



ORIGINAL

Request for Proposals

**MD 4 from Forestville Road to MD 458
(Silver Hill Road) Community Safety and
Enhancement Project - Design-Build**

Prince George's County

Maryland Department of Transportation

State Highway Administration, Baltimore, Maryland

Contract # PG7585184

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2.09.02 Project Understanding & Approach

2.09.02 PROJECT UNDERSTANDING AND APPROACH

The MD 4 (Pennsylvania Avenue) design-build project is a community safety and enhancement project. The project limits are from Forestville to MD 458 (2.2 miles) which is located inside I-495 in Prince George's County. MD 4 is classified as an Urban Freeway Expressway (55 mph) and serves as a link between Washington D.C., residential and commercial centers inside the Capital Beltway (I-95/I-495), large employment centers including Joint Base Andrews, and rural and suburban areas of Prince George's County outside the Capital Beltway.

Unfortunately, pedestrian fatalities have occurred on this stretch of MD 4 for many years. Between 2006 and 2011, there were 17 pedestrian crashes (nine fatal). Between November 2013 through January 2014, another three pedestrian fatalities occurred. Prince George's County Government has reported that they have the highest number of pedestrian fatalities per 100,000 people in Maryland. These pedestrian accidents are most likely from: high speed; open section roadway (four lane, divided highway with wide inside and outside shoulders and a wide median); poor nighttime visibility; and a dense residential and commercial development (high pedestrian traffic) in the project limits.

The existing pedestrian facilities include sidewalks located at the six intersections within the project's limits, which extends to the nearest bus stops, and a six foot wide asphalt trail along northbound MD 4 between Walters Lane and Parkland Drive. In 2013, SHA installed a mid-block pedestrian crossing between Walters Lane and Donnell Drive. There are no dedicated bicycle facilities within the project's limits. Due to the lack of pedestrian and bicycle facilities throughout the project pedestrians must use shoulders and cross at mid-block locations mixing with motorists to travel on, which created a very unsafe situation for all MD 4 users.

This project will provide continuous dedicated pedestrian and a shared use path through the project's limits to eliminate mixing pedestrians with motorists using MD 4. To accommodate these proposed pedestrian, bicycle, and stormwater management facilities and impact as little right-of way as possible, the



existing MD 4 will be reclassified as an Urban Other Principal Arterial and posted at 45mph. The north and southbound roadways will be closed and narrowed to 34-feet (2 – 11ft travel lanes, a 4-ft inside shoulder and an 8-ft outside shoulder) to force the motorists to slow down through the project limits.

2.09.02.A APPROACH TO PROJECT DELIVERY – MEETING OR EXCEEDING GOALS

The Facchina team will design, construct, and open the MD 4 design-build project on time and on budget meeting or exceeding all of the project goals identified in the RFP. These include:

Provide Continuous Education And Outreach To The Community And All Roadway Users:

Our team acknowledges that SHA has spent a significant amount of time working with the MD 4 stakeholders to advance the project to this point. We understand that the MD 4 Community Task Force was assembled three years ago in April of 2011 and is comprised of the members identified in the RFP. We will continue to coordinate with this Task Force and advance the work achieved through the seven meetings held to date. Because of the importance of continued task force coordination, public outreach, and education associated with this project, our team has chosen Rosborough Communication, Inc. (RCI) to lead this effort for the team. The team and RCI will provide full-time public involvement support for the duration of the project. RCI is a full service public outreach and communications firm who specializes in media, public and community relations, and event planning in transportation projects. RCI has led the public outreach for a number of high profile transportation projects in Maryland including the ICC, WMATA Blue Line extension, Purple Line, Red Line, and the I-95 ETLs.

We will meet with the Task Force periodically to seek feedback on construction details and progress. We will coordinate with SHA, Prince George's County DPW&T, and the Prince George's County Police Department to implement pedestrian education efforts in the community surrounding the project. More specifically, we will:

- Meet and coordinate with SHA and the MD 4 Community Task Force to develop and implement a project-specific public outreach strategy;
- Perform project background review, including historical review of outreach efforts to identify commitments made during planning and preliminary engineering;
- Develop an appropriate strategy for interactions with each stakeholder type/group;

- Determine preferred mechanism for sharing information with public/stakeholders;
- Develop or update existing mailing/distribution lists;
- Develop correspondence and collateral materials including drafting correspondence in response to inquiries sent to SHA and the members of the Task Force, as well as project inquiries on construction activities;
- Plan and implement meetings with communities and other identified stakeholders;
- Attend meetings including partnering, coordination meeting with stakeholders, and construction activities meetings as directed and any other special requests;
- Develop and distribute collateral materials to be shared with the stakeholder groups.

Provide A Safe And Accessible Facility For Pedestrian And Bicyclist Along And Across MD 4:

The redesign/repurposing of this segment of MD 4 will install new bicycle and pedestrian infrastructure. SHA's 2013 *Bicycle Policy and Design Guidelines* will be the primary design criteria for the incorporation of on- and off-road bicycle (and shared use) facilities, including facility design, signing and pavement marking. AASHTO's *Guide for the Development of Bicycle Facilities* will be used to provide supplemental design guidance as needed. Due to the expected prevailing speeds, even with traffic calming, shared lanes will not be part of the design. Shared-use pathways will be designed to conform to applicable bicycle guidelines and ADA requirements. Where pedestrian use is expected to be heavy, the shared use path will be wider to accommodate cyclists' safe passing. Likewise, driveway crossings and crosswalks at intersections that are expected to carry both pedestrians and cyclists using shared-use pathways will be wider than the minimum standard and may need additional markings to highlight that pedestrians and cyclists are expected. SHA's *Accessibility Policy and Guidelines for Pedestrian Facilities* will be utilized to incorporate pedestrian infrastructure elements into the design – including sidewalk width, ramp design and location, and driveway/intersection crossing design. ITE's *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities* will be used as supplementary guidance. We will design pedestrian crossings at signalized intersections with APS/CPS pedestrian signals. The project's the proposed sidewalk running along the eastbound roadway will be designed and constructed to SHA's minimum sidewalk width of five feet, exclusive of the curb. If minimum ADA standards cannot be met, we will follow SHA guidelines for waivers.

Addition of roadway lighting to increase visibility:

One of the major contributing factors of the past pedestrian fatalities on MD 4 in this project area is lack of visibility for the motorists. To increase visibility and safety of pedestrian, and bicyclists and motorist using MD 4, this project will include the addition of roadway and intersection lighting. Lighting will be designed in accordance with SHA and AASHTO standards and guidelines, specifically IESNA RP-8-00 and the 2005 National Electric Code, and will provide continuous lighting along MD 4 within the project limits.

In addition to the proposed design provided by SHA, we believe that other potential opportunities exist to provide safe and accessible facilities for both pedestrians and bicyclists. These could include paved pedestrian and bicycle paths to local streets, additional mid-block bus stops, additional mid-block traffic signals, and the addition of pedestrian refuge areas in the median. We understand that the project scope has been coordinated with the MD Community Task Force but once shortlisted, we will take a deeper look and present opportunities to SHA through the ATC process that might add value to the project with respect to pedestrian and bicycle safety and accessibility.

Provide Measures For Traffic Calming And Increased Driver Awareness:

Roadway designs will incorporate elements of traffic calming, while maintaining SHA's standards for travel lane width and geometric design. The purpose of traffic calming is to create the effect (real or perceived) that driving faster than the desired speed is detrimental to the driver or other road users. Elements of traffic calming include the installation of SHA-standard Type A curbs and the inclusion of both grade-separated sidewalk and a hiker/biker trail. Both the curb and sidewalk/trail provide visual cues to motorists that the area is urban in nature. Further, the inclusion of these pedestrian and bike-friendly infrastructure elements will induce larger numbers of pedestrians and bicyclists to the corridor, contributing to a more urban setting and functioning as a further traffic calming measure. Another standard tool for calming is lane width reduction; the proposed design will reduce the standard travel lane widths from 12 feet to 11 feet, requiring an added degree of vigilance on the part of the driver and ultimately leading to slower prevailing vehicle speeds. Additionally, the removal of the w-beam traffic barrier along the outside and the inclusion of landscaping is expected to further create a sense that this segment of MD 4 is more multimodal and requires a heightened sense of awareness and slower driver speeds.

In addition to the proposed design provided by SHA, further countermeasures to reduce vehicle speeds can be investigated. Because of the high traffic volumes and 45 MPH Design Speed the standard traffic calming measures such as speed tables, roundabouts, and chicanes are not appropriate. However, there are additional counter measures that are appropriate.

A brief review of NCHRP Reports provides several ideas that will be examined for their feasibility on this project. Report 737 was originally intended to address rural highways. The fundamental focus of this report is to determine potential countermeasures to reduce speeds in High-Speed to Low-Speed Transition Zones which is an appropriate description for the conditions that exist along this segment of MD 4. One of the underlying principles of this study is that it is important for drivers to realize that the character of the environment is changing and that their driving behavior should also change.

The additional measures could include additional street furniture; enhanced lighting beyond what is proposed; enhanced cross-walk markings; addition of longitudinal rumble strips; revisions to traffic signal timing to break the traffic up into a series of platoons and control the pace of traffic through the section; possibly eliminating free flow right turns wherever possible; and adding transverse rumble strips and noisy pavement.

Provide A Safe Facility And Maintain Mobility For Motorists Along MD 4:

Facchina understands that MD 4 is a high-traffic State Highway roadway facility and will design and construct this project according to all of the performance specifications, requirements and guidelines identified in the RFP while maintaining mobility for all users including motorists.

As done with all projects, all obstacles will be designed to be outside the clear zone when feasible. If this cannot be accomplished, we will design the W-Beam guardrail to meet the requirements of the *Guidelines for Traffic Barrier Placement and End Treatment Design, 2006*. As done on ICC D/E, design of the W-Beam guardrail end treatments will be done to accommodate the presence of the proposed W-Beam barrier adjacent to the proposed Type A curb and gutter. There was significant discussion on the ICC D/E project with SHA on how vehicles impacts guardrail end treatments when they are placed alongside of concrete curb and gutter.

Roadway drainage will be designed to meet the two-year storm for inlet spacing, the ten-year storm for pipe design, and the 25-year storm for the hydraulic grade line (HGL).

In addition, inlets will be spaced to not exceed the 8-ft maximum spread allowed by SHA. The signing/markings, signal, and lighting components of this project are discussed in detail later in Section 2.09.02.C.

Provide A Facility That Is Able To Be Adequately Maintained:

The Facchina team is committed to providing SHA and the community with a high-quality facility that meets the project goals and can be adequately maintained for the life of the facility. All project elements will be designed and built accurately according to all codes and standards. Specific items identified include roadway (full depth and mill and overlay sections) and shared use trail asphalt pavement, concrete sidewalks, curb and gutter, stormwater management facilities, and landscaping.

When reviewing maintenance benefits of asphalt pavements, it is important to consider items of the original construction that, when properly designed and accurately built, will extend the pavement life cycle to minimize maintenance requirements. Two primary technical items have been previously identified; properly placed subgrade and good quality control procedures during the asphalt manufacturing and construction processes.

Other technical elements that play key roles in increasing the pavement service life cycle and must be addressed in both the design and construction phases include:

- Building the roadway to correct surface grades to provide adequate drainage.
- Providing vigorous roadside and stormwater management plantings to minimize the erosion of soils adjacent to and beneath the roadway pavements.
- Installation of properly designed and correctly constructed roadway drainage facilities.
- Use of quality aggregates meeting the highest standards for hardness and wear.
- Mitigation of any soft subgrade soils or the exclusion of unacceptable subgrade materials.
- Close monitoring of utility trench backfill operations to ensure that backfill material is firmly placed.
- Designing and constructing stable fill and embankment slopes to prevent the sliding of soil and the resultant accumulation of soil in roadside stormwater management facilities, in cut slope areas, and the reduction of pavement support through the sliding of soil in embankment slopes.
- Providing properly constructed drainage for retaining walls to avoid instability and possible degradation of roadway subgrades possibly resulting in premature pavement deterioration.

- Properly designed and constructed stormwater management facilities that will function correctly prohibiting the ponding of water and possible saturation of the subgrade soils (there are over 40 ESD's on the MD 4 Project along the roadway).
- Curb and gutter construction performed using the same quality subgrade soils and prepared to the same standards as the roadways and shoulders to avoid uneven settlement of the gutter. Drainage inlets must be properly fitted and constructed on firm materials so that the inlet framework is firm so that the grate can be removed easily.

Proper maintenance of SWM Best Management Practices (BMPs) is essential to the functionality and longevity of the BMP. We will propose SWM BMPs requiring minimal future maintenance. We will provide appropriate and easy maintenance access to the SWM BMPs to minimize disruptions to pedestrian and vehicular traffic. The landscaping design for the proposed SWM BMPs will be sustainable, ultimately requiring less maintenance.

2.09.02.B SIGNIFICANT ISSUES AND RISKS

PROJECT ISSUES

Construction schedule: A well-planned and managed baseline project schedule is essential to successfully executing the project's goals and key issues and risks. It takes into account requirements for design, maintenance of vehicular and pedestrian traffic, utility relocation, and upgrades to pedestrian safety, signing, lighting, and traffic signalization. We will stage and schedule the project for smooth, orderly project implementation while minimizing impacts to pedestrian and vehicular traffic, to the environment, and to adjacent properties. Our team members continually seek design and implementation alternatives that will improve our project completion goals while reducing environmental and safety risks. These revisions, once fully designed, vetted, and approved would be incorporated into the final Baseline Schedule.

We have carefully reviewed the RFP documents, design strategies and project site specifics; three overriding factors continually surface as critical to the sequence of work. Specifically, these factors are:

- **Early Access to Right-of-Way Clear Sections** – To expedite construction, we plan on commencing work in the median where there are no right-of-way issues and minimal necessary E&S controls. We will use a phased design approach (early construction packages including the ultimate reconstruction of the median features) to

initiate permitting and start construction activities early. This approach will provide additional time needed to clear right-of-way. Our team has met similar needs on our ICC Contracts.

- **Phased construction to maintain traffic and pedestrian movements** – SHA intends to have safe and continuous movement on Pennsylvania Avenue and safe pedestrian passage during implementation; we plan on phasing construction, using intermediate traffic switches, and temporary walkways to meet those goals. Specific details on MOT are discussed in more detail later in this section.
- **Utility Relocations** – All utilities on the project, whether relocated by the utility company or by Facchina, will require a coordinated effort to prepare the site and work closely with the utility owner to avoid scheduling conflicts. We are well positioned through our long-standing good relationships with local utility owners to expedite this work. The most significant potential utility relocations to be performed on the project involves the utilities located at stations approximately 24+00, and 69+50. This work will be a critical predecessor to completing the exterior portions of the project. We anticipate that the time needed for the design and construction work on these relocations will be considerable based on our past experience with the affected utilities. We have considered this in our schedule, and address this issue early on to maintain a timely project delivery.

Taking these factors into account, we have sequenced the work into 10 construction phases -- five northbound and five southbound. We intend to expedite implementing project construction; we have broken the project into two approximately mile-long segments. Additional detail on these phases and segments is located in Section 2.09.03.A.5

Maintenance of Traffic (MOT) – Focus on Pedestrian traffic: During design and construction, our team will hold the safety of pedestrians and bicyclists to be paramount. From the beginning stages of the Transportation Management Plan (TMP) development, through the final finishes of construction, the safety of these project stakeholders will be carefully considered and fully accommodated.

Recognizing that existing pedestrian routes extend beyond the limits of the discontinuous existing sidewalks within the project limits, we will work to verify these existing pedestrian routes in the early stages of design as part of the Work Zone Impacts Assessment component of the TMP. This proactive approach will allow us to design

Traffic Control Plans (MOT plans) that safely accommodate these movements throughout construction. For example, our team will strive to accommodate temporary safe pedestrian routing during construction where paths do not exist today, as otherwise these pedestrians would potentially be in conflict with work zone hazards or MD 4 vehicle hazards. ***We will also work with both WMATA and Prince George's County DPW&T to provide access to or temporary relocate transit stops to make sure service is not interrupted.*** We have employed this strategy with great success on past projects in urban areas where existing pedestrian facilities were lacking.

These established pedestrian and bicycle routes will be incorporated into each stage of the Traffic Control Plans, and will use site-specific safety measures. Some of these strategies include: use of concrete barrier to protect pedestrians from errant vehicles; significant use of pedestrian detour signing and vehicular warning signs for crossing; temporary transverse rumble strips in advance of mid-block crossings; shoulder preservation where possible for bicyclists; and early implementation of the proposed speed limit reduction from 55 to 45 MPH to maximize pedestrian/bicycle safety during construction.



PROJECT RISKS

As with every design-build project there are risks that can affect the cost and/or the schedule. The Facchina Team's extensive experience in delivering over a billion dollars in civil infrastructure projects in this area has provided us with a vast range of expertise to both identify and mitigate potential risks that could negatively affect the successful delivery of this MD 4 project. The major risks include:

Vehicular Maintenance of Traffic: Maintenance of Traffic (MOT) design will be performed such as to maintain worker and road user including motorists, pedestrians, and bicyclists (identified in the above section) safety while achieving roadway capacity and construction duration goals. MOT designs will focus on maintaining traffic during the construction of roadway, drainage, and utility improvements and will be coordinated with the design efforts associated with other disciplines to ensure that all aspects of the project can be constructed. Designs will be prepared in accordance with SHA and FHWA policies on Work Zone Safety and Mobility. MOT designs will be coordinated with MOT

designs for adjacent projects to avoid conflicting messages/configurations for motorists.

We pride ourselves on making motorist safety and mobility the keystones of our Transportation Management Plan (TMP) and Traffic Control Plans. We will provide a TMP and construction program that significantly reduces the Projects' impacts to the travelling public and also exceeds minimum public safety requirements of the RFP. We have significant recent experience in successfully accomplishing these goals in Prince George's County, as part of the Intercounty Connector Project Contract C and Contract D/E. As was done with these projects, we will fully analyze both long term MOT conditions and proposed temporary lane closure hours to verify that the conditions will not result in excessive delays. As explained in our sequence of construction description, we will maintain all existing through and turn lanes during construction, with the exception of off-peak temporary lane closures. We will also strive to provide a usable shoulder wherever possible to avoid blocking the through lanes on MD 4 in the event of incidents, breakdown, or police enforcement.

We will employ site-specific enhanced safety strategies during construction. Some of these strategies that we will explore for use on this project include: the use of concrete barrier, possible early implementation of the proposed speed limit reduction from 55 mph to 45 mph as a work zone speed limit, and the continuous maintenance of all traffic signals during construction. We also believe this project will be well suited for the use of Portable Changeable Message Signs to alert drivers of upcoming changes in traffic patterns. The careful design of locations meeting sight distance requirements and concise, comprehensible message design by our traffic engineers will ensure that these extremely valuable devices are utilized to the maximum benefit without providing confusing or incomplete information.

Major Sequencing: according to the RFP, not all of the proposed right-of-way will be cleared at beginning of construction. This constraint, combined with the need to relocate utilities, leads us to recommend we construct the median improvement prior to the outside improvements. This proposed sequencing works very well with the proposed typical section, which generally pushes the existing EB and WB barrels into the median to make room for the pedestrian facilities on the outside. The general stages of construction we propose for the project are as follows:

- Stage 1: Construct inside (median widening)

- Stage 2: Shift traffic to inside widening, and construct utility relocates, outside widening, pedestrian facilities, and BMPs
- Stage 3: Construct final finishes, open shared use path and pedestrian facilities

The key MOT features for the project include:

- The ultimate speed limit will be reduced from 55 MPH to 45 MPH. We will propose to implement this during construction to maximize safety.
- Pedestrian TTC will be a focus, maintaining existing connectivity safely during construction.
- We recognize maintenance of pedestrian traffic includes maintaining existing routes, even if they are not formal sidewalks.
- We will maintain the existing mid-block pedestrian signal between Walters Lane and Donnell Drive during construction.
- We will utilize the ultimate lane width (11ft) during construction (existing is 12ft)
- We will utilize enhanced safety strategies and devices during construction.
- We will use concrete barrier throughout construction to protect motorists and pedestrians
- We will maintain all existing lighting during construction by using temporary lighting as needed

In addition to preparing MOT design plans, it will be necessary to prepare a Transportation Management Plan (TMP) in order to outline a plan to adequately address any potential safety and mobility issues that may arise during construction and in order to evaluate the proposed design to ensure that it can be implemented with acceptable impacts to the community. The TMP will include an evaluation, from a traffic operations perspective, of the proposed alternative for maintaining traffic during construction. Traffic analysis should be performed for each construction stage and the results should be compared with SHA's Mobility Thresholds in order to determine if the impacts to traffic operations are within acceptable limits. Consideration will be given to impacts on traffic analysis results due to adjacent construction projects. Other key sections of the TMP document will include an incident management plan, a contingency plan, and a public outreach proposal.

