



General Construction | Heavy Civil | Geotechnical

COPY



TECHNICAL PROPOSAL

IS 95 –
Baltimore Washington
Parkway to US 1
Project

Date	October 21, 2015
Solicitation #	PG3335172
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**Maryland State Highway Administration
Construction Management at Risk (CMAR)
Contract No. PG3335172
IS 95 – Baltimore Washington Parkway to US 1 (Greenbelt Metro Access)
Prince George’s County, MD**

**Technical Proposal
Table of Contents**

A. Cover Letter	Tab 1
B. Project Management Team/Capability of the Proposer	Tab 2
B.1. Project Management Team	
Organizational Chart	Page 7
B.2. Key Staff	
Project Manager Resume	Page 4
Construction Manager Resume	Page 5
Cost Estimator Resume	Page 6
B.3. Project Team Past Performance	
Intercounty Connector	Page 8
Woodrow Wilson Bridge Maryland Approach and Interchanges	Page 9
Section 100 I-95/I-695 Interchange	Page 10
C. Project Approach	Tab 3
C.1. Preconstruction Approach	Page 12
Design and Constructability Review	
Design Sequencing	
Stakeholder Involvement	
Proposed Technical Concepts	
C.2. Construction Approach	Page 19
Construction Sequencing	
Contracting Plan	
Stakeholder Coordination	
C.3. Risk Management	Page 23
Risk Management Process	
Risk Management Performance	
Project Risks	
D. Financial Information	Tab 4
D.1. Bonding Capability	
E. Appendix	Tab 5



Woodrow Wilson Bridge



I-95/I-695 Interchange



Intercounty Connector

SECTION B PROJECT MANAGEMENT TEAM / CAPABILITY OF THE PROPOSER**Project Management Team**

Wagman Heavy Civil, Inc. (WHC) will manage the IS 95 – Baltimore Washington Parkway to US 1 (Greenbelt Metro Access) Project (the Project) serving as the Construction Manager at Risk (CMAR) and will be the legal entity contracting with Maryland SHA. WHC has successfully delivered complex multi-phase interchange projects with MDOT/SHA in Maryland for more than 40 years. We have assembled a team to minimize project risk and achieve the project goals by self-performing all critical work elements and providing detailed open cost estimates. The Project Management Team consists of Wagman employees and key subcontractors **Fort Myer Construction Corporation (FMCC); High Steel Structures (HSS); Whitman, Requardt and Associates, LLP (WRA); iCivil, and Undeland Associates, (UA)**, hereafter referred to as the Wagman Team. As an experienced general contractor in the Mid-Atlantic region for over 113 years, with major operations in general construction, heavy civil and geotechnical construction, we have executed many different project delivery methods and offer more than 20 years of experience with CMAR. The box below highlights Wagman’s extensive experience with CMAR Projects.

Wagman Project Executive, Greg Andricos, PE, President/COO of Wagman will provide additional support, executive oversight, open communication with SHA and issue resolution if needed. Over the last 10 years Greg has successfully delivered over \$189M of Design-Build projects in the Greater Washington D.C. Metropolitan Region in the role of Design-Build Project Manager through partnerships with state and federal (FHWA, DOD) agencies as well as WMATA. Mr. Andricos’ efforts on the \$112.5M Fairfax County Parkway Interchange Project (Phases I, II, and IV) earned him a “Star Partner” award for his exceptional dedication, teamwork, and professionalism in support of the project’s goals by the National Geospatial Intelligence Agency (NGA), whose 8,500 employees were provided access to their new headquarters campus via a new interchange. In a Construction Operations Manager role, Mr. Andricos partnered with GSA in the construction of the Dahlgren Road Bridge over Paint Branch which was instrumental to the consolidation of the FDA Campus in White Oak; delivered Phase 1 of the MD 5 Metro Interchange Project valued at \$30M inclusive of a two-span flyover bridge over I-495 to SHA ten months ahead of schedule; and engineered a re-phasing for the SHA’s \$7.4M US 50 Columbia Park Road Interchange Project reducing impacts to WMATA and other shareholders.

Wagman CMAR Projects

Project Name	Value (\$M)
Homewood at Willow Ponds	\$81.3
Historic Fairmount Association	\$ 4.1
Historic Building Revitalization	\$ 8.4
Sycamore Square Apartments	\$26.6
Dickinson College Fitness Center	\$12.2
Bridgegate at Luther Crest	\$10.5
StoneRidge Retirement Living	\$15.5
Lutheran Social Services	\$16.2
Presbyterian Senior Living	\$23.6
Diakon Lutheran Ministries	\$ 9.8
Homewood at Spring House	\$10.7
Logos Academy	\$ 5.7

Our proposed **CMAR Project Manager, Anthony Bednarik, DBIA** will lead our project team. Anthony has more than 28 years of construction experience, including 20+ years of project management and estimating. He is familiar with alternative delivery methods including CMAR. Anthony was recently involved in the management and design development of a CMAR project in Frederick, MD that required multiple estimates and negotiations with the Owner. Anthony works closely with our proposed **Cost Estimator, Jon Fiem**. Jon has served as an estimator for more than 30 years, and has worked on low bid, CMAR and Design-Build projects. Anthony and Jon collaborated with our proposed **Construction Manager, Steve Wood** on many projects over the past fifteen years, including \$276.6M associated with the Woodrow Wilson Bridge (WWB) and \$1,045M of the Intercounty Connector (ICC). In addition to overseeing the physical construction of these projects, Steve assisted during preconstruction by performing constructability reviews inclusive of detailed project phasing with consideration to all environmental and traffic requirements. Steve assisted with the creation of the project schedule.

Our dedicated subcontractor, **FMCC** has extensive expertise with roadway projects along Interstate 495, asphalt milling, production and paving, utility relocations (such as WSSC and PEPCO) and highway signs, lighting and ITS. During preconstruction design development, FMCC will provide input and detailed cost estimates on highway, paving, electrical, signage, and ITS activities. During construction, FMCC, as a subcontractor, will self-perform the milling, paving, electrical, signage and ITS elements on the project. FMCC will provide a detailed estimate for these work items that are typically a lump sum subcontractor cost. This will ensure SHA the most cost-effective solution. **HSS** will provide expertise in constructability reviews to fabricate, transport, and erect curved steel girders for the Project. Wagman and HSS have a long relationship and have collaborated on many complex construction projects in Maryland such as \$276.6M WWB, \$216.8M I-95/I-695 Interchange, \$1,045M Intercounty Connector, and I-395 Middle Branch Interchange. This collaboration has resulted in reduced cost and improving construction schedules. **WRA** will provide Environmental

Compliance during constructability reviews and construction; they will assign Neil Leary as Traffic Manager to assist with construction phasing during preconstruction design development and oversight of traffic maintenance during construction to minimize impacts to the traveling public. **Undeland Associates** brings over twenty years of relevant regional experience and will provide Public Outreach resources and support, having previously partnered with Wagman to provide the same services on the ICC and WWB Mega Projects. **iCivil** is a registered MBE/DBE/SBE with over 17 years of SHA experience and will assist with the project schedule.

Organizational Chart: As the Project Manager, Anthony will report to SHA and communicate with the Project Executive, Greg Andricos, PE, and will be responsible for all design coordination, estimating, and construction for the Project. Our Cost Estimator (CE) Jon Fiem, and Construction Manager (CM) Steve Wood, will report directly to Anthony. Jon and his support staff will quantify and develop accurate and open cost estimates during design development, assess risk and develop sound assumptions. Steve is responsible for all construction operations, schedule development, constructability reviews, and management of field crews, subcontractors and suppliers for this project. Similar to WWB and the \$21.3M replacement of Dual Bridges on MD 4 over MD 223, Steve will manage the construction operation to ensure project schedule and facilitate open communication, collaboration and issue resolution. Anthony and his staff will assume a leadership role in meetings with third party stakeholders to obtain their input, meet all Project commitments, and track and resolve issues in a timely manner.

Design Coordination: Design Coordination is important to any project, in particular, CMAR projects. Collaboration between the Designer and Contractor ensures the Owner receives cost-effective design and a project delivered with an aggressive construction schedule. Anthony will manage the Wagman Team's Design Coordination process which assigns Design Coordinators for the major design disciplines for the Greenbelt Metro Interchange project. Each Design Coordinator will be supported by the construction team, led by our CM, Steve Wood, for in-depth constructability reviews. These reviews encourage discussion with the field personnel who will be building the project, allowing for collaboration on all levels. Our construction team is well seasoned and develops creative solutions that have been proven effective in reducing cost and accelerating project completion on similar interchange projects.

Value Added Staff Members

Design Coordination Manager: Jerry Whitlock, PE (Wagman) has over 15 years of experience working on Design-Build projects and design coordination, value engineering and alternatives.

Structures Design Coordinator: Alex Brown (Wagman) has 10 years of experience constructing structures. He served as a design coordinator and engineer on ICC-A.

Roadway Design Coordinator: Rob Shunk, PE (Wagman) has 27 years of experience as an estimator, coordinator and constructor; and held a similar role on ICC-A and ICC-B.

Geotechnical Design Coordinator: Ed Laczynski, PE (Wagman) has 17 years of experience with geotechnical services: foundations (pile, caissons, micro-piles), ground improvement, underpinning, retaining walls, and support of excavation (including grouted tie-backs and soil nails).

Utility Coordinator: Jason Hershey, DBIA, CPE (Wagman) has 15 years of experience as a utility coordinator, currently serving as utility coordinator on two Design-Build infrastructure projects in the Washington D.C. Metropolitan Region, including WSSC, power, communication and fiber optics.

Traffic Manager: Neil Leary (WRA) worked with Wagman on the \$216.8M I-95/I-695 Interchange and the \$276.6M WWB. WRA's Neil Leary, will serve as the Wagman Team's Traffic Manager during design development and construction to mitigate impacts to the traveling public. Neil worked daily with Wagman's CM Steve Wood on WWB (ADT of 288,000) and on the I-95/I695 Interchange (ADT of 305,000). On these projects, Neil, Wagman and HSS coordinated the erection of curved steel girders over I-95/I-495/I-695. Most recently, Neil and Steve collaborated to revise the maintenance of traffic phasing on the \$50.8M I-95 Deck Rehabilitation project (ADT of 228,000), minimizing impacts to the traveling public and accelerating construction schedules which resulted in Wagman achieving the full early completion incentive for this project. This experienced team has been tested on numerous regional Mega Projects, has established and functioning communication protocols and will apply this expertise to achieve the goals of the Project.

Structural Steel Fabrication & Erection: Robert Urban (HSS) has more than 25 years of experience with structural steel and structural steel erection. Bob and HSS worked with Wagman on the I-95/I-695 Interchange, WWB with massive curved steel girders. Bob Urban of HSS will review structural steel erection plans during design coordination and provide expertise to minimize impacts to the traveling public. Bob performed this exact role for the SHA during the prebid phase of the \$30M MD 5 Metro Interchange Phase 1 Project in Prince George's County, which greatly reduced project risks by developing a traffic plan that allowed the entire two-span flyover bridge to be erected over I-495 during a single weekend. During construction Bob will be on-site during steel erection over the I-95/I-495 mainline, mitigating potential impacts.

Geotechnical Resource: Monica Paylor, PE (WRA) will add 24 years of experience to help assess the best geotechnical alternative that fits Wagman's expertise. Monica was the Geotechnical Engineer on the \$276.6M WWB and worked with Wagman on many geotechnical challenges including: a Contractor designed tie-back retaining walls, a Value Engineering Concept redesigning Bridge 29, saving SHA over \$1M while reducing environmental impacts.

Environmental Compliance: James Ashby (WRA) specializes in Section 404 of the Clean Water Act conducting wetland delineations, Federal/State Wetland and Waterways Permitting, Dam Breach Permitting, Critical Area Permitting, after-the-fact emergency authorization Permitting, and MDSPGP-4 Permit Compliance.

Public Outreach: Jon Undeland (UA) will use his 20 years of relevant experience along the I-495 Corridor to serve as the Wagman Team's Public Outreach Manager supporting the Project.

