

TECHNICAL PROPOSAL

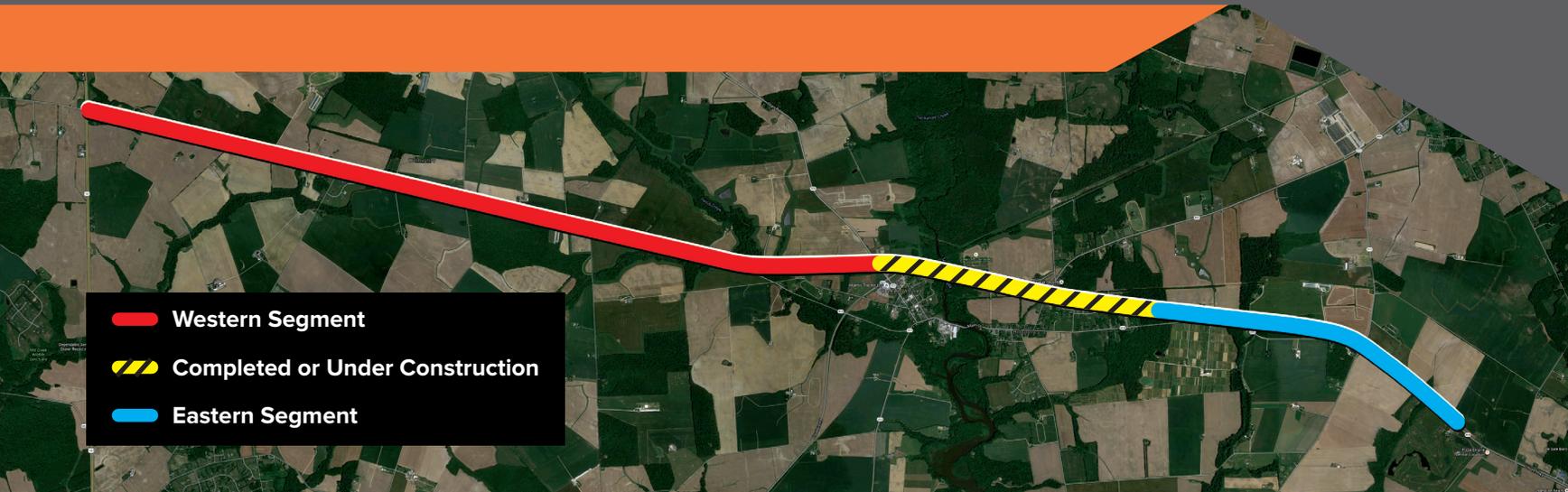
MD 404 – US 50 to East of Holly Road

DESIGN-BUILD

Caroline, Queen Anne's, and Talbot Counties

Contract No. AW8965170

F.A.P. No. AC-NHPP-300-1(53)N



404 Corridor Safety Constructors
A Joint Venture of Wagman Heavy Civil,
David A. Bramble, and Allan Myers

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2.09.02

SCHEDULE

- A. Approach to Meeting the Substantial Completion Milestone
- B. Conceptual Grading Unit Area Plan
- C. Approach to Address Permit/Approval Acquisitions and Modifications
- D. Approach to Quality Management of the Design



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A. Approach to Meeting the Substantial Completion Milestone



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Commitment to Supporting SHA's Project Goals and Values

The 404 Corridor Safety Constructors' unified design and construction team will meet the substantial completion milestone of Thanksgiving 2017 (November 21, 2017) and achieve final completion prior to Memorial Day 2018 (May 25, 2017), two months ahead of the contractual completion date through:

- Partnering with SHA and project stakeholders at all levels of the design and construction organization to proactively identify and mitigate schedule risks.
- Co-locating design and construction management staff following Notice of Intent to Award to progress critical path activities including quality management plans, geotechnical investigations, and rough grading plan sets.
- Sequencing concurrent construction of the three project segments and drawing upon the design and construction strengths of each of our team members.
- Developing a detailed and complete Critical Path Method (CPM) schedule during the proposal phase (see Appendix 2.09.06) which includes over 1,750 activities to fully develop our design and construction approach within the 18 month timeframe.
- Proactively assessing schedule risks and schedule recovery activities, including additional crews, extended work hours and days, and increased productivity.
- Implementing seven ATCs to provide a practical design that expedites the construction schedule through pavement section enhancements, minimizing full depth reconstruction, and ensuring safe and efficient traffic barrier placement.

A. APPROACH TO MEETING THE SUBSTANTIAL COMPLETION MILESTONE

The 404 Corridor Safety Constructors' unified design and construction team has been specifically assembled with the purpose of meeting the substantial completion milestone of Thanksgiving 2017 (November 21, 2017) and final completion prior to Memorial Day 2018 (May 25, 2017), two months prior to the contractual completion date. Our team members' experience includes 78 eastern shore projects over the past 10 years. The lessons learned through this construction success forms the cornerstone of our project approach, which includes accurate schedule development and monitoring; innovative and practical design; and proactive risk management. Our construction expertise, coupled with the design efforts of three design firms with substantial design-build experience (Wallace Montgomery, JMT, and RK&K) and the Independent Design Quality Assurance Engineer (Century Engineering) provides a local and homegrown pool of engineers, independent quality personnel, and constructors – all of whom are committed to SHA's success.

Proven History of Success

Our team member's extensive experience on Maryland's eastern shore for SHA includes 78 projects over the last 10 years, totaling \$278M. Our team members are currently building the 1.57 mile, MD 404 Dualization project (AW8965270) and understand the unique challenges of this project corridor.

Partnering: The 404 Corridor Safety Constructors' Team maintains a culture that embraces partnering and works collaboratively with SHA, project stakeholders, property owners, and other interested parties. The strength of this commitment includes early execution of a partnering kick-off meeting and development of the Public Outreach Plan. Partnering will continue throughout the life of the Project to collaboratively resolve issues encountered during construction. While working

on the MD 404 Dualization (Phase 1A) project, our Team members successfully used partnering to resolve construction issues at the field level; which contributed to completion 6 months ahead of schedule. Construction Manager (CM), Chuck Breeding exhibited a proactive partnering approach by visiting property owners to personally address their questions and concerns during construction.

Co-location: Our Team is committed to co-location

of key design and construction management staff following Notice of Intent to Award. Once co-located, our Design-Build Project Manager (DBPM), Construction Manager (CM), Design Manager (DM), and construction support staff will finalize design optimization efforts, prepare/submit the Design Quality Control Plan (DQCP), begin geotechnical investigations, and develop critical path rough grading plan sets. During construction, our construction management staff will co-locate with SHA within the Project corridor, providing a secure work space for each, to help proactively identify, manage, and mitigate project risks.

APPROACH TO ACHIEVING SUBSTANTIAL COMPLETION – DBPM (Anthony Bednarik) will oversee design and construction of the Project and will serve as the primary point of contact for SHA. CM (Chuck Breeding) will lead construction efforts for the Project’s three distinct segments to capitalize on the strengths of our three construction entities; David A. Bramble (constructing Segment A), Wagman Heavy Civil (constructing Segment B), and Allan Myers (constructing Segment B). Segment A extends from US 50 to east of Fox Meadow Road, approximate Sta. 231 (roadway highpoint), Segment B extends from east of Fox Meadow Road to west of MD 309, and Segment C extends from east of MD 480 to east of Holly Road.

This segmentation allows for concurrent construction activities on each segment and draws upon the design and construction strengths of each team member. For example, Wagman will be constructing Segment B which includes the Norwich Creek bridge crossing and the accompanying existing box culvert extensions S4 and S6. Wagman is the strongest bridge construction firm on the eastern shore and is currently constructing the Tuckahoe River Bridge (AW8965270), less than 2 miles to the east. A similar case can be made for the Project paving components, as Bramble and Myers operate five asphalt plants capable of servicing the Project.

Our Team has developed a detailed and complete Critical Path Method (CPM) schedule (utilizing Primavera software, a defined WBS, and CPM scheduling techniques), critical path layout, and narrative included in Appendix 2.09.06. Once cost loaded, this schedule will meet the requirements of Special Provision 109, Initial CPM (ICPM) Project Schedule. Including over 1,750 activities, the ICPM has been built over the past three months with the expertise of more than 25 design and construction professionals working together towards the common goal of designing, permitting, and dualizing 9.1 miles of the existing MD 404 roadway within 18 months.

Our Team has thoroughly evaluated the RFP documents, performed supplemental geotechnical investigations and test pits, and held internal brainstorming sessions to fully assess the associated design, geotechnical, right of way, utility relocation, time of year restrictions (TOYR), and construction risks. This effort supports our ability to understand and plan for the Project challenges. **Table 2.1** provides schedule critical activities (*ICPM activity codes*) for Segments A, B, and C and dates to achieve substantial completion, based on concurrent construction and SHA plan auditing.

Positive Stakeholder Feedback

CM, Chuck Breeding’s individualized approach to partnering resulted in the following comment the Shell Service Station owner Mr. Mohammed Chaudhry, “I am recommending Bramble, Inc. because I have been dealing with them on the Route 309 and 404. They are nice people to work with”

Table 2.1 Project Milestone Schedule Overview

Milestone	Activity Code	Date
Notice of Award	(AA00000010)	April 6, 2016
Develop DQCP / Refine ICPM	(ABA0000010)	April 7, 2016
Notice to Proceed	(AA00000020)	June 15, 2016
Project Partnering Kick-off	(ABC0000040)	April 21, 2016
PRD/MDE Rough Grading Package Approval – (A1)	(ADBCB00070)	August 22, 2016
Begin Construction – Segment A1	(BABA000010)	August 25, 2016
Segment A – Substantial Completion	(AA00000040)	November 17, 2017
PRD/MDE Rough Grading Package Approval – (B1)	(ADBCA00070)	August 22, 2016
Begin Construction – S-4 Stream Diversion (B3)	(BBDG000010)	August 23, 2016
Segment B – Substantial Completion	(AA00000050)	November 14, 2017
PRD/MDE Rough Grading Package Approval – (C1)	(ADBD000070)	August 15, 2016
Begin Construction – Segment C1	(BCABWA0010)	August 17, 2016
Segment C – Substantial Completion	(AA00000060)	November 21, 2017
Substantial Project Completion	(AA00000030)	November 21, 2017
Project Completion	(AA00000070)	May 25, 2018

To meet Substantial Completion, the 404 Corridor Safety Constructors Team will implement a comprehensive “rolling” design to construction process. This process includes pro-active plan development starting at Notice of Award to expedite design package approvals through the IDQA, SHA PRD/Office of Structures, as needed, and MDE Waters and Non-Tidal Wetlands Division. Constructor planning and procurement will begin as soon as practical with workforce mobilization following final regulatory approvals and SHA internal audit. The following captures a high level look at the proposed design and construction progression; however, a full and complete detailed assessment of the Critical Longest Path and ICPM can be found in Appendix 2.09.06.

- Concurrent with utility relocations and Right of Way acquisition, immediately upon NTP, begin work on the maintenance of stream flow and initiate construction of the existing box culvert extensions (S4 and S6) along the new WB alignment.
- Following rough grading approval in Segments A and C, begin earthwork operations from east to west along Segment A from east of Fox Meadow Road to West of Sta. 127+00 and from east to west along Segment C from the eastern project terminus to MD 312.
- Upon substructure approval from Office of Bridge and PRD/MDE approvals, begin work on the Norwich Creek Bridge (S-5) and restricted work within the Norwich Creek 10-year floodplain from November 16 to June 30. Concurrently, construct the remainder of the new WB road within Segment B followed by rehabilitating the existing EB roadway under traffic.
- Once construction of the new WB road and MOT shift within Segment A (Fox Meadow Rd to Sta. 127) is completed, switch traffic to the new WB road and begin reconstruction of existing box culverts below the EB road unobstructed. Concurrently complete the remaining WB road in Segment A and upgrades to the existing EB road under traffic, except as noted previously.
- Within Segment C, complete the remaining WB roadway construction west of MD 312 and concurrently improve the existing EB roadway under traffic.

SEQUENCING AND SCHEDULING DESIGN AND CONSTRUCTION PACKAGES

Design Scheduling Approach: The ICPM design activities include plan preparation, IDQA reviews, over the shoulder reviews, submissions, and necessary SHA PRD SWM/ESC reviews of appropriate submittal packages. PRD/MDE approval is anticipated for all hydraulic crossings,

which include the WB road's bridge over Norwich Creek, two existing box culvert extensions with final plans, two existing box culvert extensions, two new road box culvert structures, and the 18 new road pipe culvert structures. Further, PRD approval will be required for rough grading plans and final roadway/SWM-drainage/grading plans. Traffic features (signing, markings, US 50 signal mod, lighting, ITS), screen wall, landscaping plans, and supporting documents such as geotechnical engineering reports will require IDQA approval. We also recognize that approval packages are subject to SHA audit acceptance.

Expedited Design Approvals
Our Team will draw upon the lessons learned from Anthony Bednarik (DBPM) and Eric Mellor, PE (Highway Engineer) during their time at the ICC Project to compress the design approval schedule to the greatest extent possible.

Our design submission approach will be to implement a “rolling” design submission process to allow construction to proceed from east to west in each segment. Each segment is split approximately in half and the structural and rough grading (ESC and MOT only) submissions will be developed for the eastern half and then the western portion. Supportive independent submittal packages required for constructing the proposed structures and rough grading will include the Roadway Line & Grade, Geotechnical Planning & Pavement Investigation Reports, SWM Concept Plan Review, and TMP. The Final Design Roadway Plans will then be developed for each segment. The Final Design Roadway Plans will include final grading, road layout, SWM/drainage, pavement construction and necessary MOT and ESC for the dualized MD 404 roadways with the final intersection configurations and connecting side streets/access driveways. Supportive independent submittal packages required for constructing the final dualized roadway includes the Interim Geotechnical Design and Pavement Reports Submissions.

Our planned design submittals require approval for the construction of the WB roadway bridge over Norwich Creek consists of: 1) substructure and superstructure TS&L/foundation submission, 2) separate structural details/final design superstructure submission, and 3) structural details/final design substructure submission. In regards to the roadway box and pipe crossing culverts, we will expedite PRD/MDE maintenance of stream (MOS), ESC and H&H analysis reviews/approvals utilizing the culverts' current TS&L designs. Concurrently, supplemental geotechnical field exploration borings and laboratory analyses will be completed to finalize foundation designs and submission packages for IDQA and SHA Office of Structures reviews. Each culvert structure will be developed as a standalone element with independent ESC and MOS plans, as needed, for its construction to allow implementation of MOS as each design package is approved.

