



Maryland Department of Transportation  
State Highway Administration  
Office of Highway Development



Contract No. PG7005170

# MD 210 - LIVINGSTON ROAD / KERBY HILL ROAD INTERCHANGE



September 9, 2014

*I-95/I-895 Interchange (I-95 Express Toll Lanes) - Baltimore City/Baltimore County, MD*



**CONCRETE  
GENERAL, INC.**

**WR&A** WHITMAN, REQUARDT & ASSOCIATES, LLP  
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*Design-Build MD 355 at Montrose Road/  
Randolph Road from "Old" Old Georgetown  
Road to Maple/Chapman Avenue-  
Montgomery County, MD*

**CONCRETE  
GENERAL, INC.**

**WR&A** WHITMAN, REQUARDT  
& ASSOCIATES, LLP  
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Maryland Department of Transportation  
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# MD 210 - LIVINGSTON ROAD / KERBY HILL ROAD INTERCHANGE



*I-70/Relocated MD 355 Interchange  
from South of MD 85 to North of MD 914  
(Phases 2 & 2B) - Frederick County, MD*

**CONCRETE  
GENERAL, INC.**

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& ASSOCIATES, LLP  
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XVII (A). Lead Design Firm Experience  
/Qualifications and Past Performance



**FORM A-1 – Lead Design Firm Experience**

**PROPOSED KEY STAFF INFORMATION**

Name of Proposer: **Concrete General, Inc.**

Position	Name	Years of Experience <sup>1</sup>	Education/ Registrations	Name of Employer
Project Design Manager	Walter Miller	21/27	BS/Civil Engineering MD PE #19165	Whitman, Requardt & Associates, LLP
Hydrological/Hydraulics Design Engineer	Jason Cosler	15/22	BS/Civil Engineering MD PE #28467	Whitman, Requardt & Associates, LLP
Geotechnical Design Engineer	Monica Paylor	15/23	BS/Civil Engineering MD PE #24413	Whitman, Requardt & Associates, LLP
Landscape Architect	Diane Szekely	18/28	BS/Landscape Architecture MD RLA #961	Streetscapes, Inc.
Highway Engineer	Gary Bush	37/37	BS/Civil Engineering MD PE #14255	Whitman, Requardt & Associates, LLP
Traffic Engineer	Jeremy Mocny	17/17	BS/Civil Engineering MD PE #27048 PTOE #1845	Whitman, Requardt & Associates, LLP
Structural Engineer	Scott Kirwin	18/22	BS/Civil Engineering MD PE #22843	Whitman, Requardt & Associates, LLP
Stream Restoration Specialist	Charles Hegberg	1/28	MA/Physical Geography and Environmental Planning BS/Natural Science	Skelly and Loy, Inc.

<sup>1</sup> Present Firm/Total

## Walter Miller, PE – Project Design Manager

Partner – Whitman, Requardt & Associates, LLP

Years of Experience: With Firm: 21 With Other Firms: 6

Education: BS/1987/Civil Engineering

Active Registration: 1991/Maryland Registered Professional Engineer, License No. 19165

### Professional Experience:

Mr. Miller has spent his entire 27-year career working with SHA and other Maryland transportation agencies covering all aspects of transportation design including studies, preliminary and final design, development of contract documents, and construction support services. Project design services include surveys, subsurface investigations and testing, roadway design, bicycle and pedestrian design, MOT, drainage, SWM, ESC, structural design, geotechnical and pavement design, traffic engineering, TMPs, MOTAAAs, signing, marking, lighting, signalization, interconnect, noise mitigation and barrier design, landscaping and reforestation, stream restoration, permitting and permit modifications, environmental compliance, utility relocation design and coordination, Partnering During Design and Construction, and public outreach. Recent relevant experience includes:

**2007-2011 (\$38M) Design-Build MD 237 from MD 235 to Pegg Road, SHA, St. Mary's County, MD** – Project Design Manager for final design-build contract documents and construction phase services for the dualization and reconstruction of 2.88 miles of MD 237. Services included survey; roadway design; bicycle and pedestrian improvements; drainage; SWM; ESC; box culvert design, including maintenance of stream flow and a rock ramp; retaining wall design; noise analysis and barrier design; MOT; geotechnical and pavement design; water, sewer, and gas relocation design; utility coordination; signalization, signing, markings, and lighting; landscape design; permitting/compliance; and public outreach.

**2007-2010 (\$30M) Design-Build I-495 at Arena Drive from MD 202 to MD 214, SHA, Prince George's County, MD** – Project Design Manager for final design-build contract documents and construction phase services for 1.9 miles of median widening on the Capital Beltway for additional lanes in each direction, reconfiguring ramps and modifying intersections at the MD 214 and MD 202 interchanges, and modifying intersections at the Arena Drive ramp termini. Services included survey; roadway design; pedestrian improvements; drainage; SWM; ESC; MOT; geotechnical and pavement design; utility coordination; signalization, signing, markings, and lighting; landscape design; permitting/compliance; and public outreach.

**2006-2011 (\$25M) Design-Build MD 355 at Montrose Road/Randolph Road from "Old" Old Georgetown**

**Road to Maple/Chapman Avenue (No. MO8305171), SHA, Montgomery County, MD** – GEC Project Manager, acting on behalf of SHA-HDD, managing the design and preparation of contract documents by other consultants for the preliminary and final design-build phases and an \$8M advanced utility relocation contract for this interchange project. Mr. Miller provided technical design reviews and extensive coordination with the public, utility companies, permit agencies, SHA divisions, Montgomery County, and FHWA.

**1998-2009 (\$205M) I-95/I-495/I-295 Interchange (Part of the Woodrow Wilson Bridge Project), SHA, Prince George's County, MD** – WR&A's Project Structural Manager for the design of 10 bridges and 18 retaining walls for this interchange reconstruction and widening project. The project consisted of four contracts and involved complex construction staging, integral piers, temporary geotextile retaining walls, and two-staged retaining walls, to maintain traffic during construction of bridges and roadway improvements. *2005 MdQI Award for Partnering-Large Project; 2006 MdQI Awards for Consultant Highway Design and Bridge Design; 2008 ASCE Outstanding Civil Engineering Achievement Award; 2011 MdQI Award of Excellence Bronze Partnering Award.*

**1997-2009 (\$78M) I-70/Relocated MD 355 Interchange from South of MD 85 to North of MD 914 (Phases 2 and 2B), SHA, Frederick County, MD** – Provided QA/QC for the design and contract documents for a two-span curved steel girder bridge supporting a single point urban interchange at MD 85 and an adjoining retaining wall.

**1998-2006 (\$49M) Grade Separation of CSXT Railroad at MD 450, SHA, Prince George's County, MD** – Project Manager for the design of this grade separation project involving raising the CSXT mainline over existing MD 450. The project included three new bridges, a temporary bridge, 3,500 LF of parallel retaining walls, 1.1 miles of permanent and temporary mainline rail track, roadway improvements, and utility relocations. The project was located in a very confined corridor, within the Chesapeake Bay Critical Area, and bordered by park land and historic properties. *Mr. Miller received two Certificates of Appreciation at two SHA awards ceremonies for service as Project Manager.*

## Jason Cosler, PE – Hydrological/Hydraulics Design Engineer

Vice President – Whitman, Requardt & Associates, LLP

Years of Experience: With Firm: 15 With Other Firms: 7

Education: BS/1992/Civil Engineering

Active Registration: 2002/Maryland Registered Professional Engineer, License No. 28467

### Professional Experience:

Mr. Cosler has 22 years of experience in hydrology and hydraulics (H/H) for public infrastructure, transportation and development-related projects. His experience includes the investigation, analysis, and design of storm drains, culverts, SWM facilities, bridges and low-water crossings, ESC measures and permitting, stream stability assessments and restoration design, scour analysis and countermeasure/revetment design. He is experienced in the application and interpretations of the 2000 Maryland Stormwater Design Manual including recent updates requiring environmental site design (ESD), as well as methodologies and programs including HDS-5, HY-8, HY-22, HEC-11, HEC-14, HEC-18, HEC-21, HEC-23 and TR-55. He has advanced training in HEC-RAS, GIS Hydro 2000, TR-20, ABSCOUR and is Yellow Card certified. He possesses training in stream assessment and restoration based upon Rosgen methodologies. He is actively involved in the SHA Partnering for Success training program and has presented the training to graduate engineers and the consulting community.

**1998-2009 (\$205M) I-95/I-495/I-295 Interchange (Part of the Woodrow Wilson Bridge Project), SHA, Prince George's County, MD** – H/H Design Engineer responsible for storm drain and ESC design for this interchange reconstruction and widening project completed under four contracts. Mr. Cosler was also the Project Manager responsible for the development of contract documents for a \$10M geotechnical soil pre-consolidation contract (MA-1A) for the Maryland abutment construction. Design elements included special drainage systems to accommodate embankment settlement and MSE walls, revetment design, phased ESC plans to accommodate the MOT plan, and permitting.

**1997-2009 (\$78M) I-70/Relocated MD 355 Interchange from South of MD 85 to North of MD 914 (Phases 2 and 2B), SHA, Frederick County, MD** – H/H Design Engineer responsible for the drainage, SWM and ESC plans for highway improvements and a new interchange along I-70 at MD 85. The project required special analysis and design of drainage and SWM systems due to Karst topology. Responsible for the development of drainage and SWM agreements between SHA and adjacent property owners.

**2007-2011 (\$38M) Design-Build MD 237 from MD 235 to Pegg Road, SHA, St. Mary's County, MD** – Lead H/H Design Engineer responsible for the design, plan preparation, and MDE and SHA approvals for open and closed storm drain systems, eight SWM facilities, and ESC for dualization of 2.88 miles of closed-section divided roadway. Also responsible for design of a dual-cell concrete box culvert replacement with animal passage and a downstream rock ramp at the Jarboesville Run crossing.

**2007-2010 (\$30M) Design-Build I-495 at Arena Drive from MD 202 to MD 214, SHA, Prince George's County, MD** – Lead H/H Design Engineer for 1.9 miles of median widening on the Capital Beltway for additional lanes in each direction, reconfiguring ramps and modifying intersections at the MD 214 and MD 202 interchanges, and modifying intersections at the Arena Drive ramp termini. Developed a revised SWM concept and oversaw design of 1,700 LF of storm drain trunk line, including a 48" conduit jacked and bored under I-495. Also responsible for the development of all ESC plans and coordinated approvals with MDE and SHA.

**2008-Ongoing (\$140M) US 301, Section 1, DelDOT, New Castle County, DE** – Lead H/H Design Engineer for Section 1 of a new off-alignment, four-lane divided highway. Project includes numerous new bridge and culvert waterway crossings, SWM, ESC, and maintenance of stream flow elements. Responsible for development of all H/H analysis and design, floodplain mapping, and scour models for structures. Also responsible for supervision of stream restoration design for Scott Run including removal of in-stream dam structure.

**2006-2012 (\$12M) MD 295 Third Lane Widening, SHA, Anne Arundel County, MD** – Lead H/H Design Engineer responsible for all drainage, SWM, and ESC design and permitting for 1.98 mile, third lane widening project. Project SWM design included the use of grass-lined channels and vegetated buffers to meet water quality requirements, combined with forested dry basins to integrate quantity control requirements with the project's aesthetic guidelines. SWM design was restricted by Maryland Aviation Administration requirements prohibiting the use of wet ponds.

## Monica Paylor, PE – Geotechnical Design Engineer

Vice President – Whitman, Requardt & Associates, LLP

**Years of Experience:** With Firm: 15 With Other Firms: 8

**Education:** BS/1991/Civil Engineering

**Active Registration:** 1999/Maryland Registered Professional Engineer, License No. 24413

### Professional Experience:

Ms. Paylor has more than 23 years of geotechnical engineering experience on transportation related projects, including more than 15 years of experience on transportation projects in Maryland. Ms. Paylor's experience includes subsurface investigations, slope evaluation and analysis, foundation design for various transportation structures, retaining wall design, and support of excavation design in accordance with AASHTO LRFD Specifications. She is experienced in providing recommendations for structure foundations, jack and bore tunneling, microtunneling, scour mitigation, analysis of soil improvement methods due to soft soils, and pavement evaluation and design in accordance with AASHTO and SHA guidelines. She is familiar with the various subsurface conditions that can be found throughout Maryland. Recent relevant experience includes:

**1998-2009 (\$205M) I-95/I-495/I-295 Interchange (Part of the Woodrow Wilson Bridge Project), SHA, Prince George's County, MD** – Lead Geotechnical Design Engineer responsible for developing the subsurface investigation programs, geotechnical analyses, and foundation recommendations for 27 bridges, more than 30 retaining walls, support of excavation, and slope recommendations. Provided recommendations for subgrade preparation based on pavement support requirements. The project's initial phase required the development of contract documents for the placement of embankment fill using staged construction, geotechnical instrumentation, wick drains, two-stage MSE walls, lightweight fill and high strength geotextiles to address poor existing soil conditions at the Maryland abutment.

**2006-2010 (\$208M) I-95/I-695 Interchange (Section 100, Segment 2, Contract 1), MDTA, Baltimore County, MD** – Lead Geotechnical Design Engineer responsible for evaluating the subsurface data, analyzing foundation options, and providing cost estimates used to determine the most cost efficient foundation types. Provided foundation recommendations for nine new bridges. Performed external and global stability, foundation analyses, and grading recommendations for 16 new retaining walls. Provided grading and slope analyses and recommendations for subgrade improvements due to poor soil conditions. Provided construction support which included the review of dynamic pile test results performed

to confirm that the installed foundations provided the required capacities without overstressing the piles.

**2007-2011 (\$38M) Design-Build MD 237 from MD 235 to Pegg Road, SHA, St. Mary's County, MD** – Lead Geotechnical Design Engineer responsible for developing a supplemental subsurface investigation and laboratory testing program for the proposed staged dualization. Evaluated stability of slopes; provided foundation recommendations in accordance with AASHTO LRFD Bridge Specifications for a two-cell box culvert and three noise walls; evaluated global and external stability of a temporary retaining wall; evaluated subgrade conditions along the project; performed visual evaluation of pavement to be resurfaced; and provided pavement design recommendations for pavement rehabilitation of existing pavement and reconstruction, including Falling Weight Deflectometer testing, based on SHA and AASHTO design criteria. The pavement section used a bank run gravel base, a material not commonly used by SHA but local to southern Maryland, resulting in significant savings to SHA. Provided construction inspection of drilled shafts for noise walls and pile driving operations. Reviewed dynamic pile test data performed to confirm that the installed piles provided the required capacities.

**2008-Ongoing (\$180M) Reconstruction of Canton Viaduct, MDTA, Baltimore, MD** – Lead Geotechnical Design Engineer responsible for developing the subsurface investigation program and foundation analysis and design in accordance with AASHTO LRFD Bridge Specifications. The project includes developing foundation recommendations for the 3,300-foot replacement bridge, Holabird Avenue Ramp bridge, and a pile supported retained fill needed due to the presence of soft soils. The foundations were chosen to minimize construction time and equipment size in an effort to reduce the time required for lane closures. Evaluated subgrade conditions and provided pavement design recommendations for the bridge approach roadways in accordance with AASHTO and SHA guidelines.

