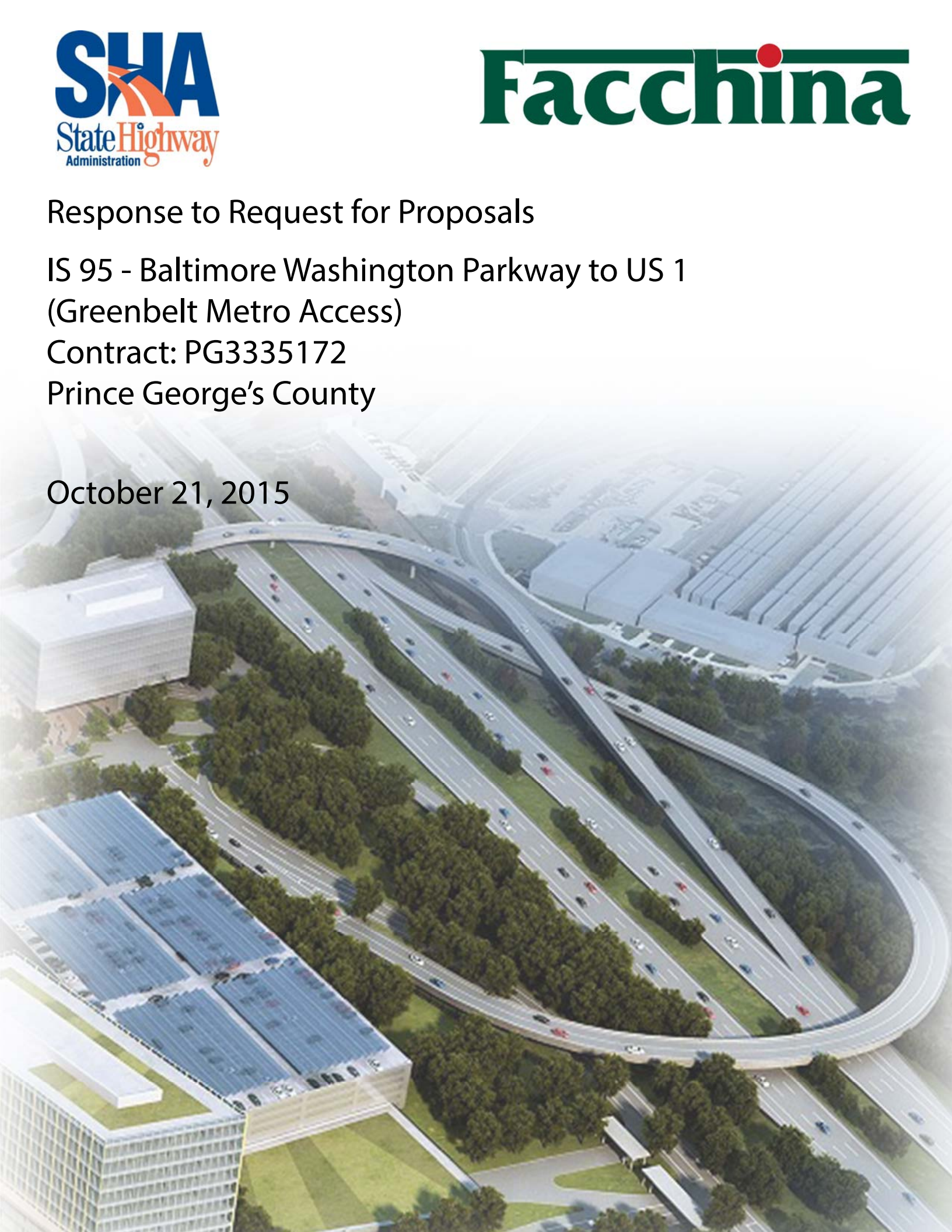
Response to Request for Proposals

IS 95 - Baltimore Washington Parkway to US 1 (Greenbelt Metro Access)

Contract: PG3335172

Prince George's County

October 21, 2015



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State Highway Administration

Facchina

Project Management Team/Facchina's Capabilities

B. Project Management Team/Facchina's Capabilities

B.1. Project Management Team

Facchina will be the Lead Contractor for the IS 95 – Baltimore Washington Parkway – US 1 (Greenbelt Metro Access) (GMA) project. We understand that the success of any construction project is dependent upon assembling a team that has the expertise to meet the goals of the project. The RFP provides clearly stated project goals:

- Maximize the scope of the construction improvements within the construction budget.
- Complete all construction improvements on time to accommodate the opening of the potential adjacent development for the FBI Headquarters.
- Minimize impacts to the physical environment (e.g. forests, streams, wetlands, etc.).
- Minimize utility and property impacts and relocations.
- Minimize inconvenience and impacts to the traveling public.
- Facilitate a collaborative partnership with all members of the project team and stakeholders.

Our project team brings significant State Highway Administration (SHA) experience and all of our key staff have extensive Design Build (DB) and /or Construction Management at Risk (CMAR) experience with projects of similar scope, complexity, and delivery. Facchina has assembled a highly qualified team using internal key staff and value added positions. Our cost estimator has a successful record of competitively bid SHA DB projects and the Facchina team will use this familiarity to maximize scope for the GMA project. Our project and construction managers both have extensive DB experience on complex/fast-track projects. They both bring this experience to accelerate a schedule that will deliver the GMA six months ahead of schedule, and at the same time optimize constructability to maximize scope. Our team will be engaged from the onset of the project and will provide continuity to ensure all of the project goals are met.

Facchina recognizes that we are joining an existing team led by SHA. As such, we are committed to effectively establishing a partnering relationship with SHA, the Designer, affected neighborhoods, utilities, local authorities and agencies, and other stakeholders. Our approach will be to align our priorities with the project goals as an integral member of the team. We will accomplish this by utilizing our experience to make significant contributions to the project's overall quality, affordability, schedule improvements, innovation, safety, and impact mitigation.

Facchina will integrate with SHA and the Designer to create a collaborative and successful team. We will fully immerse our project staff into the conceptual design process, which will allow us to better understand how the major aspects of the project will affect both the Opinion of Probably Construction Costs (OPCC) and the project goals. We will hold regular meetings, as outlined in the RFP, with SHA and the Designer in order to discuss design sequencing, projected construction sequencing, and the major cost drivers. As the construction manager, we will set agenda items and generate detailed meeting minutes that will in turn establish accountability for achieving the project milestones.

The expertise of our team in managing complex projects of this type, coupled with the collaborative approach that we bring to all of our projects, will ensure that all of the goals are achieved through the CMAR process. Our Key Staff offer the experience to meet each of the project goals, including building a professional and collaborative team as follows:

Durant Walters, P.E.; DBIA – Project Manager

- **Managed over $100M in Design Build roadway projects ranging from urban arterial roads to major highway projects**. As Design Build Project Manager for the 9th Street Bridge Replacement project in Washington DC, Mr. Walters worked with the Federal Highway Administration (FHA) and the Designer of Record (DOR), JMT, to design and construct a four-span, four-lane structure over existing railroad in the high density urban environment of the US 50 corridor. He brings this wide experience with various agencies to develop a collaborative effort with all GMA stakeholders

- Experienced with environmentally sensitive projects for a variety of jurisdictions. On the Western Parkway Phase 4B DB project Mr. Walters was responsible for the phased realignment of two tributaries of the Mattawoman Creek to allow for the new roadway alignment. He will use this experience to minimize impacts to Indian Creek and other environmental elements.
- Proven track record of delivering projects within the construction timeframe and current budget. Throughout his 26 years of experience, Mr. Walters has had consistent success completing difficult projects on time and within budget, including US 50 and Columbia Park Rd, Noise Abatement Walls I-95/I-495 – U.S. 50, and U.S. 50/301 Noise Abatement Walls.
- Experienced in constructing roadway projects in highly congested areas with minimal impact to the traveling public. On the $142.5M I-95 Express Toll Lanes MD 43 Interchange project, Mr. Walters minimized impacts to the traveling public through carefully planned Maintenance of Traffic (MOT) phases which were paramount to the success of the project.
- Fostered a partnering approach to every project regardless of delivery method. Mr. Walters has worked with a wide range of public owners as well as many design firms. His genuine desire to partner has been demonstrated on the SHA MD 4 DB project. The collaboration between SHA, the Designer and Facchina is a true testament to his ability to lead in this area. His extensive local experience, along with his P.E. and DBIA credentials speak to his professional involvement in the Maryland marketplace that he brings to the GMA project.

Thomas McFall, P.E., DBIA – Construction Manager

- Managed over $300M in complex heavy civil projects and roadways with mixed-use vehicles including automobiles and light rail. Mr. McFall served as the Design Build Manager for the H Street/Benning Road Streetcar project in Washington DC. He collaborated with the internal design team of Systra and JMT, along with DDOT to implement a streetcar system along the congested H Street corridor.
- Constructed multiple projects in and around environmentally sensitive areas. In his role on the Program Management Team at the Richmond International Airport, Mr. McFall served as the Resident Engineer on the construction of a wetland providing off-site stormwater management for the airport. Mr. McFall has also held key positions on projects surrounded by protected and endangered species, as well as federally protected waterways. This extensive experience with environmental issue makes Mr. McFall keenly aware of minimizing environmental impacts that may be associated with the box culvert extension.
- Experienced in meeting the diverse needs of project stakeholders, including balancing the needs of project stakeholders while also maintaining architectural elements within the context of historically designated design. On the H Street project, the permanent design of the Car Barn Training Center required the Project Team to incorporate “green” technology while constructing the building within the historical context mandated by the Historical Preservation Board. He successfully blended the competing needs of the project while still developing a site that complimented its historical surroundings.

Gaetan Carrier – Cost Estimator

- Experienced cost estimator for all procurement methods employed by SHA. Mr. Carrier performed the structures pricing for the MD 24, Section A CMAR project.
- Over 30 years’ experience with both constructing and estimating SHA projects. He has demonstrated the abilities to analyze productions, manage subcontractors, and fully develop construction estimates.
- Experienced in developing open cost models for estimating project costs. As lead estimator on several successful SHA DB pursuits, Mr. Carrier has been responsible for developing Work Breakdown Systems (WBS) used by the project team, JV partners and Independent Cost Estimators (ICE). This process allowed the Project Team to form Opinion of Probable Construction Cost (OPCC) pricing on multiple projects. He has also successfully structured Guaranteed Maximum Price (GMP) estimates from OPCC pricing, which has provided both comparable and transparent cost estimating to the Client.
- Demonstrated the skills to track constructability recommendations, value analysis, and technical alternatives; while also providing continually refined costs. Mr. Carrier’s extensive experience with SHA projects and pricing structure makes him uniquely qualified to develop an estimate tracking system easily reviewed by all project stakeholders.

B.2. Key Staff

Facchina has assembled a motivated, results driven team to ensure consistent quality services throughout the life cycle of the project. The RFP has outlined a list of services that the contractor will provide during the preconstruction phase of the project. The responsibilities of our project team members are detailed in the responsibility matrix below. Our Key Staff, along with the balance of our project team, will provide both SHA and the Designer with a wide breadth of experience and interdisciplinary skills. As an example, the RFP has designated utility coordination as a key project issue that will require a great level of preconstruction effort. We also understand that a lack of effective coordination with utility companies is often a common cause for both schedule delays and cost overruns in construction. In order to ensure that utility coordination receives the appropriate level of effort, Jeff Markle will serve primarily as the Assistant Construction Manager and Utility Coordinator for the project. Mr. Markle served as the Utility Coordinator for the H Street/Benning Road Streetcar project, where he worked closely with the Designer of Record (DOR) to determine utility conflicts and manage the utility relocation effort.