Limited right-of-way: The outside ROW is tight which will make clearing difficult in some locations. There will be significant selective clearing needed to install the SWM facilities and paths on the outside edges of the project. There are a number of large trees present. Special care will be needed to ensure that the clearing operations will not impact adjacent properties and structures or become

a hazard to either vehicular or pedestrian traffic. In addition to the clearing efforts, there are a number of existing walls and fences which are in close proximity to the work. This may conflict with the new construction and make grading difficult. Facchina has experience working in these conditions and will overcome these obstacles.

Obtaining MDE Permits: We will need to obtain the Stormwater Management (SWM) and Erosion and Sediment Control Plans (ESC) permits in a timely manner to support the project schedule. SWM for this project will be provided per the requirements specified in the section TC 3.17 of the RFP and we will use the most current version of guidelines at the time of the RFP. Once NTP is given, we will request a pre-permitting meeting with SHA, MDE and all personnel identified in the RFP. The project scope, the concept SWM, ESC design, submission schedules, permitting timeframes, and submission requirements will be discussed at this meeting. It is imperative that we clearly define the submission and process that MDE will accept. Based on experience with MDE on both the ICC C and D/E projects, we understand that MDE has changed their approach on when they will review certain phases of the ESC plans. For the development of the schedule for this project, we assume MDE will review final ESC plans once the final SWM report is approved. If MDE is open to reviewing the final ESC plans before the final SWM report is approved, we will work together with SHA to optimize the project schedule.

To expedite the MDE permitting process, we will use Dan O'Leary, PE, an approved MDE reviewer for all of our submissions to MDE. Mr. O'Leary will review all of our SWM and ESC plans for compliance with MDE regulations prior to submission to SHA and MDE for review and approval. In addition, our approach will be to use the approved SWM concept provided by SHA as to not have to go back through the review and approval process with MDE for changing the SWM approach and keep the project on schedule. This project has four points of investigation (POIs) and each of them are classified as redevelopment requiring treatment of 100% of the new impervious area and 50% of the existing impervious area minus the impervious area removal within the limit of disturbance. Environmental site design (ESD) will be used for water quality treatment and ESD to MEP (maximum extent practicable) will be used for quantity management before using structural BMPs and/or detention pipes. Proposed SWM BMPs will be submitted to SHA for consultation and review prior to advancing the SWM design. Proposed SWM BMP selection will follow following criteria 1) Best fit to site context, adjacent community and local ecology, 2) preference to non-

structural BMPs, 3) Alternative surfaces and micro-scale BMPs will be considered prior to larger structural BMPs, 4) BMPs requiring lower maintenance. We will obtain BMP numbers from SHA for each proposed SWM BMP. All SWM plans, reports, and supporting documents will be submitted to MDE and SHA concurrently for approval.

We will make sure there is no net debit or reduce the net credit shown on the conceptual Water Quality Summary Sheet provided in concept SWM report. Once approved by MDE, we will submit the photocopy of MDE approval letter, approved WOSS along with Excel spreadsheet that include XML conversion tool to SHA's Highway Hydraulics Division. We will complete the as-built inspections during the construction of SWM BMPs and provide the completed as-built checklists and plans certified by Mark Kilmon, PE, SWM As-built Certifier with AB. SWM plans will also include a SWM maintenance schedule for each type of SWM BMP.

Obtaining approved utility relocation plans to support the project schedule: We will identify any conflicts with existing WSSC and other utility facilities and to avoid negative schedule impacts, begin design of the relocations as early in the design phase as possible. We have designed and constructed numerous small- and large-diameter WSSC water and sewer relocations on design-build projects in the area, including ICC C and D/E. We understand the seasonal restrictions WSSC has in place for shutdowns and temporary services. We have proven experience and expertise to develop the relocation plans, coordinate with WSSC and obtain their approvals, coordinate the shutdowns, construct the relocations, test the facilities and work with the assigned WSSC inspector for their return to service.

Unknown utilities: With our experience on many similar projects in this region, we know that there is a good chance that we will discover unmarked or unknown underground utilities during construction. If this situation occurs, we will notify SHA immediately and conduct an on-site meeting to identify the utility and determine what course of action must be taken to avoid or relocate if possible. We will work with SHA to mitigate the potential schedule impacts.

2.09.02.C UNDERSTANDING OF PROJECT SCOPE

The scope of the design and construction of MD 4 from Forestville to MD 458 is driven by the identified project goals and key issues/risks (Community Outreach, Safe and Accessible Facility, MOT for Pedestrians, Bicyclists, and Motorists, Traffic Calming, Increased Visibility, Future Maintenance, Obtaining MDE Permits, Utility Coordination and Relocation, Coordination with 3rd Party Stakeholders) as discussed earlier. In order to

successfully accomplish those goals and provide SHA, the community, and the users of MD 4, the following additional major scope items will also be included in the design and construction of the project. They include:

Roadway: We will design and construct the MD 4 improvements to meet the newly classified Urban Other Principal Arterial with a design speed of 45 mph. Included in the design are continuous dedicated pedestrian and a shared use path through the project's limits to eliminate mixing pedestrians with motorists using MD 4. The proposed typical section (based on the RFP plans) will close up the currently open section roadway with type A curb and gutter, reduce the travel lanes to 11-ft and include a 4-ft inside shoulder and an 8-ft outside shoulder in an effort to force the motorists to slow down through the project limits.

Where feasible, we will design all obstacles to be outside the clear zone. If this cannot be accomplished, we will design the W-Beam guardrail to meet the requirements of the *Guidelines for Traffic Barrier Placement and End Treatment Design, 2006*. We will design the W-Beam guardrail end treatments to accommodate the presence of the proposed W-Beam barrier adjacent to the proposed Type A curb and gutter. There was significant discussion on the ICC D/E project with SHA on how vehicles impacts guardrail end treatments when they are placed alongside of concrete curb and gutter.

We will design the closed drainage system and space the inlets to not exceed the allowable flow spread of 8-ft for a 2 year storm as well as exceed 1 cfs across entrances. Pipe capacity will be designed for the ten-year storm and the 25-year storm for the hydraulic grade line (HGL).

SWM: We will design stormwater to be consistent with the Concept SWM Report (March 7, 2014), which conceptually offered ESD measures of micro-bioretenion facilities (14) for project-required water quality, recharge, and channel protection; quantity control of overbank flood protection (Q_{p10}) using reduced runoff curve number and underground detention pipes (4 locations).

We will review the approved concepts for compliance with the most current SWM regulations applicable for this project. During the final design process, the overall SWM strategy will be reviewed for: compliance with the current regulations; SHA SWM Site Development Criteria (SDC); protection of the environment; ROW impacts; geometric enhancements to the project's footprint; and minimum future maintenance costs. We will use our licensed landscape architect to guide the aesthetics and site planning, including: grading; landforms; site layout; safety criteria; and the choice of material; along with visual

integration of BMPs with the surrounding environment; developments; communities; roadways; and landscaping.

Environmental Permitting: MDE permitting scope is discussed in detail above in Section 2.09.02.B. In addition, our approach to the environmental permitting is discussed in detail in Section 2.09.05.

Traffic Engineering: In addition to the roadway and intersection lighting and MOT scope detailed above in Sections 2.09.02.A and 2.09.02.B respectively, traffic engineering services also include the design and construction of signing and pavement markings, traffic signals and interconnect, and sign lighting.

Signing and pavement marking design will include evaluating the need for and application of pavement marking material along with specific pavement marking patterns and widths based on roadway geometry, roadway classification, pavement surface, and design criteria as outlined in the Manual on Uniform Traffic Control Devices (MUTCD) and the Maryland MUTCD.

Traffic signal and interconnect design will include identification of mast arm pole, pedestal pole, lighting arm, handhole, conduit, signal head, signal-related sign, video detection camera, detection zone, power source, and cabinet locations, as well as determining the need for temporary traffic signals and/or the staged construction of the ultimate traffic signals during construction.

The design of traffic control structures may also be required. The scope of this work will include field inventories, measurements of side slopes, generating cross-section templates and elevations, completing the sign structure input sheets, performing structural analysis and design of sign structures and pole foundations and completing the SHA standard structural sheets. As part of the structure design, existing and proposed guard rail will be inventoried for appropriate length and end treatments.

Pavement Design: Once shortlisted, we will determine if we will use the RFP provided Hot Mix Asphalt (HMA) pavement designs or will provide alternate sections. Either way, we will comply with the pavement performance specifications of the RFP. We will design and construct the MD 4 HMA base widening, shoulder reconstruction, mill and overlay, wedge and level, and patching as well as the HMA for the 10-ft shared use path. We will also identify the concrete details for both the Type A curb and gutter and the 5-ft sidewalk. When construction is complete, MD will meet the visual appearance and ride quality requirements of the contract.

Retaining Walls: The constraints of grading, proposed bioretention facilities, limited existing right-of-way and roadway diet design may require construction of minor

retaining walls. The relatively level grade of MD 4, coupled with the proposed roadway section will lead to only minor height walls; however, several of these walls may run for an extended length. Our team will propose stacked stone/block gravity walls. When identified as necessary, we will design and detail the walls in accordance with MD SHA Policy and Procedure Manual (PPM) D-82-25(4) for Proprietary Retaining Walls. This PPM has seven proprietary firms that have MD SHA pre-approved walls types.

2.09.02.D CONCEPTUAL LEVEL UNDERSTANDING OF PROJECT GOALS

We will design, construct, and deliver the MD 4 design-build project on time and on budget, meeting or exceeding all of the project goals identified in the RFP.

- Throughout the project, we will meet with the established Community Task Force, updating the design and construction activities and progress.
- We will design and construct a continuous, dedicated pedestrian and shared-use path, providing dedicated facilities to eliminate mixing those travelers with motorists using MD 4.
- We will design and construct the project's roadway and intersection lighting to increase visibility for motorists, pedestrians, and bicyclists.
- With the goal of increased driver awareness, we will identify further traffic calming techniques beyond those currently in the proposed typical section.
- We will design and construct a high-quality roadway safe for pedestrians and bicyclists, as well as for motorists traveling the project limits.
- We will implement a quality roadway facility that meets SHA's goals and can be adequately maintained. Our construction techniques and final products will leave SHA with a facility that requires minimal routine maintenance.
- We will achieve and maintain the project environmental commitments and permits and will consider environmental stewardship measures when possible. Please see Section 2.09.05 for additional environmental details.

2.09.03 Project Management

2.09.03.A. PROJECT MANAGEMENT PLAN

2.09.03.A.1 COMMUNICATIONS MANAGEMENT

Facchina Construction Company, Inc. (Facchina) will meet SHA's project objectives and successfully deliver the MD 4 project through comprehensive design and construction planning, using continuous and close coordination and communication among our team and with SHA, as well as the project's stakeholders. Our team routinely uses these tactics to manage various kinds of communications for a project's duration to keep all participants clearly and concisely informed of progress.

We empower our project managers to assess, discuss, document, and determine the right approach to resolve issues quickly with minimal impacts to schedule and cost. This tactic is highly effective when combined with a formal Partnering relationship with the SHA. Open, honest, and frequent discussion amongst the entire team facilitates a successful project environment.

Key to Successful Delivery: Good Internal/External Communication
The travelling public needs information before, during, and after construction to assure safe transit for all.

Document Control: Facchina uses Meridian's Prolog and Bentley's ProjectWise, ensuring efficient document control. The program has redline, strikethrough, and other design review and comment capabilities, and other project management applications.

All documents, both internally and externally generated, (RFIs, designs, schedules, submittals) are date-stamped and receive a unique serial number. SHA-generated documents and others will be entered into a tracking log and distributed to the appropriate team members. We will create an action-item log to track the required actions' status. Weekly reviews by our Design-Build Project Manager, Mr. Durant Walters, our Project Design Manager, Mr. Ken Davis, and our Construction Manager, Mr. Tracy White will ensure timely responses and follow-up. Each document (both internally and externally generated) are issued a file address, scanned, and saved into the dedicated project database; the hard copy will be stored in the master files. Internally generated documents will be serialized and will include the project name, contract name and number, subject reference, and other SHA-required information, as applicable. Internally generated documents will be tracked and distributed for internal review prior to signature by the appropriate team member. This process ensures a single point of contact, consistent with SHA policy. Facchina will provide SHA

with the appropriate licenses and access information for easy SHA-access to Meridian's Prolog.

Our experience shows it is essential to have an on-site, dedicated Document Control Manager to enforce and coordinate these requirements. Using the Meridian's Prolog and Bentley's ProjectWise document control systems, we will track all documentation, including initial survey data, existing as-built plans and utility documentation, as well as "Issued For Construction" (IFC) plans and field or design changes, to avoid re-work or non-acceptable work in the field.

We will clearly identify all IFC documents. Revised Plans are an example. They clearly identify: revised elements; who initiated the revision; who reviewed the change for conformance with the contract documents, as well as adjacent work product; who approved the change; and most importantly, who should be notified of the change.

Public Involvement/Coordination with Stakeholders: Facchina recognizes the importance of good communication during the design and construction phases. It will be particularly critical on this project, with the overall project goal of improving pedestrian mobility and safety while providing continual access to the businesses and residences – all while minimizing impact to the traveling public. We intend to maintain close coordination to ensure the community's services, access, and other vital functions are maintained. This will be a key measurement of success. **The Public Outreach and Community Relations Program's (POCRP) approach is to ensure that accurate and timely information flows from Facchina through SHA, to local community officials, and the general public (i.e. local residents and businesses, traveling public, and other stakeholders).** Our team POCRP Coordinator and program lead, Mr. Anthony Brown will follow the procedures agreed to at project initiation by Facchina, SHA, and the MD 4 Community Task Force. Mr. Brown will regularly visit the site and participate in partnering meetings to ensure his understanding of the project's details. He will work closely with the team's key staff, developing both narrative and graphic materials suitable for public dissemination.

We will work closely with SHA to plan, develop, and execute public meetings. These personal and direct interactions allow Facchina to put faces and names to the effort, to highlight the benefits and progress of the work, and to encourage public input. We will promote site visits in tandem with these meetings to further public understanding of the effort, and to establish trust with neighboring communities and stakeholders. We are committed to first minimizing impacts while delivering the highest quality, and then as practicable making reasonable adjustments to improve the project for all

stakeholders. The need to have consistent, accurate and timely communication with the public is the best way to minimize or avoid the disruptive nature of the construction activities. Our experience and preparation for this project means we can best assist SHA in communicating with the public in a variety of formats and venues. We will take a supportive role; SHA will set the message to fulfill their goals for the project.

Tools: Our plan includes advance notice of changes in service, an open field office policy, and provision of timely and accurate project news to all affected stakeholders. We will use a multi-media toolbox to disseminate public communications illustrating project progress. Public information dissemination is planned as follows:

Info	Frequency/ Days Prior	Method
General Project	Daily	Open field office policy
	Weekly	Written Notice & Personal Contact
	Semi Annually	Community Meetings
	As needed in response to public/stakeholder inquiries	On site meeting
Traffic Changes	3 days	Closure Request Form / VMS
	7 days	Closure Request Form / VMS
	10 days	POCRP / Closure Request Form / VMS
	30 days	POCRP / Closure Request Form / VMS
	Driveway Closures	POCRP / Written Notice & Personal Contact
Utility Outages	Critical: 3 to 4 days prior	POCRP / PUC Written
	Commercial: No less than 3 days prior	POCRP / PUC Written
	Residential: 3 days prior	POCRP/PUC/Written Notice & Personal Contact

Our team is established and has been through many hours of training and team-building; we can hit the ground running to assure a high quality project is delivered.

2.09.03.A.2 COORDINATION MANAGEMENT

Right-of-Way: We acknowledge that not all of the project right-of-way will be cleared by NTP. We have phased the project to produce early construction plans to build the ultimate proposed work in the median. This will more than accommodate SHA's plans of clearing all right-of-

way by April 1, 2015. We anticipate the project can be constructed within the existing right-of-way; we recognize the responsibility of obtaining any additional ROW is the responsibility of the design-build team.

Utility Coordination and Relocations: Facchina will continue SHA's coordination meetings with the existing utility providers in the project area. We have extensive experience from our ICC C and D/E projects, as well as numerous other projects, coordinating and relocating utilities for the same owners as proposed on this MD 4 project. We will schedule early kick-off meetings, regularly scheduled coordination meetings, and field coordination efforts, to prevent scheduling issues from affecting the project. The WSSC work does require coordinating specific shutdowns of service for their existing facilities. Our construction schedule has taken the seasonal demand loadings into account to allow these shut downs to be done off-peak to minimize service impacts.

Site Access: Heavy truck/equipment access includes all major deliveries for the project, whether the work is being self-performed by Facchina members, or by sub-contractors. Truck and heavy equipment access will only be permitted from approved access points on MD 4. During shoulder reconstruction and median widening, temporary concrete barriers will be installed to protect the traveling public from drop-offs. Strategic openings in the barriers will be installed with attenuator protection for construction traffic for ingress and egress. Stone construction entrances will be installed at the limited access points.

Construction Sequencing: We will prepare a detailed sequence of construction including the project Traffic Management Plan (TMP) and detailed Traffic Control Plans (TCP) which will provide for an orderly progression of work. A preliminary sequence is detailed in the scheduling section. Our managers are experts in staged construction on major highway projects; some examples are: I-95, I-695, the ICC, US 1, US 29, and MD 43.

Noise and Dust Control: We appreciate that any construction project needs both noise and dust control. As the project site is surrounded by a high number of residential and commercial properties, we will be especially sensitive to noise concerns. Facchina will address common construction concerns, such as excess equipment idling, banging tail gates, Jake brakes, and off-hour work near residences.

We will use approved dust control measures on the project, including water trucks and/or sweepers dedicated for the entire project limits. The water source will be provided at a metered location.

2.09.03.A.3 RISK MANAGEMENT

As with every design-build project there are risks that can affect the cost and/or the schedule. Our team's extensive experience in delivering over a billion dollars in civil infrastructure projects in this area have provided us with a vast range of expertise to identify, manage, avoid, and mitigate potential risks that could negatively affect the successful delivery of this MD 4 project.

The major design and construction risks include:

Safety / Maintenance of Traffic: Public safety and the safety of our work force is our primary concern. As evidenced by the number of fatalities in this section of highway, nothing could be more important. We will work diligently to ensure everyone involved, the public and our workers, are protected. This will be accomplished by providing separation of work zones and vehicles by using devices such as temporary concrete barriers, truck mounted attenuators, and barrels. We will keep the traveling public safe by alerting them to potential hazards and by using modern and effective traffic control devices. We will use construction signage, VMS units, and pavement markers for this purpose. Pedestrians will be provided safe passage around work zones. We intend to request speed monitoring equipment be installed throughout the life of the contract. The maintenance of a 45 mph speed limit will enhance both the workers' and the public's safety.

Obtaining MDE Permits: Stormwater Management (SWM) and Erosion and Sediment Control Plans (ESC) permits will need to be obtained in a timely manner as to support the project schedule. **In order to expedite the MDE permitting process, we will use Mr. Dan O'Leary, PE, an approved MDE reviewer, for all of our submissions to MDE.** Mr. O'Leary will review all of our SWM and ESC plans for compliance with MDE regulations prior to submission to SHA and MDE for review and approval. In addition, our approach will be to use the approved SWM concept provided by SHA as to not have to go back through the review and approval process with MDE for changing the SWM approach and keep the project on schedule. Once construction begins, we will have one of our supervisors who is fully yellow card trained and experienced in E&S work directing the installation and maintenance of all devices.

- **Utilities Coordination and Relocation:** Utility conflicts are always a major source of potential delays. We will begin developing a plan to address this issue early on. We begin a test pitting and location survey to clearly define the areas where new construction might infringe on existing services. From this, a design can be developed and relocation process be initiated. Since

this work will occur later in the project, proper advanced planning will mitigate this concern.

Obtaining approved WSSC relocation plans to support the project schedule: We will identify conflicts with the existing WSSC facilities and begin design of the relocations as early in the design phase as possible as to not negatively impact the project schedule. We have designed and constructed numerous small diameter and large diameter WSSC water and sewer relocations on many design-build projects in the area including ICC C and D/E. We understand the seasonal restrictions WSSC has in place for shutdowns and temporary services. We have proven experience and expertise to develop the relocation plans, coordinate with WSSC and obtain their approvals, coordinate the shutdowns, construct the relocations, test the facilities and work with the assigned WSSC inspector for their return to service.

Unknown Utilities: From experience on many projects in this area, we know that there is a good chance that we will discover unmarked or unknown underground utilities during construction. Should this occur, we will notify SHA immediately and conduct an on-site meeting to identify the utility and determine what course of action must be taken to avoid or relocate if possible. We will work together with SHA to mitigate potential schedule impacts.

Limited Right-of-Way: Significant, selective clearing is needed to install the SWM facilities and paths on the outside edges of the project. Removal of the number of large trees present will require special care to ensure there are no impacts to adjacent properties and structures, or hazards to either vehicular or pedestrian traffic. This may conflict with the new construction and make grading difficult. Facchina is knowledgeable and prepared to overcome these obstacles.

