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MD 5 - The Causeway to South of Camp Brown Road

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Maryland Department of Transportation
State Highway Administration

Contract No. SM7745171

May 3, 2017

Kiewit

Kiewit

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B. Capability of the Proposer

PROJECT MANAGER - DONNIE ARANT

✓ 16 years experience ✓ Works with Cost Estimator Brian Flach on Greenbelt CMAR

✓ Worked with Construction Manager Bruce Applegate on Cotton Lane CMAR & SR 202L D-B

Professional Experience

Donnie has spent his entire professional career on alternative delivery procurements including six CMAR and three design-build projects and brings a wealth of knowledge relating to cost development, design coordination, constructability reviews, project phasing, operations management, subcontractor management, risk mitigation and public outreach. In the past 10 years, Donnie has served as a Project Manager on 74 miles of highway widening, and understand the complex MOT and roadway construction methods needed to execute at a high level. Donnie has been a leader on SHA's previous CMAR contracts providing lessons learned, building best practices, and developing relationships throughout the SHA organization. This experience has generated a strong relationship with SHA from the Greenbelt CMAR project, which will results in team synergy from day one. Donnie will be the primary point of contact for this contract.

Project Manager, SR-101L HOV Lanes Design-Build, Arizona DOT, Phoenix, AZ, $90M

Donnie provided oversight for all major field operations including pavement removal, drainage, utilities, bridges, grading, paving, barrier wall construction, MOT, public outreach, erosion and sediment control oversight, and shareholder coordination. The project scope included widening an active 6 lane freeway to add 60 miles of HOV lane. This fast tracked 60-lane-mile-long project was designed and constructed in 257 days. Donnie's responsibilities included proposal and estimate development, design coordination, constructability reviews, managing 100 craft and 25 pieces of equipment, scheduling, coordinating with multiple stakeholders, managing subcontractors, and coordinating with the local community.

Relevancy: *Alternative Delivery, Constructability Reviews, Design Coordination, Permitting, Widening, Live Traffic, Excavation, Grading, Asphalt, Storm Drainage, Utility Relocations, Public Outreach, Accelerated Construction, Stakeholder Coordination, V/E's, ATC's, Multi-discipline teams*

Project Manager, SR-202L Widening Design-Build, Arizona DOT, Phoenix, AZ, $189M

Donnie provided oversight for all major design and construction operations. Donnie served as a key staff member from project award to final completion, and was the face of Kiewit to this important Client. This 10 mile project included 22 bridges and 12 miles of roadway widening, all constructed under live traffic. No traffic was disrupted during the daytime travel periods. Due to proximity next to the Tempe Town Lake, Donnie coordinated with several cities, utilities, stakeholders, and special events. The entire project was designed and constructed in 600 days.

Relevancy: *Alternative Delivery, Constructability Reviews, Design Coordination, Permitting, Widening, Minimal Traffic Disruptions, Excavation, Grading, Asphalt, Storm Drainage, Utility Relocations, Public Outreach, Accelerated Construction, Stakeholder Coordination, V/E's, ATC's, Multi-discipline teams*

Construction Manager, Cotton Lane Bridge CMAR, Maricopa County DOT, Goodyear, AZ, $51.8M

Donnie provided oversight for all major design and construction operations. Donnie managed field operations including bridge construction, and roadway widening on the MC-85 freeway and Estrella Parkway. As the only entrance to Estrella Mountain Ranch, Donnie scheduled the critical roadway widening to be completed in less than 100 days, all while under active traffic. Through value engineering in preconstruction, the team utilized test shafts to cut over $3.1 Million of cost from the production drilled shafts. This multi-phase, 3.25-mile bridge project spanning over the Gila River was both the largest single contract in MCDOT's history and their first project delivered as Construction Manager at Risk. Working with the design team, this project became a signature bridge for Maricopa County.

Relevancy: *CMAR, Constructability Reviews, Design Coordination, Permitting, Widening, Minimal Traffic Disruptions, Rapid Construction, Excavation, Grading, Asphalt, Storm Drainage, Utility Relocations, Public Outreach, Stakeholder Coordination, OPCC and GMP development*

CONSTRUCTION MANAGER - BRUCE APPLEGATE

✓ 15 years experience ✓ CMAR experience ✓ Highway construction ✓ Schedule coordination
✓ Worked with Project Manager Donnie Arant on Cotton Lane CMAR & SR 202L D-B

Professional Experience

Bruce has fifteen years of construction experience, including eight alternative delivery projects (6 CMAR & 2 D/B), resulting in his proven ability to provide guidance that will support the team. Bruce has participated in these projects from start to finish, resulting in a complete understanding of the entire CMAR process. Bruce and Donnie started their careers together in Phoenix, and have maintained a strong friendship due to joint efforts on the same projects. Bruce's insight and suggestions provided during constructability reviews, value engineering analysis, and scheduling activities are provided through effective communication and lessons learned on previous projects. Bruce has a unique ability to build exceptional relationships with client staff, the local community, and the employees that report to him. From his project experience, Bruce has coordinated with hundreds of stakeholders on roadway widening projects.

Construction Manager, Metro Gold Line Foothill Design-Build, Metro Gold Line Authority, Pasadena, CA, $501M

Bruce was construction manager for three of four segments of this $501 million project. Bruce was responsible for design constructability reviews, coordination and comment resolution with various cities, agencies, and third party stakeholders for all segments. He also had oversight of all city, agency and third party coordination within his assigned segments. Bruce was responsible for procurement of all necessary permits and easements and was in direct supervision over structures work in Segment 1. He also handled coordination for the overall project with Caltrans. This project includes final design and construction of 11.5-miles of double light rail main track, 14 new bridges, eight modifications to existing bridges, six stations, and a maintenance and operations facility.

Relevancy: *Alternative Delivery, Constructability Reviews, Design Coordination, Permitting, Roadway, Live Traffic, Excavation, Grading, Asphalt, Storm Drainage, Utility Relocations, Public Outreach, Stakeholder Coordination, V/E's, ATC's, Multi-discipline teams*

Construction Manager, SR-202L Widening Design-Build, Arizona DOT, Phoenix, AZ, $189M

Bruce was responsible for overseeing all roadway widening, cast in place concrete wall operations, wall design review, operational planning and scheduling, double shift crew and equipment coordination, material procurement, erosion and sediment controls, and traffic coordination. When awarded, this was the largest design-build project ever undertaken by ADOT. This fast-tracked project involved widening 10 miles of heavily traveled urban freeway, widening 22 bridges, reconstructing 18 on-ramps and off-ramps, and adding general purpose and auxiliary lanes.

Relevancy: *Alternative Delivery, Constructability Reviews, Design Coordination, Permitting, Widening, Live Traffic, Excavation, Grading, Asphalt, Erosion and Sediment Controls, Storm Drainage, Utility Relocations, Public Outreach, Accelerated Construction, Stakeholder Coordination, V/E's, ATC's, Multi-discipline teams*

Project Manager, Cotton Lane Bridge CMAR, Maricopa County DOT, Goodyear, AZ, $51.8M

Bruce was responsible for start-up activities, work planning, scheduling, cost controls, subcontract and vendor coordination of over 40 contracts, construction operations, partnering, client and engineer coordination, and project closeout. This multi-phase, 3.25-mile bridge project is both the largest single contract in MCDOT's history and the first project delivered as Construction Manager at Risk. The project scope included constructing a six-lane bridge including bike lanes, pedestrian access, a roundabout, and roadway widening on the heavily traveled MC-85.

Relevancy: *CMAR, Constructability Reviews, Design Coordination, Permitting, Widening, Live Traffic, Excavation, Grading, Asphalt, Storm Drainage, Erosion and Sediment Controls, Utility Relocations, Public Outreach, Stakeholder Coordination, OPCC and GMP development*

COST ESTIMATOR - BRIAN FLACH

- ✓ 15 years experience
- ✓ CMAR experience
- ✓ Developing "take-off" quantities
- ✓ Works with Project Manager Donnie Arant on Greenbelt
- ✓ Mitigating project risks

Professional Experience

As our chief estimator for the Mid-Atlantic region, Brian has a tremendous amount of experience building accurate cost estimates that are useful to our management team and Clients. Brian has played an instrumental role on SHA's Greenbelt CMAR project with your Project Manager, Donnie Arant, and understands the entire CMAR preconstruction process. Working with an internal JV partner and SHA's ICE, Brian is a leader in providing detailed upfront estimate coordination, frequent communication, and builds a true partnership with the team. He has the lessons learned to effectively build OPCC's and GMP's, to successfully bring these projects to construction.

Cost Estimator, Orlando South Terminal CMAR, Greater Orlando Aviation Authority, Orlando, FL $178M

Brian was responsible for the overall management of the preconstruction phase including the development of cost estimates, value engineering studies, negotiating GMP's, procuring subcontractors including a 25% DBE program and creating risk registers. Work for this $178 million CMAR contract was performed in collaboration with the Greater Orlando Aviation Authority, the design team, and adjacent contractors. During preconstruction, the designer fell behind schedule, which resulted in potential impacts to construction. Brian and his team mitigated this risk by resequencing the schedule to construct the concrete by area, versus linearly across the entire station area. This approach mitigated the schedule risk and they maintained the original schedule. Scope involves the construction of an intermodal facility at the South Terminal of the Orlando International Airport, which serves various modes of rail (including intercity rail, commuter rail and light rail) and vehicle transport for the Airport.

Relevancy: *CMAR, Constructability Reviews, Design Coordination, Estimating, Permitting, Roadway, Live Traffic, Excavation, Grading, Asphalt, Storm Drainage, Utility Relocations, Public Outreach, Stakeholder Coordination, OPCC and GMP development*

Cost Estimator, Greenbelt Metro Station CMAR, Maryland State Highway Administration, Greenbelt, MD, $130 M (estimated)

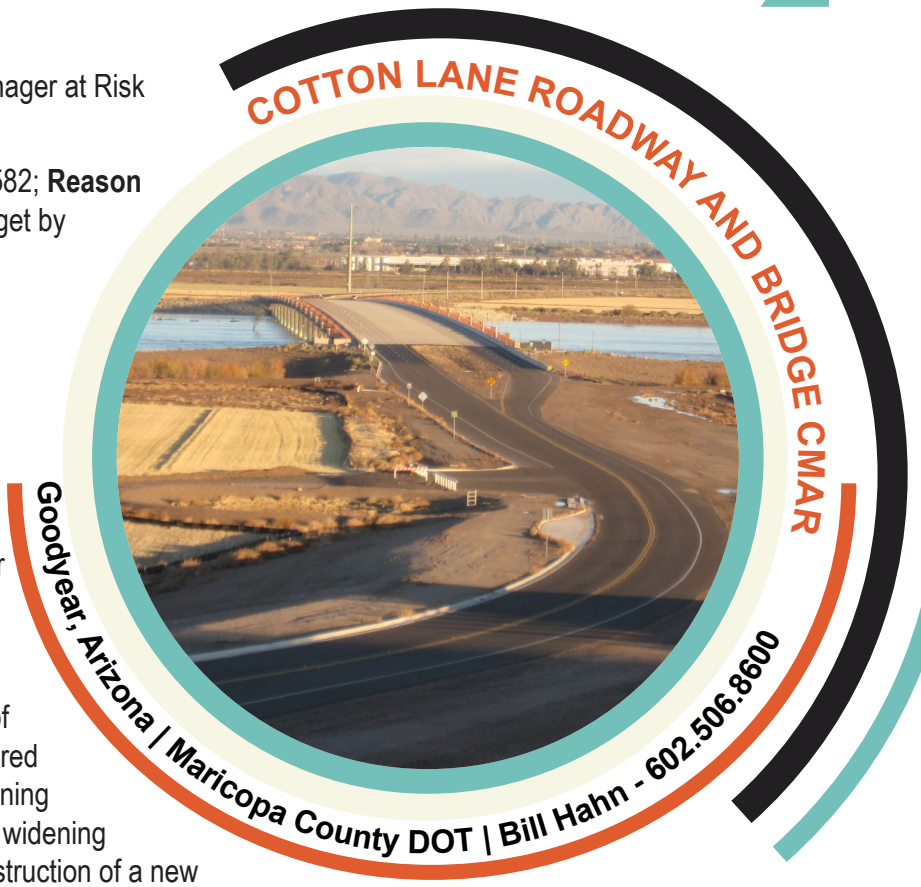
Brian has served as the lead cost estimator for the Greenbelt project. He's an expert developing take off quantities and familiar with the current local market.Working with an internal minor JV partner, Brian led the extensive coordination to successfully combine a first and second estimate together. All of this took place while also coordinating with SHA's ICE for the OPCC comparison. Brian has also participated in developer and stakeholder coordination, and has participated in the schedule development. At each milestone, Brian has also provided constructability reviews. The Greenbelt project scope includes two major flyover bridges, roadway widening, and station development for the future FBI facility.

Relevancy: *CMAR, Constructability Reviews, Design Coordination, Permitting, Widening, Live Traffic, Excavation, Grading, Asphalt, Storm Drainage, Utility Relocations, Public Outreach, Accelerated Construction, Stakeholder Coordination, OPCC and GMP development*

Cost Estimator/Construction Manager, MODOT 554, Missouri DOT, Lee Summit, MO, $430M

Brian led the estimating and successful bid for this $430 million project. The scope included the construction of 554 bridges throughout the state of Missouri. In order to be successful, Brian developed a plan to properly staff and bring equipment to each site throughout the state. This required detailed brainstorming and planning pre-bid, to ensure the estimate was correct. In addition, Brian managed hundreds of subcontractors and suppliers, many who were regional throughout the state and only quoted certain sites. Brian worked with a second estimate team, which required similar coordination to the ICE process required on CMAR projects.

Relevancy: *Constructability Reviews, Design Coordination, Permitting, Widening, Live Traffic, Excavation, Grading, Asphalt, Storm Drainage, Utility Relocations, Public Outreach, Stakeholder Coordination*



Project Delivery Method: Construction Manager at Risk

Overall Construction Cost of Project:
Initial Cost: $52,984,752; **Final Cost:** $51,581,582; **Reason for Difference:** Project was delivered under budget by returning unused contingency to the Client.

Overall Schedule Performance: **Initial Completion Date:** July 2008; **Final Completion Date:** June 2008; **Reason for Difference:** Completed project ahead of schedule

Brief Project Description:
Kiewit Western Co., an affiliate of Kiewit Infrastructure Co., was selected as the contractor of choice to construct the $52M Cotton Lane Bridge project. This multi-phase 3.25 mile roadway and bridge project was both the largest single contract in Maricopa County Department of Transportation's history and its first project delivered as a CMAR. The project scope included the widening of the heavily travelled MC-95 highway, roadway widening including a roundabout on Estrella Parkway, construction of a new four-lane roadway, and constructing a six-lane, 2,100-foot long bridge—including bike lanes and a second pedestrian access—over the Gila River. The purpose of the project was to provide additional access and capacity to the growing communities south of the river. Additional scope included providing the channel improvements, flood control, bank stabilization, habitat modification along the effected section of the Gila River, new water, sewer and storm drain lines, and the relocation of several irrigation, electrical, and gas lines.

The Cotton Lane Bridge project was comprised of three owners: Maricopa County Department of Transportation, the City of Goodyear, and the local Newland Communities. Using the CMAR process, all owners were capable of expressing their own visions and goals for the project. This included allowing owners, contractors, and designers to consider several different bridge designs and budget options, including box girders, steel girders, pre-cast girders, and arch style girders. Due to the CMAR process, owners were able to see different pricing options while deciding on issues such as aesthetics and their budget. For Maricopa County, cost and schedule were the key items to focus on; for the City of Goodyear and Newland Communities, cost and aesthetics were critical.