Responsibilty Matrix	Durant Walter	Tom McFall	Gaetan Carrier	Jeff Siddens	Jeff Markle	John Kelble	Ryan Eaton
Task	Project Mgr	Const Mgr	Cost Est	Project Exec	Assistant Const Mgr	Assistant Est	Safety Mgr
	🔑	🔑	🔑				
Constructability, staging and other design input	A	R	I	I	C		
Estimate resources needed for construction	A		R	I		C	
Determine the tasks need to complete the project	RA	C	C	I	C		
Confirm availability, cost and capacities of resources	A	R	C	I	C		
Identify risks and methods to mitigate them	RA	C	C	I	C		C
Implement risk management strategy	RA	C	C	I	C		C
Participate in risk management workshops	RA	C	P	A	P	P	P
Participate in formal design reviews	R	P	P	I	P	P	
Provide progressively refined cost estimates	A	C	R	I	P	C	
Provide informal input on constructability and value	RA	C	I	I	C		
Prepare GMP Proposals	C	C	R	A		C	
Develop and track potential innovations	RA	C	C	I	C		
Coordinate and meet with stakeholders	R	P	C	I	C		
Review as builts, conceptual design and site conditions	RA	C	C	I	C		
Attend Project Scoping / Partnering Workshop	R	P	P	P	P	P	P
Attend Project Team Meetings	RA	P	P	I	P		
Attend Milestone Meetings	RA	P	P	I	P		
Attend LLTP or GMP Meetings	R	P	P	A	P	P	
Provide cost estimate for possible alternatives	A		R	I		C	
Procurement reviews for long lead or early delivery items	A	R	I	I	C		
Prepare written design milestone reports	R	C	C	A	C		
Lead Value Analysis Workshops	RA	C	R	I	P	P	
Prepare preliminary construction schedules	RA	C	C	I	C		
Prepare phasing alternatives	A	R	C	I	C		
Develop subcontracting plan including meeting DBE goals	A	R	I	I	C		
Develop an Innovation Tracking & Performance Report	RA	C	R	I	C		
Develop a Quality Control Plan	A	C		I	R		
Develop a Material Sourcing Plan	A	R		I	C		
Develop a Worker and Public Safety Plan	R	C		I			R
Reconcile Final GMP for each phase	C	C	R	A			

R = Responsible A = Accountable C = Consulted I = Informed P = Participant 🔑 = Key Staff

Value Added Staff

These team members will add extensive experience in Highway construction and alternative project delivery methods. These personnel will be engaged in the project during both the design and construction phases of the project

Project Executive – Jeffrey Siddens

Mr. Siddens has over 31 years of experience in Heavy Civil and Heavy Highway related construction and construction management. He has played a key role in the procurement and management of numerous projects throughout the eastern third of the United States, gaining experience with several Transportation Agencies as well as other Contracting Agencies. Many of these projects were constructed in complex, high profile, schedule driven and environmentally sensitive areas requiring extensive coordination with multiple agencies, contractors and communities.

He currently serves as Facchina's Heavy / Highway Division Manager overseeing all aspects of this division from preconstruction to project closeout. Jeff served as Design Build Construction Manager on the recently completed $380M 11th Street Bridge Project in Washington, D.C. This project was awarded based on maximum scope proposed with the owner's available budget. Jeff has managed the construction of numerous, bridges, retaining walls, box culverts, noise walls, utility relocations, and earthwork on both new alignment and existing roadway reconstruction projects in dense urban areas with high traffic volumes. Several of these projects received full available bonuses for early completion. Jeff will serve as Project Executive. His extensive experience managing projects of similar scope and complexity will be a valuable resource for our project team during both the design and construction phases of this project.

Asst. Construction Manager – Jeffrey Markle, PE, DBIA

Jeff has over 10 years experience with Facchina constructing various Heavy / Highway Projects in the Mid-Atlantic region. His project experience includes our ongoing $95M H Street/Benning Road Streetcar Implementation Project in Washington, D.C., as well as our $23M North Area Roadways Project at Dulles Airport in Virginia. Each of these projects feature similar scope and complexity as GMA project. Jeff served as our Construction Manager under Thomas McFall at our H Street project. Jeff brings extensive experience with utility relocations / protection and maintenance of traffic to this project ensuring our team meets those goals on this project.

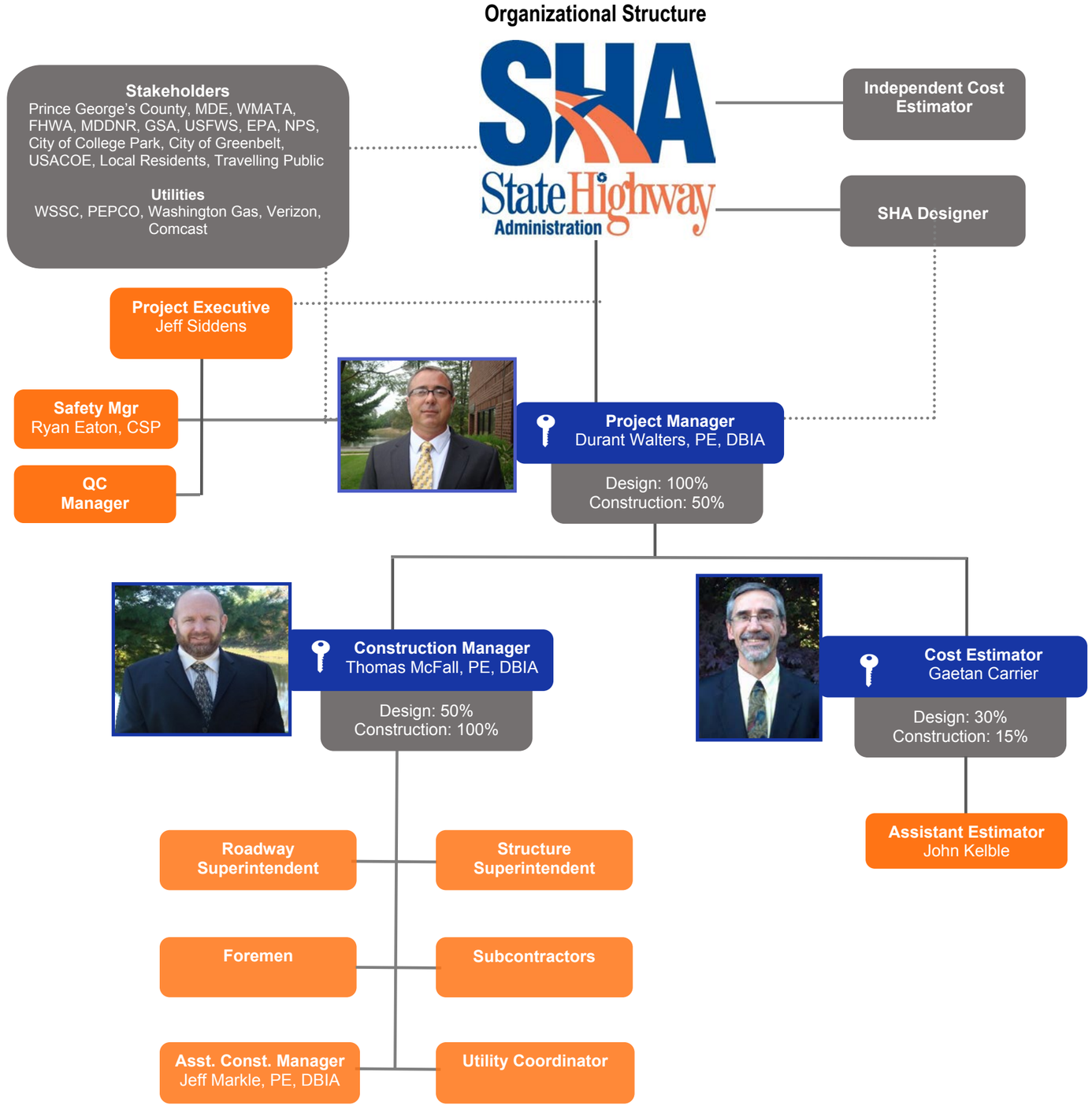
Assistant Estimator - John Kelble

John has over 26 years experience estimating and managing major infrastructure projects throughout the Mid-Atlantic region. His estimates have included accelerated construction, Design Build, environmental protection, utility relocation and protection, and maintenance of traffic for various agencies including dozens of projects for SHA. John will use this experience to assist Gaetan Carrier in the preparation of OPCC's, GMP's and risk assessments.

Safety Manager - Ryan Eaton, CSP

Ryan has over 12 years experience as safety manager for major infrastructure projects in the Mid-Atlantic region. His project experience has included Dulles and BWI Airport, MARC Yard at Union Station and SHA projects I695 / Frederick Road and I95 / Contee Road Interchanges. He has implemented a safety program that resulted in a million man hours worked without a lost time injury. Ryan will make certain that our team ***safely*** achieves the project goals.

Organizational Structure



Durant G. Walters, PE, DBIA

Project Manager

» Profile

Years of Experience
26 Total
2 with Facchina

Education
University of MD - B.S., Civil Engineering, Hudson Valley CC – AAS Civil Engineering

Registration, Certifications & Training
Professional Engineer, MD & VA, Design Build Professional (DBIA), MD SHA E&S Control Certification, MD SHA Temporary Traffic Control Manager (TTCTM), Virginia Certified Responsible Land Disturber, OSHA 30 Hour

» Authority

Mr. Walters provides a single point of accountability to deliver the project in accordance with the project commitments and has full authority within the limits of the budget and quality.

» Qualifications Summary

Mr. Walter's project experience detailed below highlights his record of completing projects within or ahead of schedule as well as minimizing environmental impacts, utility and property impacts, and inconvenience to the public.

» Project Experience

MD 4 - Forestville Rd to MD 458 Design Build | Prince George's County, MD | $22M |
Mr. Walters is currently serving as the DB Project Manager on this reconstruction of two miles of four lane divided urban roadway. Work includes asphalt pavement repairs, utility relocations, storm drainage, MOT, signing, signals and lighting. Mr. Walters is responsible for Project Scheduling, Budget, Constructability Reviews, Subcontract and MBE Plan, material procurement, alternative concept review and integration, practical design implementation, public outreach, traffic control plan concept and review, wetland and WUS avoidance, stakeholder and utility coordination. The project is currently in the design phase with construction scheduled to begin in the spring of 2016.
Relevancy: Similar scope & complexity, Alternative Project Delivery Method, utility relocation, environmental sensitivity, public outreach, MOT, SHA, & PG County.

I-95 Express Toll Lanes MD 43 Interchange | White Marsh, MD | $143M |
Mr. Walters served as the Project Manager on this reconstruction of 1.6 miles of the existing eight lane divided highway into eight General Purpose (GP) Lanes and four Express Toll Lanes separated by concrete traffic barriers. The project entailed the construction of six new bridges, the complete demolition of 3 bridges, construction of 10 retaining walls, noise barrier and the extension of multi cell box culverts. Also included was a 98" micro-tunnel for the realignment of a 48" sanitary sewer interceptor, and the infrastructure construction and coordination of PEPCO high voltage duct bank and 12" BGE Gas Main relocations. It was necessary to monitor and protect an existing 108" water line. Through Value Engineering a containment system utilizing grout injection was installed. An existing 10" sanitary line was protected from the surcharge of new off/on ramp embankments utilizing grout columns and a reinforced concrete slab to transfer loads around the utility. Mr. Walters was responsible for project scheduling, budget, subcontract and MBE Plan, material procurement, public outreach, traffic control plan concept and review, wetland and stakeholder and utility coordination.
Relevancy: Similar scope and complexity, utility relocation and protection, environmental sensitivity, Interstate Highway, MOT, partnering, Fly-overs, and culvert extension.

9th Street Design Build Bridge Replacement | Washington, DC | $58M |
Mr. Walters served as the DB Manager for the construction of a new 645' long-four span, four-lane bridge over 9th street, AMTRAK and CSXT railroads in N.E. DC. Project challenges that were overcome include the coordination of multiple owner requirements, the development of an aesthetic program providing the Owner with a 'gateway project,' and working within the restrictions imposed by underlying railroads. Mr. Walters was responsible for project scheduling, budget, material procurement, public outreach, traffic control plan concept and review, wetland and utility coordination and erosion and sediment control.
Relevancy: Similar scope and complexity, Alternative Project Delivery Method, public outreach, adjacent to railways, MOT, and environmental sensitivity.