Upon completion of all grading unit packages, we will develop and submit separate independent submissions (Definitive and Final) for ITS, Intersection lighting, US 50 at MD 404 signal modifications, and final roadway signing & pavement markings. Traffic ITS and intersection lighting submissions will commence following the Roadway Line & Grade submission. Similarly, the Project's final Landscaping features will be developed and submitted through separate independent submissions (preliminary and final).

Construction Scheduling Approach: The ICPM schedule and associated WBS (see **Appendix 2.09.06**) provides a significant amount of detail which supports the construction schedule approach. Generally, construction procurement will immediately follow the second PRD submittal of the design packages so that work force mobilization and start of construction activities can immediate follow PRD approval and run, at risk, concurrent with the SHA audit process. In general, construction will progress from procurement through ESC, rough grading/drainage, and stabilization for each grading unit defined in **Figure 2.1**. Those grading units that fall on the Critical Path will garner the most attention and focus; however, as there is limited float within any

individual grading unit activity, strict adherence to the approved CPM will be critical. Critical construction elements within the individual Project Segments are as follows:

- **Segment A:** WB road construction to accommodate the MOT shift from Fox Meadow Road to Sta. 127 for the box culvert constructions. Concurrently, improvements to existing culvert crossings will be completed under traffic. WB road construction beyond the MOT limits noted above and remaining improvements to existing EB MD 404 will occur concurrently. Modifications to the US 50 signal will occur prior to the full traffic switch at substantial completion.
- **Segment B:** Immediately upon NTP, work will begin on S-4 and S-6 utilizing the SHA/PRD/MDE approved design plans with then advancing WB road rough grading and roadway culvert installations. With IDQA and SHA Office of Structures approval, initiate test pile implementation and Norwich Creek Bridge construction. Following approval of Segment B-4, drainage improvements on EB MD 404 will begin under traffic. As no traffic switches are planned in Segment B, all improvements will utilize lane and/or shoulder closures during execution of the work.
- **Segment C:** WB roadway construction to accommodate the MOT shift from the eastern Project terminus to MD 312 and concurrent improvements to existing hydraulic crossing of existing MD 404 west of MD 312. WB roadway construction beyond these limits and remaining improvements to existing EB MD 404 will occur concurrently.

Following substantial completion, the remaining construction activities will be completed including finalizing the noise screen wall, Access Road #2 at Dulin Road, final ITS implementation, conversion of ESC traps, and installation of landscaping plantings. All of these elements will occur prior to the May 25, 2018 Final Completion date using temporary shoulder closures.

RESOURCES TO BE PROVIDED

Local Construction Resources: Our Team brings local knowledge and experience, a local workforce, integrated materials resources, and a focus on hiring locally to the Project. We maintain a continuous construction presence throughout the eastern shore with over 335 construction professionals actively working on our current eastern shore SHA projects. Further, we are currently building the 1.57 mile MD 404 Dualization project (AW8965270), which supported a work force of 42 construction professionals at the peak of construction, including senior managers Chuck Breeding, Scott Smith, Mike Navecky, and Mike Benney. These professionals and many of the locally experienced work force will be assigned to the Project.

Engineering Resources: The 404 Corridor Safety Designers will expedite simultaneous and continuous engineering design services and submissions. The primary focus of the design team members is as follows:

- WM will provide Project Design Management and PRD Coordination lead by Eric Sender, PE and Diane Durscher, PE, respectively, along with Structural and Water Resources

Benefits of Our Construction Sequencing Approach

- *Maximizes 2016 rough grading and structure construction with utility relocations while respecting TOYR.*
- *Accelerates Norwich Creek Bridge, tributary structure, and approach roadway construction before TOYR.*
- *Uses immediate stabilization techniques to provide flexibility in addressing Grading Unit restrictions.*
- *SHA accepted pavement ATC's provides time and cost effective measures to maximize 2016 paving*
- *Local partner asphalt plants provides necessary flexibility and availability to meet substantial completion*

engineering. Design will be expedited by four design teams for the proposed roadway cross culvert structures and two traffic engineering teams for TMP and final traffic features.

- JMT will provide Highway and Water Resources engineering with three design teams to expedite the rough grading and final roadway grading, drainage/SWM design efforts for the Segments A and B. JMT will also have a separate design team providing structural design services for the WB roadway's bridge crossing of Norwich Creek.
- RK&K will provide Highway and Water Resources engineering with three design teams to expedite rough and final roadway grading, drainage/SWM design efforts for Segment C.
- Subconsultants will supplement engineering resources and provide support related to the SWM, ESC, and culverts design efforts as well as geotechnical design and landscaping.

MINIMIZING SCHEDULE RISK – Our Team's approach to managing the project schedule risk, achieve timely substantial completion, and reach Final Completion two months early include:

- Developing a detailed and completed Critical Path Method (CPM) schedule.
- Implementing design and construction lessons learned from previous project experience with SHA, on Maryland's eastern shore, and through design-build project delivery.
- Utilizing local construction professionals, integrated materials resources, and subcontractors to construct the project improvements.
- Partnering with SHA, stakeholders, and property owners to address concerns and issues.
- Using practical design, innovation, and ATCs to expedite design and construction.

In developing the ICPM schedule, our Team has identified several sections where gaps limit our ability define schedule activities at a Baseline Schedule level of detail, despite our best efforts. In these areas, our Team has drawn from previous eastern shore Design-Build experience to assemble the ICPM while minimizing risk of future impact once additional details are known.

Some examples for these known risk areas and an approach to minimize this risk include:

- **Design Plan Reviews:** The ICPM includes designated time, following plan preparation, for IDQA review and addressing comments prior to plan submission to PRD/MDE. This review is in addition to periodic "Over the Shoulder Reviews" (OTSR), performed by the IDQA during plan development, and concurrent SHA audits that follow final IDQA plan approval.
- **Plan Packaging:** Design packages will be developed by Segment (A, B and C) for rough grading, final road plans and structures and then the other major scope work elements such as ITS/lighting and landscaping. This approach will manage design delay risks and allow for construction to progress with the rough grading plans while final design elements progress.
- **Grading Units:** Our approach to grading unit utilization that allows concurrent construction of the three project segments consists of dividing the COMAR 20 acre maximum grading unit into three sub-grading units. Specifically, Segment C will utilize an 8 acre maximum sub-grading unit while Segments A and B will utilize 6 acre maximum sub-grading units each, such that total of the sub-grading units in the three segment will not exceed the 20 acre grading unit requirement. Should larger areas need to be temporarily opened for earthwork storage or construction laydown areas, we will adhere to SP 308.03.14 Stabilization and stabilize with seed and mulch, if needed, at the end of each work day.
- **Utility Relocations / Right of Way Acquisition:** As management of these risks are largely out of our control, we will coordinate early and often with utility companies and SHA respectively. During utility relocations, we will work closely with the utility subcontractor to manage any risks of concurrent construction to allow initial grading to commence in 2016.

Reducing Schedule Risk and Schedule Recovery: Our Team's primary schedule risk

mitigation strategy is to provide a designated Scheduler to monitor both design and construction progress. The Project Scheduler will work closely with the DBPM, CM, and DM to ensure that pre-construction activities, submittals, and approvals are on-track. Should delays become evident, a recovery schedule will be developed to respond to any delays. The following construction related schedule recovery elements will be considered, should substantial completion be jeopardized:

- Adding a structure crew to Segment C to work on S-1 and S-2 concurrently.
- Increasing production rates in early 2016 from 8 hours/5 day to 10 hours/6 day a week.
- Utilizing weekends to make up for inclement weather.
- Expand conservative paving and soil cement calendars, weather permitting.
- Increase production rates during the 2017 summer months.

Initially, the ICPM and ultimately the approved CPM/Critical Path schedule will be the driving force behind all design and construction planning efforts, specifically to identify items with long lead times. On a monthly basis, a formal CPM schedule update and 4 week look ahead schedule will be prepared and submitted to SHA (distributed to project stakeholders and thirds parties, as appropriate), for all work planning and execution. Design work and other pre-construction activities will be closely monitored and immediate action taken should any critical path activities slip and/or other non-critical activities lag. During construction the CPM schedule, critical path schedule, and 4 week look ahead schedule will be the cornerstone of all planning and work execution efforts.

ACCELERATED CONSTRUCTION TECHNIQUES AND INNOVATION – Our Team has focused on practical design and innovation to analyze, implement, and scope this schedule critical, safety improvement project. Our Project working group of designers and contractors have looked to build constructability into each design and construction approach decision. Immediately following Notice of Award, we will use TC 5.02 - Early Design NTP Early Submissions provision to begin critical path activities, specifically Segment C-1 Subsurface Investigation for S-3, S-21, S-22 and the roadway followed by Segment C-1 rough grading package development; and IDQA acceptance. Ideally, each of these activities can be submitted to SHA and PRD/MDE for review in advance of the Project's anticipated June 15, 2016 NTP.

Finally, our Team received approval of seven ATCs for inclusion within our proposal and approach of project delivery. These focus on:

- Pavement section enhancements that maximize soil cement and capping borrow.
- Use of Ultrathin paving technologies to improve rideability and life-cycle costs.
- Rehabilitation of existing mainline and accel/decel lanes to minimize full depth reconstruction and wedge/leveling to accelerate construction and improve safety by minimizing MOT and construction traffic.
- Clarifying SWM swale requirements to ensure traffic barrier is placed in an effective manner with not compromising safety.

These accepted ATCs will assist SHA in understanding how we have developed our ICPM and underscore our commitment to deliver the Project on-time and within budget.

404 Corridor Safety Constructors' Value Enhancement from Accepted ATCs:

- ATC #1 - Use of Soil Cement improves schedule, cost, safety & mobility
- ATC #2 - Use of Capping Borrow improves schedule, cost, safety & mobility
- ATC #3 - Ultrathin Pavement improves schedule, cost, safety, customer satisfaction & mobility
- ATC #4 - Clarify Traffic Barrier improves cost, schedule, & safety
- ATC #5 - Accel/Decel Lane Treatment improves schedule, cost & mobility
- ATC #6 – Maintain Roadway Cross Slope improves schedule, cost & mobility
- ATC #7 - Cover on Cross Culverts improves schedule, cost & safety

B. Conceptual Grading Unit Area Plan



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Commitment to Supporting SHA's Project Goals and Values

The 404 Corridor Safety Constructors Team's Conceptual Grading Unit Area Plan supports achieving the Substantial and Final Completion milestones while maintaining consistency with the MDE Erosion and Sediment Control standards by:

- Utilizing multiple crews to concurrently complete earthwork in three smaller Grading Units (six to eight acres each) without exceeding the maximum 20 acre disturbance.
- Providing on-site resources to stabilize disturbed area as soon as work is complete.
- Opening another 20 acre of Grading Units once half of the first 20 acres is stabilized, not to exceed a maximum of 30 acre of disturbance, as allowed by COMAR 26.17.01.
- Dedicating resources to maintenance of erosion and sediment control measures.
- Maximizing protection by providing redundancy in ESC controls at sensitive areas and limiting exposure of bare soils by having pre-determined Grading Units.

B. CONCEPTUAL GRADING UNIT AREA PLAN

GRADING UNIT AREA PLAN – Our Team has developed a thorough understanding of the existing conditions and environmental constraints of the Project, increased our familiarity with the project site, and identified how to complete the grading work in a cost-effective and schedule efficient manner to meet the schedule and erosion and sediment control (ESC) requirements.

The proposed typical section for MD 404 equates to a wide grading footprint with relatively shallow cuts and fills, leading to large grading areas for comparatively small volumes of earthwork. To expedite the grading operations, the Project will be divided into three main Segments and further subdivided into Grading Units (GUs). Earthwork operations will generally follow the number sequence shown on **Figure 2.1 Grading Unit Area Plan**.

Our preliminary earthwork analysis shows the west side of the Project (Segments A&B) will result in excess material and the east side (Segment C) will require borrow. To balance the Project, our Team has identified two possible borrow sites located adjacent to Segments A & C (both owned by our Team), and are proactively conducting pre-bid soil borings at these sites. These sites will provide the 36,000+/- CY difference without long haul distances, saving time and money.

- Segment A – 3,600 CY of Suitable Excavation
- Segment B – 51,700 CY of Suitable Excavation
- Segment C – 91,000 CY of Borrow

To meet the project schedule, our construction approach balances operational efficiency (which prefers opening the entire site) and ESC (which prefers open small areas with tight controls) by:

- Working concurrently in three segments under different GUs not to exceed 20 acres.
- Once half the 20 acre limit is stabilized, opening another 20 acre GUs to not exceed 30 acre maximum.
- Sequencing the required work to balance cut and fills.
- Tailoring ESC controls to topography and site conditions.
- Providing end-of-shift stabilization as needed with on-site hydro-seeding equipment and dedicated ESC crews.

Maximizing the 20 Acre Grading Unit Requirement

At the beginning of grading operations, a 6+6+8 acre grading combination will be utilized not to exceed 20 acres. As earthwork operations progress and half the first 20 acre size is stabilized, another 20 acre GUs will be opened not to exceed a maximum of 30 acre of disturbance allowed at once per COMAR 26.17.01.

ESC NARRATIVE – As previously discussed, providing smaller GUs to minimize the exposure of bare soils and erosion provides greater flexibility to properly schedule work and phase work activities to maximize efficiency and effectively manage daily cut-to-fill operations.

ESC Packages: Our Team will meet early and often with Plan Review Division (PRD) prior to design submissions to expedite the review process and gain approval of phased ESC packages. Over-the-shoulder reviews with the IDQA will be performed before submitting ESC packages to PRD for approval. Providing smaller ESC design packages are intended to fast-track approvals and shorten review times. Our ESC phasing plan will break the Segments into GUs that generally do not exceed six acres under each of the first two Segments (A&B) and eight acres for Segment C, thus providing a 6+6+8 acre combination. Together, the GU in each Segment will not exceed the pre-determined GU maximum of 20 acres. Although these areas will be considered the maximum limits for each Segment, smaller GUs may be created in the field to shift crews around to work on critical path items such as constructing new culvert structures or construct time sensitive items based on permitting requirements. The ESC phasing plan results in 37 GUs totaling approx. 213 acres.