Collaboration: Wagman begins the collaborative process at the start of the project. Wagman brings all team members together in person to discuss the project and develop strategies to allow the team members to succeed. Smaller technical group meetings with subject matter experts are planned to ensure that Design Development and Estimating are proceeding according to schedule. Challenges can be assessed and additional resource requirements will be discussed during these meetings. Collaboration will ensure project goals are achieved for the Greenbelt Metro Interchange. The Wagman Team is very competitive in the hard bid construction environment, and therefore experienced with maximizing project scope within a tight budget. Anthony, Jon and Steve work daily with tight construction schedules and deadlines, and Wagman has successfully completed many similar projects on time or ahead of schedule. Wagman and our key staff were an integral part of the ICC which was considered the most environmentally sensitive project in the nation. Wagman reduced environmental impacts (stream, forest, wetlands, floodplains) during design development and construction; receiving incentives for reducing impacts. Wagman has a solid track record excelling in E&S implementation and maintenance during construction (WWB, ICC, I-95/I-695 Interchange). **The Wagman Team's extensive experience in reducing environmental impacts and coordinating with Maryland agencies will be critical for the Project.** Utility conflicts can create undue risk to a construction project's schedule and budget. Wagman has coordinated and avoided utility relocations minimizing impacts and cost. The I-95/I-495 Corridor is vital to the State of Maryland and the DC Metro area. Wagman understands the area and has worked on this corridor. **We will leverage our relationship with Neil Leary of WRA to ensure that the traffic design and construction phasing for the Project is efficient and minimizes impacts to the traveling public.** Wagman has proven our expertise implementing traffic control on major Interstates with ADTs greater than 200,000 such as I-95, I-495, I-695, I-895, I-295, I-270 and I-370. On I-95, a few miles north of this project, Wagman successfully reconstructed mainline I-95 through downtown Baltimore in at least 20 unique work phases. Wagman has extensive experience collaborating with the owner, designers, utilities, regulatory agencies and third party stakeholders. The successful partnering implementation was recognized by the multiple partnering awards Wagman received from MdQI in Maryland for the ICC, I-95/I-695 Interchange and WWB.

Each team member is empowered to create and provide input that relies on their extensive experience in the construction industry. On the Intercounty Connector (ICC) project, Wagman co-located with the Designer and Owner, creating a collaborative effort to create the best solution for the project. On the \$216.8M I-95/I-695 Phase I Interchange project, Wagman was the managing partner of a Construction Joint Venture that required creating a collaborative team with the three construction firms. In addition, Wagman created a partnering atmosphere with the Owner and Designer, allowing the project team to develop collaborative ideas such as Value Engineering proposals and modified traffic phasing. The Woodrow Wilson Bridge was a major construction project divided into multiple contracts that required a collaborative team to complete our projects. The project also required a collaborative effort to work with the Owner, designers, adjacent contractor, adjacent developers and all other third party stakeholders. **These projects demonstrate Wagman's ability to successfully form cohesive teams with open communication to maximize benefits on the Greenbelt Metro Interchange.** We also collaborate internally with organized team building activities such as laser tag, golf outings, clay pigeon shoots, and support employee participation in community outreach programs such as the United Way. Our teamwork approach is validated by multiple consecutive Best Places to Work Awards, submitted by our employees.

Wagman has worked along the I-95/I-495 corridors and is very familiar with the local subcontractors and suppliers. Wagman use electronic estimating software and has a database of qualified subcontractors and vendors. Wagman frequently pursues Design-Build and CMAR proposals in Maryland and actively seeks partnerships with firms such as FMCC. FMCC regularly hosts Small Business Networking Roundtables which provide a series of meetings for MBE/DBE/SBEs to grow by enhancing their business skills and developing professional relationships.

Wagman has earned national recognition for involvement in the largest, most complex and environmentally sensitive projects in Maryland over the past decade: The ICC, WWB and I-95/I-695 Interchange. **The Wagman Team assembled for this project includes construction professionals who have worked together on major Maryland interchange projects and are equipped to meet the goals of the Greenbelt Metro Interchange Project.**

Anthony W. Bednarik
Project Manager

Years with Wagman: 16

Total Industry Experience: 28

Project Availability:

- Preconstruction 35%
- Construction 35%

**PROFESSIONAL EXPERIENCE**

As Vice President of Design-Build/Major Pursuits, Anthony manages the estimating staff and is responsible for Major Design-Build projects from design development through construction, ensuring continuity through project completion. He has experience managing other major Design-Build and Major Pursuit projects that are similar to the Greenbelt Metro Interchange project. Over the past 28 years, Anthony has worked as a Project Manager, Design-Build Project Manager, Design-Build Coordinator, and Estimator.

PROJECT MANAGEMENT EXPERIENCE**Intercounty Connector Contracts A & B, Montgomery and Prince George's Counties, MD**

As Assistant Design-Build Project Manager, he was involved in Best and Final Offer negotiations with SHA and a review of the Contractor's estimate. Anthony managed the design coordination process which included environmental, roadway components, noisewalls, foundations, drainage, stormwater management, maintenance of traffic, phasing and all structures (steel, pre-stressed and culverts). He collaborated with designers and field personnel to assure that the design met all environmental commitments and design requirements with a high degree of constructability. During construction, Anthony managed the mobilization of equipment, personnel and subcontractors. As Wagman's Senior Executive

on-site, Anthony managed all Wagman employees which included the Roadway and Bridge Construction Managers. Anthony was an integral team member that developed an alternative technical concept redesigning the Rockville Metro Interchange.

Relevant Project Features: Project Management, ATCs, structures, stormwater management, maintenance of traffic, environmental compliance, noisewalls, retaining walls, stakeholder coordination, risk identification and mitigation, stream and wetland mitigation, minimization of environmental impacts, structure over a WMATA/CSX rail line, construction of new interchange with WMATA station in Rockville, and work on interstate.

Homewood at Willow Ponds, Frederick, MD

A CMAR project, Wagman was responsible for infrastructure construction including roadway, utility relocation, stormwater management, environmental compliance, and overall development for senior living community expansion. He was responsible for design development and construction for this senior living project. With the dynamic nature of the execution of this project from the ground floor, Anthony managed multiple

construction estimates and negotiated with the Owner to develop a Guaranteed Maximum Price.

Relevant Project Features: CMAR project, GMP Estimate, GMP discussions, stakeholder communication, risk allocation, box culvert, utility relocation, stormwater management, environmental compliance, maintenance of stream flow, risk management, design reviews, and innovative solutions.

Presently

Anthony is Wagman's Executive Sponsor on two Design-Build Projects in Virginia: Route 7 over the Dulles Toll Road and the Odd Fellows/Route 460 Interchange. As Executive Sponsor, Anthony manages the DBPM and supports the entire project team from design through construction. Additional support involves building good client relationships and collaborating with third party stakeholders.

The projects listed are successfully moving through the design phase, and are anticipated to kick off in 2016 aligned with the aggressive schedules established for each contract. These are bridge construction projects over existing highways with major traffic implications. Anthony identified risk, developed plans to manage risk, and continues to work on mitigating the risk.

REGISTRATIONS, CERTIFICATION AND EDUCATION

- BS, Civil Engineering, Bucknell University
- DBIA Certified Professional
- ARTBA Project Management Academy, ASCE

Steven P. Wood
Construction Manager

Years with Wagman: 15

Total Industry Experience: 33

Project Availability:

- Preconstruction 25%
- Construction 100%

**PROFESSIONAL EXPERIENCE**

Along with managing construction projects, Steve assists Estimating and Engineering with challenging high level work activities such as access, erection plans, demolition plans, maintenance of traffic concerns, and project sequencing. Steve manages all field personnel, equipment, subcontractors and suppliers on Wagman's major construction projects in Maryland. Steve recently completed mainline bridge construction in Prince George's County of MD 4 over MD 223 which included bio-swales and milling and paving of the mainline.

CONSTRUCTION MANAGEMENT EXPERIENCE**Intercounty Connector Contract B, Montgomery and Prince George's Counties, MD**

As Structures Construction Manager, Steve managed all construction efforts to ensure that the work was performed in accordance with design, budget and schedule. He conducted constructability reviews, created work plans that incorporated design, safety, environmental compliance and production, and oversaw the field operations; maintaining budget and schedule. He was integral in the construction of a Single Point Urban Interchange with curved steel girders

and a mainline curved steel girder structure.

Relevant Project Features: Bridges, interchange construction, stormwater management, maintenance of traffic, environmental compliance, noisewalls, retaining walls, stream and wetland mitigation, minimization of impacts to forests, Single Point Urban Interchange (SPUI), constructability reviews, risk mitigation during construction, collaboration with designer and owner, and partnering.

Woodrow Wilson Bridge, Oxon Hill, MD

Wagman completed five contracts totaling \$270 million that involved construction of the new National Harbor Interchange and reconstruction of the I-295 interchange, portions of the MD 210 interchange, and reconstruction of the Inner and Outer Loop of the I-95/I-495 corridor including local, auxiliary and express lanes. Steve managed construction efforts which included over 100 employees and multiple subcontractors and suppliers in the Washington, DC area. He coordinated with adjacent contractors and developers to maintain all project schedules. Steve constructed multiple curved steel girder

structures over I-95/I-495; demolished existing structures over I-95/I-495 and reconstructed several mainline bridges on I-95/I-495. Steve was an integral member of the project team. Wagman received multiple MdQI awards for Partnering and Best Large Project category.

Relevant Project Features: Interchange construction, curved steel bridges, reconstruction and overlay of the Inner and Outer Loop of the Beltway, coordination with adjacent developer, partnering, third party coordination and meeting all project milestones and working on the I-95/I-495 corridor, minimizing impacts to traveling public.

I-95 Bridge Rehabilitation and Latex Overlay, Baltimore, MD

As Construction Manager, Steve planned and scheduled major traffic switches and construction phases to rehabilitate and overlay the existing viaduct on I-95 in downtown Baltimore. Steve successfully coordinated with MdTA and third party stakeholders such as Fort McHenry Tunnel, Camden Yards, M&T Bank Stadium and the Inner Harbor, to minimize disruptions to the traveling public. This

\$55 million project is ahead of schedule and under budget.

Relevant Project Features: Maintenance of traffic with complex phasing, minimization of impacts to traveling public, and construction ahead of schedule (achieved early completion incentive), coordination with adjacent property owners (Inner Harbor, M&T Stadium, Camden Yards) and working on I-95 corridor.

REGISTRATIONS, CERTIFICATION AND EDUCATION

- NCCO Certified Crane Operator
- OSHA 10-Hour and 30-Hour
- OSHA Preventing Runovers & Backovers
- Confined Space
- Excavation Competent Person
- MD SHA Green & Yellow Card

Jon P. Fiem
Cost Estimator

Years with Wagman: 16

Total Industry Experience: 32

Project Availability:

- Preconstruction 35%
- Construction 35%

**PROFESSIONAL EXPERIENCE**

As Chief Estimator for Wagman, Jon is responsible for producing accurate cost estimates totaling in excess of two billion dollars per year. The estimating effort includes CMAR, Hard Bid, and Design-Build. During his career with Wagman, Jon has successfully estimated and procured over \$2.5 billion worth of contracts. Jon has spent his entire career in the Maryland market and has unparalleled relationships with the local material suppliers and subcontractors, in addition to his familiarity with Maryland specifications.

COST ESTIMATOR EXPERIENCE

As Cost Estimator (CE), Jon will quantify and estimate direct costs utilizing his 30+ years of experience and Wagman's extensive cost history. Jon's vast experience allows him to assess risk and apply sound assumptions during the estimating process. Additionally, he maintains a comprehensive list of subcontractors and suppliers to provide the best solution to execute work.

Woodrow Wilson Bridge, Oxon Hill, MD

As Chief Estimator, Jon led the estimating effort on five separate contracts for the Maryland Approach of the bridge. Wagman was successful on all five contracts totaling \$270 million. Jon was integral in a foundation redesign which resulted in significant cost savings for SHA.

Relevant Project Features: Interchange construction, bridges, I-95/I-495 commuters, curved steel structures,

E&S, extensive traffic control, coordination with adjacent developers and contractors, utility relocation, milling and paving, complex phasing, stormwater management, bio-swales, straddle bent construction, bridge demolition, risk identification and mitigation, estimating assumptions and quantifying project elements and subcontractor and supplier solicitation.

Intercounty Connector Contract A&B, Montgomery County, MD

Jon was Wagman's Chief Estimator on both contracts. He led the estimating effort and Wagman was successful on over one billion dollars of Design-Build work. As an equity member, Wagman was required to develop a complete cost estimate. The projects included a Metro Access Interchange, bridges crossing an existing WMATA line, earthmoving, caissons, noisewall, culverts and steel and concrete structures, milling and overlay, environmental compliance, bio-swales, SWM basins, E&S, maintenance of traffic and Alternative Technical Concepts (ATC).

Relevant Project Features: Bridges, stormwater management, maintenance of traffic, environmental compliance, noisewalls, retaining walls, environmental minimization and mitigation, structure over a WMATA/CSX rail line, construction of new interchange with WMATA station in Rockville, risk identification and mitigation plan, subcontractor and supplier solicitation, quantity take-off, widen/mill/overlay Interstate, and generate valid estimating assumptions.