Thomas M. McFall, P.E., DBIA

Construction Manager

» Qualifications Summary

Mr. McFall's project experience detailed below highlights his record of completing projects within or ahead of schedule as well as minimizing environmental impacts, utility and property impacts, and inconvenience to the public.

» Project Experience

H Street / Benning Road Streetcar Design Build Project | Washington, DC | $95M

Mr. McFall currently serves as the Project Manager on this 2.4 mile segment of streetcar line that began in 2008 under the District's Great Streets program, and will be the first segment of streetcar track that will put into revenue service as a part of the 22-mile priority system. The work includes maintenance of traffic, utility relocation, underground infrastructure, car barn maintenance facility, vehicle storage yard, and railway yard. Mr. McFall participates in the overall design review including reviews for constructability and over the shoulder reviews with the Owner and their agents. He attends weekly design review meetings, weekly meetings with DDOT, and regular coordination meetings with utility owners and private developers. Mr. McFall is responsible for the overall construction management and construction scheduling, including reviews and updates.

Relevancy: Alternative Project Delivery Method, similar complexity, MOT, utility relocation and protection, long lead Time procurement, community outreach, risk management

Dulles Corridor Metrorail Early Roadwork | Tysons Corner, VA | $46M

Mr. McFall served as the Project Manager for this early roadwork construction contract associated with the Silver Line extension of the DC Metro to Dulles Airport. The project entailed the installation of underground utilities, retaining walls, roadway widening / relocation, and traffic signalization for an 11 mile section of road along the metrorail right-of-way on Route 267, Route 123, Route 7 through Tysons Corner, VA, the Dulles Toll Road, and the Dulles Airport Access Highway. Mr. McFall's duties included the job cost tracking, change order pricing and negotiations, subcontract coordination, document controls, CPM scheduling, and owner relations. The project was successfully constructed while maintaining traffic through one of the highest density and congested areas in the DC metro area.

Relevancy: Similar scope and complexity, MOT, utility relocation and protection, environmental sensitivity, risk management

BWI Consolidated Rental Car / Bus Maintenance Facilities | Baltimore, MD | $120M

Mr. McFall served as the Resident Engineer representing the Maryland Aviation Administration, on these two concurrent projects at BWI Airport. His responsibilities included managing project scope, schedule, and budget; overseeing construction activities, managing quality assurance program and inspection staff. The projects included the construction of administrative offices, an automated vehicle wash bay, two-bay maintenance shop, vehicle storage, 80 acres of asphalt parking lots, 2Msf of2-story cast in place parking garage, over 1M cubic yards of excavation, roadway realignment, utility relocations, maintenance of traffic, bridges and retaining walls.

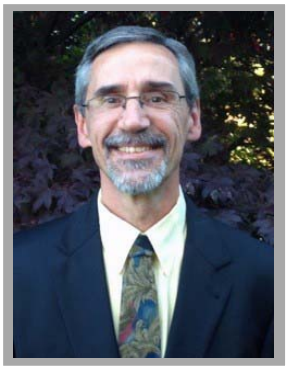
Relevancy: Environmental sensitivity, similar complexity, utility relocation and protection, design coordination, MOT

» Authority

Mr. McFall has the authority to run the project on a day-to-day basis on behalf of and within the constraints laid down by the Project Director.

Gaetan Carrier

Cost Estimator



» Profile

Years of Experience

30 Total

1 with Facchina

Education

Virginia Polytechnic Institute and State University - BS Building Construction

» Authority

Mr. Carrier has the authority to prepare cost estimates, develop Value Analysis Proposals, and Reconcile Final GMP for each phase.

» Qualifications Summary

Mr. Carrier's experience detailed below highlights his record of estimating projects of similar scope and complexity of the GMA using Alternative Project Delivery Methods. He was lead estimator for all these successful pursuits except the MD 24 project. In all cases, his primary responsibilities included; means and methods, constructability reviews, risk analysis and overall pricing.

» Project Experience

MD 24 Section A, CMAR | Harford County, MD | $6M

Mr. Carrier developed pricing for the rock-socketed soldier piles, sheet pile cutoff wall and associated concrete work. Negotiated pricing with specialty drilling subcontractor during CMAR GMP process.

Relevancy: CMAR, SHA, environmental sensitivity, maximizing scope within the budget

ICC-B, Design Build | Montgomery County, MD | $560M

Led the estimate and estimated much of the structures work. Intimately involved with selection of caissons as foundation elements to reduce environmental impacts. Factors contributing to selection of caissons as foundation type included; scour requirements, potential stream migration and stringent environmental controls for large open excavations. Cost analysis resulted in effort to limit maximum caisson diameters to match capability/equipment of local contractors for optimum pricing. Additional reinforcing steel selected as strategy to offset less than optimum shaft diameters.

Relevancy: Alternative Project Delivery Method, similar scope and complexity, environmental sensitivity, public outreach, SHA, long lead time procurement, risk management, endangered species protection

ICC-A, Design Build | Montgomery County, MD | $479M

Mr. Carrier led the estimate for one of the JV partners; this project was particularly difficult to price because it was the first ICC project, and incorporated the heightened sensitivity to both environmental concerns and community impacts. Some key elements included the deck-over with tunnel lighting, arch-structure over Rock Creek and tolling facilities.

Relevancy: Alternative Project Delivery Method, similar scope and complexity, environmental sensitivity, public outreach, SHA, long lead Time procurement, risk management, endangered species protection

Hampstead Bypass Design Build | Carroll County, MD | $41M

Led estimate for 4.5 mile new alignment with extensive SWM, E&S controls and bog turtle habitat constraints. Employed cost effective pricing with MSE-wall supported abutments and bulb-tee girders. Over 800,000 CY of roadway excavation, personally supervised two contractor-led test pit operations to properly quantify/qualify existing rock excavation. Test pitting contributed to competitive earthwork pricing and ultimately to a successful pursuit.

Relevancy: Alternative Project Delivery Method, SHA, environmental sensitivity

MD 216, US 29 to I-95, Design - Build | Carroll County, MD | $21M

Lead estimator for two mile roadway realignment. Over 300,000 sf of contractor-installed noise walls were built on this project. Production based, competitive noise wall pricing was a major contributor to this successful pursuit.

Relevancy: Alternative Project Delivery Method, similar scope and complexity

Project Name/Location:	11th Street Design Build-Bridge Replacement
Client:	District of Columbia, Department of Transportation (DDOT) 2000 14th Street NW, 6th Floor, Washington, DC 20009
Contact:	Joe Dorsey T: 202-210-4542
Contract No:	DCKA-2008-C-01
Project Delivery Method:	Design Build – Fixed Budget
Project Role:	Joint Venture GC
Contract Value:	$260M
Final Value:	$380M (Due to added scope)
Self-Perform:	30%
Commencement Date:	July 2009
Initial Completion date:	July 2013
Actual Completion Date:	Sept 2015 (Due to added scope)

Awards: Excellence in Environmental Streamlining, Road and Bridges #1 on 2012 Top Bridge List, 2013 ACEC Sustainability Award, Engineering Excellence Merit Award, Grand Outstanding Award for Design, Outstanding Civil Engineering Award, 2014 PRIDE Awards, ACI Award of Excellence in Concrete, 2014 IRF Global Achievement Award.

Project Description:

The 11th Street Bridge Design Build project reconstructed and reconfigured the interchanges of the Southeast/Southwest Freeway and Anacostia Freeway. As is typical with a Design Build job, the 11th Street Bridge Project required a significant design period. During this timeframe Johnson, Mirmiran & Thompson (JMT), the lead designer, worked with the Skanska/Facchina JV team and DDOT to complete a design of the project taking into account both the owner's needs and constructability.

The initial phase of the project was awarded based on Best Value Build to Budget. An extensive technical section was included with our proposal. DDOT had a fixed budget for the base bid and tasked competing firms to detail how much of their full desired scope of work could be done within this budget. We were able to include their full scope within their budget. During construction of the initial phase of the project, DDOT was so pleased with our performance they decided to negotiate with us to add the second phase to the Contract.

Construction operations included reconstruction of Interstates I-295 and I-695 to provide missing traffic movements, added capacity, and a safer roadway. The work included 20 new bridges, three of which are 1,000' long crossings over the Anacostia River. Skanska/Facchina constructed 18 lane-miles of new pavement for interstate, ramps, and local roadways. 7 lane-miles of existing roads were milled and overlaid. The project also includes 160,000 SF of MSE walls for site retaining walls and abutments. Several walls were top-down construction, required for the maintenance of traffic. All existing traffic movements were safely maintained during the reconfiguration. Detailed and significant Maintenance of Traffic operations were required to ensure the safety of the construction and traveling public during these switches. The project required 200,000 CY of excavation and 400,000 CY of fill. Additionally, dredging of the Anacostia River was necessary, which also included properly disposing of contaminated materials.

The project required that 12 existing bridges be demolished. Existing poor ground conditions required wick drains and surcharge or geo-piles in order to solve potentially excessive settlement conditions. The JV, in partnership with DDOT, was responsible for obtaining the permits for the project. The Skanska/Facchina team coordinated with multiple local utility companies in order to maintain and relocate their services during the project.

The project was a critical part of the Anacostia Waterfront Initiative (AWI) which is transforming the Anacostia River from one of the most polluted rivers in the nation into a model destination for environmental education, sustainability and recreational fun. Restoring the river also includes a number of various initiatives led by the District Department of the Environment (DDOE) to reduce developmental impacts while improving the overall watershed. Minor dredging of the Anacostia River was necessary, which required the proper disposal of contaminated soils.
Facchina was responsible for the utility relocation design and coordination for the entire project. Extensive utility relocation efforts from design through construction included as-built identification and data gathering, review of design concepts against existing utilities (pavement, structures, signs, etc.), development and approval of mitigation measures and coordination with utility companies.

The greatest challenge of the project was identifying, negotiating, and satisfying the varied needs of the project's numerous stakeholders. The stakeholders included: DDOT, FHWA, National Park Service, National Park and Planning Commission, Coastguard, DDOE, other federal and District agencies, utilities, neighborhood organizations, local residents, and the traveling public. This was all performed while continuing to satisfy contractual commitments and obligations, maintaining schedule and controlling cost of the project.

Relevancy:

- ✓ Maximize scope within the budget
- ✓ Complete on time or ahead of schedule
- ✓ Minimize environmental impacts
- ✓ Minimize utility and property impacts
- ✓ Minimize impacts to traveling public
- ✓ Facilitate collaborative partnership
- ✓ Alternate project delivery method
- ✓ Adjacent historical properties
- ✓ Maintenance of Traffic
- ✓ Interstate highway
- ✓ Phased construction
- ✓ Bridge construction
- ✓ MSE walls
- ✓ Bioswales
- ✓ Innovative Concepts
- ✓ Early Severable Packages

Successful methods, approaches and innovations used on the project:

- In many instances poor ground conditions were encountered, which would have created significant settlement; this would have created both time and budget issues to the project. Innovative ground improvement methods – including lightweight aggregate, Geo-Foam block, GeoSteel columns and GeoConcrete columns were successfully used to mitigate settlement and global stability issues. Traditional wick drains and surcharge were also used.
- We installed Pre-stressed Precast Cylinder Piles for the River Bridge construction which saved the District over $1M and enhanced the project schedule.

- We utilized Stay-In-Place (SIP) Corrugated Metal Bridge Deck Forms, rather than plywood formed soffits, using a VDOT Standard which provided approximately $4M in cost savings to the District as well as schedule improvements.
- Due to limited right-of-way, we provided additional auxiliary lanes on I-295 and DC 295 SB on the existing shoulders within the existing pavement footprint. The advantages of this were lower construction costs, faster construction time, ease of construction in less restricted space, and reduced environmental impacts due to less clearing of the existing 295 side slopes.
- We constructed top down retaining walls, such as soldier pile and/or soil-nail retaining walls for support of excavation. The advantages of this innovative design were lower construction costs, faster construction time and improved construction in restricted space.