## Diane Szekely, RLA – Landscape Architect

President – Streetscapes, Inc.

**Years of Experience:** With Firm: 18 With Other Firms: 10

**Education:** BS/1986/Landscape Architecture; Certificate of Merit, Longwood Gardens/1996/Ornamental Plant Material

**Active Registration:** 1990/Maryland Registered Landscape Architect, License No. 961

### Professional Experience:

Ms. Szekely has more than 28 years of experience as a landscape architect in the public sector. Her experience includes more than 10 years with SHA. Over the last 18 years, her clients have included various divisions of SHA, MTA, MDTA, MAA, Maryland Stadium Authority, M-NCPPC, DeIDOT, and VDOT, as well as various towns and counties throughout Maryland. As a Landscape Architect, she is proficient in the design process, preparing illustrative drawings, and giving public presentations. Her experience spans a project from conception to completion including: site inventory and analysis, base plan preparation, program development, conceptual design, design development, construction document preparation (including plans in MicroStation format, specifications and construction cost estimates), shop drawing review, and post construction evaluation. Her work routinely includes designing roadside revegetation/reforestation, median and streetscape planting, and planting for SWM/bioretenion facilities and wetland mitigation. Her full understanding of the Maryland Roadside Tree Law, Maryland Reforestation Law, and Stormwater Management Facility Visual and Environmental Quality and Safety criteria provide comprehensive design development of projects. Recent relevant experience includes:

**2008-2011 (\$700M) Section 100 – I-95 ETL from I-895 to North of MD 43, MDTA, Baltimore City/Baltimore County, MD** – Landscape Architect responsible for the preparation of landscape construction documents for this interchange reconstruction project including more than nine miles of highway and three interchanges. Responsibilities included developing planting plans for three separate construction contracts; each included planting along the roadside, noise walls, and SWM facilities. The design utilized vegetation along the highway for various purposes: vegetative buffers, slope stabilization, environmental diversity and ecological enhancement, aesthetics, and reforestation.

**2003-2008 (\$28M) Design-Build US 29 at MD 198 Interchange, SHA, Montgomery County, MD** – Landscape Architect responsible for the preparation of landscape construction documents for this interchange project. Landscape design included conceptual design, design development and construction documents for the

roadside landscaping and reforestation requirements of the project.

**2007-2011 (\$38M) Design-Build MD 237 from MD 235 to Pegg Road, SHA, St. Mary's County, MD** – Landscape Architect responsible for the preparation of landscape construction documents for the dualization and reconstruction of 2.88 miles of MD 237. Landscape design included roadside and median planting, reforestation, planting along noise barriers and within eight SWM facilities, and wetland mitigation.

**2007-2010 (\$30M) Design-Build I-495 at Arena Drive from MD 202 to MD 214, SHA, Prince George's County, MD** – Landscape Architect responsible for the preparation of landscape construction documents for 1.9 miles of median widening on the Capital Beltway, reconfiguring ramps and modifying intersections. Landscape design included roadside planting, reforestation, and planting within a SWM facility.

**2007-2012 (\$500M) Design-Build Intercounty Connector (ICC), Contract C, SHA/MDTA, Montgomery County and Prince George's County, MD** – Assisted in the preparation of landscape construction documents for the new interchange. Landscape design included planting adjacent to roads, bridges, bicycle paths, SWM facilities and noise barriers, including reforestation and gateway treatments where appropriate. The Landscape Architectural Design team addressed in a collaborative, multi-disciplinary approach, the functional and aesthetic needs of the project, which included the preparation and implementation of successful design responses to the commitments established for the project.

**2007-2012 (\$8M) Roads Improvements for Lottsford, Woodmore and Enterprise Roads, Prince George's County DPW, Prince George's County, MD** – Landscape Architect responsible for the preparation of landscape construction documents for roadway widening and associated improvements. Responsibilities included developing landscape designs for two proposed SWM facilities, roadside and median plantings, and reforestation.

## Gary Bush, PE – Highway Engineer

Vice President – Whitman, Requardt & Associates, LLP

Years of Experience: With Firm: 37 With Other Firms: 0

Education: BS/1976/Civil Engineering

Active Registration: 1985/Maryland Registered Professional Engineer, License No. 14255

### Professional Experience:

Mr. Bush has 37 years of highway design experience on SHA projects. He is fully knowledgeable of SHA guidelines, standards, and specifications; FHWA requirements; AASHTO; and MUTCD/MDMUTCD guidelines. Responsibilities consist of all aspects of projects, including studies, preliminary and final design, development of contract documents and construction related services. SHA experience includes projects for interstates; interchange reconstruction/rehabilitation; urban and rural roadway widenings/reconstructions; and streetscape, rehabilitation, and intersection improvement projects. Recent relevant projects include:

**1998-2009 (\$205M) I-95/I-495/I-295 Interchange (Part of the Woodrow Wilson Bridge Project), SHA, Prince George's County, MD** – WR&A's Lead Highway Engineer and Discipline Coordinator for the design and preparation of contract documents for this interchange reconstruction and widening project, including 1.9 miles of mainline, 23 ramps (11 miles), 27 bridges, and more than 30 retaining walls. Project consisted of four construction contracts, and involved complex construction staging to maintain traffic, drainage, ESC, and ITS devices while constructing bridges and roadway improvements.

**1997-2009 (\$78M) I-70/Relocated MD 355 Interchange from South of MD 85 to North of MD 914 (Phases 2 and 2B), SHA, Frederick County, MD** – Project Manager and Lead Highway Engineer for the design and preparation of contract documents for the widening of I-70, geometric improvements and widening of MD 355, relocation/reconstruction/widening of MD 85, and the construction of a new SPUI to replace an existing substandard interchange including four ramps and two retaining walls. Project included utility coordination; MOT; sequence of construction to maintain access to adjacent businesses; SWM, drainage, ESC; and signalization, signing, pavement marking, and lighting.

**2007-2011 (\$38M) Design-Build MD 237 from MD 235 to Pegg Road, SHA, St. Mary's County, MD** – Lead Highway Engineer for final design-build contract documents and construction phase services for the dualization and reconstruction of 2.88 miles of MD 237 from a two-lane roadway to a four-lane closed-section divided roadway. Project included highway design; SWM,

drainage, and ESC; noise barriers; box culvert; maintenance of stream flow; rock ramp; MOT; water, sewer and gas relocation; utility coordination; and signalization, signing, markings, and lighting. Mr. Bush also participated in the public outreach program.

**2007-2010 (\$30M) Design-Build I-495 at Arena Drive from MD 202 to MD 214, SHA, Prince George's County, MD** – Lead Highway Engineer for final design-build contract documents and construction phase services for the construction of 1.9 miles of median widening on the Capital Beltway for additional lanes and reconfiguring ramps and modifying intersections at three interchanges. Project included highway design, SWM, drainage, ESC, MOT, utility coordination, signalization, signing, markings, and lighting.

**2006-2011 (\$5M) MD 5 at Brandywine Road and MD 373 Capacity Improvements, SHA, Prince George's County, MD** – Task Manager and Lead Highway Engineer for the design and preparation of contract documents for capacity improvements to an at-grade intersection including 0.90 miles of mainline. Project included highway design, SWM, drainage, ESC, utility coordination, ROW, signalization, signing, markings, and construction related services.

**2008-Ongoing (\$26M) MD 22 Intersections Capacity Improvements, SHA, Harford County, MD** – Task Manager and Lead Highway Engineer for the preliminary and final design and preparation of contract documents for capacity improvements to three intersections along MD 22. Project consisted of performing traffic studies, preparing alternatives, public presentations, preparing conceptual and final design plans.

**2007-2012 (\$12M) Design-Build US 113 Dualization from Hayes Landing Road to Five Mile Run (Phase 2B), SHA, Worcester County, MD** – Task Manager and Lead Highway Engineer for performing preliminary design and preparation of documents for the design-build advertisement of the dualization of US 113 for six miles. Project consisted of preparing preliminary highway and drainage design, conceptual SWM approval, utility coordination, ROW requirements, and preparation of IFB for design-build. Phase V services were performed including review of design-builder final design plans.

## Jeremy Mocny, PE, PTOE – Traffic Engineer

Vice President – Whitman, Requardt & Associates, LLP

**Years of Experience:** With Firm: 17 With Other Firms: 0

**Education:** BS/1997/Civil Engineering

**Active Registration:** 2002/Maryland Registered Professional Engineer, License No. 27048; Professional Traffic Operations Engineer, Certificate No. 1845

### Professional Experience:

Mr. Mocny has spent his entire 17-year career working with state and local transportation agencies in Maryland, Delaware and Virginia providing traffic/transportation engineering services covering a variety of transportation projects, including planning, analyses, studies, preliminary and final design, development of contract documents, program and project management, development of guidelines, and construction support services. Mr. Mocny is fully knowledgeable of SHA standards, guidelines, and specifications, FHWA requirements, AASHTO specifications and guidelines, and MUTCD/MDMUTCD guidelines. Recent relevant projects include:

**1998-2009 (\$205M) I-95/I-495/I-295 Interchange (Part of the Woodrow Wilson Bridge Project), SHA, Prince George's County, MD** – Traffic Engineer responsible for preparation of signing, markings, signalization, lighting, and ITS for this interchange reconstruction and widening project, including 1.9 miles of mainline, 23 ramps, 27 bridges, and more than 30 retaining walls. Project consisted of four construction contracts, and involved complex construction staging to maintain traffic, drainage, ESC, and ITS devices. **2005 MdQI Award for Partnering-Large Project; 2006 MdQI Awards for Consultant Highway Design and Bridge Design; 2008 ASCE Outstanding Civil Engineering Achievement Award; 2011 MdQI Award of Excellence Bronze Partnering Award.**

**2007-2011 (\$38M) Design-Build MD 237 from MD 235 to Pegg Road, SHA, St. Mary's County, MD** – Lead Traffic Engineer for final design-build contract documents and construction phase services for the dualization and reconstruction of 2.88 miles of MD 237 from a two lane roadway to a four-lane closed-section divided roadway. Responsible for signing and marking plans, and coordinating traffic control device design with other design disciplines. Performed shop drawing review and construction coordination for all traffic control devices on the project.

**2007-2010 (\$30M) Design-Build I-495 at Arena Drive from MD 202 to MD 214, SHA, Prince George's County, MD** – Lead Traffic Engineer for final design-build contract documents and construction phase services for the construction of 1.9 miles of median widening on the Capital Beltway for additional lanes and reconfiguring ramps and

modifying intersections at three interchanges. Responsible for coordinating traffic control device design with other design disciplines. Design efforts included preparing signing and marking plans, which included innovative re-use of six impacted sign structures, and reviewing the design of traffic signals and roadway lighting. Performed shop drawing review and construction coordination for all traffic control devices on the project.

**2008-Ongoing (\$140M) US 301, Section 1, DelDOT, New Castle County, DE** – Lead Traffic Engineer for the design of a 5.5 mile segment of a new alignment, four-lane divided, limited access toll freeway, which included two interchanges, one at the terminus with SR 1 and one at Jamison Corner Road. WR&A's segment, Segment No. 1, was broken into four construction contracts that were all designed concurrently. Traffic engineering responsibilities included temporary traffic control and construction phasing plans; signing, marking and conduit plans; signals; lighting plans; and TMP development. Project is scheduled for advertisement in 2015.

**2007-2013 (\$46M) Fairfax County Parkway Interchange at Fair Lakes Parkway, VDOT, Fairfax County, VA** – Senior Traffic Design Engineer for this project which widened the parkway from two lanes divided to four lanes divided with a tight urban diamond interchange design at Fair Lakes Parkway and Monument Drive. Traffic engineering design efforts included signing, marking, lighting, signals, and ITS. Mr. Mocny was responsible for overseeing lighting, signing, pavement marking design, shop drawing review, and construction coordination.

**2009-Ongoing (\$7M in design fees) SHA Traffic Engineering Design Division (TEDD) Open-End Contracts, SHA, Statewide, MD** – Project Traffic Engineer responsible for the design of signing, marking, lighting, signal, ITS, MOT, program management, guidelines development on more than 330 assignments statewide. TEDD has recognized WR&A and its key staff members, including Mr. Mocny, with two awards for Outstanding Customer Service. Work has included field inventories, contract document development, and construction related services.

## Scott Kirwin, PE – Structural Engineer

Associate – Whitman, Requardt & Associates, LLP

Years of Experience: With Firm: 18 With Other Firms: 4

Education: BS/1992/Civil Engineering

Active Registration: 1997/Maryland Registered Professional Engineer, License No. 22843

### Professional Experience:

Mr. Kirwin has 22 years of structural engineering experience covering all aspects of structural design including field investigations, inspection, testing, analysis, load rating, structural evaluation, feasibility and constructability studies, foundation evaluations and design, scour analyses and countermeasure design, preliminary and final design, cost estimates, preparation of contract documents and construction related services for the repair and/or rehabilitation of existing bridges and design of new bridges, culverts, retaining walls, and other transportation-related structures. Mr. Kirwin has experience with various bridge types, including composite/non-composite steel beams/girders, curved plate girders, prestressed concrete girders, box culverts, rigid frames, concrete arches, and concrete and steel pipes. Recent relevant experience includes:

**1998-2009 (\$205M) I-95/I-495/I-295 Interchange (Part of the Woodrow Wilson Bridge Project), SHA, Prince George's County, MD** – Structural Design Engineer responsible for the preliminary design, foundation design, final design, preparation of contract documents, and construction support services including shop drawing review for 10 bridges and 18 retaining walls. Bridges included a 10-span curved steel girder bridge, a two-span curved steel girder bridge, an 11-span curved steel girder bridge, a 5-span partially curved steel girder bridge, a 5-span prestressed concrete bridge, and six simple span prestressed concrete bridges. Retaining walls included two reinforced concrete walls and 16 MSE walls, including two-stage wire-faced walls. Received the *2005 MdQI Award for Partnering-Large Project*; *2006 MdQI Awards for Consultant Highway Design and Bridge Design*; *2008 ASCE Outstanding Civil Engineering Achievement Award*; *2011 MdQI Award of Excellence Bronze Partnering Award*.

**1997-2009 (\$78M) I-70/Relocated MD 355 Interchange from South of MD 85 to North of MD 914 (Phases 2 and 2B), SHA, Frederick County, MD** – Lead Structural Engineer responsible for the design and preparation of contract documents for a two-span continuous curved steel girder bridge located within a SPUI. Project also included the design of two retaining walls (1,300 LF) along the SPUI entrance ramps. Received the *2004 American Concrete Institute Award*; *2011 MdQI Award of Excellence*,

*Consultant – Highway Design*; *2011 ACEC National Recognition Award*.