I-95/I-695 Interchange, Phase 1, KH1501, Baltimore, MD

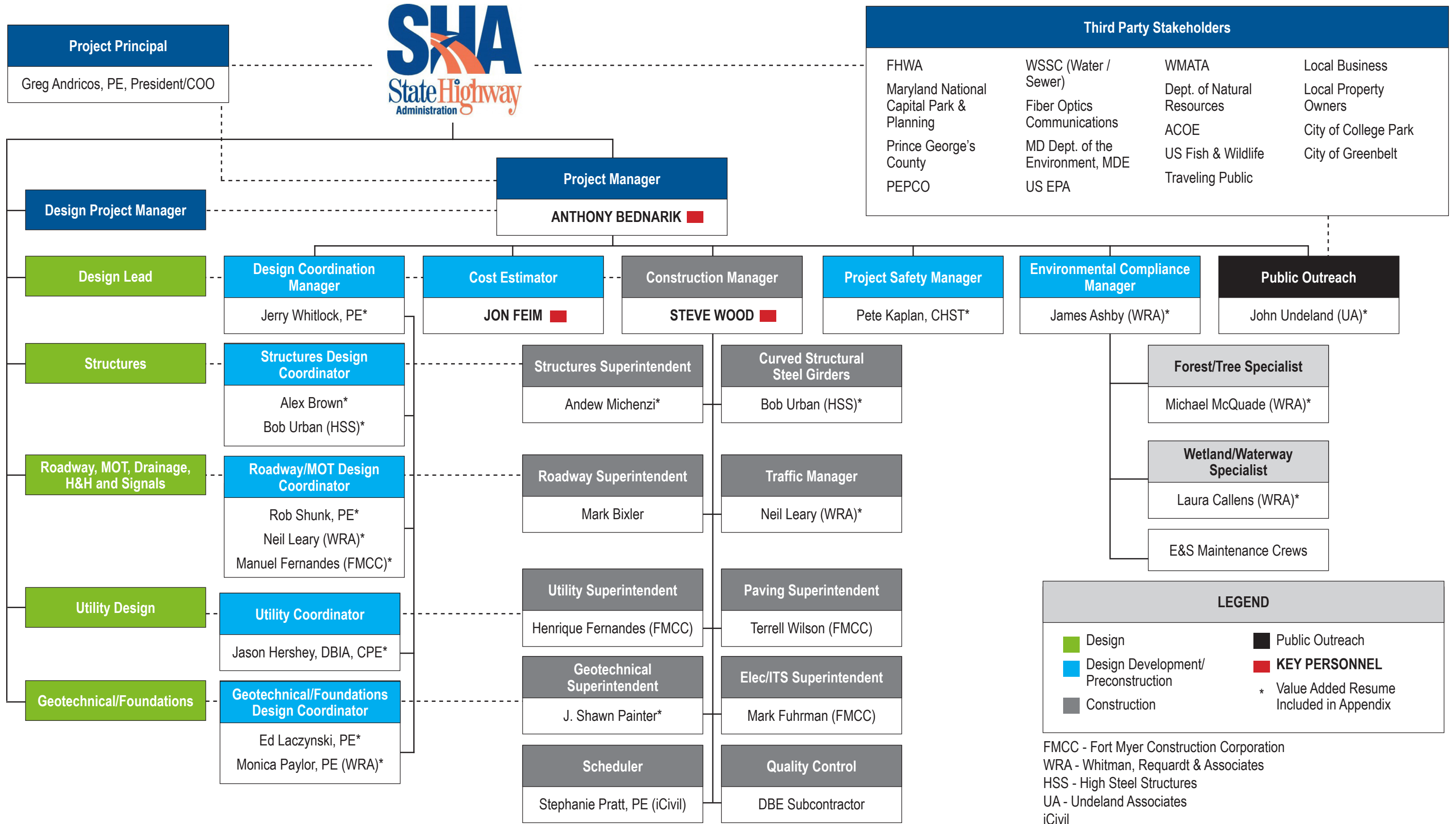
Jon managed the estimating effort of this \$220 million dollar project. Wagman was the managing partner of a three-way joint-venture. Jon developed bid instruction and estimating rules to allow all three partners to develop concise cost estimates. He managed the bid solicitation with subconsultants and suppliers for the team. He provided a conceptual schedule that facilitated the development of the baseline CPM for the project. Jon developed a Value

Engineering proposal saving the Owner close to \$2 million.

Relevant Project Features: Curved steel bridges, noisewalls, maintenance of traffic, utility relocation, stormwater management, Value Engineering, asphalt milling and paving, and complex project phasing, risk identification, estimate review with partners and alternate project sequencing/traffic

REGISTRATIONS, CERTIFICATION AND EDUCATION

- BS, Civil Engineering, Penn State University



PROJECT DESCRIPTION

Wagman was an equity member of construction joint ventures on two contracts for the Intercounty Connector (ICC). The ICC was a large Design-Build project located in Montgomery and Prince George's Counties, Maryland. Wagman's involvement included two adjacent segments, Contracts A & B, which consisted of 15.5 miles of the overall 18.8-mile 6-lane limited access, open road tolled highway. Over five million yards of excavation, 21 structures, and over 650,000 square feet of drilled caisson post and panel noise walls were provided in Contracts A & B. The project involved wet and dry utility relocations, ROW acquisition, environmental permitting and monitoring, drainage, and six major interchanges. On the western end of the project, the team widened I-370, created auxiliary lanes and reconstructed mainline bridges under active traffic on I-370. One of the structures was over a WMATA/CSX rail line. Wagman created a new interchange with the WMATA station in Rockville, MD. The project also was comprised of extensive ITS, signalization and open road tolling. During the design and construction phase, the Design-Builder was responsible for quality control and environmental compliance and coordination. Wagman's design coordinators minimized utility impacts through active coordination with the designers and utility companies. Through innovation and coordination with SHA, the designer and environmental agencies, Wagman reduced impacts to wetlands, streams, floodplains and forests design coordination and construction. Wagman's highly skilled team assumed key management and leadership roles in the joint venture team. Anthony, Jon, and Steve were team members.

PROJECT DELIVERY METHOD: Design-Build Best Value

OVERALL CONSTRUCTION COST

Initial Contract Value: \$1,023,630,000

Final Contract Value: \$1,044,788,000

Reason for Difference: Increase due to owner directed incentive and scope

OVERALL SCHEDULE PERFORMANCE

Initial Completion Date: November 2011

Final Completion Date: November 2011

Reason for Difference: N/A

OWNER/CLIENT AND CONTACT INFORMATION

Maryland Transportation Authority
2310 Broening Highway, Baltimore MD 21224
Melinda Peters (Former Owner Representative)
Email: mpeters@rkk.com

ICC ACHIEVEMENTS RELEVANT TO GREENBELT INTERCHANGE CMAR

- Wagman maximized scope and value by Best Value selection on contract A & B. During the Best and Final Offer discussion, Wagman further maximized scope and reduced budget.
- Wagman maintained open communication with adjacent land owners and developers which allowed the project to proceed smoothly.
- Contracts A & B were completed on time through planning, communication and execution.
- Working in the sensitive Rock Creek & Paint Branch Watershed, Wagman achieved 22 E&S incentives and maintained an A rating for E&S during design development. By using innovative construction techniques, impacts to stream, forests, wetland and floodplains outlined in the FEIS were further reduced.
- Adjacent ROW impacts were minimized with the use of retaining walls and modifications to the vertical and horizontal alignment.
- Wagman redesigned structural elements by adjusting pier locations and span lengths to avoid WSSC sewer mains which were previously identified as a conflict in the SHA provided preliminary design.
- Wagman developed and executed a complete Traffic Management Plan (TMP) to minimize impacts to the traveling public. Reconstruction, milling and paving on existing I-370 was executed with minimal impact to people accessing the Rockville WMATA station.
- Owner, Designer and Contractor co-located, which facilitated cooperation and collaboration during design and construction. The partnering and issue resolution process allowed challenges to be resolved at the earliest stage.
- Estimate was reviewed and justified prior to document escrow.



PROJECT AWARDS

- 2010 Intercounty Safety Award – EFCO
- 2011 President's Award for Highways – AASHTO
- 2011 Northeast's Region Best Overall Project – ENR
- 2012 National Design-Build Award – DBIA
- 2012 Exemplary Ecosystem Initiatives Award – FHWA
- 2012 America's Transportation Awards Top 10 Finalist – ENR
- 2012 Alliant Build America Award – ACG
- 2012 National Design-Build Award – DBIA
- 2012 Exemplary Ecosystem Initiatives Award – FHWA
- 2012 Alliance Award - Northern Virginia Transportation Alliance
- 2012 Globe Award for Environmental Excellence – ARTBA
- 2012 Best Transportation Project – (ENR)
- 2013 Award of Excellence, Partnering Silver Award – MDQI

Items of work on this project similar to Greenbelt Metro Interchange Project

Design-Build/Design Coordination
Box Culverts for Streams
Interstate Widening and Overlay
Stream Flow Management
Survey and 3D Modeling
Stream Relocation
Right-of-Way Acquisition
Retaining Walls and Noise Walls
Curved Steel Girders
Environmental Compliance and Mitigation
Risk Identification, Tracking and Mitigation
Geotechnical Elements
QA/QC
Hydrology and Hydraulics
Third Party Coordination
TMP/MOT
Overall Project Management
Utility Coordination and Avoidance
Fast Track Schedule
Public Involvement/Relations
Reforestation, Rare, Threatened & Endangered Species (RTE), (Comely Shiner)
Context Sensitive Design
Design and Construction of WMATA Station Access Interchange
ITS and Major Sign Structures
Coordination with Adjacent Developer
Alternative Technical Concepts
Subcontract and Supplier Solicitation and Contracting
ADT on I-370: 90,000

PROJECT DESCRIPTION

The Woodrow Wilson Bridge (WWB) Maryland Approach & Interchanges project included five individual contracts totaling \$276.6M to reconstruct the I-95/I-495 Maryland corridor up to the new WWB, add the new National Harbor Interchange and reconstruct the I-295 Interchange, and portions of the MD 210 Interchange. The project involved 32 bridges; 35 retaining walls (349,950 SF); 95,980 SF of noise walls; one million CY of excavation; 56,000 LF of drainage; subbase; bituminous paving; guardrail; signing; landscaping; architectural features; electrical; grading; ITS; maintenance and protection of traffic; and performing incidental road work for the mainline Capital Beltway and 30 associated ramps. Maintenance and protection of traffic was extensive as a result of the project's location along the heavily traveled I-95/I-495 Corridor. Wagman maintained traffic on I-295, I-95 & I-495 while the three interchanges were constructed and while the Beltway was reconstructed. Wagman reconstructed the Inner & Outer Loop of the Capital Beltway from the new WWB to two miles north of the MD 210 Interchange. Many of the structures were curved steel flyovers constructed over active traffic lanes. Wagman redesigned a structure over I-95/I-495 and the approaches, which provided a \$2 million dollar savings to the Owner and expedited construction of the overpass without affecting the aesthetics of the structure and also minimized impacts to the environment. Wagman and the Designer collaborated to redesign this structure to a practical representation and save money for SHA. Wagman was responsible for the design and construction of large permanent retaining walls with tie-backs. Our Geotechnical group coordinated with the Designer on a permanent tie-back wall with a CIP concrete face in accordance with performance specifications put forth by the Owner. Collaboration between Wagman, the Designer and Owner ensured that the Design-Build walls were constructed on time and within budget. This project fell within the larger WWB Program that required a massive coordination effort between contractors, an adjacent development of The National Harbor and local stakeholders. The project was located in the environmentally sensitive Potomac River Basin and required environmental compliance with agency permits and general regulations. All five contracts maintained the maximum E&S rating (4.0). Wagman exceeded all required DBE subcontracting goals. Wagman maintained the CPM schedule and earned all available milestone bonuses, completing each contract on time, safely and below budget. Anthony, Jon, Steve, Neil Leary and Monica Paylor were team members.