The major management risks include:

Schedule Control: Maintaining or improving a contract's schedule is a primary responsibility of our management team. Our CPM schedule will be constantly monitored to avoid slippage and to make corrections as circumstances warrant. We will reschedule or apply additional resources in the unlikely event that they would be needed. Mitigation efforts for schedule slippage are identified in detail in Section 2.09.03.A.5.

Cost Control: Facchina has a very detailed cost accounting system which can track every cost aspect of the project. A detailed budget is developed from the bid documents and used to track cost versus budget for every item on the project. Cost details are always available immediately to the managers. We will generate a weekly cost report based on weekly progress quantities turned in. An extremely detailed report is done quarterly.

From these reports, a manager will spot issues early on and look for solutions or alternatives.

Changed Conditions: Facchina recognizes that changed conditions routinely occur on major projects and will not be concerned if they are encountered on this project. We will promptly notify the owner if we encounter any potential changed condition. We will then track this development and work with the owner, our design team, and affected stakeholders to develop the best possible solution. Should a change occur, everyone's energy will be focused on finding the solution. Internally, these matters will be discussed in the weekly coordination meetings (or sooner) as soon as they are known and understood. We will determine solutions as a team and communicate with SHA for a timely resolution. In some cases, a contractual change may be required by SHA -- by providing timely notification, we will give SHA the ability to make decisions in their best interest. All issues will be tracked in the document control system to assure they will be captured in the project's as-builts.

2.09.03.A.4 DESIGN AND CONSTRUCTION MANAGEMENT

Design-Build Team Management: Facchina will serve as the design-builder, and will ultimately be responsible for delivery of this project. Mr. Durant Walters will lead the Design-Build Management Team and will serve as the Design-Build Project Manager (DBPM). Supporting him will be Mr. Tracy White, Construction Manager (CM), and Mr. Ken Davis, Project Design Manager (PDM).

Mr. Durant Walters, PE, as the DBPM, will have overall authority and oversight for project design and construction. He will work closely with all team members and be responsible for ensuring all aspects of design and construction adhere to the contract provisions and project schedule. Mr. Walters will review all CPM scheduling, design submittals, materials purchasing, construction methods, and invoicing.

Design Management: Dewberry is the lead designer, responsible for: all preconstruction activities including survey, geotechnical investigation, permitting, design, design quality control, and construction phase services.

Mr. Ken Davis, PE, DBIA, as the PDM, will provide overall management of the design team and be responsible for ensuring that adequate design personnel and other resources are available to support this project. He will interact daily with design staff, subconsultants, and Facchina staff to ensure the team meets design milestones, and will communicate all necessary information to the construction team. Our team organizational chart, shown on page 24, depicts the design team structure and lists key staff members with

their assignments. Dewberry, as well as its subconsultants, has significant resources to ensure that design is completed on time and provides a comprehensive quality control (QC) program necessary to deliver a successful project to SHA.

Construction Management: Facchina will be the lead contractor, responsible for: all construction activities, including project safety, quality control, and scheduling; coordination with SHA, utilities, and stakeholders; and managing construction subcontractors and suppliers.

Mr. Tracy White, as the CM, will be actively involved beginning with the project's estimate and schedule, continuing through the design stages and construction up to the project's successful completion. He will provide considerable input to the design staff. He will oversee the day-to-day field construction operations, supervise the Traffic Control Maintenance, and coordinate construction activities with the Environmental Compliance Manager. Mr. White will have the ultimate responsibility of constructing the project in accordance with the approved Traffic Control and Erosion and Sediment Control Plans, and will be actively involved in the review of all design submittals. Mr. White will coordinate with the lead engineers regarding any unforeseen site conditions and work to determine a course of action. Mr. White will also have authority to correct non-conforming work.

Mr. Walters, Mr. Davis, and Mr. White will proactively lead the project team to design, construct, and successfully deliver the MD 4 project on time and within budget. To accomplish this, they will conduct a series of regularly help meetings that include:

Design-Construction Coordination Meetings: The team's design and construction personnel will meet weekly. The Design-Build Manager, the Design Manager, and the Construction Manager will lead the meetings. All of the design leads and key construction personnel will attend and present progress, identify design and construction issues needing a decision, and serve as an over-the-shoulder review opportunity. Facchina will present the current construction schedule, identify design items on the critical path, and when they must be completed and submitted for formal constructability and environmental reviews for submission to SHA.

We have found it critical to include construction staff as a proactive measure during the design process for fewer field issues when the design packages are released for construction, and thus, avoid possible schedule delays.

Owner Coordination Meetings: At the agreed-upon time, but usually following the design-construction coordination meetings, the team will conduct a meeting

with SHA project team and other stakeholders. These meetings will focus on any open issues needing resolution and then move to new items. This is also an opportunity to provide SHA with any "Over-the-Shoulder" submissions to flush out any issues with a proposed approach and obtain buy-in before making the formal submission. We will discuss both short- (2-week look ahead) and long-term schedule updates and project completion milestones. We will provide SHA with the information on when we will make design submittals and in what order, to aid in managing SHA's project resources. Any upcoming MOT changes will be key point of discussion, as well. Matters involving third parties, such as PEPCO and Verizon, will be discussed as early as possible; they are critical to ensure we can mitigate and manage any conflicts effectively, without a negative impact on the project schedule.

Should an item require consideration for a contractual change, bringing it up for discussion at these meetings will give the project team every effort to minimize or possibly eliminate the impact to the project. An early, proactive approach to best identify and resolve an issue always works best, once the impact has occurred.

Division of work segments: These segments are identified in the organizational chart on page 24.

Categories of work: The table below illustrates the categories of work for this project.

Categories of Work	Facchina	Subs
Maintenance of Traffic		
MOT Implementation and Operation	■	
MOT Devices		●
Erosion Control		
Installation	■	●
Monitoring	■	
Maintenance	■	
Excavation		
Clearing and Grubbing	■	●
Drainage		
Storm Drain Systems	■	
Stormwater Management and Devices	■	
Roadway Items		
Guardrail, Fencing, Sidewalks, Curb & Gutter, Signing, Pavement Markings		●
Subbase	■	
Asphalt Paving		●
Concrete Paving		●
Subgrade Treatment		●

Categories of Work	Facchina	Subs
Lighting		●
Landscaping		●
Utility Relocations and Construction		
WSSC	■	
Verizon, PEPCO, AT&T, Washington Gas, & Comcast		●

Minority Subcontracting: Facchina is a leader in promoting minority participation. We are the first recipient of the MD State Highway Administrator's Award of Excellence for minority participation. We participate in mentor-protégé programs, and have been active in numerous committees and forums concerning minority issues. Facchina has always met or exceeded our contract goals and will aggressively seek out minority firms to reach or exceed the 26% goal for this project.

Formal Partnering Program: Immediately upon award of this project, we will initiate the formal partnering process. Facchina, along with SHA, will identify the MD 4 Partnering team and will conduct a kick-off workshop to develop the project Partnering Charter and Issue Resolution process. Follow up meetings will be held on a monthly basis. Facchina and SHA will commit to actively working together to expeditiously resolve project issues as they develop, based on a level of trust that can only be fostered through the partnering process.

The goal of the team is that key individuals working directly with SHA and other project stakeholders are empowered and trained to resolve issues, making use of the partnering issues resolution process established during the partnering process. The proposed resolution process will encourage issues to be resolved at the lowest possible level. The intent is to define timelines for issues to be held at the lowest level before being elevated to the next higher level. Facchina and SHA have found on past projects this process keeps decisions with those who have the most knowledge of it, resulting in timely resolution. Procedures and schedules will be regularly reviewed and refined for efficiency and improved coordination and cooperation amongst Facchina professionals, SHA, and all stakeholders.

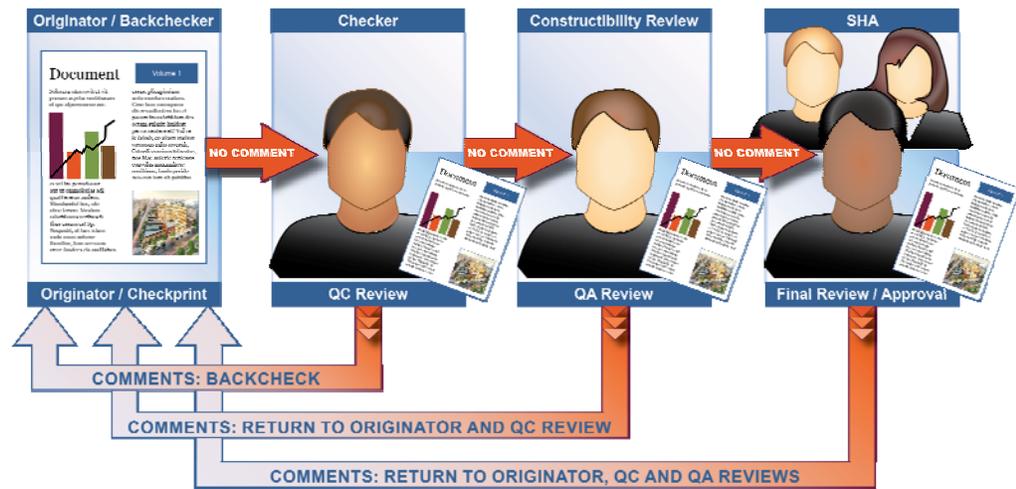
One of the areas that will most likely generate discussion will be unforeseen issues arising during construction. These issues frequently need to involve the designers, project management and supervision, as well as SHA's representative(s), in order to come to a timely resolution that won't affect the project's successful, on-time delivery.

Quality Assurance: There are a number of specific steps Facchina will take to assure quality in the various stages of this project. These include:

Design QA and QC: Facchina has selected Mr. Kirk McClelland, PE to lead the team's design QA and QC efforts. Mr. McClelland, former Director of MDSHA's Office of Highway Development for twelve years, has managed a full range of transportation related projects during his 30-year career. Included in his responsibilities were design oversight and construction management support of major highway corridor development projects such as US 113, MD 404, I-695 Baltimore Beltway and I-70 in Frederick, Maryland; oversight of the Community Safety Enhancement Program intended to provide reconstruction and rehabilitation of the State Highway secondary system; Management and oversight of specific capital improvement and asset management programs such as statewide guardrail upgrades; and expansion of the statewide sidewalk network and bicycle accommodations along state highways.

Mr. McClelland, along with Mr. Davis, will implement a Design Quality Control Plan (DQCP) that includes documentation of design criteria, design manuals, discipline-specific checklists, project schedules (including milestones), inspections, and independent reviews. The objective of the DQCP is to verify that the clarity, completeness, coordination of documents, accuracy, and constructability of the project are maintained. Plans will meet or exceed industry and SHA standards and guidelines, while ensuring all contract requirements are met. We will perform QC reviews on intermediate and final deliverables, and confirm document all comments and corrections have been addressed. The design QC process will follow the process outlined at the top of the next column. The QC process involves a detailed system of internal reviews (including constructability reviews and environmental compliance reviews) and formal reviews (SHA and 3rd Party) and clear process for addressing and closing all comments for each milestone before being finalized and issue for construction.

Construction QA: Mr. John Wilentz will be the construction QA Manager for the project. Mr. Wilentz, with a BS degree in Construction Management, has over 17 years experience, all with Facchina. For the past 8 years, Mr. Wilentz has served in the capacity of Quality Control Manager on several high-profile, high-value projects in the region. His accreditations include the Construction Quality Management for Contractors certification from the USACE.



The SHA's inspection staff will have primary responsibility for quality control. Mr. Wilentz will ensure that our team will properly perform and document any QC testing and monitoring that the Contractor has responsibility for. As part of his duties, he will prepare a project specific construction QC/QA plan. This plan will include, required field compliance testing, off-site testing and certifications, testing frequency requirements, discipline specific check lists, and job specific requirements. He and the Construction Manager will review this plan as well as relevant contract plans and specification requirements with both our crews and those of our subcontractors prior to initiating new items of work. The construction QA Manager will conduct daily site inspections and reviews to ensure that the project is built to standards that meet or exceed the contract requirements.

Understanding of SHA's QC Philosophy: Our extensive experience in design-build has led to the development of a proven QA/QC program, complete with comprehensive procedures that address all aspects of quality from document inception and constructability reviews to construction completion and final acceptance. As a result of our performance and commitment to QA/QC, project costs have been reduced by efficiently staffing these projects with sufficient oversight needed to confirm that SHA's quality standards are met or exceeded. Upon award notification, we will initiate steps to prepare a specifically written plan that reflect the contract requirements and SHA's expectations. Our goals include delivering this project in a manner that creates high public satisfaction and a positive perception of SHA.

Interdisciplinary Coordination and Constructability Reviews: Interdisciplinary coordination includes a variety of work items—roadways, sidewalks, trails, traffic signals, drainage, stormwater management facilities, permitting, and utilities. Interaction among the designers of these various disciplines and the utility manager, permitting

manager, and project superintendent is a vital part of our design QA/QC program; ensuring project design minimizes interdisciplinary conflicts. An extremely useful tool for accomplishing this is through routine design team coordination meetings. In these meetings, the design team, construction team, and all discipline managers, along with voluntary over-the-shoulder participation by SHA, will discuss the ongoing design work, identify potential conflict items or items that may be overlooked, review the schedule, and address constructability issues.

QA/QC for Field Changes to the Design: Field changes to the design occurring after final submission and release of the construction documents to the field are subject to the same rigorous procedures stipulated in the design QA/QC plan. Requests for field changes will be reviewed by the engineer who performed the original design. No field changes will be allowed without approval by the engineer and SHA, indicating compliance with applicable design standards.

2.09.03.A.5 SCHEDULE MANAGEMENT

Both our Design-Build Manager and Construction Manager have extensive experience in developing, managing, and maintaining CPM schedules on multiple projects of similar and greater size, and complexity. The final development and the updating of our project schedule will be performed by our Construction Manager, while members of the project team will contribute to this effort and review the schedule and its updates to ensure accuracy and completeness. Facchina will fully rely on our in-house capabilities using Primavera P6 software for our CPM scheduling for processing the required schedule reports for the baseline submission, as well as all updates and revisions. Self-performance allows our managers to be intimately aware of the job's needs and to closely measure progress, and take immediate corrective action if our schedule is affected.

On projects of this nature, there are a number of potential problems that could affect progress: regulatory delays; unanticipated utility conflicts; differing site conditions; owner-directed changes; shortages of manpower, equipment or material; non-responsive subcontractors or vendors; or any other problem will be addressed promptly if or when they occur. As for known factors, critical path and long-lead time items are identified early in the scheduling process and given special attention to avoid schedule slippage. Our managers are vigilant in securing sufficient manpower and equipment as well as ensuring needed construction materials are available.

In the unlikely event that we fall behind schedule of our own accord or through contract changes that may occur, we have several potential remedies to maintain our schedule depending on the nature of the problem.

Although we carefully screen our subcontractors and vendors, problems do occasionally occur. In the event of poor performance, we are always prepared to use alternative sources. Another possible solution might be to provide a recovery schedule that re-sequences our planned order of work to avoid, work around, or overcome problems. We can also provide additional manpower and equipment and/or work selective overtime to regain lost time. It is an integral part of our managers' job duties to be prepared for and to take necessary measures to remain on schedule.

2.09.03.A.6 CHANGE MANAGEMENT

Design-build projects often encounter changes as the design is ongoing and released for construction, prior to the final completed design. The entire Facchina team will continuously review all field changes whether owner directed or issues outside the original contract scope, as well as contractor-requested changes such as constructability issues, changes for the contractor's convenience, overlooked details or other similar reasons. All recommended changes to design and/or construction to be implemented in the field will be properly discussed with SHA and outside stakeholders as appropriate. For owner-related issues, we will promptly inform the owner of any issue, provide recommendations, and proceed with the revised design after we receive concurrence from the owner. All revisions will receive the same care and scrutiny that the original design underwent. All changes will be tracked and be available to all required staff through our Document Control procedures that tracks revisions, approval process, reason for change, and a narrative or description of the change.

Issued for Construction (IFC) Drawings: Once the design has been reviewed and finalized, the Issued for Construction (IFC) drawings are issued. The design team will remain involved and will have decision-making authority with respect to any changes. Dewberry staff will visit the site on a regular basis and, if necessary, station a Senior Engineer on-site, to maintain coordination between Dewberry and Facchina during the design stage once the construction starts. The designer will coordinate required adjustments, clarifications or formal design changes to meet the needs of the contractor and project. The Design PM will attend the regular construction coordination/schedule meetings to identify potential issues, provide advice, answer or explain RFIs, expedite shop drawing reviews or provide interpretation or clarification of the IFC drawings. All changes will be clearly posted and all affected parties will be properly notified. Conformed plans will then be issued for field use.

As-Built Drawings: Final drawings will be issued which reflect all changes that have been incorporated into the

project. These drawings will be continually assembled on site throughout the duration of the project. Just prior to areas of work being turned over for use, Dewberry will perform as-built surveys as needed. Upon completion of the project, the final submittal will be assembled, checked and verified by all appropriate members of Facchina.

2.09.03.A.7 SAFETY AND HEALTH MANAGEMENT

The most important aspect of any effective safety program is a sincere commitment by the organization's top management to providing clear goals and policies, effective and qualified personnel, and a continued approach to always improving the safety program. Facchina will make it clear to employees, subcontractors, consultants and vendors that safety takes precedence in the project's every management decision. This commitment to safety extends to every corner of Facchina through our shared Safety Vision, Values, and Policy, which translates safety into tangible actions for every employee. *Our current Experience Modification Rating (EMR) of .79, well below the industry standard.*

Statement of Policy: To ensure our high safety standards are enforced, Facchina team members abide by the following corporate safety policies:

- Establish safety as a responsibility for all levels of management and employees
- Establish and maintain safe working environment for employees
- Comply with, maintain and record applicable safety laws and regulations
- Act promptly to prevent or control recognized hazards
- Ensure safety as a principal corporate value at all operational levels
- Develop strong, competent safety leaders
- Leverage technology to drive safety productivity
- Deliver products and services in a manner that protects our employees, clients and communities
- Clarify safety roles with employees and clients
- Personally and actively demonstrate a commitment to safety
- Hold everyone accountable
- Ensure availability of all necessary resources and time to exceed safety requirements
- Solicit the input and involvement of all employees
- Verify our performance meets expectations
- Provide training so employees can fulfill their roles

Integrating Safety: Our goal is to blend safety and project operations into one function. We believe that by making safety intuitive to all employees, we can solve safety problems without creating barriers to cost-effective

project completion. We elevate safety awareness and know-how throughout our organization.

Traveling Public, Pedestrians, and Bicyclists: We understand this project will be constructed while the existing roadway is still being used by the traveling public, pedestrians, and bicyclists. To maintain their safety we will employ many of the following methods:

- Barricades, temporary concrete barriers, crash attenuators, cones and drums
- Striping, markings, and reflective delineators
- Arrow Boards, early warning directional signs, and VMS boards
- Early notification of traffic changes through written and verbal methods
- Smart, simple phasing and traffic staging beginning with design
- Flagmen where appropriate

Assessing and Achievement of Safety Goals: With the proactive involvement of Facchina's Safety Manager, Mr. Jim Nadeau, the commitments and the goals of the safety plan will be met or exceeded. The safety manager's involvement from the earliest efforts of design through the final completion of the project will ensure the successful integration of safe practices.

Mr. Nadeau will be responsible for overseeing the following critical elements to ensure success:

- Job- and site-specific Activity Hazard Analyses are used
- All project personnel are required to undertake safety orientation and ongoing education
- Daily tool box meetings and weekly and monthly safety awareness training
- Bi-lingual trainers and materials available to meet employees' needs
- All Subcontractors and vendors are required to participate in the Facchina safety program
- MOT designs & constructability reviews of MOT plans

Incident Management: Facchina has a proactive safety policy, and brings to this project professionals skilled in hazard avoidance. Should an event occur that requires emergency response, we will at all times during the work day have personnel on site who are trained in procedures that protect human life and project integrity, through deliberate action and verbal communication during the event. While we hope never to have to practice these skills, our construction managers and supervisors are prepared to respond with calm and responsible action. As part of our community outreach efforts, we will provide a toll free telephone line that will be monitored 24/7 and a knowledgeable person will respond within one hour.

SAFETY AWARDS

Facchina remains focused on providing the safest and most productive work environment possible to all employees, subcontractors and the general public. Since 2000, Facchina has been annually presented with the Associated Builders and Contractors' Safety Training and Evaluation Process (S.T.E.P.) Award. This award has been received in recognition of our company's either **Gold or Platinum Level** achievement as an Accredited Quality Contractor recognizing the company for its commitment to safety, its safety program, safety participation, safety training, record keeping and accident/injury record.

In addition, Facchina has received dozens of other major safety awards; as an example we have received more than 20 "Outstanding Safety Performance" awards from the Metropolitan Washington Airports Authority (MWAA) during our work on the North Area Roadways and Tier 2 projects at Dulles Airport.