**2008-Ongoing (\$140M) US 301, Section 1, DelDOT, New Castle County, DE** – Structural Engineer responsible for preparing and reviewing design computations and performing QA/QC review for nine bridges designed in conformance with the AASHTO LRFD Bridge Design Specifications. Responsible for the development of design methodology and criteria for cross frames, spherical bearings, moment slabs on top of MSE wall approaches and assisted in the QA/QC criteria for the pier design.

**2012-Ongoing (\$21M) Replacement of Harford Road over Herring Run, BCDOT, Baltimore City, MD** – Task Manager and Lead Structural Engineer responsible for the preliminary design, foundation design, final design, and preparation of contract documents for the replacement of a 1910 closed-spandrel arch bridge, which passes through Herring Run Park. Project structures include a 3-span, 291-foot, prestressed concrete girder bridge with arch façade panels, a 206-foot cast-in-place concrete retaining wall, and a 416-foot MSE retaining wall, all designed in conformance with the AASHTO LRFD Bridge Design Specifications. Responsibilities have also included coordination among all disciplines: highway, hydraulics, traffic, public and private utilities, SWM, ESC, lighting, landscaping, corrosion control, permitting, and art, which included subconsultants.

**2006-2011 (\$3M) Cedar Lane over Rock Creek, MCDOT, Montgomery County, MD** – Task Manager and Lead Structural Engineer responsible for the preliminary design, final design, and preparation of contract documents for rehabilitation of an existing 4-span, 170-foot prestressed concrete voided-slab beam bridge designed in conformance with the AASHTO LRFD Bridge Design Specifications using accelerated bridge construction techniques. Replaced the existing superstructure with a prestressed concrete solid-slab beam superstructure, removed and replaced portions of abutment stems, pier caps, and beam seats. Aesthetic concrete parapets were used to address community concerns. A temporary bridge was used to maintain pedestrian traffic during the road closure. The bridge replacement was completed in 45 days under a full detour.

## Charles Hegberg – Stream Restoration Specialist

Stream Restoration Specialist/Senior Environmental Consultant – Skelly and Loy, Inc.

**Years of Experience:** With Firm: 1 With Other Firms: 27

**Education:** MA1996/Physical Geography and Environmental Planning; BS/1987/Natural Science

**Active Registration:** MSHA ESC Certification No. 06-590 (Yellow Card); ESC Certification No. 35535 (Green Card)

**Publications:** "Natural Fish Passage Structures in Urban Streams – Part 1: Hydrologic and Resource Issues," <http://repositories.cdlib.org/jmie/roadeco/Hegberg2001a>; "Natural Fish Passage Structures in Urban Streams – Part 2: Hydraulic Design and Analysis," <http://repositories.cdlib.org/jmie/roadeco/Hegberg2001b>; "Fish Passage in Urban Streams: Using River Continuum Concepts in Site Selection," ACEC, Reno 2001.

### Professional Experience:

From the inception of the Chesapeake Bay Restoration program in 1987, Mr. Hegberg has been involved in a breadth of ecological restoration and water resources-related projects. His 28 years of experience in natural and water resources have given him the opportunity to manage and participate in projects that have spanned the entire life-cycle from planning through construction and project monitoring. This experience has included environmental program management and compliance, ecosystems restoration including streams, fish passage and reforestation, green infrastructure, water quality studies and BMPs, construction management and construction, remedial and adaptive management services and public presentations and involvement. Mr. Hegberg has extensive experience in the management and coordination of the many environmental/engineering facets for both traditional (D/B/B) and alternative delivery methods. Recent relevant experience includes:

**2001-2009 (\$2B) Woodrow Wilson Bridge Fish Passage Mitigation, SHA/VDOT, Prince George's County, MD and Alexandria, VA** – Project Manager and Technical Lead who oversaw and led the detailed mitigation site analysis and designed several tidal and non-tidal wetland mitigation sites, along with removing 23 fish passage blockages found throughout the Lower Potomac River Watershed. For wetlands, conceptual design plans (grading and planting schemes) were prepared for five sites: the 15-acre Anacostia East (tidal) site, three-acre Helwig Farm (non-tidal) site, 1.5-acre Bladensburg Marina (non-tidal) site, 10-acre Dobson Farm non-tidal site, and the 1.05-acre Tuxedo Road wetland/water quality enhancement site. Work efforts included research and development, environmental and engineering analysis, conceptual, final and PS&E design packages, preparing Engineer's cost estimates using Transport Estimator, field design changes and red lines, agency coordination and education, and construction oversight and regulatory compliance monitoring, final review and approval of green line plans and fish passage

measurement and validation.

**2006-2011 (\$460M) Design-Build Intercountry Connector (ICC) Contract A, SHA/MDTA, Montgomery County, MD** – Environmental Manager for the 7.2 mile, \$460 million ICC (MD 200) design-build project who was responsible for managing the Environmental Compliance team (ECT). The ECT was responsible for program development including environmental compliance training, provided technical input in the design and daily oversight of construction staff involved. The ECT monitored the design and construction activities for the highway to ensure that all 500+ commitments and permit requirements made were adhered to.

**2003-2011 (\$187M) Design-Build I-70/Six Point Road Interchange Fast Track, Indiana DOT, Indianapolis, IN** – Served as Project Manager and Senior Restoration Specialist responsible for the design of three miles of relocated stream channels and three temporary stream diversions. The permit required that the design provide significant biological uplift over the impacted channels based on the QHEI methodology. Design work included flow monitoring, sediment sampling, geomorphologic surveying, sediment transport model, design, plans, specifications and estimate; and construction management and oversight.

**2003-2006 (\$2M) Design-Build Wetland Mitigation, Stream Relocation and SWM, Panattoni Development Corporation, Plainfield, IN** - Senior Environmental Scientist responsible for providing assistance in the development of final design plans and permitting for this fast-tracked project to provide mitigation services for the development of a 1.4M SF warehouse. Using the flexibility of Indiana's regulations, provided an efficient, holistic watershed approach to substantially protect the natural resources and water quality of George's Creek. Designed an on-line stormwater management pond, which incorporated a relocated stream channel (4,800 LF), wetlands mitigation (12 acres), and pretreatment BMPs (four acres).



**FORM A-2 – LEAD DESIGN FIRM**

**PROJECT DESCRIPTION**

**Name of Proposer:** Concrete General, Inc.

Name of Design Firm: <u>Whitman, Requardt &amp; Associates, LLP</u>
Project Role: <u>Lead Design Firm</u> Designer: <input checked="" type="checkbox"/> Other (Describe): _____
Years of Experience: Roads/Streets: <u>99</u> Bridges/Structures: <u>99</u> Environmental: <u>99</u>
Project Name and Location: <u>I-95/I-495/I-295 Interchange (Part of the Woodrow Wilson Bridge Project), Prince George's County, Maryland</u>
Project Key Staff (as applicable to project)
Project Design Manager/Firm: John Moeller, PE/JMT
Hydrological/Hydraulics Engineer/Firm: Jason Cosler, PE/ WR&A for WR&A's work efforts
Geotechnical Design Engineer/Firm: Monica Paylor, PE/WR&A for WR&A's work efforts
Landscape Architect/Firm: David Patterson, RLA/MRA
Highway Engineer/Firm: Gary Bush, PE/WR&A for WR&A's work efforts
Traffic Engineer/Firm: Thomas Hannan, PE, PTOE/WR&A (Manager) and Jeremy Mocny, PE, PTOE/WR&A (Traffic Engineer) for WR&A work efforts
Structural Engineer/Firm: Walter Miller, PE/WR&A (Manager) and Scott Kirwin, PE/WR&A (Structural Engineer) for WR&A's work efforts
Stream Restoration Specialist/Firm: N/A
<b>Description and Specific Nature of Work for which your Firm was responsible and relevance to this contract:</b> As part of a joint venture design team, WR&A performed comprehensive preliminary and final design engineering services of this \$205.4 million interstate interchange in conjunction with the Woodrow Wilson Bridge (WWB) replacement project. WR&A's services included preparing conceptual alignments (line and grade) of interchange alternates, value engineering studies, preliminary and final engineering consisting of highway design; structural design of bridges, retaining walls, and drainage structures; drainage design and ESC; TMP, MOT, and complex construction phasing; signing, lighting, pavement markings, traffic signalization, and ITS; geotechnical analysis and foundation recommendations for bridges, and retaining walls; geotechnical analysis and design of roadway embankments including reinforced slopes and the pre-consolidation of soft fills at the Maryland abutment. Other services included assisting in obtaining MDE's SWM and ESC approvals, utility relocation coordination, coordination of interchange redesign to access a major new commercial development, coordination with the adjacent WWB bridge contract and I-95/MD 210 interchange, participation in Partnering During Design and Partnering During Construction, and Phase V construction-related services. The project adjoined the \$1 billion WWB to the west, the \$1+ billion development of National Harbor to the south, the I-95/MD 210 interchange to the east, and the DC widening of I-295 to the north. Special attention was given to the environmental and aesthetic aspects of the highway and structure designs due to the project's location along the Potomac River and its proximity to the nation's capital. The project included widening and reconstruction of I-95/I-495 (1.3 miles) to accommodate six highway lanes in each direction in an express/local configuration from the WWB to west of MD 210 and reconstruction and widening of I-295 (0.6 mile) to the DC line. The design included highway and major bridge ramps, secondary roads, access ramps, HOV lanes, and ingress and egress ramps for HOV lanes and express lanes. The I-95/I-495/I-295 interchange included eight I-95 mainline bridges, 16 ramp bridges, three pedestrian trail bridges, 31 permanent retaining walls, six temporary retaining walls, headwalls and a large drainage structure. The bridges included multi-span continuous curved steel girder bridges, multi-span continuous straight steel girder bridges, and single-span prestressed concrete girder bridges. The retaining walls consisted of both conventional and mechanically stabilized earth two-staged retaining

walls.

WR&A was responsible for drainage design and ESC for multi-phase construction across four construction contracts and for the coordination of the interchange drainage design with a private developer, state commissions, and federal landowners. WR&A assisted in obtaining state and federal environmental permits and worked closely with the contractors during post-award in order to achieve continuity between contracts and resolve environmental concerns on this highly visible project.

The interchange project was completed under four separate construction contracts, including a Pre-Consolidation contract for the expected soil consolidation at the new WWB Maryland approach and three roadway construction contracts to accept traffic shifted onto each of the two new WWB replacements. Coordination with the reconstruction of the I-95/MD 210 interchange was required. Contingent plans were included in the event phasing with the I-95/MD 210 interchange construction was not in sync due to unanticipated construction delays. Mid-way through the interchange design, the JV team was requested to modify the proposed interchange configuration to provide ingress and egress to the National Harbor development, a major new development adjacent to the interchange. Coordination with VDOT for the maintenance of ITS devices throughout construction of the I-95/I-495/I-295 interchange was required.

**Description of Design Schedules or Design Budgets Variance:** The project was schedule-critical requiring multiple construction contracts to be advertised and coordinated to accept traffic from the phased opening of the WWB replacement while maintaining traffic through the interchange. All design schedules were met under accelerated conditions. Design fees increased due to considerable scope changes during the design process, especially the inclusion of work associated with the tie-in with the National Harbor development.

**Description of Specific Nature of Work for which Key Staff proposed for this contract was responsible for on project and relevance to this contract:**

**Walter Miller, PE:** WR&A's Project Structural Manager responsible for the structural design for 10 bridges and 18 retaining walls.

**Jason Cosler, PE:** H/H Design Engineer responsible for storm drain and ESC design. Also, Project Manager responsible for a \$10M geotechnical soil pre-consolidation contract at the Maryland abutment.

**Monica Paylor, PE:** Lead Geotechnical Design Engineer responsible for developing subsurface investigation programs and performing geotechnical analyses and foundation recommendations for 27 bridges, more than 30 retaining walls, support of excavation, and slope recommendations. Provided recommendations for subgrade preparation based on pavement support requirements.

**Gary Bush, PE:** WR&A's Lead Highway Engineer and Discipline Coordinator for all highway elements.

**Jeremy Mocny, PE, PTOE:** Traffic Engineer responsible for design of signing, markings, signalization, lighting, and ITS.

**Scott Kirwin, PE:** Structural Design Engineer responsible for design of 10 bridges and 18 retaining walls.

List any awards and/or commendations received for the project: **2005 MdQI Award for Partnering-Large Project; 2006 MdQI Awards for Consultant Highway Design and Consultant Bridge Design; 2008 ASCE Outstanding Civil Engineering Achievement Award; and 2011 MdQI Award of Excellence Bronze Partnering Award.**

Name of Client (Owner/Agency, Contractor, etc.): Maryland State Highway Administration

Address: 707 North Calvert Street, Baltimore, MD 21202

Contact Name: Ms. Shirlene Cleveland

Telephone: (703) 691-6710

Owner's Project or Contract No.: BCS 98-15A

Fax No.: None

Initial Design Fee Value (US \$): \$13.5 million

Final Design Fee Value (US \$): \$19.4 million

Percent of Total Project Design Work Performed by Company: Approximately 50%

Commencement Date: Aug. 1998 Original Design Completion Date As Defined by Owner: Dec. 2005

Actual Design Completion Date: Nov. 2009 (extended by approved change orders)

Construction Contract Value (US \$): \$214.9 million

Final Value (US \$): \$205.4 million

Any disputes taken to arbitration or litigation? Yes

No

## FORM A-2 – LEAD DESIGN FIRM

### PROJECT DESCRIPTION

**Name of Proposer:** Concrete General, Inc.

Name of Design Firm: <u>Whitman, Requardt &amp; Associates, LLP</u>
Project Role: <u>Lead Design Firm</u> Designer: <input checked="" type="checkbox"/> Other (Describe): _____
Years of Experience: Roads/Streets: <u>99</u> Bridges/Structures: <u>99</u> Environmental: <u>99</u>
Project Name and Location: : <u>I-70/Relocated MD 355 Interchange from South of MD 85 to North of MD 914 (Phases 2 and 2B), Frederick County, Maryland</u>
Project Key Staff (as applicable to project)
Project Design Manager/Firm: Gary Bush, PE/WR&A
Hydrological/Hydraulics Engineer/Firm: Jason Cosler, PE/WR&A
Geotechnical Design Engineer/Firm: William Fitchett, PE/WR&A
Landscape Architect/Firm: By others under separate contract
Highway Engineer/Firm: Gary Bush, PE/WR&A
Traffic Engineer/Firm: Thomas Hannan, PE, PTOE/WR&A
Structural Engineer/Firm: Scott Kirwin, PE/WR&A
Stream Restoration Specialist/Firm: N/A
<p><b>Description and Specific Nature of Work for which your Firm was responsible and relevance to this contract:</b> WR&amp;A preformed the preliminary and final design of 0.85 miles of widening of I-70, 0.90 miles of reconstruction/widening of MD 355, 0.75 miles of reconstruction/widening of MD 85, and the design of a new SPUI at I-70/Relocated MD 355 to replace an existing substandard interchange. In addition to preliminary and final design, WR&amp;A performed traffic analysis, horizontal/vertical alignments studies for the SPUI and roundabout studies of various intersections. Roadway design services included third lane widening for 0.85 miles in both directions of I-70, four interchange ramps including acceleration/deceleration lanes, 0.90 miles of reconstructing/widening of MD 355, 0.75 miles of relocated MD 85. Hydrologic/hydraulic design services included design of open and closed drainage systems including conveying drainage to new and/or existing SWM facilities. A temporary SWM facility was designed and constructed prior to the construction of a new project facility. Hydrology and hydraulic studies were performed on an existing regional SWM facility to determine the required modifications for accepting drainage unable to flow to the new project facility. Structural design services included a new butterfly shaped bridge and MSE and top-down cast-in-place concrete retaining walls to accommodate the SPUI and support adjacent properties. Geotechnical services included foundation design for the I-70/MD 85 bridge consisting of micropiles, and the retaining walls. Also included the analysis of Karst topography and sinkhole remediation employing the use of compaction grouting, choking of sinkholes, and at-grade concrete slabs. Traffic engineering design services included performing roundabout studies of various intersections, extensive MOT studies for maintaining traffic for the full depth reconstruction of MD 355, maintaining traffic at existing intersections between MD 355/MD 85 including the maintenance of the existing traffic signal, and MOT on I-70 to maintain all lanes of traffic through the construction zone. Additional traffic engineering services included the design of five new traffic signals and reconstruction of an existing signal. Other services included performing utility coordination with utility owners on relocating impacted facilities including assisting in the development of an advance utility contract, performing Phase V services including participation in Partnering During Construction, review of shop drawings, responding to contractors' requests for information, and revisions to drawings during construction.</p>



Coordination with adjacent property owners required extensive studies and the development of various alternatives. Several adjacent properties were redeveloped during design which required coordination between the project and developers' plans. The project also incorporated access points for future development along the project corridor. Breakout projects, such as advanced utility relocation contracts, were prepared and advertised separately as funding for construction became available.