Grading Plan Supports Substantial Completion Milestone
Subdividing the project segments into smaller grading units for construction minimizes the exposure for soil erosion, provides schedule flexibility, and complements our approach to simultaneously construct three areas of the Project to achieve the Substantial Completion milestone.

Earthwork Operations: We have coordinated and scheduled our operations to be completed by three earthwork crews; one working concurrently in each Segment (A, B, C) to balance earthwork segments, reduce costs, decrease haul lengths, and accelerate construction. The phasing will minimize stockpiling and protect adjacent wetlands and WUS. Earthwork operations will begin from east to west in Segments A and B. As this work progresses, another crew will begin work in Segment C at the east side. As GUs are stabilized, the excess waste from Segments A and B will be transported to the west end of Segment C and grading operations will progress to the east.

Resources: Equipment and material resources will be shared between GUs to minimize delays and respond to any unforeseen conditions or unpredicted weather. This approach allows prompt response to schedule adjustments as well as environmental work restrictions. Upon completion of each GU within a segment, the area will be stabilized prior to disturbing another GU.

ESC Design: All ESC devices will be installed within each GU prior to any earth disturbance activities, and will be compliant with the *2011 Maryland Standards and Specifications for Soil and Sediment Control*. Grading units will consider hydraulic connectivity of existing and proposed drainage patterns to further maintain conveyance of drainage through the work area. Perimeter diversions (e.g. earth dikes and swales) will be utilized as practical to bypass clean water from upslope of the Project to a downstream outfall. Maintenance of stream flow will be critical to conveying off-site clean water through the construction GUs since the Project crosses WUS in several locations. Perimeter diversions will convey bypass flows to existing culvert crossings.

Staging of Culverts: In locations with culvert replacements, flows will be maintained through the existing culvert while a proposed barrel is constructed immediately adjacent. Once the new culvert has been installed, the existing culvert will be removed and flow redirected to the new culvert. Where multiple culvert barrels are proposed, flows will be maintained through the first barrel while the remaining barrels are constructed. In locations where existing culverts or structures are to be extended, or where constructing a culvert parallel to an existing crossing is not feasible, temporary pump-around practices or sand bags and slope drains will be used per the *Maryland Waterway Construction Guidelines* to convey clean water to a stable downstream discharge point.

STABILIZATION RESOURCES – ESC measures will include super silt fences along the LOD, stabilized construction entrances, temporary seeding\mulch for embankments to provide fast growing vegetation, temporary stone outlet structures at the downstream ends of ditches, soil stabilization matting, and temporary sediment basins or traps. Permanent seeding\mulch and turfgrass mixtures acceptable for the area will be used to stabilize disturbed areas upon final grading.

Dedicated ESC Crews

Small crews will be assigned to each segment to monitor and maintain the necessary ESC controls for the duration of the earth disturbing activities. Additional ESC devices will remain on-site to account for unforeseen conditions and to provide redundant measures.

Redundant control measures will be used adjacent to natural resources such as wetlands and WUS to address interim drainage conditions and treat potential heavy rain events. Redundant measures will include stone check dams, compost socks, or other erosion inhibitors and filtered dewatering of sediment traps/basins prior to forecasted rain events. Special attention will be given to each outfall location to ensure proper filtering and trapping devices that are adequately sized.

The GU sizes will make it easier to maintain the ESCs and stabilize disturbed areas to limit exposure of bare earth and potential sediment runoff. The subbase (GAB) of the proposed roadway will be installed to maintain a stabilized area prior to final paving operations. Waste and stockpile areas will be protected/stabilized; however, these areas are limited by the GU sequence.

ESC Coordination: Coordination efforts between project segments will be managed by designated Erosion Sediment Control Managers (ESCM) for each Segment and overseen by CM, Chuck Breeding. ESCMs will be responsible for monitoring stabilization within each GU and ensuring compliance with the 20 acre limit. As work progresses, additional GUs will not be opened until Chuck and the ESCMs have verified that a minimum of 50% of the 20 acre unit has been stabilized to ensure the maximum disturbed area of 30 acres is never exceeded.

ESC MAINTENANCE – With respect to maintenance, the ESCMs will perform daily inspections of ESC measures to ensure controls are in place and operational. Maintenance work will include performing regular cleaning of all ESC controls to mitigate erosion, and dewatering of sediment traps and basins prior to forecast rain events. In addition, our Team’s Environmental Manager (EM), will provide coordination with SHA’s Independent Environmental Monitor (IEM). Weekly meetings will be held with the CM, ESCMs and EM to discuss upcoming work operation schedules and proper installation of the required ESC devices.

Environmental resources and sensitive areas will be clearly demarcated to ensure proper ESC devices are used and maintained at the right locations. Construction will follow a clear and concise PRD approved sequence of operations which has been thoroughly coordinated and reviewed between our design and construction team members to ensure a workable and efficient plan.

Figure 2.2 ESC Resources

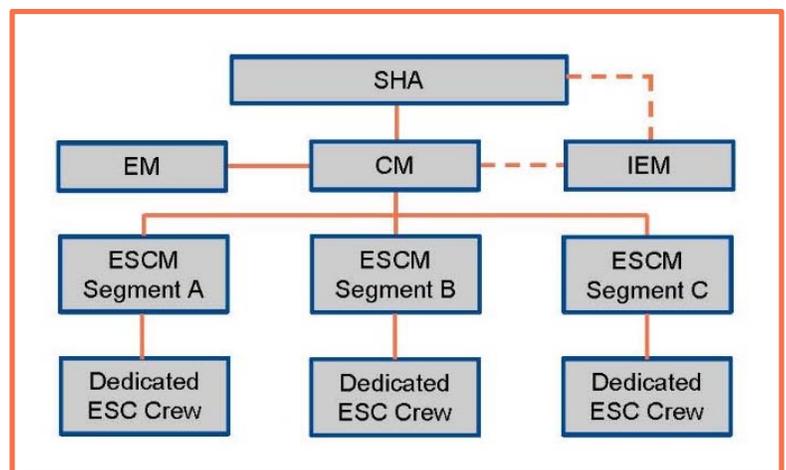
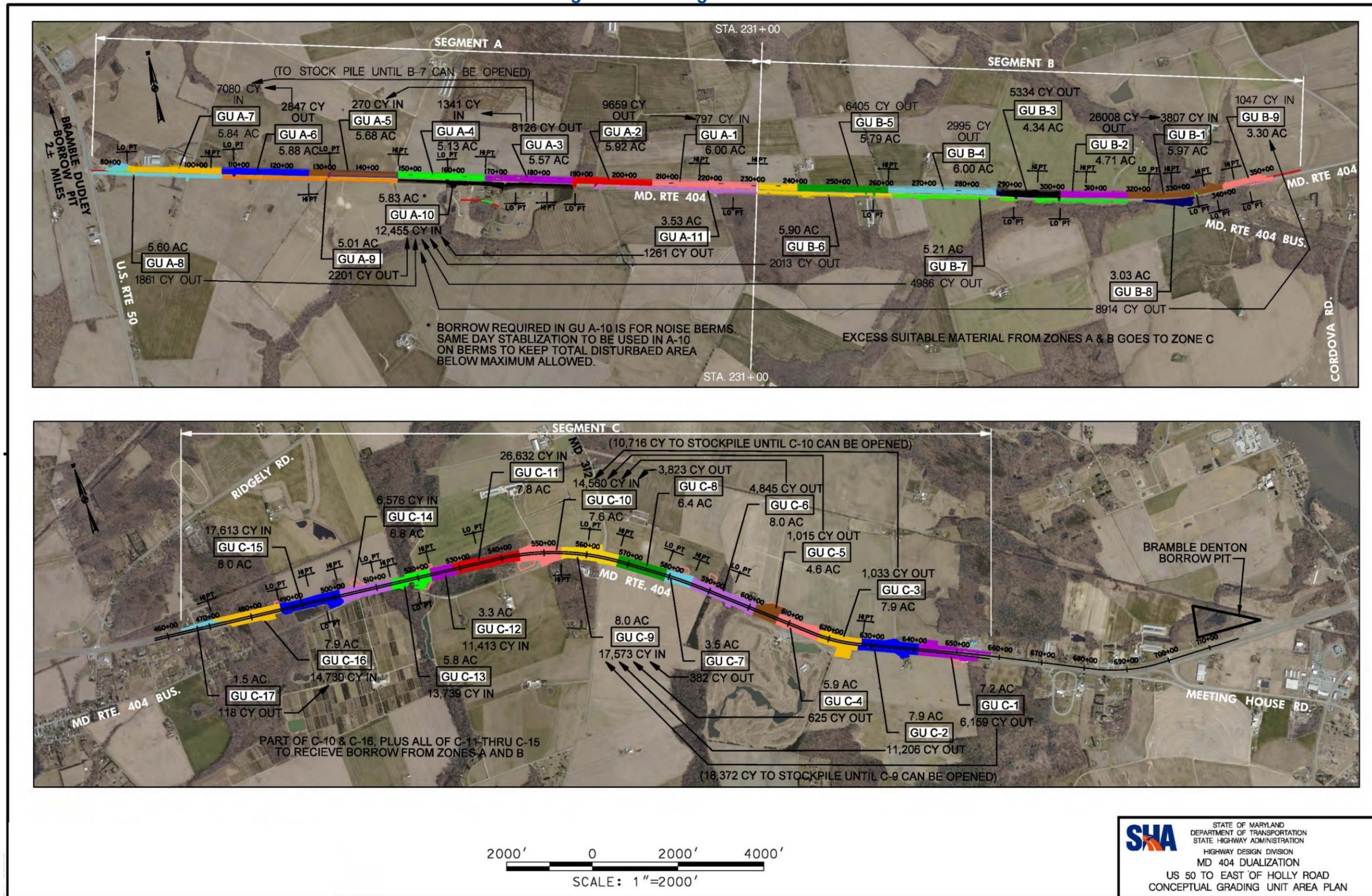


Figure 2.1 Grading Unit Area Plan



C. Approach to Address Permit/Approval Acquisitions and Modifications



404 Corridor Safety Constructors
A Joint Venture of Wagman Heavy Civil,
David A. Bramble, and Allan Myers

Commitment to Supporting SHA's Project Goals and Values

The 404 Corridor Safety Constructors Team's approach to permit approvals and modifications assists in achieving the Substantial and Final Completion milestones by:

- Providing team members experienced with expedited permitting and PRD approvals.
- Advancing culvert design reviews by submitting to PRD/MDE prior to structural design.
- Actively partnering with PRD to stream-line the design/review/approval process.
- Not changing the environmental commitments or NEPA Documentation.

C. APPROACH TO PERMIT APPROVALS AND MODIFICATIONS

APPROACH TO PERMITTING – Our Team has thoroughly reviewed the RFP and identified the required permits, approvals, and modifications and responsibility for obtaining them (See Appendix 2.09.06). Permits/approvals that require significant input by our Team and are schedule critical are explained in further depth below. 404 Corridor Safety Constructors has experience in obtaining these permits/approvals on projects with tight schedules and recognizes that complete quality submittals and advance coordination with review agencies creates efficient reviews and timely approvals, thereby minimizing risk to the schedule.

SHA PRD SWM/ESC Approval: The approval has not been secured; however, SHA PRD is anticipated to issue a LOI indicating that the concept SWM hydrology is acceptable. Our Team will obtain the final approval; therefore, the design package submittals are based on required construction sequencing. ESC approvals will be acquired for rough grading and structures so construction can begin during final road designs. Modifications to the SWM/ESC approval will be sought for each construction phase, based on design packages that include complete ESC and SWM for the final proposed roadway areas.

Partnering with PRD
Our Team's partnering with PRD will include regularly scheduled meetings prior to each submittal to discuss design approach, verify PRD comments have been addressed, and expedite reviews.

USACE/MDE Wetland Permit: This permit has already been acquired and is in effect from January 28, 2016 to January 28, 2021. All hydrologic and hydraulic studies for cross culverts in the WUS will require review by MDE. Therefore, the culvert crossings will be designed with a rolling design process, independent from roadway construction, to minimize comments from all agencies and expedite approval. Our intent is to have all culvert approvals prior to December 2016 to install all cross culverts prior to the in-stream restriction period starting February 2017.

Corridor Management Plan/Tier II Watershed: The Nontidal Wetlands and Waterways Permit requires a Corridor Management Plan for the Norwich Creek 2 watershed. SHA is preparing this plan and we will contribute a work plan to address compaction issues. Preparation of the work plan on compaction will be expedited so that the approved ESC plans may be constructed as soon as possible. Coordination will be through SHA Environmental Programs Division.

APPROACH TO CHANGES TO ENVIRONMENTAL COMMITMENTS AND NEPA

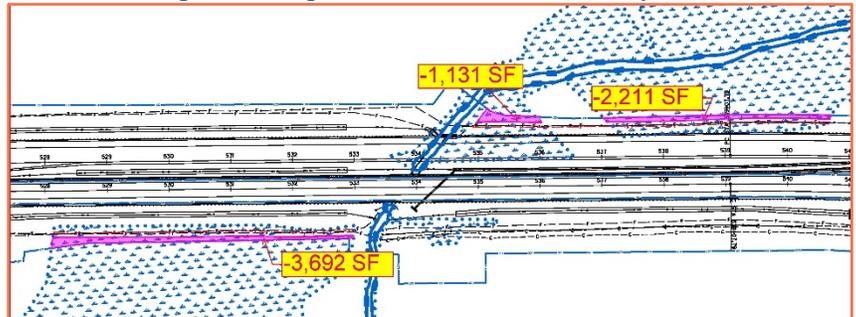
REEVALUATIONS – We conducted a thorough review of the RFP and do not anticipate any changes to the environmental commitments listed in Appendix 2.09.06. Since we do not intend to modify the roadway vertically or horizontally, modify staging areas or SWM facilities, or expand the LOD; we do not require coordination of changes with SHA nor preparation of Environmental Summaries as part of a NEPA Reevaluation. We will provide quarterly updates on adherence to environmental commitments. We understand the reevaluation process may be triggered by new

information available after NTP, or future changes in laws or regulations. In those cases, we will identify and quantify resources affected according to the process in RFP Section 3.20.07.

