

TECHNICAL PROPOSAL

**MD 5 - The Causeway
to South of
Camp Brown Road
St. Mary's County**

Contract No. SM7745171

May 3, 2017

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B. CAPABILITY OF THE PROPOSER

1. KEY STAFF - JO ELLEN SINES, DBIA – PROJECT MANAGER

YEARS WITH CORMAN: 36; TOTAL YEARS: 37

EDUCATION: BS, Civil Engineering, University of Pittsburgh

ACTIVE REGISTRATIONS: DBIA #D651; MDE Green Card; OSHA 10- Hour; Guidelines for OSHA Site Inspection; Environmental Compliance Awareness Training |Award: 2016 MdQI Flanigan Award

RELEVANT PROJECT EXPERIENCE:

Dec. 2013-April 2015, Construction Management at Risk (CMAR): MD 24, Sections A & G, Harford County, MD, \$5.3 Million, Maryland State Highway Administration: As Project Manager, Jo Ellen led the CMAR process from procurement, to preconstruction, and construction to close out, which involved developing the Technical Proposal, design development, identifying risks, constructability reviews, cost estimating, Opinion of Probable Construction Cost (OPCC) reviews, partnering with the agencies/stakeholders, and overseeing construction. She was the main point of communication between MSHA and Corman, managed the project team, equipment and material procurement, objectives and goals, work plans, budgets and resources, coordinated subcontractors, monitored schedules, conducted progress meetings, minimized exposures and risks, mitigated issues, reviewed / approved deliverables, RFIs, change orders, administered contracts, and oversaw budget, safety, and quality compliance. MD 24 is a major rural highway passing through Rocks State Park with recreational use adjacent to our work areas and to Deer Creek, a Use III-P stream. Road safety was improved by remediating the eroding slope support MD 24, repairing the pavement, and improving roadway drainage.

April 2014-Present, Design-Build Fall Hill Avenue & Mary Washington Boulevard Extension, Fredericksburg, VA, \$30.7 Million, Virginia Dept. of Transportation (VDOT): As Design-Build Project Manager, Jo Ellen leads the project team from procurement to close out, which involved developing the Technical and Price proposals, Cost Estimate, initial risk analysis, Baseline Schedule, design development, constructability reviews, partnering with the agencies/stakeholders, and overseeing construction. She was the main point of communication between VDOT and Corman, managed the project team, equipment and material procurement, objectives and goals, work plans, budgets and resources, coordinated subcontractors, monitored schedules, conducted progress meetings, identifies and minimizes risks, mitigated issues, reviewed / approved deliverables, RFIs, change orders, administered contracts, and oversaw budget, safety, avoided/resolved disputes, and facilitated quality compliance. This project widens Fall Hill Ave. from 2-4 lanes, extends Mary Washington, Blvd., including a sidewalk and the existing Rappahannock Canal trail network providing for bicyclists and pedestrians, widens a 4-lane section, and a 10-ft shared-use path. Sidewalk and path connects to the city trail, and improves pedestrian access between commercial/residential areas and a hospital.

Sept. 2002-June 2005 Design-Build MD Route 216 US 29 to I-95, Howard County, MD-\$21.1 Million, MSHA: As Design-Build Project Manager, Jo Ellen integrated the job team and led preconstruction design and procurement. She developed/coordinated/reviewed designs with design and permitting partners, partnered with the designer and project management team on innovative solutions (including bifurcating east and westbound roadways to reduce earthwork, which cut months off the schedule and yielded an environmental benefit by reducing impacts to wetlands and buffers), led team in environmental stewardship program, established design-build procedures, oversaw construction, phasing, and partnering, assisted in the integrated design and construction schedule and design deliverable schedule. She worked with staff on project management, including planning, scheduling and cost management; and developed approaches for the procurement phase. The project widened/realigned a cross county route, reconstructed two roadways, including storm drainage, and Hammond Branch stream restoration/relocation as the project was near environmentally-sensitive Hammond Branch.

JEFF WALTON – CONSTRUCTION MANAGER

YEARS WITH CORMAN: 16; TOTAL YEARS: 32

ACTIVE REGISTRATIONS: MDE Green Card; MD Temporary Traffic Control Manager; OSHA10-Hour; Environmental Compliance & Awareness Training

RELEVANT PROJECT EXPERIENCE:

Dec. 2013-April 2015, Construction Management at Risk (CMAR): MD 24, Sections A & G, Harford County, MD, \$5.3 Million, Maryland State Highway Administration:

As Deputy Project Manager / Construction Manager, Jeff participated in the CMAR process from Notice to Proceed, to preconstruction, and construction to project close out. He provided design input, performed constructability reviews, and participated in the cost estimating and OPCC reviews and onsite agency partnering meetings. During construction, Jeff oversaw the project, including supervising field operations, coordinating labor, equipment, materials, and subcontractors, and developing the CPM, short and long-term scheduling. He attended progress meetings that included stakeholders and informed them of job progress and addressed concerns. He maintained a safe environment on site and for the parks recreational uses adjacent to our construction site. Jeff also worked with a resident who lived 600-ft from the project to monitor vibration for her historic barn. MD 24 is a major rural highway passing through Rocks State Park with recreational use adjacent to our work areas and to Deer Creek, a Use III-P stream. Road safety was improved by remediating the eroding slope support MD 24, repairing the pavement, and improving roadway drainage.

Sept. 2002-June 2005 Design-Build MD Route 216 US 29 to I-95, Howard County, MD-\$21.1 Million, MSHA:

As Construction Manager, Jeff supervised field operations and construction per contract, including MOT, coordinated labor, equipment, and subcontractors, developed short-term look ahead schedules and participates in CPM schedule reviews, oversaw safety and quality control compliance, and project close out. He coordinated with electric and water utility companies, homeowners, communities and agencies, and worked with the Project Manager on constructability reviews of design packages and permits. Jeff oversaw installing 11 stormwater management ponds and four sand filter ponds, including drainage. He coordinated with the Independent Environmental Monitor (IEM) and SHA QA Inspector, often walking the entire project to verify compliance. He conducted weekly erosion & sediment control meetings, inspected controls daily, participated in modifications with MDE and tested the OOC61 form for the client. The project widened/realigned a cross county route, reconstructed two roadways, including storm drainage, and Hammond Branch stream restoration/relocation as the project was near environmentally-sensitive Hammond Branch.

July-Sept. 2013, US 40 Arch Bridge, Howard County, MD, \$15.8 Million, MSHA:

As Construction Manager, Jeff oversaw field operations and construction per contract, coordinated labor, equipment, materials, and subcontractors, maintained the CPM and short and long-term scheduling, completed punch list work, and close out. The project passes through Patapsco Valley State Park which spans above a stretch of the Patapsco River with in-stream restrictions and included base widening on the westbound roadway, east/westbound shoulder reconstruction, storm drainage improvements, pavement patching, and wedge/level pavement.

DAVID GATES – COST ESTIMATOR

YEARS WITH CORMAN: 10 TOTAL YEARS: 30 | EDUCATION: BS, Civil Eng. University of Hartford

RELEVANT COST ESTIMATING EXPERIENCE:

Dec. 2013-April 2015, Construction Management at Risk (CMAR): MD 24, Sections A & G, Harford County, MD, \$5.3 Million, MSHA: Lead Cost Estimator on the preconstruction team. Dave prepared Bid rules, item, and quantity evaluations, production rates and developed the Risk sheet. He met with the owner, designer and MSHA's Independent Cost Estimator (ICE) to develop a constructible, innovative, cost effective, and timely design to mitigate issues during construction. Dave developed a risk matrix to be used in the event of unforeseen conditions that might occur during construction. Risks were agreed to by all parties and used to develop a budget and schedule. He came up with the initial idea of creating a risk pool which was integrated into the budget and paid for any risk that actually occurred. If after project completion, the risk did not take place, it became an MSHA cost savings. Dave met with stakeholders to incorporate their concerns to protect the environmentally-sensitive Deer Creek River along MD 24. He assisted the owner and designer and, as the design advanced, with the permitting agencies. Dave led developing the open-cost model with MSHA's ICE, where they advanced through three progressive cost estimates. He developed take-off quantities for roadway reconstruction, retaining walls, MOT, excavation, storm drainage, erosion & sediment controls, stream relocation, clearing and grubbing, and reinforcing earth slope. Dave developed the Subcontracting Plan to include DBEs for the construction phase (and exceeded the 16% DBE goal). Through an open-book cost model with MSHA, an Opinions of Probable Construction Cost (OPCC) and a Guaranteed Maximum Price (GMP) was prepared/approved. MD 24 is a major rural highway passing through Rocks State Park with recreational use adjacent to our work areas and Deer Creek, a Use III-P stream. The project improved road safety by remediating the eroding slope supporting MD 24, repairing the pavement, and improving roadway drainage.

2016-Present, Construction Management at Risk (CMAR) IS-95 Baltimore Washington Parkway to US 1, Greenbelt, MD, \$150 Million, MSHA (Kiewit-Corman Greenbelt, a Joint Venture (JV)):

Lead Cost Estimator for the JV's preconstruction team. Dave prepared Bid rules, item, and quantity evaluations, production rates and developed the Risk sheet. He meets with the owner, designer and MSHA's Independent Cost Estimator (ICE) to develop a constructible, innovative, cost effective, and timely design to mitigate issues during construction. He developed a risk matrix to be used in the event of unforeseen conditions that might occur during construction. Risks will be agreed to by all parties and used to develop a budget and schedule. If after project completion, the risk does not take place, it becomes an MSHA cost savings. Dave is leading and developing the open-cost model with MSHA's ICE where they will advance through three progressive cost estimates, with one completed to date. He is developing take-off quantities for roadway reconstruction, retaining walls, MOT, excavation, storm drainage, E&S controls, stream relocation, clearing and grubbing, and reinforcing earth slope. Dave developed the Subcontracting Plan to include DBEs for the construction phase and participated in risk assessment and mitigation workshops. Through an open-book cost model with MSHA, an Opinions of Probable Construction Cost (OPCC) and a Guaranteed Maximum Price (GMP) will be prepared/approved. IS-95 reconstructs the partial interchange between I-95/I-495 and the Greenbelt Metro Station with a full interchange with auxiliary lanes and bridge reconstruction.

June 2015-Dec. 2016 Piscataway Emergency Repairs, Fort Washington, MD -\$7.7 Million-Prince George's County:

Lead Cost Estimator on this emergency contract to stabilize a slope failure compromising a residential neighborhood. Dave worked with the owner and their designer via a Construction Management at Risk (CMAR) process to rebuild the roadway, storm drain system, and water/sewer lines. He prepared Bid rules, item, and quantity evaluations, production rates and developed the Risk sheet. He met with the owner, designer, and ICE to devise a constructible, innovative, cost effective, and timely design to mitigate issues during construction. Dave developed a risk matrix covering unforeseen conditions that might occur – these risks were agreed to by all parties and used to project budget and schedule. Dave's innovative pile shoring solution to support the slope protection alleviated a major risk of excavating in the unstable clays at the base of an unstable steep slope.

2. TEAM PAST PERFORMANCE

PROJECT #1 – CONSTRUCTION MANAGEMENT AT RISK (CMAR) MD 24 – SECTIONS A & G – HARFORD COUNTY, MD

Owner: Maryland State Highway Administration (MSHA)

Point of Contact: Jesse Free, 410-229-1421

Project Delivery Method: Construction Management at Risk

Initial Contract Value: \$5,500,000.00

Final Contract Value: \$5,174,547.42

Specific reasons for difference in costs above: Savings to the project based upon constructability reviews by the Corman team.