Project Name/Location: Intercounty Connector, MD 200 Contract C, (ICC-C)
Client: Maryland State Highway Administration
707 North Calvert St. Baltimore, MD 21202
Contact: Mark Coblentz T: 301-586-9267 F: 301-586-9222
Contract No: AT3765C60

Project Delivery Method: Design Build

Project Role: Joint Venture General Contractor

Contract Value: $513M
Final Value: $526M – (Due to added scope)
Self-Perform: 60%

Commencement Date: January 2008
Initial Completion date: November 11, 2011
Actual Completion Date: November 11, 2011
Awards: Quarterly Environmental Compliance Incentive Awards – nine times from December 2008 through March 2010

Project Description:

Facchina, as a Joint Venture Partner of the ICC Constructors (IC3), was selected in January of 2008 as the Design Build team for the Intercounty Connector (ICC-C). Contract C included approximately four miles of the ICC from west of US 29 to east of I-95, approximately two miles of collector-distributor roadway along I-95, and complex interchanges at I-95 and US 29. This contract was the second of five that created the 18.8-mile ICC, connects the I-270 / I-370 corridor in Montgomery County to the I-95 / US-1 corridor in Prince George's County. Our design engineer was Dewberry, whom we have partnered with on multiple projects to date.

The scope included a three level flyover interchange with US 29, a single interchange with Briggs Chaney Road and a new three level flyover interchange with I-95. These each included extensive curved steel superstructures. In all a total of 25 bridges, five box culverts, 145,000 SF of noise walls, 160,000 SF of MSE walls, 35,000 LF of storm drain, and 6,000 LF of water/sewer. The project also included 2.5M CY of earthwork.

Owner requested changes added $13M to the total value of the project. IC3 was able to design and construct all of this added scope within the original completion date of the contract. In-stream work was restricted during the spawning periods of the Comely Shiner, a vulnerable fish native to the east coast of the US. We were also

required to relocate to outside of the LOD large quantities of native box turtles. Trained dogs were used to corral and safely trap the turtles for relocation to outside of wildlife exclusion fencing.

An existing 24" Colonial Gas pipe line and a 60" WSSC water line were relocated along a substantial portion of the project limits with no disruption of service. Traffic was maintained at all three interchanges including the interchange with I-95. This necessitated night and weekend work as well as mid-day off hour lane closures. IC3 was responsible for project design, construction including, environmental services, floodplain and stormwater management, multiple jurisdiction involvement, QA/QC implementation and conformance and maintenance of traffic on I-95 and US 29. There was a significant commitment by IC3 to limit environmental impacts to the surrounding area, which included Little Branch Stream Valley Park and Fairland Regional Park. Our environmental compliance plan ensured that impacts to forest, cultural resources, parklands, wildlife, wetlands and waterways were minimized. The Team was successful in achieving the prescribed environmental requirements and goals for the project, earning nearly every quarterly environmental incentive offered and receiving high marks overall for the project.

Great effort was put forth to meet the high expectations required by the MDE. Coordination was paramount between Dewberry and the IC3 team in order to design an environmentally compliant project. The use of BMP's and better site planning to mimic natural hydrologic runoff characteristics, and minimize the impact of land development on water resources was a key philosophy adopted by the IC3 team. The use of bio swales, retention structures, retrofitting, and extended detention methods were significant in IC3's ability to provide the maximum environmental credits to the State while maintaining a project that was constructible and financially sensible.

Relevancy:

- ✓ Maximize scope within the budget
- ✓ Complete on time or ahead of schedule
- ✓ Minimize environmental impacts
- ✓ Minimize utility and property impacts
- ✓ Minimize impacts to traveling public
- ✓ Facilitate collaborative partnership
- ✓ Alternate project delivery method
- ✓ Endangered / Threatened species
- ✓ Maintenance of Traffic
- ✓ Interstate highway
- ✓ Phased construction
- ✓ Bridge construction
- ✓ Noise walls
- ✓ MSE walls
- ✓ Bioswales
- ✓ Box culvert
- ✓ Early Severable Packages

Successful methods, approaches and innovations used on the project:

- During design it was apparent that the cost of liquid asphalt was on the rise. To minimize the amount of asphalt required, the pavement section was redesigned, including the use of cement treated base, helping mitigate impacts to SHA associated with asphalt escalation clause.
- The earthwork volumes were balanced to eliminate the need for offsite borrow or waste sites.

- A joint-use trench was developed wherein all of the communication lines could be placed at once in one location saving months of construction time as well as much as $1M in additional cost the SHA for Right of Way procurement.
- Wick drains were used on a substantial portion of the roadway to accelerate settlements and allow for suitable subgrade.
- Bridges were redesigned from steel to concrete beams after the start of construction when steel prices began to rise. This fast track redesign by our DB team eliminated the steel escalation clause costs for SHA.
- Old Columbia Pike driven piles would not achieve bearing during installation. We fast tracked a redesign effort to use the spread footing option.

Project Name/Location: I 83 / I 695 Improvements

Client: Maryland State Highway Administration (SHA)

7450 Traffic Drive, Hanover, MD 21076 T: 866-926-8503

Contact: Mark Flack

Contract No: BA1305172

Project Delivery Method: Design – Bid - Build

Project Role: General Contractor

Contract Value: $18.1M

Final Value: $20.3M (Due to added scope)

Self-Performed: 55%

Commencement Date: September 2003

Initial Completion date: September 2005

Actual Completion Date: September 2006 (Due to added scope)

Awards: 2006 Maryland Asphalt Association Quality Paving

Project Description:

In July 2003, Facchina Construction Company, Inc. was contracted by SHA to construct roadway and bridge improvements at the I-695 Beltway and I-83 Interchange. The project included improvements to I-695, the I-83 Southbound ramp, Falls Road, Joppa Road, and Thornton Road, as well as, the replacement or repair of five bridges. In addition to roadway improvements and bridge repairs/replacements, several upgrades were made to the existing storm drain systems to upgrade SWM facilities leading to the Jones Falls watershed. Sections of the bridge carrying I-695 over the I-83 Southbound ramp were rehabilitated and upgraded. The bridge that carries I-695 over Thornton Road was widened and the bridge deck was reconstructed. Bridges that carry I-695 over Falls Road, the I-83 Southbound ramp over Falls Road, and Joppa Road over I-695 were completely reconstructed and widened. Numerous bridge repairs were performed for future beltway expansion, providing increased vertical clearance, and increased driver sight lines on I-83.

All bridges were built under phased construction while maintaining traffic on the both the Baltimore Beltway and the Jones Falls Expressway at this very congested intersection of two interstate highways in the heart of the Baltimore Metro Area. This necessitated extended work hours including night time and weekend shifts. Disruption to the flow of traffic was minimized through the use of advanced signing, variable message boards and off hour lane closures.

An extensive system of erosion and sediment controls were installed minimizing runoff to the adjacent Lake Roland which feeds the Jones Falls.

Facchina partnered with SHA and their designer to work to mitigate unforeseen conditions. Among these mitigations was the addition of a Design Build temporary pedestrian walkway which maintained access for the communities to the churches along Joppa Road, north and south of the Beltway.

Relevancy

- ✓ Minimize environmental impacts
- ✓ Minimize utility and property impacts
- ✓ Minimize impacts to traveling public
- ✓ Facilitate collaborative partnership
- ✓ Alternate project delivery method
- ✓ Endangered / Threatened species
- ✓ Maintenance of Traffic
- ✓ Interstate highway
- ✓ Phased construction
- ✓ Bridge construction
- ✓ Noise walls
- ✓ MSE walls

Successful methods, approaches and innovations used on the project:

- SHA approved Facchina's request for the construction of an earthen berm. The berm provided a traffic safety barrier from a newly constructed SWM, in an area where no guardrail was to be installed. It also resulted in savings to the SHA as it was constructed with unanticipated unsuitable material.
- Demolished concrete was crushed on site and re-used in fills.
- A necessary construction phase was omitted from the original MOT concept. Facchina developed an alternate sequence which reduced the extended completion date and mitigated this issue.
- Lift dump trucks were used to capture bridge deck concrete demolition. This eliminated the need for shielding, expedited the deck removal, reduced the possibility of debris damaging adjacent structures and improved the protection of the travelling public.

State Highway Administration

Facchina

Project Approach

C. Project Approach

C.1.A. Design and Constructability Review

During the preconstruction phase of the project, Facchina will develop and maintain a framework for the Maryland State Highway Administration (SHA) that provides a systematic approach to deliver a project that will maximize the stated goals and objectives. The proposed approach will establish the project team and baselines, then use recurring meetings and continuous monitoring of schedule, budget, and constructability to refine the project until an acceptable Guaranteed Maximum Price (GMP) for construction services can be reached.

Project Kickoff: After award and incorporation of Facchina into the project team, our first initiative will focus on harmony of our integrated project team and helping to define the project's risks and opportunities that intertwine with the project goals. These initial meetings will include:

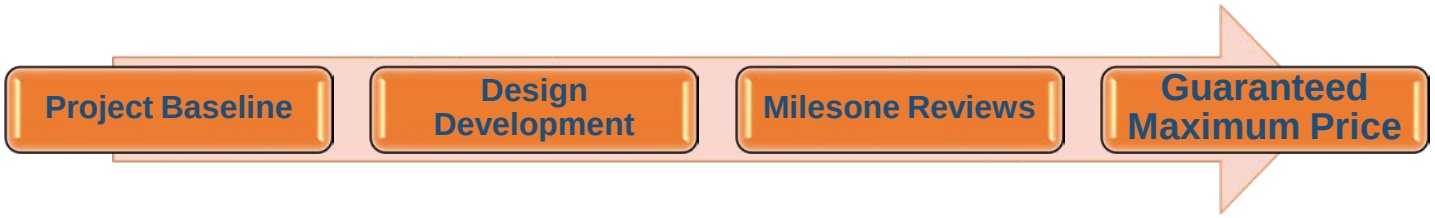
- Project Scoping/Partnering Workshop
- Value Analysis/Value Engineering Workshop
- Risk Analysis and Risk Register Development Workshop

Partnering & Scoping: Understanding that this project will employ the SHA guidelines and procedures for partnering, Facchina offers to spearhead the partnering efforts to bolster the existing relationship between SHA and Montgomery Wallace (MW), and to help integrate Facchina into the project team. Facchina is adept at partnering with the SHA, Designers and Stakeholders through our experiences on multiple projects with varying delivery methods. Partnering is the first order of work and will be centered on re-affirming project goals. Afterwards, project scoping will commence with the open communication established during partnering.

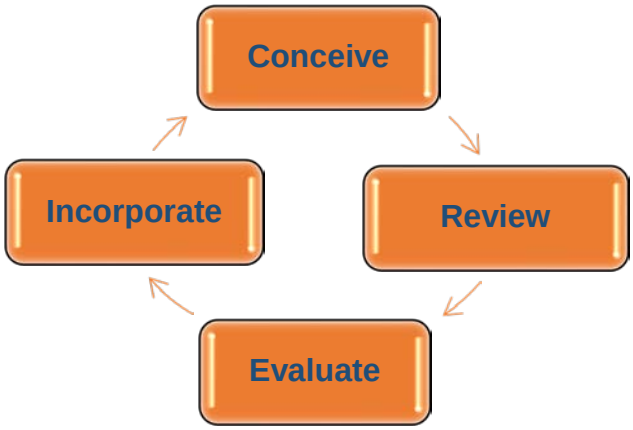
Value and Risk Analysis: "There are no bad ideas, just ideas!" This is the atmosphere Facchina exudes at project specific Value Analysis (VA)/Value Engineering (VE) workshops. Facchina will assist the SHA with selecting the attendees for, and facilitating VA / VE kickoff and recurring sessions throughout the early design stages of project design packages. Our longstanding industry relationships and highly qualified staff allows us to bring skilled tradesmen, specialty and MBE subcontractors, suppliers and fabricators, as well as other key personnel for these sessions.