APPROACH TO AVOIDING AND MINIMIZING IMPACTS TO RESOURCES – Although wetlands, WUS, and forested areas are permitted for impacts anticipated by this Project, the 404 Corridor Safety Constructors recognize SHA’s goal of further reducing the impacts to wetlands and WUS by 25% from the permitted value. Reductions can be achieved by adjusting the westbound MD 404 profile; reducing the roadside hinge slope width from 6’ to 4’ while maintaining safety grading for clear zone requirements or installing traffic barrier; and using innovative construction techniques for maintenance of stream flow at culvert crossings.

The westbound MD 404 profile will be modified to reduce impacts and fill requirements for Segment C. In general, the profile will be adjusted in a manner which maintains similar low and high points and also the same drainage patterns which will be consistent with the SWM Concept. Also, as an example we have identified between Sta. 528 to

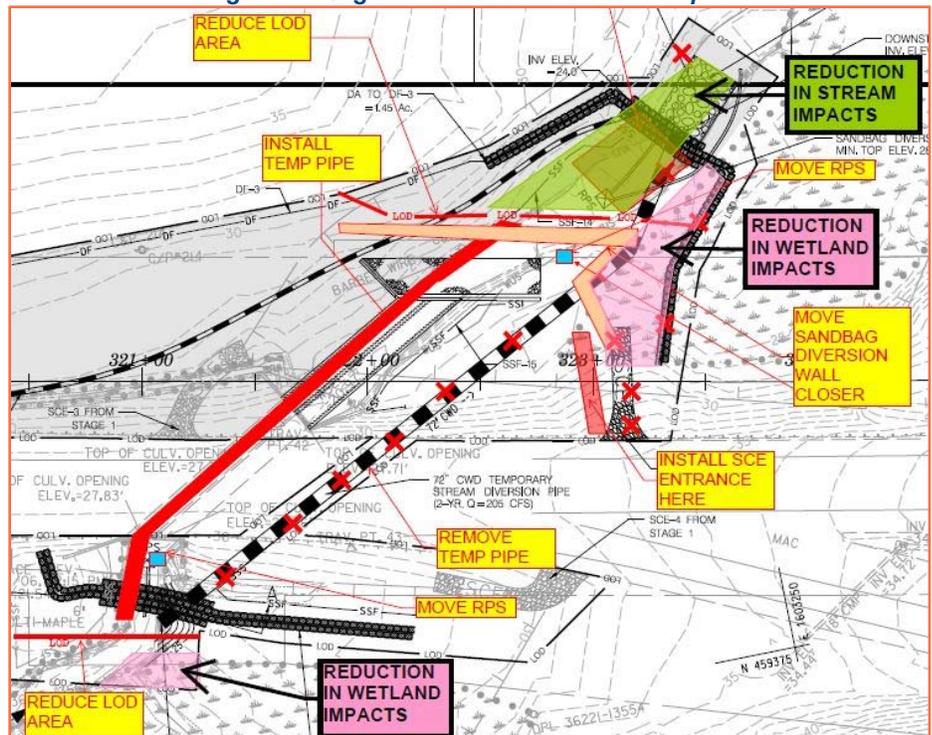
Figure 2.3 Segment C Reduced Wetland Impacts



Sta. 541 (see **Figure 2.3**) where wetland impacts can be reduced by approx. 7,000 SF by reducing the hinge width by 2’, installing new w-beam, and reducing the LOD by pulling in ESC controls approx. 7’. This approach will be applied to multiple areas throughout the corridor. In addition, we plan on eliminating road cross culvert S-15 by routing the runoff to S-16 along the WB roadway and therefore maintaining the existing flow pattern, eliminating permanent and temporary impacts to wetlands that would be created by S-15, and potentially creating wetlands along the WB roadway.

Impacts to WUS/wetlands will be minimized with a maintenance of stream flow design with close placement of the sandbag diversions. For example **Figure 2.4** shows this implementation at Box Culvert Structure S-6.

Figure 2.4 Segment B Reduced Wetland Impacts



Throughout construction, our Environmental Manager will track compliance with environmental commitments and permit conditions. Compliance reporting, dedicated ESC crews, prompt stabilization, and proactive correction of deficiencies will minimize environmental impacts.

D. Approach to Quality Management of the Design



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Commitments to Supporting SHA's Project Goals and Values

The 404 Corridor Safety Constructors Team will fully open four lanes to traffic and achieve Substantial Completion by November 21, 2017, and will reach Final Completion by Memorial Day 2018, two months ahead of the required completion. Our approach to Design Quality Management supports this schedule by:

- Implementing policies, procedures, and lessons learned by our team members on other fast paced design-build projects.
- Facilitating frequent, early communication between design, construction, SHA and stakeholders.
- Minimizing review cycles through use of over-the-shoulder reviews, concurrent reviews, and optimization of the IDQA process.

D. APPROACH TO QUALITY MANAGEMENT OF THE DESIGN

With over 162 years of local experience, our designers have the experience and resources to complete a quality design and achieve the substantial milestone. Pat Martino, PE, DBIA will lead the design quality effort for our Team using tried and true methods developed on past design-build projects. Led by Tony Frascarella, our Independent Design Quality Assurance (IDQA) firm, Century Engineering, brings their 60 years of wide ranging experience, including design-build projects. While the use of an IDQA may change the way that SHA has typically been involved in Design-Build projects, we believe that keeping SHA involved remains critical to achieving Project goals.

Experience Matters

Our Design Team has successfully delivered over 17 design-build projects in MD. Our IDQA firm has performed owner reviews on I-95/Contee Road DB, I-95/SR-1, and US 301.

MEETING THE CHALLENGE – Our approach to design quality management is focused on producing plans that are: compliant with RFP; constructible; permittable; and available for construction in a timely manner according to the project schedule. A primary challenge on this job will be maintaining design quality while meeting the aggressive design and construction schedule. In recognition of this challenge, our approach to design quality management will include:

- **Over-the-shoulder reviews** by our design QC staff, IDQA, SHA, and PRD staff will ensure design solutions are RFP compliant and constructible early in the process, reducing the time required for formal reviews.
- **IDQA, SHA, and PRD staff at task force meetings** to resolve issues on a real-time basis and ensure design concepts are RFP compliant and permittable.
- **A detailed design schedule** that provides ample time for design, reviews, audits, and approvals. By setting an aggressive but achievable design schedule, we can appropriately assign resources to ensure the substantial completion milestone is met.
- **Constructability and Environmental Reviews** integrated within the design and design quality process, ensuring that constructability and environmental/permitting issues are identified and corrected early.

Communication

Our DQCP includes frequent communication between the Designers, Contractors, IDQA, SHA and PRD using over-the-shoulder reviews, task force meetings, and formal reviews.

SHA is a primary client for all of our team members. We have a vested interest in maintaining our high standard of quality that we produce on all of our projects. As with any project, we expect that there will be a learning curve on this Project. We will incorporate lessons learned from our initial submittals into all submittals thereafter.

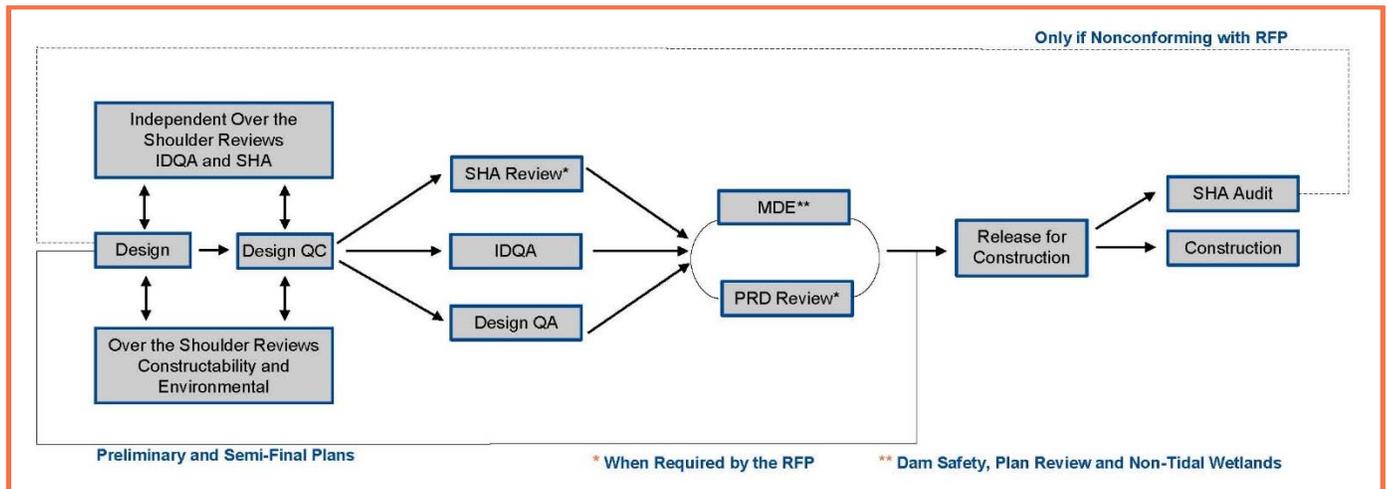
KEY ELEMENTS OF THE DESIGN QUALITY MANAGEMENT PLAN – To ensure that each and every design package released for construction meets these goals, our Design Quality Management Plan (DQMP) will include the following key elements:

- Design Quality Control
- Design Quality Assurance
- IDQA
- Constructability Review
- Environmental Review
- SHA Review
- SHA Audit
- PRD Review
- MDE Review
- DQMP Certifications
- Materials/Working Drawings
- Document Control

SHA involvement will be encouraged throughout:

- Regular Meetings
- Partnering
- Over-the-Shoulder Reviews
- SHA Reviews & Audits
- PRD Reviews
- IDQA Reporting

The following workflow and key element descriptions demonstrate how our DQMP has been optimized to improve efficiency.



Design Quality Control: Integrated into daily work performed by our design staff, our experienced and licensed design personnel will perform a complete check of all design, calculations, plans and specifications including overall concepts, element coordination, and detailed checks. Submissions to PRD will be peer-reviewed by staff familiar with PRD requirements before IDQA review.

Constructability Review: Key construction staff will be co-located with the design team performing over-the-shoulder reviews, making constructability reviews an integral part of the design quality process.

Environmental Review: Specialized in-house staff will use over-the-shoulder reviews to ensure compliance with commitments and permit conditions, as well as to identify and obtain any additional permits.

Design Quality Assurance: Design Quality Assurance will be focused on verifying that all aspects of the DQMP have been followed. If any procedure or the end product is lacking in any manner, DQMP improvements will be implemented to prevent repeat occurrences.

Avoiding Surprises
Unexpected constructability and environmental issues can delay the schedule. By integrating our process in the earliest stages of design, we avoid surprises and delays during construction.

Independent Design Quality Assurance: We understand that our IDQA firm will function in the role of SHA with respect to ensuring conformance with the RFP requirements. We will involve our IDQA firm in the design process from beginning to end, through over-the-shoulder reviews and a dedicated review process. The IDQA firm will:

- Review and approve the DQCP prior to submission to SHA.
- Document all IDQA submissions and reviews.
- Review all design elements for RFP and DQCP compliance.
- Sign, seal and certify that design submittals meet the Contract requirements prior to construction.
- Review and certify that the SWM and ESC submissions meet SHA-PRD requirements prior to submission to PRD.
- Check all working/shop drawings and stamp with approval.
- Review and approve any revisions during construction.
- Update SHA on IDQA activities through weekly reporting.

Maximizing IDQA

The IDQA firm, as an integral part of our Team, has provided input on the plan and schedule development, allowing our Team to maximize efficiency during the design process and start construction earlier.

SHA Review: For elements such as bridge and box culvert designed requiring SHA review, we will provide seven calendar days notification and allow 14 calendar days for SHA review.

Minimizing Review Cycles

We will provide PRD experienced Designers, Peer and IDQA Reviewers to make sure the plans are ready for approval by PRD.

PRD Review: We will provide plans for PRD review that can be approved with minimal comments by engaging PRD at the start of the project; encouraging over-the-shoulder reviews by PRD; inviting PRD to task force and management meetings; using peer-review of PRD design during the design QC phase; and by requiring the IDQA to provide an independent review of all design

before it can be submitted to PRD. Seven calendar day notice and a 14 calendar day review period will be included in the schedule for all PRD reviews.

MDE Review: We recognize that MDE Plan Review, Dam Safety, or Non-Tidal may be required to review elements of the design and are prepared to obtain such approvals directly from MDE.

Design Quality Management Certifications: Before any package can be released for construction, we will ensure that the following certifications are present:

- Designer – Sign, seal and certify that all calculations, plans, specifications and technical documents were prepared in accordance with the DQCP.
- Designer – Sign and seal all calculations, plans, specifications, and technical documents by the Professional Engineer, Landscape Architect, or Licensed Forester as applicable.
- IDQA – Sign, seal and certify that submittals comply with the Contract Documents.

Eliminating Re-Design

We have designed our DQMP to provide multiple checks for contract compliance, ensuring no re-design will be necessary as a result of SHA Audits.

Materials/Working Drawings: Both the Lead Design Firm and IDQA will be required to review, accept and stamp shop/workings drawings before final review is undertaken by SHA. Seven days will be provided for SHA review.

SHA Audit: We recognize that SHA may provide further review of the design submittals after certification by the IDQA and commencement of construction. As required by the RFP, we will provide seven calendar day notification and a 21 calendar day review period for SHA's audit. Our Team will immediately address any concerns, including halting construction if necessary.

2.09.03

SAFETY AND MOBILITY

- A. Plan to Safely Maintain All Traffic During Construction
- B. Incident Management Plan
- C. Plan to Accommodate Safe Access
- D. Approach to Minimize Delay While Maximizing Safety



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A Joint Venture of Wagman Heavy Civil,
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A. Plan to Safely Maintain All Traffic During Construction



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Commitment to Supporting SHA's Project Goals and Values

The 404 Corridor Safety Constructors Team's commitment to safely maintaining traffic and minimizing delays, both during and after construction, is supported by:

- Reducing the duration of construction impacts through early Final Completion by Memorial Day 2018, two months ahead of the required completion.
- Maintaining existing capacity and operations along MD 404 and at intersections until the ultimate lane configurations can be fully and safely implemented.
- Optimizing the pavement section/surface design to reduce construction truck traffic.
- Implementing effective crash prevention strategies such as proper temporary traffic control devices, temporary speed controls, and timely notifications.
- Reducing driver hazards associated with MOT devices and traffic barrier with traversable wet swales ESDv within the roadway clear zone (ATC #4).
- Compressing the construction schedule by leaving the existing right turn acceleration and deceleration lane pavement in place (ATC #5).
- Maintaining existing cross-slopes on resurfaced portions of the road to reduce durations of traffic control to avoid single-lane travel lane reductions (ATC #6).
- Reducing the required cover over rigid pipes (ATC #7) to minimize roadway reconstruction beyond the installation trench and compress the schedule.
- Constructing pipe crossings at night to avoid peak hour traffic impacts.