Facchina is proud of its safety record, particularly on specific projects:

Project	Man Hours with No Lost Time
Pentagon Reconstruction Project	638,000
BWI Rental Car Facility	930,000
MARC Station	187,508
Pentagon Secure Bypass	265,000
Dulles Tier 2	506,857

Our track record for safety is outstanding and we bring this level of safety performance to both our staff and to the general public.

2.09.03.B. DESIGN & CONSTRUCTION SUMMARY SCHEDULE

A well-planned and managed baseline project schedule is essential to successfully executing a project's goals. We have crafted the attached **Proposed Baseline MD 4 Project Schedule**. It takes into account requirements for design, maintenance of vehicular and pedestrian traffic, utility relocation, and upgrades to pedestrian safety, signing, lighting, and traffic signalization. We aim to stage and schedule the project for a smooth, orderly project implementation while minimizing impacts to pedestrian and vehicular traffic, to the environment, and to adjacent properties. Facchina team members continually seek design and implementation alternatives that might improve our project completion goals while reducing environmental and safety risks. These revisions, once fully designed, vetted, and approved would be incorporated into the final Baseline Schedule.

After the baseline schedule is established, we will schedule and hold regular meetings to maintain schedule accuracy and progress and make the updated version available to all management, supervisory, and SHA personnel, as well as to subcontractors, suppliers, and other key project stakeholders. We will use schedule updates to maintain the planned progress, forecast future activities and to address coordination with other entities involved with the MD 4 upgrade.

Our Proposed Baseline Schedule is based on SHA selecting the successful contractor on 9/15/14, when design activities will commence. Substantial completion, defined as the roadway opened to its final intended use, will be 8/30/17, and reforestation complete by 8/30/18.

We have carefully reviewed the RFP documents, design strategies and project site specifics; three overriding factors continually surface as critical to the sequence of work. Specifically, these factors are:

- **Early Access to ROW Clear Sections** – To expedite construction, we plan on commencing work in the median where there are no ROW issues and minimal necessary E&S controls. We will use a phased design approach to initiate permitting and start construction activities early. Facchina and our team have often met similar needs, like on our ICC Contracts. We understand the permitting process, our design submittal plan is geared towards gaining appropriate approvals from MDE in a timely manner.
- **Phased construction to maintain traffic and pedestrian movements** – SHA intends to have safe and continuous North-South movement on Pennsylvania Avenue and safe pedestrian passage during implementation; we will phase construction, using intermediate traffic switches, and temporary walkways to meet those goals. Specific traffic movements are discussed in more detail on the next page.
- **Utility Relocations** – All utilities on the project, whether relocated by the utility company or by Facchina, will require a coordinated effort to prepare the site and work closely with the utility owner to avoid scheduling conflicts. We are well positioned through our long-standing good relationships with local utility owners to expedite this work. The most significant potential utility relocations to be performed on the project involves the utilities located at stations 24+ and 69+. This work will be a critical predecessor to completing the exterior portions of the project. We anticipate that the time needed for the design and construction work on these relocations will be considerable based on our past experience with the affected utilities. We have considered this in our schedule, and address this issue early on to maintain a timely project delivery.

Taking these factors into account, we have sequenced the work into 10 construction phases -- five northbound and five southbound. We intend to expedite implementing project construction, we have broken the project into two approximately mile-long segments – shown on the Proposed Schedule and the following phasing breakdown:

- Phase 1 NBR Stations 22+ to 82+ median
- Phase 2 SBR Stations 22+ to 82+ median
- Phase 3 NBR Stations 82+ to 133+ median
- Phase 4 SBR Stations 82+ to 133+ median
- Phase 5 NBR Stations 82+ to 133+ outside
- Phase 6 NBR Stations 22+ to 82+ outside
- Phase 7 SBR Stations 22+ to 82+ outside
- Phase 9 SBR Stations 82+ to 133+ outside
- Phase 9 SBR mainline
- Phase 10 NBR mainline

The following summarizes the work to be completed in each construction phase.

- **Construction Phases 1, 2, 3, & 4** – Upon permitting and design approval, Facchina will commence construction work in the MD 4 median and install traffic controls. Facchina will reduce lane widths on MD 4 to 11 feet to allow space for the temporary concrete barrier. Subsequent to setting the barrier, we will remove the existing shoulder pavement, and reconstruct it. Facchina will reconstruct the pavement and any needed curb & gutter and signalization work. We will reinstall the guardrails, completing median reconstruction. Phase 1-4 work will commence on December 10, 2015, and continue through October 5, 2016
- **Construction Phases 5 & 6** – In these phases, Facchina will work along the outside of northbound MD 4. After we complete the work in the median, we will reset the temporary concrete barrier along the northbound roadway and shift the road towards the median into its final configuration, using proper traffic control techniques to allow drainage and utility relocation work to commence. Facchina will install the curb & gutter and multi-use trail with the SWM facilities being constructed concurrently. Lighting and signalization work will be concurrent as well. Phase 5 & 6 work will commence on July 27, 2016, and continue through June 14, 2017.
- **Construction Phases 7 & 8** – These phases are for southbound MD 4 exterior work. After we have reconstructed the median, we will shift traffic back towards the median. As barrier becomes available from the completion of northbound MD 4, it will be reused for southbound exterior work to commence drainage and utility relocation work. Facchina will then begin curb &

gutter and sidewalk construction; lighting and signalization work will be concurrent. Phase 7 & 8 work will commence on July 27, 2016, and continue through April 27, 2017.

- **Construction Phases 9 & 10** – After the concrete barriers are removed, mainline MD 4 will be milled and overlaid. Permanent lane markings will complete the project. Phase 10 work will complete the balance of the contract work and will continue through August 30, 2017. Reforestation will be completed within a year of project completion.

LOGIC AND ASSUMPTIONS

We developed the schedule in accordance to the RFP requirements and our team's collective experience. Several key assumptions guided its development and formed the basis of the schedule requirements. When awarded the contract, we will maintain the project schedule through monthly updates with input from the entire project staff, through over-the-shoulder reviews, and from coordination meetings with SHA. Key assumptions include:

- Design Review Timelines
- Permit Review Timelines
- Existing Utility Relocations
- Material Delivery Schedules & Availability
- Resource Allocations
- Access Points for Pedestrian Traffic
- Holiday and Weather Restrictions

HOLIDAYS AND NO-WORK PERIODS

For holidays and other non-work days, the RFP clearly defines dates that work is not allowed. Work is not permitted on the holidays indicated below, or on the work day(s) preceding and following these holidays:

- New Year's Day (January 1);
- Good Friday;
- Easter Weekend;
- Memorial Day (last Monday in May);
- Independence Day (July 4);
- Labor Day (first Monday in September);
- Thanksgiving Day (fourth Thursday in November); and
- Christmas Day (December 25).

Potential Weather Impacts: We recognize the potential impact weather-related issues can have on the construction schedule. We have established three calendars. For design, submittals, and review items, we're using a calendar with the holidays being the only non-work days. For typical construction activities, we have added anticipated non-work days caused by poor

weather along with the holiday schedule. These days are based on weather calendars used and approved on numerous MDOT projects. Finally, we have added a winter calendar which anticipates that temperature-sensitive items, such as surface paving and thermoplastic striping, cannot occur at low temperatures. We have precluded these items of work from occurring from December 15th through March 15th.

CRITICAL PATH ACTIVITIES

One of the best tools to manage a project is the CPM schedule; it highlights activities critical to on-time project completion. The schedule we have developed clearly identifies activities that are on the critical path. Some of the general activities that make up the critical path are:

- Geotechnical Field Reports
- Designs for Roadway
- Traffic Design
- Median Phases 1, 2, & 3 Pavement Replacement
- NBR Exterior Drainage, SWM Controls, Utility relocations, Curb & Gutter, Mixed Use Path
- Mill And Overlay NB

The schedule reflects all the activities (critical and non-critical) and illustrates their relationship to each other. Using this information, the project management team can effectively adjust the schedule as issues arise, and determine solutions.

IMPLEMENTATION

We will commence project mobilization: design teams will meet with SHA to coordinate horizontal and vertical alignment, so that overall design may proceed. The QC Plan for Design and Construction will be further developed and implemented. A project wide Geotechnical survey/investigation program will establish a comprehensive data base. Survey crews will establish Traverse control points, Baseline and Wetland delineation, Forest protection areas and project LOD.

2.09.03.C. ORGANIZATIONAL STRUCTURE

2.09.03.C.1 TEAM'S APPROACH TO DESIGN-BUILD CONTRACTING

Design-Build Team as an Integrated Entity: One of the greatest benefits of using the design-build procurement process for the MD 4 project is that our team's key staff members (both design and construction) are an integrated group from initial design development right through to the final completion of construction. Facchina provides a "one-stop shop" for the SHA with a seasoned team prepared to work together through preliminary and final design, as well as all phases of construction to

provide a complete and successful project. Facchina is committed to keeping the proposed key staff in place from the pursuit all the way through the successful final delivery of the project. If for some reason a key staff member becomes unavailable, we will work with SHA to identify a qualified replacement and make the switch with as little disruption to the project as possible.

Our team has identified an experienced leader as our overall project manager. **Our single point of contact is the Design-Build Project Manager, Mr. Durant Walters.** This coordination, not only within Facchina but with the owner, provides a streamlined process for all project needs. It eliminates the need to have discussions with two separate sets of people, and enforces the necessary coordination between the design and construction teams. This culture to possess ownership of the design, quality and productivity cannot be developed quickly on a single project but rather takes time, trust and fulfillment of commitments to become ingrained into a team. Together, Facchina and Dewberry have undertaken the time through many projects including the Pentagon Secure Bypass, ICC C and, currently, ICC Contract D/E and a secure infrastructure project in Washington DC, to develop these characteristics. This coordination, within Facchina as well as the owner, provides a streamlined process for all project needs.

There are three basic stages to a design-build project: Preliminary Design, Final Design/Construction, and Construction/Project Closeout. These stages are not isolated but overlap, and this critical transition is accomplished only by the continuity and integration of personnel throughout all stages. Facchina will provide such a working atmosphere. Some of the efficient ways we have been successful doing this are:

Team Structure: Open and direct communication amongst all team members is key. We developed and use an organizational structure so every team member understands: a) their role within the scope of the entire project, b) how their discipline works with all the other disciplines, c) who questions, comments and other communication should be directed to, and d) the established lines of communication so that they are assured their concerns will be heard in a timely fashion, and the information they are using is current and accurate. Issues that are raised will be assigned by the Design-Build Project Manager, Design Manager or Construction Manager, to the individual or individuals on their staff that have the correct technical and practical knowledge to offer the solution in the shortest time. The greatest value of the extensive working relationship of our principal team members is the familiarity of both Facchina and Dewberry staff, empowering staff at all levels to

interact, such as a designer discussing an issue directly with a field superintendent.

Teamwork will drive consistent work products among different firms. We deliver a quality product by instilling in each team member the importance of collaboration and communication. Coordination occurs through communication and understanding of roles and responsibilities. Facchina has developed the framework for this communication and coordination from the beginning of the proposal preparation, with regular discussions between the team members, allowing Facchina to present the approaches being taken in design and construction, allowing other team members' feedback, and resulting in a coordinated, consistent work effort.

Construction Staff Role during Design: In the design-build process, Facchina staff's involvement in the design preparation allows them to provide constructability comments, availability of materials, economics of installation and phasing as the project is being designed. It is critical that the construction staff be a proactive part of the team during the design process developing the construction methods and sequence; thereby fewer issues occur during construction, avoiding schedule delays. Integration of the construction staff with the design team began during preparation of this proposal.

Design Staff Role during Construction: Once the design has been completed and construction is fully underway, the design team's work is not done. The designers are still an integral and important member of the construction support staff and are involved in many construction related activities. The design team will remain intact to address issues in a timely fashion. This way, the project schedule, quality, safety and budget can be managed effectively. Some of the design activities during construction include responding quickly and clearly to any RFI's (either formal or informal); reviewing shop drawings; preparing of working drawings; evaluating and adjusting MOT plans and set ups (to meet actual field and traffic conditions); revising designs to meet actual field conditions as changed conditions are encountered, methods or means dictate or material availability changes; and preparation of complete and accurate as-builts. Additionally, during construction the designers make regular site visits to review what is being built and based on field conditions may even revise designs to provide the best solution and a successful project.

Review of Plans: Prior to formal submittal to SHA, all design submittals prepared by the Designer will undergo a constructibility review to guarantee the construction methods and the materials proposed are proper and acceptable. All design calculations, plans, and technical documents prior to formal submittal to the SHA will be

reviewed by the project's designated Checker. The designated Checker will be a licensed professional engineer familiar with the project, but independent of the design efforts. Dewberry will review all plans for excavation support, erection; rebar fabrication, and formwork that are prepared by Facchina.

Construction QA/QC Review: Dewberry will provide QA/QC Review for all construction phase design services. Field changes to previously approved plans shall be subject to the same level of review as the original design to assure that the revisions meet the contract requirements. Dewberry recognizes the critical nature of the design services provided during construction and will make every effort to minimize the turnaround time, to avoid adverse impact the construction schedule.

Organizational Chart: We assembled our team and illustrated it's structure on the Organizational Chart following this section. The assembled professionals have worked together on past Facchina projects, as well as served as team members on Facchina-Dewberry design-build projects.

Organization Structure: Facchina will bring together substantial and overlapping skill to this project with knowledgeable, experienced engineers and construction managers. Facchina will provide experienced team members that have completed multiple SHA projects. This is only part of the formula that is needed to achieve a successful outcome for all stakeholders involved with this complex project. The other part of the formula is to have the designers and contractors involved and cooperating throughout the entire project.

From the start of the project, the following Key Staff will work "hand in hand" to develop a comprehensive work plan for the design and construction of the project with integrated thought and consideration to design submittals, obtaining permits, staging and delivery of long lead materials, and utility relocations.

Company		Role
Facchina Construction Company, Inc.		Prime Contractor
Dewberry Consultants, LLC		Lead Design Firm
Sabra, Wang & Associates, Inc.*		Traffic Engineering
Rosborough Communications, Inc.*		Public Outreach
Straughan Environmental, Inc.*		Environmental Permitting
AB Consultants, Inc.*		Survey, Geotechnical, Pavement, & Design Quality Control
NMP Engineering Consultants, Inc.*		Landscaping, SWM As-built Certifications
Daniel J. O'Leary, PE		Approved MDE Reviewer

* MDOT Certified MBE Firm

Areas of Expertise: We assembled a strong team; our key staff have the required experience, qualifications, and expertise to design, construct, and effectively address the necessary challenges resulting in a quality project delivered on time and within budget. These areas of expertise include:

- **Community Outreach/Public Involvement.** Facchina understands that SHA has spent a significant amount of time working with the MD 4 stakeholders to advance the project to this point. Because of the importance of the continued task force coordination, public outreach and education associated with this project, Facchina has chosen Rosborough Communication, Inc. (RCI) to lead this effort for the team. Facchina along with **Mr. Anthony Brown from RCI**, are committed to providing full-time public involvement support for the duration of the project. RCI is a full service public outreach and communications firm who specializes in media, public and community relations, and event planning in transportation projects. RCI has led the public outreach for a number of high profile transportation projects in Maryland including the ICC, WMATA Blue Line extension, Purple Line, Red Line, and the I-95 ETL's.

- **Traffic Calming.** Between Dewberry and Sabra, Wang & Associates, we have extensive experience with identifying, analyzing, and implementing traffic calming technique on projects in the Mid-Atlantic area. We take an interdisciplinary approach to streetscape and traffic calming improvement programs—where planners, traffic and roadway engineers, and landscape architects (supported by architectural historians and environmental scientists as applicable) evaluate site specific challenges, take input from the community, and develop a vision founded on practical and appropriate solutions to shape more livable communities. In approaching streetscape and traffic calming projects, we recognize the need for a comprehensive vision that doesn't stop at the sidewalk but considers the interaction between drivers, pedestrians, cyclists, bus travelers, and visitors.
- **Traffic Engineering.** Facchina and Dewberry along with **Mr. Keith Riniker, PE, PTOE from Sabra, Wang & Associates** are committed to providing traffic engineering services for all aspects of the project. We make motorist safety and mobility the keystones of our TMP and TCPs, as used on as part of the Intercounty Connector Project Contract C and Contracts D/E. We will provide a TMP and construction program that significantly reduces the projects' impacts to the travelling public and also exceeds minimum public safety requirements.
- **MDE Experience.** Facchina and Dewberry, along with **Mr. Dan O'Leary, PE**, an approved MDE reviewer, are all committed to working with SHA and MDE to develop comprehensive designs that meet all current design criteria and guidelines – as demonstrated on the two most environmentally sensitive projects in Maryland, the ICC C and D/E projects.

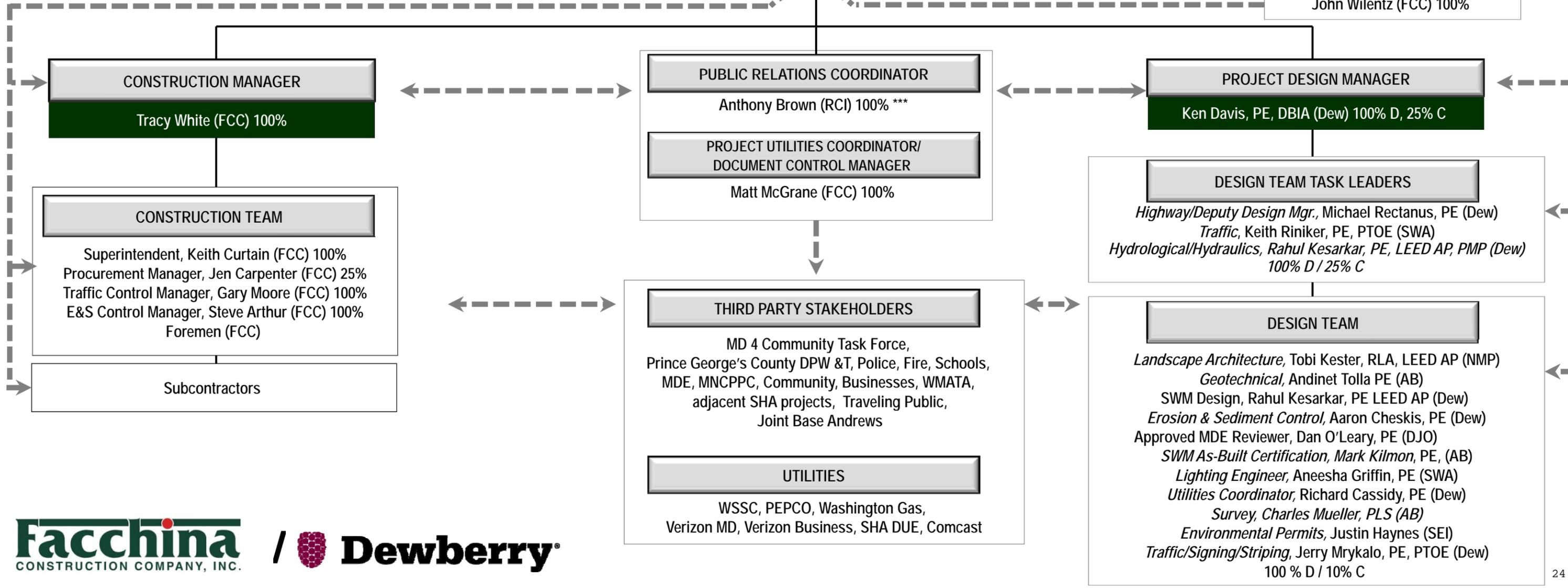
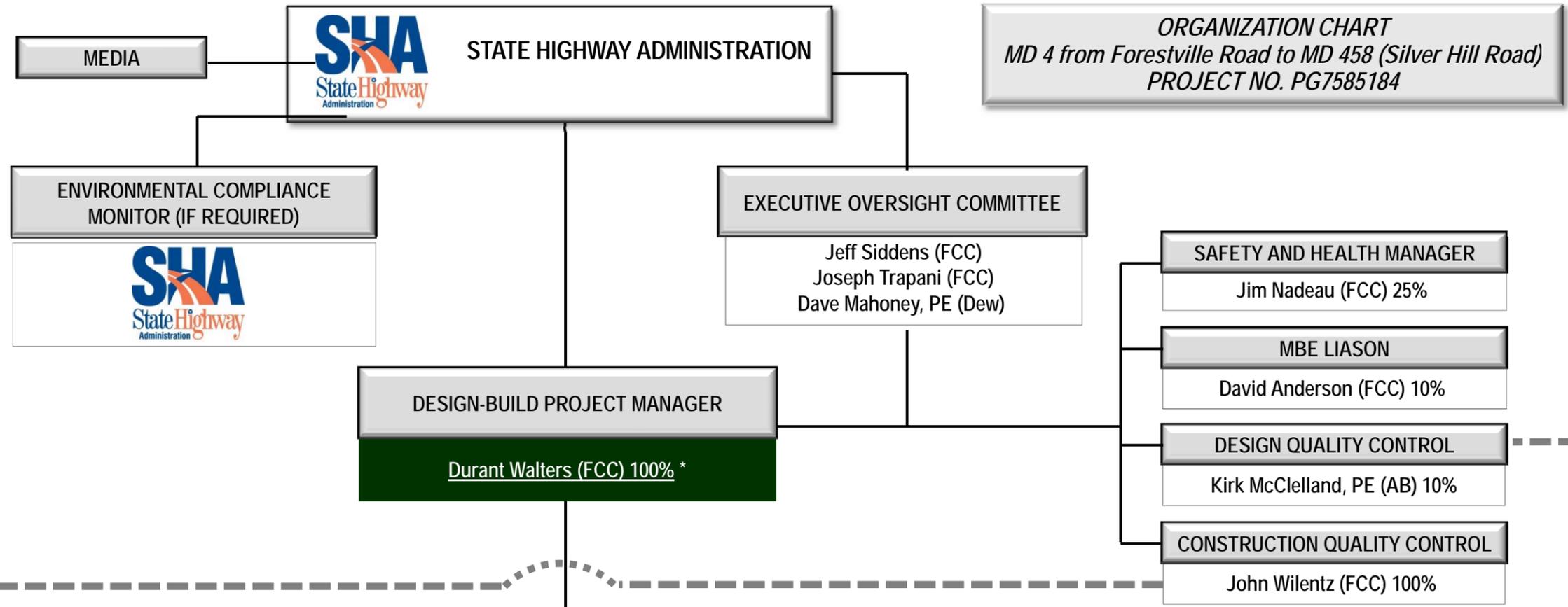
Legend
 Facchina Construction Company, Inc. (FCC)
 Dewberry Consultants LLC (Dew)
 Sabra Wang & Associates (SWA)**
 AB Consultants, Inc. (AB)**
 Rosborough Communications, Inc. (RCI)**
 Straughan Environmental Inc. (SEI)**
 NMP Engineering Consultants, Inc. (NMP)**
 Daniel J. O'Leary, PE (DJO)

Time Commitment:
 % = Percentage for entire project
 %D / %C = Percentage during Design phase / Percentage during Construction phase

Communication / Reporting:
 Direct Reporting _____
 Open Communication/Coordination <----->
 Key Personnel [Green Box]

* Primary Point of Contact
 ** MDOT Certified MBE
 *** The Public Relations Team will be available 100% of the time during the duration of the project.

