimate and fine-tuned the design of the side path with ADA compliant sidewalk ramps to minimize costs while maximizing the utility of the path. Proposed construction of a retaining wall to reduce the volume of earthwork and right-of-way needs. Analyzed water quality and quantity needs and designed drainage facilities to manage the runoff resulting from the impervious surfaces of the proposed side path.



St. Clements Shores Drainage System Improvements.

Examined the existing ditches, storm drains and outfalls to identify causes of drainage issues along the St. Clements Shores subdivision, then prepared the design for improvements to alleviate the ponding issues. Determined a combination of issues were contributing to the ponding and prepared conceptual layout then detailed design to alleviate the drainage issues. The site was relatively flat at places, and it was challenging to design a storm drain system that could flow under gravity and outfall at a safe location above tidal water. Divided the site into 10 drainage areas and designed an independent storm drain network for each of the drainage areas so that they can be constructed in phases if needed. Based on the county's desire to have most of the drainage system underground, designed a system that used a combination of surface and subsurface collection systems. For the surface conveyance, proposed several grass swales and concrete canvas (CC) lined channels for the flat areas. A total of 212 drainage structures, 12,677 linear feet of storm drain pipes and several grass and CC lined ditches were proposed. Prepared the drainage area maps, site plans, profiles, erosion and sediment control, schedules for storm drain structures, pipes and channels and submitted the plans to the county and submitted for permitting approvals from the County, SCD, and MDE.





NASPAX Buse Road Traffic Analysis. BAI performed a traffic study to evaluate the impacts of potential traffic detours associated with the closure of Taxiway Alpha which closes the intersection of Cedar Point Road and Taxiway Alpha and reroutes traffic onto Cuddihy Road. BAI collected video turning movement counts and developed synchro models for the existing and proposed conditions including improvements at the intersections along Cuddihy Road, Tate Road, Delalio Road, Whalen Road, and Millstone Road including roundabouts, traffic signal improvements, crosswalks, sidewalk improvements. BAI developed concept plans in CAD including turning paths, and intersection improvement plans. The field investigation included a site visit to review/inventory roadway and ADA compliance of existing



shared-use path conditions along Buse Road between Cuddihy Road and Cedar Point Road. This review included sight distance, traffic control devices, and crosswalks. No topographic surveying, property line surveying, utility delineation/designation, or environmental delineation survey was conducted. The signalized intersections along Buse Road were analyzed for the existing and proposed conditions in Synchro to estimate intersection capacity, Level of Service, queueing, and to evaluate potential signal phasing and timing improvements, and capacity improvements through minor roadway widening or turn-lane improvements. The proposed roundabouts at the intersections along Buse Road were analyzed for the existing and proposed conditions in Sidra to estimate intersection capacity, Level of Service, and queueing. An executive summary report will be developed to summarize the results of the traffic analysis which will include all traffic data collected for the study, pertinent infographics, data tables, and reports from the traffic analysis software. The final deliverables will include a study report which will include concept layouts of the improvements and preliminary phased estimates for the design and construction of the proposed improvements. The estimate will be broken down for each intersection and a separate estimate will be provided for the shared-use path and ADA improvements.

Mattapanoy Road Improvements. BAI provided surveying and engineering services for the preliminary and final engineering design of proposed roadway improvements along approximately 3,300 feet of roadway improvements to match the previously improved portion of the road. The scope of services included surveying, roadway design, erosion and sediment control, stormwater management (SWM), storm drainage, signing and pavement marking, property acquisition exhibits, easement exhibits, and maintenance of traffic plans. BAI developed the design criteria, evaluated the existing drainage area using the rational method including the development of worksheets for the time of concentration and travel time calculations, reviewed as-built plans, traffic volume, and speed data, the State Historic Sites Survey inventory for two sites, completed the SMSCD and DPW&T Concept E&SC and SWM Checklist. BAI prepared and submitted plans, cross-sections, and cost estimates at the 30 and 60 percent design milestone.

Piney Point Road Shore Erosion Control. Identified and designed drainage improvements for two locations exhibiting shore erosion to curtail shore erosion using MDE/DNR recommended measures and can meet water quality goals in order to use MS4 funding. In addition, BAI provided recommendations for County's future projects to reduce flooding in the area if existing drainage pipes/culverts needed resizing and satisfy SWM requirements. Reviewed site layout, existing drainage system/patterns and topography to develop flooding improvement recommendations within the site area. Prepared detailed shore erosion control construction plans that included drainage design, grading, erosion and sediment control, maintenance of traffic, stormwater management, and permitting through County Permitting, Critical Areas, SCD, MDE/DNR/CCS, MDE/USACE Tidal wetlands.



CIVIL/STRUCTURAL/TRAFFIC ENGINEERING SERVICES

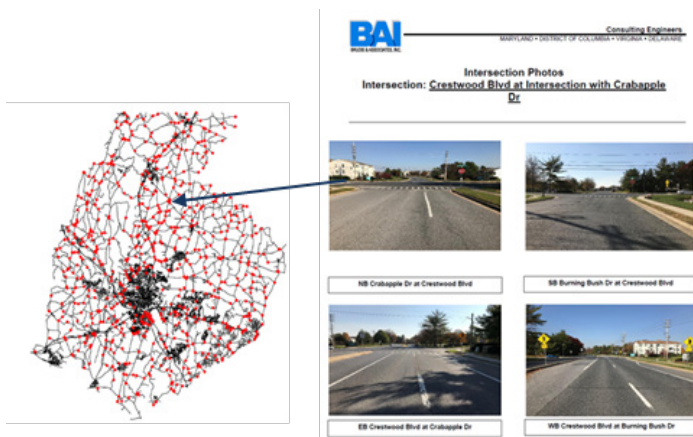
Frederick County, Maryland

BAI provided professional civil, structural, traffic engineering and related services to the County's Department of Engineering and Construction Management (DECM) on an as-needed basis.

GIS Application Review and Design & Traffic Data Collection.

BAI focused on bringing the County's previous GIS application and associated database up to date for the year 2021 and beyond, as well as updating previous historical information contained within the database so that it would reflect current roadway conditions and count locations. The traffic count GIS layer display the exact count location/data/geo-tagged photos for accurate verification, the ADT, the bi-directional traffic volumes, and the vehicle classification for each counted location with background of colored functionally classified roads. A Google Earth KML file is provided to display the geographic count data in an Earth browser.