Initial Completion Date: 7/1/2014

Final Completion Date: 4/28/2015

Specific reasons for difference in dates: Design and Utility Relocations

Description: MSHA's first CMAR project, MD 24 is a major rural highway passing through Rocks State Park in Harford County adjacent to Deer Creek, a wild, scenic, Use III-P stream. This project improved road safety by remediating the eroding slope supporting MD 24, repairing the pavement, and improving roadway drainage. Site challenges included a large watershed, complex geotechnical conditions, and stringent environmental concerns focused on the "creeper" freshwater mussel, an endangered species in the US making it a focus of environmental regulatory agencies and the general public. Prior to selecting a contracting partner, MSHA worked with a designer and stakeholders to develop design approaches. Working collaboratively via the CMAR delivery method, the project team:

Relevant Highlights

- ✓ Construction Management at Risk
- ✓ Maintenance of traffic
- ✓ Pavement construction
- ✓ DNR State Park involvement
- ✓ Seasonal park recreational user protection
- ✓ Roadway culvert replacement
- ✓ Stormwater management & erosion & sediment control
- ✓ Signing and pavement marking
- ✓ Landscaping
- ✓ Stream protection / mitigation
- ✓ Accommodated Time of Year restrictions
- ✓ Reforestation
- ✓ Third Party Coordination



Completed Road and New River Bank

- ✓ Minimized project construction costs from original MSHA budget.
- ✓ Minimized impacts to the physical environments (e.g. State forests, streams, Waters of the US, wetlands, etc.).
- ✓ Minimized inconvenience and impacts to the traveling public, especially during peak season for State Park use.
- ✓ Improved safety for residents using the roadway and visitors to the state park.

Through preconstruction reviews, partnering, Value engineering, cost considerations, construction oversight, schedule compliance, and innovation, MSHA's first CMAR project was completed on time and under budget, an unsafe road was stabilized, a recreation area improved, and a habitat for wildlife and vegetation enhanced.

Award: 2017 "Excellence in Concrete" Award – Sustainability Category

Discussion of what work, including successful methods, approaches and innovations are relevant to this contract and why.

- ✓ This MD 24 project is located in a floodplain and lies within a large watershed area. During preconstruction, a shared contingency item was established to compensate for extreme weather. This reduced contractor risk and reduced the overall base GMP price. The contingency funds stays with the owner unless used as defined. **Why Relevant?** The MD 5 – The Causeway to South of Camp Brown Road project is also located in a 100-year floodplain and the Chesapeake Bay Critical Area which means the same method could apply.
- ✓ MD 24 had environmental restrictions where work had to be completed in approximately six months. It was critical to meet this deadline or the project would be delayed a year. Once construction started, Corman aggressively progressed construction to exceed the Summer 2015 completion date. **Why Relevant?** Since it is required to accommodate environmental time-of-year restrictions on MD 5, we can take this successful method and see where it can be applied.
- ✓ Local residents were initially concerned the improvements would disrupt the communities and school transportation system and scenic park setting. State Park was concerned with impact to recreational hikers and other park users. Close coordination with stakeholder groups and the State Part staff kept all informed of the actual impacts and schedules. **Why Relevant?** Similar issues are to be expected on the RT 5 project.
- ✓ CMAR procurement enabled substantial cost savings as designer and Corman worked closely together during the pre-construction phase to value engineer the final plans. **Why Relevant?** Similar process is expected between Corman and MSHA Design team during the Pre-Construction phase.

PROJECT #2 – CMAR PISCATAWAY EMERGENCY REPAIRS – FORT WASHINGTON, MD

Owner: Prince George's County Government, Department of Public Works

Point of Contact: Dwight Joseph, 301-883-5642 and Unmesh Patel, PE, 301-883-5642

Project Delivery Method: Construction Management at Risk

Initial Contract Value: \$8,476,119.04

Final Contract Value: \$7,720,846.05

Specific reasons for difference in costs above: Value Engineering by County, Designer and Corman

Initial Completion Date: 12/23/2015

Final Completion Date: 12/23/2015

Description: In May 2014, heavy rains fell on saturated soils, setting off a landslide in the scenic Piscataway Hills Community at the lower section of Piscataway Drive which knocked down trees, damaged water and sewer lines, and buckled the main road. Approximately 2,000-ft. of Piscataway Drive, which is the only road into the neighborhood, suffered cracks collapsed 4-ft. in one location, and caused a 450-ft. longitudinal crack along the roadway leaving homes sitting at the edge of a cliff. This sparked an immediate road closure and home evacuations making this the costliest natural disaster in Prince George's County's history to date.

Relevant Highlights

- ✓ Construction Management at Risk
- ✓ Widening and geometric improvements of Roadway
- ✓ Maintenance of traffic
- ✓ Pavement construction
- ✓ Roadway culvert replacement
- ✓ Stormwater management & erosion & sediment control
- ✓ Signing and pavement marking
- ✓ Landscaping
- ✓ Reforestation
- ✓ Third Party Coordination

Temporarily restoring above and below ground utilities was critical in getting most families quickly back into their homes. The County installed a temporary drainage diversion just above the slope failure to reduce additional infiltration into the hillside while design of a repair was initiated.



Piscataway Road Paving

Approximately 1,750-ft. of roadway was constructed; the new road is 22-ft. wide with curbs and gutters and about 1,200 LF of storm drains. Corman drove more than 400 16 x 141 H-piles, 60 and 70-ft. long and installed structural beams that can withstand tons of force on both sides of the damaged roadway for stability and flattening and stabilizing the slope to keep it from further fracturing and sliding. Also replaced 2,000-ft. of damaged water and sewer, overhead utilities, installed guardrails, paving, and landscaping. Geo-grids were used to reconstruct and stabilized the slope's surface.

What makes this project stand out was its emergency nature, early selection of Corman, and the team's approach to project management. Early coordination between the involved parties enabled this complex project to be completed timely and under budget.

Awards:

2016 MdQI County Engineers Association of Maryland Award: County Project Over \$5 Million

2016 County Engineers Association of Maryland (CEAM) County Project of the Year (Large Project)

2016 American Society of Civil Engineers (ASCE) Outstanding Civil Engineering Achievement – Minor Construction Project

Discussion of what work, including successful methods, approaches and innovations are relevant to this contract and why.

- ✓ For this Piscataway project, while the design progressed, County, designer, and Corman calculated costs and quantities for bid items separately and collaborated on prices and prospects to lower costs. The team also capitalized on an opportunity to simultaneously value engineer and refine the design, generating an additional \$1.1 million in savings. **Why Relevant?** Since the Rt. 5 design is at 30%, as a team, we will also look for ways to refine the design and lower costs without compromising on quality.
- ✓ Local residents were initially concerned the improvements would not be performed speedily enough and further disrupt the communities' transportation system and scenic park like setting. Close coordination by the County, Designer and Corman with impacted residents kept all informed of the actual impacts and schedules. **Why Relevant?** Similar issues are to be expected on the RT 5 project.
- ✓ Poor saturated soils caused the initial slide and impacted the construction means and methods. **Why Relevant?** Poor saturated soils are to be expected on the RT 5 project.
- ✓ CMAR procurement enabled substantial cost savings as County, Designer and Corman worked closely together during the pre-construction phase to value engineer the final plans. **Why Relevant?** Similar process is expected between Corman and MSHA Design team during the Pre-Construction phase.

PROJECT #3 – DESIGN-BUILD – ROUTE 1 IMPROVEMENTS AT FORT BELVOIR

Owner: Federal Highway Administration
Point of Contact: Timothy M. Brown, 703-339-5454
Project Delivery Method: Design-Build
Initial Contract Value: \$69,391,712.80
Final Contract Value: \$77,800,000.00 (Estimated)
Initial Completion Date: 2/19/2016
Final Completion Date: 5/17/2017 (Estimated)

Specific reasons for difference in dates: Delays by the utilities and owner directed change orders.

Description: This project widens US Route 1 to relieve heavy traffic near the Fort Belvoir military installation. The scope constructs and/or widens from four to six lanes with left and right turn lanes at intersecting roadways, a multi-use trail, bicycle lanes and safer crosswalks, route realignment, intersection improvements, stormwater management, drainage, utility relocations, and right of way acquisition.



Lane Detour on Route 1

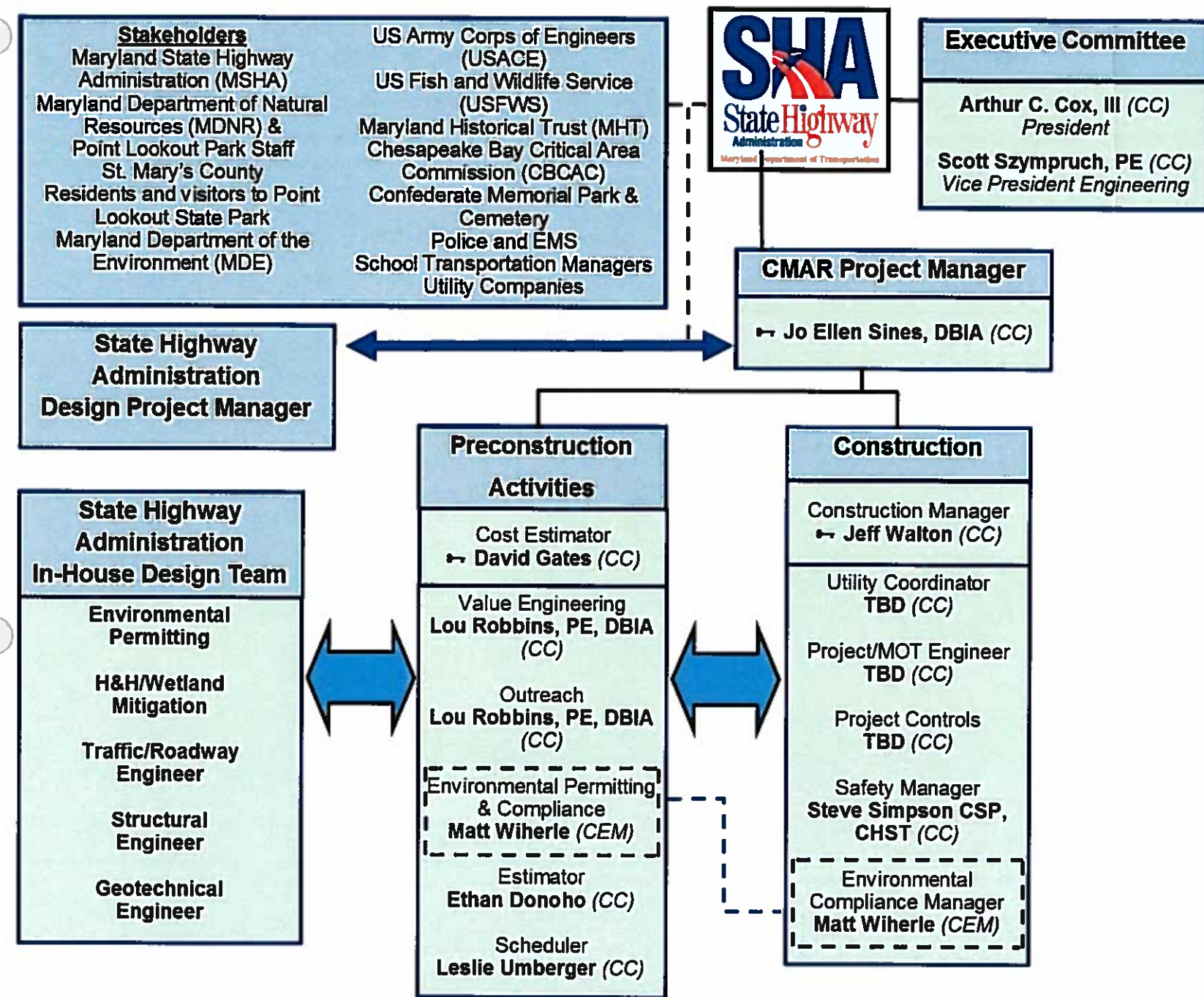
Relevant Highlights

- ✓ Widening and geometric improvements of Roadway
- ✓ Maintenance of traffic
- ✓ Pavement construction
- ✓ Roadway culvert replacement
- ✓ Stormwater management & erosion & sediment control
- ✓ Signing and pavement marking
- ✓ Landscaping
- ✓ Wetland protection
- ✓ Stakeholder & Third Party Coordination

Discussion of what work, including successful methods, approaches and innovations are relevant to this contract and why.

- ✓ A Traffic Management Plan was created for this Route 1 widening project that provided multiple lane stages. This included daily lane closures along Route 1 and shifting traffic to the newly-constructed southbound lanes as the northbound lanes were constructed and additional detours and lane shifts were implemented to construct cross drainage. **Why Relevant?** Similar complex traffic maintenance as the Rt. 5 project including MOT coordination with utility relocations.
- ✓ Poor soils and high groundwater in wetland areas required remediation to support road and stabilization of side slopes. **Why Relevant?** Similar poor soils and groundwater expected on the Rt. 5 project.
- ✓ Design-Build procurement enabled substantial cost savings as designer and Cormor worked closely together during the pre-construction phase to value engineer the final plans. **Why Relevant?** Similar process is expected between Cormor and MSHA Design team during the pre-construction phase.
- ✓ Construction adjacent to productive wetlands natural resource area. SUP realigned to avoid the wetlands. **Why Relevant?** Similar wetlands exist adjacent to the new SUP within Park Boundaries.