Through the CMAR process, the Kiewit team provided cost estimating, scheduling, planning and phasing, value engineering, constructability reviews, DBE goal setting, and subcontractor selection for the owner, in addition to managing the construction process. Recognized by MCDOT as "a shining example of what can be accomplished through shared public and private projects," the Cotton Lane Bridge project also won the Southwest Contractor's Best of 2007 award.

On this project, our key staff, Donnie and Bruce, worked together for the entire project, serving in similar key roles. Their relationship dates back over a decade, which will ensure strong team synergy and a thorough understanding of CMAR processes.

COTTON LANE ROADWAY AND BRIDGE CMAR cont.

Discussion of what work, including any successful methods, approaches, and innovations, on the project is relevant to this contract and why:

During the design phase, Kiewit collaborated with MCDOT and the project designer in developing and implementing a drilled shaft load test program. Through the use of a separate GMP, Kiewit mobilized a drilled shaft subcontractor along with specialty testing firms to perform the test shaft work. By gathering real life data from the field, the team was able to reduce drilled shaft lengths throughout the project which resulted in a $3.1 million savings for MCDOT.

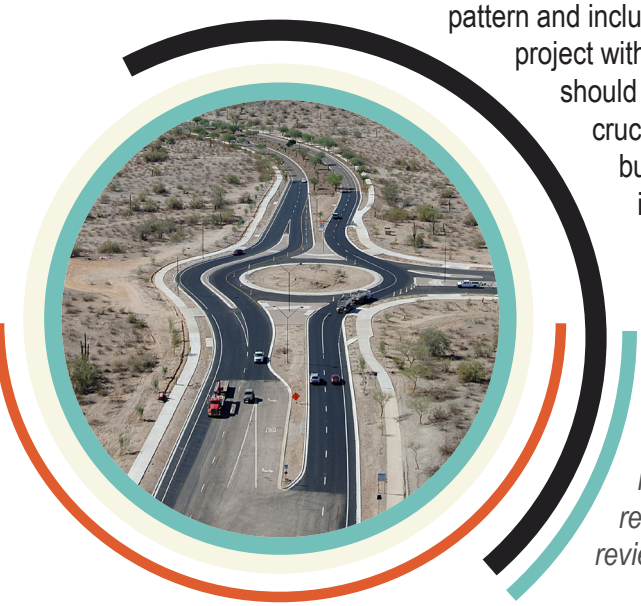
Kiewit assisted in the project's extensive agency and utility coordination efforts. The U.S. Army Corps of Engineers (USACE) 404 permit acquired for this project was the largest permit, in terms of area, to date at the time, in the state of Arizona, and Kiewit provided a signification amount of assistance to acquire this permit.

At the south end of the project, Kiewit's scope included roadway widening and roundabout construction on the only access point to the 14,000 Estrella Mountain Ranch residents. Prior to construction, Kiewit assisted MCDOT by participating in public meeting events, meeting with local businesses and residents provide advanced notification, and a mass distribution of project information. By developing a phased MOT scheme, along with accelerated construction techniques, Kiewit was able to maintain 24/7 traffic flows while completed the work in just under 100 days.

During construction, MCDOT worked with the local community to design an 18" water line that would provide water to the expanding community to the south end of the project. Procured under a separate GMP, this waterline would travel under MC-85, a Union Pacific Railroad track, parallel the new roadway, and was supported under the new bridge superstructure. By developing innovative design concepts, our team utilized jack and bore under MC-85 and the UPRR railroad in lieu of traditional open cut construction. This innovation resulted in zero impacts to the roadway or the rail line, and cut months off of the schedule.

During preconstruction, the team performed a site investigation. During this investigation, ruins of a small Hohokam village were uncovered. The team hired a consultant to excavate the village, collect artifacts, and exhume any human remains. Those remains were removed in cooperation with tribal beliefs and customs and were reburied on tribal ground. To prepare for any further discoveries, the team hired an archaeological monitor to remain on-site during excavation operations.

The first thing to see when admiring the Cotton Lane Bridge is the bridge aesthetic package, which included stenciled and stained pre-cast exterior girders and columns. Each pedestrian alcove shares the same stenciled and stained pattern and includes artistic benches that tie very well with the southwestern theme. As a project with multiple owners, each with goals and visions of what they think the project should become, communication of these goals and strategies to meet them were crucial. One of the main concerns for the City of Goodyear was designing and building a project that conforms to their "Dark Sky" theme. To minimize the impacts of lights along the bridge, special architectural lighting was used. Now Goodyear can enjoy the benefit of a visually pleasing bridge, while keeping light from bleeding into surrounding communities that could potentially reduce the neighboring residents' ability to stargaze.



Relevancy: *CMAR, roadway widening, MOT, pedestrian and bicycle accessibility, landscaping, SWM and ESC, signing, striping, utility coordination, construction in environmentally sensitive area, natural resource mitigation, historical awareness and archaeological remains relocation, public outreach, OPCC and GMP development, constructability reviews, value engineering*

Project Delivery Method: Design-Build

Overall Construction Cost of Project:
Initial Cost: $188,895,000; **Final Cost:** $190,701,292; **Reason for Difference:** Project was delivered under budget through effective design management and commodity cost reductions.

Overall Schedule Performance: **Initial Completion Date:** December 2010; **Final Completion Date:** December 2010; **Reason for Difference:** Completed project ahead of schedule.

Brief Project Description:
This $190M Design-Build project was ADOT's largest design-build project to date, and their third-largest project overall. The project, led by Kiewit, consisted of widening 10 miles of the heavily-congested SR-202L freeway through Phoenix and Tempe, adding general purpose and auxiliary lanes. The project portions, which spanned over protected wetlands, Tempe Town Lake, and the Salt River, included the widening of 22 bridges and the reconstruction of 18 on- and of-ramps. The entire purpose of the SR 202L project was to improve traffic flows through a highway widening.

Many of the project challenges were related to the aggressive 600-calendar-day schedule that required the design of this complex, highly-phased project to be completed within eight months, and construction within 13 months. The team completed the project on August 1, 2010 (within 592 calendar days), eight days ahead of the RFP bid schedule, and eight months earlier than ADOT's original anticipated schedule.

This design and construction was completed ahead of schedule despite very adversarial weather in early 2010. During this time, the Phoenix area received record amounts of rain. In addition, the flows in the Salt River, resulting from this rain, were at their highest levels since 1993. The heavy rains and the Salt River flows occurred during a critical time of the project when KSJV was attempting to complete the entire project prior to the specified Fall 2010 asphalt paving window. The project was also completed several million dollars below ADOT's budget, which allows the repurposing of funds for future projects.

The SR 202L project greatly improved corridor safety through several design and construction methods. First, the entire project was constructed with minimal accidents and zero work zone fatalities by implementing a rigorous MOT plan for the project. As a major artery connecting the SR-101L to I-10, it was critical that all traffic flows were maintained throughout construction. In addition, the project paralleled Tempe Town Lake and Arizona State University, the sites of dozens of special events. Much of the impactful construction was completed on nights and weekends, and detailed coordination was required with the hundreds of stakeholders along the corridor. By widening the corridor and providing adequate shoulders, the amount of congestion and traffic accidents were reduced. All of the safety features including shoulder width, ramp geometry, and drainage functionality were designed to the standards and did not require any design exceptions. Several modifications were made to ramp geometry to improve visibility, and in one case, a bridge was modified to accommodate the new ramp. Lastly the pavement was rehabilitated and new striping was installed to improve motorist safety.

SR-202L RED MOUNTAIN FREEWAY D-B cont.

Our key staff, Donnie and Bruce, worked together for the entire project, serving in identical key roles. Their relationship from Cotton Lane carried over to the SR-202L, which resulted in another award winning project.

Discussion of what work, including any successful methods, approaches, and innovations, on the project is relevant to this contract and why:

The team's issue/resolution procedure–the most important element in managing the project–was founded on the commitment to provide the other party immediate notification of any issue to allow the team to discuss and implement actions that either minimized or eliminated impacts. ADOT and KSJV also used bi-weekly "How Are We Doing" partnering meetings to allow senior project management to provide guidance and support to the project team, and to empower the staff to find equitable resolutions. The project team built a strong partnership, and jointly received the Marvin M. Black partnering award in Las Vegas, NV in late 2010. Many of the relationships remain to this day.

During the design phase, Kiewit analyzed all of the pavement sections through a detailed geotechnical survey of the entire corridor. In some areas, the existing pavement met the new design criteria and was only a few years old. Kiewit proposed a value engineering idea to leave the existing pavement in place due to its long useful life. The value engineering idea was accepted by ADOT and a substantial amount of money was returned to the state.

Throughout the course of construction, the project team identified future maintenance and operability challenges, and incorporated them into the project design. For example, while this project was a widening and only required the lengthening of bridge joints, it was discovered that the existing joints were in poor condition and needing replacement. Instead of creating future impacts to the travelling public, the team incorporated these repairs into the project, and performed the work under other adjacent traffic closures. This resulted in minimal impacts to the public, saved ADOT money, and decreased the need for future maintenance.

Due to the location of the project, there was a large landscaping package that was part of the design-build scope. During initial investigation, the team discovered a large amount of plant loss and watering system issues due to an inadequate and poorly maintained system. Our team incorporated the issues into our new landscaping design and upgraded the entire system to reduce future maintenance costs, reduce water consumption, and prevent plant loss.

Relevancy: *Alternative delivery, roadway widening, asphalt paving, subgrade, drainage, MOT, pedestrian and bicycle accessibility, landscaping, SWM and ESC, construction in environmentally sensitive area, signing, striping, utility coordination, natural resource mitigation, public outreach, OPCC and GMP development, constructability reviews, value engineering*

Project Delivery Method: Design-Build

Overall Construction Cost of Project:
Initial Cost: $89,900,000; **Final Cost:** $98,900,000; **Reason for Difference:** There were incentives earned for early completion and quality. In addition, the Client added additional asphalt paving on the existing roadway to improve safety and reduce long term maintenance.

Overall Schedule Performance: **Initial Completion Date:** September 2011; **Final Completion Date:** November 2011; **Reason for Difference:** Client requested added scope near the end of the schedule including full freeway milling and asphalt overlay replacement. Contract scope was completed on schedule.

Brief Project Description:
The $98.9M SR 101L Design Build (D-B) project, led by Kiewit, constructed 60 miles of HOV lane widening for the Arizona Department of Transportation. The project consisted of a combination of inside and outside widening along the heavily-congested SR 101L freeway through the cities of Glendale, Peoria and Phoenix. The project was bid with an aggressive 257 calendar day duration which was 14 months ahead of ADOT's original schedule and required more than 1.7 lane miles of freeway to be designed and constructed on average per week. Major components of work included 288,837 CY of excavation and embankment, 8,669 LF of storm drainage pipe, 242 EA catch basins, 672,289 SY of PCCP, 56,434 SF of retaining walls, 30 miles of roadway barrier, five cast in place box girder bridge widenings, new ITS systems, signs, lighting, compaction grouting and pavement replacement at Camelback Road, as well as ramp improvements at Bell Road, Bethany Home Road, and Glendale Avenue. A 4" asphalt base was utilized as the foundation for all of the PCCP paving, along with a 1" asphalt overlay on top of the PCCP. During construction, the team averaged of one mile of roadway paving per night.

On the day of project award, the project team held a kickoff partnering meeting to discuss the plan to tackle this extremely aggressive project. All team members were bought in to make the project a success. Within two weeks, construction began, including demolition and grading operations. Once permanent features were designed, there were a total of 6 project headings, performed within two project segments to facilitate the project schedule.

The entire project was constructed next to adjacent traffic on this heavily travelled roadway. To facilitate the work zone, the team utilized pavement grinding to remove the existing striping, and used temporary tape for the shifted traffic lanes. All of Kiewit's work was performed behind concrete barriers to aid in the safety of the workers and public. Once the widening was complete, the new striping was put back into the original locations that had been carefully removed, resulting in significant cost savings to ADOT.

This project required coordination with several cities as well as minimizing any disruptions to the University of Phoenix Stadium, Gila River Arena, Glendale and Peoria Spring Training, Luke Air Force Days, and other special events. Special events included NFL football games, NHL hockey games, and several other high profile sports events located within the SR-101L corridor.

SR-101L RED MOUNTAIN FREEWAY D-B cont.

Discussion of what work, including any successful methods, approaches, and innovations, on the project is relevant to this contract and why:

This schedule required the project to be divided into two segments and to be managed as if it were two independent projects with dedicated resources in each segment. This approach not only reduced the schedule, but allowed the team to substantially lower the price, which came in $12M under ADOT's estimate.

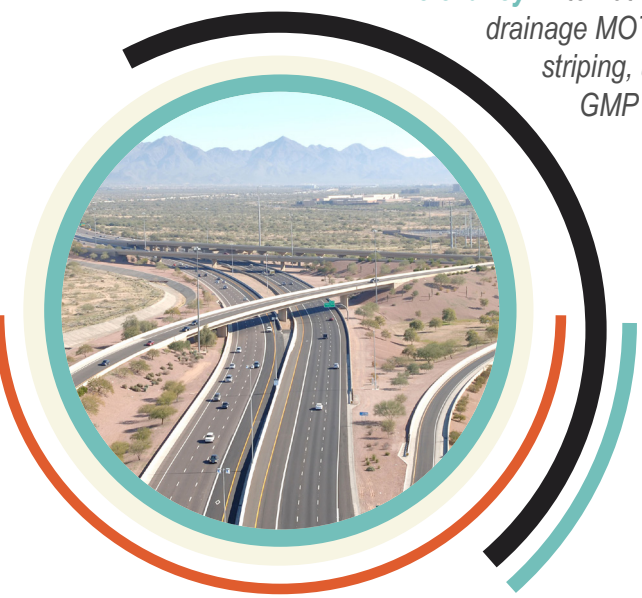
Through cost savings and partnering, Kiewit and ADOT were able to partner together to add enhancements throughout the corridor that were not included in the original scope. These developments included: extending the project limits to the south, adding an additional lane at Glendale off-ramp, milling and replacing deficient existing rubberized asphalt, adding auxiliary lanes in both directions from the SR 51 to Cave Creek Road, modifying the down drains at the Interstate-17 interchange to eliminate existing erosion problems, and a variety of smaller enhancements.

A major challenge that was encountered was unsuitable subgrade. This was a large issue that had the potential to severely affect the project schedule. Upon discovery, Kiewit immediately notified the client and proposed multiple mitigation measures, along with a cost and schedule analysis for each idea. Through a long term partnership dating back to the SR-202L project, the team decided to utilize lime treatment for the unsuitable subgrade. Within 2 weeks of discovery, the team was repairing subgrade and resuming the critical path work. Despite this issue, the original scope was completed ahead of schedule and under budget.

Through the ATC process, Kiewit proposed several innovations that were incorporated into future ADOT specifications. The first innovation that greatly aided in meeting the schedule was the use of wireless paving. Due to the elimination of wire operations, there were significant man-hour reductions on the PCCP operations. Access was improved for the trucks hauling concrete, because they could pull in front of the paver at any location instead of contending with access points from the wire. Paver productions were increased by 25% vs. the traditional wire method and the overall smoothness was improved.

Next, the team proposed and utilized intelligent compaction and all grading operations. Intelligent compaction was used in conjunction with traditional compaction tests for verification, but the intelligent compaction verified compaction was achieved across the entire project, and not just in random sampling locations.