OWNER/CLIENT AND CONTACT INFORMATION

Maryland Transportation Authority
707 North Calvert Street, Baltimore MD 21202-3601
Shirlene Cleveland (now employed by VDOT), 703-691-6710
Email: Shirlene.cleveland@vdot.virginia.gov

WOODROW WILSON ACHIEVEMENTS RELEVANT TO GREENBELT INTERCHANGE CMAR

- Wagman maximized scope by being low bidder on all five of the contracts we bid, and also successfully proposed Value Engineering (VE) opportunities to save the SHA budget.
- Each contract had specific milestones to maintain coordination with adjacent contractors and the adjacent development, National Harbor. Wagman achieved all milestones to allow adjacent contractors to maintain schedule and for the adjacent development to proceed on or ahead of schedule.
- Working in the sensitive Potomac River Watershed, Wagman maintained the highest E&S rating possible during construction. Wagman's VE proposal at Rosalie Island reduced impacts by eliminating a causeway in the environmentally sensitive Smoot's Cove. We constructed an access road with barges reducing environmental impacts.
- Wagman worked with SHA and the designer to minimize utility and ROW impacts, and also partnered with all adjacent property owners to minimize impacts.
- Wagman worked on the I-95/I-495 Corridor and executed all traffic phase switches on time and with minimal impact to the traveling public, including switching the entire beltway onto the new Woodrow Wilson Bridge. Wagman worked directly with the Team Traffic Manager Neal Leary (WRA) to achieve this goal.
- Wagman partnered with all stakeholders and created a collaborative atmosphere that allowed innovation and VE opportunities for SHA.
- Construction of a new major interchange along the I-95/I-495 Corridor that met the requirements of the Interstate Access Point Approval.
- Compliance with work restrictions due to American Bald Eagles, (George and Martha) RTE



PROJECT AWARDS

- 2010 Award of Excellence Major Roadway over \$10 Million Award – MdQI
- 2011 Award of Excellence Partnering Bronze Award – MdQI
- 2012 Northern Virginia Transportation Alliance Award – NVTA

PROJECT DELIVERY METHOD: Design-Bid-Build

OVERALL CONSTRUCTION COST

Initial Contract Value: \$259,177,000
Final Contract Value: \$276,586,712
Reason for Difference: Incentive and Owner change orders

OVERALL SCHEDULE PERFORMANCE

Initial Completion Date: February 2009
Final Completion Date: February 2009
Reason for Difference: N/A

Items of work on this project similar to Greenbelt Metro Interchange Project

- Design-Build Retaining Walls
- Environmental Compliance
- Design Coordination with Designer/Owner on Permanent Elements and Value Engineering Proposals
- Permit Acquisition/Modification
- Survey and 3D Modeling
- Major Traffic Control on I-95/I-495 Corridor
- Curved Steel Structures over I-95/I-495
- Utility Coordination, Relocation and Avoidance
- Milling/Paving of I-95/I-495 Corridor
- Project Scheduling, CPM and Project Updates
- Widening, Auxiliary Lanes & Reconstruction of I-95/I-495 Corridor
- Stakeholder Coordination and Communications
- Demolition of Existing Structure over I-95/I-495
- Completed On-Time and Within Budget
- Drainage, Landscaping and other Highway Elements
- Met all Project Milestones
- Geotechnical - Deep Foundations
- Drilled Post/Panel Noise Walls
- Environmental Compliance
- Straddle Bent over I-95/I-495 and Ramps
- Reconstruct Mainline Bridges on I-95/I-495
- Coordination with Adjacent Developer - National Harbor
- Partnering with Owner, Developer, Contractors and Third Party Stakeholders
- Major Traffic Switches to Mill, Overlay and Reconstruct I-95/I-495
- ADT on I-95/I-495: 200,000 / ADT on I-295: 88,000 (Project Total: 288,000)

PROJECT DESCRIPTION

This was a \$210 million interchange reconstruction project north of Baltimore City, MD for one of the most heavily traveled interchanges in the United States. The I-95/I-695 Interchange was designed to eliminate an outdated double braided interchange. Wagman was the managing partner of a construction joint-venture formed to build this project. Collaboration, coordination and open communication, facilitated by Wagman, between our joint-venture partners, MdTA and GEC, made this project a success. The project also included demolition of existing bridges and roadway. This project required major traffic control components to maintain traffic on I-95 and I-695 during construction. The work included 11 bridges – four curved steel flyovers, three mainline bridges, two ramp bridges and two overpass structures. The project also included 75,000 SF of retaining walls; 215,000 SF of drilled caisson post and panel noise walls; 1,100,000 CY of excavation; 30,000 LF of drainage pipe; 175,000 tons of asphalt paving; milling of mainline I-95; and grooving services.

This interchange project created unique challenges in stormwater management. Working closely with MDE we were able to adjust erosion and sedimentation sequencing to align with earthmoving operations. Wagman reconstructed mainline I-95, creating express toll lanes (auxiliary lanes). Wagman proposed to Value Engineer portions of the foundation system on the main flyover structures. We designed the foundations to a more conventional pile foundation that suited our resources and resulted in a \$1 million savings to the Owner. Working with the Designer and Owner, Wagman proposed a very successful alternate traffic scheme to minimize impact to the traveling public during steel erection operations. Wagman worked closely with Neal Leary of WRA to facilitate this betterment. A partnering environment fostered by Wagman, the Owner and the Designer allowed this type of collaboration with everybody working in the best interest of the project. Utility relocation and coordination enhanced the progress of the project when we proposed to hand tunnel under I-95/I-695 in lieu of micro-tunneling. This work was self-performed by the Joint-Venture allowing us to manage the schedule of the utility relocation. A major fiber optic communication line ran through the project, and we collaborated with the utility owner to locate and avoid relocation of this important utility. Anthony, Steve, and Neil Leary were team members.

OWNER/CLIENT AND CONTACT INFORMATION

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2310 Broening Highway, Baltimore MD 21224
David Labella, 410-931-0110 x 251
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I-95/I-695 INTERCHANGE ACHIEVEMENTS RELEVANT TO GREENBELT INTERCHANGE CMAR

- Wagman maximized scope as low bidder by over \$20 million. Wagman successfully proposed Value Engineering (VE) opportunities to save additional MdTA budget concerning foundations.
- Wagman improved the construction schedule through modification of the traffic phasing and reduced costs.
- Wagman met each of the specific milestones to maintain coordination with adjacent contractors, as well as final completion.
- Working in the sensitive Chesapeake Bay Watershed, Wagman maintained the highest E&S rating possible during construction. Wagman allowed MdTA to utilize our temporary bridge over Stemmers Run to reduce impacts on future contracts.
- Wagman worked with MdTA and the Designer to minimize utility and ROW impacts. Adjacent property owners were treated as neighbors, and impacts to neighbors were minimized.
- Wagman worked over, along and on the I-95 & I-695 Interchange maintaining traffic and minimizing impact to the traveling public. Working with this Team's Traffic Manager, Neal Leary (WRA), we re-designed the traffic phasing on both major interstate roads to further reduce impacts to the traveling public.
- Wagman developed a great working relationship with MdTA, GEC, the designers and local stakeholders and created a collaborative atmosphere that allowed innovation and VE opportunities for SHA.
- Daily coordination meetings were utilized to encourage collaboration and partnering throughout this contract.



PROJECT AWARDS

- 2010 Excellence in Concrete Award - ACI, Maryland Chapter
- 2010 Silver Award for Public Communication – NPHQ
- 2011 National Achievement Award, Special Recognition for a Structure Project – NPHQ
- 2011 Award of Excellence, Partnering Silver Award – MDQI
- 2011 Award of Excellence, Structure New/Structure Rehabilitation Over \$5 Million – MDQI

PROJECT DELIVERY METHOD: Design-Bid-Build

OVERALL CONSTRUCTION COST

Initial Contract Value: \$208,440,000
Final Contract Value: \$216,788,000
Reason for Difference: Incentive and Owner change orders

OVERALL SCHEDULE PERFORMANCE

Initial Completion Date: June 2010
Final Completion Date: August 2010
Reason for Difference: Contract completion extended due to extra work

Items of work on this project similar to Greenbelt Metro Interchange Project

- Design-Build Alternate Foundations & Traffic Environmental Compliance
- Design Coordination with Designer and Owner on Traffic Maintenance & Value Engineering Proposals
- Permit Acquisitions and Modifications
- Survey & 3D Modeling
- Major Traffic Control on I-95/I-695 Corridor
- Large Curved Steel Structures
- Utility Coordination, Relocation & Avoidance
- Milling and Paving of I-95/I-695
- Project Scheduling
- Widening & Reconstruction of I-95/I-695 Interchange
- Stakeholder Coordination & Communications
- Demolition of Existing Structure over I-95
- Completed On-Time and within Budget
- Drainage
- Met all Project Milestones
- Geotechnical - Deep Foundations
- Drilled Post and Panel Noise Walls
- Reconstruction of Mainline Bridges on I-95
- Partnering with Owner & Third Party Stakeholders
- Large Sign Structures
- Stream Maintenance
- ADT on I/95: 170,000 / ADT on I-695: 135,000 (Project Total: 305,000)



Woodrow Wilson Bridge



I-95/I-695 Interchange



Intercounty Connector

SECTION C PROJECT APPROACH

The Construction Management at Risk (CMAR) contracting method will result in a partnership between the Designer, Wagman and SHA. Wagman has a well-established track record of delivering successful projects through alternative delivery methods including CMAR and Design-Build. Wagman recognizes the key to successfully delivering a CMAR project requires a culture and management that encourages integration of all corporate resources including executive, engineering, estimating, project management, legal and accounting personnel. Wagman recognizes CMAR delivery requires a different approach than a typical design-bid-build project. Having successfully delivered \$224M of CMAR projects, Wagman understands what is required and fosters a culture that promotes innovation, collaboration and synergy between disciplines, resulting in a fully integrated Project Team to maximize the benefits of CMAR procurement.

Wagman personnel assigned to the Project will be committed for the project duration; Preconstruction Phase, early procurement option and early construction package if elected, and if the submitted GMP is acceptable, the construction of the project. Wagman’s team members are seasoned professionals, each with relevant experience in the various specialized areas and are empowered by Wagman management to make the timely decisions necessary to promote a streamlined design and construction process. Wagman has identified critical Project roles and assigned personnel to those roles to participate in the day-to-day operations of all parts of the Project as follows (illustrated in further detail in Section B and the Appendix):

Name	Role	Name	Design Coordinator (DC)
Greg Andricos, PE	Project Executive	Ed Laczynski, PE	Geotech./Foundations DC
Anthony Bednarik, DBIA	Project Manager	Alex Brown	Structures DC
Steve Wood	Construction Manager	Rob Shunk, PE	Roadway DC
Jon Feim	Cost Estimator	Jason Hershey, DBIA, CPE	Utility DC

In addition to identifying and performing key roles of the Project Team, Wagman has also made strategic alliances with outside firms through Professional Services Agreements or Dedicated Subcontractor Agreements to create the Wagman Team. This will allow experts in each specific discipline to actively participate in the Preconstruction Design Development. These strategic alliances are invaluable for constructability reviews. The reviewer, eventually tasked with construction, is the best resource to provide an evaluation of practical design, constructability and risk. A summary of the Wagman Team members and their specific contributions are described below.

Name/Firm	Area of Expertise	Specific Contribution
Neil Leary (WRA)	MOT & Phasing	MOT Preconstruction Design Development/Review MOT Constructability Review
James Ashby (WRA)	Environmental Compliance	Environmental Compliance Design Review Constructability Review
Monica Paylor, PE (WRA)	Geotechnical	Geotechnical Preconstruction Design Development
Manuel Fernandes (FMCC)	Paving, Lighting, Signage, ITS, Signalization, Accelerated Bridge, WSSC & PEPCO	Design Review and Constructability Review Coordinate with WSSC & PEPCO Construction of Signalization, Lighting, ITS, Signage Performance of Hot Mix Asphalt/Milling if best value
Bob Urban (HSS)	Curved Structural Steel	Structural Steel Preconstruction Design Development Structural Steel Constructability Review Furnish/Transport/Erect Structural Steel
John Undeland (UA)	Public Outreach	Assist with Public Relations

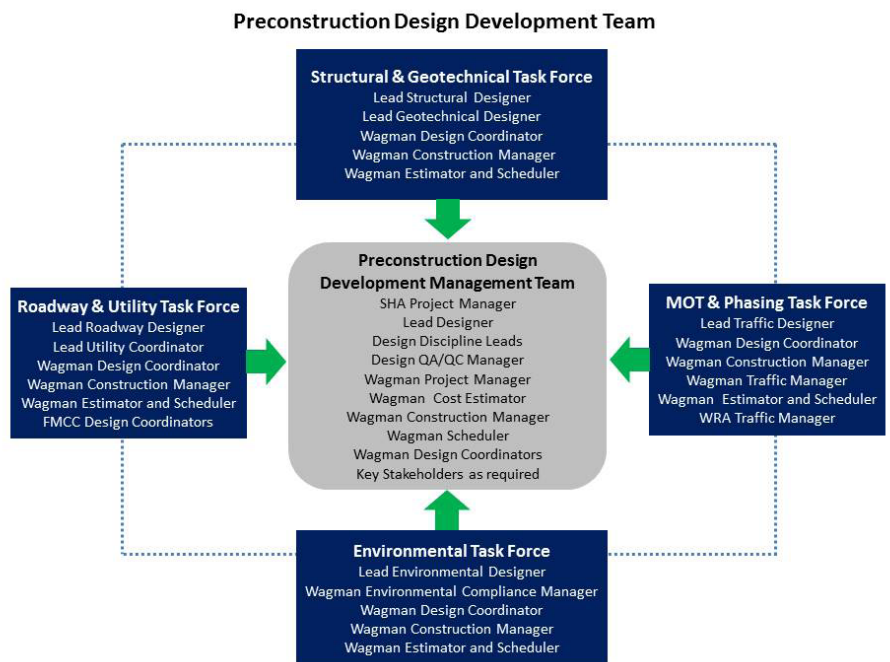
In addition to the benefit of added expertise, the structure of the Wagman Team will allow for more transparency and control over the performance of preconstruction services and construction execution of the Greenbelt Metro Interchange. For example, the Wagman Team, includes FMCC who will provide valuable insight into the lighting, signalization, signage, ITS, utilities and milling and asphalt pricing as opposed to simply evaluating a non-dedicated subcontractor's line item quote. This insight provides better cost control and risk management, and improved identification of alternative technical concepts. Wagman and HSS, both family businesses, have successfully worked together through generations of management succession. By including HSS on the Wagman Team, we will draw upon significant expertise for the design, fabrication and erection of the curved steel girders over I-95/I-495. Wagman and HSS have jointly constructed numerous similar projects. Most relevant to the Greenbelt Metro Interchange is the I-95/I-695 Interchange - Phase 1, KH1501 project, which also consisted of deep curved structural steel girders erected over highways with ADTs in excess of 200,000 in an urban setting, and the Woodrow Wilson Bridge with curved steel girders over the I-95/I-495 Corridor.