3. ORGANIZATIONAL CHART



FUNCTIONAL ROLES

Jo Ellen Sines, DBIA, will be the **CMAR Project Manager (PM)** and the project team's main point of communication to MSHA. All of Corman's efforts will be under her control starting with preconstruction, through design, construction, and punch out. She will oversee the Construction Manager's pre-construction services (estimating, quantity take offs, utility and permit coordination, value engineering, stakeholder outreach, risk analysis, design coordination and schedule preparation). During construction, Jo Ellen will continue to lead our team managing the Construction Manager, Safety Officer, and Environmental Compliance Manager. Jo Ellen will assist with constructability reviews and safety audits, and oversee the quality management program, purchasing and all construction. **Construction Manager, Jeff Walton** reports to the PM. Jeff will manage the on-site construction team, including the Project Control team, Safety Manager, and field staff. He will be assigned to this project and be on site full-time for the duration of construction. He will play a key role in pre-construction performing constructability reviews for design. He will work with Ms. Sines and Mr. Gates coordination between the design and construction forces with regard to design, access, material deliveries, equipment placement, utilities, and MOT. Once construction starts, he will focus on ensuring construction is performed safely, and along with our QC engineers, that materials and work are per approved plans, permits and the contract. He will coordinate with the Designers during construction for the proper and timely issuance and review of RFIs and shop drawings, as well as field visits, preparation of as-builts, and plan revisions. **Cost Estimator David Gates** will lead the conceptual estimating utilizing incomplete design plans and permitting activities at the schedule points specified. He clearly understands what MDNR and other review agencies are likely to request and will include those items early on in his estimates thereby mitigating any surprises later on. **Environmental Compliance Manager Matt Wihlerle of CEM** will lead Environmental Compliance on this extremely environmentally-sensitive project. During pre-construction, he will coordinate with the designers, owner, and permit agencies to assess the impact of their decisions and offer alternative environmentally-sound solutions to proceed construction with the least disruption to cost / schedule and the environment. During construction, Matt will regularly visit the construction site at key stages to review that environmental conditions in the specifications and permits are followed. **Value Engineering Lou Robbins PE, DBIA** of Corman will lead the Value Engineering Workshops. He has completed the Federal Highway Administration (FHWA) 40-Hour Value Engineering workshop and utilized lessons learned when preparing Design-Build proposals and project implementations. Should Outreach with the Park officials or community be required during pre-construction or construction, Lou will assist Jo Ellen in putting them in place. **Safety Manager Steve Simpson** of Corman will report to the CM. Steve will regularly oversee plans and field activities to provide a safe environment for MSHA, construction workers, and the traveling public. He will spearhead the safety training and aid in developing a job-specific safety plan addressing unique hazards that enhance our standard Corman policies, including subcontractor protocols. He will also assess our safety efforts with regard to the hikers, picnickers, canoers and tubers near the project. Steve has the authority to stop work which does not meet our strict safety requirements.

LEGEND:
 ← = Key Staff
 CC = Corman Construction
 CEM = Chesapeake Environmental Services (WBE)

Key Staff Member	Title	Hours per week during Preconstruction (Avg)	Hours per week during Construction (Avg)
Jo Ellen Sines	CMAR Project Manager	15	25 to 30
David Gates	Cost Estimator	20	0 to 5
Jeff Walton	Construction Manager	20	40+



C. PROJECT APPROACH

1. PRECONSTRUCTION APPROACH

Corman understands this is the fourth Construction Management at Risk (CMAR) project for MSHA and like the first three, success will be gained by:

- A solid collaboration that fosters teamwork,
- Respect for the sensitive environmental and historic nature of the surrounding area, and
- Finding the best cost-effective solutions given the site and community constraints.

As the successful Contractor on the State's first CMAR, and currently finalizing the preconstruction phase on the third and largest MSHA CMAR to date, we will build on the success and relationships cultivated during those projects. The CMAR project delivery anticipates a contract duration less than traditional design-bid-build and design-build with risk appropriately distributed between Owner and Contractor. The goal is to reach an agreeable Guaranteed Maximum Price (GMP) with concurrence from an Independent Cost Engineer (ICE) so as to proceed to construction with a fair market price GMP. Preconstruction services include constructability and risk analysis, value engineering, scheduling, site assessments, and cost estimating with input to the MSHA from the Contractor through each phase. Construction estimates of probable cost will be developed by Corman and shared with MSHA and its ICE at key milestones.

Corman Construction was the contractor for MSHA's first CMAR -MD 24 – Deer Creek Project and a JV Partner (Lead Estimator) for the third which is the largest to date (I-95 Greenbelt)

A/B. Collaboration / Design and Constructability Reviews

Throughout preconstruction and construction, solutions are generated through a collaboration between MSHA, and Corman. Frequent meetings, partnering, constructability reviews, risk assessment and mitigations, workshops and progressive cost estimating at milestones Opinion of Probably Cost (OPCC), coordination with stakeholders, schedule and phasing development and monitoring, development of the GMP and formal / informal communication throughout construction are sure fire ways to produce streamlined design, reduce project duration, lower cost, and develop solutions that deliver these project goals:

Goal No.	Goal Description	Suggested Mitigation
GOAL #1	Minimize Project Construction Cost Within the Current Budget	Evaluate options and material cost to determine the most cost effective solution
GOAL #2	Minimize Project Delivery Time	Evaluate MOT sequencing and schedule options to minimize project delivery time
GOAL #3	Minimize Impacts to the Physical Environment (e.g. Forests, wetlands, etc.)	Evaluate construction activities and required equipment to try and minimize the required LOD to perform work. Reduce the need for temporary construction easements.
GOAL #4	Minimize inconveniences and impacts to the traveling public, especially during peak park season for Point Lookout State Park	Balance construction schedule to peak season traffic in the Park. Work 4 -10 days in peak season.

Solutions to meeting most of the goals above are entwined in that addressing one will impact another. For example - reducing the delivery time can be addressed with additional overtime, weekend or

GOAL #5	Improve Safety for Residents and Visitors to Point Lookout State Park	Closely monitor MOT and work areas to provide safe passage of motorist, bikers, and pedestrians
GOAL #6	Facilitate a collaborative partnership with all members of the project team and stakeholders	Incorporate facilitated Partnering with monthly evaluations and feed back into the project requirements

summer work – those time mitigation methods would however adversely impact meeting Goal #1 (Cost) and Goals # 4 (Minimize inconvenience) or # 6 (Facilitate a collaborative partnership). To address this issue we will prepare a matrix be established and each suggestion proposed (during any value engineering evaluation or pre-construction meeting) be ranked on its impact to all six goals as stated above. The suggestion would be rated as having a positive, negative or neutral impact on each goal and the decision to proceed, or not, be based on the resulting scoring. *This Approach will:*

- *streamline design decisions to best meet the project goals,*
- *reduce errors and omissions by eliminating rework to reengineer to meet the goals during subsequent reviews,*
- *improve constructability and quality as the team is jointly making the decisions, and*
- *reduce the cost of construction and project delivery schedule, as best possible in concert with meeting the other goals.*

Many of the goals are also design dependent, such as minimizing impacts to wetlands (Goal # 3) could increase the project cost (Goal # 2), etc. As described in later pages, we will work closely with the MSHA designers to perform constructability reviews to minimize cost (Goal #1) while maximizing production to minimize construction duration (Goal #2). As the Contractor chosen, we pledge to Partner with MSHA to deliver the project while maintaining an emphasis on meeting the above goals - our pledge will be to continue to maintain awareness to these goals during construction.

In order to initiate *collaboration, cooperation, and trust between MSHA, the design team, and contractor*, immediately upon Award, MSHA (Project Manager and the In-house Design Team) and Corman will start meeting right away to establish a partnering approach to the project. The approach could entail a formal facilitated program with monthly evaluations or a more informal approach as agreed to by the parties. The goal, either way, would be to develop trust, collaboration and a cooperative spirit among the team members before we get down to the business of design, estimating, and construction. The next meeting will be to confirm design direction before additional design is performed. Joining forces beforehand gets the ball rolling and discussions out on the table, so we are on the same page when the design packages are ready for review. After reviewing current designs and environmental documents, reading past stakeholder and/or Design Team meeting minutes, we will conduct a MSHA / Contractor workshop to:

1. Evaluate the constructability of the design to date,
2. Evaluate / mitigate project risks, and
3. Identify any value engineering opportunities that may be appropriate to either reduce costs, shorten the schedule or reduce stakeholder impacts.

Value Engineering will follow the procedures outlined in the most recent FHWA circular modified for the size and complexity of this project with the effort geared toward attaining the project goals listed in the RFP. The value engineering would be led by Lou Robbins P.E. who would facilitate an informal half day value engineering workshop to expand upon the one previously performed by MSHA in 2003. Most of the recommendations from that workshop were already incorporated, however, additional suggestions from the previous stakeholder meetings and construction staff would be expected to help refine the details. Lou has been trained in Value Engineering by having taken the 40-Hour FHWA Value Engineering Workshop training and currently performs a similar function on our many Design Build projects finding the best way to design or construct a project.

As the team develops design and construction approaches, value analysis studies will determine the most cost-effective solutions that meet contract requirements and goals. MSHA set the above project goals and we will position ourselves to meet them both during design development and throughout construction.

We then progress to having senior estimators and field personnel develop anticipated work plans and sequencing graphs to create a project schedule. These plans are shared with MSHA and creates an opportunity to break out selected design packages or identify long-lead items. For example, ROW may become an issue at the northern section of the project, north of the intersection with Scotland Beach Road near Station 367 +/- where we are outside of the Park limits. If that is the case, one solution to make sure we meet Goals # 2, 4 and 6 is the project could be broken into two sections, performed in two separate construction seasons, with the work south of that intersection closer to the Park broken out and performed while the ROW issues in the other section are being resolved. Construction on at least half of the project could then be accelerated.

Similarly, from a review of the plans, several utility poles will need to be relocated for the entire length of the roadway. We could either work with the utilities to relocate all poles prior to us starting work, or to expedite the project, request the poles north of the intersection with Scotland Beach Road near Station 367 +/- all be relocated first and we start work in that area while the poles south of the intersection are relocated. Obviously, the southern section could be the first one to have the poles relocated, but that would be determined in conjunction with the ROW status and communication / coordination with the utility owners and MSHA. The suggestion again allows the team to better meet Project Goals # 2, 4 and 6 and keep the project moving forward.

Any field issues stemming from these early packages, i.e., difficulty in maintaining traffic or issues with the wet saturated subgrade, could be addressed in the follow-up section. Schedule planning will take into account any environmental or traffic Time-of-Year (TOY) restrictions with Corman, MSHA jump starting designs or permit reviews as required to allow construction to proceed with no delays. Because of the potential environmental sensitivity, the project can also be broken down into sections with MDE, DNR, Army Corps of Engineers, MD Historic Trust, Chesapeake Bay Critical Area Commission, US Fish and Wildlife Service (USF&WS), or other agency permits obtained progressively to meet the actual construction schedule/ phasing.



To keep records on decision making, meeting minutes will include action items identifying "Ball in Court" and due dates. Design enhancements/modifications are tracked with a tracking sheet that contains design changes, identifies cost or schedule advantages, additional risks, impacts on other portions of the design or permitting, status of investigation or implementation, team member responsible and action item deadline (see visual left). Suggestions could come from Corman estimators, field staff, MSHA Project Management or in-house designers. Even a stakeholder or permit agency reviewer can contribute to our list of comments. This tracking sheet is reviewed at each

progress meeting. Face-to-face meetings or conference calls can be set up with key personnel (MSHA, Corman, or permit/stakeholder agencies) to discuss ideas. A champion advocate is then assigned to each idea for quick evaluation and resolution. At regular or special meetings, the idea/comment is discussed by Corman & MSHA to reach a decision and a direction to either "Incorporate", "Further Investigate", or "Eliminate". The tracking sheet is then be updated and becomes a permanent reference. Risks and value engineering suggestions will be evaluated by the project team on how it will positively or negatively impact the six project goals.