A variety of traffic counts were performed to provide the County with a robust dataset for transportation planning and future capacity analysis. These included 24-hour turning movement counts collected by video as well as 48-hour intrusive volume, speed and classification counts. Also calculated the average daily traffic (ADT) for each count location. Traffic control plans were provided to the County as needed when lane-closures on county-owned roadways were necessary. Deliverable reports included spreadsheet tabulations by lane and by direction, photographs, GPS-locations field observations, condition diagram, field observations, conversions from ADT to Average Annual Daily Traffic, Critical Lane Volume, and Volume-to-Capacity ratio.



Pinehurst Drive & Boyers Mill Road Traffic Study. In response to resident complaints about the long delays and potentially dangerous intersection especially during peak hours, BAI conducted a traffic study to determine what site improvements and changes could improve the operations and safety at the three-leg residential unsignalized intersection. Reviewed the existing conditions, available traffic data, and collected new data including a delay study and turning movement counts (TMCs). Conducted a crash analysis and sight distance evaluation (using AASHTO standards) to determine safety hazards/constraints within the intersection. Conducted a capacity/LOS analysis for the existing and proposed conditions using

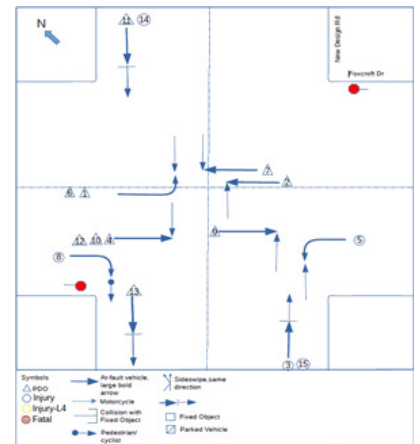
- Client:** Frederick County Division of Public Works
- Contact:** Maddy Dolan, (301) 600-3453
- Project Highlights:**
 - Traffic Engineering
 - Arc-GIS Design
 - Video Traffic Data Collection
 - Manual Traffic Counts
 - Machine Traffic Counts
 - Spot or Safety Improvements
 - Signing and Pavement Marking
 - Traffic Barrier Determination
 - Transportation Modeling and Travel Volume Forecasting
 - Roadway Condition Inventory
 - Trip Generation Studies
 - Intersection and Stopping Sight Distance Analyses
 - Intersection, Interchange, Link and Corridor Capacity Analyses
 - Crash Analyses
 - Safety Studies
 - Trail/Sidewalk Planning & Design
 - Operational Simulation Analyses
 - Traffic Signal Phasing Optimizations and Repair, Inspection and Modification
 - Traffic Impact Analyses
 - Intersection Signal Warrant
 - Roundabout Alternative Analysis
 - Work Zone Traffic Control Plans
 - Assess Traffic Mitigation/ Calming Devices
 - Roundabout Capacity Analysis/ Modeling/Design
 - Intersection Signal Design
 - Roadway/Intersection Layout ROW
 - 3rd Party Reviews
 - ASTM, BOCA, ACI, AISC, AASHTO, MUTCD, HCM, codes/guidelines



Synchro and identified deficiencies and issues within the intersection. Considered the existing conditions, background developments, proposed roadway improvements in the area, and future traffic growth. Analysis highlighted the traffic improvements needed to accommodate traffic demand and growth. Developed improvement concepts based on the analysis results and needs to address the deficiencies and safety concerns and improve the operational conditions and meet the established LOS targets. Proposed concepts included full or partial signal, single-lane roundabout, or geometric changes and widening to improve operations without changes to current traffic controls; also conducted a traffic signal warrant analysis. Prepared a report with the analysis for the intersection and immediate vicinity that considered traffic capacity/congestion, safety, traffic control, multimodal issues, background developments, proposed roadway improvements in the area, future traffic growth, cost of construction, and right of way impacts. Implementing a traffic signal was the recommended alternative.



New Design & Foxcroft Traffic Study. BAI conducted a traffic safety study to identify deficiencies and develop countermeasures to improve safety for pedestrian and drivers following crash reports and complaints from residents. Residents have complained that during peak hours it is difficult for pedestrians/students to safely cross to nearby commercial developments and Crestwood Middle School. Collected traffic count and speed data, reviewed the existing conditions at the four-leg intersection, projected future traffic volumes, and developed and evaluated various conceptual improvement alternatives. Analyzed crash data, evaluated sight distance per AASHTO standards, conducted an intersection capacity and LOS analysis for the existing and future conditions using Synchro & Sidra, and signal warrant analysis. Analyzed alternatives including a combination of several short-term improvements (beacons, signing, forced turn island, install pedestrian refuge island, removal of sign obstructions, install advance “stop ahead” warning signs), installation of HAWK beacons, and conversion of the intersection to a two-lane roundabout. Considered the operation performance, reduction of the conflict points to avoid crashes, cost of construction/maintenance, and ROW impacts. Prepared a report with the findings of the analysis and recommended the short-term improvements and HAWKS signal options as the preferred alternatives.



Covell Road Bridge. Provided a hands-on inspection followed by preliminary through final engineering services for the rehabilitation design of the one-lane bridge over Little Bennett Creek and replacement of a culvert located west of the bridge. The existing structure is a single-span steel riveted pony truss with a timber deck and concrete abutments. Due to the weight restriction of 28,000 lbs. for the existing structure, modifications to the bridge were needed for continued emergency vehicle access. Proposed installation of a beam bridge inside of the truss with the truss structurally attached to the exterior beams for aesthetic requirement. Developed hydrology and hydraulic computations and analysis for a hydraulically in-kind bridge superstructure and to determine replacement sizing for the deteriorated CMP culvert. Coordinated with MDE and County as needed for review and approval of the analysis. Designed a temporary roadway and bridge as the road is the only access point for the local residents; then designed the permanent roadway approaches for Covell Road.



ON-CALL CIVIL ENGINEERING/HIGHWAY DESIGN SERVICES

Baltimore County, Maryland

Under a multi-year, open-end engineering agreement, BAI was responsible for highway, traffic, drainage and transportation planning services for the Baltimore County Department of Public Works, Engineering and Construction Division. Completed projects included:

MS-4 and NPDES Compliance Projects.