Initial Schedule and Cost Estimate: Facchina will perform an evaluation of the concept design plan, as-builts and project site conditions, and using this information to develop a project baseline budget and schedule. The development of the project budget and schedule begins with the identification of the Work Breakdown Structure (WBS) and development of the preliminary cost estimate model. This preliminary cost estimate will utilize SHA established items (bid tabs), and will form an open-cost model with the Independent Cost Estimator (ICE).

Project Baseline: Once developed and agreed upon, the initial project cost estimate and schedule are openly shared with the integrated team and used to assist with generating and evaluating value added concepts throughout the design lifecycle. Ultimately, the systematic evaluation of design elements and innovative concepts will provide a clear and defined direction for the project.



Design Development: After establishment of the Project Baseline, Facchina proposes to use an iterative design review and validation process to help streamline the design process, reduce errors and omissions, improve constructability and quality, reduce the cost of construction, and optimize the project delivery schedule. All aspects of design will be evaluated for their impacts on cost, risk, functionality, aesthetics, value added, constructability, practical design advantages, schedule compliance and adherence to the project goals.

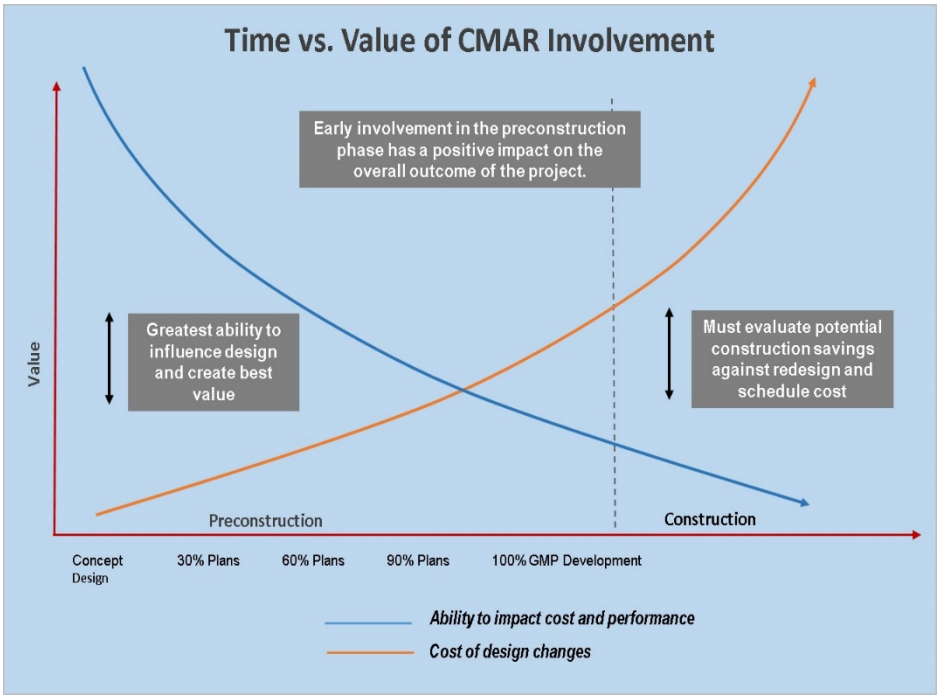


Conceive: Our Design Build experience has proven that regular project team meetings with the Owner and Designers have the greatest impact on achieving an efficient, practical, constructible and timely design. As changes can be implemented with minimal design rework early in design, it is recommended that these meetings be held on a weekly basis.

Facchina is successfully employing these principals on Contract PG7585184 – MD 4 Community Safety and Enhancement Project Design Build (CSEP-DB). Weekly meetings are held between the Contractor and Designer with Specialty Subcontractor's and Design Sub consultants attending when necessary.

These weekly meetings focus on:

- Review of the project goals
- Update on design disciplines
- Constructability reviews
- Introduction of innovations
- Report on the impact of recent design advances to both project cost and schedule
- Review the project's CPM for upcoming design activities
- Update schedule with design and construction progress
- Identify and/or update project risks or issues, and
- Generate and track attendee specific action items



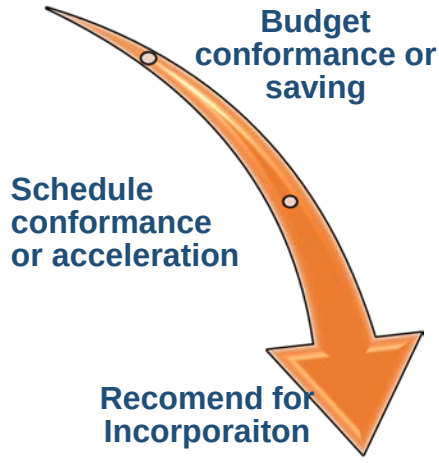
Innovation often stems from experience. Facchina is proud of our past projects and the strengths of our people. On one of his most recent projects, our proposed Project Manager, Mr. Durant Walters, saved approximately 3% of the project cost by applying his experience and innovation to:

- Value Engineer a waterline containment system utilizing grout injection to protect the 108" Susquehanna Conduit supplying water to Baltimore
- Value Engineer caisson supported grade-beams to bridge MSE walls over existing 48-inch sanitary sewers and protect them from settlement
- Redesign the proposed stream diversion at a triple-box culvert extension
- Revise the sequence of construction activates to eliminate post construction settlement under spread foundations eliminating the need for lightweight fill in MSE wall abutments

These examples of our innovative approach and experience are a prelude to the opportunities available on the I-95/Greenbelt Metro Access Project. Our team is already looking at the benefits for the following concepts:

- Waterline containment system protecting the 96" WASA water main to protect the main from settlement resulting from the ramp approach surcharge and also be an integral support of excavation system to allow for future repairs
- Adjusting the alignment from of the IL ramp to the Metro to allow for the reuse of the existing lower-half of the ramp from the Metro to the OL. This allows for the re-use of the bridge spanning the 96" water main

Review: As innovations or practical solutions are generated during the progression of design, they will be reviewed by the team for feasibility. Items deemed feasible will then be further evaluated by Facchina. Often these weekly meetings, VE sessions, or constructability reviews reveal project issues, or potential pitfalls, which are just as, if not more important than the innovations that were sought. The new found issues and potential problems are then detailed on the project's risk register, and mitigated through that mechanism, while the innovations generated at these meetings will be vetted by the core team (SHA/Lead Designer/Contactor), before further evaluation by Facchina .



Evaluate: Our Project Manager will evaluate project risks and innovation against the initial baseline schedule and cost estimate. Often, the evaluation of proposed revisions can be done with simple concept sketches so cost and schedule implications can be identified without significant design development.

Incorporate: A summary of the evaluation will be furnished to the Administration, with recommendations for project direction, and added to the Project Innovation Tracking and Performance Report (PITPR). Approved modifications can then be carried forward for incorporation into the Opinion of Probably Construction Cost (OPCC).

Milestone Reviews: Facchina anticipates participating in up to three (3) formal design milestone reviews for each design phase, section, or construction package. These reviews provide further opportunity for the team to identify innovation and value engineering solutions in addition to validation of constructability, practical design opportunities, and conformance to project goals and objectives. The plan sets scheduled for constructability review will be distributed throughout the entire Facchina Team, from field personnel to specialty subcontractors, fabricators and suppliers. The Milestone reviews will include continually refined cost estimates by our Cost Estimator. This serves to validate changes tracked by the PITPR, and confirm that complete components are included in the design scope, further reducing omissions. During these Milestone Reviews should; the cost of any work package, long lead time procurement or construction GMP exceed the OPCC, the Contractor shall, at no additional cost to the Administration, provide additional Value Analysis services for the work unless this condition was caused by an increase in the contractor's work requested by the Administration. At the completion of all Milestone Reviews, Facchina will prepare written reports summarizing the Value Analysis activities accomplished and any recommendations developed along with a written

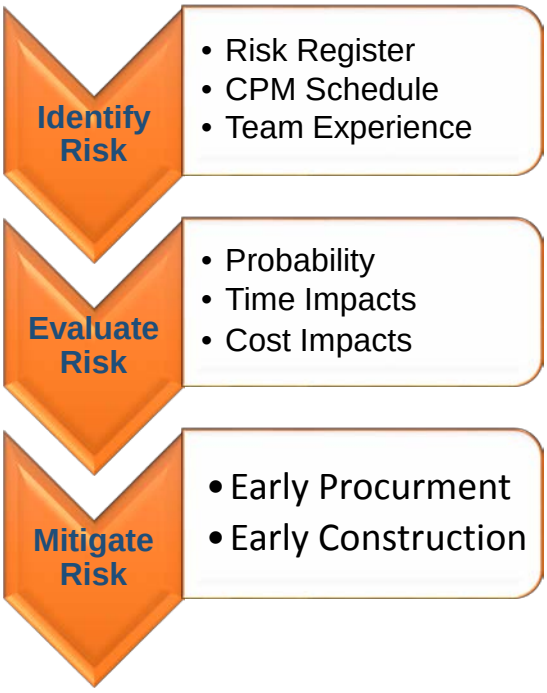
procurement review for materials that could be procured by the Administration or the contractor ahead of any construction phase. These reports will be reviewed at follow up Milestone Meetings to communicate the findings to all team members.

Guaranteed Maximum Price: Once design reaches approximately 80%, Facchina will advise the SHA and prepare Guaranteed Maximum Price (GMP) Proposals for all of the required packages and provide it along with all documentation to the Administration's Independent Cost Estimator (ICE) for review and acceptance. Our estimating staff is experienced and adept in separating projects into conceivable work packages, or WBS's. In addition to providing the baseline cost estimate, the open cost model at the onset of the CMAR Contract, and milestone cost estimates for each procurement or construction package, they will also use their experience to compile comprehensive bid packages for obtaining competitive subcontractor pricing from competent specialty, traditional and MBE subcontractors during the development of the GMP. Facchina understands the high commitment that SHA has made to the DBE contracting community and will comply with those standards as they relate to the COMAR 21.05.10.05 procurement process.

This systematic approach is structured to provide the SHA with a design exceeding the project goals and an agreed upon GMP for all construction work and procurement packages. Our approach will achieve these results by using an iterative approach to incorporate innovation, confirm constructability, mitigate risk, and validate cost and schedule. Facchina's processes have been developed through the successful completion of numerous projects and provide the mechanisms needed to document and evaluate the creative ideas that stem from open communication within the team.

C.1.B. Design Sequencing

Facchina will be able to identify and recommend specific elements, procurements and/or construction packages to the SHA for early acquisition by taking advantage of the Risk Register and CPM Schedule developed early in the CMAR Contract. The decision to break out specific elements and/or segments for early or independent construction packages is a commonly used technique to mitigate risk and ensure an on-time and under budget project delivery. Facchina will use the risks identified at the Risk Management Workshop, listed in the Risk Register and the experience of its management and field personnel as the starting point to identify elements, segments or construction packages for early construction or procurement. Analysis of the CPM and Risk Register will identify several significant risks that can be mitigated by this technique, such as:



- Time for Completion: The early start, and corresponding early finish of activities may be necessary for the project's on-time completion, achieving milestone dates, or facilitating construction by other project stakeholders.
- Utility Relocations: Utilities that need to be relocated by others. The early completion of relocations will minimize project delays and reduce jobsite congestion.
- Material, or Material component cost increases: Demand on construction materials can have devastating increases to material cost. Early procurement of materials can lessen these impacts and help maintain the projects budget, quality and schedule.
- Subcontractor and Labor Availability: Resources are regionally limited, and costs escalate in proportion to their demand. Scheduling construction activities in advance of regional peaks in construction activity can offset these premiums.

- Long-Lead Material and Fabrication Items: the scheduling and early procurement of significant and long-lead materials such as girders, MSE wall panels, lightweight fill as well as others will maintain schedule.
- Construction Efficiency: Completion of work in a congested area on a project facilitates efficient construction operations. The reduced congestion also promotes a safer work environment for the workers and the public.