At our initial project “Kick Off” meeting, Corman will join forces with MSHA in a Scoping/ Partnering workshop to review what has been completed so far, what the constraints are, stakeholder concerns, key project goals that need to be stressed, schedule, and proposed working relationships. We will participate in public outreach meetings with MSHA and the local stakeholders, including MD State Park personal, local St Mary's County officials (Police, EMS responders, School transportation, etc.), utilities, permitting agencies (MDE, MDNR, USACOE, USF&WS, MHT, Chesapeake Bay Critical Area Commission), Confederate Memorial Park, and other interested officials, or permit reviewers, to clearly understand their concerns and answer any questions regarding schedules and construction phasing, as well as means and methods. Additional or concurrent Public Information Meetings would be suggested during key milestones in the design process with the local residents to hear their concerns and explain our planned mitigation to keep the roadway safe and passable at all times. Staff would be available from both MSHA and Corman to explain the specifics that may impact them. These meeting could be formal in a public school or other Government owned facility or smaller in scope at one of the residents homes where more “one on one” informal discussions would be appropriate. Both have worked well on our past projects and a combination of the two maybe most appropriate on this project. The goal will be to listen to their concerns, incorporate what we can and explain why we can't accommodate some of the suggestions. Phone numbers for our key staff would be provided, if approved by MSHA, so they can call to ask specific questions that may impact them.



Route 1 Public Outreach Meeting

Preconstruction reviews are “over the shoulder” meetings with the designers, as well as at MSHA Project Management conducted at pre-determined or required milestones during the design. We will encourage MSHA staff to call or set up teleconferences to discuss issues or opportunities as they arise during design. Picking up the telephone and calling saves time and strengthens team member collaboration, however, since the Corman staff is only a short half-hour drive from MSHA's offices, personal visits are encouraged. Bi-weekly in person progress meetings are recommended to maintain progress. Corman's comments will be documented outlining benefits (cost savings, time acceleration, safety improvement, traveling public impact minimization, etc.), and a disposition (accepted/included, modified/included, under evaluation, or not accepted). Tracking sheets will be utilized to identify the status of:

- | | |
|--------------------------------------|---|
| ✓ Utility relocations / coordination | ✓ Environmental and other permits |
| ✓ ROW impacts | ✓ Status of comments by others (County, EMS responders, etc.) |
| ✓ State Park impacts | ✓ Review / approval status of design submittal |
| ✓ Environmental commitments | |

An initial schedule will be prepared in conjunction with MSHA and our project team that lists preconstruction and construction operations. We encourage joint preparation of the schedule with MSHA to capture all design, permitting, and construction activities which will then be reviewed at each monthly meeting and updated.

After Notice to Proceed with construction, Corman will continue the partnership with MSHA and the State Park operators and form additional relationships with the local police, County DPW, Trash Collectors, School transportation departments, etc. to establish lines of communication, discuss local traffic requirements, and any special events planned during construction. Maintenance of traffic will be coordinated with local authorities, State Park personal and the residents.

C. RISK MANAGEMENT

Approach to assisting the project team in managing risks, and develop and evaluate potential innovations: During design development of our Design-Build projects, Corman will hold formal weekly meetings to review plan development/status. At those meetings, innovative suggestions are discussed and evaluated with decisions made to advance the suggestion. Advancing a suggestion can result in cost estimating, value analysis or exploring a design for feasibility. If it conflicts with restrictions, prior MSHA commitments, or may require a design variance, the team evaluates the overall benefit and presents it to the MSHA Project Manager. Schedule, cost and quality are always considered, and depending on the Owner, can evolve into value engineering proposals. Constructability of design development is discussed as a team. There are formal plan and constructability reviews on the plans prior to submission, and comments are provided to the design team by marking up plan sheets and discussing with the MSHA Design Manager. We will hold similar regularly scheduled meetings on the CMAR project with the only changes being the project is being designed in-house by MSHA and the meeting frequency would be reduced to twice monthly or as desired by MSHA. ***Our hard learned CMAR and DB skills will carry forward as an advantage to meet MD 5's CMAR project goals***

We will evaluate the geotechnical reports against the proposed roadway sections and share our concerns with respect to risk. Risks would include items, such as saturated or unacceptable subgrade conditions, and possibilities of flooding during construction causing rework.

We will expand upon the meeting discussed above to have senior estimators and field personnel develop anticipated work plans and sequencing graphs to schedule the project. These plans would be shared with MSHA and its Designer, and opportunities for breaking out selected design packages or identifying long lead items or other risks would occur at this time. For example, once the preliminary concept roadway plans are developed, the MOT and sequencing of constructions would be evaluated and the roadway plans revised to provide plans the minimize impacts to the local residents and park users.

Our construction schedule planning will take into account any identified Time-of-Year (TOY) restrictions. The full team Corman, State PM and Design team will work together to jump start designs or permit reviews of construction affected by the time restrictions or other permit issues. Because of the environmental sensitivity of the project – it encompasses 25 wetlands and is almost entirely within the 100-year flood plain and Chesapeake Bay Critical Area, the project may need to be broken down into sections with permits from MDE or other permitting agencies obtained in a staged

The project contains 25 wetlands and is almost entirely within the 100-year flood plain and Chesapeake Bay Critical Area.

order to meet the actual construction schedule with construction in less sensitive areas started prior to final approval of the lowlands, park or wetlands. This could mitigate any risks due to TOR or other permit restrictions (**Goals # 2 & 3**). ***Since obtaining environmental permits and mitigation could be a major risk, we have asked Chesapeake Environmental Management (CEM) to join our team and assist by reviewing the list of permits and mitigation required,*** and based upon their past experiences, make suggestions to expedite the permits either by minor design changes or by suggesting innovative mitigation strategies. Corman has worked with CEM on numerous past MSHA

projects, including the Inter-County Connector Contracts A & B, as well as **CMAR MD 24, Sections A & G.**

Initial innovation areas we want to explore early on, during the pre-construction phase, to enhance constructability and reduce risk include:

- a) **Review subbase materials for both availability and suitability of placement on soft subgrades and compaction with non-vibratory compaction equipment** – utilizing native materials would reduce trucking costs and eliminating or reducing vibration would not draw the high ground water table into the subgrade. (Goals # 1 & 2)
- b) **Increase the usage of geo-textiles in the paving base segments** – utilizing geotextiles will strengthen the structural capabilities of the subgrade / base and prevent the new base from being mixed with the underlying soft subgrade. (Goals #1 & 2)
- c) **Ensure the drainage pipes utilized are appropriate for the soil conditions and require the minimum amount of cover** – ensure the pipes will not deteriorate in the brackish environment or be set too close to the riding surface, either during construction or at project completion.
- d) **Suggest the use of end sections vs. headwalls** – faster to install with less excavation, equipment or trucks on the road. (Goals # 1 & 2)
- e) **Phasing of the construction to excavate, grade, place base paving in sections that could be completed prior to each summer weekend** – avoids long areas of construction that would conflict with MOT and/or driveway access. (Goals # 1 & 2)



To maintain efficient decision making, minutes of all meetings would include action items with *“Ball in Court”* and due dates identified. Suggested design enhancements/modifications that could minimize risk, cost or schedule that are suggested or identified would be tracked in a risk register, which include these headings:

Risk	Category	Impact (Minor, Moderate, Significant)	Risk to Cost, Schedule, Environment, Community Acceptance, Traffic, Historic, Etc.	Best Entity to Manage the Risk	Probability of Risk Occurring	Potential Mitigation Strategies	Chosen Strategy	Person / Organization Responsible
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The risk tracking sheet maintains suggested changes to the design, identifying potential risk eliminated, cost or schedule advantages, additional risks, impacts on other portions of the design or permitting, status of investigation or implementation, individual responsible and anticipated date of any required action. These suggested changes could come from Corman estimators, field staff or the in-house MSHA designers. It is even possible a stakeholder or permit agency reviewer may contribute to the potential list of comments. The tracking sheet is then reviewed at each regular progress meeting. Separate face-to-face or conference calls can be established with key personnel (Corman, MSHA PM, and Designers or permit / stakeholder agencies) available to discuss suggestions. An advocate is assigned to champion each suggestion to ensure timely evaluations are performed with the proper personnel involved and resolution obtained timely. At regular meetings, or at a special meeting, the suggestion/comment is discussed by Corman, MSHA PM, and Designers with a consensus reached on its merits and a direction determined to; 1) incorporate; 2) continue to investigate or obtain additional data/information; or 3) abandoned. The above-referenced tracking sheet is updated and becomes a permanent reference of the comment and resolution.

Corman Cost Estimator David Gates will lead the development of an open cost model for the ICE so that assumptions, contingency, and approach to the estimate are similar. David successfully implemented this process on MSHA's recently completed MD 24, Sections A & G CMAR project, as well as the ongoing I-95 Greenbelt CMAR project with MSHA. Once the plans have reached their agreed upon design milestone for pricing, three progressive cost estimates will be prepared through

an open-book cost model with MSHA, and a Guaranteed Maximum Price (GMP) will be prepared with little risk to MSHA. To further minimize MSHA's risk, we anticipate that this process will occur multiple times for the agreed upon sections, phases or construction packages as determined through the scoping workshop and subsequent discussions to reach on-time or early project delivery. During this time, we also anticipate working with MSHA and the ICE on Long Lead Time Procurement (LLTP) of items included in the design.

Initial Risk Matrix: The following is an initial risk matrix identified by Corman staff based upon site visits and reviews of the preliminary plans provided. While there are additional risks not listed in the table, we have identified the ones most likely to occur and adversely impact the project.

Risk	Potential Impact	Mitigation Strategy
Utility Relocation	a) Delays in relocations	a) Identify all conflicts early, mitigate to avoid conflicts whenever possible, hold regular progress meeting's with appropriate Utility during design (in their offices if necessary), invite all impacted utilities to combined regular progress meetings, and follow up regularly on all utility activities, report any delays to the proper authorities as soon as they become apparent.
	b) Relocated incorrectly	b) Overlay all designs received from utilities on MSHA designs and Visa-Versa to confirm conflicts eliminated, have contractor state out relocations for utilities, have contractor as-build relocations prior to performing his work
	c) Increase in Scope of Relocations	c) Understand reason and scope for each relocation and identify unnecessary relocations for Utilities benefit only and challenge the need for any relocation that appears to be unnecessary
High Ground water	a) Soft subgrades	a) Use lightweight construction equipment, minimize compaction by vibration, utilize a geotextile fabric at the bottom of the road subbase, utilize bridging lifts where required, keep excavations drained.
	b) Lack of positive drainage for outfalls	b) Obtain waivers for minimum slope/velocity, utilize "Low Head" elliptical pipes, utilize wider ditches to obtain capacity, consider flood gates at outfalls, utilize end sections vs. end walls.
Maintenance of Traffic	a) Reduced access to park and residences	a) Maintain two way traffic at all times, communicate sequencing and potential impacts to all residents, provide paved or stone access to all driveways, relocate mail boxes as required to maintain service, utilize flag men as appropriate, schedule work Monday through Thursday in the summer.
	b) Unsafe conditions due to narrow roadway	b) Phase construction to allow free flowing two way travel when work not underway, phase work to open full width of roadway each weekend, inspect the Traffic Control devices on a regular basis (including weekends), back up excavations / widening's daily to avoid drop offs at edge of work areas, utilize barrels vs. concrete barrier to allow more room on the roadway, lower speed limit, utilize temporary striping and signing, provide temporary lighting at ends of work areas or at lane width transitions.

	c) Lack of construction access to work areas	c) Utilize the smallest equipment required to perform the work, pay special attention to construction access entrances / exits to eliminate confusion to the drivers, load dumps forward vs having them sit on adjacent roadway adjacent to work area.
	d) Unfamiliar divers during peak summer season	d) Schedule work Monday through Thursday, lower speed limit, utilize temporary striping and signing, and provide temporary lighting at ends of work areas or at lane width transitions. Pay special attention to construction access entrances / exits to eliminate confusion, utilize flag men as appropriate, and inspect the work area during summer weekends.
Storms and unusually high storm surges	Stops work or damages partial work in place	Maintain awareness of upcoming weather reports and act accordingly, cancel upcoming operations, and protect work (backfill & provide temporary drainage) when adverse weather is predicted.
Lack of local labor, material supplier and subcontractors	Delays construction or increases cost	Partner with local subcontractors, suppliers and labor groups, hold outreach meetings with local vendors / subcontractors.
Environmental Permitting	a) Delays project	a) Identify permits early, hold pre-application hearings with all Permit agencies, perform detailed quality reviews of all permit applications, and follow up once permit applications made
	b) Increases the Scope of the Work	b) Same as a) above, plus enlist upper management support if Agency requires work in excess of that customary to mitigate impacts

D. PROPOSED TECHNICAL CONCEPTS

Throughout the text above and below several innovative ideas or technical concepts are discussed that may, upon further investigation and analysis, increase the likelihood of success and help balance the project goals of time, cost and quality. These potential improvements include:

A - Review subbase materials for availability and suitability of placement on soft subgrades and compaction with non-vibratory compaction equipment – utilizing native materials reduces trucking costs and eliminating or reducing vibration would not draw the high ground water table into the subgrade-COST SAVINGS..