ORGANIZATION CHART
 MD 4 from Forestville Road to MD 458 (Silver Hill Road)
 PROJECT NO. PG7585184



Critical Path Management Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	2015												2016												2017											
					Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
A1000	Notification of Selection	0	15-Sep-14		◆ Notification of Selection																																			
A1010	Survey (LIDAR + Ground)	40	15-Sep-14	21-Nov-14	■ Survey (LIDAR + Ground)																																			
A1020	Geotech (Field & Report)	90	15-Sep-14	26-Feb-15	■ Geotech (Field & Report)																																			
A1030	FAA Approval (Scott Airforce Base)	60	15-Sep-14	08-Dec-14	■ FAA Approval (Scott Airforce Base)																																			
A1040	Pavement Reports	60	15-Sep-14	08-Dec-14	■ Pavement Reports																																			
A1050	Roadway - Design 60% Plans	65	27-Feb-15	29-May-15	■ Roadway - Design 60% Plans																																			
A1052	Roadway - SHA Review 60% Plan	15	01-Jun-15	19-Jun-15	■ Roadway - SHA Review 60% Plan																																			
A1054	Roadway - Design 100% Plans	40	22-Jun-15	17-Aug-15	■ Roadway - Design 100% Plans																																			
A1056	Roadway - SHA Review 100% Plans	15	18-Aug-15	08-Sep-15	■ Roadway - SHA Review 100% Plans																																			
A1057	Roadway - Issue Plans For Construction	20	09-Sep-15	06-Oct-15	■ Roadway - Issue Plans For Construction																																			
A1059	Roadway - SHA Review Plans For Construction	15	07-Oct-15	27-Oct-15	■ Roadway - SHA Review Plans For Construction																																			
A1060	Traffic Design (Signing, Marking, Signals etc) 60% Plan	65	10-Apr-15	13-Jul-15	■ Traffic Design (Signing, Marking, Signals etc) 60% Plan																																			
A1062	Traffic Design - SHA Review 60% Plans	15	14-Jul-15	03-Aug-15	■ Traffic Design - SHA Review 60% Plans																																			
A1064	Traffic Design - 100% Plans	40	04-Aug-15	29-Sep-15	■ Traffic Design - 100% Plans																																			
A1066	Traffic Design - SHHA Review 100% Plans	15	30-Sep-15	20-Oct-15	■ Traffic Design - SHHA Review 100% Plans																																			
A1068	Traffic Design - Issue Plans for Construction	20	21-Oct-15	17-Nov-15	■ Traffic Design - Issue Plans for Construction																																			
A1069	Traffic Design - SHA Review Plans for Construction	15	18-Nov-15	09-Dec-15	■ Traffic Design - SHA Review Plans for Construction																																			
A1070	Traffic Control Plan - Design 60% Plans	65	10-Apr-15	13-Jul-15	■ Traffic Control Plan - Design 60% Plans																																			
A1072	Traffic Control Plan - SHA Review 60% Plans	15	14-Jul-15	03-Aug-15	■ Traffic Control Plan - SHA Review 60% Plans																																			
A1074	Traffic Control Plan - Design 100% Plans	40	04-Aug-15	29-Sep-15	■ Traffic Control Plan - Design 100% Plans																																			
A1076	Traffic Control Plan - SHA Review 100% Plans	15	30-Sep-15	20-Oct-15	■ Traffic Control Plan - SHA Review 100% Plans																																			
A1078	Traffic Control Plan - Issue for Construction	20	21-Oct-15	17-Nov-15	■ Traffic Control Plan - Issue for Construction																																			
A1079	Traffic Control Plan - SHA Review Plan for Construction	15	18-Nov-15	09-Dec-15	■ Traffic Control Plan - SHA Review Plan for Construction																																			
A1080	Traffic Management Plan (Narrative) - 60% Plan	20	10-Apr-15	07-May-15	■ Traffic Management Plan (Narrative) - 60% Plan																																			
A1082	Traffic Management Plan - SHA Review 60% Plan	15	08-May-15	29-May-15	■ Traffic Management Plan - SHA Review 60% Plan																																			
A1084	Traffic Management Plan (Narrative) - 100% Plan	20	01-Jun-15	26-Jun-15	■ Traffic Management Plan (Narrative) - 100% Plan																																			
A1086	Traffic Management Plan - SHA Review 100% Plan	15	29-Jun-15	20-Jul-15	■ Traffic Management Plan - SHA Review 100% Plan																																			
A1100	Landscape - Design 60% Plan	40	10-Apr-15	05-Jun-15	■ Landscape - Design 60% Plan																																			
A1110	Landscape - SHA Review 60% Plan	15	08-Jun-15	26-Jun-15	■ Landscape - SHA Review 60% Plan																																			
A1120	Landscape - Design 100% Plan	30	29-Jun-15	10-Aug-15	■ Landscape - Design 100% Plan																																			
A1130	Landscape - SHA Review 100% Plan	15	11-Aug-15	31-Aug-15	■ Landscape - SHA Review 100% Plan																																			
A1140	Landscape - Issue Plan for Construction	20	01-Sep-15	29-Sep-15	■ Landscape - Issue Plan for Construction																																			
A1148	Landscape - SHA Review Plan for Construction	15	30-Sep-15	20-Oct-15	■ Landscape - SHA Review Plan for Construction																																			
A1200	Storm Water Management (SWM)- Confirm Concept Report	30	15-Sep-14	24-Oct-14	■ Storm Water Management (SWM)- Confirm Concept Report																																			
A1210	SWM - Design 100% Plan - 1st Submission	40	27-Oct-14	22-Dec-14	■ SWM - Design 100% Plan - 1st Submission																																			
A1220	SWM - SHA/MDE Review 100% Plan - 1st Submission	20	23-Dec-14	21-Jan-15	■ SWM - SHA/MDE Review 100% Plan - 1st Submission																																			
A1230	SWM - Design 100% Plan - 2nd Submission	20	22-Jan-15	18-Feb-15	■ SWM - Design 100% Plan - 2nd Submission																																			
A1240	SWM - SHA/MDE Review 100% Plan - 2nd Submission	20	19-Feb-15	18-Mar-15	■ SWM - SHA/MDE Review 100% Plan - 2nd Submission																																			
A1250	SWM - Design 100% Plan - 3rd Submission	15	19-Mar-15	08-Apr-15	■ SWM - Design 100% Plan - 3rd Submission																																			
A1260	SWM - SHA/MDE Review 100% Plan - 3rd Submission	20	09-Apr-15	06-May-15	■ SWM - SHA/MDE Review 100% Plan - 3rd Submission																																			
A1270	SWM - Design 100% Plan - Issue for Construction	5	07-May-15	13-May-15	■ SWM - Design 100% Plan - Issue for Construction																																			
A1280	SWM - Design 100% Plan for Constr - SHA/ MDE Review	5	14-May-15	20-May-15	■ SWM - Design 100% Plan for Constr - SHA/ MDE Review																																			
A1300	Erosion & Sediment Controls (ESC) - Initial Plan - 1st Submission	20	21-May-15	18-Jun-15	■ Erosion & Sediment Controls (ESC) - Initial Plan - 1st Submission																																			
A1310	ESC - Initial Plan - SHA/MDE Review - 1st Submission	20	19-Jun-15	17-Jul-15	■ ESC - Initial Plan - SHA/MDE Review - 1st Submission																																			

■ Actual Work ■ Summary
■ Remaining Work
■ Critical Remaining Work
◆ Milestone

Facchina Construction Company, Inc.
 Maryland Rt 4 from Forestville Rd to Md Rt 458
 Contract # 7585184

Date	Revision	Checked	Approved

2.09.04 Team Experience

Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

FORM A-1

PROPOSED KEY STAFF INFORMATION

Name of Proposer: Facchina Construction Company, Inc.

Position	Name	Years of Experience¹	Education/ Registrations	Name of Employer
Design-Build Project Manager	Durant Walters, PE	1 / 25	B.S./1999 Civil Engineering PE MD #41726 MD SHA MOT Manager MD SHA E&S Control Certification Yellow Card MD E&S Control Certification Green Card OSHA 30 Hour	Facchina Construction, Inc.
Construction Manager	Tracy White	13 / 19	B.A. / 2005 Business Management OSHA 30-Hour Course MD SHA E&S Control Certification Yellow Card MD E&S Control Certification Green Card HCSS Estimating Software Expedition Construction Management Software ARTBA Schedule Training	Facchina Construction, Inc.

¹ Present Firm/Total

EDUCATION

B.S., Civil Engineering, University of Maryland, 1999

CERTIFICATIONS, ACCREDITATIONS AND SPECIALIZED TRAINING

Professional Engineer, MD #41726; VA #49300, Commonwealth of Virginia Certified Responsible Land Disturber, MD SHA MOT Manager, MD SHA E&S Control Certification "Yellow Card" (11-188), MD E&S Control Certification "Green Card" (47034), OSHA 30 Hour

SUMMARY OF EXPERIENCE

Mr. Walters, a licensed civil engineer 25+ years experience in heavy civil and heavy highway construction. He has been the Design-Build Manager and/or Construction Manager on several major highway projects in densely urban environments with similar or greater complexity and breadth of scope than the MD 4 project. While providing overall management direction for field projects, Mr. Walters excels in establishing project objectives, policies, procedures and performance standards. His ability to plan, organize and staff key positions compliments his capability to monitor and control the project construction. He provides administrative direction of on-site management and construction personnel to ensure the project is built on schedule and within budget. Mr. Walters is skilled in investigating potentially serious situations and implementing corrective measures to make certain the project runs smoothly. He is a diplomatic representative of the company in project meetings, assists in labor negotiations and strategy meetings, and manages financial aspects such as fee payment, rental equipment, and income/expenses to maintain a positive relationship with the Owner.

RELEVANT EXPERIENCE

Mr. Walters' extensive experience as a Design-Build Project Manager including all of his roles and responsibilities identified in his "Summary of Experience" to the left are applied to all of the projects below.

Project Manager – I-95 Express Toll Lanes MD 43 Interchange (White Marsh, MD)

Mr. Walters served as the Project Manager on the I-95 Express Toll Lanes MD 43 Interchange in White Marsh, MD for the MD Transportation Authority beginning in November 2012. This \$142.5M project involved the reconstruction of 1.6 miles of the existing eight lane divided highway into eight General Purpose (GP) Lanes and four Express Toll Lanes (Managed Roadway) 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 and the extension of drainage culverts and the realignment of a 48' sanitary sewer interceptor. MD 43 was realigned and widened from four to six lanes for a distance of approximately 1.1 miles through the interchange. The interchange ramps were realigned, one full signal and two half signals at the ramp connections to MD 43 were added, miscellaneous structural repairs and construction were performed and the MdTA facilities were maintained.

Design/Build Project Manager – 9th Street Bridge Design-Build Bridge Replacement (Washington, DC)

Mr. Walters served as the Design-Build Manager and Project Manager for the \$58M replacement of the 9th Street Bridge for the Federal Highway Administration in Washington, DC. The Project included the construction of a new 645' long-four span, four-lane structure over 9th street, AMTRAK and CSXT railroads in N.E. DC. Specific Project challenges that were overcome include the coordination of multiple owner requirements and specifications, the development of an aesthetic program proving the Owner with a gateway project, and working in the restrictions imposed by underlying railroads.

Project Manager – Taylor Street Design-Build Bridge Replacement (Washington, DC)

Mr. Walters served as the Project Manager for the replacement of the Taylor Street Bridge in Washington, DC for the Federal Highway Administration. This design-build project included the replacement of the Taylor Street Bridge over Brookland Avenue, EMATA Metro and CSX Transportation railroads. This \$10M project met many challenges, including intricate railroad coordination. Keys to the project success involved identifying and controlling betterments, a proactive community program and working closely with the Owner and Designer to implement design revisions for budget control.

Project Manager – Cross County Connector Phase 4B Middletown Road Phase 2 (Waldorf, MD)

Mr. Walters served as the Project Manager for Phase 4B of the Cross County Connector – Middletown Road Phase 2. This \$9M contract for Charles County Government improved Middletown Road and Billingsley Road to a 4-lane divided highway and included approximately 5,000 FT of new roadway construction, two storm water management ponds, a fully signalized intersection and a design/build 16" water main extending throughout the limits of the project.

Project Manager – Design-Build Quantico Greenside/Whiteside Hangars: Quantico, VA

Mr. Walters served as the Project Manager on this \$3M design-build subcontract to design and develop the final contract plans. Part of a multimillion dollar upgrade to the Presidential Helicopter Squadron Hanger Facility, work included the demolition of existing airfield and utilities and the construction of all new utilities, 4,000 LF of storm drain piping, import and placement of 60,000 CY of borrow, building pad, entrance roads, parking and security measures.

EDUCATION

B.A Business Management w/minor in Accounting, College of Notre Dame, 2005

CERTIFICATIONS, ACCREDITATIONS AND SPECIALIZED TRAINING

OSHA 30-Hour Course; HCSS Estimating Software; Expedition Construction Management Software; ARTBA Schedule Training MDYellow/Green Card

SUMMARY OF EXPERIENCE

Mr. White has nearly 20 years combined construction experience in heavy highway and site development related construction and construction management. At Facchina, Mr. White plays a key lead role in project management on projects ranging from \$5 - \$500M, including highway construction, site development, drainage, utility coordination and relocation, asphalt paving, MOT and concrete frame construction projects. His experience includes work with a variety of agencies including Maryland Aviation Administration, Maryland State Highway Administration, Maryland Transportation Authority, Baltimore County Parks & Recreation, Delaware Department of Transportation, Virginia Department of Transportation, and District of Columbia Department of Public Works. Recently, Mr. White was involved with the MdTA/MDSHA ICC project – considered the most environmentally sensitive project in the State's history. This project required a comprehensive management approach to heavy highway construction while adhering to strict MDE guidelines & implementing the latest SWM and E&S concepts.

RELEVANT EXPERIENCE

Mr. White's extensive experience as a Construction Manager including all of his roles and responsibilities identified in his "Summary of Experience" to the left are applied to all of the projects below.

Construction Manager – MD200 InterCounty Connector Contract D/E Design/Build (Laurel to Silver Spring, MD) \$90M heavy highway project under a joint venture partnership which included sharing administrative and field management. Project is the last leg of the a new, 6 lane highway linking existing and proposed development areas between the I-270 and I-95/US 1 corridors spanning Montgomery and Prince George's Counties with a multi-modal East-West limited-access highway that accommodates passenger and goods movement. The project involved \$10M utility relocations. It has extensive protective E&S efforts to protect the environment and meet the new strict MDE Requirements. An effective outreach program kept the public informed.

Construction Manager – MD200 InterCounty Connector Contract C Design/Build (Laurel to Silver Spring, MD) \$525M heavy highway project under a joint venture partnership, including sharing administrative and field management responsibilities. Project is the third leg of the a new 6-lane highway linking existing and proposed development areas between the I-270 and I-95/US 1 corridors spanning Montgomery and Prince George's Counties with a multi-modal East-West limited-access highway that accommodates the movement of passengers and goods. Approximately 4.0 miles of a new highway with 2.5 miles of auxiliary lanes and C-D ramps, including a three level interchange at US 29, a new interchange at Briggs Chaney Road and another three level interchange with I-95. The contract included 23 steel & concrete bridges, 125,000 SF of retaining & MSE walls, 140,000 SF of noise barrier, 2.4M cubic yards of excavation & embankment, 53,000 LF of storm drain (Including deep trunkline drainage), 14 SWM ponds, soil improvements (including soil cement & wick drains), Relocation of numerous public utilities (BGE, Comcast, Colonial Pipe, Montgomery County, Pepco, Verizon, Washington Gas, and WSSC), electrical and lighting, signage, MOT operations on two of the State's most heavily traveled roadways (I-95 & US29), and extensive protective erosion and sediment undertakings to protect the environment and meet the strict MDE requirements. An effective outreach program kept the public informed.

Project Manager – Central Parke @ Milford, Milford, DE \$5M site development project for private developer. Scope included 400k cubic yards of excavation, construction of several large SWM ponds, roadway construction, site utilities, and sanitary pump station.

Project Manager – Wilson Point Project, Baltimore, MD \$6M site development project for the Baltimore County Parks & Recreation. Scope included site construction for several large parking lots, road improvements, athletic field, site utilities, boat ramp, marine retaining wall, and dock.

Project Engineer – I-695 @ I-83 Improvements, Baltimore, MD \$20M heavy/highway project for SHA. Scope included replacing/reconstructing five bridges, and improvements to I-695, I-83 Southbound ramp, Falls Road, Joppa Road, and Thornton Road.

Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

FORM A-2 LEAD CONSTRUCTION FIRM

PROJECT DESCRIPTION

Name of Proposer: Facchina Construction Company, Inc

Name of Construction Firm: <u>Facchina Construction Company, Inc</u>	
Project Role: <u>Principal Participant</u>	
Contractor: <input checked="" type="checkbox"/> Other (Describe): _____	
Years of Experience: Roads/Streets: <u>27</u> Bridges/Structures: <u>27</u> Environmental: <u>27</u>	
Project Name and Location: <u>Design-Build of MD 200 Intercounty Connector, Contract C, Montgomery & Prince George's Counties, MD</u>	
Description and Specific Nature of Work for which Firm was responsible and relevance to this contract: <p>Facchina, as a member of the ICC Constructors (IC3), A Joint Venture was selected in January of 2008 as the design-build team for Contract C of the Intercounty Connector (ICC) with Dewberry as the Lead Designer. Contract C includes 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 will create the 18.8-mile ICC, which will connect the I-270/I-370 corridor in Montgomery County to the I-95/US-1 corridor in Prince George's County.</p> <p>Owner requested revisions to the scope of work increased the contract value from \$513.9 million to \$525.9 million.</p> <p>The scope of Contract C a three level interchange with US 29, a new interchange with Briggs Chaney Road and a new three level interchange with I-95. It also included the widening and reconstruction of Briggs Chaney Road, Old Gunpowder Road, and Old Columbia Road (total of 7,400 LF). Included in the project was the design and construction of 2,100 LF of new sidewalk, 18 new ADA ramps, and over 11,100 LF of new shared use pedestrian and bicycle trails.</p> <p>There are 20 new bridges, with aesthetic elements to complement the surrounding area. The Team is responsible for structure design, construction, environmental services, floodplain and stormwater management, multiple jurisdiction involvement, and maintenance of traffic on I-95 and US 29. Additionally, the Team is responsible for the Project's QA/QC implementation and conformance. There is a significant commitment from the Project Team to limit environmental impacts to the surrounding communities and area, which includes Little Branch Stream Valley Park and Fairland Regional Park. An Environmental Compliance Plan, which was implemented and managed by the IC3 team, 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 projects. As the ICC Project was considered the most environmentally sensitive project in Maryland History, great effort was put forth to achieve the high expectation of the project as required by MDE. Coordination between the Dewberry and IC3 to design an environmentally compliant project though the use of BMPs 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</p>	



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swales, Retention Structures, Retrofitting, and Extended Detention methods were significant in IC3's ability to provide the maximum credits to the State while maintaining a project that was constructible and financially sensible.