**Description of Design Schedules or Design Budgets Variance:** The project's original scope was to reconstruct the I-70/MD 355 interchange at its existing location. As the design progressed, reconstructing the interchange as original proposed was not adequate to accommodate future development and its associated traffic volumes. Further studies were performed which revealed the interchange should be relocated and reconfigured with MD 85 Relocated. This resulted in a major scope revision including revamping the design schedule and submitting a revised design scope and budget. The design fee figures and design completion date below are shown for the revised project scope. The actual design completion date was extended to address additional sinkhole remediation. The construction contract amount increased due to approved change orders for work added by SHA and additional sinkhole remediation.

**Description of Specific Nature of Work for which Key Staff proposed for this contract was responsible for on project and relevance to this contract:**

**Walter Miller, PE:** Provided QA/QC for the structural design and contract documents for the SPUI bridge and retaining walls.

**Jason Cosler, PE:** H/H Design Engineer responsible for design and coordination of all drainage, SWM, and ESC, including the design of a temporary SWM facility, modifications to an existing SWM facility, and acquiring MDE permit.

**Gary Bush, PE:** Project Manager and Lead Highway Engineer for the preliminary and final design and preparation of contract documents and construction phase services. Responsible for the roadway design of 0.85 miles of widening on I-70, 0.90 miles of reconstruction/widening of MD 355, 0.75 miles of reconstruction/widening of MD 85.

**Scott Kirwin, PE:** Lead Structural Engineer responsible for design of the SPUI bridge, MSE retaining wall, and top-down cast-in-place concrete retaining wall.

List any awards and/or commendations received for the project: **2004 American Concrete Institute Award; 2011 MdQI Award of Excellence, Consultant – Highway Design; and 2011 ACEC National Recognition Award.**

Name of Client (Owner/Agency, Contractor, etc.): Maryland State Highway Administration

Address: 707 North Calvert Street, Baltimore, MD 21202

Contact Name: Mr. Barry Kiedrowski Telephone: (410) 545-8769

Owner's Project or Contract No.: BCS 96-06B Fax No.: (410) 209-5001

Initial Design Fee Value (US \$): \$2.3 million Final Design Fee Value (US \$): \$2.3 million

Percent of Total Project Design Work Performed by Company: 60%

Commencement Date: Oct. 1997 Original Design Completion Date As Defined by Owner: Jan. 2009

Actual Design Completion Date: Dec, 2009

Construction Contract Value (US \$): \$73.1 million Final Value (US \$): \$78.2 million

Any disputes taken to arbitration or litigation? Yes  No

## FORM A-2 – LEAD DESIGN FIRM

### PROJECT DESCRIPTION

**Name of Proposer:** Concrete General, Inc.

Name of Design Firm: <u>Whitman, Requardt &amp; Associates, LLP</u>
Project Role: <u>Lead Design Firm</u> Designer: <input checked="" type="checkbox"/> Other (Describe): _____
Years of Experience: Roads/Streets: <u>99</u> Bridges/Structures: <u>99</u> Environmental: <u>99</u>
Project Name and Location: <u>Design-Build MD 237 from MD 235 to Pegg Road, St. Mary's County, MD</u>
Project Key Staff (as applicable to project)
Project Design Manager/Firm: <u>Walter Miller, PE/WR&amp;A</u>
Hydrological/Hydraulics Engineer/Firm: <u>Jason Cosler, PE/WR&amp;A</u>
Geotechnical Design Engineer/Firm: <u>Monica Paylor, PE/WR&amp;A</u>
Landscape Architect/Firm: <u>Diane Szekely, RLA/SI</u>
Highway Engineer/Firm: <u>Gary Bush, PE/WR&amp;A</u>
Traffic Engineer/Firm: <u>Jeremy Mocny, PE, PTOE/WR&amp;A</u>
Structural Engineer/Firm: <u>Brian Brawand, PE/ formerly with WR&amp;A</u>
Stream Restoration Specialist/Firm: <u>n/a</u>
<p><b>Description and Specific Nature of Work for which your Firm was responsible and relevance to this contract:</b> WR&amp;A was the lead design firm for this design-build project responsible for performing final engineering services, preparing final construction documents, and obtaining approvals for the dualization and reconstruction of 2.9 miles of MD 237 from a two-lane open section roadway to a four-lane closed-section divided roadway with left-turn lanes at select intersections. Continuous bicycle lanes and sidewalks were provided along the entire length of the project. Additional improvements included resurfacing and reconstruction of 16 intersecting side streets and over 65 driveways and entrances. The project included a new closed storm drain system consisting of over 13,500 LF of drainage pipe, eight (8) new SWM facilities, and extensive phasing of erosion and sediment control. A 2,200 LF portion of MD 237 vertical alignment was raised 12' to accommodate the replacement of undersized pipe culverts with a larger twin-cell reinforced box culvert. A temporary fabric wall was installed along the proposed fill embankment to maintain traffic along MD 237 for the box culvert construction. Three noise walls supported on drilled shafts, totaling 1,700 LF, were installed along several residential communities. Geotechnical services included foundation design for the twin-cell box culvert and noise walls, geotechnical evaluation and design of roadway embankments and cuts, and pavement design including Falling Weight Deflectometer testing of existing pavement. The pavement section used a bank run gravel base, a material not commonly used by SHA but local to southern Maryland, resulting in significant savings to SHA. Utility work consisted of designing and installing over 10,000 LF of 12" ductile iron water pipe, 6,000 LF of 6" and 8" gas line, 350 LF of low pressure sanitary sewer line with grinder pumps. Utility coordination with utility companies for the relocation of aerial electric, telephone, and cable was a first order effort requiring individual meetings with utility owners to synchronize their relocation with the roadway reconstruction. Advanced relocation of major electric and telephone aerial facilities was required to facilitate the driving of the piles for the new box culvert. Traffic engineering services included the installation of five new traffic signals, signal interconnect, relocation of a school flasher, new signing and pavement markings, and new intersection lighting. All intersections were designed to be ADA compliant and were field checked for compliancy during construction. Extensive MOT plans were developed to maintain traffic along all roadways and access to</p>

driveways and entrances at all times. Temporary cross-overs from newly constructed pavement to the existing pavement were needed as portions of the project were completed. Extensive landscaping was provided along MD 237 roadside and medians, within SWM facilities, and for wetlands and forest mitigation.

The project was divided into four construction zones to accelerate critical path construction elements (e.g., utility relocation, box culvert, noise wall, etc.) and to manage stormwater runoff during construction. SWM facilities were initially constructed as sediment traps and then converted to final SWM facilities as sections were completed. Each construction zone was designed and submitted for approval separately. This allowed construction to proceed in approved zones as subsequent zones were being designed and approved.

Environmental compliance was a priority and the SHA retained an Independent Environmental Monitor (IEM) through the project duration. Close coordination with the IEM was required to maintain the project within the permit conditions as authorized by the Water Management Administration, the Water Quality Certification, and approved plans and specifications. Special attention was required at Jarboesville Run with the replacement of the pipe culverts with a box culvert due to its natural resources. An automated water quality data logger was installed upstream and downstream to monitor the water quality. Temporary stream diversions were installed to facilitate the construction of the box culvert and a rock ramp for fish passage.

A public outreach program was implemented including several public meetings and distribution of brochures to inform the public of the project progress and future work efforts. Individual meetings with concerned property owners were performed to discuss impacts to the owners' properties and respond to their questions and concerns. Coordination with an adjoining St. Mary's County project was also required.

**Description of Design Schedules or Design Budgets Variance:** The design and construction schedule were fully integrated and all design dates were met. A one-year time extension was granted due to delayed project award and approved change orders. Design and construction contract amounts increased due to approved change orders for work added by SHA.

**Description of Specific Nature of Work for which Key Staff proposed for this contract was responsible for on project and relevance to this contract:**

**Walter Miller, PE:** Project Design Manager responsible for all design services, including design, scheduling, budgeting, subconsultants, coordination with the lead contractor, SHA, and other stakeholders.

**Jason Cosler, PE:** Lead H/H Design Engineer responsible for analysis and design of all storm drain, SWM, and ESC, acquiring MDE permits, stream rock ramp design, and Joint Permit modification.

**Monica Paylor, PE:** Lead Geotechnical Design Engineer responsible for subsurface investigations, evaluation of highway earthwork and existing pavement, pavement design, foundation recommendations for a two cell box culvert and three noise barriers, and design of temporary retaining walls.

**Diane Szekely, RLA:** Landscape Architect responsible for landscaping for roadside, median, SWM reforestation, and wetland mitigation.

**Gary Bush, PE:** Lead Highway Engineer responsible for all roadway design elements.

**Jeremy Mocny, PE, PTOE:** Lead Traffic Engineer responsible for traffic analysis and design for multi-stage MOT along MD 237, traffic signalization, roadway lighting, signing, and pavement markings.

List any awards and/or commendations received for the project:

Name of Client (Owner/Agency, Contractor, etc.): Maryland State Highway Administration

Address: 707 North Calvert Street, Baltimore, MD 21202

Contact Name: Mr. Jeffrey Folden Telephone: (410) 545-8814

Owner's Project or Contract No.: SM7575171 Fax No.: (410) 209-5001

Initial Design Fee Value (US \$): \$3.0 million Final Design Fee Value (US \$): \$3.1 million

Percent of Total Project Design Work Performed by Company: 100%

Commencement Date: Dec. 2007 Original Design Completion Date As Defined by Owner: Nov. 2010

Actual Design Completion Date: Oct. 2011 (extended by approved change orders)

Construction Contract Value (US \$): \$35.9 million Final Value (US \$): \$37.8 million

Any disputes taken to arbitration or litigation? Yes  No

### Environmental Past Performance – Lead Design Firm:

Throughout the design of all our projects, WR&A regularly looks for opportunities to avoid, minimize, and mitigate impacts to environmental resources. Our design staff is aware of the need to minimize the limits of disturbance adjacent to environmental features, paying particular attention to elements such as stormwater management facilities, ditches and outfalls, utility relocations, and ESC devices, as well as considering impacts associated with construction access and constructability. We recognize that stewardship is a collaborative process between the design-build team, SHA, regulatory agencies, and the community. We have successfully implemented stewardship practices on our previous projects for the SHA and we will continue to do so for the MD 210 – Livingston Road/Kirby Hill Road Interchange Design-Build project. Project-specific examples of techniques, products, and practices WR&A has employed on our past projects include the following:

*I-495 at Arena Drive Design-Build, Prince George's County, MD* – During the design of the I-495 at Arena Drive Design-Build project, WR&A determined that the two stormwater management ponds identified in the RFP Concept Plans could be consolidated into one stormwater management pond and located within the gore area of the I-495 SB/MD 202 EB ramp. This WR&A initiated redesign was successful in preserving large forested areas, totaling more than five acres, within the loop ramps of the interchange.

*MD 237 from MD 235 to Pegg Road Design-Build, St. Mary's County, MD* – For the MD 237 from MD 235 to Pegg Road Design-Build project, WR&A was successful in minimizing permitted impacts to wetlands, waterways, and trees identified in the RFP by restricting the limits of disturbance during final design. Our efforts resulted in a net decrease in impacts to wetlands, waterways, and trees. WR&A worked with SHA's OHD and EPD, MDE, USACE, and DNR to obtain all required permit modification approvals. In addition, during final design, WR&A identified an opportunity to treat runoff entering the project's most sensitive resource, Jarboesville Run. The runoff discharging from the sump in MD 237 at the location of the culvert crossing could not be treated in the adjacent stormwater management facilities due to elevation change, and the project's concept stormwater management scheme provided by SHA with the RFP did not propose any water quality treatment for this runoff. WR&A successfully tailored the maintenance of stream flow plan for the crossing such that a diversion channel could be converted to vernal pools and riparian buffer plantings in order to provide water quality for more than an additional acre of pavement that would have otherwise discharged, untreated, directly into the stream.

*I-70 over Conococheague Creek Bridge No. 21106 Widening and Deck Replacement, Washington County, MD* – WR&A and CGI teamed up after award of this bid-build procurement project to CGI to develop and implement a revised construction sequence for the construction of the pier extensions within Conococheague Creek. Working collaboratively, WR&A and CGI determined that constructing the pier extensions in a reverse order while using concrete block diversion structures to support the required temporary construction bridge/platform crossing Conococheague Creek, the physical impacts could be reduced while the time required within the creek could be reduced significantly. WR&A and CGI worked with SHA's OOS and EPD to obtain approval of the revised sequence and approval of a Joint Permit Modification, while not delaying the construction schedule. This re-sequencing and geotechnical/structural design resulted in significantly less temporary construction impacts since the temporary construction bridge/platform crossing needed for pier construction was in the waterway for a much shorter duration and their physical impacts were minimized.