Responsible for program management and preparation of complete construction documents including plans, specifications and construction cost estimates for five project locations. Projects were part of MS-4 compliance for industrial sites owned by the County, to obtain the NPDES General Permit for Discharges from Stormwater Associated with Industrial Activities. Goals included treating 20% of the existing impervious using stormwater BMPs or reducing the site impervious area by 20%, or combination thereof. Also responsible for preparation of Notice of Intent (NOI) and a complete Storm Water Pollution Prevention Plan (SWPPP) for all five project sites. General good housekeeping measures such as site cleanup, organizing and measures that prevent oil & fuel spills were also implemented to reduce discharge of pollutants into the stormwater system, enhancing environmental compliance. Prepared construction documents for bio-retention facilities and infiltration trenches required to treat stormwater runoff from 20% of impervious surface. The proposed SWM facilities were designed in accordance with DPW and County EPS guidelines to meet the pavement reduction and treatment goals. Assisted the County in advertising the project for bids and provided construction phase support services including attendance at a pre-construction meeting, reviewed contractor's shop drawings & material submissions, responded to contractor RFI's, red line revisions and SWM/preparation of as-built certification.



Client: Baltimore County
Department of Public Works
Contact: Radu Zamfirache, PE,
410-887-3711

Project Highlights:

- Highway Engineering
- Structural Engineering
- Traffic Engineering
- Hydrology/Hydraulic Engineering
- Feasibility Studies
- AASHTO Compliance
- Topographic Survey
- Signing, Lighting, Pavement Markings
- R/W Determination
- ADA Compliance
- Stormwater Management
- Erosion/Sediment Control
- Maintenance of Traffic
- Environmental Permitting
- Wetland Delineation
- Geotechnical Investigations
- Utility Coordination
- MS-4/NPDES Program
- Public Presentations
- Plans/Specifications/Estimates
- Construction Phase Services

Supple Avenue/Henry Avenue Drainage Improvements. Provided engineering design services to resolve drainage issues along Henry Avenue, caused by runoff from adjacent residential properties. Runoff caused ponding in the roadway and resulted in erosion and icing during winter months. Developed drainage plans and profiles for new inlets tied to the existing system, designed to the 10-year storm frequency. Provided designs to re-grade and stabilize and stabilize the existing channel, evaluated the installation of low impact development (LID) stormwater management (SWM) facilities for water quality enhancement and designed SWM to meet pavement reduction goals and prepared erosion and sediment control plans. Also provided design plans for adjustment of the existing flat roadway cross slope and proposed curb/gutter to improve drainage conditions. Designs were prepared in accordance with Baltimore County DPW, Environmental Protection and Sustainability (EPS), and Soil Conservation District (SCD) standards.

Bellona Avenue Drainage Improvements. Developed conceptual design and preliminary design documents for roadway and roadside drainage improvements for more than a 1/2-mile of suburban roadway. Due to the maturity of the neighborhood, forest stand impact analysis, and hydrologic/hydraulic analyses were required to resolve flooding issues. Developed details for a \$1.5M curb and gutter/closed pipe system to resolve residential/roadway flooding from Roland Run stream.



Short Line Railway/Bloomsbury Avenue Multi-Use Trail. Design plans for construction of approximately 600' long x 10' wide multi-use trail. Project connected existing Short Line Railway Trail to Bloomsbury Avenue. Trail design was done in accordance with AASHTO's Guide for the Planning, Design and Operation of Bicycle Facilities as well as American's with Disabilities Act (ADA) regulations. Design activities included, horizontal trail geometry, vertical profile, grading, Erosion/Sediment Control, drainage, ADA ramp, crosswalk, traffic barrier, and signing. BAI also conducted topographic & property boundary survey, environmental delineation; and coordinated with the Maryland Department of Natural Resources (DNR)-Natural Heritage Division, and US Fish and Wildlife Service (USFWS) and Maryland Historic Trust (MHT) to determine the presence of threatened and/or endangered species, and historic resources within and adjacent to the project area.

Mohrs Lane Water Main. Prepared design documents for the construction of 12' water main on Mohrs Lane. For 1,900'. Design included plans/profiles, details, specifications and construction cost estimates. Services included collection and review of record plans/reports/data; collection, plotting and evaluation of record utility data; topographic surveys; design of new waterline; construction phase services; and coordination with DPW Water Design Section, CSX, and MDOT.

Mohrs Lane Retaining Wall. Provided geotechnical, structural and roadway design revisions for the construction of a grade separation retaining wall along to reduce grading impacts to an existing wetland area. Retaining wall was 160' in length with a maximum height of 16'. Responsible for complete construction plans for the wall and roadway reconstruction, typical sections, cross sections, stormwater management plans, grading, culvert profile, and cost estimate. Design included support to MDOT for the preparation of the Indirect and Cumulative Effect Analysis (ICE) in order to obtain the Categorical Exclusion for the project.

Towsontown Blvd./Osler Drive Intersection Reconstruction.

Engineering design services for the high-profile T-Intersection located at Towson University. The \$2.9 million construction project, relieved severe traffic congestion, improved overall operations, and provided access for the master-plan improvements at Towson University. Design services included structural retaining walls, sidewalks/pathways, ADA compliance, streetscape design, landscaping, signage, utility designation and relocation, roadway reconstruction, right-of-way plats, easements, topographic survey, geotechnical engineering, stormwater management, erosion/sediment control, cost estimation, and urban development. BAI prepared 100% design plans, cost estimates, construction documents, and obtained all permits and approvals for advertisement. However, due to fiscal year funding constraints, Baltimore County was unable to fully fund the project for construction. In 2015, partial funding became available which required scope items to be removed from the project in an effort to minimize construction costs according to the new budget. BAI assisted the county to obtain reapproval for any permits that expired and updated design elements to reduce costs.



Todds Lane Outfall Stabilization. Analyzed the drainage issues and developed the design to remediate the problems caused by an existing pipe outfall was collecting water and there was no adequate swale to convey runoff. Thus, when it rains, runoff impacted an existing parking lot and building. Proposed to regrade the existing swale on west side of Todds Lane to convey runoff down to CSXT tracks.

Floodplain Studies. Completed hydrologic and hydraulic analysis of multiple water bodies including Long Quarter Branch, Moores Branch, Towson Run, Slaughterhouse Branch, and Spring Branch. Developed detailed hydrology/hydraulic models based on existing conditions and ultimate conditions for revising floodplain boundary delineations and establishing the base flood elevations. LiDAR and survey data were used to delineate the watershed and set parameters for H/H models, and evaluate backwater effects. Peak discharge rates for 2-, 10-, 25-, 50-, and 100-year flood frequencies were determined along the water bodies. Used water surface elevation data on to the digital terrain (topo) data using RAS Mapper and ESRI's GIS software ArcMap to map the floodplain. Completed studies were submitted to FEMA for map revision request.