1. PRECONSTRUCTION APPROACH

A. DESIGN AND CONSTRUCTABILITY REVIEW

Critical to the CMAR process is collaboration and coordination between the Designer, Contractor and Owner. Wagman's objective in the preconstruction phase of the project will be to streamline the practical design process with open communication, reduce errors and omissions, improve constructability and quality, and reduce the cost of construction ensuring delivery within budget and on schedule. The Wagman Team will be proactive in forming a Preconstruction Design Development Management Team (PDDMT) consisting of applicable personnel from the Project Team. The PDDMT will perform two major functions: participation in task force group meetings and participation in monthly progress meetings. Task Force Groups comprised of technical subject matter experts will be established and include representatives from both the Designer, Wagman, and SHA. Wagman representation will consist of both key personnel and value-added personnel as outlined in Section B. Based on Wagman's evaluation of the major elements of the Project, four Task Force Groups will be established including structural and geotechnical, roadway and utilities (including geometry), MOT and phasing, and environmental. All work elements will be assigned to the appropriate task force. The Task Force Groups will include SHA representatives, Designer representatives, and Wagman personnel specializing in estimating, engineering, scheduling and construction, including our Construction Manager, as needed to be continually evaluating and providing feedback for design advancement. The task force approach will allow for systematic and efficient conceptualization and evaluation across all preconstruction divisions including cost and schedule analysis, early risk identification, phasing analysis and development of project innovations. The Task Force Groups will collaborate weekly and report during the monthly progress meetings to the PDDMT to present findings and coordinate between the different Task Force Groups ensuring design compatibility. The Task Force Groups will utilize a design evolution tracking log, a Value Engineering Cost Proposal (VECP) tracking log, a risk matrix, and a constructability evaluation matrix to categorize, track and report the challenges throughout the design process.

The main role of the PDDMT is to develop options and alternatives that will improve constructability, safety, minimize environmental impacts, and reduce costs through task force meetings, over-the-



shoulder reviews, and open communication.

During Preconstruction Design Development we will work with the Designer to create constructability hold points, so ensuring the design does not progress without the proper reviews. Each design element will be reviewed by our PDDMT. When all design elements are compiled into a design submission, our PDDMT will complete additional constructability reviews to ensure that the scope of work is clear, the sequence of construction is complete, and that there are zero conflicts during construction among the design elements. Working with SHA and the Designer, we will create a formal constructability evaluation matrix. The form will be tailored to highlight the goals of the Greenbelt Metro Interchange project, including elements such as cost, schedule, and risk impacts; sequence of construction; access; lay-down; equipment requirements; material selection; environmental impacts; and MOT impacts. Once a constructability review is completed, we will provide a Comment Resolution Form to the Designer and SHA with our comments. The Designer and SHA will address our comments on the Comment Resolution Form, the PDDMT will collectively establish a final resolution prior to proceeding beyond the established hold point, reducing redesign, errors and omissions.

Currently, Wagman is successfully collaborating with Wallace Montgomery & Associates LLP on these active projects in Maryland: US 301 at MD 304 Interchange Improvements (\$30.1M SHA project), and I-95 Latex Overlay (\$50.2M MdTA project) which just received the \$500,000 early completion incentive.

STREAMLINING THE DESIGN PROCESS – To assist with streamlining the design process, immediately upon selection the Wagman Team will work with the Designer and Owner to develop a mutually agreeable design schedule. Design Coordinators are available to meet as required to meet the Preconstruction Design Development schedule. The development of the design schedule will occur in conjunction with the development of the preliminary project schedule, phasing and work breakdown structure, and will be the main tool utilized to identify critical design tasks, advance the design effort and track progress. The design schedule will be monitored during the progress meetings and the Designer's progress will be tracked accordingly. As part of the Progress meeting discussions, a three-week look ahead for design and preconstruction activities will occur and the PDDMT will ensure that the appropriate resources are scheduled to complete the upcoming tasks.

Wagman will use the partnering process to resolve issues at the lowest possible level, if an issue cannot be resolved, we will elevate the issue early utilizing the issue resolution ladder; partnering will minimize impacts to project schedule and cost.

The process of utilizing the progress meetings to steer the design effort also allows for more efficient evaluation and integration of innovative ideas and risk management solutions proposed by the Task Force Groups. While the advancement of innovative ideas and risk management solutions is a key component of the CMAR process, it is imperative that the continual evaluation of innovative ideas does not deter from the advancement of the overall design. During the monthly progress meetings, the PDDMT will review the progress information provided by the task force inclusive of any innovative alternate technical concepts (ATC). The PDDMT will rely on the analysis performed by the cost estimator and lead scheduler to determine which of these ATCs warrant further detailed analysis prior to allocating resources to ensure all project resources are effectively and economically applied.

REDUCE ERRORS AND OMISSIONS - The Wagman Team's involvement in the Preconstruction Design Development Phase will greatly reduce the potential for design errors and omissions. Our approach will involve working with the Designer to incorporate Wagman constructability reviews within the Design QC plan. Our internal quality review process will be implemented in addition to Owner required Design QA/QC and will define the quality review process for all design elements of the project. This process will identify the planned schedule of submission for SHA review and approval. Additionally, early coordination, task force meetings and constructability reviews will facilitate practical design, reduce errors and omissions, reduce risks, and allow solutions to be vetted by the PDDMT, Task Force Groups and the Designers. A typical internal quality review process that includes Wagman constructability reviews will require the design documents to go through a four-step quality review prior to submission to SHA.

Step 1 – Design Document Preparation – The Designer of Record will assign discipline specific designers to prepare documents for the project and participate in Contractor led Task Force Groups. The documents will be prepared in accordance with the contract requirements, SHA design standards and specifications, special provisions, and generally

accepted engineering principles and practices.

Step 2 – Constructability Review – The Designer of Record will coordinate with the Design Discipline Lead and the Contractor’s Project Manager, Construction Manager and Cost Estimator in the Task Force Group setting to conduct constructability reviews of the design. The Owner will be requested to participate in over-the-shoulder reviews of the design. Owner, Designer and Construction personnel will attend the Task Force meetings and will review the documents for the following:

- Constructability, material compatibility, accuracy and clarity of plan details and typical sections.
- Adherence to contract requirements, SHA standards and specifications and special provisions.
- Review the sequence of construction to verify logic and practicality.
- Review the MOT, SWM and E&S plans for conformance with the sequence of construction.
- Review for utility conflicts, including WMATA, WSSC, and PEPCO, over-the-shoulder reviews.
- Review for easement and/or Right-of Way conflicts.
- Review for coordination between design disciplines.
- Review for budget compliance.

Step 3 – Quality Control Review – The Designer of Record will assign qualified, discipline specific, design QC Managers to perform a detailed QC review of the documents utilizing project specific checklists for each discipline that will also be reviewed by the Contractor. The QC review will include:

- Checking engineering computations and corresponding design assumptions.
- Checking math, geometry, drafting, spelling, and technical accuracy.
- Reviewing form, content, and organization.
- Evaluating the suitability and compatibility of materials.
- Reviewing for coordination with other design disciplines.
- Reviewing the sequence of construction.
- Verifying conformance to contract documents, SHA standards and specs, and special provisions.

Step 4 – Designer of Record Review – Upon satisfactory completion of the internal design quality review process including the resolution of any review comments and corrections, the Designer of Record will review the documents and will verify that the constructability and QC reviews have been completed and that all comments have been addressed.

In conjunction with this four-step QC Plan, Wagman will implement a comment resolution process between discipline specific designers and reviewers that will occur after each step in the quality review process. During the review, comments will be recorded in red on the documents and will be summarized in writing in electronic format using a Comment Tracking Log in Microsoft Word or Excel along with responses to the comments. This process, used on CMAR and Design-build projects, will reduce errors and omissions.

REDUCE COST OF CONSTRUCTION TO ENSURE IT IS WITHIN BUDGET - The Preconstruction phase is the most advantageous time to capitalize on project cost, mitigate risks, and improve construction methods and sequence. Wagman’s expertise building major interchanges in the region, such as Woodrow Wilson Bridge, I-95/I-695 Interchange, and the Intercounty Connector (ICC), provides the Project with resources to meet the project goals. Our PDDMT team includes experienced cost estimators as well as over 50 years of documented cost trend reporting to utilize as a resource to evaluate design evolution options. Our cost estimation approach will focus on transparent cost estimating in order to best evaluate each aspect of the design evolution to ensure its cost effectiveness. Our Team will utilize HCSS cost estimating software, one of the most respected and transparent software tools available. HCSS is extremely detailed and

each cost activity will include labor, equipment, production, permanent material, construction material and subcontractors. Each project work element is efficiently quantified using systems such as Blue Beam, Carlson and AGTEK. An example of an HCSS cost report for a sample direct cost item is located in the Appendix and illustrates the level of cost breakdown available, as it shows the allocation of an item's cost between equipment, burden, labor, permanent materials, temporary materials and subcontractors. Our Construction Manager (CM) Steve Wood will review the estimate to ensure productions are attainable, assumptions are reasonable, and risks are properly identified. In addition, the alliances formed by the Wagman team with firms such as HSS and FMCC will allow for further cost transparency and reporting not typically available. Our alliances with these firms as dedicated subcontractors will allow for open book cost analysis on disciplines that are typically unit price subcontracted items such as lighting, signals, ITS, utilities, structural steel, milling and paving. The preconstruction cost model that is developed can be incorporated into the final GMP cost estimate as a tool for SHA and the Independent Cost Estimator to evaluate the design evolution.

Upon selection, Wagman will develop a preliminary schedule of values and estimate based on information provided by the RFP. Our Cost Estimator (CE), Jon Fiem will generate a preliminary estimate that will include reasonable assumptions and evaluate project risks. Once we establish the preliminary estimate, we will create an "Innovative Engineering" Register to track potential savings to cost, schedule, reduced environmental impact or impacts to third party stakeholders. Each Innovative Engineering (IE) idea will be quantified and estimated to determine the real impact to the project. As alternates or options are introduced, we will populate our IE register, evaluate, and provide recommendations to the Project Team. As an example, we will work with the Designer and SHA to optimize vertical alignment of the roadway to reduce the excess waste, reduce cost, accelerate construction schedule, and minimize impacts to the environment. This Preconstruction Design Development was incorporated on the ICC, where we reduced waste and minimized impacts. Another cost reduction on the ICC was the redesign of the Rockville Metro Interchange (WMATA), saving the Owner \$15 million.

OPTIMIZE THE PROJECT DELIVERY SCHEDULE - Wagman has extensive experience in CMAR and Design-Build projects and has been successful in accelerating both design and construction aspects of projects. Wagman will work with SHA and the Designer to develop a fully integrated Project schedule inclusive of the design schedule and other preconstruction tasks. Wagman's Project Manager, Cost Estimator and Construction Manager will work together to create the preliminary project schedule. The development of the design schedule will occur in conjunction with the development of the preliminary project schedule, phasing and work breakdown structure, and will be the main tool utilized to identify critical design tasks, advance the design effort and track progress. Wagman has teamed with iCivil, Inc., a WBE/DBE and well-respected scheduling consultant, to assist with the evolution of the design and construction schedules to ensure optimization.