*MTA Waldorf Park & Ride Facility, St. Mary's County, MD* – In 2011, WR&A was contracted by MTA to develop alternate design and construction documents for a 551-space Park & Ride facility in Waldorf, MD. The site was heavily forested with numerous site constraints, including wetlands, utilities, and right-of-way. The original design by others was advanced under pre-2010 MDE SWM requirements and relied upon a large infiltration basin that would have caused significant impacts to the forest stand, as well as utilities, right-of-way, and a small area of wetlands. WR&A's initial assessment noted that the project site was characterized by sandy soils close to the surface as well as high groundwater which, in addition to the noted constraints, did not appear to be compatible with the infiltration basin design. WR&A therefore proposed to MTA the implementation of a pervious concrete surface for all parking area, as well as micro-scale bioretention practices designed in accordance with the 2010 revisions to the MDE manual. WR&A worked actively with our geotechnical engineers to ensure proper subgrade conditions and with pervious concrete experts in the design and specification of the pervious concrete surface, which also included the installation of water quality and conveyance monitoring equipment. This design resulted in the elimination of the infiltration basin and the reduction of 0.77 acres of forest impacts, eliminated any impacts to wetlands, utilities, and right-of-way, while providing the high level of water quality treatment dictated by the revised regulations. CGI was ultimately awarded the contract and WR&A is actively working with CGI in the successful implementation of the design.



Maryland Department of Transportation  
State Highway Administration  
Office of Highway Development

Contract No. PG7005170

# MD 210 - LIVINGSTON ROAD / KERBY HILL ROAD INTERCHANGE

XVII (B). Lead Construction Firm  
Experience/Qualifications and  
Past Performance



*1-95/I-495/I-295 Interchange (Part of the  
Woodrow Wilson Bridge Project) -  
Prince George's County, MD*

**CONCRETE  
GENERAL, INC.**

**WR&A** WHITMAN, REQUARDT  
& ASSOCIATES, LLP  
ENGINEERS · ARCHITECTS · PLANNERS EST. 1915



Project Number: PG7005170

Project Description: MD 210 – Livingston Road/Kerby Hill Road Interchange

**FORM A-1 – Lead Construction Firm Experience**

**PROPOSED KEY STAFF INFORMATION**

Name of Proposer: **Concrete General, Inc.**

Position	Name	Years of Experience <sup>1</sup>	Education/ Registrations	Name of Employer
Design-Build Manager	Raymond "Butch" Lundgren	25/51	BS/1968/Civil Engineering	Concrete General, Inc.
Construction Manager	Joseph Kirsch	15/33	High School Graduate	Concrete General, Inc.
Utilities Coordinator	Stephen Beckley	13/30	High School Graduate	Concrete General, Inc.

<sup>1</sup> Present Firm/Total



## Raymond “Butch” Lundgren – Design-Build Project Manager

Project Manager – Concrete General, Inc.

Years of Experience: With Firm: 25 With Other Firms: 26

Education: BS/1968/Civil Engineering

Active Registration: None

### Professional Experience:

Mr. Lundgren has experience as both a Project Manager and a Design-Build Manager for the construction of airports, roads, highways, bridges, water mains and sewer mains in the states of Maryland, Kentucky, Massachusetts, and Pennsylvania. His Design-Build Manager experience includes MD 32 at Linden Church Road Design-Build, US 50 HOV Lanes from I-495 to MD 197, US 29 at MD 198 Design-Build, MD 124 Design-Build, MD 355 at Montrose Road/Randolph Rd Design-Build, and the Ramp 6 Widening from EB I-495 to SB MD 97 Design-Build. Recent relevant experience includes:

**2008-2011 (\$89M) I-95/I-895 Interchange (I-95 Express Toll Lanes), MDTA, Baltimore City and County, MD** – As Project Manager for this \$89 million interchange project, Mr. Lundgren was engaged with the owner's general engineering consultant, I-95 GEC Partners, who assisted in coordinating construction issues between the various contracts being built in the area. He performed major reviews, analysis, and dialogue consisted of planned contractor operations, schedule coordination issues, haul routes, contractor access issues, public access issues, utility relocations and new utility services, lane closure schedules, environmental permit compliance, traffic switch coordination, scheduling and implementation, and opportunities for collaboration. Mr. Lundgren had to coordinate with the multiple contractors to construct this project concurrently with different complex travel patterns. Since several projects were being constructed at once, our access/work areas were limited and had to be coordinated with multiple contractors. Additional management involved was for the construction of two new 1,900 LF steel girder curved bridges and demolition of a 600 LF bridge over the interstate, significant ESC, and SWM work. Project received *Quality in Construction Award Excellence in Asphalt Pavements for 2012; MdQI 2013 Award of Excellence Modal Award (over \$5 Million); and MdQI 2013 Award of Excellence Partnering Gold Award.*

**2008-2010 (\$25M) Design-Build MD 355 at Montrose Road/Randolph Road from “Old” Old Georgetown Road to Maple/Chapman Avenue (No. MO8305171), SHA, Montgomery County, MD** – Design-Build Manager for project which included design and construction of an interchange at MD 355 and Montrose/Randolph Road. Mr.

Lundgren experience included management of the environmental impacts during construction. Minimizing the permitted acreage was very important to maintain the design and construction schedule. Site access during construction was coordinated with the MOT phasing starting with the construction of the MD 355 detour roadway and temporary pavement widening for Randolph Road. Construction phasing was utilized to minimize traffic impacts and provide safety for the construction workers and traveling public. He was responsible for designing and construction of this project while meeting the needs of other project stakeholders including, WSSC, SHA Public Affairs representative, Maryland DNR, SHA Landscape Operations, SHA Environmental Program Division, SHA Highway Hydraulics, MCDPWT, PEPCO, Verizon, Comcast, Washington Gas, and WMATA, and working with local businesses, neighbors, and religious institutions. The project received the *MdQI Award of Excellence for Major Roadway over \$ 10 Million 2011, and American Society of Civil Engineers for Outstanding Large Project Award for 2011.*

**2003-2007 (\$28M) US 29 at Briggs Chaney Road Interchange (No. MO8685170), SHA, Montgomery County, MD** – Project Manager for the grade separation of Briggs Chaney Road. Construction of two new architectural concrete bridges, MSE slopes and retaining walls, reconstruction and overlay of US 29, including off-ramps. Developed temporary median detours and was instrumental in the engineering and procurement of the temporary bridge required to construct the new bridge over US 29. Project included multi-phased MOT, drainage, SWM, ESC, structures and traffic. Developed and implemented a revised MOT plan that allowed the project to be completed on schedule.

**2013-2014 (\$2.5M) ES Upper Paint Branch Stream Restoration (No. AX3765F60), SHA, Montgomery County, MD** – Project Manager for this project which included stream restoration, stormwater retrofits of existing stormwater facilities, stream channel reconstruction, riparian buffer, bio trenches, dewatering, and stream bank stabilization.

## Joseph Kirsch – Construction Manager

Construction Manager – Concrete General, Inc.

**Years of Experience:** With Firm: 15 With Other Firms: 18

**Education:** High School; 2011/Adult CPR & First Aid Training; 2014/OSHA 30-Hour Course; 2014/MDOT Traffic Manager Course; Erosion & Sediment Control Certification

**Active Registration:** 2009/Maryland Registered Flagger

### Professional Experience:

Mr. Kirsch has 33 years as a Construction Manager managing and supervising large and complex highway construction projects, including Design-Build projects. His duties have included managing a 50 man general contracting crew for ESC, SWM, dams and structures, clearing and grubbing, utility relocation, traffic control, grading and storm drain construction in environmentally sensitive areas. He also has experience in constructing Booze Creek Stream in Montgomery County, MD which included imbricated riprap, gravel tailings, riffle material, rock bank stabilization, log vanes, root pack, rock grade controls, and plunge pools. His responsibilities also include safety programs, and hazmat programs for work sites and working with an environmental monitor for environmentally sensitive areas. Recent relevant experience includes:

**2008-2011 (\$89M) I-95/I-895 Interchange (I-95 Express Toll Lanes), MDTA, Baltimore City and County, MD** – Construction Manager for project which consisted of two 1,900 LF curved bridges, retaining walls, multiple phases of maintenance of traffic, full depth construction, storm drainage, stormwater management facilities, landscaping, signing, marking, sign structures, lighting, ITS, utility coordination and relocation. Mr. Kirsch was responsible for supervising and coordinating all trades with multiple crews and all subcontractors (30 subcontractors, of which 15 are MBEs, and 22 suppliers) to ensure contract compliance. Major realignment of the I-95/I-895 interchange was performed with no significant traffic impacts. Project received *Quality in Construction Award Recognizes Excellence in Asphalt Pavements for 2012; MdQI 2013 Award of Excellence Modal Award (over \$5 Million); and MdQI 2013 Award of Excellence Partnering Gold Award.*

**2008-2010 (\$25M) Design-Build MD 355 at Montrose Road/Randolph Road from “Old” Old Georgetown Road to Maple/Chapman Avenue (No. MO8305171), SHA, Montgomery County, MD** – Construction Manager for this project that included design and construction of an interchange at MD 355 and Montrose/Randolph Road, construction of relocated Montrose Parkway on new alignment, new bridge and retaining walls, construction of three interchange ramps on new alignment, significant

maintenance of traffic phasing with temporary detours and drainage, utility relocations, SWM facilities, ESC, lighting, and signalization. Mr. Kirsch was responsible for all the facets of the management and administration on the project. The project received the *MdQI Award of Excellence for Major Roadway over \$ 10 Million 2011, and American Society of Civil Engineers for Outstanding Large Project Award for 2011.*

**2014-Ongoing (\$23M) Emergency 26th Street Repair & North Charles Street Reconstruction from 25<sup>th</sup> Street to University Parkway (No. TR10301), BCDOT, Baltimore City, Maryland**– Construction Manager for project which consisted of reconstruction of approximately 5,300 feet of North Charles Street., a major reconstruction project in the heart of the City. Mr. Kirsch worked and coordinated with Johns Hopkins University, JHU Access to Student Health and Wellness Center, Charles Village, Verizon, Comcast, the Parking Authority of Baltimore City, Baltimore Museum of Art and other stakeholders. In April 2014, the City of Baltimore roadway collapsed along 26<sup>th</sup> Street. The City chose CGI to perform the 26<sup>th</sup> street emergency road repair because of our resources. CGI has expertise working with the City, working with the local communities, working with and cooperating with the local business owners, and taking into consideration the local civic associations, and had the ability to mobilize quickly, having the available resources, and having knowledge of the local subcontractors available.

**2002-2005 (\$28M) Design-Build US 29 at MD 198 Interchange (No. MO8675170), SHA, Montgomery County, MD** – Construction Manager for this project for the design and construction of an existing at grade intersection to a grade separated interchange with high traffic volume, complex MOT, ESC, utilities, SWM ponds, and stream restoration within the Patuxent River Critical Zone. Traffic and access to homes and businesses were always maintained in a way that minimized congestion while providing a safe environment. The project received the *MdQI Award of Excellence – Major Roadway Project.*

## Stephen Beckley – Utilities Coordinator

Project Manager – Concrete General, Inc.

Years of Experience: With Firm: 13 With Other Firms: 17

Education: High School; College coursework in Civil Engineering

Active Registration: None

### Professional Experience:

Mr. Beckley has extensive experience in all aspects of highway construction including recent design-build projects as Utility Coordinator for MD 32 at Linden Church Road, MD 355 at Montrose Rd/Randolph Road, MD 124, and US 29 at Briggs Chaney Road projects. He has 30 years in the construction industry, focusing on heavy highway and site work. Recent relevant experience includes:

**2008-2011 (\$85M) I-95/I-895 Interchange (I-95 Express Toll Lanes), MDTA, Baltimore City and County, MD** – Utilities Coordinator for this project which consisted of two 1,900 LF curved bridges, retaining walls, multiple phases of maintenance of traffic, full depth construction, storm drainage, SWM facilities, landscaping, signing, marking, sign structures, lighting, ITS, utility coordination and relocation. Mr. Beckley was responsible for coordinating utility relocations and adjustments with the affected utility owners, MDTA and GEC Partners. He was successful in utility coordination for all overhead and underground utility facilities in a way that provided an on time and within budget project and cooperated with the utility agencies or their contractors. Project received *Quality in Construction Award Recognizes Excellence in Asphalt Pavements for 2012; MdQI 2013 Award of Excellence Modal Award (over \$5 Million); and MdQI 2013 Award of Excellence Partnering Gold Award.*

**2008-2010 (\$25M) Design-Build MD 355 at Montrose Road/Randolph Road from “Old” Old Georgetown Road to Maple/Chapman Avenue (No. MO8305171), SHA, Montgomery County, MD** – Utilities Coordinator, Scheduler, and Document Controls Specialist for this project which involved design and construction of a grade separation interchange for MD 355 and Montrose Parkway with a major detour of an eight-lane SHA roadway. Mr. Beckley’s responsibilities included development of the project construction schedule, utility coordination, and correspondence with the owner. He successfully coordinated the design and construction of new and relocated overhead and underground utility facilities in a way that provided an on time and on budget project. The project received the *MdQI Award of Excellence for Major Roadway over \$10 Million 2011, and American Society of Civil Engineers for Outstanding Large Project Award for 2011.*

**2003-2007 (\$31M) US 29 at Briggs Chaney Road Interchange (No. MO8685170), SHA, Montgomery County, MD** – Utility Coordinator and Scheduler for this grade separation of Briggs Chaney Road. Construction of two new architectural concrete bridges, MSE slopes and retaining walls, reconstruction and overlay of US 29, including off-ramps. Project included multi-phased MOT, drainage, structures and traffic. Mr. Beckley’s responsibilities include utility coordination and the development of the project construction schedule. Concurrent Utility work had to be coordinated with the utility contractors during construction in addition to our work. Major relocation was done with WSSC and Washington Gas.

**2007-2010 (\$29M) Design-Build MD 124 South of Airpark Road to Rosewood Manor Lane, SHA, Gaithersburg, MD** – Utilities Coordinator for this project which involved the six lane widening of 1.6 miles of MD 124 to improve congestion, safety and pedestrian access along this commercial and residential corridor. Relevant features included reconfiguring multiple existing and new traffic signalizations and working around the power companies already relocated poles. Mr. Beckley was successful in coordinating the design and construction of the new and relocated overhead and underground utility facilities in a way that provided an on time and within budget project.