ON-CALL CIVIL ENGINEERING AND SITE DESIGN SERVICES

Baltimore County, Maryland

BAI was responsible for civil & structural design and engineering services for Baltimore County. Project included structural inspection, recreational and state park facilities, site improvement, traffic expansions, stormwater management, regulatory permitting, utilities, water distribution, ADA compliance and construction administration services. Projects included:

Fleming Center’s Fishing Pier. Responsible for visual inspection of the beams, pier caps and piles; structural condition assessment report including a referencing sketch, load carrying assessment, and certification of adequacy or recommendation of needed repairs. Underwater portions of the pier will be inspected by a diver and three (3) piles will be borehole tested. Provided site layout and grading for development of 90+ additional parking spaces. BAI used traffic simulation that reflected peak AM/PM demand to provide adequate queuing lengths and impacts to adjacent mainline. Developed construction documents for additional parking spaces, roadway for vehicular and bus circulation, sidewalks, curb ramps, cross walks, and signage to meet current ADA regulations, drainage, stormwater management and erosion/sediment control, signing, lighting, pavement markings and field survey. Task also included utility, landscape, and construction phase.

Loch Raven Fishing Center. Provided a structural condition inspection, repair recommendations, and cost estimate for the two existing floating piers and exterior deck structure of the adjacent building at Loch Raven Fishing Center. BAI inspection efforts focused on the support structure to determine if additional work will be need. BAI inspected the structure with the assistance of divers for underwater portions and anchorage of the pier structures. BAI documented the current condition of the piers, anchorage system and exterior building deck; provide a referencing sketch for member identification and identify any recommended repairs for strengthening the pier and building deck.

Fort Howard Park Waterline Replacement. Responsible for the design of a replacement waterline for Fort Howard Park located in the city of Fort Howard in Baltimore County, Maryland. This is an ongoing project to replace the water network for the park including a connection for a bathroom, a connection for a fire hydrant and yard hydrants, a future connection point for an additional proposed bathroom, and replacing the plumbing and fixtures within the existing bathroom. The project includes topographic survey of the site, design of proposed improvements, preparing a bid package for the County, and assisting the County with permitting. Performed design for water demand, waterline sizing, fire hydrant design, waterline sizing and pressure demand for sprinkler system. Prepared construction plans that included waterline plans, profiles, all applicable details, notes, title sheet.

Fullerton Fire Station. Provided replacement of the existing concrete slab and drainage opening at the Fullerton Fire Station. Replaced the existing concrete slab drainage at the engine bays. The proposed concrete slab was included regrading to ensure positive drainage. The drainage was redirected to a curb opening and carrying to a ditch drainage inlet via a riprap lined channel. Services included collecting as-built plans, topographic survey, utility designation, new slab design, preparing construction plans with riprap lining of the outfall and ditch (for lower maintenance purposed), coordination with Baltimore County permitting, construction specifications, cost estimate, and providing services during construction.

- Client:** Baltimore County Office of Property Mgmt.
- Contact:** Michael Goodyear, 410-887-6595
- Project Highlights:**
 - Structural Engineering
 - Emergency Response
 - Civil Engineering
 - Building Code Compliance
 - Structural Investigations
 - Geotechnical Investigation
 - Marine Structures
 - Parking Garage
 - ADA Compliance
 - Stormwater Management
 - Topographic Survey
 - Drainage Design
 - Erosion/ Sediment Control
 - Utility Identification
 - Environmental Delineation / Permits
 - Site Landscaping
 - Plans/Specifications/Estimates
 - Construction Phase Services





SURVEY & ENGINEERING DESIGN, DISTRICT 3

Prince George’s & Montgomery Counties, Maryland

Under a \$5.4 million, 5-year open-end engineering services agreement, Brudis & Associates, Inc. (BAI) provided engineering and surveying services for highway geometric design, bicycle and pedestrian facilities, ADA compliance, hydrology and hydraulics (SWM, ESC, streams), utility design, urban streetscape and landscape, environmental permitting, public involvement and outreach support, surveys, data collection, utility designation, ROW plats, shop drawing reviews and construction phase services. Projects included:

District Design Support. BAI provided resources necessary to assist in managing and implementing various system preservation contracts and highway, traffic, drainage, and structural engineering studies as directed by MDOT SHA. Prepared cost estimates for several statewide projects. Provided administration, management, and coordination with several divisions within MDOT for six county-wide paving, patching, micro surfacing & crack sealing, and traffic barrier projects across Montgomery & Prince George’s Counties. Also revised the geometric design as needed for the MD 410 at MD 186 project when during construction, the contractor discovered a utility conflict with the proposed design.

I-95 Safety & Resurfacing. Provided the development of design documents and cost estimates to enhance safety, rehabilitate the existing pavement, and improve vehicular rideability on 3.7 miles of I-95 from Livingston Road to South of MD 5. The proposed improvements consisted of resurfacing, asphalt patching, pavement markings and signage, traffic barrier upgrades, and minor drainage upgrades. Design services included highway, drainage, erosion & sediment control, and stormwater management.

MD 769C and Quincy Lane Drainage Improvements. Analyzed the existing storm drain system and layout and developed preliminary construction documents for the stormwater remediation design. The design was completed under an accelerated schedule and included the replacement of three (3) pipes and three (3) inlets along 48th Ave.

US 301 at Berry Street Resurfacing. Provided design services for safety and resurfacing improvements for approximately 1.2 miles of US 301. Established marking the baseline of construction, general roadway plan and typical roadway sections, assessed the project site for potential ADA and bike lane improvements, design revisions per Federal Aid Review and constructability reviews, and provided construction phase services. Developed general roadway plans including typical roadway sections with consideration for potential ADA ramp and bike lane improvements including minor modifications. Minor modification considerations included narrowing lanes to ensure designs are compatible with traffic signals. In areas where bicycle lane compatibility could not be achieved or budget constraints for the federal funding were prohibitive, prepared waiver requests. Developed base and typical roadway section plans along US 301 including road edges, driveways, guardrail, utilities and roadway details including lane widths, paving dimensions, cross slopes, grading, and right of way.