The RFP has Contractor selection slated for December 2015, with design completion slated for June 2017, a duration of approximately nineteen months of design and preconstruction tasks, with a construction start Spring 2017. The design is on the Critical Path, and through Preconstruction Design Development our coordinators will ensure the designers maintain the project schedule. Wagman's preconstruction effort will reduce the critical path design activities to between twelve and fourteen months, thereby allowing construction to start by February 2017. These additional two months of construction will allow non-weather sensitive activities such as traffic switches, MOT setup, clearing operations, and related activities to occur. During preconstruction, Wagman will work closely with the designer to obtain required environmental clearances and permits, WMATA right of entry, property owner right of entry, and other required permits. In addition, the construction schedule will be optimized and shortened through proper project segmenting and sequencing as discussed in Section 2.a. Our task force approach to Preconstruction Design Development is key, as we will be able to constantly evaluate the project schedule when determining the final sequencing and phasing to ensure the completion of the Project to accommodate the opening of the new FBI facility.

Wagman was part of a team that designed and constructed two contracts of the ICC project in 36 months. Each contract was over \$400 million. The Preconstruction Design Development was accelerated and fast-track construction was required to meet the project end date. On the I-95/I-695 Interchange, we accelerated construction and increased safety to the traveling public by revising the construction sequence and MOT on I-95/I-695 for the major traffic switches.

B. DESIGN SEQUENCING

Support for SHA will come in the form of collaboration from each task force group, inclusive of Designer and SHA input, which will perform an analysis to identify any early lead items, specific elements and/or segments that are best suited for early or independent construction packages. This will be accomplished by analyzing the preliminary project schedule and work breakdown structure to determine which early activities or segments may benefit from having an early or independent construction package submittal. Wagman has already performed an analysis of the project work flow and determined that the project may best be broken into three segments, as discussed in Section 2.a, and the design sequencing will follow accordingly. Our preliminary design schedule will depict the individual design packages required to accommodate our construction segmenting and sequencing.

In addition to our segmentation approach, each segment design submission could potentially be broken into smaller work packages for reduced SHA review efforts. By submitting smaller work packages, submission review delay risk is mitigated because each work package can be performed independently. In addition, submission of smaller work packages will allow for the timely submission of long lead items. Such work packages may include:

- MOT
- Sediment & Erosion Control
- Hydraulics and Drainage
- Utility Relocations
- Roadway
- Structural
- ITS/Lighting
- Pavement Markings/Signage
- Landscaping

The following elements were preliminarily identified that may benefit from an early/independent submission:

Element Description	Reason
Right-of-Entry	Right-of-Entry allows access on WMATA controlled areas.
Box Culvert Extensions	Box culvert extensions need to precede the roadway widening.
Rhode Island Ave Bridge	Bridge Replacements are on the critical path, and will require three-phase construction. We can mitigate schedule risk if this was an independent submission.
Greenbelt Road Bridge	Bridge Replacements are on the critical path, and will require three-phase construction. We can mitigate schedule risk if this was an independent submission.
E&S Packages for Culverts, Bridges and Utilities	E&S packages allow early access and excavation for the culvert extension areas, bridge replacement areas and utility relocations.
Utility Relocations	Utility relocations allow for relocation of existing utilities in conflict with box culvert extension, bridge replacements and roadway widening.
Noisewalls	Noisewalls allow for procurement of long lead items.

In addition to the identification of the early or independent construction activities, the analysis will identify which design

activities or elements require early work or coordination. Such activities include noise studies, geotechnical exploration, utility test pitting, pipe inspections, survey, overhead sign relocation, as well as MOT support activities. These design activities will be properly identified and incorporated into the integrated project schedule.

C. STAKEHOLDER INVOLVEMENT

Open communication, partnering and active involvement is the key to success when involving stakeholders during the Preconstruction Design Development Phase. Immediately upon selection, a project kickoff meeting will be arranged, to which all stakeholders will be invited to participate. This will give the PDDMT the opportunity to present the project to all stakeholders and obtain feedback regarding their concerns. This project kickoff meeting will include all identified stakeholders including, but not limited to SHA, Designer, Prince George’s County, City of College Park, City of Greenbelt, FHWA, WSSC, GSA, WMATA and adjacent developers. As part of the kickoff effort, Wagman will host a separate utility kickoff meeting for utility owners. Following the project kickoff meetings, monthly progress meetings will be established to discuss Preconstruction Design Development, and third party stakeholders will be invited if required. During these meetings, Preconstruction Design Development progress will be conveyed to those in attendance. Stakeholders will participate in over-the-shoulder reviews and participate in more detailed Preconstruction Design Development discussions. Third party stakeholders will receive copies of any design submissions to SHA. As preconstruction design advances, we will schedule stakeholder coordination meetings to incorporate comments and input into the design process. Our public outreach Manager John Undeland will support SHA’s public outreach program by creating a project website, Facebook, Twitter, and e-mail newsletter to keep stakeholders informed. Wagman will maintain open communication lines between the stakeholders and the PDDMT. Stakeholders will be encouraged to communicate directly with the Project Manager through email and telephone.

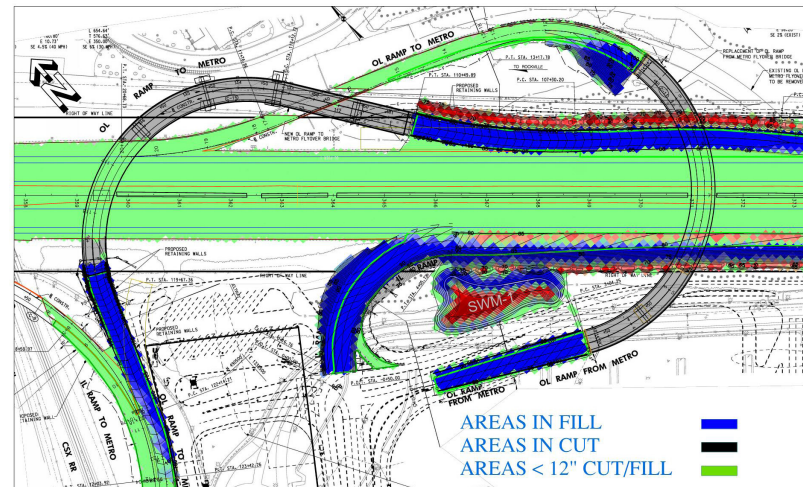
D. PROPOSED TECHNICAL CONCEPTS

Innovation is a core value at Wagman. Wagman has successfully developed and obtained Owner approval, ATC/VECPs improving project schedule, safety, environmental compliance or cost savings as depicted below.

Wagman Innovative/Alternate Technical Concepts Approved by SHA/MdTA		
Project	Description	Benefit to Project
WWB MB4	Redesigned Bridge Foundation fill material and approach at Bridge 29 (VECP)	\$2,200,000
ICC-A	Redesigned a WMATA metro access interchange that eliminated structures and reduced retaining walls.(ATC)	\$15,000,000
I-95/I-695 Interchange - Phase 1, KH1501	Redesigned Pier Foundations (VECP)	\$2,100,000
I-95/I-695 Interchange - Phase 1, KH1501	Modified MOT for Major traffic switches (ATC)	Safety improvement, time reduction and minimized impacts to motorists
Salisbury Bypass	Lengthened Wicomico River Bridge to relocate an abutment outside of flood plain (ATC)	Reduction in Environmental Impacts

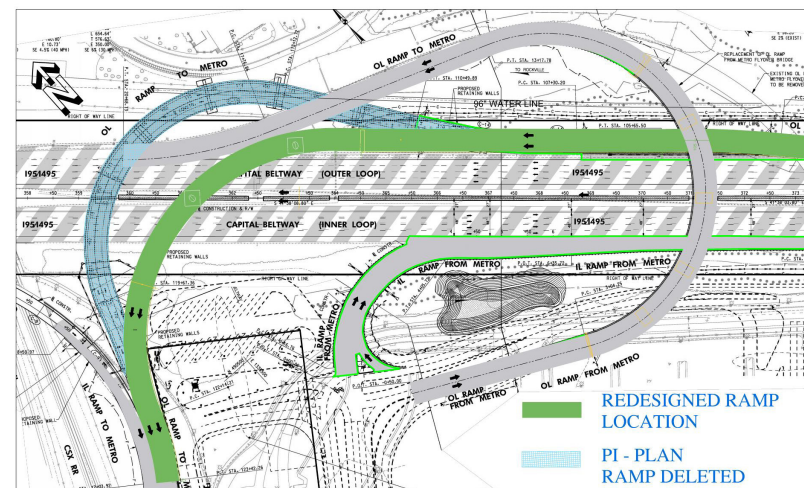
Our team has studied the RFP and the information available to the contractors for this procurement and presented innovative concepts on the following page.

Optimization of the vertical profile and SWM facilities to minimize the amount of waste or borrow required for earthwork. Our PDDMT will work with the Designer during task force meetings to ensure the vertical profile minimizes offsite borrow or waste and that the resultant profile is constructible, thereby reducing cost and time. Wagman has performed a preliminary analysis of the earthwork and determined that there is an approximate cut value of 79,600 CY and a fill value of approximately 113,150 CY. Once factored for swell and shrinkage, there is a 44,860 CY deficit of material. Wagman will help identify areas where the vertical alignment can be depressed to the fullest extent possible and will try to over excavate the SWM facilities as much as possible to fill the deficit. Any additional deficit will be filled with offsite borrow, possibly excess cut material from adjacent developments. The above cut/fill map illustrates the major locations of the cuts and fills for the project. While not pictured due to space constraints, our analysis included the widening for the entire length of the project. **Enhancement of Project Goals: This innovation reduces cost, advances project schedule, reduces on-road trucking to minimize inconvenience and impact to traveling public, and reduces project footprint to minimize environmental impacts.**



Outer Loop Ramp to Metro Adjustment

Optimization of the ramp structure by starting the point of radius earlier. The revised layout reduces the overall length of the structure, reduces the number of piers and most importantly eliminates the conflict between the straddle bent piers and the 96" WSSC waterline. This layout also avoids conflicts with WMATA's secured facility. Additionally, this reduces the amount of ROW required. Our preliminary analysis indicates that sight distances, clearances and super elevation transitions will work, thereby warranting further design analysis. **Enhancement of Project Goals: This innovation shortens the bridge reducing cost and improving project schedule, avoids WSSC conflict, reduces project footprint to minimize environmental impacts, and innovative sequencing allows the traveling public minimal impact.**



Modifications to WSSC's Minimization Option

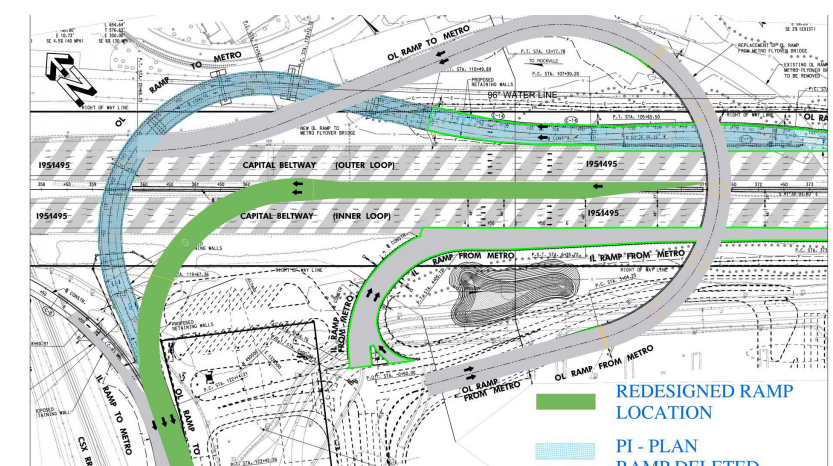
Should the alternate interchange configuration, developed between SHA and WSSC and included with the RFQ, be elected, Wagman will utilize innovative geotechnical alternatives to provide better options for retaining wall installation. Currently, WSSC's requirements are to excavate to a depth below the 96" water line for installation of the retaining wall to protect from future excavation issues adjacent to the wall should future excavation for maintenance or replacement of the water main be required. The proposed excavation could be up to 15' deep and would add significant cost and time to the Project. Wagman's in-house geotechnical division can provide alternative methods such as a pile supported wall foundation, ground improvements or other methods that will allow for future excavation of the water main without compromising the retaining wall foundation. **Enhancement of Project Goals: This concept deconflicts the 96" WSSC waterline by avoiding full-depth excavation.**

Accelerated Bridge Construction (ABC) for the Rhode Island bridge replacements, the Greenbelt Road bridge replacement or the flyover ramp structures. Because the bridge replacements will most likely require three phases, they are on the critical path for the construction schedule. Accelerated bridge construction could greatly reduce the overall construction schedule. Wagman has experience with rapid bridge replacements as demonstrated on the successful replacement of the Nursery Road Bridge for SHA. In addition, Wagman has teamed with FMCC, who has experience in utilizing pre-casted large structural elements such as pier units and Inverset precast superstructure units. FMCC utilization of precast elements on the Eastern Avenue Bridge project in Washington, D.C. resulted in project completion four months ahead of schedule, resulting in faster alleviation of traffic. **Enhancement of Project Goals: ABC will reduce the duration of the reconstruction of mainline bridges, minimizing impacts to the traveling public and accelerating the Project schedule. Savings will be realized as a result of the accelerated schedule.**