**2005-2008 (\$30M) Montrose Parkway, Montgomery County DOT, Montgomery County, MD** – Utilities Coordinator and Scheduler for this project which included widening and reconstruction of 4,750 LF of Montrose Road and construction of 5,100 LF of the new Montrose Parkway. Mr. Beckley’s responsibilities included developing and updating the CPM schedules, reviewing and pricing redline revisions, and coordinating with utility owners and other parties. Utilities were a major challenge: delays to overhead Verizon relocations had the potential to greatly impact the project. Mr. Beckley was able to successfully re-sequence the construction schedule, which allowed the project to finished on time and within budget. The project received the *National 2009 Top Storm Water Project Award.*

## FORM A-2 LEAD CONSTRUCTION FIRM

### PROJECT DESCRIPTION

**Name of Proposer:** Concrete General, Inc.

Name of Construction Firm: <u>Concrete General, Inc.</u>
Project Role: <u>Lead Construction Firm</u> Contractor: <input checked="" type="checkbox"/> Other (Describe): _____
Years of Experience: Roads/Streets: <u>42</u> Bridges/Structures: <u>42</u> Environmental: <u>42</u>
Project Name and Location: <u>I-95/I-895 Interchange (I-95 Express Toll Lanes), Baltimore City and County, Maryland</u>
Project Key Staff (as applicable to project)
Design-Build Project Manager/Firm: <u>N/A</u>
Construction Manager/Firm: <u>Joseph Kirsch/CGI</u>
Utilities Coordinator/Firm: <u>Stephen Beckley/CGI</u>
<p><b>Description and Specific Nature of Work for which your Firm was responsible and relevance to this contract:</b> This project involved the widening and pavement reconstruction of I-95 to provide two Express Toll Lanes in both the northbound and southbound directions of I-95 from south of the I-895 interchange to south of Chesaco Avenue and the widening and reconstruction of I-895 to provide one Express Toll Lane in each direction of I-895 from south of the Moravia Road interchange to the I-95 interchange. This was one of the projects within the I-95 ETL Section 100 project corridor. The project involved construction of two new 1,900 LF curved bridges, a new bridge carrying northbound and southbound I-895 managed lanes, a new bridge over stream, retaining walls, maintenance of traffic planning and execution, full depth pavement construction and patching, structure demolition, grinding, open drainage systems, stormwater management quality and quantity facilities, erosion and sediment control, culvert extensions, landscaping, reforestation, signing, pavement marking, bearing pile, caissons, concrete pavement, sign structures, lighting (high mast and low level), utility relocation and coordination.</p> <p>CGI was engaged with the owner's General Engineering Consultant (GEC) who assisted in coordination of construction issues between the various contracts. The major reviews, analysis, and dialogue consisted of planned contractor operations, schedule coordination issues, haul routes, contractor access issues, public access issues, utility relocations and new utility services, lane closure schedules, environmental permit compliance, traffic switch coordination, scheduling and implementation, and opportunities for collaboration.</p> <p>CGI had to coordinate with multiple contractors to construct this project concurrently with different complex travel patterns. The main maintenance of traffic feature was switches in the traffic pattern at the I-95/I-895 split which were performed with no significant traffic impacts. Since several projects were being constructed at once, our access/work areas were limited and had to be coordinated with multiple contractors.</p> <p>CGI assigned a dedicated Contractors Primary Safety Representative who was assigned to each shift of construction and responsible for the administration of the Projects Safety Plan. He had no other duties that could inherently conflict with his abilities to fulfill these safety-related duties. Duties that would inherently conflict included production supervision and production management.</p> <p>Erosion and sediment control was a major feature on this project and was performed well, thanks to a co-operative effort between CGI, GEC, and the Environmental Monitor. CGI designed our own environmentally-safe pumping system and measured water quality using a Nephelometer.</p> <p>Partnering was also used between the owner, GEC, and CGI to obtain open communication, teamwork, and cooperative action to identify and achieve mutual goals. Our key staff, MDTA, and the GEC partnering</p>



commitments were established at the beginning of the project with a focus on safety first, quality, schedule – being on time and within budget, open communication, MDTA's financial parameters, CGI financial goals, having no claims, resolving issues at the lowest possible level, and being of an award-winning excellence. The Partnering/Progress meetings were a great tool to bring the necessary stakeholders together to share information, identify issues, and discuss possible solutions for this successful project.

**Description of Design Schedules or Design Budgets Variance:** Project completion dates and construction costs were met, but the final contract value was increased to add additional work at MDTA's request.

**Description of Specific Nature of Work for which Key Staff proposed for this contract was responsible for on project and relevance to this contract:**

**Raymond "Butch" Lundgren** worked closely with MDTA and the GEC who partnered on numerous construction issues. He performed major reviews, analysis, and dialogue consisting of planned operations, contractor and public access issues, traffic switch coordination, schedule implementation, and coordinating with the multiple contractors in the area. He was also responsible for monitoring the construction schedule, resolved major coordination issues, and assigned personnel and equipment to the project. In addition, he managed the construction progress, approved monthly invoicing, attended partnering meetings and acted as the prime contact with MDTA and the GEC.

**Joseph Kirsch** was responsible for managing and coordinating all trades and subcontractors to ensure contract compliance. He managed day-to-day construction activities and crew assignments, monitored the schedule, identified construction problems and directed them to the appropriate construction staff, attended Partnering meetings and prepared and maintained an issues resolution list. He worked hand-in-hand with the designers, owner, and MDE on plan changes and issues while avoiding any delays due in the work. He also worked together with CGI's dedicated Contractors Primary Safety Representative who was assigned to each shift of construction and responsible for the administration of the project-specific Safety Plan.

**Stephen Beckley** was responsible for coordinating utility relocations and adjustments with the affected utility owners, MDTA and the GEC. He was successful in utility coordination for all overhead and underground utility facilities in a way that provided an on time and on budget project and cooperated with the utility agencies or their contractors. The utility agencies involved were Verizon, BGE, Comcast, Level 3 Communications, Baltimore County DPW, SHA, and SHA's Office of Traffic. Coordination and communication with all stakeholders was critical to the overall success of the project.

List any awards and/or commendations received for the project: **Quality in Construction Award Recognizes Excellence in Asphalt Pavements for 2012; MdQI 2013 Award of Excellence Modal Award (over \$5 Million); and MdQI 2013 Award of Excellence Partnering Gold Award.**

Name of Client (Owner/Agency, Contractor, etc.): Maryland Transportation Authority

Address: 303 Authority Drive, Baltimore, MD 21222

Contact Name: Mr. Graydon Tobery

Telephone: (410) 931-0808

Owner's Project or Contract No.: MO8305171

Fax No.: (410) 931-4110

Contract Value (US \$): \$85.2 million

Final Value (US \$): \$89.2 million

Percent of Total Work Performed by Company: 100%

Commencement Date: Sep. 2008 Original Completion Date As Defined in IFB: Oct. 2011

Actual Completion Date: Oct. 2011

Any disputes taken to arbitration or litigation?

Yes

No



**FORM A-2 LEAD CONSTRUCTION FIRM**

**PROJECT DESCRIPTION**

**Name of Proposer:** Concrete General, Inc.

Name of Construction Firm: Concrete General, Inc.
Project Role: <u>Lead Construction Firm</u> Contractor: <input checked="" type="checkbox"/> Other (Describe): _____
Years of Experience: Roads/Streets: <u>42</u> Bridges/Structures: <u>42</u> Environmental: <u>42</u>
Project Name and Location: <u>Design-Build MD 355 at Montrose Road/Randolph Road from "Old" Old Georgetown Road to Maple/Chapman Avenue, Montgomery County, Maryland</u>
Project Key Staff (as applicable to project)
Design-Build Project Manager/Firm: Raymond Lundgren/CGI
Construction Manager/Firm: Joseph Kirsch/CGI
Utilities Coordinator/Firm: Stephen Beckley/CGI
<p><b>Description and Specific Nature of Work for which your Firm was responsible and relevance to this contract:</b> The MD 355 project consisted of the design and construction of a grade-separated interchange at MD 355 and Montrose Road/Randolph Road. The project included widening and resurfacing of MD 355 and "Old" Old Georgetown Road; construction of relocated Randolph Road on new alignment; a new bridge on MD 355 over Montrose Parkway, approximately 179 LF long; architectural treatment; a hiker/biker trail and sidewalks throughout the interchange; three interchange ramps on new alignment; full-depth and partial-depth pavement patching; concrete pavement and patching; bridge joints; carbide grinding; spall repairs; pile driving; MOT; temporary drainage and detour; closed/open drainage systems; culvert extensions; structure demolition; SWM quality and quantity facilities; maintaining waterways; maintenance of stream flow; ESC; retaining walls; landscaping and reforestation; signing, pavement markings, signalization, and lighting; and utility relocations and coordination.</p> <p>This grade-separated interchange provided capacity and safety improvements and eliminated a major intersection in the MD 355 corridor. The improvements addressed the traffic and development growth in the project area and provided pedestrian connectivity to local shopping centers, apartments, schools and service road, and Park &amp; Ride lots, including sidewalks and bike paths. Our objectives were to meet the construction schedule, provide quality construction, and prepare construction phasing and an MOT plan that minimized traffic impacts and provided safety for the construction workers and traveling public; maintain pedestrian traffic during construction; address the project's stakeholders' needs; coordinate utilities; and meet the construction expectations of SHA and the County for the roadway, bridge, pedestrian and bicycle pathways, pavement, drainage, signals, signing, lighting, and landscaping. Management of the environmental impacts during construction by keeping the project within the permitted impacts acreage was very important to maintain the design and construction schedule. The pavement design was developed using the performance spec that describe how the finished product should perform over time. As the storm drain system was constructed, the roadway excavation was phased for positive drainage into the storm drain system. This sequencing of the drainage and roadway excavation ensured that clean stormwater runoff was diverted in the existing system; and sediment contaminated runoff was either filtered with inlet sediment traps or treated through our proposed sediment ponds and traps.</p> <p>CGI engaged an experienced team early to work during the design phase with our design partner to develop a design that was cost-effective and constructible, leveraging the collaboration afforded with the design-build process. We were very successful in coordinating designs and working with other agencies and the public.</p> <p><b>Description of Design Schedules or Design Budgets Variance:</b> The design schedule was developed</p>

and achieved to construct the project on time. To avoid a delayed start, the storm drain design within the shopping center area was designed to avoid major utility conflicts. Project completion dates and construction costs were met, but the final contract value was increased to include additional work at SHA's request.

**Description of Specific Nature of Work for which Key Staff proposed for this contract was responsible for on project and relevance to this contract:**

**Raymond "Butch" Lundgren** coordinated with the Design Manager in developing project phasing plans and submissions and the overall design and construction schedule; established work flow completion dates; performed a constructability review for all design submissions; coordinated the design staff on the means, methods and materials for various construction elements; and provided a timely response to the design staff in addressing construction or contract issues. Mr. Lundgren was also responsible for monitoring the construction schedule, resolving issues, and assigning personnel and equipment to the project. He also met with SHA to coordinate upcoming construction work for MOT operations with SHA, county and community associations, and coordinated with the design team. He supervised the construction team to ensure they met the project's environmental compliance requirements and operated in accordance with CGI's safety manual and OSHA procedures. In addition, he managed the construction progress, approved monthly invoices, attended Partnering meetings, and acted as the prime contact with SHA and the County.

**Joseph Kirsch** was involved in the early design of the project, including ESC, SWM, drainage, and structures. He reviewed the plans, commenting on construction-related issues and coordinated with the design team during construction. He managed day-to-day construction activities and crew assignments, monitored the schedule, identified construction problems and directed them to the appropriate design or construction staff, attended Partnering meetings, and prepared and maintained an issues resolution list.

**Stephen Beckley** was responsible for the utility coordination from the very beginning planning stages through design and construction with PEPCO, WMATA, WSSC, Verizon, Comcast, and Washington Gas. Our main methodology was to make a concentrated effort to keep the stakeholders informed through an active public information and public input process and emphasize the importance of the design, implementation and continuous improvement. The stakeholders received an early invitation in the Partnering process so that relationships and trust could be built, and project issues could be coordinated through open communication and corporation. The design and subsequent relocation of WSSC water lines, Washington Gas lines, and electric were a major risk and represented key critical path elements for the design and approval phase. He successfully coordinated the design and construction of new and relocated overhead and underground utility facilities in a way that provide an on-time, within budget project.

Acting on behalf of SHA's Office of Highway Design Division, **Walter Miller**, of WR&A, provided GEC project management services for this project. Services included the management of the preliminary design and preparation of the RFP for the design-build project advertisement, the management oversight of the CGI team's final design, and design management support during construction.

List any awards and/or commendations received for the project: **MdQI Award of Excellence for Major Roadway over \$ 10 Million 2011, and American Society of Civil Engineers for Outstanding Large Project Award for 2011.**

Name of Client (Owner/Agency, Contractor, etc.): Maryland State Highway Administration District 3

Address: 9300 Kenilworth Avenue, Greenbelt, MD 20770

Contact Name: Mr. Mark Dougherty, Area Engineer Telephone: (301) 513-7372

Owner's Project or Contract No.: MO8305171 Fax No.: (301) 513-7415

Contract Value (US \$): \$24.8 million Final Value (US \$): \$25.4 million

Percent of Total Work Performed by Company: 100%

Commencement Date: Jan. 2008 Original Completion Date As Defined in IFB: Oct. 2010

Actual Completion Date: Oct. 2010

Any disputes taken to arbitration or litigation? Yes  No

**FORM A-2 LEAD CONSTRUCTION FIRM**

**PROJECT DESCRIPTION**

**Name of Proposer:** Concrete General, Inc.

Name of Construction Firm: <u>Concrete General, Inc.</u>
Project Role: <u>Lead Construction Firm</u>
Contractor: <input checked="" type="checkbox"/> Other (Describe): _____
Years of Experience: Roads/Streets: <u>42</u> Bridges/Structures: <u>42</u> Environmental: <u>42</u>
Project Name and Location: <u>US 29 at Briggs Chaney Road Interchange, Montgomery County, MD</u>
Project Key Staff (as applicable to project)
Design-Build Project Manager/Firm: <u>N/A</u>
Construction Manager/Firm: <u>Mahlon Simmons/CGI</u>
Utilities Coordinator/Firm: <u>Stephen Beckley/CGI</u>
<b>Description and Specific Nature of Work for which your Firm was responsible and relevance to this contract:</b> The US 29 at Briggs Chaney Road Interchange project involved the reconstruction of an existing at-grade intersection in an urban area with very tight right-of-way restrictions, which was the reason for the various retaining walls and noise barriers. The project included <i>a design-build tie back retaining wall and temporary bridge</i> , the reconstruction of US 29, 2,300 ft. south and 2,000 ft. north of Briggs Chaney Road; the reconstruction of Briggs Chaney Road, 850 ft. east and 1,900 ft. west of US 29; and intersection improvements at Old Columbia Pike/Briggs Chaney Road. The purpose of the project was to eliminate the at-grade intersection of US 29 at Briggs Chaney Road. US 29 is a heavily traveled roadway and a major commuter route. The reconstruction of this intersection was complex. It involved the lowering of US 29 (a maximum of 14 ft.) and the raising of Briggs Chaney Road (approximately 20 ft. during construction and 14 ft. in the ultimate configuration) while maintaining traffic on all roadways. These grade changes required the use of a temporary bridge for vehicular and pedestrian traffic along Briggs Chaney Road, and significant temporary supports of excavation with tiebacks ranging in height from 15 ft. to 25 ft. along the median of US 29 to provide for safe and continuous traffic flow. Work also involved one bridge structure carrying Briggs Chaney Road traffic over US 29; seven retaining walls consisting of concrete cantilevered and MSE panels varying from five ft. to 30 ft. and varying in length from 60 ft. to 1,204 ft. with noise barrier; water and sewer relocation including jack and bores; gas relocation; MOT; SWM quality and quantity facilities; erosion and sediment control; maintaining waterways; maintenance of stream flow; landscaping and reforestation; mass grading; lighting; traffic barrier; closed/open drainage systems; culvert extensions; signing; lighting; signalization; utility relocation and coordination; structure demolition; pavement markings; architectural treatment on all concrete structures; new pavement construction; and pavement rehabilitation of existing roadways and shoulders. The design-build tie back retaining wall was 1,204 ft. long varying in height up to 30 ft. with structural concrete walls consisting of complex simulated stone form liner architectural treatment. The tight right-of-way required us to design the retaining wall with tiebacks under an existing row of townhouses. In several areas, the groundwater table was above subgrade elevation, which required significant dewatering efforts. In addition, significant cost savings were passed on to the SHA when CGI developed a Geopier system that was used as a foundation at two retaining walls in lieu of the as-planned undercuts.
<b>Description of Design Schedules or Design Budgets Variance:</b> Project completion dates and construction costs were met, but the final contract value was increased to add additional work at SHA's request.