A. MAINTENANCE OF TRAFFIC

The 404 Corridor Safety Constructors provides a team of local resources with deep experience and understanding of work in the area and the corridor. This understanding is pivotal to safely maintaining traffic while expediting the schedule and reducing construction impacts. Our experience on Maryland's eastern shore for SHA includes 78 projects over the last 10 years, and specifically the Phase IA and Phase IB MD 404 Dualization projects and the US 113 Phase 3 Dualization projects. This depth of experience provides first-hand knowledge and understanding of the challenges associated with designing and constructing MD 404 to a four-lane divided highway.

We are committed to a safe MD 404 that results in no serious injuries, reportable incidents, or fatalities. Our corridor work experience reinforces the knowledge that accident rates increase during the peak usage summer months and MD 404 accident rates exceed the statewide average. As safety for both the traveling public and our work is part of our Team's culture, we will be vigilant in maintaining a zero injury work zone and a design that reduces incidents following construction. Throughout the Project, design and construction staff will work hand-in-hand performing MOT constructability reviews to ensure that implementation of traffic patterns during construction will meet all performance specifications and implement methods to improve traffic operations and/or delays that occur along the corridor.

Implementing Lessons Learned
Phase 1A dualization of MD 404 was completed by our team members without any construction related accidents. Mobility impacts were relegated to lane switches, and confusion was alleviated through face-to-face discussions with local residents and business owners prior to the lane switch, to ensure that the transitions to traffic patterns would be smooth.

MOT PLAN

A comprehensive Transportation Management Plan (TMP) will be compiled at the beginning of the Project, and will include the sequence of construction, operation of the corridor and intersections at each stage, and supporting studies necessary to prove that intersection operations are maintained at existing levels of service (LOS). The phased Maintenance of Traffic (MOT) Plans will be developed indicating all temporary flagging, signs, arrow boards, VMS boards, lighting, traffic signals, barricades, channelization devices, etc. to maintain traffic through the work area. The MOT and Erosion & Sediment Control (ESC) Plans will be coordinated to ensure all design components are included in the respective work areas and sequencing notes.

The 404 Corridor Safety Constructor's Traffic Engineers and Construction Traffic Managers will work closely to ensure the traffic plans reflect construction means and methods and are implemented properly in the field. Traffic will be continuously maintained along MD 404 and connecting side roads at all times. Maximizing work completed during non-peak periods will improve safety and optimize efficiency. Lane closures will be implemented when needed during non-peak periods, but must be approved and may require a flagging operation.

The construction approach utilized will minimize impacts to the motoring public. All lanes of traffic along the connecting state and county roadways will be maintained during staged construction. Traffic will primarily utilize the existing roadways and existing traffic operations will be maintained until the dualization is fully completed. Only two Temporary Crossovers will be utilized to shift traffic from the existing road onto the new and will be constructed in accordance with AASHTO, MUTCD and SHA standards to safely accommodate all vehicle types and traffic traveling within the corridor. We are minimizing the number of lane shifts to provide consistent traffic flow through each work area. The final stage will include the implementation and integration of the new intersections and then the full opening of the MD 404 dualized roadway.

Full-time shoulder closures will be signed, while nominal shoulder widths will be maintained for bicycle compatibility, where feasible. The shoulder closures will have an impact to this facility, which warrant additional analysis to determine the traffic impacts. All existing access points will be maintained and improved early during construction, including consolidation with service roads. Existing light levels will be maintained during construction until the ultimate intersection lighting can be implemented.

The 404 Corridor Safety Constructors Team will coordinate with local stakeholders, including emergency responders, with respect to traffic impacts associated with construction of the Project. In order to minimize disruptions to traffic, our approach will build as much of the roadway widening as possible from the existing road. This includes the dual section of pavement where the new pavement is "offline"; culvert extensions; and "external" SWM facilities. We will coordinate clearance of utilities early to maximize available work space and safety. Culvert extensions will be constructed early in order to prepare for roadwork in future phases.

Concurrent Segmented Construction

Segmenting the Project in three sections gets more shovels in the ground sooner, which implements the safety benefits of the dualization earlier.

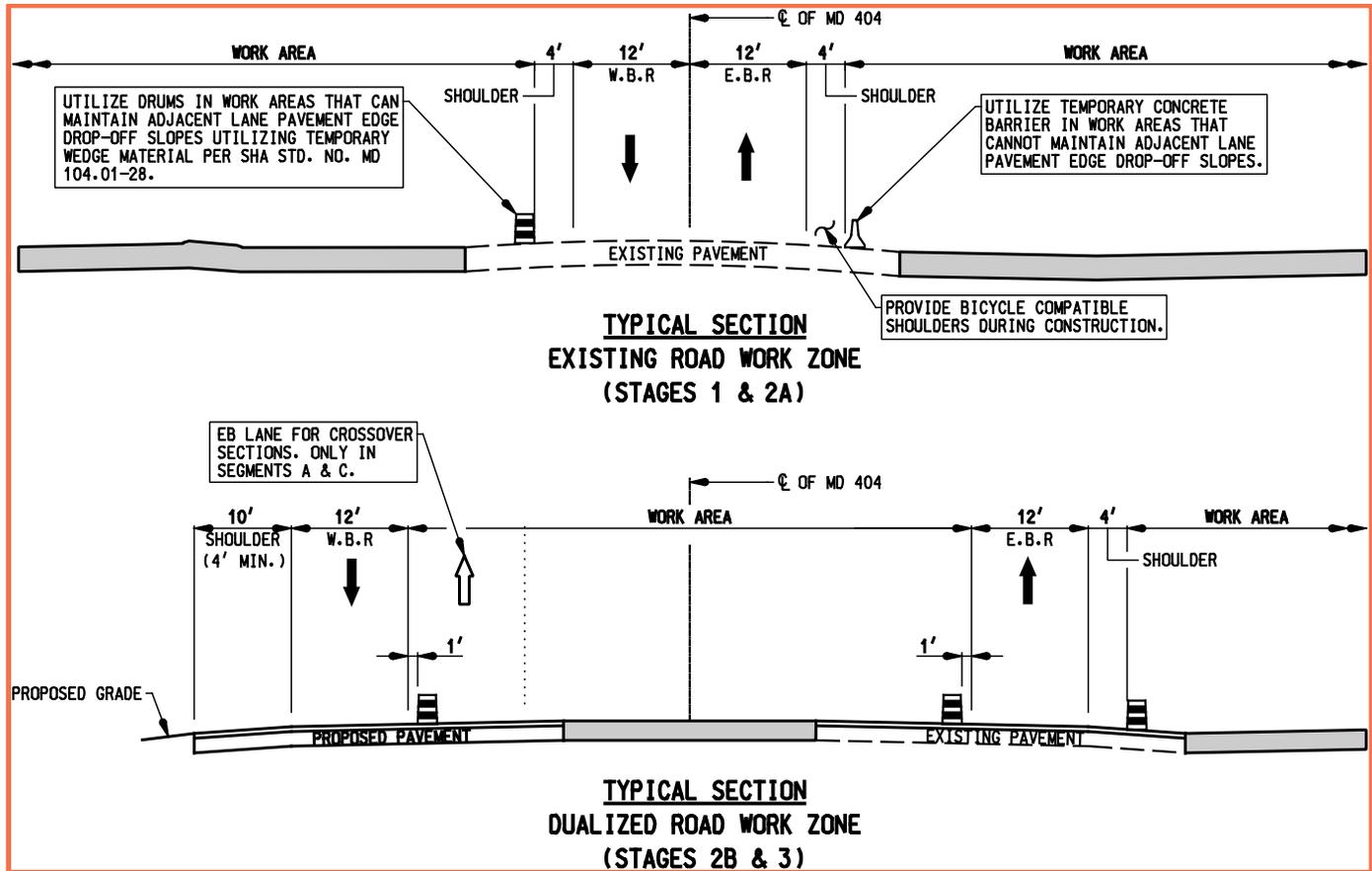
Safely Maintaining Traffic during Construction

Minimizing the number of lane shifts to only one shift in Segments A and C (and no shifts in Segment B) provides a consistent traffic pattern that minimizes safety risks for motorists travelling through the work zone.

MOT NARRATIVE

Construction Sequencing: Given the high visibility of the Project, historic safety considerations, and the limited allowable disturbed areas, the 404 Corridor Safety Constructors has sequenced construction work in three segments that can operate concurrently, in the minimum number stages while providing maximum safety to workers and the traveling public for both contract sections. The multiple stages of construction described below and shown in **Figure 3.1** will be consistent with each segment. This will assist in accelerating critical path utility relocations during rough grading stages, constructing the roadway widening, and completing the Project in the final stage.

Figure 3.1 – MOT Typical Sections



The following general construction sequencing will be followed by each Segment:

Stage 1 – Rough Grading

Traffic utilizes existing two-lane two-way roadway lanes with shoulder widths reduced and intersection configurations maintained. Non-peak night-time lane closures will be utilized as required. Work will be completed from the eastern to western limits, which include:

- Relocation of impacted utilities
- Installation of ESC
- Clearing, grubbing and rough grading of the project area
- Culvert structure, ITS infrastructure and structure installations

Stage 2 – Dualization

Stage 2A: Traffic will primarily continue to utilize the existing roadway network through the project limits with existing traffic movements and patterns maintained. Work will be completed from the eastern to western limits, which include:

- Construction of proposed westbound (northern) dualized MD 404 roadway section, connecting side roads and access roads/driveways
- New northern intersection lighting infrastructure installations

Stage 2B: Once the proposed westbound section of MD 404 is completed, traffic will be transitioned onto the dualized roadway while maintaining one lane in each direction with the eastbound shoulder widths reduced. Work will be completed from the east to west which includes:

- Completing the construction of proposed eastbound (southern) MD 404 roadway section, center median, southern connecting side roads and access roads/driveways, and connections to adjacent Segments.
- New southern intersection lighting installations

Stage 3 - Final

Fully open MD 404 dualized roadways and connecting intersection configurations, and complete the following work:

- Installation of final pavement surface, SWM, landscaping, permanent signing/markings.
- Address punch list items and closeout project.

Each segment have unique construction activities and traffic control challenges to address.

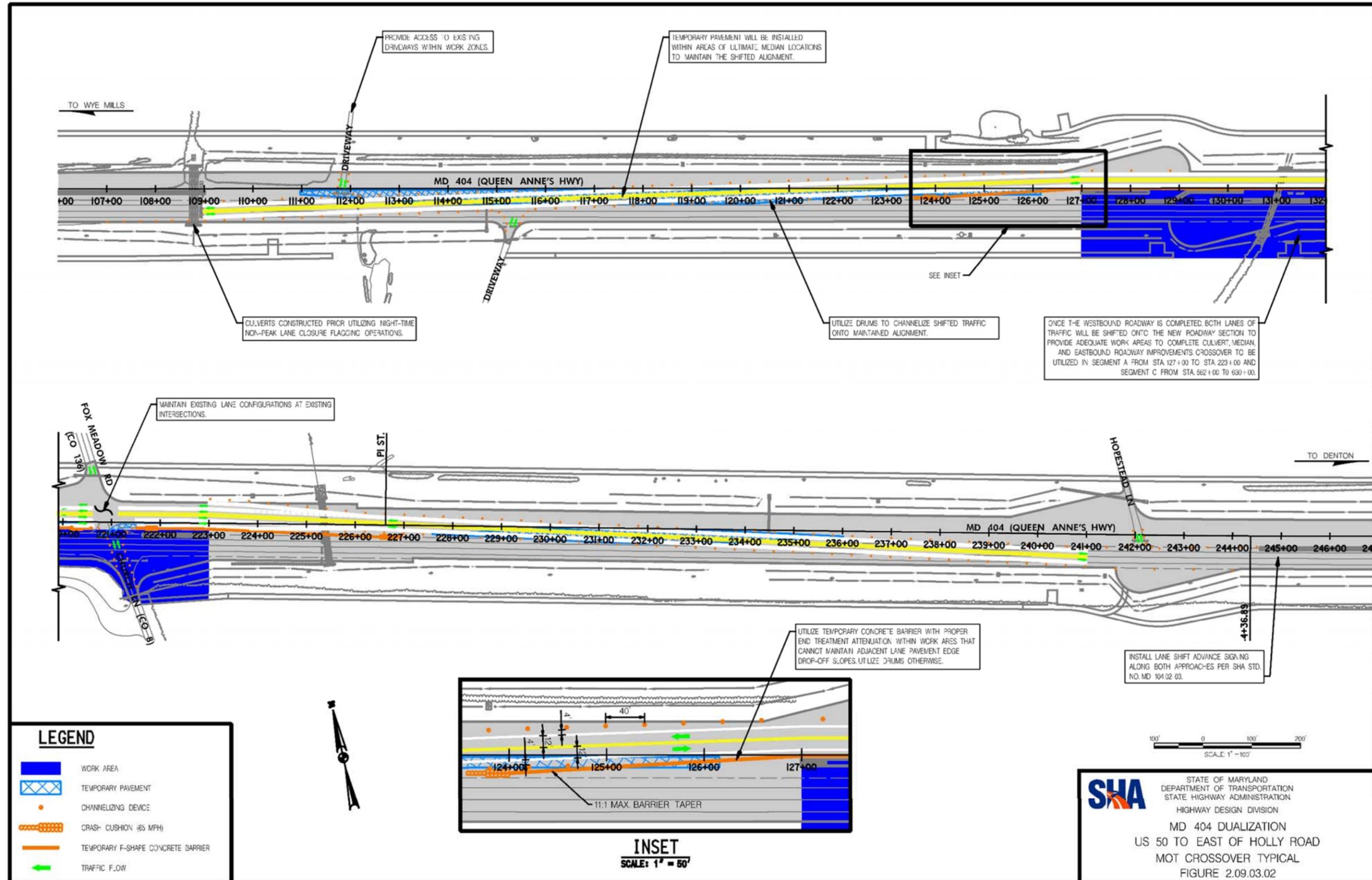
Segments A & B – From US 50 to East of Pinder Road

- All work will require maintaining continuity of traffic between Segments A and B work zones.
- Once the proposed westbound section of MD 404 is completed from approximately Sta. 127+00 to Sta. 223+00 in Segment A, a temporary crossover will be utilized to shift both directions of traffic from the existing road (proposed eastbound section) onto the new westbound roadway as shown in **Figure 3.2** The crossover will be utilized until the western section of Segment A and Segment B can tie into the completed dualization.
- Traffic will then be transitioned onto the dualized roadway while maintaining one lane in each direction to complete medians, roadway tie-ins west of Sta. 127+00, and connections east of Sta. 223+00 to Segment B.
- The final stage will also include modifications to the US 50 signal to accommodate revisions to the westbound MD 404 lane configurations and left-turn phasing.