ADA Pedestrian Ramp Compliance/Design. Responsible for inspection, ADA evaluation and development of design plans along 12 roadway segments at various locations. Project involved improvements to 491 existing pedestrian ramps over a length of 30.38 miles. BAI reviewed as-built plans and developed base mapping from

Client: SHA District 3 Office
Contact: Dorey Uong, 301-513-7390
Project Highlights:
 Highway Engineering
 Structural Engineering
 Traffic Engineering
 Hydrology/Hydraulic Engineering
 Feasibility Studies
 AASHTO Compliance
 Topographic Survey
 Signing, Lighting, Pavement Markings
 R/W Determination
 ADA Compliance
 Stormwater Management
 Erosion/Sediment Control
 Maintenance of Traffic
 Environmental Permitting
 Wetland Delineation
 Geotechnical Investigations
 Utility Coordination
 Public Presentations
 Cost Estimating
 Construction Plans/Specifications
 Construction Phase Services





GIS and performed site visits to assess existing sidewalk/ramp conditions. Sites were evaluated for compliance with State's Accessibility Policy, guidelines for Pedestrian Facilities and American Disability Act Accessibility Guidelines (ADAAG). Identified conflicts with drainage features, roadway signage, surface utilities, buildings, fences and other features within the accessible pedestrian pathway. At locations that were determined did not comply with ADA standards, developed plans to address corrective measures. Plans included non-standard sidewalk ramp details, E/S plans, SWM waiver/and variance documentation, and MOT, estimates, quantities, and right of entry documents.



MD 5 Resurfacing. Engineering services for construction documents for safety and resurfacing improvements on MD 5 (Surratts Road to MD 223), approx. 1.3 miles of roadway. Developed typical sections depicting the lane widths, paving dimensions, cross slopes, grading, and R/W. BAI completed construction details for proposed improvements for non-standard ADA ramps, bus stop pad, drainage inlet modifications, outfall protections, and LOD. BAI also prepared bicycle and ADA waivers for areas where compatibility was not able to be achieved. Construction quantity and cost estimates were developed for the project. Provided construction phase services including review of contractor's shop drawings and material submittals, responding to requests for information (RFIs) submitted by the contractor, attendance at site meetings to resolve construction related issues, and preparation of red line revisions.

MD 410 from Ager Road to Toledo Terrace. BAI developed a concept report with conceptual plans and cost estimates for pedestrian and bicycle improvements along MD 410 from Ager Road to Toledo Terrace. The purpose of these improvements addressed the safety and accessibility of pedestrians, bicycles, and other non-vehicular modes of travel. Completed a traffic engineering study that proposed low-cost improvements including lane width reductions, barrier-separated shared used paths with channelizing curb and bollards/flex posts, and bike lane transitions at intersections in both directions of MD 410. While improving non-vehicular safety was the primary purpose of this project, the improvements also addressed transportation equity, and recreational use, while minimizing impacts on vehicle mobility and reliability by retaining the existing number of travel lanes.



MD 355 over Bennett Creek Bridge Replacement. BAI developed the maintenance of traffic, roadway, and erosion and sediment control (E&SC) design. BAI was responsible for Phase V activities associated with these designs. BAI provided services to conduct minor redesign and generate additional Green line/Redline revisions for contract documents to address unforeseen conditions, constructability conflicts/issues, etc.



ON-CALL STORMWATER MANAGEMENT & ECOLOGICAL DESIGN & CMI

City of Bowie, Maryland

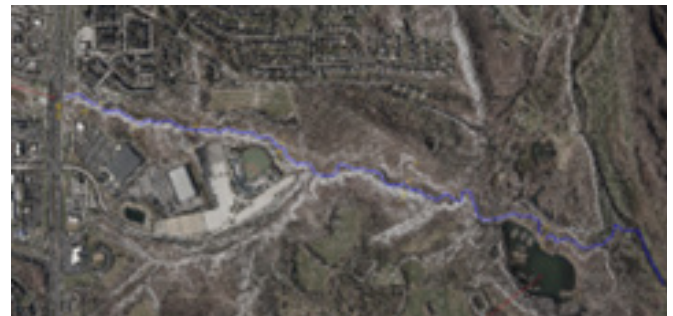
BAI was responsible for stormwater management and ecological design and CMI services, as independent projects, under a multi-year, open-end engineering agreement. Tasks included:



- Client:** City of Bowie
Contact: Hong Yin, 301-809-2337
Project Highlights:
- Water Resources Engineering
 - Hydrology & Hydraulics
 - Stormwater Management (New & Retrofit) Design
 - Best Management Practices
 - Water Quality/Quantity Control
 - Environmental Site Design
 - Floodplain Studies
 - Flood Control Analyses
 - Closed and Open System Drainage
 - Ecological/Habitat and Stream Restoration
 - Wetlands, Forestation Permitting
 - Landscaping
 - Watershed Assessments
 - Environmental Permitting
 - NPDES
 - MS-4
 - Erosion & Sediment Control
 - Construction Inspection

Hickory Leaf Court Drainage Basin De-Mucking. Provided design and bidding services to restore the Longleaf stormwater management pond constructed in 1995. The area had significant slugging off and caused the drainage trench to fill up, which also created problems for the inlets and outlet at the pond. Identified and evaluated options to repair or restore the original design and determine the best approach. Reviewed drainage areas, and developed three options: a plunge pool, plunge pool redesign, and riprap pad. Prepared schematic layouts, probable construction cost, permitting needs, and considerations involved for each option. Developed full design plans for the selection option to address the drainage issues. Evaluated construction bids and clarified information for contractors as needed.

Gateway Harbor SWM Pond Improvements. Provided retrofit of the existing stormwater management pond constructed in 1989, to treat more impervious area and provide credits toward the City’s NPDES/MS4 permit goals. Developed the design from concept to final design stage for the wet pond with extended detention to provide the storage and treatment needed and maximize the impervious area credit in the most cost-effective way. Developed hydraulic computations, grading, construction costs. Analyzed storm drains, dam breach, and outfall protection that was impacted because of the proposed stream restoration. Project challenges included avoiding impacts to forest conservation easements, steep slopes, existing right-of-way/properties, and utilities within the active residential community. Because of the location, nature, and funding for the project, there were many stakeholders involved including Prince George’s County, MNCPPC, MDE, MHT, USFWS, DNR, USACE, utility companies, homeowners/citizens, and the City of Bowie. A big component of the project was to address and secure required permits including City of Bowie SWM and Grading, Prince George’s County/MNPPC Mandatory Referral Review, PG DIPE/MDE Floodplain, MDE NOI, PG SCD, MDE/USACE/MHT/USFWS.





ON-CALL STRUCTURAL ENGINEERING

City of Rockville, Maryland

BAI was responsible for bridge and structural engineering services for the City of Rockville and the City’s 102 structures including 19 long span bridges, 39 small structures, and 44 pedestrian bridges. Tasks include:

Rockville Town Center Garages Inspections.