**Description of Specific Nature of Work for which Key Staff proposed for this contract was responsible for on project and relevance to this contract:**

**Raymond "Butch" Lundgren** coordinated the overall construction schedule; established work flow completion dates; performed a constructability review for design submissions for the design-build project elements; and coordinated means, methods and materials for various construction elements. Mr. Lundgren was responsible for oversight of design for design-build elements, construction, quality control, partnering of the project while satisfying the needs of other parties, monitoring the construction schedule, resolved issues, and assigned personnel and equipment to the project. He also met with SHA to coordinate upcoming construction work for MOT operations with SHA, County, and community associations. He supervised the construction team to ensure they met the project's environmental compliance requirements and operated in accordance with CGI's safety manual and OSHA procedures. In addition, he managed the construction progress, approved monthly invoices, attended Partnering meetings and acted as the prime contact with SHA.

**Mahlon Simmons** was responsible for day-to-day construction activities and crew assignments, monitored the schedule, identified construction problems and directed them to the appropriate construction staff, coordinating trades and subcontractors to ensure contract compliance, attended partnering meetings and prepared and maintained an issues resolution list. He was responsible for MOT compliance, ESC compliance, and was instrumental in receiving an "A" rating for ESC. His partnering was important because team communication was essential to the success of the project. Mr. Simmons had the authority and ability to mobilize the necessary resources to satisfy the needs of the project. He worked closely with all key managers on the project including the Quality Control Manager and Safety Manager.

**Stephen Beckley** was responsible for coordinating utility relocations and adjustments with the affected utility owners, SHA, and District Utility Engineer. His successful utility coordination during construction of the overhead and underground utility facilities resulted in the project being delivered on time and within budget. The utility agencies included Verizon, Comcast, BGE, PEPCO, Washington Gas, WSSC, AT&T Communications, and MCI World Communications. Concurrent utility work had to be coordinated with the utility contractors during construction in addition to our work. Major relocation was done with WSSC which included the jack and bore of a steel casing directly under the US 29 at Briggs Chaney Road intersection and Washington Gas line.

List any awards and/or commendations received for the project:

Name of Client (Owner/Agency, Contractor, etc.): Maryland State Highway Administration District 3

Address: 9300 Kenilworth Avenue, Greenbelt, MD 20770

Contact Name: Mr. Mark Dougherty, Area Engineer Telephone: (301) 513-7372

Owner's Project or Contract No.: MO8685170 Fax No.: (301) 513-7415

Contract Value (US \$): \$28.9 million Final Value (US \$): \$31 million

Percent of Total Work Performed by Company: 100%

Commencement Date: Nov. 2003 Original Completion Date As Defined in IFB: Sep. 2007

Actual Completion Date: Sep. 2007

Any disputes taken to arbitration or litigation? Yes  No

### Environmental Past Performance – Lead Construction Firm:

CGI understands the importance of adhering to standard practices and for continual monitoring and improvement in our processes and practices for protecting the environment. Environmental stewardship requires constant effort and a serious commitment. Environmental stewardship is an important facet of CGI's corporate culture – embedded in all aspects of our operations, the responsibility is shared by every employee. Our corporate president works closely with employees to infuse environmental awareness in all areas and levels of the company. Many of our employees are placed in the ESC certification program to supplement their knowledge, even though they are not going to be ESC Inspectors or Managers. We are proactive with our employee education to not only meet the goals, but exceed them.

As a general practice, we always investigate ways to reduce impacts, whether permanent or temporary, to environmental features and resources. One of the innovative approaches to accomplish this, implemented on previous contracts, is to conduct pre-activity meetings prior to work in sensitive areas, or where permitted impacts are allowed to wetlands, streams, and forest. In many cases, minor field changes have reduced impacts to environmental resources. Changes in equipment, access, and adjustments to LOD have all been identified in past projects, and have resulted in beneficial stewardship opportunities. Other innovative methods that we have implemented to reduce impacts to resources, or prevent pollution, have included: utilizing vegetable-based motor oil for equipment used in sensitive environments, installing mandatory concrete wash-out pits and working with trucking companies to stress the importance of proper clean out, installing wooden mats and PSI restrictions on equipment to protect wetlands and critical root zones of significant trees within a project area, and reducing noise pollution during construction by implementing special methodologies or work hours for demolition or installing temporary curtains.

CGI strives to keep all off-site material on-site and has recycling capabilities. We will recycle all available materials such as hot mix asphalt, concrete, stone and steel. Reinforcing steel will also be recycled by a certified recycler.

**Past Project Examples** – Project specific examples of techniques, products, and practices CGI has employed on our past project include the following:

*I-70 over Conococheague Creek Bridge No. 21106 Widening and Deck Replacement, Washington County, MD* – CGI teamed with WR&A after award of this bid-build procurement project to develop and implement a revised construction sequence for the construction of the pier extensions within Conococheague Creek. Working collaboratively, CGI and WR&A determined that constructing the pier extensions in a reverse order while using concrete block diversion structures to support the required temporary construction bridge/platform crossing Conococheague Creek, the physical impacts could be reduced while the time required within the creek could be reduced significantly. CGI and WR&A worked with SHA's OOS and EPD to obtain approval of the revised sequence and approval of a Joint Permit Modification, while not delaying the construction schedule. This re-sequencing and innovative design approach resulted in significantly less temporary construction impacts since the temporary construction bridge/platform crossing needed for pier construction was in the waterway for a much shorter duration and their physical impacts were minimized.

*US Route 50 HOV Widening Detail-Build Project, Prince George's County, MD* – CGI constructed all drainage-related aspects of this project, including open/closed storm drains, SWM, and ESC. Our team designed and constructed an additional 3.5 acres of SWM using grass swales, check dams, and infiltration facilities for water quality treatment. This work reduced the runoff which in turn reduced stream erosion, weed invasion, and alterations to natural flow regimes. An incentive offered by SHA of \$175,000 was achieved by providing this water quality management in excess of the contract amount required by the MDE permit. The project was awarded an Achievement Award by the American Council of Engineering Companies/Maryland and an Award of Excellence by the Maryland Quality Initiative.

*I-95/I-895 Interchange (I-95 Express Toll Lanes), Baltimore County, MD* – CGI designed our own environmentally-effective pumping system. As we were constructing large concrete pier foundations during the wet season, the pier footing excavations were constantly filling with water from rain events and a high water table. There were no provisions in the design or plans for pumping the water, and temporary silt traps were not allowed. After discussions with MDE, we developed a pumping system within 24 hours to pump water out of the footing excavations. The system consisted of pumping water into five portable sediment tanks through a discharge hose, through dewatering bags, down slopes, and through geotextile. This complex yet economical design clarified the water sufficiently to allow it to be discharged, which kept the project on schedule.

*Route 107 over Dry Seneca Creek Bridge No. 15014 Replacement, Montgomery County, MD* – As part of this project, CGI restored and protected the existing stream banks through SHA's first use of root wads and live fascines, a design provided by SHA. The successful implementation of these newly developed methods of stream bank stabilization has

provided a more natural means of protection despite the construction disturbances. CGI received an Award of Excellence for erosion and sediment control on this project.

Seabrook Rd to MD 193, Prince George's County, MD – As part of this project, CGI constructed major fills with recycled material without disturbing the existing marsh area. The project used over 300,000 SY of geosynthetic stabilized subgrade and 114,000 CY of recycled crushed aggregate. We set up our crusher near the job site and crushed recycled concrete to meet SHA's requirements for crushed aggregate. A layer of geotextile was placed over the cleared marsh area with 12" of stabilized subgrade using crushed aggregate, then common borrow was placed up to 12" below subgrade, and finally another layer of geotextile and 12" of stabilized crushed aggregate was placed.

Another innovative construction technique consisted of replacing a bridge, repairing the stream, and full-depth pavement replacement within the Chesapeake Bay Critical Area. Clearing and grubbing and undercutting of very wet soils were avoided to reduce the environmental impact. CGI cleared only the site, placed geotextile over the roadway bed, and placed a stone fill up to the roadway sub-base to act as a bridge to avoid disturbing the wet bottom. The soil properties were acidic with continual wetness, very soft, deep mud, and prime material for bog turtles that lived in very soft, deep mud. As part of this project, we were able to excavate bog turtle mud and donate it to the new bog turtle exhibit at the Baltimore Zoo.

US 1 (Rhode Island Avenue) from DC Line to 33<sup>rd</sup> Street Urban Stormwater Retrofit Pilot Program Enhancement Project, Prince George's County, MD – On this project, CGI constructed experimental stormwater quality facilities known as bioretention inlets and gutter filters to provide stormwater quality management. The bioretention curb opening type inlets consisted of magnesium sulfate (Epsom salt), potash, and planting soil and bioretention soil mixture. The gutter filters consisted of precast structures with perforated pipe, baffles, perlite media, granular activated carbon, zeolite, and pool filter sand.

I-70 at Beaver Creek Project, Washington County, MD – CGI constructed SHA-designed thermal impact reduction and stabilization of swale channels and slopes utilizing impervious liner, soil stabilization matting, riprap, and vegetative plantings along channel banks. These measures were constructed to reduce the heat transferred from impervious surface runoff into nearby streams.

**Corrective Actions and Lessons Learned** – Environmental stewardship within our daily business activities and on projects we undertake is a cornerstone principle of CGI. Our aim on all projects is to practice environmental stewardship in our operations that exceeds regulatory standards. We strive to manage and mitigate the environmental impacts of our business activities by improving energy efficiency, reducing waste and emissions, increasing eco-friendly products, and protecting our natural resources. CGI fully understands that the MD 210 – Livingston Road/Kirby Hill Road Interchange project must be constructed without environmental violations, stop work orders, or low ratings in order to be considered a success to SHA and ourselves. CGI is currently working on projects that have received 318 ratings with an average rating of "A" and, over the last four years, we have received 575 ratings with an average rating of "A." We are, however, human, and thus falter at times. However, we look at these events as opportunities to improve our business practices and the education of our work force. In the past six years, CGI has had the following two stop work orders or low ratings. In each case, we have amended our business practices to prevent their reoccurrence.

Redland Middle School Trail Project (Contract No. AX3775360) – On June 23, 2011, CGI received an "F" rating. At the beginning of the project, we installed all of the sediment control devices and started work before MDE inspected our controls. The ICC team considered this working out of sequence and issued us an "F" rating. We felt that the "F" grade was the result of miscommunication and a misunderstanding of the plan notes. Our controls were acceptable when MDE made their inspection.

CGI now stresses the importance to all project personnel that they are aware of the sequence of construction.

Bridge Deck Overlay – MD 175 Bridges over US 29 (Contract No. HO4385180R) – On August 31, 2011 we received an "F" rating. During our nighttime operations, we noticed water leaving the site, which we believed had sediment. We proceeded to be proactive and placed silt fence in the only location it could be installed to filter the water to protect the environment. An "F" rating was received because the silt fence was placed outside the LOD.

CGI now stresses the importance to all project personnel that they need to communicate with the Inspector and MDE better.



Maryland Department of Transportation  
State Highway Administration  
Office of Highway Development

Contract No. PG7005170

# MD 210 - LIVINGSTON ROAD / KERBY HILL ROAD INTERCHANGE



*US 29 at Briggs Chaney Road Interchange -  
Montgomery County, MD*

XVII (C). Team Organization

**CONCRETE  
GENERAL, INC.**

**WR&A** WHITMAN, REQUARDT  
& ASSOCIATES, LLP  
ENGINEERS · ARCHITECTS · PLANNERS EST. 1915

### Our Philosophy and Approach to Design-Build Contracting:

Concrete General, Inc. (CGI) is a leading Maryland contractor providing design-build services on transportation projects to SHA. CGI's vast experience in the design-build method of project delivery for SHA includes US 29 at MD 198 Interchange Design-Build, US 50 HOV Lane Widening Detail-Build, MD 355 at Montrose/Randolph Roads Design-Build, MD 124 Design-Build, Widening of Ramp 6 Design-Build, and MD 32 at Linden Church Road Interchange Design-Build. With many of these projects involving interchange design and construction, CGI has a deep understanding of the challenges associated with completing design-build interchange projects for SHA, similar to the MD 210 – Livingston Road/Kerby Hill Road Interchange. One key to success on design-build projects is choosing the right design partner, one that has similar extensive experience and design-build procurement and, just as importantly, is one that shares CGI's values for delivering high quality projects, on-time and within budget, while bringing innovation and ingenuity to the collaborative design and construction process afforded by design-build contracting. To this end, we have partnered with Whitman, Requardt & Associates, LLP (WR&A). WR&A brings to our team extensive SHA experience across all design disciplines and has extensive work history providing design-build services to SHA, both in support of SHA during the RFP development phase and as a design-build design partner completing bid phase, final design and construction support services. WR&A's SHA design-build experience includes I-495 at Arena Drive Design-Build, MD 237 Design-Build, MD 355 at Montrose/Randolph Roads Design-Build (RFP - SHA-GEC Manager), MD 216 Design-Build (RFP and final contract documents for structures), US 113 Phase 2B Design-Build (RFP), and Phase 3 Design-Build (RFP).

CGI's and WR&A's contractor-designer relationship, however, extends beyond our collective SHA and design-build experience. CGI routinely engages WR&A's expertise during the bidding and construction of traditional bid-build projects, while WR&A leverages CGI's construction expertise to improve the constructability and cost-effectiveness of WR&A designs. This cohesive and collaborative relationship is currently on display with the design and construction of the Emergency Replacement of the 26th Street Retaining Wall project in Baltimore City. When the City was in need of a designer and contractor to work together to complete this emergency, high-profile project, they came to CGI and WR&A to get the job done! All accelerated design and construction schedules have been met to date, requiring 24-hour, seven days a week services at times.

**Team Building within the CGI Team** – Another key element in CGI's successful design-build approach is the integration of Partnering within the daily workflow of design and construction. Through our team's collective experience of working on design-build projects, the CGI team understands the importance of fostering continuous communication throughout the design and construction phases of the project. This communication begins upon receipt of the RFP to the end of construction. This continual interaction fosters a deep understanding of each other's approach toward design and construction such that decisions on project elements and issues are mutually developed while ensuring the project design meets all contract requirements and environmental commitments, and best fits construction means, methods, practices, and products. In addition, frequent interaction during construction ensures construction is being performed as intended by the design, project goals are being met, and unforeseen construction issues are quickly resolved.