Segment C - From East of MD 480 to Denton

- Work will be split into two sections, east and west of MD 312. The eastern section will be completed prior to beginning work along the western section.
- Once the proposed westbound section of MD 404 is completed from approximately Sta. 562+00 to the eastern LOW, a temporary crossover will be utilized to shift both directions of traffic from the existing road (proposed eastbound section) onto the new westbound roadway. Similar to Segment A, the crossover will be utilized until the western section can tie into the completed eastern dualization.
- Traffic will be transitioned onto the dualized roadway while maintaining one lane in each direction to complete medians, roadway tie-ins west of Sta. 562+00, and connections to the eastern LOW.

Figure 3.2 Crossover Plan



DETOURS AND CLOSURES

Detours are not anticipated for construction; however possible detour routes may be needed in case of an emergency that would cause MD 404 to be shut down during construction. The TMP will provide details of possible emergency detours that will require coordination between contractors and emergency personnel if a detour is implemented, and access to the connecting State routes will be maintained at all times.

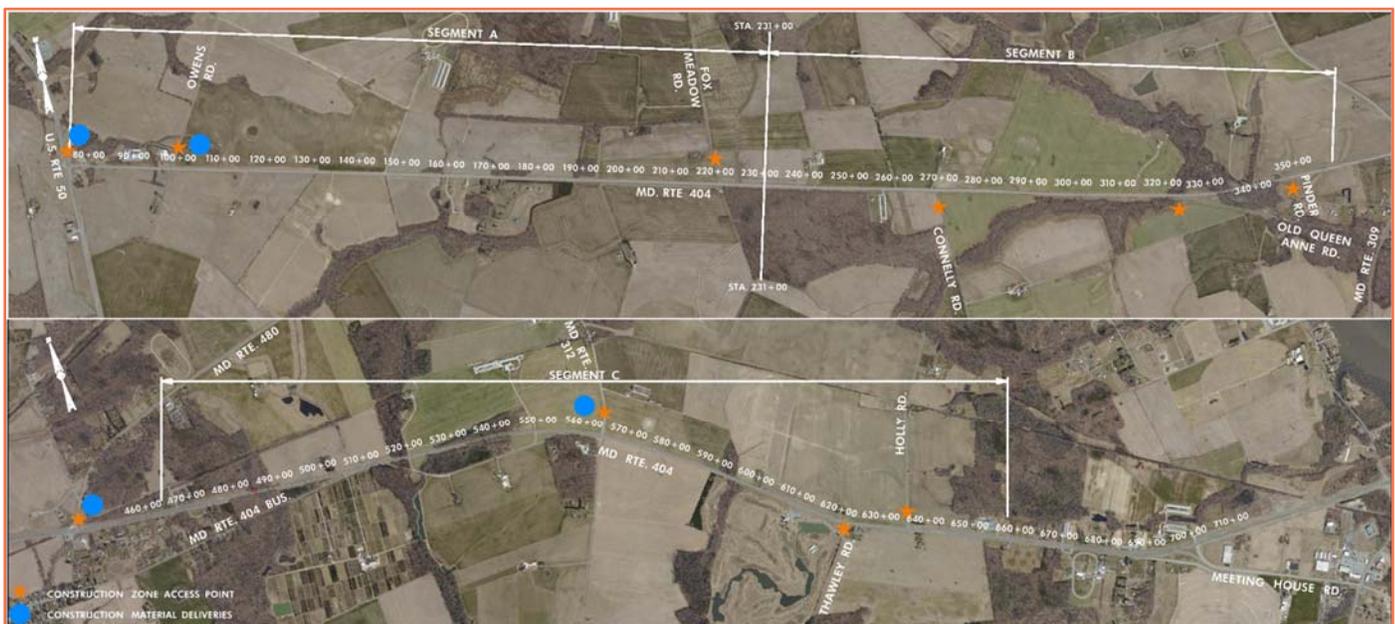
Lane closures utilizing flagging operations are anticipated during construction while traffic is maintained along the existing roadway. These lane closures will be implemented during non-peak, night-time work periods in order to minimize user delays. We will coordinate the approval and duration of the lane closures with SHA prior to implementation.

ACCESS AND MOBILITY PLAN

Construction Access and Staging: Construction entrances will be developed to ensure safe access and egress to/from all work areas, staging areas, and lay down yards. When possible, hauling vehicles will utilize the newly constructed roadway within the work area to avoid impacting traffic. Staging areas will be located within the work zone in the existing right-of-way limits. These areas will be located so that impact to farm access and utility easements is completely avoided. A construction yard will be established in close proximity to the Project site to minimize the need for haul material and equipment on public roads. Designated personnel will coordinate with suppliers for material deliveries to ensure drivers are aware of the exact delivery points. **Figure 3.3** identifies anticipated access points to each segment.

Haul Routes: The use of local roads for the hauling of materials within the limits of the project is unavoidable. On-site haul routes will be utilized to reduce the impact of construction traffic on the local roadways. Flagging operations will be utilized, as needed, to allow ingress and egress from the work areas by construction equipment at the construction entrances. Not all construction entrances may be utilized concurrently, and the haul routes may establish any combination of entrances to allow access to the needed work areas throughout the project.

Figure 3.3 – Construction Access Location Plan



B.

Incident Management Plan



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Commitment to Supporting SHA's Project Goals and Values

The 404 Corridor Safety Constructors Team is committed to safely maintaining traffic and minimizing delays, both during and after construction. Our approach to construction and incident management supports these goals by:

- Reducing the duration of construction impacts through early Final Completion by Memorial Day 2018, two months ahead of the required completion.
- Providing a project safety culture focused on incident prevention.
- Implementing effective crash prevention strategies through use of proper temporary traffic control devices, temporary speed controls, and timely notifications that reduce the likelihood of crash occurrences.
- Utilizing well-coordinated incident response and notification protocols with SHA and first response personnel.

B. INCIDENT MANAGEMENT PLAN

The Project's construction work zone will further constrain an already narrow MD 404 footprint; and coupled with high traffic volumes, especially during the summertime beach vacation months, the likelihood of traffic incidents tend to be more prevalent. The 404 Corridor Safety Constructors compiled a team with strong reputations for safety, and have a history of minimal work zone related incidents in this region of Maryland. We have effectively utilized Incident Management Plans as a tool to prevent incidents and to ensure quick responses to minimize delays if an incident occurs.

INCIDENT MANAGEMENT PLAN

The following comprehensive Incident Management Plan will be compiled as part of the all-encompassing Transportation Management Plan. It is intended to help reduce the duration and impacts of incidents and improve safety of motorists, crash victims, and incident responders. The plan will not supersede any incident management plans currently implemented by the State Police and/or Local Authorities/Municipalities.

Crash Prevention Strategies: The 404 Corridor Safety Constructors will plan and execute all work which has a direct or indirect impact to the traveling public with practices to reduce the likelihood of the occurrence of a crash. Additionally, traffic restriction implementation and removal will be performed in such a manner so as to proceed with the flow of traffic and provide the greatest visual presence to the traveling public. To the greatest extent possible, the 404 Corridor Safety Constructors will use advance notification of upcoming traffic restrictions and reconfigurations and strategic placement of State Troopers, and PCMS's to bring attention to abnormal traveling conditions.

Crash Prevention Practices:

- Utilize temporary traffic control (TTC) devices per SHA standards
- Protect work zones with proper staging, offsets to TTC, and delineation
- Maintain lighting during construction
- Continuously inspect MOT equipment condition and set-ups
- Provide adequate advanced signing and notification of work zones
- Close lanes only during non-peak traffic periods and seasons
- Utilize Drone Radars and Speed Display Trailers
- Public Outreach campaign

Incident Response and Notification: Incident detection will be identified from emergency 911 calls, Traffic Manager’s observations, MOT and construction personnel, and police patrols. The proposed DMS and CCTV cameras installed within the project limits will be implemented early in construction, and will be used in conjunction with the existing local CHART traffic cameras to monitor any incidents. The 404 Corridor Safety Constructors will assist in incident management by providing assistance to responding SHA/law enforcement personnel to implement closures, assist removing debris blocking the roadway, and repair/replace displaced/damaged drums and concrete barrier as necessary.

In the event of a vehicular crash, the 404 Corridor Safety Constructors will not stop active traffic or move vehicles unless directed by law enforcement personnel, will not participate in the cleanup of hazmats, will only provide First Aid to injured persons by a properly trained and certified in first aid person at his/her discretion.

Local Emergency Responders:
Fire Companies: Denton, Queen Anne/Hillsboro, Ridgely, Cordova
State & Local Police: Denton, Easton, Centreville

Reporting Requirements: In the event of an on-site traffic incident, the 404 Corridor Safety Constructors will notify SHA if the incident was a result of an error by our Team, with the actions by our Team were taken to correct the problem, who is responsible to ensure all problems have been properly corrected, and the total time of the disruption. All information will be documented on the SHA Work Zone Accident/Incident Report Form.

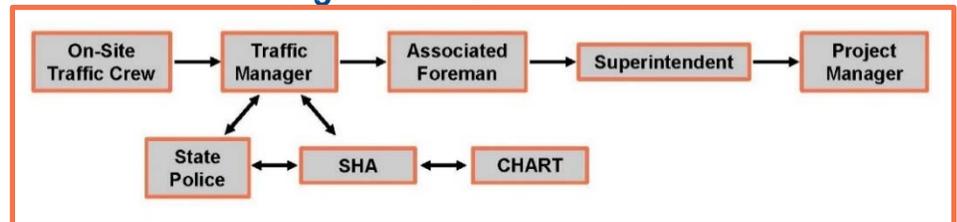
IMPLEMENTATION OF NOTIFICATIONS

The 404 Corridor Safety Constructors will work with SHA throughout the Project to ensure that SHA has appropriate time to provide input or concerns about the schedule of traffic restrictions. This coordination should alleviate the potential needs for contingency operations during traffic restrictions. Regardless of planning, if events occur which are beyond the control of the parties involved, they will react appropriately.

We will develop a Public Outreach (PO) campaign as a means to communicate with highway customers, the general public, local communities, appropriate public entities, and other identified stakeholders about the Project and its implications for safety and mobility. The goals of the PO campaign include alerting the public about potential impacts and available means to avoid them, improving public awareness and understanding of a project, modifying travel habits to reduce traffic congestion during the Project, and promoting Project support.

Decision Tree: The following decision tree in **Figure 3.4** will be implemented in the process of deciding the appropriate actions during an event that may require a modification/ removal of a traffic restriction.

Figure 3.4 – Decision Tree



Telephone Trees: A telephone tree of appropriate emergency response agencies will be established and managed for immediate response in the event of an emergency. The tree shall be divided into areas of expertise (Construction, Traffic and Public Relations) so the proper people are contacted for a specific emergency situation.

C. Plan to Accommodate Safe Access



404 Corridor Safety Constructors
A Joint Venture of Wagman Heavy Civil,
David A. Bramble, and Allan Myers

Commitment to Supporting SHA's Project Goals and Values

The 404 Corridor Safety Constructors Team's is committed to providing safe access for all properties along the corridor, both during and after construction, through:

- Accommodating safe and efficient access to properties and connecting side roads for all types of users, including farm equipment.
- Providing a logical and systematic construction implementation which maintains access for all properties.
- Maintaining access for all driveways and connecting side roads with safe sight lines, properly channelized passages, and temporary access points if necessary.
- Implementing a project safety culture which ensures safe passage and access within and through the work zones for all roadway users including motor vehicles, truck traffic, farm equipment, pedestrians and bicycles.
- Communicating construction impacts through door-to-door notifications.

C. PLAN TO ACCOMMODATE SAFE ACCESS

The 404 Corridor Safety Constructors shares the same goals as SHA, to provide safe access to and from MD 404 during and after construction. Our local Team is very familiar with Eastern Shore and MD 404 farm access issues. Our Traffic Control Plans (TCP) will address safe access during construction and our design execution will address safety per SHA, AASHTO and MUTCD criteria when the roadway is completed and in full operation.

ACCESS DURING CONSTRUCTION – Our Transportation Management Plan (TMP) and TCP will establish the basis of how safe access will be provided to all properties during construction. Elements of the plan to assure safe access during construction include:

Notification and Communication with Property Owners:

We will establish lines of communication with property owners and first responders as one of the first orders of business. These communications will help identify specific access concerns of the property owners, which may include types and limitations of farming equipment requiring access, schedules for access, maintaining access to mailboxes and delivery vehicles, and maintaining access to first responders/emergency equipment. Notifications will include mailbox notices, direct communication with property owners, web notices and other means outlined in **Section 2.09.04 Public Outreach Plan** to keep property owners notified and informed.

Door-to-Door Communication

Our Team's coordination strategies will include door-to-door notifications for each impacted property owner to convey construction related information and address concerns and accommodate access needs.

Advance Notification Requirements and Lane Closure Restrictions: We will fully comply with all advance notification requirements as well as Section 104.01 lane closure restrictions. Full compliance with these requirements is important in communication with property owners so that abrupt changes do not create unsafe access issues. No lane closures will occur during peak summer traffic, May 15 – September 15, noon Friday to noon Monday, when high traffic volumes create unsafe access conditions and customer satisfaction/mobility issues for property owners.

Use of Variable Message Signs: At least seven days before a roadway configuration changes and pattern change, we will provide variable message signs throughout the Project to notify motorists and property owners of pending roadway changes.