Provided engineering services for structural inspection of three municipal parking garages in the Rockville Town Center. Performed a visual/non-intrusive inspection of the garage structures including all decks, ramps, elevator enclosures, exposed steel, drains, joints, beams, and columns in order to identify major structural defects that required repair. Documented, photographed, and measured all structural defects found in the concrete columns, beams, floor slabs, walls, and other structural elements within the City-owned portions of the parking structures. Prepared and submitted reports for each of the three garages. Based on BAI’s inspection, no major structural defects were found and none of the defects appeared to present any danger of imminent failure or stability of the building structures. Recommended repairs to the minor defects to maintain the appearance and enhance the longevity of the structures.



Client: City of Rockville
Contact: Faramarz Mokhtari,
240-314-8509

fmmokhtari@rockvillemd.gov

Project Highlights:

- Structural Engineering
- Structural Design, Evaluation, Computations
- Structural Analysis/Studies, Shop Drawings, Foundations
- Structural Condition Inspection
- Parking Garage Inspection
- Inspection Reports
- Repair Recommendations
- Load Rating Analysis
- Scour Analysis
- Constructability Reviews
- Plans/Specs/Estimates
- Construction Administration, Management, & Inspection
- Bentley’s InspectTech

Hurley Ave. Bridge Emergency Repairs. Prepared construction documents for the design of emergency bridge repairs for the structural steel girders on the Hurley Avenue Bridge over Watts Branch Tributary. The bridge is scheduled to be replaced but needed emergency repairs to ensure the structural integrity and safety of the existing bridge structure until the full bridge replacement can be completed. Inspected the bridge to confirm current conditions, designed the repairs to make the structure safe to use, and provided construction services including inspection and contractor support services.

New Pedestrian & Bicycle Bridge over CSX/WMATA Tracks.

BAI is underway on the project to recommend the most feasible and practical crossing location and to develop a preferred conceptual design plan for a pedestrian and bicycle grade-separated bridge crossing with full ADA accommodations of the existing CSX/WMATA Metrorail tracks. BAI’s philosophy focuses on improvements to pedestrian and cyclist safety and connectivity of the overall bike network. This results in an efficient multi-modal transportation infrastructure that addresses access, mobility, and the safety of bicyclists and pedestrians of all ages and abilities. Conducted research of the location and condition of existing pedestrian, bicycle, and public transit accommodations and services, sidewalks, pedestrian crossings, roadways, signed bikeways, overhead utilities, and barriers or constrains in the study area to identify logical termini and potential locations for the new crossing. For each studied crossing location, developed a detailed assessment and documented the potential benefits, challenges, relative cost, and relative environment and property impacts. For the recommended crossing location, BAI is evaluating the crossing design types (ex: Truss, Beam, Suspension/cable-stayed, or Arch, Steel grates, or Precast), pier configurations and approach and landing options (elevator and stairs, stairs, or helix ramp) and developing three distinct alternatives for review.





MD 261 SAFE ROUTES TO SCHOOL SIDEWALK

Town of Chesapeake Beach, Maryland

BAI provided a cost-effective sidewalk design, focused on the project purpose and need to provide a safe, continuous pedestrian access route in two locations on MD 261 (Bayside Road) that satisfied Calvert County, the Town of Chesapeake Beach, Federal and State designated standards, and ADA requirements. Engineering design included an ADA-compliant sidewalk, roadway alignment, curb and gutter, grading, structural designs for retaining walls to minimize elevation impacts between the roadway and adjacent wooded area, board walk structure, drainage, and stormwater management utilizing linear environmental site design facilities and storm drain plan. Construction plans and deliverables also included NEPA application, sidewalk layout and construction drawings, utility adjustments, a demolition plan, an erosion and sediment control plan, a critical area review, construction cost estimates, forest conservation plans, wetland delineation, maintenance of traffic (MOT), signage plans, and light recommendations. BAI's engineering and project administration services were provided for the 2 locations: from the existing sidewalk terminus at Chesapeake Beach Elementary School to "F" Street on Old Bayside Rd, and the second sidewalk terminus extends South along MD 261 to the existing sidewalk just North of Chesapeake Village Boulevard.

Roadway Alignment/Sidewalk, Structural. The proposed section maintained a two-lane, two-way roadway for both roadways. The design maintained the existing open section, and included new curb & gutter and ADA compliant sidewalk to minimize grading and impacts, and a grass buffer was included where feasible. A board walk structure was required to provide pedestrian connectivity, and short retaining walls or grading was needed to minimize grading impacts, and curb & gutter and sidewalk in front of the retaining wall. BAI coordinated with the Town and State regarding materials to ensure the sense of community, visual continuity and preservation within the Town.

Drainage and Stormwater Management. BAI's design minimized impacts to adjacent areas by utilizing a series of linear environmental site design (ESD) facilities to the maximum extent practical (MEP). This included various small-scale low impact development facilities (LID) (i.e. micro-bioretenion, bio-swales, & rain gardens). Such facilities satisfy all local and state requirements for SWM by utilizing "green street" design methodologies and enhance aesthetics and satisfy stakeholder needs. The main focus was to reduce the amount of new impervious pavement by using as much of the existing roadway footprint as possible.

Stakeholder Involvement. This project includes stakeholders at all ends of the spectrum including residential property owners, school officials, utility companies, permitting agencies, community associations, county officials, general public, MDOT-SHA, etc. BAI communicated with stakeholders to gather & share project information, gain consensus on key issues, keep the project moving forward (without costly rework) and to streamline project approvals & permits.

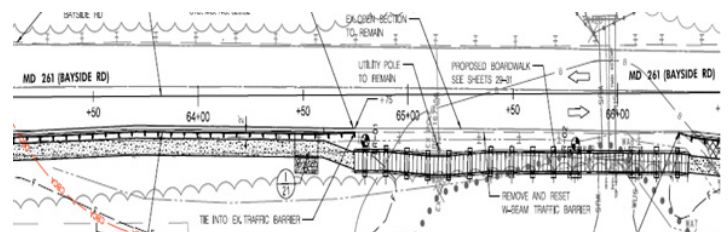
Construction Documents & Permits. BAI provided design documents and processed all permit paperwork associated with the project disturbances for SWM, ESC, wetlands, Waters of the US, FEMA floodplain, etc. BAI initiated the application at the Preliminary phase and updated as needed to address comments/revisions as the design progressed. BAI coordinated with the Town, County, Department of Natural Resources, U.S. Fish & Wildlife, Maryland Historic Trust, as required.