B - Increase the usage of geo-textiles in the paving base segments – utilizing geotextiles will strengthen the structural capabilities of the subgrade/base and prevent the new base from being mixed with the underlying soft subgrade-INCREASES QUALITY – LOWERS FUTURE MAINTAINCE COSTS .

C - Ensure the drainage pipes utilized are appropriate for the soil conditions and require the minimum amount of cover – Ensure the pipes will not deteriorate in the brackish environment or be set too close to the riding surface, either during construction or at the project’s completion-INCREASES QUALITY.



D - Suggest the use of end sections vs. headwalls – faster to install with less excavation, equipment or trucks on the road-SAVES TIME.

E - Phasing construction to excavate, grade, place base paving in sections that could be completed prior to each summer weekend – avoids long areas of construction that would conflict with MOT and driveway access-SAVES TIME – REDUCES IMPACT TO THE COMMUNITY AND PARK VISITOR.

2. CONSTRUCTION APPROACH

A. CONSTRUCTION SEQUENCING

As the Contractor chosen to construct the project we pledge to Partner with MSHA to deliver the project while maintaining an emphasis on meeting the MSHA’s stated goals - our pledge will be to continue to maintain awareness to these goals during construction. Examples of our approach to maintain awareness to the MSHA stated goals during the construction phase includes:

- Avoid work on the roadway weekends in the peak tourist season (**Project Goals # 4 & 6**);
- To expedite the work consider performing construction in several independent areas simultaneously with multiple crews (**Project Goal # 2**);
- Hold “Pardon our Dust” meetings with affected residents to address their concerns and keep them updated on upcoming construction (**Project Goals # 4 & 6**);
- Hold weekly meetings with MD DNR Park Authorities to discuss upcoming work, coordinate work with special park events and methods to minimize impacts (Goals # 4 & 6);
- Provide clear, MOT signage and facilities that conform to the MUTCD to meet driver expectations (**Project Goals # 4 & 5**);
- Provide accurate “Three Week Look Aheads” to impacted agencies (including Police, EMS, Park authorities, and School transportation managers) to keep all concerned stakeholders aware of the work that can be expected (**Project Goals # 4 & 8**); and
- Respect the cultural and historic nature of the area and train our workers to identify unanticipated historic artifacts that may be uncovered (**Project Goals # 3 & 6**).
- Train all workers to avoid impacting adjacent wetlands (used successfully on the environmental sensitive Intercounty Connector (ICC), clearly identify, with orange construction fencing, sensitive areas (wetlands, forests, Chesapeake Bay Critical Area Buffers, etc.) to be avoided (**Project Goal # 3**).

Our approach is to construct the work while causing the least amount of impact to the stakeholders. Since the most stakeholders (traffic on the road and in the Park) are present in the area between May and September, construction activities will be sequenced to avoid impacting traffic during that time period. Many visitors to the Park arrive on Fridays and depart on Sundays making the most effective work days Monday through Thursday. Daily lane closures will be used where appropriate to ensure the roadway can be opened to traffic for the weekend rush.

The MD 5 Improvement project is comprised of three types of modifications to the existing roadway:

1. Overlay existing road
2. Widen roadway to one side
3. Widen roadway to both sides

Each presents its own challenges and required phasing. Corman has broken the project into four segments based on the type of work required to complete each section of the roadway.

Segment 1	Station 303+75 to 330+40: The existing roadway is being overlaid, with some widening near the Park entrance. A shared use path (SUP) will also be constructed as well as drainage and road side ditches.
Segment 2	Station 330+40 to 341+50: Complete widening to the left of baseline. Drainage and roadside ditches will be installed as well.
Segment 3	Station 341+50 to 372+25: Complete widening is constructed on both sides of the road with additional drainage and roadside ditches being installed.
Segment 4	Station 372+25 to 424+50: All widening is done offset right with drainage and roadside ditches being cut in.

To complete the project as quickly and cost effectively as possible, we intend to work the entire length of the project at one time. Construction will begin on the right side of the road and then switch to the left side. After the left side is complete the entire project will be paved with surface asphalt for a uniform finish.

- **Segment 1** will not require Construction phasing as most of the work is offset to the left of the existing roadway. This work can be done outside the Park's peak season with the final resurfacing being completed with the remainder of the project.
- **Segment 2** has minor widening on each side of the road with daily closures. Roadside ditches can be cut in with minor impacts to Park traffic.
- **Segment 3** requires widening on both sides of the road, so two construction phases will be required.
- **Segment 4** has widening to the right but will need two traffic phases to install drainage and roadside ditches on the left side of the roadway.

From a review of the plans, several utility poles will need to be relocated for the entire length of the roadway. We could either work with the utilities to relocate all poles prior to us starting work, or to expedite the project, request the poles north of the intersection with Scotland Beach Road near station 367 +/- all be relocated first and start work there while the poles south of the intersection are relocated. Obviously, the southern section could be the first one to have the poles relocated, or our suggested break point could be modified, but that would be determined in conjunction with the utility owners and MSHA. These suggestions allow the team to better meet Project Goals # 2, 4 and 6. Should the suggestion be accepted we will revise the suggested sequencing and schedule to meet the revised conditions. Starting work on half of the projects length would shorten the overall project schedule.

Maintenance of Traffic (MOT): There are many options available for MOT on a project such as this, each has its pros and cons.

Daily Lane Closures: Work in all 4 segments could be done under temporary lane closures. PROS: The roadway would be open to traffic in its existing condition whenever no construction is taking place. CONS: Results in an extended construction schedule and higher construction costs. The clear zone must be restored to a safe grade prior to removing the lane closure. When work continues in that area, the temporary grading must be removed so work can continue.

Temporary Concrete Barrier (TCB): Work in segments 3 and 4 could be completed with TCB protecting the work zone from traffic. The advantage of this option is that work can be left as is at the end of each shift. Drop offs do not have to be backed up at the end of each shift allowing higher production rates and a faster completion schedule. CONS: The cost to procure, install, reset and then remove the TCB's from the project. Another issue with this option is that the existing roadway width does not allow for the barrier to be placed outside the saw cut line where the widening occurs

without first placing temporary asphalt on the opposite side of the roadway to push traffic onto – again extending the schedule.

Temporary Traffic Signals: A permanent lane closure can be implemented using temporary signals to control traffic flow through the work area. PROS: Gives Corman the most space to work and allow the existing asphalt to be saw cut and tied into without intermediate steps. CONS: There are many obstacles to overcome, local streets that tie into the project, driveways, farmer access to farm fields, etc. Bottom line is this does not appear to be practical for the entire project but may be feasible for short daily or weekly segments, coordinated with the impacted residents.

The best combinations for MOT will be determined during preconstruction when the Team can evaluate schedule, cost and constructability options to best meet the project goals and minimize impacts to the stakeholders.

Construction Phasing: A majority of the project will require three phases of construction; right, left and then final surfacing. Right and left phasing is required in segments 3 and 4 for the drainage, roadway widening and storm water management pond construction.

Independent Work Packages: Early work packages for clearing and grubbing would be helpful for avoiding any Time of Year restrictions that may apply to the project such as Forest Interior Dwelling Species or Long-Eared Bat. They would also allow Utility companies to relocate their respective facilities while final design is completed.

B. CONSTRUCTION SCHEDULE

Based on the 30% plans, project duration will be between 18 – 21 months. To complete surface paving prior to December 2019 cost-effectively, an early summer 2018 Notice to Proceed (NTP) is required. If that NTP date is not achieved, the December 2019 date can still be met using additional resources and overtime.

We propose all four segments are worked concurrently, the right side of the road first then the left side. A majority of the roadway widening is on the right side thus pushing the traffic to the newly constructed pavement for the second phase of construction.

With the segments we have chosen, the critical path runs through Segment 4 which is the largest section on the project. During the first phase of construction, the roadway widening and roadside ditches are completed. The critical path then moves to Segment 3 where the second stage of roadway widening is completed. The entire project will be surfaced at one time in early 2020.

Major factors that could impact the construction schedule include:

- **Right of Way Acquisition** – If all the right of way for the project is not acquired, it will cause disruptions in the start of the schedule and/or inefficiencies due to areas that must be skipped.
- **Utility Relocations** – Through much of the alignment overhead utility lines must be relocated out of the new roadway or ditches. Since these lines run the length of the project, in many areas on both sides of the project, the entire roadway will be affected. Therefore, it may be beneficial to have all the utility companies co-locate on one set of poles throughout the alignment. **Soft or Wet sub-base** - Use lightweight construction equipment, minimize compaction by vibration, utilize a geotextile fabric at the bottom of the road subbase, utilize bridging lifts where required, keep excavations drained.
- **Lack of Construction Access to work areas** - Utilize the smallest equipment required to perform the work, load dumps forward vs having them sit on adjacent roadway adjacent to work area.

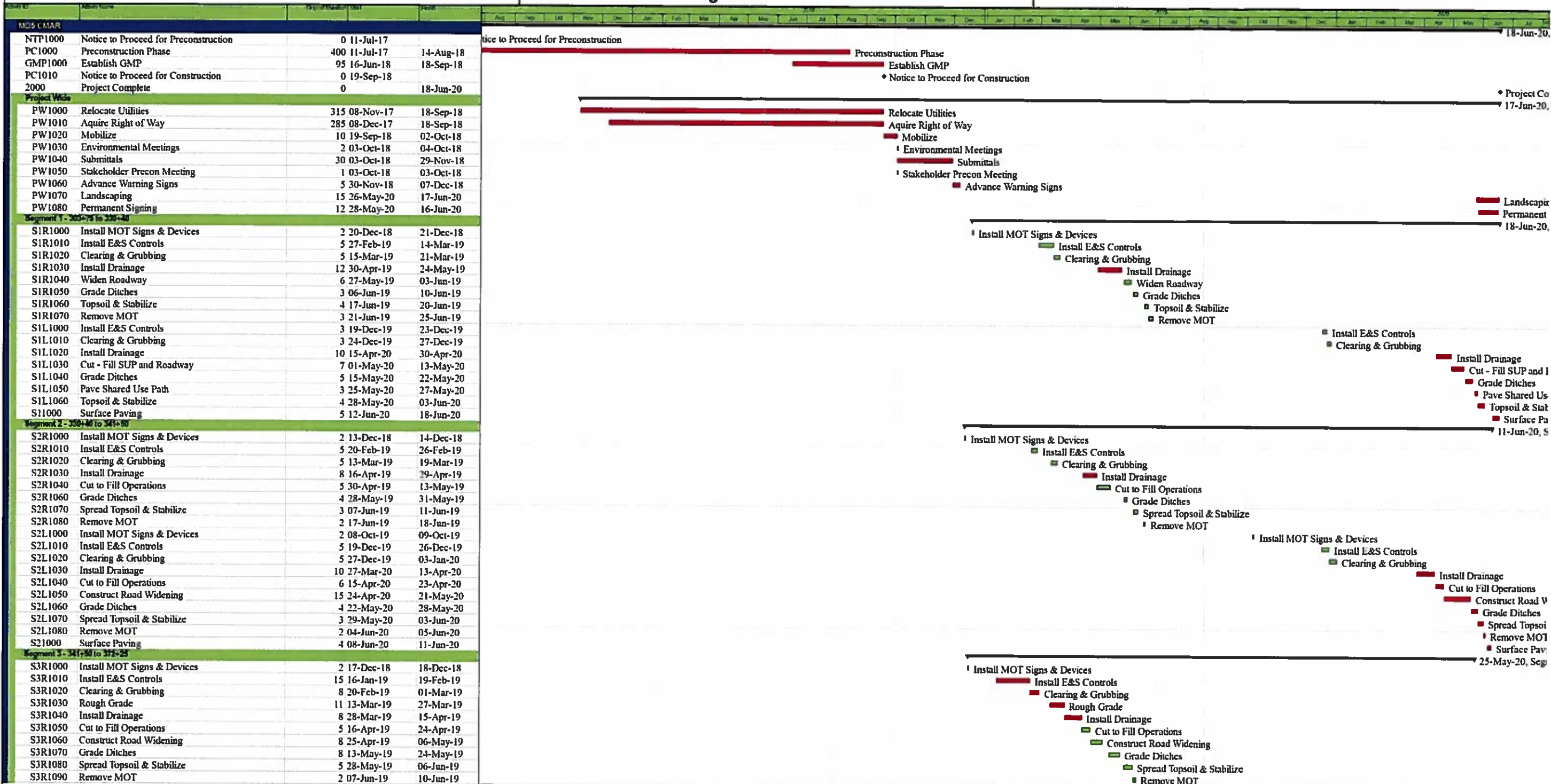
- **Storms or adverse weather conditions** - Maintain awareness of upcoming weather reports and act accordingly, cancel upcoming operations, and protect work (backfill & provide temporary drainage) when adverse weather is forecasted.
- **Materials** – We do not see an issue acquiring materials for this project. Asphalt and aggregate materials are readily available but may be more expensive than other areas of the state.
- **Equipment & Labor Availability** – Equipment will be sized to reduce the limits of disturbance, but allow for productive work. Smaller equipment will also reduce the amount of groundwater being worked to the surface.
- **Local labor may be limited** – Corman's forces are large enough (350 Craft Labor) to provide resources to complete the project within the schedule