Mr. Tracy White served as our Construction Manager for the ICC Contract C project. His responsibilities included oversight of field staff, subcontractors and suppliers (including DBE firms) to meet the scheduling milestones, quality standards, safety requirements and the project's budget. Integration of all these aspects of the project was concurrent and integrated into the project's design. Mr. White performed constructability reviews and worked closely with Dewberry design professionals in regards to the SWM plans, E&S Phasing, and overall Environmental impacts to the project. This relationship, built on previous projects, will be used on the MD 4 project. Having this experience of working together on several design-build projects with Dewberry will enable Mr. White and the whole team to hit the ground running to assure the project is completed on time. On schedule is critical for all of the stakeholders. Making sure the project meets or exceeds the requirements for safety, financial performance, and environmental quality were elements of Mr. White's responsibility on the ICC Project and will be the same for MD 4 project.

Project Items Similar to work required for MD 4 Project:

- Roadway Design and Construction
- Maintenance of Pedestrian and Vehicular Traffic
- Utility Coordination and Relocation
- Environmental Compliance and Stormwater Management
- Coordination with multiple stakeholders including SHA, residents, and businesses.
- Community Relations and public outreach

List any awards and/or commendations received for the project: Quarterly Environmental Compliance Incentive Awards- 9 from December 2008 through March 2011 | 2011 Top Roads, Roads & Bridges Magazine | 2012 "Globe Award" American Road & Transportation Builders Association | 2012 America's Transportation Award - Best Use of Innovation AASTHO | 2012 American Concrete Institute Award for Heavy Construction American Concrete Institute - National Chapter | 2012 Best Transportation Project, Award of Merit ENR Mid-Atlantic | 2012 Excellence in Construction Awards - Heavy/Industrial/Transportation Construction, Associated Builders and Contractors of Metro Washington | 2012 National Design-Build Award in Transportation National Design-Build Awards Competition | 2012 Washington Contractor Award "Over \$150M" Category, Associated General Contractors of America | 2013 Outstanding Civil Engineering Achievement (Large Project) Award, American Society of Civil Engineers, Maryland Section | 2014 Honor Award Project of the Year Engineering Society of Baltimore | 25th Anniversary "Salute" Northern Virginia Transportation Alliance | American Concrete Institute Award for Heavy Construction American Concrete Institute | Quarterly Environmental Compliance Incentive Awards

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

Address: 707 North Calvert Street, Baltimore, Maryland 21202

Contact Name: Mark Coblentz

Telephone: 301.586.9267

Owner's Project or Contract No.: AT3765C60

Fax No.: 301.586.9222

Contract Value (US \$): \$513.9 Million

Final Value (US \$): \$525.9 Million (Due to Owner Change in Scope)

Percent of Total Work Performed by Company: 30%

Commencement Date: Jan. 2008

Original Completion Date As Defined by IFB: Nov. 2011

Actual Completion Date: Nov. 11, 2011

Any disputes taken to arbitration or litigation? Yes No

Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

FORM A-2 LEAD CONSTRUCTION FIRM

PROJECT DESCRIPTION

Name of Proposer: Facchina Construction Company, Inc.

Name of Construction Firm: <u>Facchina Construction Company, Inc.</u>	
Project Role: <u>Principal Participant</u>	
Contractor: <input checked="" type="checkbox"/> Other (Describe): _____	
Years of Experience: _____	
Roads/Streets: <u>27</u> Bridges/Structures: <u>27</u> Environmental: <u>27</u>	
Project Name and Location: <u>Dulles Corridor Metrorail Project-MOT Early/Final Roadway Construction</u>	
Description and Specific Nature of Work for which Firm was responsible and relevance to this contract:	
<p>Facchina is currently completing work for the Dulles Transit Partners on their project to extend the Metrorail from Falls Church, VA to Dulles International Airport. Facchina received contracts for two major portions totaling over \$80 million of the overall \$1.6 billion project. The project involved creating space in the median for the new Metrorail line. This was accomplished by relocating existing Route 7 past the outside shoulders. The project consisted of heavy civil/structural work over an eleven-mile stretch of primarily commercial properties through some of the most congested and highly traveled roadways in the Washington, DC metro area.</p> <p>Facchina was responsible for installing maintenance of traffic (MOT) and performing all civil/roadway work for the first phase of the extension which brings the Metrorail to Wiehle Road. Facchina constructed retaining walls, widened roads, installed traffic signals and overhead signs, provided concrete flat work and paving, along with the MOT.</p> <p>Facchina also designed and obtained regulatory approval for all MOT, temporary roadway alignment shifts, and intersection signalization. The project was a design-build deliverable. Our partner, Dewberry, was part of the design build team and they were responsible for the roadway design for our section of work. The entire project extends from Route 66 to Wiehle Road on the Dulles Toll Road and includes significant civil work along Route 7 through Tysons Corner, VA. Facchina has had to vary (both delay and accelerate) its construction pace in order to service the client's needs, which are driven by developments in the remainder of the project. We have managed multiple crews to ensure that the overall project schedule was maintained. Construction operations included reconstruction and realignment of I-66, the Dulles Connector Road, the Dulles International Airport Access Highway, Route 7, and Route 123.</p>	 

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The roadway construction work requires multiple traffic switches along the length of the project, MOT phasing, and coordination with adjacent projects that make up the VDOT "Mega Projects" program. The project required 160,000 CY of excavation, seven new retaining walls (cast in place, MSE, modular block), 18,000 LF of storm sewer, 2,000 LF of 24" water main and the design/reconstruction of over 20 temporary and permanent intersections.



Facchina was responsible for quality control associated with our scope of work. QC testing and inspections were performed by EMC2 of Rockville, MD. The greatest challenge of the project has been working safely and efficiently in a heavily congested, highly traveled road way system while satisfying the varied needs of the project's numerous stakeholders including VDOT, MWAA, DTP, utility owners, local residents, and the traveling public. Doing all of this was necessary while continuing to satisfying contractual commitments and obligations, maintaining schedule, and controlling cost of the project.

Facchina was responsible for quality control associated with our scope of work. QC testing and inspections were performed by EMC2 of Rockville, MD. The greatest challenge of the project has been working safely and efficiently in a heavily congested, highly traveled road way system while satisfying the varied needs of the project's numerous stakeholders including VDOT, MWAA, DTP, utility owners, local residents, and the traveling public. Doing all of this was necessary while continuing to satisfying contractual commitments and obligations, maintaining schedule, and controlling cost of the project.

Project Items Similar to work required for MD 4 Project:

- Roadway Design and Construction
- Maintenance of Significant Pedestrian and Vehicular Traffic
- Utility Coordination and Relocation
- Traffic Signals and Overhead Signs
- Coordination with multiple stakeholders including VDOT, MWAA, DTP, utility owners, local residents, and the traveling public.

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

Name of Client (Owner/Agency, Contractor, etc.): Metropolitan Washington Airports Authority (MWAA)/ Dulles Transit Partners

Address: 1 Aviation Circle, Washington D.C. 20001

Contact Name: John Tarascio

Telephone: 703.872.4796

Owner's Project or Contract No.:

Fax No.:

Contract Value (US \$): \$80 million

Final Value (US \$): \$80 million

Percent of Total Work Performed by Company: 100%

Commencement Date: June 2009

Original Completion Date As Defined by IFB: July 2013

Actual Completion Date: July 2013

Any disputes taken to arbitration or litigation?

Yes

No

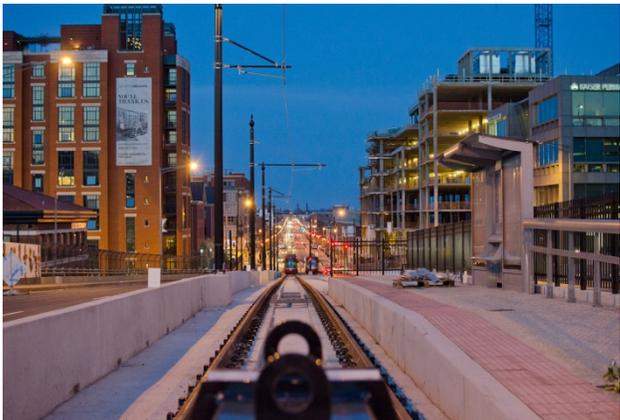
Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

FORM A-2 LEAD CONSTRUCTION FIRM

PROJECT DESCRIPTION

Name of Proposer: Facchina Construction Company, Inc

Name of Construction Firm: <u>Facchina Construction Company, Inc.</u>	
Project Role: <u>Principal Participant</u>	
Contractor: <input checked="" type="checkbox"/> Other (Describe): _____	
Years of Experience: _____	
Roads/Streets: <u>27</u> Bridges/Structures: <u>27</u> Environmental: <u>27</u>	
Project Name and Location: <u>H Street/Benning Road Streetcar Implementation Design Build Project</u>	
Description and Specific Nature of Work for which Firm was responsible and relevance to this contract:	
<p>In June 2012, the District Department of Transportation (DDOT) awarded Dean-Facchina Joint Venture the design-build contract for the H Street/Benning Road Streetcar Implementation Project. The initial, design-only contract was complete in July 2013. DDOT has since awarded the construction portion of the project in phases. The initial phase will be completed in October 2014. The final phase is scheduled for a July 2015 completion.</p>	
<p>The H Street/Benning Road project is the first streetcar route to carry passengers in the District of Columbia in over 50 years. It extends between Union Station and the Anacostia River along H Street and Benning Road traversing dense residential and commercial areas. This 2.4 mile segment is part of the Once City Line connecting the Benning Road Metro Station and Georgetown, and is an integral part of the District's plan for an Integrated Premium Transit System.</p>	
<p>The project consists of the relocation of existing water and sewer lines, the installation of new drainage, stormwater management, new track, overhead contact system (OCS), traction power and traction power substations, train controls, traffic signals, and system integration and roadway reconstruction. In addition, Dean-Facchina is contracted to develop and construct a car barn that will serve as maintenance facility/vehicle storage as well as a training and community center. The Car Barn Training Center (CBTC) is being constructed on a historically designated site, and will be built in the architectural</p>	

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context of the surrounding historic structures while maintaining a modern appearance and functionality. The CBTC site is also located within the immediate vicinity of the Anacostia River; a river that has become a landmark for environmental restoration in urban settings.

The Dean-Facchina Team is sensitive to the importance of a cleaner Anacostia. As such, our team has tailored the design and construction of the project to ensure that effluent from the site will have no negative impacts. Dean-Facchina worked closely with the District Dept. of the Environment during the stormwater management development and has designed a system that will provide 100% stormwater treatment on-site.

The re-introduction of streetcars to the H Street has spawned significant economic development. One of the challenges of the streetcar project has been constructing the project while maintaining access to the numerous small businesses that have invested in the area. Dean-Facchina has worked closely with DDOT's communication team to maintain an open line of communications between the businesses, residents, developers, and traveling public. We developed and implemented plans to minimize disruptions through this highly traveled corridor and to provide safe access to all affected areas.



Project Items Similar to work required for MD 4 Project:

- Roadway Design and Construction
- Maintenance of Pedestrian and Vehicular Traffic
- Utility Coordination and Relocation
- Stormwater Management
- Coordination with Multiple Stakeholders including DDOT, Residents, and Businesses
- Community Relations and Public Outreach

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

Name of Client (Owner/Agency, Contractor, etc.): District Department of Transportation DDOT

Address: 55 M Street SE, Washington, DC 20003

Contact Name: Mr. Thomas Perry

Telephone: 202.907.7067

Owner's Project or Contract No.: DCKA-2010-R-0220

Fax No.: 202.671.0650

Contract Value (US \$): \$15 million

Final Value (US \$): \$15 million

Percent of Total Work Performed by Company: 50%

Commencement Date: November 2011

Original Completion Date As Defined by IFB: December 2013

Actual Completion Date: Ongoing – additional phases added for July 2015 completion

Any disputes taken to arbitration or litigation?

Yes

No

Contract Number: PG7585184

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FORM A-1

PROPOSED KEY STAFF INFORMATION

Name of Proposer: Facchina Construction Company, Inc.

Position	Name	Years of Experience¹	Education/ Registrations	Name of Employer
Project Design Manager	Kenneth Davis, PE, DBIA	7 / 18	M.S./1998 Civil Engineering B.S./1996 Civil Engineering PE MD 28350	Dewberry Consultants LLC

¹ Present Firm/Total

EDUCATION

M.S./1998 Civil Engineering
B.S./1996 Civil Engineering

CERTIFICATIONS, ACCREDITATIONS AND SPECIALIZED TRAINING

2002/Professional Engineer/MD #
28350

2009/Designated Design Build
Professional/DBIA

SUMMARY OF EXPERIENCE

Mr. Davis has 17+ years project management and technical experience on large, complex transportation design-build projects including ICC Contract C and D/E in MD, Dulles Rail Phase 2 in VA. He manages preliminary and final engineering design services, and the support associated with preparing Issued for Construction (IFC) plans. He coordinates efforts of project disciplines including surveys, ROW, environmental documentation/permitting, roadway geometrics, storm drainage, structures, geotechnical, pavements, noise analyses, hydrology and hydraulics, erosion and sediment control, MOT, signing and marking, pedestrian/bicycle improvements/ADA upgrades, traffic analyses, utility coordination /relocation, lighting, shop drawings, public involvement, as-built, and construction support.

He has valuable experience in public meetings and construction sequencing and constructability reviews. He is thoroughly familiar and ensures compliance with relevant design codes such as NEPA, AASHTO, MUTCD, SHA's Standards and Specifications, and other applicable codes, policy regulations, guidelines, and federal and State laws.

RELEVANT EXPERIENCE

Design Manager - ICC Contract D/E Design-Build, SHA, MD. Mr. Davis served on the \$90M design-build project that includes 1.25 miles of the new six-lane roadway, 4 miles of new CD roads, a half-diamond interchange, a Continuous Flow Interchange, 1.5 miles of roadway widening/reconstruction, and 1.8 miles of new bicycle facilities. Responsibilities: overall coordination of 40 multi-disciplinary engineering staff (10 discipline leads) in roadway design and drainage, ADA and bicycle upgrades, stormwater management, floodplain studies, erosion and sediment control, bridge and structures, geotechnical investigations and recommendations, signing and marking, signals, lighting, traffic analysis, environmental services, noise analysis, landscaping, and utility relocations. Attended and participated in weekly and monthly meetings including internal design progress meetings with contractor, design discipline task force meetings with the owner and owner's representatives, and Partnering and Community Involvement meetings.

Roadway Section Lead for Area M -- ICC Contract C (MD 200) Design-Build, SHA, MD. Mr. Davis served on Area M and as the Area E QC Engineer. Responsibilities included lead roadway design for 1.25 miles of MD 200, interchange at and widening of Briggs Chaney Rd. over MD 200, widening of Old Gunpowder Road over the \$525M MD 200, and both respective detour roads. Developed and delivered four submission packages including IFC plans, for both roadway and fencing. Overall coordination with roadway drainage, SWM, floodplain studies, ESC, bridge and structures (retaining and noise walls), signing and marking, fencing, signals, lighting, traffic analyses, signal design, environmental services, noise analyses, landscaping, and utility relocations. Worked with SHA, the ICC Team and the Cross Creek Community and Golf Club to realign the hiker/biker trail and noise wall and made changes to the landscaping design to REDUCE cuts/fills and project LOD eliminating impacts to the 14th hole. Participated in numerous project meetings including partnering, public involvement, task force and internal meetings. Construction-phase responsibilities included answering field generated RFIs.

Project Manager - Patterson Avenue, Baltimore County, MD. Design of a \$2.5M, 0.75-mile, traffic calming, community rehabilitation project. Responsibilities included oversight of all project aspects including developing horizontal/vertical roadway alignments and design, closed system storm drain design, roadway resurfacing (mill and overlay), full depth pavement design, wedge and level determination, pedestrian improvements, curb profiles, utility coordination, avoidance, and relocations (including offset inlet design to avoid gas and water main lines), permitting (erosion and sediment control design and stormwater management), and public involvement.

Deputy Project Manager and Task Manager -- SHA BCS 2006-19D Office of Highway Development, Statewide, MD. Design of 3 pedestrian and bicycle focused projects. Tasks: design ADA upgrades at District 3 transit sites; develop 2 pilot locations for Statewide Bikeway Improvements Library; and an On-Call Bicycle Improvement Feasibility Studies task. Responsible for data collection, design development, QA/QC of task deliverables, resource allocation, and subconsultant management.

Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

FORM A-2

PROJECT DESCRIPTION

Name of Proposer: Facchina Construction Company, Inc

Name of Firm: Dewberry Consultants LLC	
Project Role: <u>Lead Designer</u>	
Designer: <input checked="" type="checkbox"/> Contractor: <input type="checkbox"/> Other (Describe): _____	
Years of Experience: Roads/Streets: <u>58</u> Bridges/Structures: <u>58</u> Environmental: <u>58</u>	
<p>Project Name, Location, Description and Specific Nature of Work for which Company was responsible: Project Name and Location: Design-Build of MD 200 Intercounty Connector, Contract C Montgomery & Prince George's Counties, MD</p> <p>DESIGN-BUILD of MD 200 Intercounty Connector, Contract C, is a lump sum, Design-Build project with Facchina Construction Company, Inc. as a member of the IC3 Joint-Venture prime construction entity and Dewberry as the Lead Designer. The project consists of 3.8 miles of a new 6-lane ICC roadway and a three level interchange at US 29, a new interchange with Briggs Chaney Road and a new three level interchange with I-95. It also included the widening and reconstruction of Briggs Chaney Road, Old Gunpowder Road, and Old Columbia Road (total of 7,400 LF). Included in the project was the design and construction of 2,100 LF of new sidewalk, 18 new ADA ramps, and over 11,100 LF of new shared use pedestrian and bicycle trails. The contract also included 20 bridges, numerous retaining walls, 12 SWM ponds, ground improvement techniques; MOT on two of the State's most heavily traveled roadways, extensive protective features to the environment, landscaping and aesthetic treatments to bridges, walls and noise barriers to compliment the surrounding area.</p>  <p>Dewberry's responsibilities on this contract include providing services for mapping, surveys, geotechnical investigations, and design for the roadway interchanges, bridges and structures, SWM, floodplain studies, signing and marking, signals, ITS system, lighting, traffic analysis, environmental services, noise analysis, landscaping, and utility relocations. The Dewberry Design Team used innovative design solutions to completely redesign the I-95/MD 200 interchange along with ground improvements (wick drains and surcharge loading) in the East Wash Pond to eliminate bridges and significantly reduce the overall contract price. This required significant coordination with FHWA and the revisions to the IAPA.</p> <p>The Dewberry Design Team developed typical section design changes to the section that runs along the Cross Creek Golf Club's 14th hole. The team reduced the section, realigned the hiker/biker trail and noise wall and made changes to the landscaping design to REDUCE cuts/fills and project LOD eliminating impacts to the tee box, fairway and green. This effort required significant coordination with the Cross Creek Community and Golf Club.</p> <p>Ken Davis was the Area M Section Lead (west of Briggs Chaney Road to east of Old Gunpowder Road) and Area E QC Engineer (east of Old Gunpowder Road to east of I-95). Responsibilities included lead roadway design for 1.25 miles of MD 200 (ICC), interchange at and widening of Briggs Chaney Road over MD 200, widening of Old Gunpowder Road over the \$525M MD 200, both respective detour roads, and all associated</p>	

Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

pedestrian and bicycle facilities. Developed and delivered four submission packages (DD drawings, Interim, Final, and RFC plans) for both roadway and fencing disciplines. Provided overall coordination with roadway drainage, SWM, floodplain studies, ESC, bridge and structures (retaining and noise walls), signing and marking, fencing, signals, ITS system, lighting, traffic analyses, signal design, environmental services, noise analyses, landscaping, and utility relocations. Responsibilities also included participation in numerous project meetings including partnering, public involvement, task force and internal meetings. Construction-phase responsibilities included answering field generated RFIs.

ICC C staff proposed as Leads for MD 4 Project:

Discipline	Name	Discipline	Name
<i>Project Executive</i>	Dave Mahoney, PE	<i>Roadway Design</i>	Michael Rectanus, PE
<i>Traffic Engineering</i>	Jerry Mrykalo, PE	<i>SWM Design</i>	Rahul Kesarkar, PE
<i>ESC Design</i>	Aaron Cheskis, PE	<i>Lighting Design</i>	Aneesha Griffin, PE
<i>Utility Relocation Design</i>	Rich Cassidy, PE		

Project Items Similar to Work required for MD 4 Project:

Roadway widening and reconstruction | Pedestrian and bicycle facilities | Pedestrian, bicycle, and vehicle maintenance of traffic | Public involvement / coordination with local government officials and stakeholders | Obtaining MDE permits for SWM and ESC plans | Utility coordination and relocation | Signal design and interconnect | Landscaping | Environmental compliance and permitting.