Client: The Town of Chesapeake Beach

Contact: Holly Wahl, 410-257-2230

Project Highlights:

- Civil/Transportation Engineering
- Structural Engineering
- Alternative Analysis
- Sidewalk Design
- Pedestrian Connectivity
- ADA Compliance
- Retaining Wall
- Maintenance of Traffic
- Lighting
- Site Distance Evaluation
- Signing and Pavement Markings
- R/W Determination
- Erosion & Sediment Control
- Environmental Permitting
- Forest Conservation
- Wetland Delineation
- Stormwater Management
- Joint Permit Application
- Drainage
- Stakeholder Involvement
- Utility Coordination
- Plans/Specifications/Estimate





OFFICE STREET/ COURTLAND STREET IMPROVEMENTS

Bel Air, Maryland

Brudis & Associates, Inc. (BAI) designed and prepared complete construction plans for improvements to Office Street and Courtland Street which provided a safe, efficient, convenient, and aesthetically pleasing environment around the Town Court House and adjacent businesses. Construction cost was \$1.2M.



Roadway. Developed preliminary and final design plans for the roadway reconstruction, reduction of vehicular lanes, parking reconfiguration, green space expansion and ADA compliant pedestrian ramps. Narrowed the roadway to a 13'-14', one-way, one-lane roadway with 1' wide concrete band and bollards that can be temporarily closed to vehicular traffic and used for medium sized public gatherings. Part of the Courthouse property was designed to accommodate the gatherings and a proper setting for an existing fountain.

Streetscape. Existing sidewalk was replaced with brick sidewalks to match downtown Bel Air theme with expanded landscaped area in front of the buildings to create aesthetically pleasing plaza. Areas were created for deliveries, emergency parking, street parking, and all-weather event staging. Proposed street paving was pressed asphalt with thermoplastic pattern, with pervious pavers. New benches, lighting, wrought iron fences, waste receptacles, and added signs per downtown Bel Air Design Guidelines. The Courthouse Square was designed to create an attractive plaza and entrance to the Courthouse, which include replacing the existing fountain larger basin to serve as a focal point. The design of the Courthouse Square prioritized the retention and preservation of existing features, such as select trees, monuments, and existing brick pavers.

Drainage and Stormwater Management. Provided storm drainage, erosion/sediment control, and stormwater management facility designs to work within and enhance the existing system. Incorporated additional green spaces and environmental site design (ESD) facilities such as rain gardens, tree boxes, and permeable pavements. Evaluated the existing and proposed drainage according to regulatory criteria. Grading plans addressed drainage concerns in front of businesses along Office Street.

Signing & Marking. Signing and pavement marking plans included proposed vehicular lanes, crosswalks, parking areas and associated signage. Traffic control phasing (TCP) to maintain vehicular and pedestrian access and utilization of the corridor throughout construction were prepared.

Stakeholder Involvement. Project also involved extensive stakeholder coordination including public and private agencies, Harford County Circuit Court, Harford County Facilities, Neighborhood Associations impacted by the design. Additionally, coordinated with Maryland Historic Trust (MHT) for approval of the improvements in front of the courthouse.

Client: Town of Bel Air DPW

Contact: Kevin Small,
410-638-4547

Project Highlights:

- Roadway Engineering
- ADA Compliance
- Traffic Engineering
- Street Lighting
- Pedestrian Safety
- AASHTO Compliance
- Topographical Survey
- R/W Determination
- Signing and Pavement Marking
- Stormwater Management
- Erosion/Sediment Control
- Stormwater Management
- Maintenance of Traffic
- Regulatory Permitting
- Closed Storm Drainage Design
- Utility Coordination
- Stakeholder Coordination
- Plans/Specifications/Estimates
- Construction Phase Services



HOURLY PRICING

BRUDIS	
Staff Assignment	Hourly Rate
Principal	\$245.00
Senior Project Manager	\$225.00
Project Manager	\$205.00
Senior Project Engineer	\$185.00
Project Engineer	\$165.00
Senior Design Engineer	\$145.00
Design Engineer	\$125.00
CADD Technician	\$105.00

DMY	
Staff Assignment	Hourly Rate
Project Manager	\$220.00
Senior Geotech Engineer	\$185.00
Geotech Engineer	\$165.00
Staff Geotech Engineer	\$125.00
Technicians	\$115.00

BENGAL	
Staff Assignment	Hourly Rate
Project Manager	\$138.67
Chief Land Surveyor	\$134.20
2 Man Survey Crew	\$145.38
3 Man Survey Crew	\$201.30
Survey Technician/CAD	\$67.10
Office Surveyor	\$89.47
Administrative Staff	\$55.92

TO BE SUBMITTED WITH BID

**TOWN OF BLADENSBURG
ON-CALL CIVIL AND SITE ENGINEERING SERVICES
Information Regarding the Bidder**

NOTE: The information requested on this form may be submitted in a separate document as long as all requested information is provided and numbered according to this form.

1. Name of Bidder: Brudis & Associates, Inc.
(Individual/Firm/Corporation)
Business Address: 11000 Broken Land Parkway, Suite 450, Columbia, MD, 21044

Telephone Number: (410) 884-3607

E-mail address: abrudis@brudis.com

2. Is the business incorporated? X Yes _____ No

Non-Corporation Business

3. If response to item #2 above is No, list the name and business and residence address of each individual having a 10% or greater financial interest in the business.

<u>Name</u>	<u>Business Address</u>	<u>Residence Address</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Corporate Business Entities - Please answer items 4 and 5

4. List the names of all officers of the corporation, their business and residence addresses and the date on which they assumed their respective offices.

<u>Name</u>	<u>Office</u>	<u>Residence and Business Address</u>	<u>Date Office Assumed</u>
Anthony Brudis;	Principal;	11000 Broken Land Parkway, Suite 450 Columbia, MD 21044;	1/1/2023
William Brudis;	Principal;	11000 Broken Land Parkway, Suite 450 Columbia, MD 21044;	1/1/2023
Angela Billock;	Principal;	11000 Broken Land Parkway, Suite 450 Columbia, MD 21044;	1/1/2023

5. List the names of all members of the current Board of Directors, and their business and residence addresses.

<u>Name</u>	<u>Business Address</u>	<u>Residence Address</u>
Same as Officers Above		

6. Please provide the following information concerning work that you have done within the last 5 years which is similar to the Bid work.