Address Physical Access to Properties: Access to abutting properties will be maintained at all times. Access may be provided using temporary HMA or GAB driveways/roads. Proposed Access Roads which provide safer access to MD 404 will be constructed and implemented as early as possible during construction. J-turns and associated auxiliary lanes will also be constructed as early as possible to allow for safe ‘u-turn’ movements as the divided roadway construction proceeds. Other important components for providing safe property and roadway access during the construction include:



Figure 3.5 During farm access reconstruction, temporary access will be provided

- Grading operations will avoid impacts to sight distance at property access points.
- Equipment will not be parked to block site distance.
- Sight distance for temporary access points will be checked and mitigated.
- Temporary MUTCD-compliant signage will be provided near property access points so that roadway users understand and anticipate construction impacts.

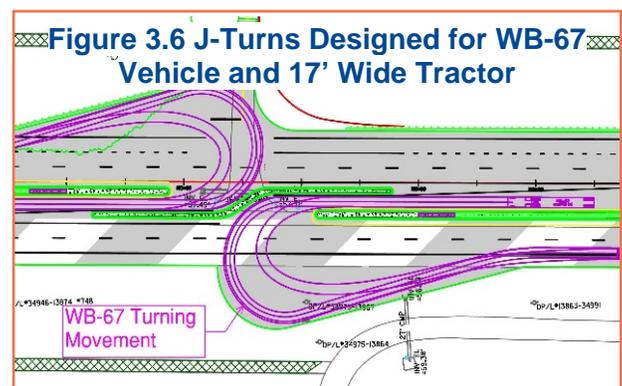
Access for Farm Equipment: During construction, we will closely coordinate with adjacent farm operators to determine access points, needs and schedules for farm equipment accessing the roadway. Wherever possible, the TCP will accommodate turning movements and widths of farm equipment. Other options may include providing escort vehicles for wide-load equipment through the construction zone to the point of farm field access. Additionally, we will maintain current farm field access points to ensure equipment can easily access farm fields. (See **Figure 3.5**)

ACCESS POST CONSTRUCTION – SHA has developed a design for MD 404 to improve safety for the roadway users and property owners accessing the roadway. We will design and construct these safety improvements in accordance with AASHTO and SHA requirements including:

- J-turns to allow for safe “u-turn” movements.
- Auxiliary left turn, right turn, decel/accel lanes and queueing assessments.
- Maryland “T” intersections which provide accel/decel lanes for safer merging movements.
- Access Roads/Service Driveways with compliant accel/decel, sight distance and geometry.
- J-turns, Maryland “T” and intersection geometry to accommodate a WB-67 vehicle and a farm tractor with a 17-foot outside wheel base.
- Signage, pavement markings, traffic signals, lighting and proposed ITS features.

Access for Farm Equipment Post Construction: Farm equipment accessing the roadway in this rural community can present safety issues. Our Team will incorporate the following features into the Project to help improve safety for farm equipment accessing the roadway:

- Two 12-foot lanes, 10-foot shoulder, and 8-foot safety grading, allowing farm equipment to utilize the shoulder and safety grading, and part of one travel lane to move along the roadway.
- J-turns designed to accommodate a WB-67 and tractor with 17’ wheelbase turning movement (see **Figure 3.6**).
- Incorporate other safety features including MUTCD signage based on farm access locations along the roadway.



D. Approach to Minimize Delay While Maximizing Safety



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David A. Bramble, and Allan Myers

Commitment to Supporting SHA’s Project Goals and Values

The 404 Corridor Safety Constructors Team is construction approach supports minimizing delays while maximizing safety, both during and after construction, through:

- Delivering a properly designed roadway that uses innovative intersection controls, auxiliary lanes, and enhanced/consolidated driveways.
- Phasing implementation of the proposed intersection controls to bring the safety and operational benefits to the traveling public sooner.

D. APPROACH TO MINIMIZING DELAY WHILE MAXIMIZING SAFETY

Our Team will deliver on safety to minimize operational impacts through the travel way, roadside, and temporary work zone. Our experienced designers and constructors are familiar with the means and methods to achieve a safe project. During design, we will progress the RFP design and establish final road alignments, superelevation criteria, intersection sight distances, accel/decel lengths, and roadside clear zones to exceed AASHTO and/or SHA criteria minimums. Given the corridor crash history and farm vehicles operating at varying speeds, additional design considerations include:

- Reviewing crash history to identify trends/challenges during MOT and permanent conditions
- Incorporating design lessons learned for J-turns and MD “T” intersections from similar projects
- Meeting with community organizations to establish dialogue
- Meeting with farmers to understand their access needs

As summarized in **Table 3.1**, there are 13 existing intersections and 7 new J-turn intersections through the Project limits. The existing stop-controlled intersections will be converted to a MD “T” or limited left-turn configurations, with J-Turn intersections adjacent to the existing intersections to accommodate U-Turn movements. Existing left-turn

Table 3.1 Intersections Within the Project

MD 404 Intersection	Existing Control	Proposed Control	Implementation Phasing Sequence
Segment A			
US 50	Signalized	Signal Modifications	Modifications during Final Stage
Owens Rd/ Newtown Rd	Two-way Stop Control	MD T	Opened after Dulin Rd completed
J-Turn 1	None	EB & WB J-Turns	Completed first
Dulin Rd	One-way Stop Control	MD T w/ WB J-Turn	Opened after Fox Meadow Rd/ Church Ln completed
Willoughby Cannery Rd	One-way Stop Control	Limited Int. Left Turns w/ EB & WB J-Turns	Opened after J-Turn 1 completed
Fox Meadow Rd/ Church Ln	Two-way Stop Control	Limited Int. Left Turns w/ EB & WB J-Turns	Opened after J-Turn 2 completed
Segment B			
J-Turn 2/ Hopstead Ln	Driveway	Driveway w/ EB & WB J-Turns	Opened after Willoughby Canner Rd completed
Connelly Rd/ Pemberton Farm Ln	One-way Stop Control/ Driveway	MD T & Driveway w/ EB & WB J-Turns	Opened after Old Queen Anne Rd completed
J-Turn 3	None	EB & WB J-Turns	Completed first
Old Queen Anne Rd	One-way Stop Control	Right-In Right-out	Opened once J-Turn 3 & 4 completed
J-Turn 4	None	EB J-Turn	Completed first
Segment C			
Hillsboro Rd	One-way Stop Control	Limited Int. Left Turns w/ EB J-Turn	Opened once J-Turn 5 & 7 completed
MD 485 W	One-way Stop Control	Limited Int. Left Turns w/ WB J-Turn	Opened once J-Turn 6 completed
MD 485 E	One-way Stop Control	Limited Int. Left Turns w/ EB & WB J-Turns	Opened once J-Turn 5 & 7 completed
MD 312/ Log Cabin Rd	Two-way Stop Control	Limited Int. Left Turns	Opened after Holly Rd completed
J-Turn 5	None	EB J-Turn	Completed first
J-Turn 6	None	WB J-Turn	Opened after MD 485 E completed
J-Turn 7	None	EB J-Turn	Completed first
Thawley Rd	One-way Stop Control	Right-In Right-out	Completed first
Holly Rd	One-way Stop Control	Limited Int. Left Turn w/ EB J-Turn	Opened after MD 485 W completed

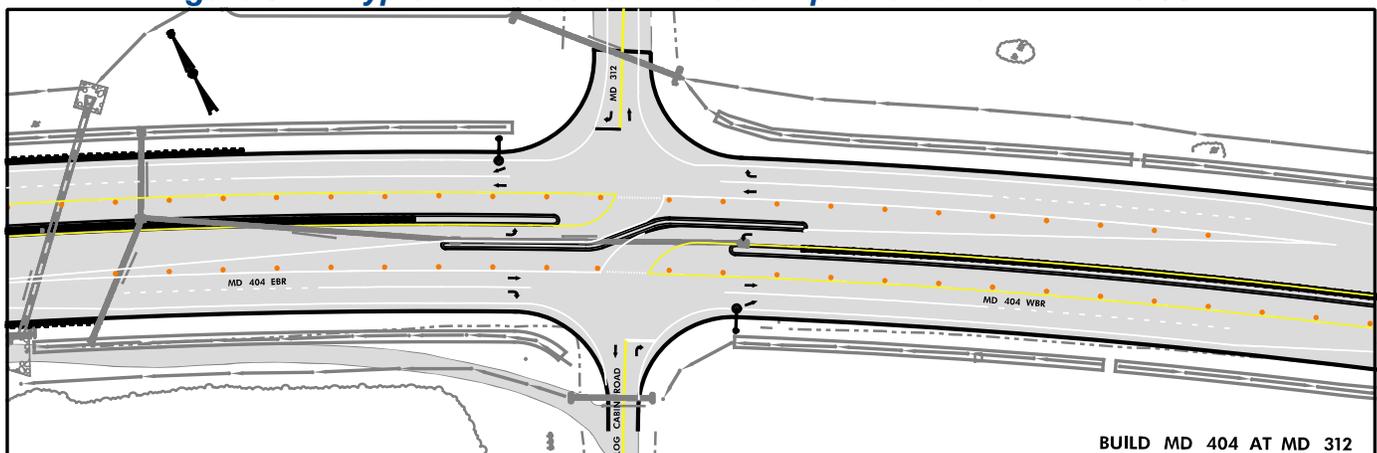
movements will be limited, requiring right-turns and merging movements to improve intersection operations and safety. The proposed intersection controls will be implemented once each intersection is built and all means of access is accommodated during construction. Left-turn movements are ready to be restricted once J-Turn intersections are open and can accommodate U-turn movements. Implementation of new intersection controls will be phased to implement improvements early and limit waiting for the final corridor completion.

Safety Considerations: The corridor has a history of severe crashes from rear-end, angle, and opposite direction head-on collisions. The dualization has proven to be effective in mitigating head-on collisions, but have introduced new safety concerns at intersections. Severe right angle collisions can occur with motorists at stop controlled intersections having to cross now two sections of high-speed roadway, which requires yielding within the wide medians. Introducing unconventional intersection geometries such as Maryland “T”s and J-turns have mitigated these intersection safety concerns. Eliminating the ability to cross both directions of MD 404 and providing protection for side-street left-turning traffic merging onto mainline reduces the number of conflict points. These intersections provide better refuge for larger vehicles/ farm equipment within the median. Consolidation of driveways and restricting left-turn movement to/from driveways will also reduce the likelihood of crashes at these access points.

Operational Considerations: MD 404 experiences traffic congestion caused by high seasonal peaks associated with summer resort traffic, where the existing two-lane sections create bottlenecks. Introducing the unconventional intersection geometries will improve side street operations by reducing delay through eliminating and protecting left-turn movements to/from the side street approaches. Installing loons at the J-turns and some intersection locations provide additional room to accommodate U-turn movements by larger trucks/ farm equipment, thus reducing delay from waiting for these negotiated slower movements.

Our Team will maintain existing corridor and intersection operations during construction to the maximum extent possible, and will maintain at least one lane in each direction along MD 404. As shown in **Figure 3.7**, the new intersection controls will be initially implemented once ready with one through lane in each direction. This allows room to continue work once the new controls are “on-line” and allow time for users to acclimate to the new configuration. The interim operations will still exceed existing conditions with just one lane each direction.

Figure 3.7 – Typical Intersection Phased Implementation at MD 404/312



2.09.04

CUSTOMER SATISFACTION

- A. Public Outreach Plan
- B. Coordination With Property Owners



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A. Public Outreach Plan



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Commitment to Supporting SHA's Project Goals and Values

The 404 Corridor Safety Construction Team's approach to ensuring the satisfaction of the project stakeholders during and after construction includes:

- Partnering with SHA to provide timely information, support, and assistance with community participation and interaction activities throughout design and construction.
- Supporting a flexible Public Outreach Plan that is responsive to changing needs and conditions, including the increase in traffic during the summer months.
- Maintaining a database of individuals and groups impacted by the Project as a resource for communicating with stakeholders.
- Ensuring transparent, two-way communication through stakeholders meetings, webpage and email updates, media and print notifications, and a project hotline.
- Utilizing web surveys to gauge public perception of the Project, adjusting the public outreach plan to address challenges, and promptly resolving concerns
- Tailoring communication strategies to stakeholder groups and providing proactive notification of anticipated impacts

A. PUBLIC OUTREACH PLAN

PUBLIC OUTREACH PLAN OVERVIEW – The widening of the MD 404 corridor is a top roadway safety priority for Queen Anne's, Caroline and Talbot counties. The wider roadway will improve safety and operations and reduce traffic congestion caused by high seasonal peaks associated with summer resort traffic. The Public Outreach Plan for this Project provides a framework to and a variety of mechanisms for stakeholders and special interests groups to receive information about this critically important improvements project. Stakeholders include:

- Adjacent Property owners and tenants within the roadway corridor
- Businesses including Delmarva Poultry Industry, 84 Lumber, Michael Sherwood Trucking, Queen Anne Shell, Atlantic Tractor, Royal Farms, Ridgely Auto Sales, Tuckahoe Animal Clinic, and Wye Nursey
- Local government and elected officials in Queen Anne's, Talbot and Caroline Counties
- Interest groups such as C-TEAM (Citizens for Transportation Emergency Action for Maryland)
- Media representatives for Project updates and traffic impacts/lane closures
- Public service providers (schools, EMS, Police, Fire, USPS)
- Seasonal travelers (during construction)

PUBLIC OUTREACH GOAL – The Public Outreach Plan establishes and maintains open lines of communication with residents, farmers, tenants, and businesses in the immediate area of the work site. Our Team will partner with SHA to provide timely information, support and assistance with community participation and interaction activities during the development of the design and throughout construction of the Project. Construction inconveniences will be minimized and ongoing information will be provided to the traveling public about travel impacts.

A key element of the public outreach program is the preparation and distribution of project information to the public. The 404 Corridor Safety Constructors Team will share the responsibility for the Public Outreach program by:

1. Committing to significant assistance for community participation and interaction activities;
2. Providing a Public Relations Coordinator;
3. Participating in meetings with individual land owners, local officials, and community groups and public meetings;
4. Providing a good faith effort in addressing public inquiries and comments;
5. Facilitating notifications to the public and surrounding community;
6. Maintaining a consistent system for documenting all contact with stakeholders; and
7. Assisting with public forums.

The Public Outreach Plan is designed to be flexible and responsive to the changing needs and conditions of the Project. For example, due to the large increase in traffic during the summer months and increased accident frequency, our Team will place special emphasis on the plan execution and traffic safety to reduce or eliminate the increase in rear end and angle type collisions that typically occur on MD 404 during this time.