Utilize drilled shaft for flyover pier foundations in confined space areas such as the median, adjacent to WSSC 96" Water and within WMATA's storage and inspection yard. Wagman self-performs drilled shaft installations. Drilled shaft foundations result in significantly less disturbed footprint and excavation as well as reduced installation vibration and ground heave than other foundation designs such as pile or spread footing foundations. Support of excavation can typically be reduced as well, depending on substructure type. Wagman's in-house geotechnical services can assist the designer with determining the suitability and designing alternate foundation designs such as drilled shaft, micro pile or even drilled in pile to reduce vibration and protect existing infrastructure. **Enhancement of Project Goals: Drilled shafts reduce structured footprint, minimizing environmental impacts, in addition, drilled shafts mitigate vibration and potential conflicts with WSSC and WMATA facilities. Duration of bridge foundations will be reduced, minimizing construction within WMATA's secure facility.**

Outer Loop Ramp to Metro Left Hand Exit

Revising the OL off-ramp structure to accommodate a left hand exit. The revised layout widens the OL into the median to accommodate an off ramp, then a flyover structure goes over the IL. The layout requires MSE walls in the median to support the off ramp. Our preliminary analysis indicates that sight distances, clearances and super elevation transitions all appear to work, thereby warranting further design analysis, however there may be insufficient length for the off ramp weave prior to conflicting with the proposed pier for the OL ramp from Metro, which must be evaluated. **Enhancement of Project Goals: This innovation greatly reduces scope, creating cost savings and decreasing project duration. With this Left Hand Exit, we minimize impacts to the traveling public during construction and avoid environmental resources. Potential conflict with WSSC and the WMATA secured facility is eliminated.**



Other possible innovative ideas that were discussed during the preparation of this proposal include the use of roundabouts within the existing Metro station area and also the possible re-use of the existing soundwall components. While the soundwalls will most likely become taller, there may be sections of the soundwall installation where existing panels can be reused and stacked higher to achieve the required height. These cost reduction ideas may be unconventional, but further exploration could lead to other valuable ideas.

Proposed Innovations and Benefit (•) to Greenbelt Metro Interchange Project

Description	Safety	Timeframe	Budget	Quality	Environmental Impact	Traveling Public Impact
Drilled Shaft Foundation for Flyover Piers	•	•	•	•	•	•
Accelerated Bridge Construction	•	•	•	•		•
Optimization of SWM Facilities		•	•	•	•	
Optimization of Vertical Profile		•	•	•	•	
OL Ramp to Metro Adjustment	•	•	•	•	•	•
OL Ramp to Metro Left Hand Exit	•	•	•	•	•	•
Modifications to Deconflict WSSC	•	•	•	•	•	•

2. CONSTRUCTION APPROACH

A. CONSTRUCTION SEQUENCING

SEGMENTATION - Based on preliminary analysis, Wagman has segmented the Project into three main independent segments providing much needed flexibility to minimize risk: Segment I – Rt. 1 to Metro Rail Bridge, Segment II – Metro Rail Bridge to Kenilworth Avenue, and Segment III – Kenilworth Avenue to Project end. Segmentation of the project minimizes the risk of Project-wide impacts due to constraints such as Time of Year Restrictions (TOYR) from March to June, Environmental Compliance, Right-of-Way acquisition (ROW) and utility relocations. Each segment is independent regarding MOT and phasing. Each segment can be constructed concurrently with other segments or on their own. Segment II has the majority of the constraints including TOYR, ROW, utility, and environmental as well as the design of numerous complex structures and significant coordination with adjacent projects, and as such could face delays in design and construction. Therefore, to minimize Project-wide impacts from Segment II, we anticipate Segments I and III will be constructed concurrently. Segment II work will proceed in conjunction with Segments I and III as constraints allow. Each segment constitutes a separate independent work package to ensure work can begin on Segments I and III as soon as possible without hindrance from segment two. In addition, this scheme will allow us to best optimize resources such as equipment and labor. By initially focusing on Segments I and III, we will be able to reallocate our resources to complete Segment II upon completion of Segment III, as it will be the shortest duration of all three segments, and then again upon subsequent completion of Segment I. Our segmenting plan is illustrated on the following page.



PHASING

Each segment will be phased independently of other segments. All three segments will have three phases as shown in the following phasing diagrams. Travel lanes will be compressed to 11-foot widths and shifted towards the median to allow for barrier placement for the outside widening, eliminating the need for temporary pavement. At all times, through the length of the project, either the inside or outside shoulder will be preserved for emergency pull-offs and accel/decel lanes for construction vehicles, with the exception of the short distance through the bridge replacement areas. A final fourth phase will be implemented across all segments for milling, bio-retention, overlay and final striping. This fourth phase can be conducted Project-wide or can be implemented by segment should some segments be completed early. This will allow for removal of MOT devices and the opening of a segment early, sooner alleviating impacts to the traveling public.

SEGMENT 1 INCLUDES:

Rhode Island Ave Bridges



Phase I - Compress travel lanes to 11', place TCB, perform utility relocations, construct outside road widening and outside of Rhode Island Ave Bridge.

Phase II - Construct middle two lanes of mainline bridge replacement.

Phase III - Perform interior lanes of mainline bridge replacement.

SEGMENT 2 INCLUDES:

Metro Station Interchange, Box Culvert Extensions, Flyover Structures



Phase I - Culvert Extensions, Flyover median piers, utility relocations.

Phase II - SWM Basins/Traps, Outside road widening, both OL flyover structures, Metro approaches.

Phase III - Tie-ins at Metro Ramps, Remove Ex. Flyover, tie-ins at Metro Station Parkway & Access Drive.

SEGMENT 3 INCLUDES:

Greenbelt Road Bridge



Phase I - Compress travel lanes to 11', place TCB, perform utility relocations, construct outside road widening and outside of Greenbelt Road Bridge.

Phase II - Construct middle two lanes of mainline bridge replacement.

Phase III - Perform interior lanes of mainline bridge replacement.

B. CONTRACTING PLAN

Overview - The Wagman Team was established to ensure that we have the technical expertise and resources to self-perform all critical work elements required by the Project. Additionally our Subcontractor procurement process (inclusive of MBE/DBE/WBE/SBE/HubZone) will ensure that the most capable, reputable and local subcontractors are selected to perform work associated with the selective scope packages for this Project. Each potential firm responding to a solicitation will be evaluated based on the following criteria: Safety, Quality, Capability, Evidence of Past Performance, Financial Capacity and MBE/DBE/WBE/SBE/HubZone Status. From Wagman’s experience within the I-95/I-495 Corridor (WWB and ICC), we have outstanding relationships with local subcontractors and suppliers. Wagman maintains an electronic database of over 3,000 potential vendors. Additionally, Wagman Team member FMCC regularly hosts small business networking Roundtable meetings which provide a series of meetings for MBE/DBE/WBE/SBE/HubZone firms to facilitate growth of disadvantaged businesses.

Self-Performed Work - Wagman has historically self-performed at least 50% of the work on all of our contracts throughout the Mid-Atlantic. We pride ourselves on being builders. We will self-perform work as outlined below:

Wagman Self-Performance		
Construct Retaining Walls	Structure Excavation & Backfill	Bio-Retention & BMP Systems
Erosion and Sedimentation	Drive Pile	Drainage Pipe & Structures
Stripping & Respreads of Topsoil	Install Drilled Shafts	Stormwater Management Basins
Excavation and Embankment	Install Micro-Piles	Form & Pour Foundations
Installation of Aggregate Subbase	Erect Bridge Girders	Form & Pour Substructure
Fine Grading	Install/Extend Box Culverts	Form & Pour Superstructure

Evidence of Wagman’s qualifications for self-performed work is illustrated through previous successful completion of these same elements on similar projects. Wagman has self-performed all of the above listed work elements for major projects within urban corridors with similar ADT’s for SHA. Projects such as the \$276.6M Woodrow Wilson Bridge, \$1045M ICC and the \$216.8M I-95/I-695 Interchange attest of Wagman’s qualifications to self-perform this work. In addition, Wagman has over 100 years of reputable performance and accurate costing history of these self-performed work elements for various Owner’s within the Mid-Atlantic Region. Wagman has significantly grown its geotechnical operation over the past five years and added grooving and grinding through strategic acquisitions to further bolster our list of self-performed work. Further detail regarding our capabilities and qualifications is included in Section B of this proposal.

Subcontracted Work - The Wagman Team self-performs as much work as possible, including all critical construction elements, however there are some specific activities that we typically subcontract. In response to the specific challenges of this Project, Wagman has formed strategic alliances with key firms that perform project specific work elements not typically self-performed by Wagman. By providing one integrated team, Wagman can offer cost control of the Project, provide better insight during the Preconstruction Design Development Phase and ensure maximum cost transparency for the Opinion of Probable Cost (OPCC), the Guaranteed Maximum Price (GMP), negotiations of the GMP and comparison with the ICE. Our dedicated subcontractors are listed below.

Dedicated Subcontractors	
Asphalt Milling/Paving – FMCC	Signage – FMCC
Utility Relocations – FMCC	Structural Steel F&I – HSS
Lighting/ Signals/ITS – FMCC	Scheduling – iCivil
Public Outreach – UA	Environmental Compliance – WRA

The following are additional subcontracting opportunities for work that Wagman and our dedicated subcontractors do not perform. These opportunities are available to satisfy the Project’s DBE goals.

Subcontracting Opportunities		
Install Reinforcing Steel	Landscaping	Clearing and Grubbing
Guardrail & Fence Installation	Pavement Markings	Underdrain
Seeding	Paint & Stain	Sediment Control Devices
Deck Pan & Stud Installation	Trucking	Construction Quality Control (if required)

Subcontracting Plan - During the estimating process, Wagman contacts subcontractors and vendors and complies with all state laws. Our solicitation process targets qualified subcontractors and vendors, in particular minority or disadvantaged businesses, to comply with COMAR 21.05.10.05. Our solicitation process for this CMAR project is:

1. Wagman shall send the solicitation notice to the Governor’s Office of Minority Affairs.
2. Wagman will work with the State to advertise the procurement on eMaryland Marketplace.
3. Wagman will post the solicitation on our Website, in newspapers and in DBE publications.
4. Wagman will identify potential subcontractors and vendors through our in-house data base of prequalified subcontractors, from other databases (State DOT, MD DBE, Plan Holders List). The Wagman Team will discuss these opportunities at FMCC’s small business network Roundtable.
5. Wagman will send solicitations via facsimile or e-mail at least 15 days prior to bid date.
6. Wagman will provide plans, specification and schedule via hard copy or FTP site.
7. Wagman will establish pre-bid meetings and minority outreach meetings.

DBE - Wagman has internal policies regarding Disadvantaged Business Enterprise (DBE) and Equal Employment Opportunity (EEO) and do not discriminate on the basis of race, color, national origin or sex in the award of any subcontracts or offering of employment. All businesses, including those owned and controlled by socially and economically individuals, will have equal opportunity to participate in our solicitation process. In conjunction with our Dedicated Subcontractors for this Project, Wagman will meet or exceed the DBE solicitation set for this Project, and has been very successful meeting or exceeding minority and disadvantage business goals as exhibited on some of our recent past projects for Maryland as shown below.

Project	County	\$ Contract Value	MBE/DBE Req'd	MBE/DBE Actual
ICC – A	Montgomery	464,000,000.00	20.00%	22.20%
ICC – B	Montgomery and Prince George’s	560,000,000.00	20.00%	23.30%
I-95/I-695 Interchange	Baltimore	217,000,000.00	16.00%	16.30%
WWB I-95/I-295/I-495	Prince George’s	106,000,000.00	18.00%	18.20%
WWB MD 210 Interchange	Prince George’s	62,000,000.00	17.00%	18.00%

C. STAKEHOLDER COORDINATION

Wagman embraces the partnering process. We have extensive experience partnering with SHA/MDOT/MdTA on many projects including the \$276.6M Woodrow Wilson Bridge, \$216.8M I-95/I-695 Interchange and the \$1,045M Intercounty Connector. Our partnering experience is supported by multiple MdQI partnering awards highlighted below.