Our proposed schedule is included on the following pages.

MD5 CMAR

Project Schedule

21-Apr-17 14:55



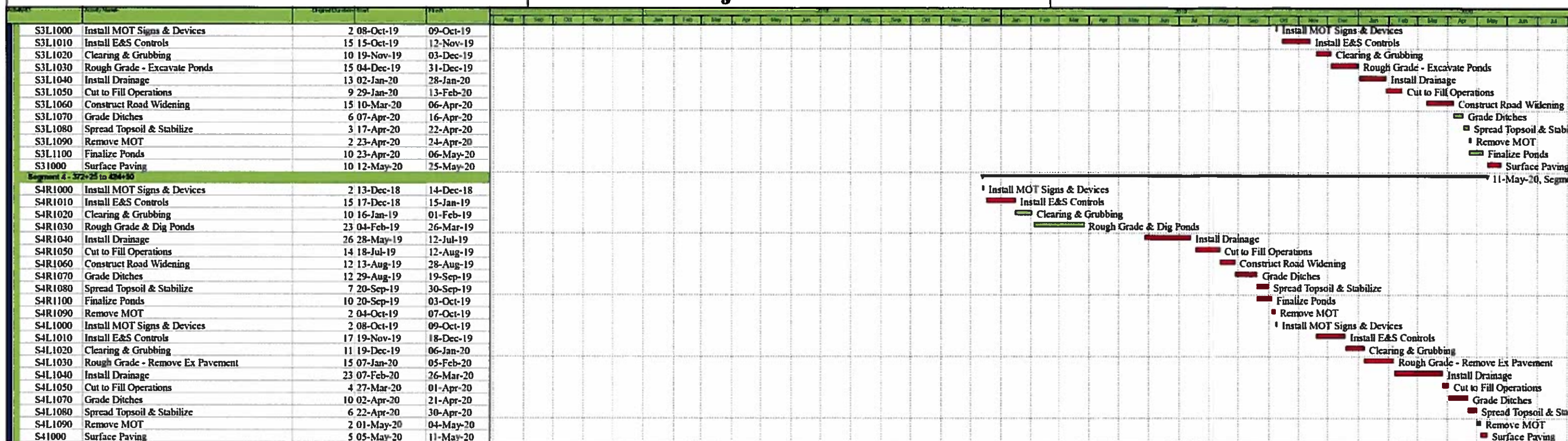
█ Remaining Level of Effort
 █ Remaining Work
 ◆ Milestone
 ◆ Critical Remaining Work
 ▼ Summary
 █ Actual Work



MD5 CMAR

Project Schedule

21-Apr-17 14:55



█ Remaining Level of Effort
 █ Remaining Work
 ◆ Milestone
█ Actual Work
 █ Critical Remaining Work
 ▼ Summary

C. STAKEHOLDER COORDINATION

There are many stakeholders who have a vested interest in this visible and regionally significant project. Significant stakeholders include:

- MSHA
- DNR – Point Lookout State Park staff
- St. Mary's County
- Residents and visitors to Point Lookout State Park
- Maryland Department of the Environment (MDE)
- Maryland Department of Natural Resources (MDNR)
- US Army Corps of Engineers (USACE)
- US Fish and Wildlife Service (USFWS)
- Maryland Historical Trust (MHT)
- Chesapeake Bay Critical Area Commission (CBCAC)
- Confederate Memorial Park & Cemetery
- Police & EMS
- School transportation managers
- Utility Companies

Since it is critical that the MSHA be kept informed, representatives are invited to our Progress Meetings. Any issue that could impact the roads, recreational users, local community or the adjacent properties, will be shared with the local state park as soon as the team is aware of their existence. As an early lead item during the pre-construction phase, a decision will be jointly made by Cormac and MSHA on the best way to disperse information to the involved adjacent property owners, affected businesses and traveling public. The information disbursement procedures will be monitored as the project progresses and modified as appropriate.

Specific methods to insure stakeholders interests are being addressed includes:

- Hold Public Outreach meetings during the Pre-construction phase and "Pardon our Dust" meeting at the start of construction with affected residents to address their concerns and keep them updated on upcoming construction;
- Hold regular meetings with MDNR Park Authorities during pre-construction and weekly meetings during construction to discuss upcoming work, coordinate work with special park events and methods to minimize impacts;
- During the Pre-construction attend, with the designers, pre-permit application meetings with reviewing agencies including MDE, MDNR, USACOE, USF&WS, MHT, and Chesapeake Bay Critical Area Commission;
- Provide clear, non-confusing MOT signage and facilities that conform to the MUTCD to meet driver expectations;
- Provide accurate "Three Week Look Ahead's" to impacted agencies (including Police, EMS, Park authorities, and School transportation managers) to keep all concerned stakeholders aware of the work that can be expected;
- Show respect for the cultural and historic nature of the area, and train our workers to identify unanticipated historic artifacts that may be uncovered;
- Coordinate our work with any special events proposed by the State Park Authorities, Confederate Memorial Park or other local entities; and
- Pay special attention to the Utility Relocation process, invite all utilities to *all* progress meetings, have Cormac and the Designers travel to the utilities offices in Southern Maryland vs. hoping they attend meetings in Baltimore or Cormac's Annapolis Junction office, check to insure the utilities are utilizing the latest roadway plans, and raise any utility delays to the proper authorities at first sign of any issues.

Additional or concurrent "Pardon our Dust" meetings would be suggested during key milestones in the design or construction process with the local residents to hear their concerns and explain our planned mitigation to keep the roadway safe and passable at all times. Staff would be available from both MSHA and Corman to explain the specifics that may impact them. These meeting could be formal in a public school or other Government owned facility, or smaller in scope at one of the residents homes where more "one on one" informal discussions would be appropriate. Both have worked well on our past projects and a combination of the two maybe most appropriate on this project. The goal will be to listen to all the Stakeholders concerns, incorporate what we can, and explain why we can't accommodate some of the suggestions.

Coordination meetings would be held with Police, EMS, Park authorities, and School transportation managers during the design and again prior to the start of construction to insure their concerns are addressed. Although MSHA will be handling the utility conflict / resolution process and ROW acquisition, Corman is available to also provide that service. Most of our VDOT Design Build projects transfer that responsibility to us and we are well versed to assist the MSHA in managing both the utility and ROW process. During the pre-construction phase, Corman will coordinate with the Utility Companies to complete the necessary utility relocations and locate other utilities so they can be avoided. An added benefit of performing the utility coordination pre-construction is to insure MOT is not adversely impacted by Corman and Utility crews working on opposite sides of the roadway at the same location simultaneously.

Planned work schedules and traffic updates would be provided to local media to distribute to the local populace. Information would also be provided, and regularly updated, to the Park and MSHA to utilize on their websites. If desired during construction, a project specific web site could be established or regular updates made to the existing MSHA sites. If the park has a Twitter, Facebook page or other Social Media sites, updates would be sent to those social media sites as upcoming traffic switches or construction phase's change. Public Meetings would also be advertised in social media as appropriate.

WE understand our work is for the public's benefit and that goal is best served by maintaining open and honest lines of communication with all affected, or interested, stakeholders.

D. APPROACH TO COST ESTIMATING

1. ESTIMATING ENVIRONMENT

Approach to providing an open and transparent estimating environment that assures MSHA is receiving a fair price for the work: Corman's estimating department is led by our proposed Cost Estimator David Gates. David has successfully created a team environment with MSHA and the ICE on other CMAR projects by leading estimates that were fair, straight-forward, and open book, including MD 24, Sections A & G and I-95 in Greenbelt. David has been estimating MSHA projects since 1994, and knows MSHA specifications and standards, along with bid-build, design-build, and CMAR project delivery methods. This knowledge is crucial to leading the Cost Estimating team on this project.

As an integral member of the Design team Corman will participate with initial workshops, project site visits, and help streamline the design process. During meetings, David and other Corman Estimators will review plans for constructability and help to reduce the cost, impacts, and duration of the construction as the team moves towards building an estimate. Open discussions will be held about optimizing the maintenance of traffic ideas to minimize impacts to the traveling public along MD 5 during the peak season of Point Lookout State from May through September. We will work together to minimize the environmental impacts to wetlands, floodplains and the Chesapeake Bay Critical Area Buffer during these workshops to help lessen the future construction costs. The biggest cost saving ideas start in these collaborative meetings prior to formulating an estimate. The shared ideas from stakeholders, MSHA, and the ICE during this stage paves the way for a smooth transition into the estimate down the road. Creating an open, fair, and transparent environment for estimating starts early in the process.

As collaborative plans are developed, the estimating team (Corman, MSHA, and the ICE) will work closely together to establish a list of bid items that follow MSHA guidelines and formats. Corman's extensive MSHA experience will make building this list seamless. Input from all team members is crucial. David will use his past CMAR experience to lead the charge. As the collaborative plans are taken to final completion, the open and transparent estimate will follow right along. **The team's focus will always remain on producing the most cost and time effective estimate that meets the project's six goals.**

As the conceptual design progresses the bid quantities will also be developed. Corman will estimate bid item quantities and with detailed back up available for the ICE to review. We will then meet with MSHA and the ICE to compare / discuss these quantities and come to an "agreed to" quantity to use for each item in our estimates. Some bid items often have many sub items. We will agree on the sub items and quantities with the ICE for all items as well. Clear detailed backup and open discussions make this process run smoothly and successfully. **By ensuring all parties are pricing up the exact same bid items and quantities, it removes one variable from the equation when comparing estimates.** Corman has been using this same approach with our MSHA Design-build mega-projects (ICC), where we were part of a large joint venture (JV) team. Each JV partner would prepare a separate estimate then gather to compare estimates and come up with the best cost effective estimate for the group.

A key to having an open and transparent estimate is that Corman and the ICE team use the same unit costs for labor, equipment, materials, and subcontractor pricing.

A key to having an open and transparent estimate is to ensure that Corman and the ICE team use the same unit costs for labor, equipment, materials, and subcontractor pricing. Corman will provide a complete and open breakdown of our labor costs (i.e. Foreman, operators, laborer, and etc.) and all our equipment costs (i.e. excavators, dozers, and etc.). Corman will create a complete vendor list and solicit pricing for all materials and subcontractors. We will develop a DBE Out-reach program to meet the required goals for the project. Material pricing and subcontractor pricing DBE firms will be jointly shared and evaluated with the ICE team member.