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

2011 Top Roads, Roads & Bridges Magazine | 2012 "Globe Award" American Road & Transportation Builders Association | 2012 America's Transportation Award - Best Use of Innovation AASTHO | 2012 American Concrete Institute Award for Heavy Construction American Concrete Institute - National Chapter | 2012 Best Transportation Project, Award of Merit ENR Mid-Atlantic | 2012 Excellence in Construction Awards - Heavy/Industrial/Transportation Construction, Associated Builders and Contractors of Metro Washington | 2012 National Design-Build Award in Transportation National Design-Build Awards Competition | 2012 Washington Contractor Award "Over \$150 Million" Category, Associated General Contractors of America | 2013 Outstanding Civil Engineering Achievement (Large Project) Award, American Society of Civil Engineers, Maryland Section | 2014 Honor Award Project of the Year Engineering Society of Baltimore | 25th Anniversary "Salute" Northern Virginia Transportation Alliance | American Concrete Institute Award for Heavy Construction American Concrete Institute | Quarterly Environmental Compliance Incentive Awards

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

Address: 707 North Calvert Street, Baltimore, MD 21202

Contact Name: Marc Coblentz

Telephone: 443.844.9886

Owner's Project or Contract No.: AT3765C60

Fax No.: 301.586.9222

Contract Value (US\$): \$36.2 Million

Final Value (US \$): \$39.9 Million

Percent of Total Work Performed by Company: 50% of Design, 50% Stakeout & QC

Commencement Date: Jan 2008

Original Completion Date As Defined in IFB: Nov. 2011

Actual Completion Date: November 11, 2011

Any disputes taken to arbitration or litigation?

Yes

No

Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

FORM A-2

PROJECT DESCRIPTION

Name of Proposer: Facchina Construction Company, Inc.

Name of Firm: Dewberry Consultants LLC

Project Role: Lead Designer

Designer: X Contractor: Other (Describe):

Years of Experience:

Roads/Streets: 58 Bridges/Structures: 58 Environmental: 58

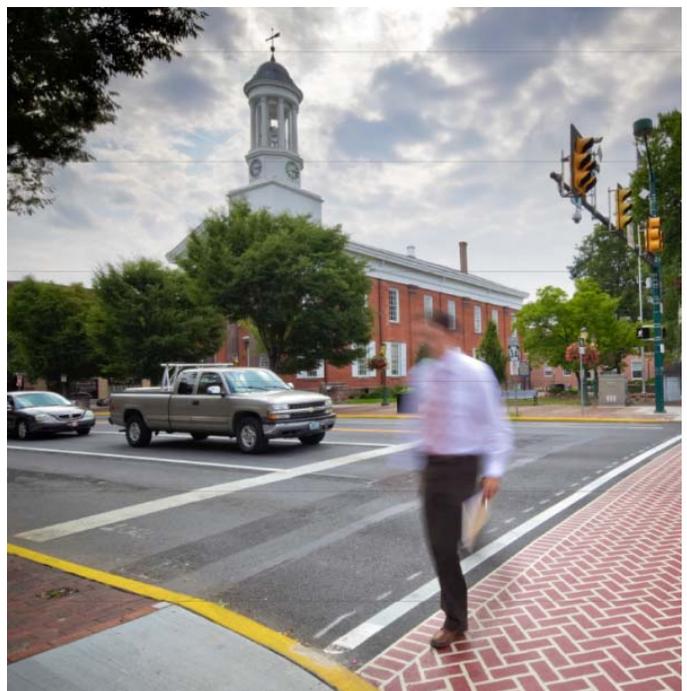
Project Name, Location, Description and Specific Nature of Work for which Company was responsible:

The Carlisle Road Diet, Carlisle, PA Dewberry was selected by the Borough of Carlisle to provide preliminary engineering and final design for the Downtown Carlisle Traffic Safety and Mobility project. Dewberry prepared construction drawings, specifications, and bid documents that implement the recommendations of the Comprehensive Traffic Study of Downtown Carlisle.

The primary objective of the traffic study recommended traffic pattern changes that achieved the following goals in downtown Carlisle:

- Calm traffic and enhance the Borough's "small town" feeling
- Reduce accidents and enhance safety
- Promote walking and bicycling
- Reduce air and noise pollution
- Maximize downtown business success
- Improve parking access and safety
- Reduce truck traffic through the downtown area

Carlisle's downtown was troubled by excessive vehicle speeds and long pedestrian crosswalks. The two four-lane roadways that intersect at the square created an auto-dominance that made it difficult for bicyclists and pedestrians to navigate through town. Implementation of the results of the study provided an excellent opportunity for the Borough to recreate the thriving, walkable downtown that it once had.



Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

The primary recommendation of the study called for a traffic calming "Road Diet" for High and Hanover Streets. Road Diets have been proven to reduce vehicle speeds by up to five miles per hour and to significantly reduce intersection accidents. Features of the Carlisle Road Diet included a conversion from four travel lanes to three and the addition of five foot wide bike lanes in each direction as depicted above. Dedicated left turn lanes at each intersection along the roadways increased safety and improved traffic flow. Curb extensions at intersections were planned to shorten the crossing distance for pedestrians, reducing their exposure to vehicles. The bike lanes serve as a buffer to make parallel parking easier and make entering and exiting your vehicle safer.



Significant upgrades to the existing traffic signals included emergency vehicle preemption, video detection for vehicles on the side streets, pedestrian pushbuttons, and pedestrian countdown signals to better serve the walkers in the downtown area. All of the curb ramps at each signalized intersection were upgraded to meet ADA requirements.

Construction was funded via a \$2.8M grant from the Pennsylvania Community Transportation Initiative. This program was intended to fund projects that best exemplify PennDOT's Smart Transportation goals and objectives. Additional funding in the amount of \$300,000 was provided by PennDOT directly for the inclusion of additional paving work that PennDOT combined with the Road Diet work.

Project Items Similar to Work required for MD 4 Project:

Roadway widening and reconstruction | Pedestrian and bicycle facilities | Pedestrian, bicycle, and vehicle maintenance of traffic | Public involvement / coordination with local government officials and stakeholders | Obtaining permits for SWM and ESC plans | Utility coordination and relocation | Signal design and interconnect | Landscaping | Environmental compliance and permitting.

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

Diamond Award for Excellence, ACEC/PA | Project of the Year, Small Projects, MASITE | CABBIE Award, Clean Air Board of Central PA

Name of Client (Owner/Agency, Contractor, etc.): Borough of Carlisle, PA

Address: 50 West South Street, Carlisle, PA 17013

Contact Name: Matthew Candland

Telephone: 717. 249.4422

Owner's Project or Contract No.: MPMS No. 87043

Fax No.: 717.240.6615

Contract Value (US\$): \$3,154,000.00

Final Value (US \$): \$3,154,000.00

Percent of Total Work Performed by Company: 75%

Commencement Date: 9/17/2009 Original Completion Date As Defined in IFB: August 2011

Actual Completion Date: August 2011

Any disputes taken to arbitration or litigation? Yes No

Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

FORM A-2

PROJECT DESCRIPTION

Name of Proposer: Facchina Construction Company, Inc

Name of Firm: Dewberry Consultants LLC	
Project Role: <u>Lead Designer - Roadway</u>	
Designer: <input checked="" type="checkbox"/> Contractor: <input type="checkbox"/> Other (Describe): _____	
Years of Experience: Roads/Streets: <u>58</u> Bridges/Structures: <u>58</u> Environmental: <u>58</u>	
Project Name, Location, Description and Specific Nature of Work for which Company was responsible: Project Name and Location: Dulles Corridor Metrorail Project Client: Dulles Transit Partners, LLC (DTP), Fairfax County, VA (Phase I)	
<p>The Dulles Corridor Metrorail Project is an extension of the existing Metrorail system in Fairfax County to Washington Dulles International Airport and beyond (for a total of 23.1 miles of new rail and 11 stations). Dewberry has been involved as a key designer in the overall project since the development and submission of the unsolicited PPTA proposal in 1998. Dewberry's initial key role was to provide the local design and permitting expertise the project required to be successful. Consulting and Preliminary Engineering (PE) services started in July 2001 and continued up to June 2007.</p>	
<p>From June 2007 through October 2011 under a fully authorized design-build contract by the Metropolitan Washington Airports Authority (MWAA) for Phase 1, Dewberry has been the key design subconsultant to the Design-Build Entity, DTP. Phase 1 is from the West Falls Church Station through Tyson's Corner to Reston (Wiehle Avenue). This phase of the project includes the design and construction of approximately 11.6 miles of new rapid rail with 5 stations and a new Service and Inspection Yard within the existing West Falls Church rail yard.</p>	
	<p>Working under the Phase 1 design-build Contract, Dewberry is a design subconsultant to DTP, the design-builder. Dewberry key staff have led or been involved in the preliminary layout and design of the major elements of the project, including: relocation & realignment of existing roads, coordination and submission of project permits, preliminary design of utility relocations, preparation of right-of-way plans in support of the acquisitions process, landscape architecture design for the station sites and Route 7 streetscape, design of bridges and elevated rail and design of stations and parking garages. The Route 7 improvements were constructed by Facchina under contract to DTP.</p>

Contract Number: PG7585184

Project Description: Design-Build RFP | MD 4 from Forestville Road to MD 458 (Silver Hill Road) | Community Safety and Enhancement Project in Prince George's County

Dewberry provided engineering, architectural, and permitting services including surveying, roadway design including geometric roadway design, roadway drainage design, roadway widening and reconstruction, design of new pedestrian and bicycle facilities, maintenance of traffic, traffic signal design, stormwater management design, erosion and sediment control design, architectural reviews, preparation of special exception plats and environmental services. In particular, Dewberry played a pivotal role in the design of the realigned Route 7 corridor within Tysons Corner. Dewberry's team led the roadway design required to accommodate the aerial Metrorail guideway in the median of existing Route 7 (a 6 lane Principal Urban Arterial). The existing median width needed to be increased to accommodate the piers, pier caps, guideway structure and stormwater management facilities associated with the proposed Metrorail alignment. Since Tysons Corner is a robust urban business district it includes many of the challenges associated with widening a roadway in a tight urban environment. The challenges included multiple commercial entrances each with a unique grade and access path required by the existing land use. It also included existing conflict points between pedestrian and vehicular facilities as well as varying cross sections and pavement sections along the corridor. Dewberry worked closely with the construction team to develop a design approach and construction phasing that minimized traffic impacts and reduced the number of required traffic shifts. Another challenge inherent in an urban environment is the flow of traffic through signalized intersections. Again Dewberry's team worked with the construction team and project stakeholders to develop both temporary and permanent coordinated signal timings to maintain traffic flow through the intersections which balanced both vehicular and pedestrian needs. The final design incorporated a streetscape concept that enhanced the security of the pedestrian pathway as well as addressing aesthetic concerns raised by the business district.

Throughout Phase 1, Dewberry engineers and architects worked closely with all project stakeholders including the Facchina construction team. Our experience and understanding of the appropriate criteria, reviewers' expectations, constructability and stakeholders' priorities will benefit the design-build team and SHA by avoiding and addressing issues early in the process.

Project Items Similar to Work required for MD 4 Project:

Roadway widening and reconstruction | Pedestrian and bicycle facilities | Pedestrian, bicycle, and vehicle maintenance of traffic | Public involvement / coordination with local government officials and stakeholders | Development of SWM and ESC plans | Utility coordination and relocation | Signal design and interconnect | Environmental compliance and permitting.

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

Name of Client (Owner/Agency, Contractor, etc.): Dulles Transit Partners, LLC (DTP)

Address: 1595 Spring Hill Road, # 600 Vienna, VA 22182-2228

Contact Name: George Morschauer

Telephone: 571.392.3455

Owner's Project or Contract No.: 25235-000-HC6-G00Y-00003 & 24969-000-HC6-G00Y-00003_____

Fax No.: _____

Contract Value (US\$): \$4.9 M (Dewberry)
Change Orders)

Final Value (US \$): \$15.6M (DTP Directed

Percent of Total Work Performed by Company: **1.56%**

Commencement Date: 2007 Original Completion Date As Defined in IFB: 8/2014 (est.)

Actual Completion Date: Currently underway

Any disputes taken to arbitration or litigation?

Yes

No

2.09.05 Environmental Approach & Past Performance

2.09.05 ENVIRONMENTAL APPROACH AND ENVIRONMENTAL PAST PERFORMANCE

2.09.05.A. ENVIRONMENTAL APPROACH

To claim a successful project, the design-build team will meet or exceed all environmental commitments, minimize and/or avoid negative impacts to the natural and built environment, and whenever feasible improve upon what existed prior to construction. To do this, all parties involved must have a thorough understanding of the project scope and of previously made commitments to ensure compliance with applicable federal, state, and local environmental regulations. Construction activities affecting environmental resources will be clearly defined and assessed and alternatives proposed reducing or minimizing their impact. We will use ingenuity and innovation to meet the intent of the law, not merely the letter. During design and construction, open lines of communication between the designers, contractor, SHA, and MDE will ensure that additional opportunities to protect the environment are identified and acted on.

2.09.05.A.1 Understanding of the Major Environmental Features

The existing project site contains unique environmental, geologic, and hydraulic conditions. Environmentally sensitive areas include Waters of the US (WUS), floodplains, jurisdictional wetlands, forest, and areas adjacent to developments. The most critical environmental components are the successful design and implementation of both Stormwater Management (SWM) and Erosion and Sediment Control (ESC), in strict conformance with environmental commitments made and permits obtained to date by SHA. All runoff from the project ultimately ends up in the Chesapeake Bay.

Plan to Protect Environmental Features: We will use existing, proven best management practices (BMPs) in order to meet or exceed the RFP requirements as well as applicable Federal, State, and local laws, ordinances, and regulations. All sensitive areas will immediately be demarcated before any work in the area begins. These areas will be deemed off-limits to all employees unless necessary for approved construction, and only with permission from **Steve Arthur, our ESC Manager (ESCM)**. No storage of equipment and materials will be allowed in the wetlands. As part of the initial orientation required for all on-site employees, we will stress the importance of protecting these features and the methods required. Written warnings will be given to employees for any and all actions deemed to not be in accordance with

our Environmental Compliance Plan (ECP). Repeated violations will be grounds for removal from the project. Deliberate violations will be grounds for employment termination. In addition to taking a proactive approach to environmental stewardship, our chief goals are to:

- Offer technical design and construction solutions for SWM that meet or exceed RFP concepts.
- Design and implement appropriate ESC controls that minimize the construction impacts on the surrounding area, including the Chesapeake Bay
- Leave the project area environmentally better at the completion of the project than we found it at the beginning of the project
- Meet or exceed the environmental requirements (laws, regulations, permit conditions) during design and construction, and honor commitments made during the project planning process.
- Implement an integrated design process, actively incorporating environmental issues and requirements into the design process
- Track environmental commitments carefully throughout the design/construction process.
- Rigorous monitoring and inspection during construction coupled with clear lines of communication for effective reporting of problems and well-defined lines of responsibility for timely response and resolution.
- Address permitting agency concerns and information needs proactively and early in the permitting process through clear communication, well in advance of actual permit applications
- Plan thoroughly in advance, that unexpected events (previously undiscovered contamination, archaeological resources) are handled smoothly and without disruption to the project.

Approach to Implementing an Effective SWM Plan: We will base the project's SWM Plan on the approvals obtained, and commitments made by SHA during the preliminary design stage. We will incorporate the requirements of the Maryland Stormwater Act of 2007, which requires the use of ESD to the Maximum Extent Practicable (MEP), which incorporates the use of non-structural practices. ESD designs will be in accordance with the *2000 Maryland Stormwater Design Manual Volumes I and II Supplement No. 1*, and the *Maryland Stormwater Guidelines for State and Federal Projects April 15, 2010*. Water quality shall not be banked and will be provided through ESD methods for this project.

The team will design stormwater to be consistent with the Concept SWM Report (March 7, 2014), which

conceptually offered ESD measures of micro-bioretenion facilities (14) for project-required water quality, recharge, and channel protection; quantity control of overbank flood protection (Q_{p10}) using reduced runoff curve number and underground detention pipes (4 locations).

We will review the project's approved concepts for compliance with the most current, applicable SWM regulations. During final design, the overall SWM strategy will be reviewed for: compliance with the current regulations; SHA SWM Site Development Criteria (SDC); protection of the environment; ROW impacts; geometric enhancements to the project's footprint; and minimum future maintenance costs. We will use our licensed landscape architect to guide aesthetics and site planning, including: grading; landforms; site layout; safety criteria; and choice of materials; along with visual integration of BMPs with the surrounding environment; developments; communities; roadways; and corridor landscaping.

With the final SWM design, the team will assure that there will be no water quality debit to SHA Water Quality Bank for the Potomac River U Tidal watershed (02140201). Our team will submit the Water Quality Summary Sheet (WQSS) reflecting final SWM design to SHA for signature; then forward it to MDE for approval.

We will ensure that copies of the most current approved plans are available to all personnel during construction and inspection. During construction, should unforeseen conditions develop, we will immediately notify SHA and MDE of the issue, and suggest alternate concepts to comply with the applicable regulations and field conditions encountered. Once the alternate concept is informally approved by SHA and MDE, the revised design will be submitted to SHA for approval. Once approved, submit it to MDE for final approval.

The SWM As-Built (AB) inspector will be on-site during construction of all applicable SWM BMPs, as required, and will inspect the various stages of construction. The AB Inspector will also be present if elements of the final SWM BMP are being constructed as part of ESC (e.g. embankment, core trenches, control structures).

MDE Pre-Permitting Meeting: Our team will request a Pre-Permitting meeting through SHA with MDE representatives, the team's representatives (Design-Build Water Resource Engineer, Design-Build Construction Manager, Design-Build Design Manager, Design-Build ESC Manager) and SHA (Highway Hydraulics Division and Highway Design Division Managers). We intend to discuss final design approach to the approved SWM Concept, the team's ESC concept, how the team is proposing the project be built, the timeline for submittals to MDE, and any additional MDE requirements.

SWM Submittals: We will prepare an update to the Concept SWM plans and SWM Concept report to address any changes to the proposed concept. The team will concurrently submit to MDE and the SHA for review and approval. We will address any comments and obtain the final SWM approval. We will prepare the As-Built Certification package per the RFP and for submittal to SHA/MDE acceptance.

Wetland and Forest Permit Compliance: We will avoid impacts to forested areas and wetlands/waterways to the maximum extent feasible and practical. We will integrate permit commitments from the Nontidal Wetlands & Waterways Permit and Natural Resources Reforestation Permit into the design constraints and project work plan. Environmental professionals will work closely with design engineers and construction managers to ensure the project proceeds according to regulatory requirements and SHA's proactive approach to environmental stewardship. We will minimize off-site waterway mitigation requirements by re-establishing jurisdictional drainage channels in the project area. The design team will actively pursue any compensatory mitigation on-site by improving impaired waterways and outfalls. We will reduce estimated forests impacts of 5.97 ac wherever possible. For example, we will reduce impacts by performing geotechnical evaluations to side slopes adjacent to sensitive features for steepening and reducing the footprint, where possible.

Proper scheduling is vital. We will avoid beginning work in or adjacent to a sensitive area, with a long-term unfavorable forecast. We will avoid starting work in these areas just prior to the winter months. We will schedule completions for these areas as quickly as feasible.

Our team includes landscape architects, certified arborists, and licensed tree experts to implement tree preservation and protection measures where impacts are necessary. We will use appropriate ESC and SWM practices to protect the environmental features and minimize runoff impacts to the Chesapeake Bay. As an integrated team of environmental specialists, engineers, and construction manager, we are committed to minimize impacts to resources and provide on-site mitigation.

Cultural Resources Compliance: Though cultural resources have not been identified in the project concept plans, design changes will require the design-build team to consider impacts to architectural or archeological historic properties in order to comply with Section 106 of the National Historic Preservation Act and the Maryland Historical Trust Act of 1985. We will review cultural resources investigation reports and the Project Effects Determination produced by SHA, FHWA, and the

Maryland Historical Trust during project planning. We will review any proposed design changes against known resources. We will provide cultural resource professionals that will consult with SHA to identify, evaluate, and determine project effects to any cultural resources encountered due to design changes.

Quality Control: To ensure that our desired results are realized, we will incorporate a series of stringent quality control procedures and practices. Our Environmental Compliance Team (ECT) will be inspecting and reporting on the project at least daily. In addition to the many eyes in the field, and our dedicated environmental staff, our Construction Quality Assurance Manager, John Wilentz will daily inspect the controls in place. He will report to our ECT any findings that need attention to provide another level of review to the oversight process.

As important as daily inspection of the installed features is, assurance that the controls are installed correctly in the first place. Our team puts as much attention to detail in temporary controls as we do in the finished product. We achieve this through the expertise of our designers, managers, supervisors and craftsmen. We will achieve quality through the proper design, installation, maintenance, documentation, and removal of temporary controls intended to protect these features.