Coordination and communication between SHA, CGI, WR&A, resource agencies, utility companies, and other project stakeholders are critical to the overall success of the project. Partnering as promoted by SHA will be utilized as the framework for ongoing coordination and communication. The CGI team is committed to working as an integrated team with the SHA and project stakeholders to successfully deliver an award-winning transportation project. All key staff and key support staff of the CGI design and construction team will actively participate with SHA and project stakeholders in an initial Partnering workshop and monthly Partnering meetings.

The CGI team's mission is to develop, initiate, and promote Partnering which offers opportunities to improve communication, provide structured issue resolution, and timely follow-up. This Partnering is a process based on trust and an open, honest communication in which all participants in the project recognize both common and individual objectives, and work to achieve those objectives through improved communication and cooperation. Partnering will create a multi-participant team in which all members are committed to a common purpose, goals, and work approach for which they hold themselves mutually accountable. Shared responsibility means fulfilling commitments to the team and ensuring the success of all members of the team. The approach will allow for the fact that team members share many common goals yet have differing authorities, interests, and objectives that must be accommodated.

There are several Partnering values and attributes of the way the CGI team conducts business. As a Partnering team member, our mission is to instill the **trust, teamwork, communication, motivation, empowerment, and issue resolution** into the project, and to identify and overcome any barriers that interfere with successful completion of the project. Working together, we will have clear objectives of what we want to accomplish by using the Partnering process throughout the life of the project. Team members will play an important role in the Partnering process. They will help with

issue resolution and decision-making, offer encouragement, attend meetings, provide input for meeting agendas, and work on completing assigned tasks on time.

**Integrated Organization Structure** – For all design-build projects, CGI integrates the participation of the team's construction and design entities and facilitates the concept of joint involvement by providing “construction expertise during design” and “design expertise during construction.” This integration starts with **Raymond “Butch” Lundgren (CGI), our Design-Build Project Manager**, and is supported by **our Executive Committee, Michael Miller (CGI) and Joseph Makar, PE (WR&A)** who are principals at their respective firms. Mr. Lundgren will be the prime point-of-contact with SHA for all project matters. He will have full responsibility for compliance with all project requirements, overall project management, and contract administration. Mr. Lundgren will ensure the team is fully integrated and that the project stays on time and within budget. He will regularly report project progress to SHA and our Executive Committee.

On the construction side, Mr. Lundgren will be supported by **Joseph Kirsch (CGI), our Construction Manager**. Mr. Kirsch will report directly to Mr. Lundgren and will be responsible for the on-site construction team, including the project controls/DBE compliance; scheduling; on-site safety; subcontractors; and MOT/Traffic, Structures, Utilities, and Highway/ESC/SWM Managers. Mr. Kirsch will be assigned on-site full-time during construction. His focus will be to perform construction safely and in conformance with approved plans and the RFP. Mr. Kirsch will ensure all critical construction coordination activities are being progressed to avoid schedule slips. During design, Mr. Kirsch will ensure all design elements are reviewed for constructability and consistency with construction scheduling, sequencing, and means/methods. He will also regularly coordinate with the design team during construction on shop drawings reviews and to resolve unforeseen field issues. **Our Construction QC Manager, Shannon Brown (CGI)**, will coordinate with Mr. Kirsch, manage and coordinate construction QC activities for compliance to project requirements, and bring any non-compliance issues to Mr. Kirsch's and Mr. Lundgren's attention.

On the design side, Mr. Lundgren will be supported by **Walter Miller, PE (WR&A), our Project Design Manager**. Mr. Miller will report directly to Mr. Lundgren and will be responsible for all design activities and other professional services. All design discipline leads, including **Highway, H/H, Structures, MOT/Traffic, Utility and Geotechnical/Pavement Engineers**, Environmental Scientists and **Stream Restoration Specialists, Landscape Architect, Land Surveyor**, etc. and subconsultants will report directly to the Mr. Miller. All design discipline staff, including subconsultant design staff, will report directly to their respective design leads, who will provide them with daily direction and guidance on their discipline-specific design activities. Mr. Miller will ensure all design leads coordinate with each other, our subconsultants, and construction staff. Mr. Miller will ensure that all necessary permits and design approvals are obtained. He will assign resources, oversee/coordinate design subconsultants, coordinate design schedules, develop/implement corrective measures, if needed, and integrate environmental compliance/mitigation measures into the design. During construction, Mr. Miller will manage plan modifications and shop drawings, and review construction activities with Mr. Kirsch. **Our Design QC Manager, Brian Riffel, PE (WR&A)**, will implement and oversee our Design Quality Plan to ensure all design elements are thoroughly checked, consistent with project commitments, and constructible. Mr. Riffel will be independent from production and will report directly to Mr. Lundgren.

To ensure full integration of our design and construction staff and leverage the collaboration afforded through the design-build process, CGI has assigned **Andrew Kitchen (CGI) as our Design/Construction Coordinator**. Mr. Kitchen will report directly to Mr. Lundgren and his sole responsibility will be to ensure collaboration between design and construction staff starts early during the bidding and design phases and is sustained throughout the construction phase. He will actively work with Mr. Kirsch and Mr. Miller to ensure all design submittals are reviewed for constructability, conformance with project requirements, and consistency with construction scheduling, sequencing, means/methods, and other project commitments. He will also assist Mr. Kirsch in keeping design staff informed and integrated during construction so construction is being progressed in conformance with the design intent and project commitments, and unforeseen construction issues are resolved quickly.

Typical critical elements on any project are utilities, environmental permitting/approvals/compliance, and MOT/traffic. To ensure coordination between design and construction on these critical items, we have assigned key personnel to manage and coordinate these elements. **Stephen Beckley (CGI), our Utilities Coordinator**, will work directly with utility owner representatives and our utility design staff and **Joseph O'Brien (CGI), our on-site Utilities Manager** to ensure all utilities are identified, impacts minimized, and necessary relocations coordinated and effectively scheduled/sequenced. **James Ashby (WR&A), our Environmental Compliance Manager**, will work with **Mike Gawlik (CGI), our ESC Manager**, and **Timothy Hess (WR&A), our Permitting Coordinator**, to ensure compliance with all permit requirements during design and implementation of the design during construction. He will review design plans along with construction staff, and will visit the construction site periodically and during critical phases to ensure permit

conformance throughout. Particular attention will be paid during design to ensure impacts are minimized and constructability/construction access is considered in the design. Mr. Gawlik will ensure all ESC controls are properly placed in the field, all construction remains in permitted limits, and any field modifications are properly approved by MDE and/or USACE. Mr. Hess will work with our design and construction teams to ensure permits are being properly interpreted during design and construction, and he will prepare any necessary permit modifications due to design or construction changes. **Joe Hall (CGI), our MOT/Traffic Manager**, will work closely with our traffic engineering staff during design and will review plans to ensure all MOT/traffic elements are coordinated and sequenced with construction activities, including ESC phasing. During construction, he will ensure the proper implementation of traffic control devices in the field and will review their performance. As needed, he will work with our traffic engineering staff to make improvements due to unanticipated driver, pedestrian, or bicyclist behaviors.

Lastly, since all transportation projects involve interested or impacted stakeholders, including the public, the CGI team will integrate our **Public Relations/Outreach Coordinator, Odessa Phillips, PE**, throughout our design and construction phases to ensure we are working with SHA to effectively manage stakeholder expectations, meet commitments, address their needs as appropriate, and keep them informed throughout.

**Our Collaboration, Coordination and Communication Practices** – The success of any project relies on close collaboration, coordination, and communication between all team members to ensure that the project moves forward efficiently. Our management team has a proven track record of successfully completing quality design-build projects safely, on-time, and within budget. This starts with our construction and design team members working closely and interactively during the development of construction bids through CGI's involvement in design decisions and WR&A's input into CGI's estimating and bid preparation. Starting in the bidding phase, our construction and design staff will carefully evaluate all work activities on the project. Initial field investigations will be completed together in order to assess issues such as construction access, potential environmental constraints, and impacts to adjacent property owners or other stakeholders such as utilities. This collaboration carries forward into design and construction through formal monthly Partnering and our integrated daily workflow Partnering approach. In the design phase, CGI is heavily involved in design and constructability decisions in preparation of design submittals. During construction, WR&A's designers are consulted to assist CGI in developing construction solutions and provide design modifications to address unforeseen field conditions. Key inputs during the design and construction phases include:

Construction Input during Design:

- Constructability reviews – review of scheduling, sequencing, means/methods, materials, etc.
- Construction scheduling and development of WBS activities for the CPM
- Assisting with the development of cost effective designs
- Assessing utility impacts and relocation or avoidance measures
- Assessing environmental impacts to identify/develop avoidance and minimization strategies
- Over-the-shoulder reviews
- Cooperative efforts for shop drawing preparation

Design Input during Construction

- Design field support during the construction phases
- Review of preliminary CPM schedules for construction
- Assistance with permit compliance
- Assistance with MOT and approved traffic control plans
- Supporting resolutions for changed field conditions
- Assisting with public involvement and community interaction

As part of our integrated Partnering approach and in addition to formal Partnering, our team holds joint design/construction workgroup meetings on a weekly basis during the design phase to report on progress, discuss construction scheduling/sequencing and means/methods, identify and resolve issues, and ensure proper coordination of the work. Additionally, quality review meetings are held on a bi-weekly basis to review conformance with technical and project criteria/commitments. As the project moves from design into primarily a construction function, bi-weekly meetings between construction and design staff will continue. In addition, design staff will be continuously involved via regular field visits, continuous communication with construction staff, and regular Partnering meetings. Design staff will be responsible for expedited design revisions, primarily as a result of unforeseen changes in field conditions. Our design staff has reacted quickly to such revisions in the past, which have resulted from the discovery of unsuitable materials, changes in material availability or, in the case of ESC, design solutions to deal with extreme weather events. In addition, our design staff will be responsible for continuous as-built inspection and certification during construction.



## Legend

- CGI Concrete General, Inc.
- WR&A Whitman, Requardt & Associates, LLP
- ABC AB Consultants, Inc. (MBE)
- AC Assedo Consulting, LLC (MBE)
- ALA Athavale, Lystad & Associates, Inc. (MBE)
- DCI Daniel Consultants, Inc. (MBE)
- E2CR E2CR, Inc. (MBE)
- SI Streetscapes, Inc. (MBE)
- S&L Skelly & Loy
- Key Staff
- XX% Approximate Time Commitment

### Third-Party Stakeholders

- FHWA
- Prince George's County (DPWT & FD)
- State and Local Political Leaders
- Utility Owners
- WMATA
- Schools & Childcare Centers
- Religious Entities
- Homeowner Associations
- Businesses/Residents (Condos/Apartments)
- Community/Public
- Emergency Services

### Executive Committee

- Michael Miller (CGI)
- Joseph Makar, PE (WR&A)

### Design-Build Project Manager

- Raymond "Butch" Lundgren (CGI) - 60%

### Public Relations / Outreach Coordinator

- Odessa Phillips, PE (AC)
- Kristen Franklin (AC)

### Construction

- Construction Manager**
- Joseph Kirsch (CGI) - 100%

- Project Controls / DBE Compliance**
- Mark Miller (CGI)

- Project Scheduling**
- Stephen Beckley (CGI)

- On-Site Safety**
- Fred Collins (CGI)

- General Superintendent**
- Chris Kirsch (CGI)

- Structures Manager**
- Larry Smith (CGI)

- Surveys-Construction**
- Frank Collins (CGI)

- SWM As-Built**
- Inspection/Certification
- Matthew Alish (WR&A)

- Stream Restoration Specialists - Construction**
- Joshua Miller (CGI)
- Bob Stoneburner (CGI)

- Highway/ESC/SWM Manager**
- Mike Gawlik (CGI)

- Utilities Manager**
- Joseph O'Brien (CGI)

- Utilities**
- PEPCO
- Verizon
- Washington GAS
- WSSC
- Fiber / Telecom

- MOT/Traffic Manager**
- Joe Hall (CGI)

### Quality Control

- Design QC Manager**
- Brian Riffel, PE (WR&A)

- Construction QC Manager**
- Shannon Brown (CGI)

- Certified MDE Reviewer**
- Richard Sobbett, PE (DCI)

- Environmental Compliance Manager**
- James Ashby (WR&A)

- Resource Agencies**
- Maryland Dept. of the Environment (MDE)
- U.S. Army Corps of Engineers (USACE)
- U.S. Fish & Wildlife Service (USFWS)
- Dept. of Natural Resources (DNR)
- Maryland State Preservation Officer (MD SHPO)

- Utility Coordination**
- Stephen Beckley (CGI) - 25%
- Utilities Coordinator
- Paul Weiner, PE (WR&A)

- Design / Construction Coordinator**
- Andrew Kitchen (CGI)

### Design

- Project Design Manager**
- Walter Miller, PE (WR&A) - 60%

#### Highway

- Gary Bush, PE (WR&A) - 75%
- Mark Roberts, PE (WR&A)
- Bryan Townsend, PE (WR&A)

- Pedestrian/Bicycle**
- Rodney Hill, PE (WR&A)

- Hydrological/Hydraulics/SWM/ESC**
- Jason Cosler, PE (WR&A) - 40%
- Debra Rasmussen, PE (WR&A)
- Don Feng, PE (DCI)

- Stream Restoration Specialist**
- Charles Hegberg (S&L) - 10%
- Todd Moses (S&L)

- Environmental Resources/Permitting**
- Timothy Hess (WR&A)
- Permitting Coordinator
- Laura Callens (WR&A)
- Wetlands & Waters
- Michael McQuade (WR&A)
- Forest / Trees

- Utility Design**
- Dale Swenson, PE (WR&A)

- Traffic Engineer**
- Jeremy Mccny, PE, PTOE (WR&A) - 60%
- Neil Leary (WR&A)
- Melanie Earnest, PE (WR&A)

#### Structures

- Scott Kirwin, PE (WR&A) - 50%
- Paul Duemmel, PE (WR&A)
- Harry Parrish, PE (ALA)

- Geotechnical/Pavement**
- Monica Paylor, PE (WR&A) - 25%
- Jeffrey Basford, PE (WR&A)

- Landscape Architect**
- Diane Szekely, RLA (SI) - 25%
- Michael Campbell, RLA (WR&A)

- Roadway Lighting**
- Jeffrey Cheng, PE (WR&A)
- Neil Leary (WR&A)

- Noise Analysis/Abatement**
- Ken Bauer, PE (WR&A)

- Land Surveyor**
- Charles Mueller, PLS (ABC)

- Subsurface Investigation**
- Siva Balu, PE (E2CR)
- Soil Borings & Pavement Cores
- Neil Eppig, PLS (ABC)
- Utility Test Pitting

- ROW Coordination**
- Gregory King, PLS (WR&A)

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**WR&A** WHITMAN, REQUARDT  
& ASSOCIATES, LLP  
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