- Award of Excellence, Partnering Silver Award: ICC Contract B (2013)
- Award of Excellence, Structure New/Structure Rehabilitation Over \$5 Million: I-95/I-695 Interchange from Hazlewood Avenue to King Avenue & I-695 from Lillian Holt Drive to MD 7 (2011)
- Award of Excellence, Partnering Silver Award: I-95/I-695: I-95 from Hazlewood Ave. to King Ave & I-695 from Lillian Holt Drive to MD 7 (2011)
- Award of Excellence, Partnering Bronze Award: I-95/I-495/I-295 Interchange, Inner Loop Local & Express (2011)
- Award of Excellence, Major Roadway Over \$10 Million: I-95/I-495/MD 210 Interchange, Mainline/Ramp B (WWB)
- Award for Excellence, Major Roadway Category: I-295 Interchange with I-95/I-495 in Prince George’s County.

Wagman routinely coordinates with developers on many of our projects. On \$276.6M WWB, we coordinated and collaborated with the National Harbor Development. During earthmoving operations we provided borrow material to the developer to reduce cost and accelerate the completion of the development.

The Wagman Team understands the environmental regulations and has worked with all of the regulatory agencies who may have jurisdiction on this project, and has successfully obtained permits and permit modifications. Wagman knows the local utility companies and has worked with them to relocate their facilities on many projects throughout the state and specifically in Prince George's County. Our project staff, supported by our in-house Marketing/Public Outreach Department and our subconsultant Undeland Associates will create the Public Outreach Plan and assist with coordination of third-party stakeholders. Meetings will be held to disseminate information and all interested stakeholders will be invited and encouraged to comment. Wagman will work closely with SHA and the Designer to present a common message to the public and stakeholders.

Wagman Team member WRA will develop a Project Specific Environmental Compliance Plan and corresponding training. The Project Specific Environmental Compliance Plan will discuss environmental resources and methods to protect, avoid and minimize impacts. Our entire team, managers, PDDMT and Construction Personnel, will receive project specific training that will address sensitive areas within the project such as Indian Creek and its tributary, Waters of the U.S., Wetlands, floodplain and RTEs. Working with the Design team, we will identify all impacted areas and document all permit conditions to maintain compliance. We will create a project specific Commitment Tracking Database for use during Preconstruction Design Development and Construction to capture permit requirements and stakeholder feedback.

Environmental impacts will be identified and noted on our Construction Work Plans. The environmental permit requirements will be identified and we will work with the Design team to discuss options that avoid or minimize impacts based on the latest construction techniques and equipment.

Wagman Team member John Undeland (JA) will assist with public outreach and coordination. During Preconstruction Design Development we will work with the Design team to conduct public outreach meetings. At these meetings, we will be available for discussion with the third party stakeholders and they will be given the opportunity to comment on the design and construction process. All comments will be recorded and tracked, and we will collaborate with the Designer and SHA to address each comment.

Prior to the start of construction, we will hold a construction kick-off meeting to discuss the upcoming construction schedule and phasing. All project stakeholders will be given an opportunity to comment on our construction plan, and each comment will be catalogued and addressed in our final plan. We will meet frequently with the adjacent developer to understand the developer's goals. Below are typical goals for developers and potential methods to achieve these goals:

- **Reduce Developer Cost:** incorporate developer's waste material as Project borrow.
- **Improve Developer Schedule:** improvement of the Project schedule through Wagman innovation, planning, or Preconstruction Design Development will allow earlier occupancy for the developer.
- **Minimize Inconvenience to Developer:** proper coordination, planning, construction phasing and MOT design will minimize impacts to the traveling public accessing the development and construction of the development.

Upon concurrence by SHA, we will establish an interactive project website, where stakeholders can view our plans and communicate with the Construction team. Wagman's internal Marketing/Public Outreach Group is available to work with SHA and JA to ensure that all material contains the proper message and is professional and positively represents all team members. During construction, variable message boards will be strategically placed to communicate with the traveling public. Available outreach services that can be provided upon SHA concurrence include developing and maintaining an e-mail list, Twitter list, and project-specific Facebook page to communicate with the stakeholders and traveling public.

3. RISK MANAGEMENT

A. RISK MANAGEMENT PROCESS

Wagman has successfully completed over \$224M of CMAR contracts in the last 20 years. We are very familiar with the process and understand how the CMAR process helps manage risk, reduce risk and encourage innovation. Working as a team Wagman, SHA and the Designer can call upon all of our experiences and resources to create the most cost effective and efficient solution.

Wagman believes the most important tool in risk mitigation is the early identification of items that may impact the project in a detrimental way. Our Cost Estimator Jon Fiem has extensive experience in preconstruction project risk identification, and our Construction Manager Steve Wood has the field experience to identify and mitigate risk during the preconstruction process and to manage risk during the construction process.

The main advantage of Wagman's engagement in the Project's risk management is our ability to participate in the Preconstruction Design Development and review in terms of construction risk early during the design process. This early identification of risk will allow for mitigation, avoidance or elimination of the risk by design changes or optimization, as opposed to more costly risk control measures implemented post design, allowing the PDDMT to better project control costs and schedule impacts. Wagman will utilize a risk register which is a living document used to identify and track risk and mitigation methods as the Preconstruction Design Development progresses and during the construction phase. After identification of the risk item, key elements are assessed that may impact schedule, cost, environment, safety, quality, third party stakeholders, utility owners, designer, contractor, subcontractor and owner. Risks will be evaluated for severity of impacts to cost, schedule and quality and will be ranked accordingly. Mitigation measures will focus on the highest ranked risks first. The application of design changes and optimization will allow for a reduced risk contingency item in the GMP, thereby reducing Project cost. It is important to note that as part of our analysis of this project, we are already actively identifying and evaluating potential project risks and tracking on a risk register.

As we start the CMAR process and engage the Owner and the Designer we share risks identified by us and incorporate risk that has been identified by SHA, the Designer or other third party stakeholders. We will analyze all risks on the risk register during Task Force Groups and progress meetings or we may host separate meetings just for discussion of significant risk items. By identifying and assigning risk to the party best capable of managing that risk, we will reduce cost and improve the project schedule. For example, ROW acquisition risk was identified on an ATC on the ICC during Bestand Final Offer discussions. The ICC project team, including SHA, determined ROW acquisition risk was best managed by SHA, and the Contractor was able to reduce the final price to SHA.

B. RISK MANAGEMENT PERFORMANCE

The Wagman Team assembled for this project have managed and mitigated risks on past projects. Environmental Compliance is a common risk on projects in Maryland and Wagman is committed to minimize or avoid environmental impacts. On the Intercounty Connector (ICC) project, we reduced environmental impacts (stream, forest, wetlands, and floodplains) during Preconstruction Design Development and construction. Using lessons learned from the ICC we will mitigate risks associated with environmental compliance during preconstruction design and construction. During construction, Wagman has a very good history excelling in E&S implementation and maintenance on past projects such as WWB, ICC, and I-95/I-695 Interchange throughout Maryland. Our workers are trained in E&S controls and all of our E&S supervisors have successfully earned the MDE Yellow Card Certification.

Utility conflicts can create undue risk to a construction project and Wagman has coordinated and avoided utility relocations minimizing impacts to cost, schedule and quality. Wagman understands the area and the importance of the Capitol Beltway. We have worked on the I-95/I-495 Corridor and offer Traffic Manager Neil Leary of WRA to ensure that the traffic design and construction phasing is efficient and risk to the travelling public is minimized. Wagman has proven expertise in implementing traffic control on major Interstates such as I-95, I-495, I-695, I-895, I-295, I-270 and I-370. On I-95 a few miles north of this project, we successfully overlaid mainline I-95 through downtown Baltimore in at least 20 unique work phases; project sequencing and maintenance of traffic were major risks that we were able to mitigate through planning and coordination thereby recently obtaining the full early completion incentive. In general, we identify the risk early; create work plans for all major work activities to develop a plan to execute the work while minimizing risk and the entire project team collaborates to reduce risk. The Wagman Team has been assembled to address the specific requirements of this Project and will self-perform all critical elements of work, such as the concrete straddle bent over the 96" WSSC waterline (Wagman built a large straddle bent over ramps at the WWB project), further reducing project risk. As a result of self-performing the critical elements of the work, including curved structural steel erection, utility relocations, milling, paving, lighting, signage and ITS, we control cost, schedule, quality and risk mitigation.

C. PROJECT RISKS

The chart below describes top risks that Wagman identified during preparation of our proposal and will manage during the CMAR process. We will partner with SHA, the Designer, WMATA, and third party stakeholders to reduce and mitigate risk.

Risk Description	Time Impact	Cost Impact	Quality Impact	Summary of Mitigation/Elimination or Implementation Plan
WMATA Impacts	1 – 2 Months	\$90,000 - \$200,000	High	Employ proper support of excavation near or within WMATA’s Zone of Influence to avoid settlement or collapse of excavations; Explore minimally invasive foundation options such as drilled shafts (cased if necessary to avoid caving and settlement); Coordinate with Designer and utilize our in-house geotechnical division to review and foundation designs to ensure no impacts to WMATA; Avoid vibration producing activities near WMATA rail; Prepare pressure illustrations to ensure loads are not increased on existing WMATA facilities; install mechanical swing stops on cranes working near WMATA facilities to avoid track fouling; adhere to WMATA’s Construction Safety and Environmental Manual & WMATA’s Safety Rules and Procedures Handbook; Wagman will implement a checklist to ensure proper adherence with security protocol when working within WMATA secure areas and will have proper badging and permitting prior to entering.
Design Coordination with Stakeholders, WMATA Adjacent Developers & other Third Parties	1 – 3 Months	\$90,000 - \$270,000	High	Develop a checklist to review Preconstruction Design Development for compliance with all applicable design standards including WMATA’s Manual of Structural Design Criteria, WMATA’s ACPM developed by the Office of Joint Development & Adjacent Construction (JDAC), and AREMA Manual for Railway Engineering; Actively engage stakeholders and WMATA at Kickoff Meetings and Progress Meetings; Encourage stakeholders to participate in over-the-shoulder reviews of the Preconstruction Design Development.
Environmental Compliance, Permitting, T&E Species, Time of Year Restrictions, classification of wetlands and waters of the U.S.	1 – 3 Months	\$90,000 - \$270,000	High	Project specific environmental compliance plan & training; early identification & survey of environmental resources; Proper execution of required studies at the appropriate time of year to detect T&E species; Proper sequencing and scheduling to minimize impacts of time-of-year-restrictions for the in stream work to the Project schedule; Perform early constructability and compliance reviews of the E&S sequence to ensure adequacy; Perform proper analysis to ensure adequacy of stream diversion design for culvert extensions.
Maintenance of Traffic / Phasing / Sequencing	1 Month	\$150,000	High	Employ MOT practices utilized on Woodrow Wilson Bridge and I-95/I-695 Interchange, Phase 1, KH1501 projects as they were high ADT projects on I-95 and similar to this Project with and ADT of 220,000; Partner with WRA (Neil Leary) to assist as a consultant for MOT to both the design and construction phases; Engage SHA for over the shoulder reviews of the MOT design phase to ensure the planned segmentation and phasing of the Project meets the needs of the traveling public and satisfies project goals; Ensure we are minimizing the number of phases and traffic switches to minimize impacts; Employ the services of our public relations consultant, Undeland Associates (John Undeland) to ensure the public is properly informed of MOT related activities.
Utility Relocations and Impacts Including 96” WSSC Water Main	2 Months	\$200,000	Moderate	Conduct thorough utility investigations early in the preconstruction phase; Engage utility companies early to engage them in the design process; Implementation of our segmentation approach discussed in section 2 to minimize project wide impacts; Utilize the same utility coordinator during design and construction; Design for drilled shafts for the flyover pier near the 96” WSSC water main to avoid vibration and ground displacement that may cause damage; Employ proper protection and monitoring practices agreed to by SHA, WSSC and Contractor to monitor the 96” water main; Avoidance of any temporary loadings overtop the 96” water main; Have other project controls such as the project schedule in place in a timely manner and adequately communicated to the utility companies; Perform ongoing coordination and partnering with the utility companies.
Geotechnical Concerns – Foundation Bearing / Existence of Fatty Clays, and existing paving on the belt way – how to handle substandard section, or the risk of encountering.	1 Month	\$100,000	High	Perform thorough geotechnical investigation during preconstruction phase to ensure early identification of substandard soils or substandard existing paving section that may need remedied; Our Design Coordinators and our in-house geotechnical engineers will work with our consultant, WRA and the Designer to ensure that the most cost-effective and efficient solution is determined for foundations and walls; Roadway profiles will be adjusted to minimize amount of fill required; Wagman self-performs foundation solutions including drilled shaft, pile, micro pile, soil nails reducing cost and risk and we will perform pre-consolidation efforts for deep fills such as wick drains, CMCs, and other methods as required.



Woodrow Wilson Bridge



I-95/I-695 Interchange



Intercounty Connector