Relevancy: *Alternative delivery, roadway widening, asphalt paving, poor subgrade conditions, drainage MOT, pedestrian and bicycle accessibility, landscaping, SWM and ESC, signing, striping, utility coordination, natural resource mitigation, public outreach, OPCC and GMP development, constructability reviews, value engineering*



B.3. Organizational Chart

Value Added Staff:

Environmental Manager - Bill Parks

Bill is experienced in nontidal and tidal wetland and waterway delineation and design, environmental resource analysis, water resource design, construction permitting, construction inspection and permit compliance. He is experienced in all facets of environmental compliance including regulations related to RTE species, coordination for historic and archaeological resources and coordinating approvals for work within Critical Areas. Bill's approach to environmental compliance is a proactive one; his communication style and trusted relationships with all stakeholders allows for quick issue resolution and/or authorizations from the resource agencies. His experience includes coordinating wetland and waterway permitting with the USACOE, USFWS, MDE, MDNR, and county governments; performing conceptual and final design of wetland creation projects in accordance with MDE and USACE protocol.

Scheduling – Alexa Bledsoe

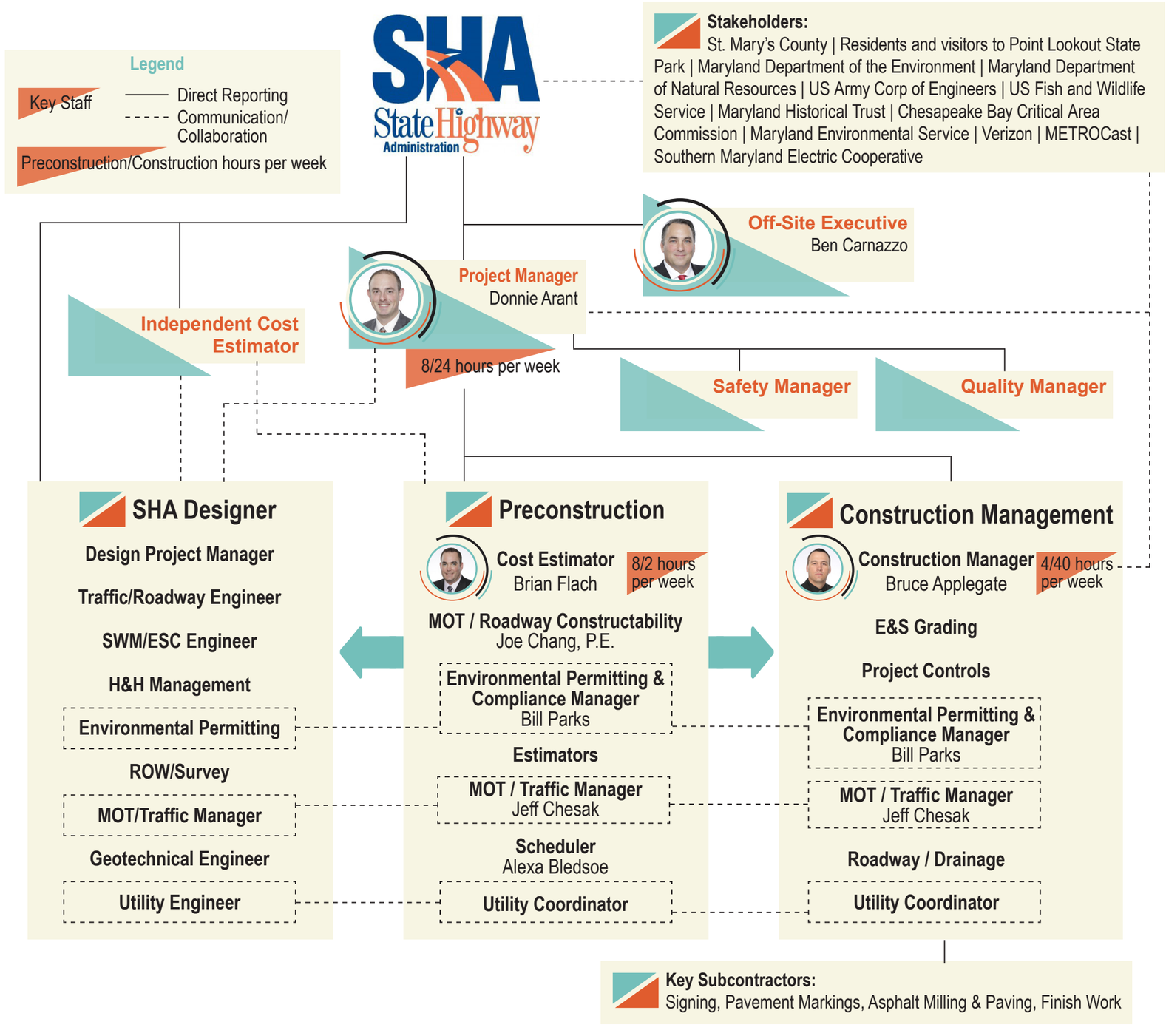
Alexa is a trained schedule professional and a Certified Scheduling Technician (CST). She has been involved in all areas of on all types of construction projects across the country. Most recently, Alexa helped develop and regularly maintain the Greenbelt Metro Station CMAR preconstruction schedule. Working with the adjacent developer and design team, Alexa helped incorporate the developers schedule into our schedule, along with identifying key design and permitting milestones. This schedule has been a powerful communication tool at our bi-weekly meetings.

MOT Manager – Jeff Chesak

As an ATTSA-certified Traffic Control Supervisor, Jeff is a trained professional with experience in improving road safety and worker safety. Working on the Chesapeake Bay Bridge for MdTA on two concurrent contracts, Jeff has managed traffic control for extremely high traffic volumes that has kept the travelling public safe. He understands and has been involved in design, set up, and maintaining temporary control plans. Jeff knows how to implement traffic control plans and techniques for installation and removal to reduce impact to traffic during construction.

MOT/Roadway Constructability - Joe Chang, P.E.

Joe is a civil design technical expert. He combines his design and construction background on all technical peer reviews incorporating safety and constructability into his design reviews and recommendations. Besides peer reviews, Joe also develops cost saving innovative geometric and construction sequence designs. His experience has helped him develop the correct, low-cost design and construction solutions efficiently. Joe and his team of professional engineers have provided significant input into the Greenbelt CMAR design.



C. Project Approach

C Project Approach

C.1. Preconstruction Approach

C.1.a. Collaboration, Cooperation, and Trust

Building a professional and collaborative team starts with a history of performance and trust. We know the best way to build a professional and collaborative team is to partner with you and the stakeholders from day one. From our current experience with SHA on the MD 97 and Greenbelt CMAR projects, we strongly believe partnering begins with the understanding that open communication and teamwork are essential to achieving the objectives. On MD-97, our team, including our Project Manager, Donnie Arant, spent several late nights participating in public meetings with the entire town of Brookeville at the Brookeville Academy Community Center and at resident's homes, to give them project updates and hear their concerns. On Greenbelt, Donnie has built a true partnership with SHA, Wallace Montgomery, Rennard Development, and Hensel Phelps, meeting bi-weekly at SHA's office. Our team has traveled to the Hensel Phelps's office several times for impromptu brainstorms and coordination meetings, to promote collaboration and cooperation. On both of these projects, communication is not stifled through a cumbersome chain of command, rather, all team members collaborate directly with each other to ensure project challenges are resolved in a timely fashion and in the best interest of SHA and the stakeholders. We have provided timely input at every step, and attended numerous critical meetings or tackled a technical challenge in a moment's notice to resolve a stakeholder or permit concern. Trusting does not happen by chance, but is based on a sincere effort to build relationships, invest time into a project, and tackle issues that arise. We will bring the same commitment and leadership to the MD 5 project.

To kick of the project, we will participate in a project kickoff to gain understanding of the project status, constraints, stakeholder concerns and schedule, and will establish counterpart relationships and set goals for what we aim to achieve. We understand the impact that a construction project can have on a community, and we want to understand everyone's goals from day one and shape the entire project around those goals.

Monthly, during preconstruction, we will hold a Partnering Meeting to give the team ample opportunities to track preconstruction progress, set action items, discuss design progress and collaborate to find innovative ways to meet project goals. We invite stakeholders such as local governments, utility companies, adjacent property owners, and local businesses so that we can understand their concerns and ensure that they are addressed from the beginning. This has been a best practice on both of our current SHA CMAR contracts, and we know our stakeholders on a first name basis.

We have identified several key utilities including Maryland Environmental Service, Verizon, METROCast and Southern Maryland Electric Cooperative, along with private residences that rely on septic and well systems. During preconstruction we recommend setting up monthly meetings at a minimum to work with these utility companies on potential conflicts, relocation needs, design status, and relocation schedules. Frequent communication can help keep the project schedule on track and build strong stakeholder relationships. On MD-97, we worked regularly with PEPCO, COMCAST, WSSC, and Verizon through several task force meetings to ensure the work was properly coordinated with our design, and also ensured schedules were properly coordinated with the construction plan. These meetings were critical due to the highly phased nature of the project and limited LOD.

Prior to construction, we will work with SHA's public involvement team to go door-to-door, and meet many of the stakeholders along the corridor. We will hear the communities concerns, and work with the design team to incorporate comments into the design. We will continue to work with the adjacent residents and businesses during construction to provide timely and accurate project phasing and scheduling updates throughout preconstruction and construction phases.

During construction, we also include stakeholders in our Construction Progress Meetings and take them on monthly field tours to discuss the progress of the project and discuss any concerns. In addition, we hold a monthly Four-Square review meeting with all project team members during both preconstruction and construction where everyone can see the hot issues at-a-glance. The four square matrix is develop in collaboration with SHA, and any key team

members, to candidly discuss positive and negative trends. This matrix allows the entire team to focus on current and ongoing issues, while building upon positive trends. Lastly, we hold weekly progress meetings and daily/weekly quality inspections. In the progress meetings, we discuss the challenges of the week ahead.

Everyone participates and contributes to the plan and schedule, which reduces risk, time and money. Our approach to CMAR projects is to set up a scheduling meeting early in the preconstruction phase, to brainstorm all of the activities and critical items that must occur prior to the start of construction. By working with SHA and the design team, we all know the path to success and the roadblocks that could prevent us from getting to construction. Donnie, Brian, and Alexa all have worked with SHA on the Greenbelt Metro project to develop a fully integrated schedule that includes all design activities, permitting, utilities and the adjacent developer's schedule. This has been a powerful tool to help the team understand the critical path to construction. We will use these same best practices on MD 5.

To provide assured synergy, we are bringing a team together that has been working together for several years. First, Donnie and Bruce both started their careers together in Arizona, and both graduated from the University of Nebraska. Having worked together on 3 projects and several estimates, they have a strong friendship that will carry into this project. Donnie and Brian have been working together for 5 years on Mid-Atlantic pursuits and estimates, and also have a strong friendship. These relationships will smoothly transition over to the MD 5 project and will be a huge benefit to SHA.

In summary, to build a professional and collaborative team, you need a team that has the experience, knowledge, history, and commitment to build this job safely. Our project team will put the MD 5 project first—no matter what the task or challenge is. Whether it means driving to the site to meet with SHA's project manager, or take a look at a conceptual design to provide comments at a moment's notice, our team is available at any time to ensure this project is a success.

C.1.b. Design and Constructability Review

One of the greatest benefits of the CMAR delivery method is the early involvement of the contractor in the design process. We are able to work out constructability issues with the designer and make the best plan to address both quality and risk.

Our project manager, Donnie Arant will act as the construction team's Design Coordinator and will utilize his extensive D-B and CMAR experience to fill this role. With several agencies, design firms, and stakeholders involved in a project, it can be a challenge to continuously advance the design while accommodating the needs of all parties involved. By having one person champion the overall design coordination, we ensure that the design stays on schedule, within budget, and priority is given to activities that provide the most benefit to the overall project. Donnie has built relationships throughout SHA's organization, and will further expand upon them to make this project a success.

Donnie and our scheduler, Alexa Bledsoe, will lead the team in developing a preconstruction schedule, which includes design milestones, constructability review meeting dates, OPCC estimate dates, and any other pertinent milestones needed to manage the design phase. This approach has proven successful on other CMAR projects where the preconstruction schedule has aided the team in identifying the critical path, promoted accountability to critical activities, and generated understanding of long-lead items such as permits or stakeholder approvals that could impact the start of the project. Alexa is familiar with SHA's expectations, and has been performing preconstruction schedules on other SHA CMAR projects. The benefit to you is a project that has a **streamlined design process**.

During every phase of the design, we conduct a formal process to provide innovative constructability and value engineering ideas. Our experienced superintendents and engineers review all design submittals to confirm the plans are constructible and compatible with planned construction methods. They also identify areas to improve the overall design through frequent, informal constructability review meetings. Donnie and Bruce have made a career of alternative delivery roadway widening work. By dealing with nearly identical scopes of work on over 74 miles of paving, they have already encountered a multitude of lessons learned.

We have already reviewed the information provided, and have begun developing constructability comments and ideas into the construction sequence. At each design milestone, our entire team will provide formal constructability comments on our constructability comment form. For a value added approach, we have included Kiewit Infrastructure Engineers (KIE) as part of the team. On the Greenbelt CMAR, we flew in professionals from our KIE team to work with the designer on the critical structures and MOT portion of the project. They provided tremendous value to this brainstorm and have assisted in the direction of the design. For this proposal, Joe Chang, PE, from KIE has already been assisting our team with maintenance of traffic scenarios for this proposal, and will **improve constructability and quality** on the MD 5 project.

Informal, over-the-shoulder reviews, are used to focus on more discipline-specific design reviews where we contribute value-engineering ideas. This approach ensures comments are "designed-in" rather than "reviewed-in." This ultimately reduces the design schedule and overall design man-hours. On the Greenbelt CMAR, Kiewit participated in several over-the-shoulder reviews. For example, on Edmonston Road, there is a critical box culvert replacement that is under the only access point to the Franklin Park Apartments. Kiewit worked with the designer, and Franklin Park Apartments management, to develop the optimal phasing and construction scheme to rebuild this box and roadway, while maintaining resident access. This was done prior to a design milestone to ensure the correct design is included in the submittal. MD 5 is a perfect candidate for over-the-shoulder reviews, due to the nature of the widening, and the several different phasing options that can be explored. We will invite input from several roadway superintendents and engineers within our company to provide every possible idea that can improve cost and schedule on this project. Donnie will track all comments on an easy to use constructability comment form and will distribute the comments at each design milestone, or at additional intervals, as needed. Once the comments are transmitted, responses from the design team will be tracked, and he will verify that the constructability comments have been addressed and incorporated into the revised plans.

The constructability review team reviews each drawing in detail, focusing on:

- A design that optimizes material properties and results in efficient construction methods to ensure constructability
- A finished product that meets all of the specified design criteria
- A design that has been coordinated with all disciplines and avoids conflicts during construction providing swift and efficient operations that exceed schedule requirements
- Design and construction best management practices incorporated from previous projects to improve the finished product quality
- Cross-checking details across design packages, providing a second set of eyes to reduce errors

Our constructability review process **streamlines the design process, reduces errors and omissions, improves constructability and quality, reduces the cost of construction, and optimizes the project delivery schedule.**

For value engineering, each suggestion will be provided to the team and evaluated to decide whether to further advance the idea. Advancing a suggestion may result in the need for cost estimating, value analysis or exploring a design for feasibility. To accomplish this, we utilize Decision Analysis and Resolution Team (DART) tracking. The DART matrix organizes and quantifies innovations developed during design to help the team evaluate the overall change. Each innovation is evaluated based on impacts to design, construction, schedule, the client, and overall project goals. Weighted scores are entered for each category. This allows the team to make an informed decision whether we move forward with an innovation by analyzing redesign cost and schedule impact. On MD-97 CMAR, our team utilized the DART matrix to evaluate an option to install a soil nail wall in an effort to reduce the LOD and offsite hauling of material. This analysis helped SHA work with an important stakeholder to evaluate the tradeoffs of this idea. Several of our innovative ideas listed in the construction plan portion of this proposal would be ideal candidates for a DART analysis. We believe that the DART process **reduces the cost of construction and optimizes the project delivery schedule**. We look forward to sharing and vetting these ideas with your team.