2.09.05.A.2 Approach to Coordinating with Federal, State, and Local Agencies to Secure Environmental Permits

During the proposal stage, we began identifying the applicable governmental agencies concerned with the protection of natural resources. Our team is developing this list by reviewing the RFP, current government regulations, SHA Policies and Procedures, as well as our own local knowledge of the applicable regulations. This list, which will become part of the Project's Environmental Compliance Report (ECR), will again be reviewed upon award for completeness based upon possible changes in regulations or authority. We will develop a list of all applicable regulations, resource protections, and required permits with the involved agencies, the applicable requirements, and schedule implications prior to initiating design. We will review the list with appropriate SHA personnel for completeness. As we identify each impact to these resources, the associated agency, we will also identify the requirements and time frame for review. We will submit a formal request to SHA to coordinate an Agency Kickoff meeting with key personnel within each agency. This approach is successful in reducing conflicts during the permitting phase.

We will focus discussions on the specific impacts identified in the construction zone. We will:

- Identify prior planning stage commitments
- Identify specific, already approved permits and their restrictions
- Identify means to reduce or eliminate the proposed impacts through BMPs
- Identify all necessary components of permit applications as modifications require.

We will maintain effective communication with SHA, Permit Agency, the Independent Environmental Monitor, and the Environmental Compliance Manager (ECM) during the design and construction phases. Our discussions will be a part of the regular weekly progress meetings' agenda. Whenever possible, the designers will hold over-the-shoulder reviews of concepts and implementation strategies prior to final design to integrate the reviewers and avoid last minute surprises.

We will make every effort to keep from having environmental permit non-compliance issues. If an unexpected non-compliance issue occurs, we will immediately notify SHA and any additional agency representatives having jurisdiction. We will identify what went wrong and bring it back into compliance as quickly as possible. For example, with respect to the ESC permit, Mr. Arthur will ensure that the field staff installs the ESC measures per the plan and per the approved sequence. He will ensure that no construction work begins before the controls are inspected and approved by MDE. If we expect a significant rain event to occur, Mr. Arthur will inspect all the controls prior to the event and fortify as necessary. He will also conduct post rain event inspections to make sure that all controls functioned as intended. As noted above, if a non-compliance issue should happen, we will notify SHA's Independent Environmental Monitor as well as MDE's inspector immediately of the issue and bring it back into compliance. We will identify what went wrong and Mr. Arthur will ensure that we learn from the issue and make sure it doesn't happen again.

2.09.05.A.3 Approach to Implementing an Effective ESC Plan

We have found an effective ESC plan is founded on a sequence of construction for the MDE-approved plans that is carefully developed with close coordination between the designers and the construction personnel. We will develop our conceptual ESC plan, allowing for phased construction, ensuring the necessary ESC Controls and resource protection devices are in place to

maximize protection of all environmental resources and adjacent properties from construction sedimentation. Our ESC designs will be prepared by designers having completed SHA's Designers ESC Training. The ESC plans will be reviewed by an independent MDE-approved reviewer; all comments from the independent reviewer will be satisfactorily addressed prior to submitting it to MDE and SHA for review and approval. Our team understands SHA has submitted a Notice of Intent (NOI) form to MDE in accordance with the NPDES General Permit for Construction Activities. If this NOI is not approved, we will submit a revised NOI to MDE for approval. We will not perform earth disturbance activities prior to NOI acceptance by MDE.

It is imperative to maintain effective ESC on the site throughout the duration of the project. After MDE notification and completion of the Pre-construction meeting, perimeter ESC will be installed. Once the initial / interim controls are installed, we will notify SHA and MDE for inspection and approval.

Our team recognizes the importance of the commitments made to minimize impacts to the natural resources throughout the project and through BMPs we will ensure their protection. Accordingly, the implementation of our ESC approach is based on the following:

Providing Separate ESC Plans for All Necessary Interim Phases: We will address interim grading based on the Construction team's project phasing, which will be defined based on maintenance of traffic, areas of cleared ROW and/or utilities, areas requiring advance settlement, and earthwork balance. The project contours will be tied to existing ground to obtain interim limits of disturbance (LOD) for which the controls will be designed. To effectively accomplish this approach, the designers will begin by designing ESC for the final phase, then back up into each previous phase and determine how early in the process the final phase ESC device can be installed.

Minimize the Extent and Duration of Bare Soil Exposure: We will plan construction activities in phases to reduce erosion potential. Clearing vegetation in phases as construction proceeds will expose smaller areas, making it easier to control erosion and retain sediment. Disturbed areas will be stabilized quickly.

Protect Disturbed Areas from Stormwater Runoff: Stormwater runoff will be diverted from unstable disturbed areas or cut-and-fill slopes. Installation and stabilization of water diversions, dikes, and waterways will be put in place early in the construction process. Water collected by such devices will be directed over well-protected surfaces.

Stabilize Disturbed Soil Areas: We will install measures to stabilize soil areas quickly, with permanent or temporary vegetation, mulches, or other protective practices. We will protect channels for concentrated water flow through proper design and channel linings.

Minimize Run-Off Velocities: During the initial design stages, we will look at measures that reduce the problems associated with concentrated flow volumes and run-off velocities. Practical ways to reduce velocities include conveying stormwater runoff away from steep slopes to stabilized outlets, preserving natural vegetation where possible, and stabilizing exposed areas immediately. By reducing water flow volume and velocity, we can decrease erosion and sedimentation.

Keep sediment on the site: We will design and install measures to retain sediment resulting from site clearing, preparation, and construction on site.

Clearly Delineate and Respect Drainage Area Boundaries During Interim Phases: The maximum drainage area to an ESC device will be used to size the control. Careful attention will be paid during construction to ensure that the maximum DA is not exceeded, thus ensuring that the device functions as intended.

Maintenance of In-Place Control: Maintenance of ESC measures is of critical importance. Controls will require frequent and periodic cleanout of accumulated sediment. Sediment basins and traps will be cleaned out prior to sediment accumulating to 50% of the wet pool storage capacity. Filtering fabric and stone on devices such as inlet protections and stone outlet structures will be immediately replaced when clogging is observed. Seasonal and climatic differences may require more frequent cleanout. The sediment removed from ESC devices will be placed in protected areas to prevent further erosion and sediment from reaching storm drains and streams. Maintenance will also include periodic inspection of ESC devices that may require replacement of deteriorated materials such as straw bales and silt fence fabrics, or restoration and reconstruction of sediment basins and riprap installations.

Frequency of Inspection: To maximize effectiveness, ESC controls must receive thorough inspections. At a minimum, inspections will be conducted on site prior to commencement of land clearing activities, daily during construction (using a project- and site-specific, preventive ESC inspection checklist), pre- and post-storm events during construction, at the completion of construction activities, and upon final removal of ESC controls.

During the grading and drainage installations, the effectiveness of the ESC controls will be evaluated for

applicability with the current construction staging. These reviews will be performed daily by Mr. Arthur, the Contractor's ESCM. Mr. Arthur will be on the project full time while the work is being performed and ground cover is disturbed. He will have the authority to redirect crews to repair damaged ESC controls, order additional resources, and if necessary stop or revise non-compliant operations. Prior to predicted rain events, he will walk the site and if deficiencies are found repair them immediately. Following major storm events, he will again inspect the site and direct the necessary repairs. Mr. Arthur will perform daily inspections and maintain all ESC following major storm events throughout the project duration.

Removal of Control Measures: The site will be permanently stabilized, and we will contact the SHA and the MDE to inspect the site and identify which ESC controls may be removed. We will maintain a log book to provide a record of inspections and necessary actions performed for review by SHA and MDE.

Measures for Ensuring a Proactive Approach to Maintaining/Correcting Effective ESC Devices: The effective implementation of an ESC Plan (ESCP) is imperative to a successful project. Educating the work force on ESC allows for greater oversight and proper maintenance of these controls. Placing an emphasis on installation and maintenance will result in maximum containment of sediment on-site. Managers and supervisors will ensure that every worker has the responsibility to prevent damage to installed controls. Workers will repair controls as necessary, and will report any failures to the ESCM.

Coordination with regulatory agencies for ESC is a necessary element of an effective ESCP. We anticipate daily discussions with SHA inspectors on site and MDE. SHA and MDE personnel will be included in all relevant meetings discussing ESC on site. The ESCM will complete and provide daily status reports to SHA and MDE using an approved form similar to SHA OC-61 form. The status reports will detail the onsite conditions and repairs made to the ESC.

Approach to Interacting with SHA's Independent Environmental Monitor (IEM), If Required: Should an IEM be employed by the SHA to oversee the environmental impacts and the ESC on this project, Our team's ESCM, Mr. Arthur, would be the designated first point of contact. We envision Mr. Arthur and the SHA IEM working very closely on a daily basis complimenting each other's inspections to maintain the site in full compliance. The IEM and ESCM will jointly ensure compliance with all applicable regulations, will confirm impact minimization efforts, and will verify that the project is undertaken with

environmental stewardship goals in mind. We recognize the inclusion of an independent IEM as a benefit to the project's success and would welcome the position to the team. Proactively inspecting the site together and discussing issues and or solutions as a team will effectively double the positive impact of the ESCM. Coordinating the Team's efforts with those of the IEM will result in a more efficient and effective protection of natural resources. Mr. Arthur will be responsible for direct communication with the IEM regarding all environmental issues.

The IEM will also be included to conduct reviews, at the preliminary and prior to the final design submittals and consulted regarding minimization and avoidance of impacts to environmental resources. He will be included in the evaluation of techniques and additional measures required to address negative issues in the field. By including the EM in the design reviews, we will provide advanced insight of possible permit complications. These will be highlighted and addressed prior to formal submittal in an effort to keep the project on schedule.

Communication between the ESCM and IEM does not replace the communication with relevant regulatory agencies, nor does it eliminate the provision of revised plan submissions to those agencies if necessary.

Mr. Arthur will work closely with the IEM in order to craft an acceptable abatement strategy, in the unlikely event of a permit violation or infringement. The IEM's input will be integrated into resolving the violation. Interactions with the IEM will focus on establishing a working relationship. Close open communication with the IEM will allow the Team to streamline data requests, address potential issues early, discuss project goals and progress, and identify potential revisions to permits.

2.09.05.A.4 Measures for Ensuring Compliance with Commitments from the Environmental Documents and Laws Related to Cultural and/or Environmental Resources

Commitment: We are committed to achieving environmental compliance by providing the necessary resources, expertise, training, and management support to ensure compliance for this project. The Team's approach to achieving environmental compliance is to develop, implement, and continually monitor a multi-phased ECR. Our team will develop the ECR and will continue to refine according to SHA and applicable permitting agencies. **We will implement the ECR under the direction of Justin Haynes, of Straughan Environmental, Inc. (SEI), and the full Environmental Compliance Team (ECT).** Their review will ensure that

the Project is designed and built in compliance with the commitments of the final environmental documents, and project permits.

Plan Overview: A three phased Environmental Compliance Plan (ECP) will be developed to ensure environmental compliance. The three phases include:

Phase 1 - Environmental Responsibilities: This phase of the ECP is to identify the environmental responsibilities of the Team and ensure that all team members, from management to designers and craftsmen, are aware of these responsibilities. Our team will complete this phase in preparation of the proposal.

Our team is familiar with components and conditions in the final environmental documents, Section 106 MOA, CWA Sections 404 and 401 authorizations/permits, floodplain permits, roadside tree permit and all other necessary permits and approvals required. Throughout the preparation of the proposal the ECM will coordinate closely with our full team to ensure that the proposed design and construction concepts meet or exceed the published environmental requirements.

Phase 2- Design Review: This phase of the ECP involves design review ensuring compliance with all approved permits and applicable laws. We will create a Commitment Tracking Database (CTD) of all relevant permits and conditions contained within those permits. The CTD will include the impact type, location, specific restrictions, conditions of approval, contact information for inspectors and plan reviewers, and any other relevant information. If during the design phase an approved change to the project footprint is initiated, we will minimize or completely avoid additional negative impacts through the use of design best practices and innovation. The impact to the environment would be a major consideration on any design change proposed.

Commitments are organized into two components. The first component is organized by designated Contract Number ID, such as project wide or localized. The second component is organized by commitment categories, such as ESC, wetlands, streams, and temporary impacts.

In addition to the design commitments and the CTD requirements, the Team will monitor the progress and the completion of the design requirements per the RFP through the completion of construction.

Documentation: A Compliance Report will be produced quarterly. This report tracks and confirms compliance with each construction or design commitment and will document compliance with the CTD. Environmental references will be cited in the report if a design change results in avoidance or minimization of impacts.

Role of the Environmental Compliance Team (ECT) during Design: The ECT will work closely with the design team during the preparation of design plans to minimize or avoid possible adverse impacts to the environment. The Team will utilize an integrated approach where the ECT, and the design and construction team will work together to evaluate design alternatives and construction methods that are available to facilitate the reduction of impacts and to improve the ability to permit within the established schedule and cost.

The ECT members will act as an involved liaison between our team, SHA, Permitting and Regulatory Agencies suggesting improvements, changes, and opportunities to minimize impacts and advance the partnering spirit. They will work to resolve potential conflicts and implement environmental requirements.

Environmental Constructability Review: Compliance with environmental activities and the Special Provisions are essential to ensure that temporary impacts related to construction are controlled and do not cause unnecessary adverse impacts to the surrounding resources and communities. It is imperative that the ECT is involved in reviews of the construction plans for compliance. ESC plans will be reviewed for applicability during the full construction process from initial clearing through final stabilization.

Phase 3 - Construction Compliance: This phase of ECP involves the continued daily coordination, inspection, and documentation of construction activities to verify compliance with the design plans, permit requirements, and the CTD. The CM and field supervisors will be involved during the design phase, further ensuring compliance in the field. Our team will provide crews with the responsibility of monitoring, repairing, and enhancing environmental controls, such as silt fence, stone construction entrances, stabilization, and the maintenance of the various sediment traps.

It is imperative for us to acknowledge the effects of construction activities in order to mitigate any potential impacts. The ECT will communicate with the team and will work directly with the SHA and the MDE. The ECT will oversee the preparation, coordination, and submittal of the Quarterly Compliance Report to the SHA during the construction phase. This Quarterly Compliance Report will summarize the construction activities and will include any impacts to wetlands and Waters of the US (WUS). The ECP will provide a means for maintaining open communication and document compliance with required permit conditions and regulation requirements.

How the Design-Builder will Address any Unknown Cultural Resources, If Encountered: Archeological

resources may be encountered unexpectedly during construction. In accordance with Section 3.20.07.07.02 of the project RFP, once construction has been halted, the Facchina Team's archeologists will consult with SHA regarding archeological resources encountered, and will investigate, evaluate and consult with SHA on avoidance, preservation, data recovery, or destruction without recovery of the resources encountered.

2.09.05.A.5 Environmental Techniques, Products, Practices, or Innovation Proposed for this Project

As we evaluate our professional responsibility to the larger community, Our team is committed to stewardship of the environment by fostering an active sustainability agenda throughout both organizations. Although the SHA does not have a formal LEED program on their projects, they have begun integrating LEED processes into their proposals. We have embraced these techniques and exceed the current requirements. Facchina's commercial group has built several LEED certified buildings. As subcontractors, Facchina has worked on numerous LEED certified projects. We are a member of the Green Building Conference and have LEED accreditation for several of our managers.

Dewberry Sustainability Program Vision: The corporate strategic plan states how the world's finite resources influence their business practices and work products, as well as how they support employees' passion for the communities where they live and serve. They realize, as do their clients, the need to think about sustainability in all that they do. In order to progress as a sustainable organization, they seek opportunities to leverage their competencies and be known for helping clients deal with the challenges posed by an ever-changing world. Within their own operations, they identify ways to seek out and implement sustainable practices.

Dewberry provides a framework for their employees to act sustainably in their professional and personal lives, and to do the same for their communities. They create professional development opportunities for their employees to become thought leaders on sustainable issues. They work with their clients to deliver sustainable solutions that meet program and business needs. They help make the communities where they work and live more sustainable through their project designs and through community/civic engagement and service. They promote sustainable practices within our internal operations by limiting their use of resources through efficiency, reuse, and waste reduction. They drive sustainability in the procurement of their services and supplies and selection of partners. Finally, they evaluate

their business and administrative policies and practices for opportunities to make our work more sustainable.

Techniques, Products & Practices: Together our Team has already incorporated the following practices into our daily business.

Recycling	<ul style="list-style-type: none"> • Office recycling programs for paper, cardboard, glass, metal, plastic • Easily visible, separate bins for recycling • One-sided printed paper reused for in-house draft prints • Dedicated paper trays for paper reuse • One-sided plan-sheets reused for sketches • Printer ink cartridges recycled
Energy Efficiency	<ul style="list-style-type: none"> • Equipment/appliances are Energy Star rated • All computers Energy Star rated. • Use occupancy sensors for lighting in garage most offices, bathrooms, conference rooms
Environmentally Preferred	<ul style="list-style-type: none"> • Reuses on-site office furniture from project to project and purchases used furniture • Dewberry's Baltimore office re-used 90% of office furniture when relocating in 2008 • Purchase refurbished office furniture during office relocation or refurbish
Water/Energy Conservation	<ul style="list-style-type: none"> • IT policy to turn off monitors daily, shut down computers every weekend. • Power strips turned off on weekends • Only LCD/LED displays are used
Air Quality / Emissions	<ul style="list-style-type: none"> • Video Conferences used for meetings and training; reduces travel-related GHG and energy consumption • Ridesharing and carpooling encouraged during travel planning • Regularly maintain and service vehicles/equipment
Disposal Practices	<ul style="list-style-type: none"> • Battery recycling offered • Proper disposal of computers/electronics

Other On Site Recycling Practices	<ul style="list-style-type: none"> • Double-sided printing default for network printers • Paperless technology for agendas, handouts, and presentations • WebEx conferencing for presenting agendas, handouts and Presentations in conjunction with Video Conference Meetings. • Employee reimbursements are paperless
On Site Recycling Practices	<ul style="list-style-type: none"> • Reuse Oil • Excavated/milled pavement recycled • Excavated concrete/crushed or incorporated into fills • Recycled aggregates used where possible • Recycled stone for traps/stabilized construction entrances • Electronic submittals where possible • Paper/aluminum recycling in trailers/offices • All temporary construction materials are reused where feasible

Product/Practice/Innovation	Team	Owner
Reduced structural BMPs by 50% from RFP concept on the ICC Contract C, leveraging key locations and non-structural BMPs	■	
Geoweb retaining walls/bio-retention SWM ponds for 11 th St. Bridge	■	
Re-wrote the ESC sequence of construction to better protect the surrounding environment on the 100+ acre Charles Retreat project, working closely with the owner and MDE	■	

2.09.05.B.2 MEASURES TO CORRECT DEFICIENCIES

On previous projects, members of our team have implemented environmental techniques, products, practices, and innovations to minimize impacts to the natural resources within and adjacent to the project footprint. A technique in the field in locations deemed critical, we have installed redundant controls. Products have been brought onsite for additional filtering capacity for dewatering operations mobile filtrations systems (Pro-Act, and Rain-for-Rent.). Practices employed include weekly tool box meetings with construction and environmental personnel to review installation techniques, provide a forum to discuss critical/problematic areas to be addressed, and review the ESC QA inspection reports. Also, prior to working onsite, all personnel were required to attend an environmental training seminar which addressed the critical environmental areas on the project and the proper techniques and procedures for the execution of the work. As mentioned earlier, having a dedicated onsite ESC crew, ESC materials stockpiled onsite, and pre-/post-storm inspections have been practiced on past projects. An innovation used on ICC Contract C for a problematic sediment basin was the installation of an extended length drawdown device wrapped in filtering fabric to improve the basin's function. This innovation was coordinated with SHA/ICC and MDE personnel prior to installation and resulted in a ~90% sediment removal (as measured by the project's independent environmental monitor) of the runoff entering the basin.

2.09.05.B ENVIRONMENTAL PAST PERFORMANCE

2.09.05.B.1 Environmental Techniques, Products, Practices, or Innovations on Past Projects:

We have incorporated the following specific environmental innovations in past projects:

Product/Practice/Innovation	Team	Owner
Changes to design that limited stream and wetland impacts / forest impacts	■	
Solar powered monitoring equipment	■	
Solar powered VMA, Arrow Boards	■	
Solar powered ETC/Gantries on the original design and additions to Dulles Greenway	■	
Rock shot from the site used in gabion baskets: Rt. 287 in NJ	■	
Designed boardwalk hiker/biker trails under the Little Paint Branch bridge, avoiding impacts to the adjacent seeps on ICC Contract C		●
Use of pre-cast culverts over streams, to minimize site disturbance.	■	
Use of pre-cast culverts over streams, to minimize site disturbance.	■	
Use of steeper side slopes using rock or geotextiles to minimize impacts to adjacent environmental features.	■	