These, and developing elements, will be continuously evaluated for their potential to impact the project, and those lending themselves to mitigation through early procurement or construction will be identified to the Administration for review and consideration. Elements that are identified and presented to the SHA will be supported by a Risk and CPM Schedule analysis, identifying the benefits of early procurement/construction packages, and prioritized in order of value to focus the project team's logistic efforts. By doing so, the SHA will be equipped with a substantiated and comprehensive analysis that will provide the project team with a clear direction. Once the recommended packages are reviewed by the Administration, Facchina will host or participate in Long Lead Time Procurement (LLTP) reconciliation meetings with the project team. As the project design progresses, continued upkeep and monitoring of the project's Risk Register will identify the project's potential issues, and will be the mechanism for continual identification of elements and/or segments for early or independent construction.

C.1.C. Stakeholder Involvement

A collaborative partnership and effective communication with all Stakeholders is the under-pinning for achieving the stipulated and overarching project goals. Facchina will support the Administration in engaging Stakeholders though several proven techniques, specifically Partnering, Task Specific Work Sessions, Communication Plan, and Public Outreach. A multi-faceted approach will provide the greatest engagement with the identified Stakeholders during the design phase of the Project.

Partnering: We are adept at Partnering with the SHA, designers and stakeholders through our experiences on multiple projects with varying delivery methods. Understanding that this project will employ the SHA guidelines and procedures for partnering, Facchina offers to take the initiative for developing a true team spirit between SHA, Facchina and key stakeholders. Partnering sessions will be the first order of work to knit together the cords that will make up our Project Integrated Team. Those that are identified as core partners, representatives with signification project involvement, will be contacted during our early outreach and encouraged to participate in the traditional Partnering Kick-off Workshop and subsequent partnering sessions.

Task Specific Meetings: Those omitted from the formal partnering process or unable to participate in the partnership will not be precluded, instead the utilization of task and/or issue specific meetings will be used to gather feedback from these Stakeholder representatives on as needed or a reoccurring basis. The scheduling of these meetings will performed by Facchina for groups outside of the SHA and meeting minutes will be generated for SHA's concurrence prior to distribution.

Communication Plan: Facchina will work with the SHA to identify the level of project involvement required of each identified Stakeholder and then develop matrix to define the level of engagement needed. A project of this size and scope will benefit from the development and implementation of a formal communication plan that prescribes the needed communication to each

Stakeholder. Preparing the project communication plan assists the project team in identifying internal and external stakeholders and enhances communication among all parties involved in the project. Facchina will lead the project team and prepare a communication plan to ensure that an effective communication strategy is built into the project delivery process. The plan is a framework and will be a living, evolving document that is revised when needed.

Public Outreach: Communicating Project developments, upcoming work activities, and finalized design concepts to the public can only be achieved through an effective Public Outreach Plan. Facchina is currently engaged with the SHA's Public Outreach Representatives from SHA State and District offices on Contract PG7585184 – MD 4 Community Safety and Enhancement Project Design Build (CSEP-DB). This experience and knowledge will enable Facchina to support the SHA with the development of presentations, displays, handouts, and notices. Facchina will also accompany the SHA at Public Outreach events and tackle construction specific questions concerning the project.

Facchina understands that effective Stakeholder engagement requires varying approaches depending on the degree of engagement. By assisting the SHA with the identification of Key Stakeholders, formulating an effective communication plan, assisting with public outreach, and engaging select Stakeholders with task-specific work sessions Facchina will ensure the greatest success of each approach through our knowledge, experience and professionalism.

C.1.D. Proposed Technical Concepts

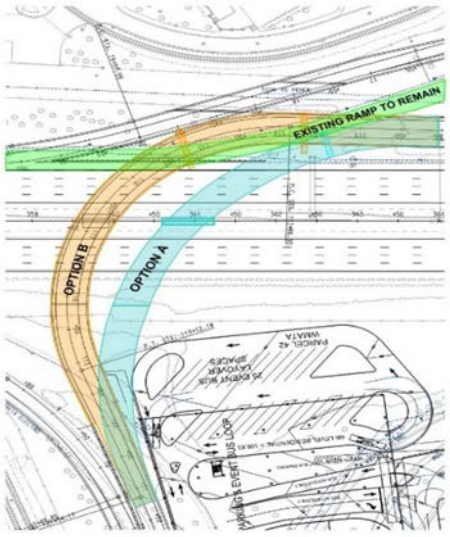
The most current interchange concept in the RFP is the WSSC Minimization Option (WMO). This layout shifts the Outer Loop Ramp to Metro (OLRTM) further south, away from WSSC 96" waterline. Our team believes this is a good concept because it eliminates potential schedule impacts associated with the 96" waterline and substantially reduces costs associated with working around this line.

Re-Use Existing OLRFM over WSSC waterline to maximize project scope. The existing bridge is excellent condition.

The WMO also adds a new ramp and structure over the 96" line by relocating the existing Outer Loop Ramp from Metro (OLRFM) further north. Our initial analysis indicates that re-using the existing ramp, versus constructing a new ramp, may be a better approach because it will:

- Be more cost effective than relocating the ramp and minimize utility and property impacts
- Maximize project scope
- Result in project completion in 3rd quarter 2019, providing earlier access to the FBI headquarters because our concept does not require linear construction of the flyover bridges.

The most practical approach to minimize the footprint conflict between the new ramp and the re-used ramp is to shift the Point of Curvature for the new ramp further east and provide separation between the ramps (Option "A"). This option requires one integral cap to provide clearance over the existing ramp. Vertical geometry for final ramp design and clearance below the other new flyover bridge will work because the OLRTM Bridge only shifts 125' east along the outer loop. A complete avoidance of the existing ramp may be possible with a detailed engineering analysis.



Re-use existing OLRFM and minimize impacts by shifting new OLRTM (option "A") and/or build over existing ramp.

Option "B" is to use the most current OLRTM alignment and build over the existing ramp. This option is less desirable than Option "A" but the "B" Option is still more economical than relocating the existing ramp with a new bridge over the WSSC line and the associated walls. Option "B" will require:

- Two integral caps to provide clearance over the existing ramp
- Straddle piers so columns clear the ramp footprint

An efficient span layout is still maintained under either option to optimize steel girder weights. These options add a net 7,500 sf of deck area but also reduce overall retaining wall quantities by 30,000 sf. Straddling the existing ramp is an unconventional approach with fairly complex methods but will enable concurrent construction of the ramp bridges that are on the critical path for the GMA.

EPS Geofoam used on Facchina's11th Street Bridge Project in Washington, DC to achieve zero-net loading on critical utilities.

Zero net loading design along adjacent utilities and/or structures is a widely accepted concept to eliminate settlement impacts from additional loads with new alignments. The GMA may benefit from this design concept for the new retaining walls along the WSSC water line. The concept involves removing existing soils within the footprint of a proposed roadway and replacing them with lightweight fills that permit raising the new roadway without any net addition of load to an already pre-consolidated soil stratum. Lightweight fills include; cellular concrete, expanded polystyrene (EPS) geofoam or expanded shale. Local jobs like the south approach to the Woodrow Wilson Bridge used over 20,000 CY of cellular concrete to reduce embankment loads. Conventional MSE panels can be used with cellular concrete and lightweight aggregate. Custom wall panels and a load distribution slab are required for EPS geofoam applications.

WSSC has requested that new retaining walls extend below the existing 96" line so these walls are not impacted by future maintenance on WSSC facilities. The near edge of the existing 96" line is 16' from the face of the ramp's wall at Sta. 114+00. Allowing for 3' of excavation along the edge of the line, and considering a 2:1 lay-back, the wall would need to be extended down an additional 7' to prohibit undermining MSE walls during excavation of the line. Consider also, that laying back the excavation to install the wall deeper will expose the 96" waterline. If WSSC requires the wall to be installed below the water line invert, then 12' to 14' of additional wall will be needed, along with a support of excavation (SOE) system to install it. Lowering the ramp walls will also increases the SOE requirements along the outer loop roadway. None of these scenarios offer a preferred solution, especially when considering the potential damage to the 96" line during construction. Instead, a permanent SOE system around the 96" line, consisting of augured soldier piles on both sides of the waterline could be installed during ramp construction to provide an in-place SOE system for future use.

The piles, which require specialty installation equipment, would then be in place and ready for any maintenance or repair needs in the future. Assuming 1,000LF of impacted roadway and an additional 7,000 SF of both permanent wall and temporary SOE, the net saving is a minimum of $400,000.This approach not only helps maintain the construction budget but also minimizes utility, property and schedule impacts. Durant Walters, our proposed Project Manager for the GMA has specific experience with this system on MDTA Contract KH-1402, the MD 43/I-95 ETL Interchange Improvement for protection of the Susquehanna Conduit, a 108" water line serving Baltimore City.

The current RFP drawings show a substantial rise in the profile grade line for the beltway over Rhode Island Ave. We believe this proposed grade change is related to the sub-standard clearance below the bridge, as there is evidence of the beams

being struck several times. The current design requires raising the beltway grades which will involve a conventional wedge/level and possible retained fill. This overlay concept will cost in excess of $500,000 in wedge and level alone to raise the grades above an already very acceptable roadway. An alternate approach is to shorten the proposed bridge length from 120' to 70' which will substantially improve the feasibility of designing a shallow beam section that will not require changing the beltway grades. A low cost, fairly practical upgrade to enhance beam capacity will be to use Grade 70 High Performance Steel (HPS) for the flanges. This is a common application in modern plate-girder technology.

Additional technical concepts for S-1 to improve constructability, reduce costs and schedule and improve long term maintenance include:

- MSE abutment walls partially built below the existing bridge without phasing constraints
- Pipe sleeves installed within MSE wall fill for piling once decks are removed in each phase
- Bridge decks precast with beam sections to accelerate superstructure construction in each phase
- Integral or semi-integral abutments to reduce initial costs and reduce long term maintenance

Facchina VEP on SHA project CA3975170 replaced CIP abutments and sheetpile walls with dynamic compaction, wire walls and sleeved piles to accommodate settlements. The benefits were a 5 % reduction in overall project costs and a finish date 2 months ahead of schedule.

Some of the beltway embankments and retaining walls in the Metro parking lot will be in excess of 20' deep and will impose substantial ground loading. But these fills do not impact utilities that would preclude allowing settlements. If the schedule does not dictate accelerated construction of these ramps, then any foundation issues due to soft soils in these areas could easily be mitigated with settlement periods and/or wire walls, similar to the practical/cost-savings methods used on our value-engineered MD 4/Route 260 interchange project CA3975170. The wire walls and settlement periods in our VE proposal for this project were not particularly novel but the revision succeeded in dramatically reducing the construction budget and shows a collaborative partnership of working with SHA bridge department on major design changes.

The new retaining wall at the south abutment of the Inner Loop Ramp to Metro (ILRTM) over CSX will require an innovative technical concept because very little work area is available between the traffic lane and the existing wall. One option that improves constructability and lowers construction costs is a soldier-pile or sheet-pile wall that can be built outside the existing retaining wall with no impact to traffic. The sheet-pile concept is especially appealing because it minimizes impacts on the WMATA/CSX properties because equipment does not enter the fouling zone. In either option, the existing wall can then be used as a deadman with minimal intrusion into the traffic lane. The void between the new and existing walls can be backfilled with lightweight fill to minimized lateral loading.

We understand as the CMAR contractor that a balance needs to be maintained towards achieving an acceptable solution for all stakeholders. What the Facchina team brings to the process are practical, cost-effective methods that will meet all stakeholder needs. Facchina has a long history of innovation coupled with constructability on SHA projects as outlined with several projects in this proposal, along with cutting edge technology and innovation as demonstrated with our nationally recognized 11th Street Bridge project. Three of our named positions in our organizational chart are Professional Engineers with DBIA certification. The credentials of our key staff is a prime example of the value placed on innovation by both Facchina and its personnel that the Facchina team brings to the GMA project.