After reviewing the information provided on this project, we have found several specific design coordination activities that we will focus on with your team, including:

Maintenance of Traffic. We will work closely with the design team and SHA representatives to determine working room requirements, project access points, coordinate a phasing workshop and develop a phasing plan. This will provide an opportunity for everyone's feedback and "buy in" for the final plan. By developing the optimal phasing scheme, we will reduce the duration of the project and minimize temporary work. Additionally, we are providing Jeff Chesak as our MOT manager for the project. He has spent the last three years on MDOT's Chesapeake Bay Bridge in a similar role, and is familiar with Maryland's traffic control requirements on heavily traveled roadways. Jeff will review the MOT plans during preconstruction, and will serve as our MOT manager during construction. This approach **reduces the cost of construction and optimizes the project delivery schedule.**

Utilities Coordination. Utilities coordination is of critical importance since they are often long lead items and require extensive coordination. During preconstruction, we identify all utility agencies with facilities within the corridor, ensure utility owners attend regular project meetings, acquire as-built information and verify with physical pothole data as needed, work with the CMAR task forces and utility owners to identify potential conflicts, and assist with conflict resolution and coordination. Our number one goal is utility relocation avoidance and to minimize utility impacts and relocations.

Drainage Coordination. The design of pavement drainage is contingent upon the roadway grades, cross slopes, and resident access points. We also pay special attention to the locations of sign and other pole foundations, miscellaneous structures and other utilities during our constructability reviews. Through design coordination, we provide the designers with input regarding temporary drainage to match our construction and MOT sequencing. For example, we communicate our phasing plan to the design team to ensure SWM areas are designed and constructed in the proper sequence to handle construction storm water and keep the project in compliance.

Environmental Coordination. The MD 5 Point Lookout project is surrounded by sensitive environmental areas, including non-tidal wetlands and their buffers, tidal wetlands, 100-year floodplain, the Chesapeake Bay Critical Area, forest tracts, FIDS and wildlife and plant species habitats. The limits of the project also contain park lands and historic sites such as the Confederate Memorial Park, a former smallpox cemetery and Point Lookout State Park. These resources, all have the potential to be directly or indirectly impacted by this project. In the location of former Smallpox Cemetery No. 2 we will provide recommendations to the design engineer to develop special provisions for monitoring during construction. This will be done as a result of the multiple Civil War grave relocations and anecdotal reports of remains found during the construction of MD 5 in 1934. Although no major in-stream work is proposed as part of this project, there is approximately 12 cross culverts and driveway culverts that convey hydrology from various wetland / channel configurations. We will provide recommendations to the design engineer on maintenance of stream flow (MOSF) construction sequencing. The nearest waterway within the study area is Long Neck Creek, a Use 1 waterway with a time of year restriction of March 1 through June 15, inclusive, of any year.

C.1.c. Risk Management

Reducing risk and applying innovation is critical to the success of any project. Risk management begins by defining the risks associated with the project and by understanding a risk's potential impact which is essential to managing and mitigating it. We will work in partnership with the SHA and the designer to identify, analyze, innovate, and manage any potential risks that may occur on the project. Working closely together, we will develop a plan and strategy that:

- Identifies all potential risks that may arise on the project
- Separates any risk out of the cost models
- Determines the correct contingency amounts for those risks that cannot be eliminated
- Regardless of ownership, develops approaches that either eliminate or minimize those risks
- Determines which party "owns" each risk item

We will develop a Risk Analysis and Mitigation Plan that identifies all potential risks associated with the project and that includes the following information:

- Risk Description
- Ownership
- Mitigation Measures
- Risk Level (High, Medium, Low)
- Risk Probability

Assigning a risk level and probability will enable the project team to focus on those items that represent the largest risks to the project and the best opportunity for cost reduction. By starting with the elimination/minimization of the largest risk items first and then working down to the smaller risk items, the team will be able to minimize the amount of contingency needed for construction. Also, by separating the cost component associated with risk from the cost model, the team will be able to quickly see how risk is affecting the project cost while the individual bid items within the cost model remain transparent.

During design development on the MD-5 project, we propose to discuss the risk register at our formal meetings. Along with constructability reviews, our team would discuss the risk register along with innovative suggestions to mitigate the risk. These ideas will be provided by all team members, including Kiewit Infrastructure Engineers, a group of highly qualified roadway engineers. They have already been highly invested in this project, and will continue throughout the remainder of the project. As part of this proposal, our team has already taken an in-depth look at the potential risks that are associated with the project. In order to develop the additional potential risks associated with this project, we will utilize a collaborative approach. First, we will brainstorm potential risks by performing an initial plan flip with all team members involved in the project including the client, designer, estimators, superintendents, internal professional engineers and managers. During this plan flip, we are familiarizing everyone with the project, but also diving into the details of each plan sheet. Every potential risk is added to the initial risk register. Next, each team member spends individual time getting deeper into the details of the project plans. Many times, our engineers, estimators and superintendents are able to find additional risks by performing takeoffs, running calculations, and developing the project schedule. In order to capture each team member's thoughts, we ask individuals to maintain their own individual risk registers and then hold a formal meeting to discuss every idea, and put it on the master list. For this project, we paid special attention to items such as:

- **Utility locations:** There are several key utilities including the Maryland Environmental Service's sanitary sewer line, Verizon's communication lines, METROCast's communication lines, and Southern Maryland Electric Cooperative's electrical lines that we need to consider during roadway and drainage design that can reduce schedule and cost.
- **Surrounding residents:** The majority of the grading work take place very close to side streets and local residents. Focusing on property damage mitigation will be key to reduce risk.
- **Geotechnical conditions:** Reviewing the geotechnical data will be critical as we evaluate pavement types and subgrade drainage solutions, to provide the best possible solution.
- **Environmental:** Many of the widened areas are located near wetlands, ditches, and other environmentally sensitive areas. We will focus on permitting and other environmental risks
- **Schedule:** There are several approaches to the MOT phasing. Each approach can greatly effect cost and schedule.
- **MOT:** There are several traffic switches and access requirements that are critical to the success of this project. We will pay special attention to conflicts between roadway construction and key access points for residents.

All of these items and many others are added to the initial risk matrix. After identification of the risk on the matrix, our team will go through a process of analyzing risk that leads to appropriate innovations and developing mitigation and innovative strategies, along with efficient allocation of risks. As a team, we will compare costs, schedule, and risk between different design alternatives and construction practices to develop the best overall approach that eliminates or reduce risk. Advancing an innovation that reduces risk can result in cost estimating, value analysis or exploring a design for feasibility. A task lead would be assigned to champion each suggestion to ensure full evaluation is performed with the proper

personal involved and resolution obtained. Our Cost Estimator, Brian Flach, will lead the development and management of the risk register, along with support from Donnie Arant and Bruce Applegate. This team successfully implemented this process on Cotton Lane CMAR, MD-97 CMAR, Greenbelt CMAR, and several other alternative delivery projects. This team brings tremendous value because we understand SHA requirements and the processes in CMAR procurement.

At the start of preconstruction, members of the management team will also meet with SHA to identify potential risks to the project's schedule. A detailed risk analysis will be conducted on both the design and construction processes, and mitigation measures implemented congruent with the level of risk and potential for occurrence. Our team can run several "what if" scenarios during preconstruction to identify potential issues if a key preconstruction activity gets delayed or if we experience a differing site condition during roadway construction. This project is highly phased, and it is important to play out several different scenarios. By ensuring that there are several "Plan B" options, we can develop the optimal phasing plan that maintains the completion date if an issue were to arise. Since the risks can change as the team decides which concepts and approaches will be adopted, we will utilize the risk register as a living document to prioritize and track progress during design and construction to mitigate risk.

Initial Risk Matrix

Risk or Innovation Description	Estimated Risk Cost	Probability of Occurrence	Schedule Impact to Project (Days)	Summary of Mitigation/Elimination or Implementation Plan
Encountering Wet or Unsuitable Materials Under Roadway	$150,000 (Purchasing offsite materials and haul off of unsuitable)	50%	30 Days	▪ Perform geotechnical investigation during preconstruction to identify types and properties of material ▪ Develop economical geofabric reinforced undercut refill section
Delays in Overhead Utility Relocation	$60,000 (General Conditions delays, resequencing)	25%	90 Days	▪ Conduct thorough utility investigation early in preconstruction ▪ Begin working through design/permitting with utilities early in preconstruction ▪ Have utility relocations performed prior to the start of project construction ▪ Utilize phased approach to allow more time for utility relocations
Adverse Weather – Historically, snow occurs in Dec – Feb	$20,000 (Treat embankment for winter work)	10%	30 Days	▪ Perform bulk of grading operations between March – October ▪ Perform asphalt paving between April – October due to temperature requirements
Unknown Archeological/ Civil War Remains Discovered During Construction	$60,000 (General Conditions delays, resequencing)	25%	90 Days	▪ Perform additional site investigation during preconstruction ▪ If found, prepare mapping, delineation, avoidance and minimization studies ▪ Train crews on historically sensitive areas prior to construction
Delayed permits	$120,000 (General Conditions Delays)	25%	60 Days	▪ Begin permitting process early in preconstruction ▪ Incorporate permitting into preconstruction schedule to track progress ▪ Utilize experience from past projects to fast track permit development

Risk or Innovation Description	Estimated Risk Cost	Probability of Occurrence	Schedule Impact to Project (Days)	Summary of Mitigation/Elimination or Implementation Plan
Protected Animal or Plant Species Located within Limits of Disturbance	$20,000 (Investigation and Mitigation)	25%	30 Days	▪ Perform additional site investigation by the Environmental Compliance Team during preconstruction ▪ If found, implement plan for relocation or protected species if possible ▪ Implement design solutions to minimize or avoid protected species
Property Owner ROW Delays	$20,000 (General Conditions delays, resequencing)	50%	30 Days	▪ Perform extensive public outreach during preconstruction to meet with residents ▪ Develop ROW matrix during preconstruction and track on weekly basis ▪ Hold targeting ROW meetings to expedite purchase

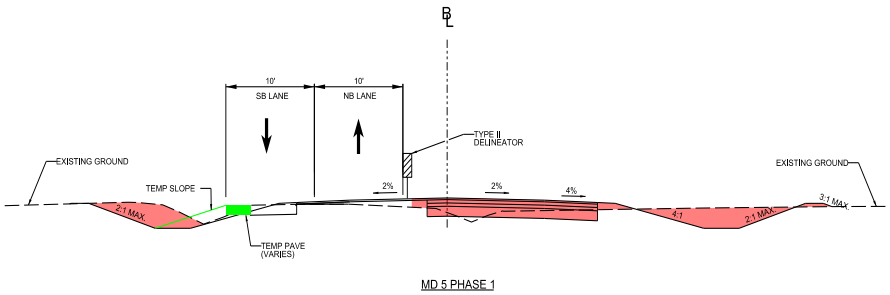
C.1.d. Proposed Technical Concepts

Kiewit is well known for its creativity, innovation and accelerated construction techniques nationally as well as locally. Having just completed the accelerated roll-in-roll-out replacement of the Bayview CSX Bridge in Baltimore, the Kiewit team is poised to bring our knowledge of rapid construction and innovative approaches to the MD 5 Lookout Point Road CMAR project. Although environmental and maintenance of traffic challenges are present, the complexity of this project would be considered minimal. As such, our team has focused on technical concepts that promote constructability and eliminate activities which results in reductions to construction costs, time of construction, impacts to the traveling public and impacts to physical environment. Safety is always interwoven into our approach to construction, as it is part of our culture. Upon initial review of the RFP, our team has developed the following Proposed Technical Concepts (PTC's) which speak to these goals:

1. **Shift the roadway's horizontal alignment from STA 331+00 to 366+80:** The widening of MD 5, Point Lookout Road generally adheres two distinct strategies. From the Limit of Work at Station 421+70 traversing southward to Station 366+80, where Scotland Beach Road diverges, the widening is consistently to the East of the existing pavement. However, continuing southerly from the Scotland Beach intersection to the Ranger Station at Station 331+00 the widening is split, with 6' to 8' of new pavement added to both edges of the existing roadway. Kiewit proposes as a PTC that the widening though this section be kept consistently to the West side of the roadway, similar to the widening North of Scotland Beach. This horizontal adjustment will provide several benefits:

   - ➔ Minimizes impacts to the traveling public: By widening the work zone to more than 8', conventional excavation, grading, hauling, and paving equipment can be used without imposing on adjoining travel lanes. The widened work zone could also permit construction to commence without continued backing up of the pavement edge drop-off during subbase installation and grading if the alignment shift describe in PTC #2 is employed as well. The elimination of this activity further reduces construction cost, and reduces time for construction.
   - ➔ Construction Cost Savings: The Contractor will also experience additional efficiency by working in a wider work zone. The narrowest width that a small size dozer, like a Caterpillar D3, can operate is roughly 8'. Below that width, grading must be accomplished with less efficient equipment, such as a Gradall or skid-steer. Neither of which are practical for installing stone subbase. By facilitating this efficiency, the Administration will realize lower GMP and/or bid prices.

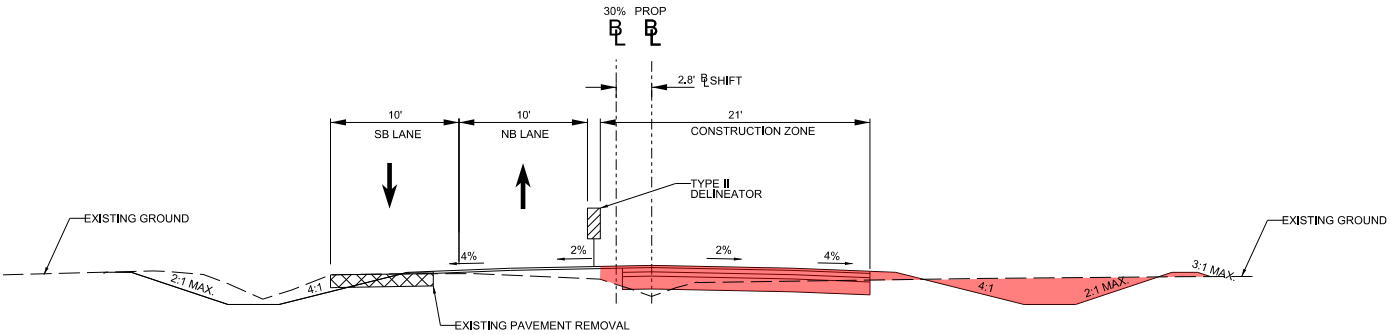
- Utility relocations can be minimized. As currently planned, both the overhead communication lines to the left and power lines to the right will require localized relocations to avoid the ditch line grading and widening to both edges of the existing roadway. These relocations will not be able to commence until after clearing has taken place, causing a break in construction activities while the respective utility companies relocate their facilities. By inserting the utility relocations into the critical path of the project, the Administration increases its exposure to claims if the relocations are delayed. However, by maintaining the right edge of shoulder though this segment of the roadway, a utility agreement could be drafted to add the overhead communication lines to the existing power poles. This would effectively minimize the cost of these relocations by reducing the number of relocations and utilizing existing facilities. Furthermore, by using the existing overhead powerline poles, the communication lines could be transferred during preconstruction and cleared prior to construction commencing, eliminating all risk of utility relocation delay.