<u>FOR WHOM PERFORMED</u>	<u>CONTRACT AMOUNT</u>	<u>DATE COMPLETED</u>	<u>CONTACT'S NAME/ TELEPHONE NUMBER</u>
1. Baltimore County DPW, On-Call Civil/Structural Engineering Services, 2012-2024, \$2M,			Radu Zamfirache: (410) 887-3711, rzamfirache@baltimorecountymd.gov
2. City of Bowie Public Works, On-Call Stormwater Management & Ecological Design & CMI, 2023, \$135k, Carissa S. Sullivan, Contract/Permit Specialist, (301) 809-2339,			csullivan@cityofbowie.org
3. St. Mary's County Gov., Comprehensive Engineering Services, 2020-2023, \$1.3M,			Donald Mills, Deputy Director: (301) 475-4200 x3526, donald.mills@stmarysmd.com

7. Bidders will answer the following questions: (The word "you" refers to any individual, partnership, partner and/or corporation and its officers.)

a. Have you ever failed to complete any work awarded to you? No

If yes, state where and why: _____

b. Have you ever been affiliated with some other organization that failed to complete a contract? No

If yes, state name of individual and reason therefor. _____

c. With what other businesses are you affiliated? CurveRight

d. Please list all persons who will supervise the work under the Contract? Mahendra Bastakoti, PE; Billy Brudis, PE, DBIA; Ray Dagher, PE; Anthony Brudis

e. Identify all personnel who will be employed to prosecute the work described in the Contract Documents and list their hourly rate(s). Refer to Hourly Pricing

f. Please provide at least 3 references, including any Maryland governmental units or agencies for which you have worked on a similar project. Include the name and telephone number of your contact with each. _____

1. Baltimore County DPW: Radu Zamfirache: (410) 887-3711, rzamfirache@baltimorecountymd.gov

2. City of Bowie Public Works, Carissa S. Sullivan, Contract/Permit Specialist, (301) 809-2339, csullivan@cityofbowie.org

3. St. Mary's County Gov.: Donald Mills, Deputy Director: (301) 475-4200 x3526
donald.mills@stmarysmd.com

g. Identify all unsuccessful bidders, materialmen, and suppliers that you intend to use in performing the work under the Contract, and specify the work each is expected to perform.

Bengal Engineers: Survey and Utility Designation Services

DMY Engineering Consultants Inc. (DMY): Geotechnical Services

Dated this 17 day of June, 2024.

Brudis & Associates, Inc.

Name of Bidder

By: 

Printed Name: Anthony Brudis

Title: Principal

TO BE SUBMITTED WITH PROPOSAL

Non-Collusion Affidavit

Anthony Brudis, being duly sworn on oath, deposes and says:

That he/she is the
Principal

(Owner, Partner, Title if on behalf of a Corporation)

of Brudis & Associates, Inc.,

(Name of Business, Corporation or Partnership)

the party submitting the Proposal; that no officer of the said Corporation has nor has any person, firm or corporation acting on its behalf; agreed, conspired, connived or colluded to produce a deceptive show of competition in the compilation of the Proposal being submitted herewith; and that the said Corporation has not in any manner, directly or indirectly, entered into any agreement, participated in any collusion to fix the Proposal Price of the Proposer herein or any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the Proposal is submitted; that in making this Affidavit, the affiant represents that she has personal knowledge of the matters and facts herein stated. The Affiant hereby declares and affirms under the penalties of perjury that the foregoing is true to the best of her knowledge and information.

To be signed by a duly authorized Officer.

Anthony Brudis
Name

Title Principal

Date: June 17, 2024



TO BE SUBMITTED WITH PROPOSAL

AFFIDAVIT WITH RESPECT TO NON-CONVICTION, NON-SUSPENSION AND FALSE PRETENSES

I hereby affirm that:

1. I am the Principal (Title) and duly authorized representative of Brudis & Associates, Inc. (Name of Business Entity) whose address is 11000 Broken Land Parkway, Suite 450, Columbia, MD, 21044 and that I possess the legal authority to make this affidavit on behalf of myself and the firm for which I am acting.
2. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, any of its officers, directors, or partners or any of its employees directly involved in obtaining contracts with the State, or any county, bi-county or multi-county agency or subdivision of the State have been convicted, or in an official investigation or other proceeding admitted in writing or under oath, acts or omissions which constitute bribery, attempted bribery or conspiracy to bribe under the provisions of Criminal Law Article of the Annotated Code of Maryland or under the laws of any state or the federal government (conduct prior to July 1, 1977 is not required to be reported); and
3. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, any of its officers, directors, or partners or any of its employees directly involved in obtaining contracts with the State, or any county, bi-county or multi-county agency or subdivision of the State have been convicted under a State or federal law or statute of any offense enumerated in §16-203 of the State Finance and Procurement Article; and
4. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, any of its officers, directors, or partners or any of its employees directly involved in obtaining contracts with the State, or any county, bi-county or multi-county agency or subdivision of the State have been found civilly liable under a State or federal antitrust statute as provided in §16-203 of the State Finance and Procurement Article.
5. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, any of its officers, directors, or partners or any of its employees who will provide, directly or indirectly, supplies, services, architectural services, construction related services, leases of real property, or construction have been debarred or suspended under this subtitle.

6. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, information, and belief, any officer, director, partner, member or associate thereof; nor any of its employees directly involved in obtaining contracts with the Town, has been convicted of false pretenses, attempted false pretenses or conspiracy to commit false pretenses under the laws of any state or federal government, based upon acts committed after July 1, 1981.
7. State "none" below or, as appropriate, list any suspension, debarment, conviction, plea or admission described in Paragraph 2 - 6 above, with the circumstances, date, court, official or administrative body, the individuals involved, and their position with the firm, and the sentence or disposition, if any.

None

I acknowledge that this affidavit is to be furnished, where appropriate, to the Town of Bladensburg under Section 16-311 of the State of Maryland Finance and Procurement Article of the Annotated Code of Maryland. I acknowledge that, if the representations set forth in this affidavit are not true and correct, the Town of Bladensburg may terminate any contract awarded and take any other appropriate actions. I further acknowledge that I am executing this affidavit in compliance with Section 16-309 of the State Finance and Procurement Article of the Annotated Code of Maryland, which ordains that any person convicted of bribery (upon acts committed after July 1, 1977) in furtherance of obtaining a contract from the State or any subdivision of the State of Maryland shall be disqualified from entering into a contract with the Town.

I further affirm that the business entity is properly registered to do business in the State of Maryland, or is not required to be registered.

I do solemnly declare and affirm under the penalties of perjury that the contents of the affidavit are true and correct.

June 17, 2024

Date



Signature

Anthony Brudis

Printed Name



Brudis & Associates, Inc.
Consulting Engineers
www.brudis.com