The Public Outreach Coordinator will:

- Research, write and draft news releases, fact sheets, traffic alerts, briefing memos, web content, social media content, newsletters, brochures and other collateral materials that will be submitted to SHA for approval and use;
- Provide clips of media coverage for inclusion in SHA's daily report;
- Distribute construction updates and updated project timelines through applicable channels with SHA oversight;
- Draft responses to correspondence and other inquiries, including Customer Care Management System (CCMS) requirements;
- Assist with website content management;
- Facilitate and coordinate photography;
- Coordinate and participate in community and stakeholder events;
- Implement and coordinate stakeholder/public meetings;
- Develop and manage distributions for collateral materials; and,
- Research inquiries from the public and develop responses for SHA distribution.

Experienced Public Outreach Team

PR Manager, Shannon Moody and Public Outreach Coordinator, Linda Moreland, will support SHA by managing the day-to-day public outreach activities for the Project. Their experience includes public outreach services for numerous design/build projects including: the Intercounty Connector/MD 200, I-95 at Contee Road Interchange, US 113 Dualization, and I-95 Express Toll Lanes.

MAJOR STAKEHOLDER OUTREACH – The 404 Corridor Safety Constructors Team will maintain a database of individuals and groups impacted by the Project. The database will include contact information such as phone, address and e-mail information. This database will form the foundation for the documentation of all contacts with business owners, residents, media and property owners through design and construction. Early during the design phase, our Team will meet with the major stakeholders to share designs and associated impacts in order to collect comments and concerns. We will make a good faith effort to address any concerns the public may have, and take under consideration any suggestions or wishes they express if those suggestions are reasonable in regard to cost, time, and construction effort. All questions, comments, and/or complaints will be referred to SHA within 4 business hours. Our Team will maintain a log of all public comments/ questions and include the person's address, phone number and/or e-mail.

An electronic copy of all public contact records will be provided to SHA by the 1st of each month, including all contacts made prior to the 25th of the previous month. When questions or concerns



are brought up, in coordination with SHA they will be responded to either in person or by telephone as soon as possible. Written documentation will be included in the Project Field books and in the form of follow-up meeting minutes and correspondence, including e-mails and telephone logs. This database will be continually updated and maintained and used as a resource for the Team when communicating with stakeholders.

SHA will be the lead on Public Outreach activities with active support provided by our Team, to include necessary project information/materials and adequate staff support/representation. Unless otherwise directed, our team members will not act as spokesman for the Project. If requested by SHA, our Design-Build Project Manager, Anthony Bednarik, will serve as spokesperson for the Project for technical and safety issues with certain audiences.

The 404 Corridor Safety Constructors Team prioritizes customer satisfaction. In this case the customers are roadway users, project neighbors, farmers, and the greater community. Our Public Outreach Plan will make use of many tools to keep the public informed about the Project. However, the major components of the plan are minimizing impacts and keeping stakeholders and the affected greater community informed about the Project. We will work closely with the SHA to ensure a coordinated effort is in place to address public information. Our plan to minimize construction impacts includes the approached highlighted in **Table 4.1**:

Table 4.1 – Plan to Minimize Construction Impacts

Traffic Management Plan and MOT	Minimize traffic delays to 5 minutes or less.
Summertime Traffic Impacts	Specific plan to address the increased traffic during the summer months.
Property and Business Owner and Stakeholder Coordination	Early and frequent owner notification. Temporary access or phased construction to maintain access. Maintain farm access.
Advance Notice for Traffic Pattern Changes	Advance notice for all changes in access or traffic patterns using advanced signage, message signs.
Emergency Services	Keep volunteer fire companies, first responders, State and local police informed on the progress.
Safety	Our #1 Priority and goal for our MOT plans.

Our Team will make use of communication opportunities and venues to keep the roadway users, adjacent property owners and greater community informed on the progress and potential project impacts. Communication will be done in complete coordination with the SHA to ensure a consistent message. PR Manager, Shannon Moody, will assist with developing communication for public dissemination. We anticipating utilizing various outreach tools to keep the public fully informed on how the project may affect them, including the following:

- Press releases to local newspapers, radio, TV stations
- Informational website (hosted by SHA)
- Social media – Facebook, Twitter
- SHA Chart
- Project information mailers
- Stakeholder meetings
- Local ‘bulletin board’ notices
- Variable Message Signs
- Develop graphics, animations, content for SHA MD 404 website
- Hosting community input meetings
- Fixed signage

MODES OF COMMUNICATION – Fully coordinated with SHA, our Team will implement the following tools to ensure transparent, two-way communications with major Project stakeholders:

- *Pardon Our Dust meeting* – prior to the start of construction, our Team, in coordination with SHA, will host a “Pardon Our Dust” public meeting. This meeting provides an opportunity for all interested parties to review the final project design, ask questions, and voice concerns.
- *Stakeholder meetings* – Multiple stakeholder meetings will be held through pre-construction and construction to discuss access issues, project schedule and progress, lane closures, and other construction impacts. These meetings will include one-on-ones with businesses and property owners, such as farmers, to address access challenges, formal “Pardon Our Dust” meetings prior to construction activities, and presentations to local stakeholder groups.
- *Web page and “Road Ready” e-brochure* – Our Team will provide timely and comprehensive content for the SHA MD 404 Project website, www.MD404project.com, and the “Road Ready” e-brochure regarding project schedule, construction impacts and project progress. The Project hotline and email address will be provided here.
- *Media* – Our Team will provide timely and comprehensive content to the SHA Communications Team for response to inquiries and to support media outreach activities.
- *Public notifications* – News releases, fact sheets, traffic alerts, construction updates, utility shutdowns/shutoffs, and project timelines will be provided to SHA for stakeholder distribution. In addition, signs will be provided at the start and end of the Project, at intersections with highways, and at the project office with pertinent Team contact information. These signs will identify the SHA official logo, the Project name, contact info and the Project website URL.
- *Collateral* – Fliers, postcards, door hangers, etc. may be created, in compliance with SHA, to support the public outreach efforts.
- *E-mail updates* – A stakeholder database will be established by our Team. Regular Project updates will be e-mailed to this stakeholder list outlining the Project status and upcoming activities. A project-specific email address will be publicized for public inquiries.
- *Project hotline* – Our Team will establish a project hotline telephone number for the public to relay questions and concerns. We will maintain a log of calls made to the number including date, time, name of caller, reason for call, caller’s address, phone number and e-mail. The logs will be provided to the SHA.
- *Emergency response telephone tree* - Appropriate emergency response agencies will be included on the telephone tree for immediate emergency response. The tree will be divided into areas of expertise so the proper people are called for a specific emergency situation.

PROJECT PROGRESS UPDATES – The 404 Corridor Safety Constructors Team will provide SHA with a monthly report of outreach activities and project progress information. This monthly report will be delivered by the 1st of each month for activities and progress made prior to the 25th of the previous month. This monthly report will include at progress photos that can be used by SHA and our Team for the project website, newsletters, and other materials. The monthly report will also include a contact record for all public contacts that month including media*, business owners, property owners, and/or motorists. Any media coverage from that given month will also be included. Project milestones and construction progress will be included in the monthly report for use in public information distribution. We understand that SHA will handle all media relations efforts, and will provide timely information for use in responding to inquiries.

SATISFACTION DURING AND AFTER CONSTRUCTION – The 404 Corridor Safety Constructors Team will post a survey on the project website at least once during construction and again prior to project delivery to gauge public perception of the Project construction. This feedback will be important in tweaking the public outreach plan.

B.

Coordination with Property Owners



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B. COORDINATION PLAN

The 404 Corridor Safety Constructors Team will develop and deliver the Project in a manner consistent with building and maintaining effective, respectful relationships with all property owners along the corridor. These transparent relationships will be a cornerstone in the foundation of the overall success of the Project. Our Team understands the grassroots nature of this communication and coordination, and the diverse means and methods to reach these valued stakeholders. One of the key messages for local stakeholders is that access will be maintained for farmers to access areas of their farmland throughout construction. We will work with the local farming community to coordinate this access.

COORDINATION WITH PROPERTY OWNERS – The following communication strategies (Table 4.2) will be used as a baseline plan for communicating to other property owners directly affected and those property owners adjacent to the Project:

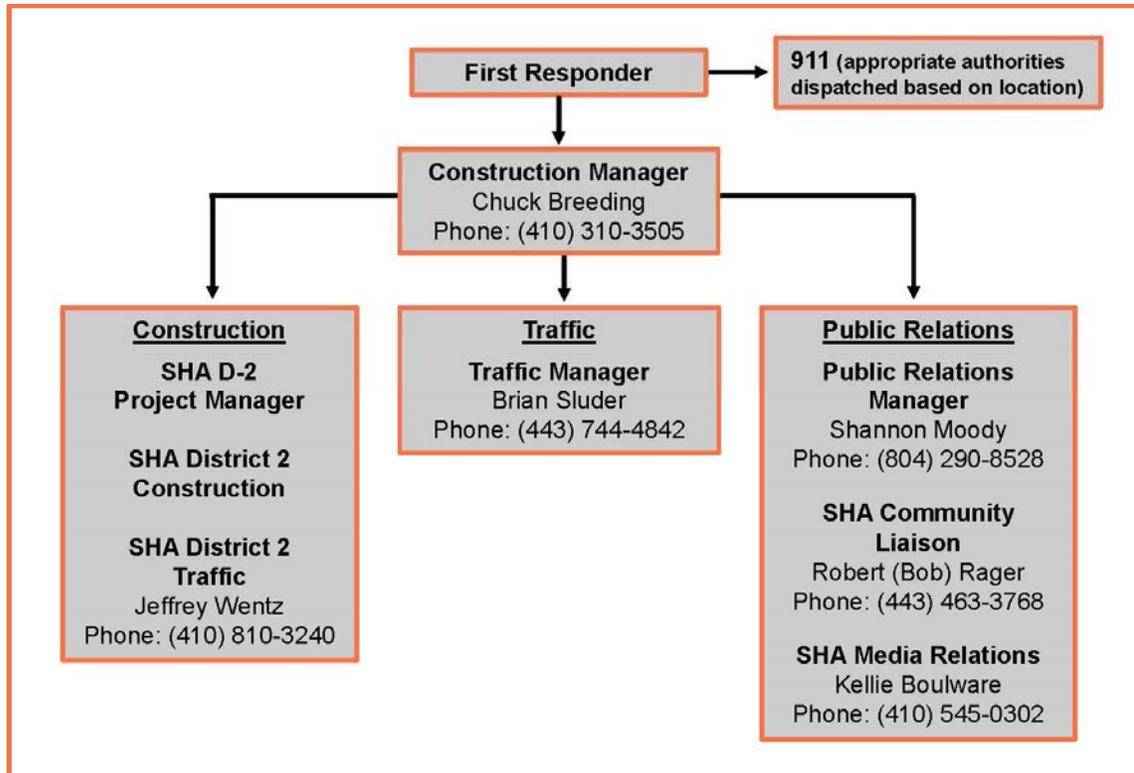
Table 4.2 – Property Owner Communication Summary

Stakeholder Type	Measurement/ Goal	Primary Communications Tool	Secondary Communications Tool
Property owners directly affected	<ul style="list-style-type: none"> Smooth ROW process with limited concerns Knowledge of being treated fairly Limited media coverage 	<ul style="list-style-type: none"> Pardon Our Dust Face to face meetings Hotline Email blasts 	<ul style="list-style-type: none"> Collateral Website Media Public notifications
Farming community adjacent	<ul style="list-style-type: none"> Farmers have direct contact with DB Team Both the DB Team and the farming community understand and respect one another’s needs Irrigation needs are not impacted 	<ul style="list-style-type: none"> Pardon Our Dust Face to face meetings Hotline Email blasts 	<ul style="list-style-type: none"> Collateral Website Public notifications
Adjacent property owners	<ul style="list-style-type: none"> Speak highly of the process, that neighbors were treated fairly Educated on project impacts 	<ul style="list-style-type: none"> Pardon Our Dust Community presentations Public notifications Word of mouth 	<ul style="list-style-type: none"> Website Media

COORDINATION WITH EMERGENCY SERVICES – Advanced and consistent coordination with local first responders and emergency service providers is a priority to the 404 Corridor Safety Constructors Team. During the design phase, our Team will meet with Talbot, Queen Anne’s and Caroline County fire, police and rescue representatives to coordinate construction activities and discuss impacts. These meetings provide an opportunity to first responders to provide valuable input to construction plans. Table top exercises with the local community may be offered as well as opportunities to simulate an emergency situation in the Project area. As this is a major route to the Delaware beaches and is also a designate Hurricane Evacuation Route, there is a large increase in traffic during the summer months and increased accident frequency. The Team will

place special emphasis on the plan execution and traffic safety to reduce or eliminate the increase in rear end and angle type collisions that typically occur on MD 404 during this time. We will implement the following Emergency Services Response Tree (Figure 4.1)

Figure 4.1 – Emergency Services Response Tree



COORDINATION WITH SCHOOLS – Coordination with the leadership of Talbot, Caroline and Queen Anne’s County schools will be an important step during the design phase of the Project. Construction activities will have an impact on bus routes and student movement through the corridor, and could cause traffic delays or necessitate the use of alternate routes. As with the first responders, early coordination prior to construction is important to understand the needs of the school systems and the plans for construction. The 404 Corridor Safety Constructors Team will facilitate these meetings with SHA to ensure all necessary stakeholders are included in these critical coordination meetings. Once a central contact is established with each school system, this representative will be included in the distribution of construction update information.

ADDRESSING AND INCORPORATING FEEDBACK INTO THE PROJECT – Each of the public outreach means and methods implemented as part of this Project allow the opportunity for feedback on the Project by participants. Feedback received at public meetings and other stakeholder meetings will be addressed at the time. Responses to any question requiring follow up will be coordinated with SHA. This holds true for feedback received through the Project email account, phone or social media. The 404 Corridor Safety Constructors Team will make a good faith effort in addressing any concerns the public may have, and take into consideration any suggestions or wishes they express if those suggestions are reasonable in regard to cost, time, and construction effort. These issues will be documented in meeting minutes and correspondence, including emails. Any feedback received will be considered for incorporation into the Project. All design or construction modifications are subject to written acceptance by SHA.