2. Construction Approach

C.2.A. Construction Sequencing

A well developed, forward-looking project schedule is one of the best methods to mitigate risk for the Integrated Project Team. A good builder should be able to visualize the project and their project schedule should clearly demonstrate that understanding and the constructability impacts to the team. Facchina as the Construction Manager will identify risks, and then build those risk items into the project Work Breakdown Structure (WBS) for mitigation by the project team.

Design is always a concern on a Design Build Project because impacts to the design schedule often impact the construction schedule. We believe there is an adequate time allotment for design with spring 2017 as the start of construction. Four zones will be used to develop both the general design packages and the overall construction WBS for this 3.2 mile long project. The zone limits and sequencing is outlined on the next page. The work progresses from west to east, with Sections 1 & 2 being the most critical segments of the project.

The WBS will be coupled with schedule calendars to reflect the various constraints such as: in-stream work, paving windows or earth moving restrictions. The goal is to plan for the constraints before they become impacts. Below are few other considerations that involve; Long Lead Time Procurement (LLTP), material availability, material/construction constraints, traffic and safety concerns.

FACTORS THAT AFFECT SCHEDULE	*SECTION*	*1*	*2*	*3*	*4*
Stream Restrictions (Feb – Jun)			X	X	
Base Paving Temperature Restrictions (Dec – Mar)		X	X	X	X
Surface Paving Temperature Restrictions (Nov – Apr)		X	X	X	X
Daily Lane Closures for embankment borrow			X		X
Winter Earthmoving/Grading Restrictions (Dec – Feb)		X	X	X	X
Critical Girder Fabrication			X		
Winter Concreting (Bridge Deck)			X		
Utility Relocations		X	X	X	X

Utility relocations and their impacts are always a major schedule concern because this work often must be performed with pre-approved specialty subcontractors that may not be as responsive to project needs. It is imperative to have early schedule milestones that capture the meetings and processes to engage the utilities in helping resolve the utility conflicts.

The largest traffic impact to motorist passing through the GMA will be the temporary lane closures that are typically permitted during off-peak hours. Our team will minimize these lane closures whenever possible. These temporary lane closures are primarily used for the dump trucks that import borrow for the mainline widening. Our plan will be to route dumped/empty trucks behind temporary barriers to the nearest exit. This will include the Greenbelt Metro and Kenilworth Ave exits for the inner loop. Some areas will require lane closures for truck egress but those locations will be kept to an absolute minimum. We will strive to create alternative means to blend haul traffic with mainline traffic and/or create alternate haul routes.

Whether utility or traffic impacts, it is our responsibility as Construction Manager to identify and reflect those constraints into the project schedule, and then to go on and mitigate those impacts. Facchina was recently very successful on the current PG7585184, MD 4 project, where both schedule and costs were substantially reduced with utility avoidance. We received a SHA major partnering award on the I-270/Old Georgetown Road Interchange (MO8995172) for re-sequencing one of the bridge structures and reduced the overall project duration by 11 months. Facchina brings this same experience to the GMA project.

SECTION 1A (Spring 2017 – Fall 2018)

Elements: IL/OL Embankment/Widening, Retaining Walls, Noisewalls, Mainline Asphalt Paving

- Install temporary barrier wall on both sides of the IL and OL widening in Spring 2017.
- In coordination with early design approvals; establish E&S controls, clearing, and demolition of noisewalls starting in the Spring of 2017.
- Embank fill concurrently on both sides of beltway in spring 2017
- MSE Retaining walls constructed on the outer loop between S1 and station 342+00 to address the tight right-of-way in this area.
- As retaining walls and fills are completed, begin new noisewalls Spring-Summer 2018. Over 60% of project noisewalls are in Section 1.

SECTION 2A (early work, bridge access related)

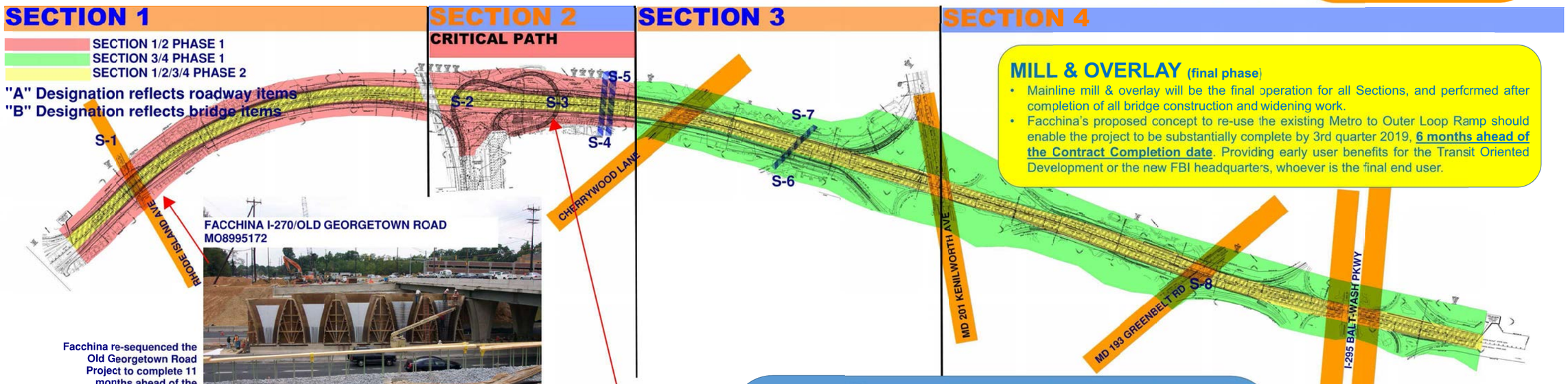
Elements: OL Ramps To and From Metro, IL & OL Embankment/Widening, Box Culvert Extensions, and Mainline Asphalt Paving.

- Install temporary concrete barrier wall on IL and OL widening in Spring 2017
- E&S controls and grading following early design approvals in the Spring of 2017.
- Rough Grading on the Metro Site South of the Beltway in Spring 2017 through Summer 2017 in advance of ramp walls.
- Complete OL ramp lane grading and roadbed construction by Spring/Summer 2019 in conjunction with flyover bridges.
- S-5 Box culvert extensions to be started in Summer 2017 after MDE restriction window.

SECTION 3A/4A (non-critical, Spring 2018 – Spring 2019)

Elements: IL & OL Embankment/ Widening, Noisewalls, Excavation, Box Culvert Extensions, and Paving

- Sections 3&4 sequenced in the same manner as Section 1A, same scope be but lesser scale.
- Noisewalls and box culvert extension are scopes possibly subcontracted to traditional or DBE subcontractors.
- Complete culvert extensions prior to 2018 restrictions. Begin grading operations by Spring 2018.



MILL & OVERLAY (final phase)

- Mainline mill & overlay will be the final operation for all Sections, and performed after completion of all bridge construction and widening work.
- Facchina's proposed concept to re-use the existing Metro to Outer Loop Ramp should enable the project to be substantially complete by 3rd quarter 2019, **6 months ahead of the Contract Completion date**. Providing early user benefits for the Transit Oriented Development or the new FBI headquarters, whoever is the final end user.

Facchina re-sequenced the Old Georgetown Road Project to complete 11 months ahead of the contract completion date.

SECTION 1B (non-critical work)

Elements: S1 Rhode Island Ave Bridge Replacement

- Widen and re-build S1 bridge in three phases
- Phase 1; widen both inner and outer structures concurrently to the outside
- Accelerate shoulder widening immediately adjacent to S1 to provide tapers for switching traffic onto newly widened bridge.
- Switch traffic to outside progress to phases 2 & 3 bridge re-construction.

SECTION 2B (Critical Path Operations, Summer 2017 – Summer 2019)

Elements: Two fly-over bridges to/from Metro to Outer Loop with approach walls for ramps. Facchina technical concept enables large portions of these bridges to be built concurrently

- After approval of early design approvals and developing access, begin pier foundations and ramp walls in Summer/Fall 2017. Summer/Fall startup reflects some WSSC/Metro impacts. Complete both bridges by Summer 2019
- Fly-over sequencing:
  - Traditional bottom to top sequencing; SOE for piers, piling, substructure concrete
  - Single piling crew so linear SOE and footing work progression
  - Pier/Cap operations long duration activities so provide multiple forms.
  - Structural steel erection requires specialty crews so linear operations
  - Superstructure concrete between two bridges may be performed concurrently

SECTION 4B (non-critical)

Elements: S8 Bridge Reconstruction

- S8 Reconstruction phased outside to inside
- Bridge reconstruction to start in Late 2017 – Early 2018

Facchina

C.2.B. Contracting Plan

Facchina's success is based on a business model that aims to self-perform as much of the project as possible. The Contracting Plan for the GMA Project is simply, to use our experience, resources and ambition to achieve success for the Client. When Facchina's Client is successful, Facchina will be successful, and vice versa. As one of the largest heavy/highway contractors in the region Facchina maintains over 600 employees and more than 200 pieces of construction equipment. We have completed major local projects as the prime contractor such as the $526M ICC Contract "C", the $89 million ICC Contract "D&E" and $380M 11th Street bridge over the Anacostia River in Washington DC.

Listed below are several definable features of work that Facchina has the capability to self-perform. Past projects referenced support Facchina's qualifications for self-performing similar work anticipated on the GMA Project.

Work Element Self-Performed by Facchina Construction	I 83 / I 695	Pentagon Secure Bypass	MD Rte. 4 at Rte. 260	I 270 / Old George-town Rd	ICC C	ICC D/E	Dulles North Area Road-ways	11th St / Anacostia River
Contract Amount	$20M	$27M	$14M	$25M	$526M	$89M	$23M	$380M
Completion Date	2004	2004	2003	2002	2011	2013	2008	2014
Utility Relocations	✓	✓	✓	✓	✓	✓	✓	✓
MOT/Temporary Barrier	✓	✓	✓	✓	✓	✓	✓	✓
Bridge & Structure Demolition	✓	✓		✓			✓	✓
Earthwork & Grading	✓	✓	✓	✓	✓	✓	✓	✓
H-Pile and Sheet Pile	✓	✓	✓	✓			✓	✓
Structure Excavation and SOE	✓	✓	✓	✓	✓	✓	✓	✓
MSE & CIP Retaining Walls	✓	✓	✓	✓	✓	✓	✓	✓
Bridge Abutment and Bridge Pier	✓	✓	✓	✓	✓	✓	✓	✓
Approach Slabs and Bridge Deck	✓	✓	✓	✓	✓	✓	✓	✓
Storm Drainage	✓	✓	✓	✓	✓	✓	✓	✓
Water and Sewer Infrastructure	✓	✓		✓	✓	✓	✓	✓
Stream & Wetland Diversions			✓		✓	✓	✓	
Noise walls		✓		✓	✓	✓		
Bioswales, SWM, and ESC			✓		✓	✓		
CIP & Precast Box Culverts			✓		✓	✓	✓	✓

With such a broad array of self-perform capabilities, it will allow us to ensure control over the schedule, prevent scope gaps from causing construction delays, and build confidence in our commitment to pricing throughout the OPCC process.

Facchina was an integral component of the team for ICC Contract D/E completed in 2014 by IC3, a Design Build team comprised of Facchina, Shirley, Clark Civil, Trumbull and Dewberry. The $89M Contract D/E required design and construction of 0.9 miles of four-lane, tolled roadway with a partial interchange and crossing bridge at Virginia Manor Road and 0.7 miles

of improvements to US 1, 2.4 miles of resurfacing on I-95, and construction of 2.4 miles of collector-distributor roads adjacent to the north- and south-bound lanes of I-95.

Our experience in self-performing large quantities of grading, excavation, and structures work on projects with technically complex and challenging attributes, and highly demanding schedule requirements qualifies Facchina's team for the challenges of the Greenbelt CMAR. We are confident our experience and tested construction management best practices, coupled with our self-perform approach to building the work, will provide the SHA the same for the GMA Project.