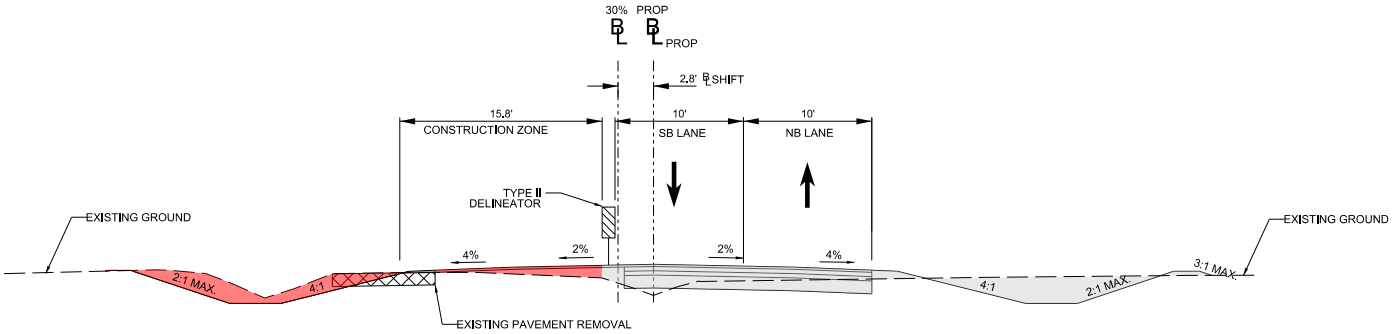
MD 5 PHASE 1

- Increased pavement performance. The current widening scenario maintains all travel lanes on the existing pavement, and only the shoulders are newly constructed. By adopting the shifted alignment, the southbound travel lane would consist of new full depth pavement, increasing the serviceability of the roadway.

2. **Shift Roadway Alignment for MOT:** As noted in PTC #1, from the Limit of Work at Station 421+70 traversing southward to Station 366+80, where Scotland Beach Road diverges, the widening is consistently to the East of the existing pavement. This segment is more constructible than the split widening to the South, but could benefit further from additional separation. The typical section provided indicates that the 20' +/- of existing travel lanes can remain active during the widening to the right of the roadway, but there is no buffer provided for maintenance of traffic devices to delineate the work zone and provide separation. In addition, during the follow on phase, traffic will need to be flagged around the milling and paving operations. To reduce impacts to the public during construction, Kiewit recommends shifting the roadway alignment to permit passage of 2 lanes of traffic around the construction site during phased construction. During the initial phase, a full 20' wide roadway would be constructed to the right of the existing travel lane. This construction could occur without impacting the traveling public with as little as a 3' horizontal shift and an additional 6" of full depth pavement. The shift allows for the placement of barrels between the edge of existing pavement and the widening to the East. The existing roadway's shoulder would be maintained, eliminating dangerous drop-offs that require constant MOT Stone to slope safely, and permit undisrupted travel for the public.

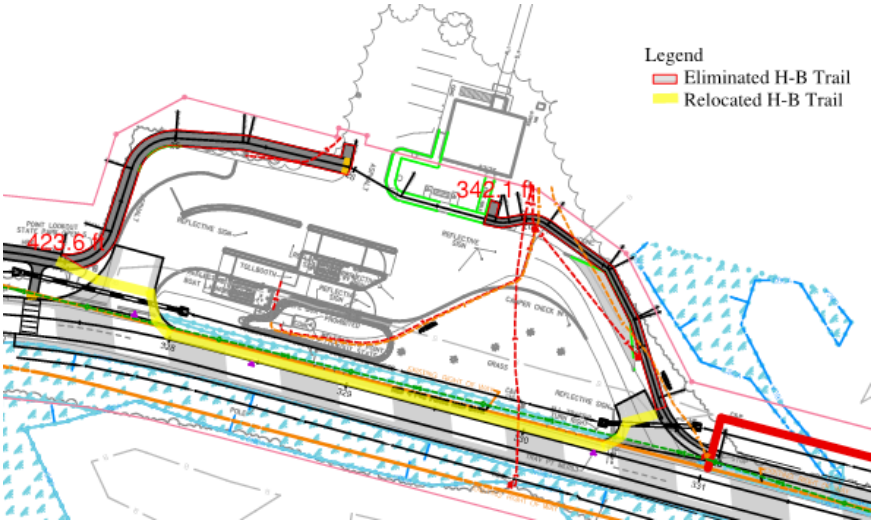


Alternative Typical Section Phase 2

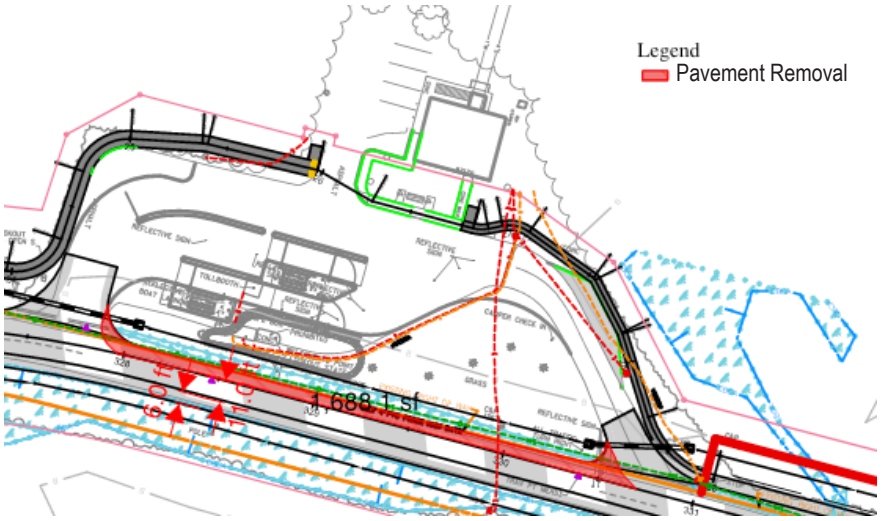


Alternative Typical Section Phase 3

3. **Realign the Hiker-Biker Trial at the Ranger Station:** The existing southbound lanes are permanently closed at the entrance to the park and signage, markings and delineators direct all inbound traffic through the tollbooth entrance. Additionally, the southbound lanes in this area hash marked for non-use. This proposed technical concept utilizes this pavement for the planned Hiker-Biker (H-B) Trail. The PTC reroutes the H-B trail to cross at the entrance to the visitor center, transverse the existing pavement which is scheduled for mill and overlay and could be easily remarked to indicate bike lanes, then cross the exit from the visitor's center and joins the proposed trail. The crossing locations allow good visibility of hikers and bikers at both entry and exit. By utilizing the existing pavement there is a reduction of 765 SF of proposed impervious area, reduced clearing and minimized disruption to operations around the Ranger Station.



4. **Similar to PTC #3, additional benefit can be realized by removing the un-used pavement on the southbound lanes of Lookout Point Road where they bypass the Ranger Station:** These lanes are permanently closed, and signage, markings and delineators direct all inbound park traffic through the tollbooth entrance. Where PTC #3 recommended this pavement be utilized for the new H-B trail alignment, PTC #4 recommends the removal of this pavement if the current H-B Trial alignment remains fixed. The resulting pavement removal contributes nearly 1,700 SF of previous are to the project, more than offsetting the increase caused by the new trail. In addition, removal of this pavement eliminates the proposed milling and overlay as currently indicated.



C.2. Construction Approach

C.2.a. Construction Sequencing

Our preliminary sequencing of the project balances several critical elements; a late fall NTP, weather restrictions, scope efficiencies, and the project's goals of minimizing impacts to the traveling public during peak season and minimizing the project's delivery time. With these critical elements in mind, the Kiewit team has established sequencing to take advantage of the off season reduction in tourist traffic and intends to perform non-weather dependent, traffic critical activities during this lull. This work is also identified as an independent work package that can be constructed in advance of a GMP, ensuring a timely start to the project. This work consists of activities performed in Phase 1, including erosion and sediment control installations, clearing and grubbing and stabilization for utility relocations. All independent severable packages are identified in the project sequencing description later in this segment and are bolded for clarity.

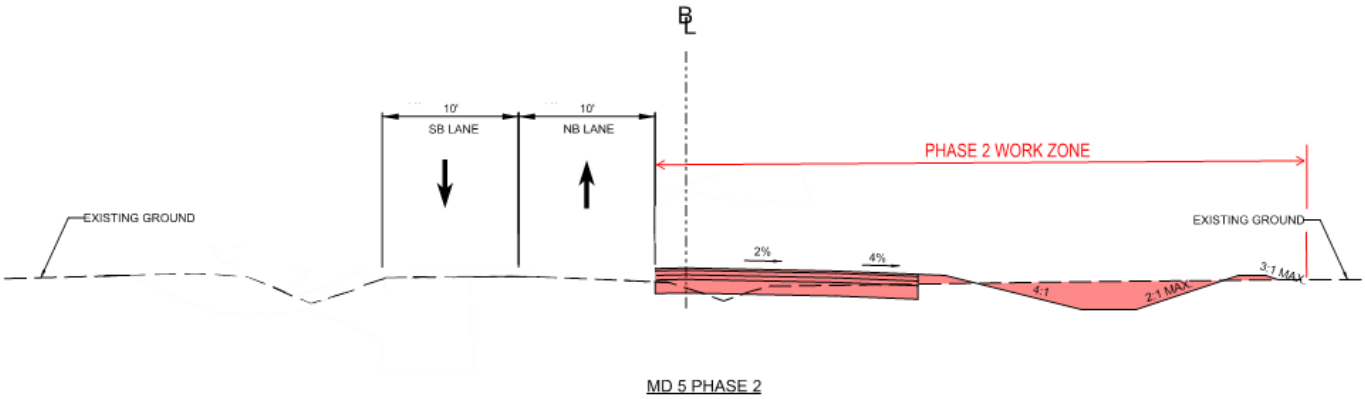
The project naturally divides itself to geographic segments. The widening of MD 5, Point Lookout Road contains three distinct areas that share common scope and traffic controls. These areas define our segments. From the Limit of Work at Station 421+70 traversing southward to Station 366+80, where Scotland Beach Road diverges, the widening is consistently to the East of the existing pavement. We have delineated this as the Northern Segment. Continuing southerly from the Scotland Beach intersection to the Ranger Station at Station 331+00 the widening is split, with 6' to 8' of new pavement added to both edges of the existing roadway. We will refer to this portion as the Southern Segment. Finally, the remaining work from at the Ranger Station extending south to the causeway at Station 303+60 is considered the Hiker-Biker Trail (H-B Trail). Note that all segments as conceived can be constructed independent of each other. For example, the Northern Segment phase 2 can begin prior to the completion of the Southern Segment phase 1. Our general sequencing of these segments and schedule is as follows:

Phase 1: Project Startup and Installation of Controls (Fall 2018 – Spring 2019)

- **Independent Severable Package – Underground Utility Package:** Perform advanced relocation of electrical lighting services and communication lines in conflict with the proposed Hiker-Biker Trail leading into and out of the Ranger Station. This work can be accompanied by a test-hole program to verify utility clearances were proposed storm drainage culverts cross utilities. This package can be let once drainage and widenings are finalized.
- **Independent Severable Package – Overhead Utility Package:** Install project construction signage and erosion and sediment controls. Complete clearing and grubbing. The completion of clearing and installation of E&S devices initiates the overhead utility relocations. Package can be let upon the issue of SWM and E&S approvals and project NOI.
- Initiate non-weather dependent activities such as mobilization and establish field offices.
- Install project construction signage and establish MOT devices project wide. Traffic remains in the existing travel lanes during this phase, with localized flagging operations at construction entrances anticipated.
- Capitalize on the reduced off-season traffic and install transvers storm drainage road crossings. To accommodate for potential snow events, road plates would be milled in 1" for protection from plows. Permanent culvert patching will be performed as weather permits.
- **Independent Severable Package – Roadway Patching:** Upon the completion of the existing pavement evaluation report, selected patching locations can be initiated. The roadway patching could be issued as an independent package to permit work to commence prior to peak season traffic to avoid impacts to the public. For efficiency, Kiewit would strive to perform the roadway patching in conjunction with the road crossing patching associated with the early storm drain installations.
- **Independent Severable Package – Wetland Mitigation Package:** Initiate off-site wetland mitigation construction and planting in accordance with developed plans and permits.

Phase 2: Construct Widening and Drainage (Spring 2019 – Summer 2019)

- For the Northern Segment, Kiewit would perform grading and install pavement sections to accommodate the new full depth widening to the east. Perimeter wet swales, longitudinal storm drain culverts and entrances would be constructed concurrently in this phase. Traffic remains in the existing travel lanes while weather dependent activities are completed.

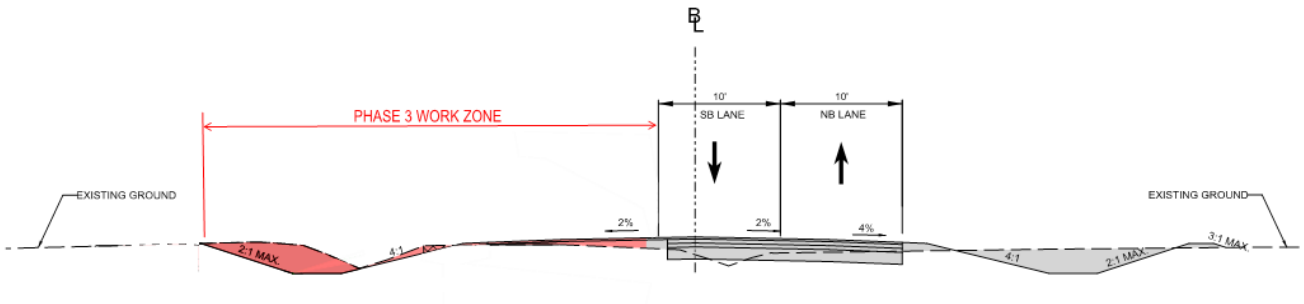


MD 5 PHASE 2

- The Southern Road Segment is limited to narrow work areas and will require regular travel lane closures and flagging in the southbound lanes to construct the new pavement widening to the west while traffic is maintained in the existing lanes. Kiewit has conceived a Proposed Technical Concept (PTC) that would shift the horizontal alignment to the east, allowing all grading and pavement construction to occur the west. This PTC provides a work area roughly 14' wide, which would eliminating regular lane closures. Regardless of PTC acceptance, traffic will remain in its current lane configuration while perimeter wet swales, drainage, pavement widening and entrances are constructed during this phase.
- For the Hiker-Biker Trail segment, Kiewit would perform the grading, and pavement installation to construct the new trail. Similar to the roadway segments, longitudinal drainage culverts and entrances would be constructed concurrently in this phase. There are no traffic shifts and minimal interruptions in this phase as the trail is constructed behind the existing drainage swale, away from travel lanes excluding the terminations.

Phase 3: Construct Remaining Widening and Drainage (Summer 2019 - Fall 2019)

- After wedging is completed along the phase line to correct grade differences, the Northern Segment traffic is shifted onto completed Phase 1 pavement. Once traffic is shifted, Kiewit would proceed with the installation of entrances, perimeter ditch grading and parallel culvert installation. Once perimeter grading and pavement construction is completed, pavement removals and remaining grading will be completed with rubber tire excavators using localized shoulder closures.