Once the quantities are agreed on by Corman and the ICE / MSHA, two independent estimates will be developed. Corman and ICE will come up with a complete estimate with crews and productions accordingly. Both estimates will be sent to MSHA, where comparison sheets are prepared for each bid item. For each item, the team will evaluate if the Corman estimate of probable cost, Engineer's Estimate, and the ICE's estimate are within acceptable tolerances. If prices are acceptable, MSHA will prepare a Construction contract amendment. If pricing is not acceptable, MSHA will enter into a process of risk identification that identifies price differences between the Contractor and the ICE. Corman and the ICE will compare crew size, equipment and productions, discuss the individual approaches / rates to identify and resolve any differences in our costing. This open and professional exchange of information and approach to estimating has worked well on past projects, because all parties are working towards the one goal to ensure MSHA is receiving the best fair and reasonable GMP price for the work desired.

Our estimates start with a bid item such as Maintenance of Traffic, Mobilization, or Class 1 Excavation (see Page 28 - Estimate Summary – Costs and Prices). Bid items are broken into activities (see Page 29 – 30 – Cost Report). Corman assigns crews (with labor, equipment and production), activities and then add materials, supplies, subcontract work and trucking.

2. SAMPLE ESTIMATE

Estimate Summary - Costs and Prices

Corman Construction 100 David Gates
 4283 MD 5 - CMAR

Direct Biditems

Manhours	Labor	Perm Materials	Const Materials	Equipment	Subs	Trucking	Direct Total	Indirect Charge	Addon Bond	Total Cost	Balanced Bid		Bid Prices	
											Markup	Total	Markup	Total
1001 - Maintenance of Traffic 1 LS														
120	2,940	2,650		434		1,000	7,023		140	7,163	3,039	10,202.36	3,039	10,202.36
120.00										7,163.44	42.42%	10,202.36	42.42%	10,202.36
1002 - Mobilization 1 LS														
								800,434		800,434		800,434.37		800,434.37
										800,434.37		800,434.37		800,434.37
2001 - Class 1 Excavation 15,000 CY														
2,462	72,654		79,500	48,509	240,000		440,663		8,792	449,455	190,671	640,125.64	190,745	640,200.00
.16										29.96	42.42%	42.68	42.44%	42.68
Direct Totals														
2,582	75,594	2,650	79,500	48,943	240,000	1,000	447,686	800,434	8,932	1,257,053	193,709	1,450,762	193,784	1,450,837

Indirect Charges

MHs	Labor	Perm Matl	Constr Matl	Equipment	Subcontract	Total
99950 - I-1 Schedule Based Costs/Risk Sharing Pool						
12,672	767,134	-	33,300	-	-	800,434
Indirect Totals						
12,672	767,134	-	33,300	-	-	800,434

Profit - markup

Addon/Bond

Additional Cost	Addon/Bond Cost
Bond from Summary Table	8,932
Totals from Addon and Bond	
	8,932

Cost Report

Corman Construction 100 David Gates Page 1 of 4
4283 MD 5 - CMAR 04/18/2017 10:27 AM

Biditem **Maintenance of Traffic**

1001
Takeoff Qty: 1.000 LS
Bid Qty: 1.000 LS

Supplies

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Trucking	Total
U. Cost	2,180.00	759.51	2,939.51	433.80	2,650.00	0.00	0.00	1,000.00	7,023.31
Total	2,180.00	759.51	2,939.51	433.80	2,650.00	0.00	0.00	1,000.00	7,023.31

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	120.0000	0.0083	120.0000	58.5276	18.1667	24.4959	0.0500

Activity: 1001A MOT Misc. Materials Quantity: 1 Unit: LS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Trucking	Total
U. Cost	0.00	0.00	0.00	0.00	2,650.00	0.00	0.00	1,000.00	3,650.00
Total	0.00	0.00	0.00	0.00	2,650.00	0.00	0.00	1,000.00	3,650.00

Calendar: 508 5 - 8 Hr Days Hrs/Shift: 8 WC: MD5222 Bridge Work

Resource	Description	Pcs/Wkst	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2AGGAB	Graded Aggregate base	1.00	100.00	TON	25.00	106.00	26.50	2,650.00
5AGTNGAB	GAB HAUL (Ton)	1.00	100.00	TON	10.00	100.00	10.00	1,000.00

Activity: 1001B Lane closures Quantity: 5 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Trucking	Total
U. Cost	436.00	151.90	587.90	86.76	0.00	0.00	0.00	0.00	674.66
Total	2,180.00	759.51	2,939.51	433.80	0.00	0.00	0.00	0.00	3,373.31

	Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
	674.6620	4.0000	0.2500	168.6655	2.5000	2.0000	0.5000	1,349.3240

	Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
	120.0000	0.0417	24.0000	24.4959	436.0000

Calendar: 508 5 - 8 Hr Days Hrs/Shift: 8 WC: MD5222 Bridge Work

Crew: MOTLC MOT LANE CLOSURE Prod: US 2 Eff: 100.00 Crew Hrs: 20.00 Labor Pcs: 6.00 Equipment Pcs: 2.00

Production

Resource	Description	Pcs/Wkst	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
8TPU	Pickup Truck	1.00	20.00	HR	7.00	100.00	7.00	140.00
8TSBT1	Stake Body Truck 1.0 TN	1.00	20.00	HR	14.69	100.00	14.69	293.80
LS	Skilled Laborer	4.00	80.00	MH	14.00	100.00	18.88	1,510.21
OPTR	Operator-Truck	1.00	20.00	MH	18.00	100.00	24.27	485.42
ZFM	Foreman	1.00	20.00	MH	35.00	100.00	47.19	943.88

Biditem **Mobilization**

1002
Takeoff Qty: 1.000 LS
Bid Qty: 1.000 LS

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Activity: 1002A Mobilization Quantity: 1 Unit: LS

Calendar: 508 5 - 8 Hr Days Hrs/Shift: 8 WC: MD5222 Bridge Work

Biditem **Class 1 Excavation**

2001
Takeoff Qty: 15,000.000 CY
Bid Qty: 15,000.000 CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Trucking	Total
U. Cost	3.59	1.25	4.84	3.23	0.00	5.30	16.00	0.00	29.38
Total	53,881.69	18,772.37	72,654.06	48,508.75	0.00	79,500.00	240,000.00	0.00	440,662.81

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	2,461.6600	6.0934	0.1641	179.0104	21.8884	29.5143	25.7711

Activity: 2001A Strip topsoil to stockpile Quantity: 5000 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Trucking	Total
U. Cost	1.52	0.53	2.05	2.23	0.00	5.30	16.00	0.00	25.58
Total	7,600.00	2,647.84	10,247.84	11,158.00	0.00	26,500.00	80,000.00	0.00	127,905.84

	Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
	4.2812	0.0160	62.5000	267.5730	10.0000	500.0000	0.0020	12,790.5840

	Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
	320.0000	15.6250	0.0640	32.0245	1.5200

Calendar: 508 5 - 8 Hr Days Hrs/Shift: 8 WC: MD5222 Bridge Work

Crew: EXAC Cut to Waste Offsite Prod: US 500 Eff: 100.00 Crew Hrs: 80.00 Labor Pcs: 4.00 Equipment Pcs: 3.00

cy/shift

Resource	Description	Pcs/Wkst	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DDIRT	Dump Fee clean dirt	1.00	500.00	LOAD	50.00	106.00	53.00	26,500.00
4HAUL	Hauling - Sub	1.00	1,000.00	HR	80.00	100.00	80.00	80,000.00
8DZD6	Dozer 180 HP (D-6)	1.00	80.00	HR	60.88	100.00	60.88	4,870.00
8EX060K	Excavator 60,000 LB (325)	1.00	80.00	HR	71.60	100.00	71.60	5,728.00
8TPU	Pickup Truck	1.00	80.00	HR	7.00	100.00	7.00	560.00
LS	Skilled Laborer	1.00	80.00	MH	14.00	100.00	18.88	1,510.21
OPDZ	Operator-Bulldozer	1.00	80.00	MH	21.00	100.00	28.32	2,265.31
OPEX	Operator-Excavator	1.00	80.00	MH	25.00	100.00	33.71	2,696.80
ZFM	Foreman	1.00	80.00	MH	35.00	100.00	47.19	3,775.52

Activity: 2001B Roadway Excavation Quantity: 10000 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Trucking	Total
U. Cost	1.01	0.35	1.37	1.49	0.00	5.30	16.00	0.00	24.15
Total	10,133.65	3,530.56	13,664.21	14,877.80	0.00	53,000.00	160,000.00	0.00	241,542.01

	Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
	2.8542	0.0107	93.7500	267.5813	13.3333	749.9998	0.0013	18,115.6451

	Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
	426.6800	23.4368	0.0427	32.0245	1.0134

Calendar: 508 5 - 8 Hr Days Hrs/Shift: 8 WC: MD5222 Bridge Work



Crew: EXAC Cut to Waste Offsite Prod: US 749.9998 Eff: 100.00 Crew Hrs: 106.67 Labor Pcs: 4.00 Equipment Pcs: 3.00

Notes: ASSUMES 15' FROM BRIDGE

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UG	Total
3DDIRT	Dump Fee clean dirt	1.00	1,000.00	LOAD	50.00	106.00	53.00	53,000.00
4HAUL	Hauling - Sub	1.00	2,000.00	HR	80.00	100.00	80.00	160,000.00
8DZD6	Dozer 180 HP (D-6)	1.00	106.67	HR	60.88	100.00	60.88	6,493.54
8EX060K	Excavator 60,000 LB (325)	1.00	106.67	HR	71.60	100.00	71.60	7,637.57
8TPU	Pickup Truck	1.00	106.67	HR	7.00	100.00	7.00	746.69
LS	Skilled Laborer	1.00	106.67	MH	14.00	100.00	18.88	2,013.67
OPDZ	Operator-Bulldozer	1.00	106.67	MH	21.00	100.00	28.32	3,020.51
OPEX	Operator-Excavator	1.00	106.67	MH	25.00	100.00	33.71	3,595.85
ZFM	Foreman	1.00	106.67	MH	35.00	100.00	47.19	5,034.18

Activity: 2001C Grade Roadway Quantity: 16682 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Trucking	Total
U. Cost	0.85	0.30	1.14	0.81	0.00	0.00	0.00	0.00	1.95
Total	14,146.62	4,928.68	19,075.30	13,469.45	0.00	0.00	0.00	0.00	32,544.75

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1.9509	0.0080	125.0000	243.8613	16.6820	1,000.0000	0.0010	1,950.8902

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
667.2900	24.9996	0.0400	28.5862	0.8480

Calendar: 508 5 - 8 Hr Days Hrs/Shift: 8 WC: MD5222 Bridge Work

Crew: GRADRD Rough Grade Rdwy Prod: US 1000 Eff: 100.00 Crew Hrs: 133.46 Labor Pcs: 5.00 Equipment Pcs: 3.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UG	Total
8GR180	Motor Grader 180 HP (C 120G)	1.00	133.46	HR	62.80	100.00	62.80	8,381.29
8RL66	Compactor 66" Drum (BW172D)	1.00	133.46	HR	31.13	100.00	31.12	4,153.94
8TPU	Pickup Truck	1.00	133.46	HR	7.00	100.00	7.00	934.22
LS	Skilled Laborer	2.00	266.91	MH	14.00	100.00	18.88	5,038.62
OPGR	Operator-Grader	1.00	133.46	MH	27.00	100.00	36.41	4,858.85
OPRL	Operator-Roller	1.00	133.46	MH	16.00	100.00	21.57	2,879.32
ZFM	Foreman	1.00	133.46	MH	35.00	100.00	47.19	6,298.51

Activity: 2001D Grade Turf Area Quantity: 49110.68 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Trucking	Total
U. Cost	0.45	0.16	0.60	0.18	0.00	0.00	0.00	0.00	0.79
Total	22,001.42	7,665.29	29,666.71	9,003.50	0.00	0.00	0.00	0.00	38,670.21

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
0.7874	0.0053	187.5000	147.6393	32.7405	1,500.0002	0.0007	1,181.1142

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,047.6900	46.8752	0.0213	28.3163	0.4480

Calendar: 508 5 - 8 Hr Days Hrs/Shift: 8 WC: MD5222 Bridge Work

Crew: GRADTF Rough Grade Turf Prod: US 1500.0002 Eff: 100.00 Crew Hrs: 261.92 Labor Pcs: 4.00 Equipment Pcs: 2.00



Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UG	Total
8DZ450	Dozer 75 HP (450)	1.00	261.92	HR	27.38	100.00	27.38	7,170.06
8TPU	Pickup Truck	1.00	261.92	HR	7.00	100.00	7.00	1,833.44
LS	Skilled Laborer	2.00	523.85	MH	14.00	100.00	18.88	9,889.03
OPDZ	Operator-Bulldozer	1.00	261.92	MH	21.00	100.00	28.32	7,416.63
ZFM	Foreman	1.00	261.92	MH	35.00	100.00	47.19	12,361.05

Report Summary

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Trucking	Total
Total	56,062	19,532	75,594	48,943	2,650	79,500	240,000	1,000	447,686

Job Notes

Estimate created on: 01/19/2016 by User#: 1 -
 Source estimate used: \\CORMAN-HCSS\HEAVY BID\HEAVYBID\EST\ESTMAST

*****Estimate created on: 02/10/2016 by User#: 101 - Chase Cox
 Source estimate used: Y:\HEAVYBID\EST\NOVAMASTER

*****Estimate created on: 04/13/2017 by User#: 100 - David Gates
 Source estimate used: H:\HEAVYBID\EST\MDMASTER

Calendars Used In Estimate

508 5 - 8 Hr Days

3. CONTRACTING PLAN

Approach to developing a subcontractor selection plan that allows for the competitive solicitation of bids from quality subcontractors: Corman self-performs on many of our projects and will be self-performing a minimum of 50% of the work required for this project. During preconstruction, a detailed subcontracting and DBE plan will be developed and submitted to MSHA for concurrence. The plan will be based on our current standard plan and emphasize selecting subcontractors based on:

- A past history of successful performance on other MSHA, Federal, local County or Corman projects,
- Price,
- Quality,
- Financial stability, and
- Schedule adherence.