We consider this project to be highly challenging, with high exposure to the travelling public, and of major importance for providing access to the adjacent proposed development site. One of this project's greatest challenges is to effectively develop and execute a strategy that delivers a project cost within an optimized GMP, while also meeting schedule milestone dates and accomplishing all project goals. For this reason, Facchina will deliver a detailed subcontract procurement strategy that engages and involves the most capable subcontractors who will bring value, innovation and expertise to the execution phase of the project.

Facchina commonly subcontracts the following scopes of work found on this project:

- Trucking
- Directional Drilling
- Electrical/Communications
- Cantilever Signs/Sign Structures
- Landscaping
- Precast Concrete
- Fencing
- Reinforcing Steel Supply and Erection
- Asphalt Milling & Paving
- Striping
- Guard Rail Installation
- Caisson/Deep Foundations

As the CMAR on this project, Facchina will assume the risk for the cost, schedule and performance of the subcontractors and suppliers. During the design development stage, 50% documents will be used to engage and short-list subcontractors throughout the mid-Atlantic region for key elements of work. Initial solicitation to the subcontracting community will provide detailed instructions for a prequalification process. In accordance with COMAR 21.05.10.05, the subcontractors will be evaluated to eliminate any contractors with poor bond ratings, history of default, or insufficient resources. Once prequalified, subcontractors will be required to make commitments to provide pricing on short notice, with minimal allowable turn-around.

Facchina is committed to providing disadvantaged business enterprises (DBE) with a full and equal opportunity to participate in the performance of contracts and subcontracts. Moreover, we will carry out the applicable requirements of 49 CFR Part 26 in the award, administration and performance of our subcontracts.

To ensure that DBEs have equal opportunity to compete for and perform work under this contract, Facchina will identify and award subcontracting opportunities in a systematic and transparent manner. The MDOT directory of certified firms will be

used as a guide for identifying certified Minority (MBE), Disadvantaged (DBE), and Small Business Enterprise (SBE) vendors. The fundamental principles of Facchina's DBE subcontracting plan will be:

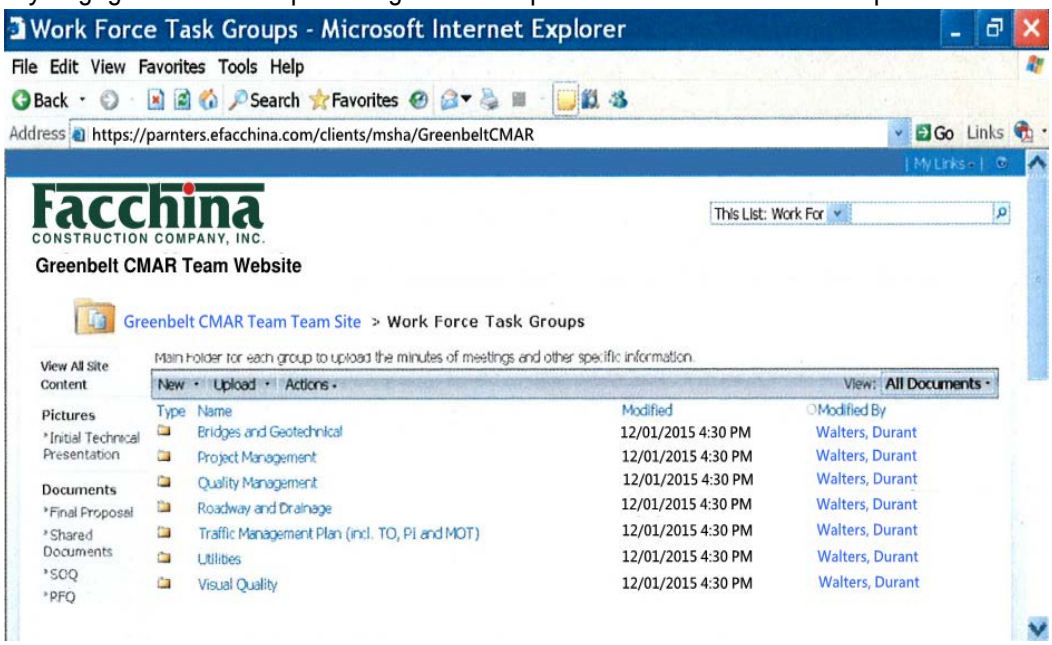
- Apply a procurement strategy that identifies subcontract opportunities for disadvantaged firms and meets the intended participation goals.
- Advertise, solicit, and assist certified DBEs that are interested in our bidding opportunities and offer an equal opportunity to compete in the bid process.
- Mentor disadvantaged subcontractors on the job; educate and train their workforces in quality, safety measures, and management systems.

C.2.C. Stakeholder Coordination

The Facchina team will take the lead from SHA relative to how it desires to effectively communicate and coordinate with project stakeholders through the design process. It is also critical for the Facchina team and SHA to collaborate and present a single voice and message with the stakeholders throughout the construction stages of the project. This will help to facilitate starting areas of work early to start construction and advance progress prior to 100% final design.

During construction, the team will work with SHA to develop traffic management plans that will facilitate accelerated construction and promote coordination and communication among identified stakeholders. The goal is to understand stakeholder concerns, present information about the project early, discuss measures to mitigate potential conflicts, and provide a continuous status of construction activity. Delivery of information will be initiated by Facchina throughout the construction process to give the stakeholders the most current updated information about the project, listen to their thoughts, concerns or ideas, and, adapt the project communication plan to constantly address issues caused by the project, or, that will affect the progress or cost of the project.

Facchina recognizes the developer of the Metro site as an integral partner to this project. Upon being selected as the CMAR for this project, Facchina will immediately engage in relationship building with the representatives from the developer and will be involved in the execution of the site development project. Facchina will build a relationship for the principle purpose of collaborating and brainstorming opportunities that will bring cost and schedule benefits to the SHA, as well as the developer.



Using an internet-based secure project site specifically designed for project coordination, separate from the SHA public project website, Facchina will coordinate and communicate with project stake-holders in real-time. With SHA's approval, this secure website will be established for the contract to provide SHA and all team members with swift access to the most recent versions of project information, including schedule

and status report information. By using one source, all project personnel will have at hand the most current documents and data.

At all meetings, issues will be addressed head-on with the goal of compromise to achieve consensus approval allowing design or construction to move forward. In the context of partnership, the team will ensure that SHA objectives and interests are well represented at all times.

C.3.Risk Management

C.3.A. Risk Management Process

We believe the risk management process must be viewed as a systematic process divided into the following three main categories – identification, classification, and mitigation. Facchina's approach to effective risk management builds confidence and credibility to the overall project management plan, while also ensuring transparency, integrity, and accountability.

Risk Identification - The first and most important step in the risk management process is receiving buy-in from all stakeholders, including the designer, the contractor, and SHA. We will achieve this objective by holding a series of risk identification workshops dedicated solely to establishing the master list of risks as the basis for the project risk register. The CMAR process lends itself to effective risk management in that it allows the designer and contractor to provide input in the early stages of the project. Often times, when risk identification strategies are employed early in the design process, risks can be significantly reduced or all together eliminated, thus reducing financial or schedule impacts to the construction approach.

Risk Classification - Once a master list of risks is identified and agreed upon by the stakeholders, the next step in the risk management process is classifying the risks and developing the full risk register matrix. The primary intent of the initial risk classification process is to ensure all of the identified risks are indexed against the likelihood of occurrence, and assigned to the appropriate cost and/or schedule index values.

Risk Mitigation - Upon completion of the risk identification and risk classification processes, our project team will have at its disposal the necessary tools to mitigate the risk through detailed analysis. By narrowing down the top risk factors through quantitative analysis, the project team not only visually sees the top cost/schedule risks, but can also effectively allocate time and resources based on risk potential. For each major risk factor, a remedial action item will be assembled and delegated as part of managing the risk element. As a team, we will also evaluate the design and construction alternatives and strategies that provide such mitigation.

C.3.B. Risk Management Performance

11th Street Design Build – Bridge Replacement – Facchina used early procurement packages to procure structural steel for the twenty new bridges. In late 2009, the steel market was extremely volatile with predictions for 2010 indicating even more volatility. We expedited a steel design package and effectively purchased the raw plate required for fabrication. This purchase of the steel materials at a recognized market downswing mitigated a huge financial risk to the project.

Intercounty Connector, MD 200 Contract C – Utility relocation coordination was recognized as an imminent risk to both the $519 million budget and the November 11, 2011 substantial completion date. The risk management team came up with the concept of a joint utility trench ultimately allowing multiple utility companies to stage a collaborative infrastructure approach. Through this integrated effort, the JV was able to save SHA over $1,000,000 in Right-Of-Way acquisitions.

H Street / Benning Road Streetcar Implementation – The rail installed under the original contract was RI52 girder rail, which is only manufactured in Europe. To complicate matters further, in late 2012 and 2013, there was a recognized shortage of RI52 stock available in Europe to produce specialty RI52 turnouts. Facchina was able to provide specialty track turnouts, RI52-to-RI59 transition rails, and over 500 girder rail weld kits on an accelerated procurement schedule from Europe. This allowed us to reduce the overall construction schedule by almost six months simply using a combination of innovative design coupled with intense Long Lead Time Procurement (LLTP) strategies.

It is our intent to implement the lessons learned from our past experiences to mitigate risk on the GMA project. LLTP, early procurement, and utility relocation will require comprehensive risk mitigation on the GMA project. We will apply our proven risk management strategies outlined above to provide SHA with a quality finished product, while reducing both financial and schedule impacts to the GMA project.

C.3.C. Project Risks

After thoroughly reviewing the Preliminary Investigative (30%) Plans and assessing the project goals as detailed in Page 9 of the RFP, we have identified the following key risks for the GMA Project:

- Protecting WSSC 96" Water Main – WSSC has requested a horizontal clearance of at least 15' from the 96" main, that no additional loading (temporary or permanent) be introduced, and that access be maintained during and post construction. The 96" water main will affect both the design and construction phases of the project. Through effective risk management, we will prevent the effects of settlement by either zero net loading using lightweight cellular material or the installation of grout columns under the proposed MSE ramp.

- Undercuts/Unsuitable Soils – The Preliminary Plans show proposed widening construction of approximately 20 LF on both the Outer Loop (OL) and Inner Loop (IL) of the Beltway. There is a high risk of encountering soils unsuitable for loading in the new fill areas. By working with the Geotechnical Engineer during Preconstruction, we will identify areas with the highest potential for unsuitable soils, and develop soil remediation plans accordingly. This will prevent spending hundreds of thousands of dollars in construction budget, as well as schedule and traffic impacts associated with undercut removal and replacement.

- Utility Relocations – The utility companies identified as stakeholders in the RFP include WSSC, PEPCO, Washington Gas, Verizon and Comcast; there will be other private and public utilities within the project area footprint. We will analyze the use of a "joint trench" to optimize the utility relocation schedule. Based on using this exact method on the ICC-C contract, we anticipate substantial financial savings as reductions to the overall project schedule.

- Maintenance of Traffic (MOT) – This project is located in one of the busiest quadrants of the Capital Beltway, with arterial connection points to I-95, Route 1, and the Baltimore-Washington Parkway. Delays and impacts to the travelling public are an inherent risk. We anticipate a potential schedule savings of 6 months by working together with the Designer and the SHA to optimize design, we will minimize the impact to the travelling public.

The relevant risks identified above are not to be interpreted as an all-inclusive list. Our team has found the top ten risks based primarily on the specified project goals. These risks and the level of potential impact to cost and schedule are shown in the Risk Tornado Chart below. We will fully evaluate the design and construction risks associated each of those in our Risk Mitigation Plan with respect to cost, schedule, and quality. Throughout the entirety of the project, we recognize the goal of the partnership is to mitigate risk. We will develop a project that achieves this goal while also adhering to the budget and delivering the GMA project on time.

IS 95 Greenbelt Metro Access CMAR Project – Top Ten Risks