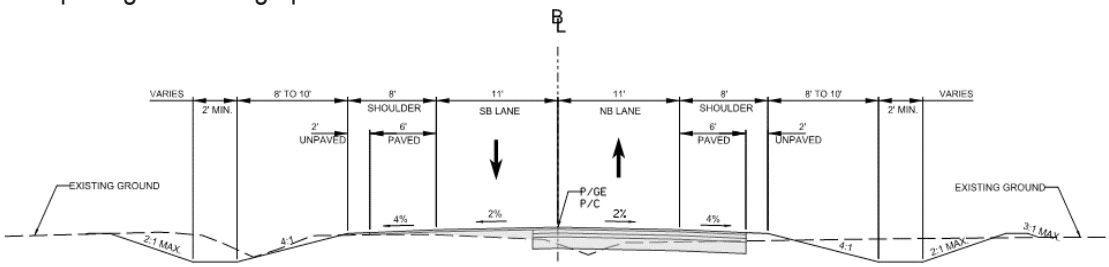


MD 5 PHASE 3

- The Southern Road Segment will be shifted to the new widening alignment or remain in-place depending on the selection of our PTC. If the proposed PTC is not incorporated, the narrow easterly widening will be constructed under regular lane closures. During these closures, perimeter swale grading, entrances and parallel culverts will be constructed. As an alternative, the proposed PTC provides for two travel lanes in phase 3, regular lane closures are not required for the perimeter work in phase 3.
- Any remaining grading, paving or restoration work not completed on the H-B trail in phase 2 will be completed in phase 3. Again, minimal traffic disruptions are anticipates for construction of this segment due to the separation of the work area from the travel lanes.

Phase 4: Surface Paving and Demobilization (Fall 2019 – Winter 2019)

- All permanent seeding and remaining restoration is completed project wide during this phase. Any needed permanent signage, final surface pavement and markings will be installed during Phase 4 of the project for all segments, as well. During this phase, traffic is shifted to its ultimate alignment and localized flagging will be utilized around paving or marking operations.



C.2.b. Construction Schedule

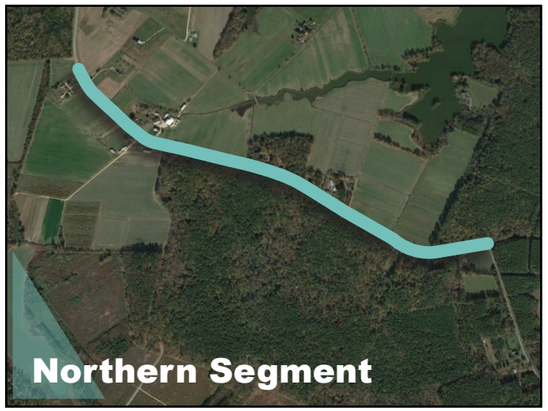
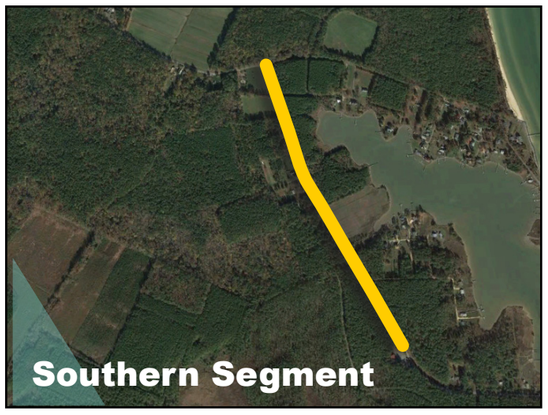
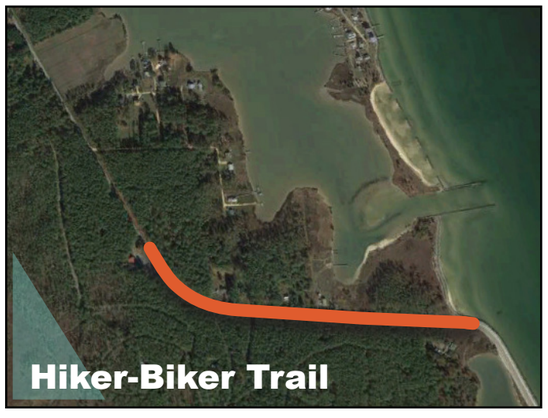
The Kiewit Team prides itself on our ability to plan and execute work efficiently. This is woven into our culture and practiced globally. For the MD 5 CMAR project, Kiewit has conceived a schedule approach that will minimize project delivery time, minimize project construction costs, minimize inconvenience and impacts to the traveling public, especially during peak season for Point Lookout State Park and reduce the risks associated with external factors.

To minimize project delivery time and impacts to the traveling public, our scheduling approach capitalizes on the lower, off-season traffic volumes. During the off season for Point Lookout State Park (fall 2018 – spring 2019) we will perform all construction activities that can be accomplished during the winter season. These include:

- Project construction signage
- Clearing and grubbing
- Erosion and sediment controls
- Mobilization and establish field offices
- Transverse storm drain road crossings

To accommodate for potential snow events, road plates will be milled in 1" for protection from snowplows at road crossings. Permanent storm drain crossing patching will be performed as soon as weather permits, along with identified HMA patches throughout the project limits. It is expected that these patched would be completed ahead of the peak season for Point Lookout Park. We acknowledge that these winter work measures have additional expenses associate with them, they will ultimately prove cost effective by providing an efficient and cost effective workspace to perform follow on activities, and permit the widening to be completed within one construction season, reducing costly overhead.

Our approach to scheduling the MD 5 CMAR also reduces the impacts of external factors. By performing advance erosion and sediment control installations and clearing and grubbing, access will be provided for the relocation of utilities. It is evident that several overhead power and communication poles will need relocation to accommodate the widening and perimeter ditch grading. By providing a workspace for these utilities early on, we can reduce their impact to the schedule during the critical peak season/summer months. Ideally, overhead utilities throughout the project limits could be cleared prior to widening and grading activities during the spring and summer months, when warmer weather will be critical to working in the moist, in-situ soils prevalent on the project. The schedule timeline, segments and anticipated major activities are provided on the following graphic.

TimeLine	Fall 2018 to Spring 2019	Spring 2019 to Summer 2019	Summer 2019 to Fall 2019	Fall 2019 to Winter 2019
Location	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**
	**Project Wide : All Segments** • Install project construction signage - establish MOT devices project wide • Install project erosion and sediment controls • Perform all Clearing and Grubbing • Relocate electrical lighting services and communication lines in conflict with the proposed Hiker-Biker Trail • Test-hole to verify utility clearances where proposed storm drainage culverts cross utilities. • Mobilize and establish field offices and Install transverse storm drainage road crossings	• Perform grading and Install pavement sections to accommodate the new full depth widening to the east • Construct perimeter wet swales, longitudinal storm drain culverts and entrances • Traffic remains in the existing travel lanes	• Wedge along the phase line to correct grade differences • Northern Segment traffic is shifted onto completed Phase 1 pavement • install entrances, perimeter ditch grading and longitudinal culvert installation. • Remove existing pavement and complete remaining ditchline grading with rubber tire excavators using localized shoulder closures.	**Project Wide : All Segments** • Permanent seeding and remaining final is completed project wide • Install permanent signage • Perform final surface pavement and markings • Traffic is shifted to its ultimate alignment • Localized flagging will be utilized around paving or marking operations.
	**Independent Severable Packages:** • Project signage, E&S Controls and Clearing for Overhead Utility Relocations • Testhole Investigations and Underground Utility Relocations. • Off-Site Wetland Mitigation. • Initiate off-site wetland mitigation	• Construct perimeter wet swales, storm drainage, pavement widening and entrances • Traffic continues to use existing travel lanes and MOT is provided daily by localized lane closures and flagging of the southbound lanes	• Complete perimeter swale grading • Construct entrances • Construct longitudinal culverts • Traffic continues to use existing travel lanes and MOT is provided daily by localized lane closures during easterly widening	
		• Install all E&S Controls and complete clearing and grubbing for the trail if issued as an independent package for utility relocations. • Perform the grading, and pavement installation to construct the new trail pavement • Furnish and install longitudinal drainage culverts and entrances • Traffic remains in it's existing travel lanes, there are no traffic shifts required.	• Complete remaining grading, paving or restoration work not completed on the H-B trail in phase 2	

C.2.c. Stakeholder Coordination

Kiewit will work with SHA to comprehensively coordinate proactive and effective communication with utility companies, property owners, local businesses, governmental districts such as St. Mary's County, permitting agencies, and other stakeholders involved with this project. Each supporting outreach tactic will be tailored to best educate and inform all of these stakeholders both before and during construction. These tactics include:

Project Kick-off. After award, we will start work with the District 5's Community Liaison and other SHA staff to coordinate, refine and schedule execution of a stakeholder outreach plan. An important first step will be identifying all project stakeholders and creating a matrix with detailed contact information and their role in the project. This matrix will ensure we can easily contact all important parties including residents, permitting agencies, utility companies, local governments and businesses. This contact matrix will be a living document throughout the entire project. Once created, we recommend holding a stakeholder kickoff meeting to get the relevant parties up to speed with the current project status and gain valuable feedback. This meeting will allow the team to develop a better preconstruction schedule and identify any additional project risks to add to the risk matrix.

Partnering Meetings. We encourage each stakeholder to attend the monthly partnering meetings that are regularly held on the projects. These meetings are a forum for the stakeholders to voice their opinions and weigh in on the design as it progresses. Often times, stakeholder input results in action items that improve stakeholder goals.

Effective Informational Materials. Maximizing effectiveness of our messages about the project will be key to our success. We will support SHA with the review and messaging of any printed and digital informational materials that include a project brochure/fact sheet, Frequently Asked Questions, project update sheets, PowerPoint presentations, display boards, graphics, website and social media content, proposed draft press releases, traffic advisories or alerts, progress photographs and low-cost videos; and, as needed, mailings or door hangers.

Public Forums or Meetings. We recommend holding regular public meetings during key milestones of the project. This will allow SHA and our project team to collectively follow up on any issues and concerns outstanding previous public meetings while also further creating a better public understanding of the project moving forward. The meeting will be structured to help us share the latest design and construction details and schedule, solicit feedback, further introduce how we will work with stakeholders during the design-build process and set expectations for traffic configurations and project work. On MD-97 and Greenbelt CMAR's, we frequently participated in local and agency public meetings. Often times, the public would ask questions that were directed towards the contractor, and our expertise provided key information regarding means and methods, construction schedules, and other constructability concerns.

One-on-One and Organizational Meetings. We recognize that in coordination with SHA throughout design and construction proactive meetings and updates will have to be held with individual residents, businesses, law enforcement, emergency service providers and stakeholder organizations. Doing so is yet one more way to build relationships, a spirit of partnership and overall customer satisfaction. Again, our experienced team has worked with SHA and has similarly performed this function for sensitive transportation projects. We will work closely with SHA to be responsive to issues raised during these meetings, flag those that could be problematic, and generally create an environment that allows the community to be heard and achieve satisfaction from our methods. For the most part, these meetings will be held with pre-planning off-site at stakeholder homes or offices, but we do anticipate that some may occur based on walk-ins at the Project office during construction.

Targeted Task Forces. This project has several unique elements that would benefit from targeted task force meetings. For utilities, we recommend scheduling multiple utility only coordination meetings. During these meetings, we work with the utility company and their designers to ensure their design is coordinated with our design, identify options to eliminate relocations if possible, and monitor their design and construction schedule. Another critical component that benefits from targeted meetings is environmental. In these meetings, we meet with local parks, agencies, and property

owners to review the erosion and sediment control and storm water management design, find ways to reduce impacts, support permitting and ensure all local regulations are met.

Project Office, Phone Number, Email Address and Other Correspondence. We know that our effectiveness responding to stakeholders that contact us, SHA or other local and state officials will be just as important to customer satisfaction as how well we reach out to them. We will publicize a branded email account and phone number to which we will promptly respond. The hotline will have recorded information about the project while allowing callers to leave messages. Sensitive complaints will be fagged immediately for SHA.

Emergency Preparedness. In coordination with SHA and building on existing protocols, our team will proactively work with local, county and state law enforcement and emergency response agencies to identify situations that could arise and develop contingency plans for most effectively working together to address and mitigate them. Emergency contact mechanisms such as phone and email trees will be established for use in emergencies. In addition, we will establish with SHA templates to be used for providing information it needs to communicate to motorists via traditional media and its social media, traffic information systems or other tools such as CHART and MD511.

- **Phone Trees.** Phone trees look at the project leadership both within the CMAR team and SHA to identify the most efficient and effective way to share urgent information with the decision-makers for the project. Our phone tree will include notes identifying who information will be shared with, how decisions will be made, who final decision-makers will be and expected timing of each activity. This are related documents will be regularly updated to ensure accurate contact information.
- **Email Trees.** Similarly, email trees can be used to help track the decisions made during crisis communication situations and protect both SHA and our team from miscommunication during potential periods of crisis and high concern. This information will also be available on ProjectWise with access to high level parties who may be involved in the process.

Coordination with Property Owners, Emergency Services, and other local Stakeholders. As mentioned earlier, a wide variety of motorists travel the MD 5 corridor throughout the year. Many of them live locally or regionally; however, on any given day thousands of them may be from other parts of Maryland or even other states. Accordingly, we will work with SHA to comprehensively coordinate proactive and effective communication with them all. Each supporting outreach tactic will be tailored to best educate and inform all of these motorists both before and during their travel. This will minimize surprises and help them make informed decisions on how and when to travel through our project area to avoid delay, particularly during peak travel months and weekends.

For the most part, key messages and information for motorists living both near and far from the project area will be similar – a brief overview of the project, its benefits and planned duration; the updates on traffic configurations and work schedule; pending configuration changes and potential impacts; and the tools available to them to follow our progress and plan their trips. We also will establish with SHA an approved, comprehensive notification package of static signs and variable message boards to provide advanced notice of project work, potential travel delays, detour routes and, as possible, emergency information. What will be different, mostly due to their proximity to and frequency using MD 5, is the greater potential for impacting local/regional compared to non-local motorists on a daily basis. We will offset this by capitalizing on the increased methods and opportunities available to us for communicating with local/regional motorists, as well as the frequency with which we do so.

In this regard, local/regional motorists certainly will be more apt than non-local motorists to subscribe to our contact lists, attend project public meetings, and also remember and use tools available to help them plan their travel. They can be more easily specifically segmented and targeted for outreach through mailings and periodic one-on-one or small group meetings for stakeholders. We will build relationships with these stakeholders and more directly communicate with them throughout

the project about aspects of our work and traffic configurations that could impact their mobility and access.