Selection will be in accordance with COMAR 20.05.10.05, and the State's Nondiscrimination Clause as provided in State Finance and Procurement Article, §13-219, Annotated Code of Maryland, and the Commercial Nondiscrimination Policy as provided in State Finance and Procurement Article, Title 19, Annotated Code of Maryland.

Corman maintains a database of qualified Specialty/DBE firms. Outreach is continuous as a way to connect with additional firms. The following are ways we solicit Specialty/DBE firms for this project during the preconstruction phase:

1. Publish Proposal Notifications / Bid Notices in local and minority newspapers and eMaryland Marketplace 30 and 10 days prior to price due dates. Post plans and specifications on Corman's Sharepoint Site.
2. Review past MSHA, Paxtuxent River Naval Air Base (NAVFAC) and County bids and projects for possible Specialty / DBE firms that maybe interested in the project – contact those firms to determine interest.
3. Review MSHA MBE/DBE directory to identify appropriate certified DBE subcontractors / suppliers.
4. Corman's Estimating Assistants will reach out to identify potential Specialty / DBE firms from our company database.
5. Based on available scopes of work if adequate response is not obtained an "Open House" will be held at a local venue to advertise the opportunity and solicit interest from the local contracting community.
6. Develop and maintain a list of identified potential Specialty / DBE firms to solicit prices from – the list would be prepared using Corman's database, as well as Items 1 through 5 above.
7. Validate licensing, qualifications, bonding capacity and references of specialty and certified DBE subcontractors / suppliers identified, respond to project inquiries, and furnish requested information as appropriate.
8. Review at regular intervals our compliance with project requirements, codes and ordinances.

Specialty / DBE subcontractors will be chosen based on:

- ✓ Past performance on Corman projects.
- ✓ Industry feedback/references from past performance on similar contracts.
- ✓ Personal interviews.

- ✓ Visits to subcontractors' office/yards.
- ✓ Review of subcontractor Quality program.
- ✓ Familiarity of working on Government (MSHA, NAVFAC or County) projects.
- ✓ Financial stability and strength.
- ✓ Understanding project goals/scope during pricing and investigative phases.
- ✓ Ability to perform multiple contract tasks.
- ✓ Price of the work to provide MSHA the best value.
- ✓ Availability of equipment and labor (Backlogs).
- ✓ Capacity to perform within the anticipated shorten seasonal schedule and at night.

Specific subcontracting opportunities will be determined and based upon the outreach and subcontracting venting described above, and a short list of qualified subcontractors will be developed and discussed with MSHA and the Governor's Office of Minority Affairs, as appropriate. The shortlisted Specialty / DBE firms will then be contacted; plans and specifications made available; and a pricing request sent. Corman will create a complete vendor list and solicit pricing for all materials and subcontractors. An Estimating Assistant oversees and manages the pricing for each of the bid items where Specialty / DBE pricing is required.

Demonstrating subcontractor's prices are competitive: We understand our responsibility to demonstrate to the ICE and MSHA the selected subcontractor's price is competitive. This is accomplished by:

- Comparing submitted quotes to pricing, utilizing our in-house estimating software.
- Reviewing the inclusions and exclusions in the subcontractor's scopes to ensure equal scopes have been priced.
- Providing a minimum of two quotes, three if available.
- If only one quote available – use past pricing from other similar scope and size projects.

Commitments to enhance DBE participation: We will develop a DBE Outreach program to meet the required goals for the project. All the material pricing and subcontractor pricing DBE firms will be jointly shared and evaluated with the ICE team member. When preparing a fair price for the project, we will track the status of our DBE Participation. This creates an awareness to maintain and/or increase our efforts to successfully meet the goals. As the fair price submittal dates approaches construction, DBE participation goals are evaluated and finalized to meet them. If adequate DBE participation is not obtained thru the above process bid items Corman had originally planned to perform in-house would be broken out and sent to local or regional DBE firms to quote on. However at this time we believe adequate DBE firms are available to bid on the planned subcontracted items listed below. During construction, the project team monitors DBE participation for compliance with the goal.

Items we would anticipate subcontracting out to Specialty/DBE firms currently includes:

- | | |
|---------------------------|---------------------------------|
| • Asphalt Paving | • Line Striping |
| • Guide Rail installation | • Fueling |
| • Trucking | • Seeding / Landscaping |
| • Underdrain Installation | • Material supply (Rebar, etc.) |
| • Signing | |

Complying with COMAR 21.05.10.05: COMAR 21.05.10.05 states:

The construction manager assumes all risk for the cost, schedule, and performance of the trade contracts.

B. Trade contracts may be procured concurrently or over the life of the project.

C. The construction manager or procurement unit shall send the solicitation notice for trade proposals to the Governor's Office of Minority Affairs and publish the notice in a newspaper of general circulation near the project, or Internet media, or both, at least 14 days before trade proposals are due. If the construction manager restricts trade proposals to prequalified contractors, the solicitation notice shall include information on the prequalification process.

D. The procurement agency shall publish notice of the project, contact information of the construction manager, and general information on trade proposal solicitation on its website and eMaryland Marketplace.

E. The construction manager may, subject to approval by the procurement officer, select trade contractors based on evaluation factors other than low bid, including, but not limited to, MBE participation, past performance, and special qualifications.

F. The construction manager shall comply with the State's Nondiscrimination Clause as provided in State Finance and Procurement Article, §13-219, Annotated Code of Maryland, and the Commercial Nondiscrimination Policy as provided in State Finance and Procurement Article, Title 19, Annotated Code of Maryland.

The Contracting plan described above clearly meets all of those requirements. We will regularly review our compliance with the CMAR requirements and adjust our actions accordingly to maintain compliance with COMAR 21.05.10.05.

E. LEGAL AND FINAINCIAL INFORMATION

1. TEAM ORGANIZATION

Corman Construction, Inc. will be the sole contract holder and lead contractor with total responsibility for the project.

2. LIABILITY

Not applicable, see Section E, Subsection 1. Team Organization.

3. BONDING CAPABILITY

See our surety letter on the following page.

4. Termination

None

F. APPENDIX

1. Addendum No. 1
2. Prospective Proposer Questions – Q2
3. Surety Letter, Statement of Financial Condition, & Power of Attorney

April 13, 2017

Contract No.: SM7745171
F.A.P. No.: Not Applicable
Description: MD 5 – The Causeway
to South of Camp Brown Road
Construction Management at Risk

ADDENDUM NO. 1

To All Prospective Proposers:

Please be advised that the Technical Proposal and Price Proposal Submittal Date for this contract is still scheduled for **May 3, 2017**.

The attention of prospective proposers is directed to the following questions.

REQUEST FOR PROPOSALS

<u>Page No.</u>	<u>Description</u>
25-26	REVISED bullets a. and b. under "2. Construction Approach.

Questions relating to this Addendum No. 1 may be directed in writing to:

Jason A. Ridgway, P.E.
Director, Office of Highway Development
State Highway Administration
e-mail address: SM7745171_MD_5@sha.state.md.us

During the Price Proposal Phase, only e-mailed inquires will be accepted. No requests for additional information or clarification to any other Department or Administration office, consultant, or employee will be considered.



JASON A. RIDGWAY, P.E.
DIRECTOR, OFFICE OF HIGHWAY DEVELOPMENT.

C. Project Approach – CRITICAL (Limit 16 pages)

1. Preconstruction Approach – CRITICAL

- a. Collaboration – The CMAR process is based on principles of collaboration, cooperation, and trust between SHA, the design team, and the Contractor. Describe the Proposer’s approach to accomplishing this objective. Discuss how you would support the Administration in involvement with stakeholders during the Preconstruction phase.
- b. Design and Constructability Review – The Contractor’s involvement during the Preconstruction phase of the project should help streamline the design process, reduce errors and omissions, improve constructability and quality, reduce the cost of construction to ensure it is within budget, and optimize the project delivery schedule. Describe the Proposer’s approach to accomplishing these objectives on this project.
- c. Risk Management – Discuss the Proposer’s approach to assisting the Project Team in managing risks. Describe the Proposer’s approach to assisting the Project Team develop and evaluate potential innovations. As part of your proposal, prepare an initial risk matrix for the project identifying what your team has identified as the most relevant risks, their potential impacts to the project, and a mitigation strategy for each.
- d. Proposed Technical Concepts – Your team may have some innovative ideas or technical concepts that could increase the likelihood of success and help balance the project goals. Describe these innovative ideas or technical concepts and how they may further improve reaching project goals including impacts on time, cost, and quality.

2. Construction Approach – SIGNIFICANT

- a. Construction Sequencing – Discuss your proposed construction sequencing including, but not limited to, maintenance of traffic, construction phasing, and independent work packages.
- b. Construction Schedule – Describe the Proposer’s construction schedule. Discuss factors that would affect schedule such as outside constraints, seasonal work, materials, equipment and labor availability, etc. Include a schedule graphic outlining the major activities and their associated timeframes.

April 6, 2017

Contract No.: SM7745171
F.A.P. No.: NOT APPLICABLE
Description: MD 5 – The Causeway
to South of Camp Brown Road -
Construction Management at Risk

NOTICE TO PROSPECTIVE PROPOSERS

To All Prospective Proposers:

Please be advised that the Technical Proposal and Price Proposal Submittal Date for this contract is still scheduled for **May 3, 2017**.

The attention of prospective proposers is directed to the following questions.

PROSPECTIVE PROPOSER QUESTIONS

INCLUDED IN THIS RESPONSE ARE PROSPECTIVE PROPOSER QUESTIONS RECEIVED AS OF April 6, 2017.

The following questions were received from prospective proposers. The responses are provided for clarification to all proposers in **bold** after the questions:

Q2: There is a discrepancy in the RFP for the above project - Page 27 of the RFP says no Proposal Guaranty is required. The last page of the RFP (Page not numbered) states a 5% Bond is required. Which is correct?

R2: A Proposal Guaranty will not be required in response to this RFP

Questions relating to this NOTICE may be directed in writing to:

Jason A. Ridgway, P.E.
Director, Office of Highway Development
State Highway Administration
e-mail address: SM7745171_MD_5@sha.state.md.us

During the Proposal Phase, only e-mailed inquires will be accepted. No requests for additional information or clarification to any other Administration office, consultant, or employee will be considered.


JASON A. RIDGWAY, P.E.
DIRECTOR, OFFICE OF HIGHWAY DEVELOPMENT.

Maryland Department of Transportation
State Highway Administration

707 North Calvert St., Baltimore, MD 21202

410.545.0300 | TTY 800.735.2258 | roads.maryland.gov

My telephone number/toll-free number is _____