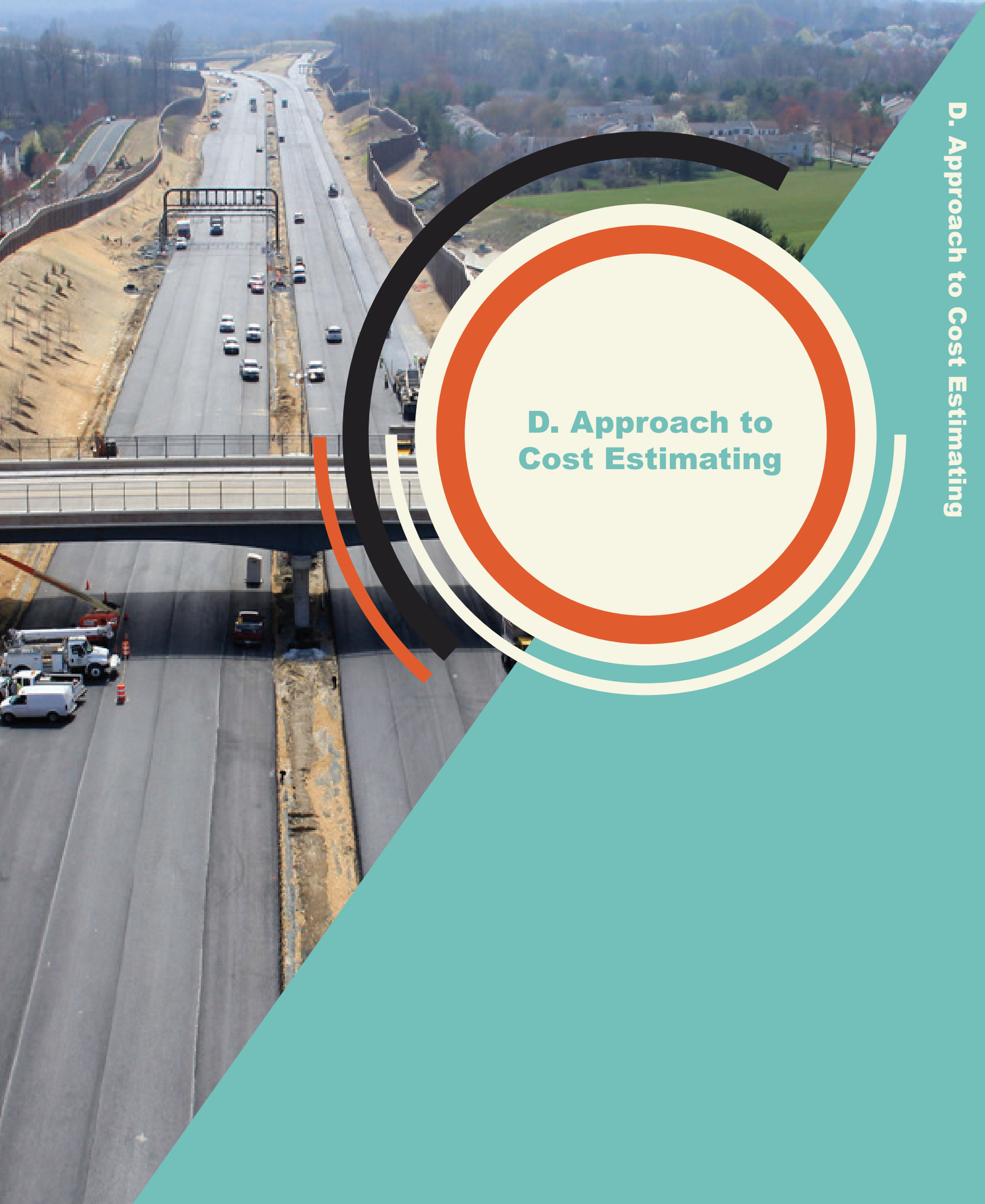
Acknowledging that some project stakeholders are concerned about more than just traffic, we will similarly communicate, work and build relationships with residents whose properties could be impacted by project design and construction. We will work through the design to minimize these impacts, but developing a design and phasing scheme that has resident input. Potential impacts may include utility interruptions or relocations, access to driveways, replacement of storm water management facilities and various other construction-related activities.

During construction, our team has weekly operations meetings to generate a three-week look-ahead work schedule, which includes any MOT changes or potential road/lane closures affecting residents and commuters. This schedule is distributed to interested third parties. Stakeholders are notified two weeks in advance of the initial MOT installation or any major MOT traffic switches. In addition, we notify the traveling public of major traffic changes or lane closures through message boards. In the event of a traffic emergency, local emergency responders are notified immediately in accordance with our Emergency Response Plan submitted after NTP. Our team continually monitors the effectiveness of our outreach plan and each of its elements. The program performance is based on feedback from stakeholders. We establish a monthly formal evaluation process that measures the performance of our stakeholder interaction, and use the feedback from those evaluations to modify and improve upon the initial programs.

In addition to the specific activities during design and construction, there are numerous environmental agencies and stakeholders (such as St. Mary's County, Maryland Department of the Environment, Maryland Department of Natural Resources, US Army Corps of Engineers, US Fish & Wildlife Service, and the EPA) that we will need to partner and coordinate with on a regular basis to monitor compliance and perform joint inspections.

More specifically, the chart below details specific interactions between our team and each stakeholder:

County Governments	▪ Minimize impacts to emergency services ▪ Maintain clear consistent messaging and information on potential impacts
Utility Companies (Maryland Environmental Service, Verizon, METROCast and Southern Maryland Electric Cooperative)	▪ Discuss early on relocations or impacts to facilities ▪ Confirm any potential seasonal restrictions on shutdowns ▪ Coordinate any proposed planned improvements to its infrastructure ▪ Regularly communicate to minimize impact to existing facilities
Resource Agencies (Maryland Department of the Environment, Maryland Department of Natural Resources, US Fish and Wildlife Service, US Environmental Protection Agency, US Army Corps of Engineers, Maryland Historical Trust, Chesapeake Bay Critical Area Commission)	▪ Assist SHA in obtaining required permits ▪ Meet all Permit requirements and procedures ▪ Suggest alternative Designs and means and methods that minimize environmental impacts to wetlands, streams, floodplains and RTE species
EMS (Police, Fire, and Hospitals)	▪ Coordinate changes in MOT and traffic patterns prior to implementation ▪ Assist EMS responders, as appropriate, to incidents along the roadway
Local Residents	▪ Minimize traffic impacts to other roadways in the area ▪ Minimize impacts to emergency services and local transit routes ▪ Maintain clear consistent messaging and information on potential impacts
Point Lookout State Park	▪ Setup regular meetings with park staff to discuss project schedule ▪ Develop innovations in MOT to reduce impacts to park station



D. Approach to Cost Estimating

D Approach to Cost Estimating

D.1. Estimating Environment

Kiewit's approach to developing construction cost estimates for our clients is based on methodologies that have proven successful in delivering jobs at the lowest possible price while still providing a high quality and durable project that meets all of the project goals.

To ensure that SHA receives a fair and competitive price for the construction of the project, we anticipate that an independent cost estimate will be developed at each design milestone and compared with the Kiewit's Opinion of Probable Construction Cost (OPCC) estimate developed for the MD 5 Project.

Kiewit proposes that a cost model based on 50% design documents be developed to establish an OPCC for the team. This initial cost model will verify that the project progresses from the start within budget. The 50% Cost Model would provide valuable information to the SHA and the project team in terms of anticipated project costs and assist all team members in evaluating various design options and decisions. Without the 50% Cost Model, it would not be until the semi-final or roughly 90% design stage when a complete cost model was in place, at which point, there would be potentially significant tradeoffs between making design changes to save money in the construction phase with cost and schedule impacts to the design effort.

The Cost Model Evolution Log (CMEL) is the cornerstone to Kiewit's Open Book approach to developing a project's cost estimate that allows an owner to see all cost elements of the project and how the estimated project costs are developed from conception to the final GMP. The foundation of the CMEL is customarily the 50% design deliverable that, as discussed above, Kiewit would propose on developing at the start of the Pre-construction Phase.

Throughout the pre-construction phase, the CMEL provides detailed cost and quantity tracking for each item of work to show cost evolution of that work item. A change to the cost of one item of work may be from a VE proposal that was accepted as well as the added cost due to a stakeholder request. Other changes tracked in the CMEL would include quantity changes and changes in subcontract or material unit costs resulting from market fluctuations.

Another function of the CMEL is to compare the adjusted cost of the previous cost model with the new cost model developed at the next design milestone. In the case of the example shown, we are able to document the various cost differences for a bid item that changed from the originally estimated 40% design stage. As the project approached the 70% design milestone, a new cost model would be developed based on the 70% design documents.

COST MODEL EVOLUTION LOG (CMEL)

The reason for each change is captured and summarized by the bid item as well as by the overall project

Bid Item Number and Description		Structural Concrete (Class S, f'c=4500 PSI)									
Cost Model Storage	Change Category	Quantity	Equipment & Maint.	Labor	Materials & Subs	Total	Difference Between Models	Independent Cost Estimate		Cost Model Difference	
								Quantity	Total	Quantity	Total
40% Cost Model		**3,544 CY**	**$216,922**	**$665,954**	**$620,545**	**$1,503,421**		3,478 CY	$1,486,782	66 CY	$16,719
Added pipe block-outs...	SI	- CY	$3,412	$22,320	$2,107	$27,839					
Stand all bridge pier...	VE	- CY	$(13,866)	$(42,913)	$(5,227)	$(62,006)					
Thin bridge deck at...	QA	(38) CY	$(2,326)	$(7,141)	$(6,654)	$(16,120)					
Adjust 40% Cost Model		3,506 CY	$204,142	$638,220	$610,771	$1,453,134	$(18,573)				
70% Cost Model		3,492 CY	$203,409	$616,506	$614,646	$1,434,561		3,492 CY	$1,492,686	0 CY	$(58,125)
Incr. concrete buy price $3...	UP	3,508 CY	$-	$-	$10,524	$10,524					
VE/cost reduction	VE	(36) CY	$(5,358)	$(19,794)	$(6,336)	$(31,488)					
Lth. of abut. wall changed	QA	52 CY	$3,029	$9,181	$9,153	$21,362					
Adjust 70% Cost Model		7,016 CY	$201,080	$605,893	$627,987	$1,434,959	$(21,695)				
90% (FINAL) Cost Model		3,477 CY	$209,525	$590,819	$612,920	$1,413,264		3,477 CY	$1,426,275	0 CY	$(13,011)

The CMEL provides the differences between the 40% cost model that has evolved up through the 70% design stage with the 70% cost model

At each design milestone, the CMEL provides the cost and quantity difference between our cost model and the independent cost estimate

Bid Item Changes by Change Types		40%	70%	Total
SI/SD	Project Scope Increase/Decrease	$27,839	$-	$27,839
VE	Value Engineering	$(62,006)	$(31,488)	$(93,494)
UP	Unit Price Adjustments	$-	$10,524	$10,542
QA	Quantity Adjustments	$(16,120)	$21,362	$5,242
QT	Other	$-	$-	$-
	Total Adjustments	$(50,287)	$398	$(49,889)

The CMEL summarizes the cost changes to each bid item by category

This 70% cost model would then be compared to the adjusted 40% cost model. Theoretically, all design and associated cost changes made between the 40% and 70% design would result in an adjusted 40% cost model that would be approximately the same amount as the new 70% cost model. Any large discrepancies between the two cost models would be quickly identified and allow the team to determine the cause for the large variance.

The CMEL also provides the capability to compare Kiewit's cost model with the Independent Cost Estimate. Similar to its ability to determine variances with previous cost models, the CMEL determines the cost difference between Kiewit's cost models and the Independent Cost Estimate, allowing prompt identification of large variances within the two estimates.

It is our experience that to maximize the benefit of the independent cost estimate, a substantial amount of coordination must occur throughout the development of the cost model. The purpose of this coordination effort is to produce two estimates that can be compared on an "apples to apples" basis. Without this coordination, the time and effort to perform an effective comparison increases substantially and introduces doubt into the process on the accuracy of the cost estimates. Prior to estimate development, we have found tremendous value in including the Independent Cost Estimator (ICE) in all project partnering and update meetings. When the ICE is fully engaged in the preconstruction process, there is less learning curve, better understanding of project scope and constraints, better partnering, and the overall process is streamlined. On both the MD-97 and Greenbelt CMAR projects, we have developed a great relationship with our ICE counterparts, and this partnership has greatly aided in the development of the independent cost models. We are bringing the same key staff to the MD 5 project that will build upon our experiences and lessons learned.

As part of our coordination effort, we typically meet with the ICE prior to the development of the initial cost estimate to discuss and agree on:

- The timing and process of reconciling the estimated quantities prior to completing a cost estimate
- Subcontractor and supplier unit prices that will be used, which reflect current market conditions, as plug numbers, prior to receiving firm quotes
- Understanding how certain "support" bid items (e.g. survey, quality control, construction water) will be priced within each party's estimate
- Collaboratively developing the necessary bid items for the project, and the unit of measure for each item.

The two estimating teams will hold similar coordination meetings prior to the development of subsequent cost estimates. By performing these coordination functions, the estimate comparison meetings are much more productive, and both teams can devote their time in identifying cost discrepancies and the reasons behind the discrepancies, in lieu of reconciling plug differences.

For estimating, our team uses an InEight Software, called Hard Dollar. Our estimating program is extremely effective and well suited for the CMAR model. After agreeing to the bid items, quantities, and structure of the estimate, our team will create an estimating template for the entire team to review. Hard Dollar generates a report showing the entire bid item structure without cost, to retain independence. This structure can be reviewed with the entire team to ensure that both teams utilize a similar bid structure. Once the estimate is complete, Hard Dollar can generate a comparison report as discussed above, which extremely effective when performing the estimate comparisons.

Once the teams are coordinated, each team independently develops their estimate and submits them to SHA on an agreed to date. We then schedule a cost comparison and review each item for similarities and differences. Our estimating software can import the ICE's estimate into our estimate, and generate a comparison report. This report breaks down all of the costs into the different T-Totals (Labor, equipment, supplies, materials, subcontractors), man-hours, quantity deltas, and several other comparison factors. This report allows the team to focus on the major deltas, and better understand each team's approach to the work. Each difference is discussed to see if the two teams utilized different assumptions, productions, equipment, or crew makeup, or if one of the estimates contains an error. We then address action items, perform any

needed adjustments, and update the estimate in preparation for the next estimate milestone.

During each estimating milestone, our team will develop and transmit subcontractor bid packages to the market, in order to input accurate pricing into the subcontracted scopes of work into the estimate. Each quote (minimum 3 per package) will be placed into a quote book, and shared with SHA and the ICE. We will collaboratively select the subcontractors and suppliers that we want to carry in our estimates, which will further ensure cost accuracy in our estimates.

All subcontractor quotes are entered into the program, and SHA, the ICE, and Kiewit can collaboratively award each subcontractor package in real time on the screen, which automatically updates cost in the estimate. Lastly, Hard Dollar keeps track of every change from each estimate milestone, and easily generates to the Cost Model Evolution Log as discussed in the preconstruction section of the proposal. This allows the project team to track any changes in cost as the design progresses, and react quickly to any cost increases

D.2. Sample Estimate

Our approach to estimating on CMAR projects is to provide a complete estimate of the direct costs separate from the indirect costs. This gives SHA and the ICE the opportunity to review and compare every item in our directs and indirects separately, instead of reviewing indirect costs that are spread throughout the estimate. We then apply overall project markup to the entire project cost, which is also shown as a separate line item. Once the teams agree on the appropriate direct, indirect, and markup costs, we will spread the indirects and markups across the direct bid items similar to any traditional bid build project. This will be used as the schedule of values for payment during construction. Our goal is to provide an estimate that is transparent, open book, easy to review, and improves final GMP negotiations. A sample estimate can be found on the below:

120500 MAINTENANCE OF TRAFFIC									
Description	Quantity	UOM	Labor	Equipment	STS	Subcontractors	Materials	Subtotal	Manhours
Daily Traffic Maintenance	52	WK	$ 72,286.99	$ 21,010.47	$ 4,095.00			$ 97,392.46	1,820
Flaggers	524	MHRS	$ 20,217.52	$ 5,020.15	$ 1,179.00			$ 26,416.67	524
Lane Closures	10	EA	$ 18,456.73	$ 4,329.08	$ 1,125.00			$ 23,910.81	500
Subtotal Direct Cost								**$ 147,719.94**	**2,844**
Indirects	20%	Indirects Spread Evenly Among Bid Items						$ 29,543.99	
Markup	10%	Markups Applied Evenly Among Bid Items						$ 17,726.39	
Grand Total				**Unit Price**	**1**	**LS**	**$ 194,990.32**	**$ 194,990.32**	**2,844**

201030 CLASS 1 EXCAVATION									
Description	Quantity	UOM	Labor	Equipment	STS	Subcontractors	Materials	Subtotal	Manhours
Strip Topsoil	2,730	CY	$ 15,524.75	$ 6,835.91	$ 769.50			$ 23,130.16	342
Roadway Excavation	9,991	CY	$ 30,357.29	$ 27,378.65	$ 1,498.50			$ 59,234.44	666
Finish Subgrade	28,832	SY	$ 18,900.34	$ 20,303.20	$ 927.00			$ 40,130.54	412
Finish Slopes	32,764	SY	$ 17,689.59	$ 9,844.91	$ 738.00			$ 28,272.50	328
Dump Fees For Excess Dirt	609	LDS			$ 32,429.25			$ 32,429.25	
On-Site Trucking	382	HRS				$ 30,560.00		$ 30,560.00	
Trucking - Haul to Waste	609	HRS				$ 48,720.00		$ 48,720.00	
Subtotal Direct Cost								**$ 262,476.89**	**1,748**
Indirects	20%	Indirects Spread Evenly Among Bid Items						$ 52,495.38	
Markup	10%	Markups Applied Evenly Among Bid Items						$ 31,497.23	
Grand Total				**Unit Price**	**9991**	**CY**	**$ 34.68**	**$ 346,469.49**	**1,748**

D.3. Contracting Plan

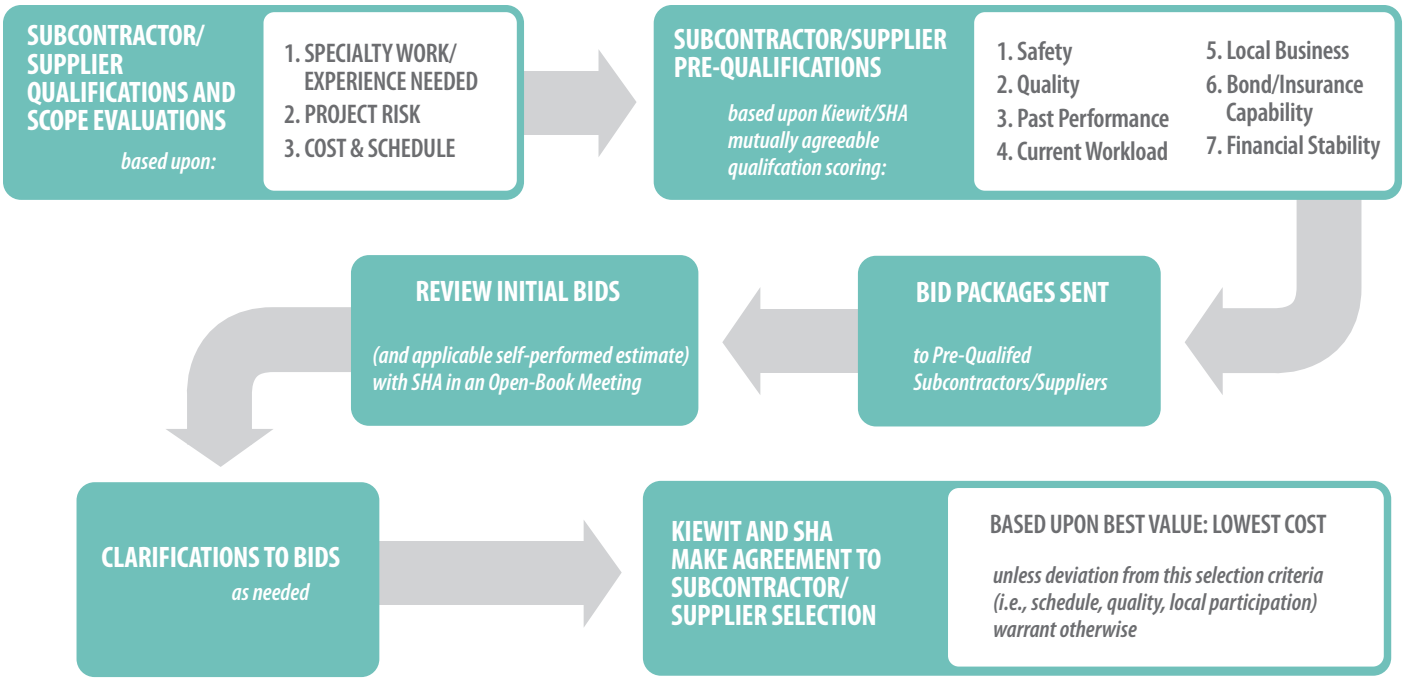
Subcontractor Procurement Process

The subcontractor procurement process starts during the early stages of preconstruction with the creation of bid packages, prequalification of subcontractors and the identification of long-lead items. In addition to making sure the most qualified subcontractors have the opportunity to bid the project, the prequalification process also guarantees that both local and DBE-certified subcontractors have multiple opportunities to participate. We will use the SHA MBE Directory to identity MBE's for our solicitation.

Our subcontractor selection criteria, as illustrated below, is based on both qualifications and competitive bid criteria. We believe it is critical to establish a detailed procurement plan with SHA at the onset of the project, and our plan is in full compliance with COMAR 21.05.10.05. If several alternatives for qualified subcontractors or suppliers are available, we implement our selection plan to pre-qualify and evaluate bids that provide the best value to the MD 5 project. SHA staff will be involved throughout the subcontractor selection process, including the prequalification stage, to ensure that all subcontractors meet SHA's qualification requirements. Subcontractor selections are based on a combination of qualifications and price, and are subject to concurrence between SHA and Kiewit based on project-specific criteria. Some of the criteria we utilize in the prequalification includes:

- **Safety.** Subcontractors must provide their Experience Modification Rate (EMR) for the past three years. Have they had any fatalities over the last 5 years?
- **Quality.** Does the Subcontractor utilize a formal written Quality Plan? Have there been any major rework issues on past projects?
- **Past Performance.** Each subcontractor's past performance is evaluated on: shop drawings, procurement, change order response, schedule response, work quality, safety, clean-up, punch list and any other appropriate categories specific to the project.
- **Capability.** References are requested from three past projects to verify the subcontractor's ability to complete projects satisfactorily (within budget, on time, quality and safety).
- **Management / MBE.** Each subcontractor is asked to provide a list of their firm's principal parties and their specific State Contractor's
- **License numbers.** Additionally, the company's ownership as it relates to DBE status and the company's minority status as it relates to County, City or State applications.
- **Capacity.** Provide information on past annual sales (revenues) and a statement as to their total bonding capacity. This information is analyzed to provide the most relevant data as to whether the subcontractor can perform on a specific task and a subcontract amount at which they will be able to perform.
- **Financial Stability.** If the subcontractor's scope of work is likely to exceed $50,000, an annual financial statement is required from the subcontractor. A letter from the subcontractor's Surety Company stating bonding availability will be required.

Each prequalified subcontractor receives a copy of the invitation to bid, and calls are placed to all prospective bidders to confirm they are bidding the work. After establishing a list of confirmed bidders (lists are used to track their bid status), we make sure that we have a minimum of three bidders per trade and report to the SHA Division of Innovative Contracting about the status of the bid process.



All prequalified bidders are invited to an in-person pre-bid meeting at our local office. At the meeting, we discuss the CMAR process, the status of the project, and the bid items that require quotes. We also ensure all bidders are pricing the work on a level playing field. We have found that this collaboration results in more competitive pricing, better scope coverage, and reduces project risk.

Once quotes are received, the bids are posted to our estimating software, so that a simple comparison can be performed in a live estimating environment.

In many cases, Kiewit subcontracts out work that we typically self-perform, in an effort to achieve MBE participation goals on a project. In each case, Kiewit is able to prepare a self-performed estimate for a particular scope of work, and then compare it to quotes that are received from subcontractors. This comparison is shared with SHA, which helps ensure that the pricing that we are receiving is competitive. In addition, due to our local presence, we are constantly receiving pricing for similar scopes of work on similar projects in the state. During subcontractor closeout, we are able to compare current quotes to recent pricing on other projects. If there is a particular scope of work that is quoted above the recent averages, we can quickly identify the increase, and meet with subcontractors and suppliers to better understand the difference. After all quotes are deemed to be reasonable, they are and awarded with SHA and the ICE's input to the firm with that provides the best value. The ability to perform comparison estimates and compare to recent averages ensures that subcontractor pricing is competitive.

Commitments to Enhancing DBE Participation

We maintain an active database of subcontractors and suppliers that includes small business/small disadvantaged firms. This database is maintained in SmartBIDNET, which is continually updated to broaden small business firm resources and to reflect additional information learned in the solicitation of small business involvement on other contracts. This database is maintained to add new firms and to remove firms that are no longer in business or have lost their small business/small disadvantaged status. To ensure thorough outreach, the SmartBIDNET database will be updated with subcontractors specializing in needed scopes that are identified through the SHA Directory. This ensures new DBE contractors are identified and contacted during our outreach process.

SmartBIDNET is updated with each new solicitation for bid or execution of an agreement. When contacts are made with vendors of all size classifications, they are entered into our database and included in future solicitations. All staff employees involved with procurement have access to our in-house database, and are instructed to search it as well as outside source lists prior to solicitations or awards for products and services to ensure complete coverage of small business firms. In addition, all staff members have annual compliance training to ensure that everyone in the procurement process understands and complies with public law and the subcontracting plan.

We will also maintain the following:

- List of organizations contacted in an attempt to locate small business firms
- Records to support outreach efforts, e.g., contacts with minority and small business trade associations, business development organizations, veterans service organizations and attendance at small business procurement conferences and trade fairs
- Records of all internal workshops, seminars and training provided regarding small business firms and subcontracting plan obligations
- Periodic compliance reviews to monitor performance and evaluate compliance with the program's requirements.

As mentioned above, we schedule pre-bid meetings with every interested subcontractor. In the meeting, we discuss the CMAR process, the scope included in their specific package, the prequalification process, and the critical dates for the project. These face-to-face meetings have improved scope coverage, increased DBE participation, and greatly improved our subcontracting efforts in the field.

Once all of the quotes are received, we track all DBE participation in a detailed DBE spreadsheet. This tracking tool ensures we are meeting SHA's prescribed goals and sub goals (if applicable), and any cost premiums to meet these goals. This tool further increases collaboration between Kiewit, SHA, and the ICE.

Contracting Plan

We have the staff, craft and equipment resources necessary to self-perform the critical scopes of the work on our projects. On the SR-202 D-B, SR-101 D-B, and Cotton Lane CMAR, we self-performed over 70% of the work on scopes identical to the project. Our key staff worked in identical roles on at least two of these projects, and have the self-performed experience to build this work.

By self-performing the majority of the work, we can provide the following benefits to SHA:

- Improved control of safety, quality, schedule, and budget
- By constructing the critical path of the project, we have full control of maintaining the schedule
- Having our own crews of workers on-site gives us the ability to react to issues quickly
- The project is not paying subcontractor markups on scopes that we can self-perform ourselves
- The risk of scope gaps between contracts is drastically reduced because we own the scope

Below is a list of all major scopes of work on the project, along with our past project experience demonstrating our qualifications to construct this project. In addition, we have detailed the scopes of work that we intend to self-perform providing the most value to SHA.

Description	Previous Project Experience				Approach on MD-5	
	Cotton Lane CMAR	SR-202 D/B	SR-101 D/B	Qualifications	Self-Performed	Subcontract
Preconstruction Services	X	X	X	Extensive CMAR and D/B preconstruction experience.	X	
Permitting	X	X	X	Relevant, local experience with permitting, including our exclusive partner, GPI	X	X
Survey	X	X	X	We employ our own surveyors and own our own survey equipment.	X	X
Erosion and Sediment Controls	X	X	X	We self-performed E&S on jobsites within miles of the Greenbelt.	X	X
Stream Diversion/Relocation	X	X		Relevant, local experience with stream mitigation.	X	X
Maintenance of Traffic	X	X	X	We employ our own personnel and own our own MOT equipment.	X	X
Temporary Traffic Barrier	X	X	X	We have widening experience with the use of temporary barrier.		X
Clearing and Removals	X	X	X	We own clearing equipment and operators.	X	X
Excavation and Embankments	X	X	X	We own grading equipment and employ local operators.	X	
Hauling and Trucking	X	X	X	We own hauling equipment and employ local operators.	X	X
Biker Trails	X			We have constructed miles of biker trails on similar projects.	X	X
Utility Mitigation	X	X	X	We have performed utility mitigation on local projects.	X	X
Roadway Base	X	X	X	We own grading equipment and employ operators.	X	
Asphalt Milling	X	X	X	Relevant, local experience with milling.		X
Asphalt Paving	X	X	X	Relevant, local experience with paving.		X
Guardrail	X	X	X	Relevant, local experience with guardrail.		X
Drainage Pipe and Structures	X	X	X	We own excavation equipment and employ laborers.	X	
Landscaping and Planting	X	X	X	Relevant, local experience with landscaping.		X
Signing	X	X	X	Relevant, local experience with signing.		X
Pavement Markings	X	X	X	We experience with the use of temporary and permanent striping.		X
Testing and Inspections	X	X	X	We own onsite laboratories and have subcontractor references.	X	X

F. Appendix

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

Page No.	Description
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.

THIS ADDENDUM IS ISSUED TO CLARIFY, ADD TO, DELETE FROM, CORRECT AND/OR CHANGE THE CONTRACT DOCUMENTS TO THE EXTENT INDICATED AND IS HEREBY MADE PART OF THE SAID CONTRACT DOCUMENTS. COMAR 21.05.02.08 REQUIRES THAT ALL ADDENDA ISSUED BE ACKNOWLEDGED; THEREFORE, PRIOR TO SUBMITTING YOUR PROPOSAL, ATTACH THE ADDENDUM RECEIPT VERIFICATION FORM TO THE FRONT OF THE PRICE PROPOSAL FORM PACKET. FAILURE TO DO SO MAY RESULT IN THE PROPOSAL BEING DECLARED UNACCEPTABLE.

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.

c. Stakeholder Coordination – Discuss how you will communicate with and minimize impacts to the various stakeholders throughout the construction of the project.

D. Approach to Cost Estimating – SIGNIFICANT (Limit 10 pages)

1. Estimating Environment – Discuss the Proposer's approach to providing an open and transparent estimating environment that will assure SHA is receiving a fair price for the work. – **CRITICAL**

2. Sample Estimate – Provide a sample estimate for Class 1 Excavation and for Maintenance of Traffic showing how the Contractor will breakdown direct costs such as labor, equipment, material, trucking, small tools and supplies, etc., as well as the approach to applying indirect costs and markup associated with the items and any other detailed costs used to develop a fully loaded cost for the items for OPCC reviews and bid analysis. The costs and markups provided should be conceptual and will not be evaluated or considered "contractual". The purpose of this sample estimate is to demonstrate the Contractor's approach to estimating/bidding is open and transparent and will be evaluated for structure of the breakdown rather than costs. – **SIGNIFICANT**

3. Contracting Plan – The Contractor has a minimum self-performance requirement of 50 percent. Discuss the approach to developing a subcontractor selection plan that will allow for the competitive solicitation of bids from quality subcontractors. How will the Proposer demonstrate the subcontractor's prices are competitive? What specific commitments will the Proposer provide to enhance DBE participation? Include discussion on how the Proposer will comply with COMAR 21.05.10.05. – **IMPORTANT**

E. Legal and Financial Information (Limit 2 pages)

The structure of the Legal and Financial Information shall include:

1. Team Organization. Briefly describe the proposed legal structure of the team.

2. Liability. State whether the firms who will be party to the prime contract with the Administration will have joint and several liability and how it is be apportioned.

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.

April 3, 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 3, 2017.

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

Q1: Page 11 of the RFP states supplemental information that will be made available to the proposers including:

a) NEPA Documentation
b) 30% plans, and
c) Value Engineering Study Report

Assuming the roll plans are intended to compromise the entire 30% Plan set please be aware they do not include any profile or typical section information on them. In addition, the NEPA Documentation and Value Engineering Report are also not included in the information that is available on eMaryland Marketplace. Can you please provide the missing information?

R1: A set of 30% plans, the NEPA Documentation and Value Engineering Report have been provided on eMaryland Marketplace in the file "SM7745171 - supplemental information.zip"

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.