



# Meeting Summary

<b>Project:</b>	<b>I-64 Hampton Roads Bridge-Tunnel Expansion</b>
Meeting Title:	U.S. Coast Guard Bridge Permit Coordination Meeting
Date:	July 24, 2019
Location:	USCG 5th District – Federal Building 431 Crawford Street, Portsmouth, VA 23704

**Attendees:**

Company	Last Name	First Name	Phone Number	E-mail Address	Present
USCG	Barnes	Jerry	(757) 398-6231	Jerry.R.Barnes@uscg.mil	XX
USCG	Pitts	Hal	(757) 398-6222	Hal.R.Pitts@uscg.mil	XX
USCG	Thorogood	Michael	(757) 398-6557	Michael.R.Thorogood@uscg.mil	XX
FHWA	Mott	Dan	(804) 775-3355	Daniel.Mott@dot.gov	XX
VDOT	Reilly	Pete	(757) 323-3307	Peter.Reilly@vdot.virginia.gov	XX
HRCP	Barrier	David	(514) 663-9198	David.Barrier@vinci-construction.com	XX
HRCP	Vazelle	Solène	(757) 933-0878	Solene.Vazelle@vinci-construction.com	XX
HRCP/WRA	Sprenkle	Taylor	(804) 366-4097	TSprenkle@wrallp.com	XX
HRCP/I-64 DJV	Gaffney	Douglas	(856) 924-3363	Douglas.Gaffney@mottmac.com	XX
HRCP/I-64 DJV	Duschang	John	(845) 596-7953	John.Duschang@hdrinc.com	XX
HRCP/I-64 DJV	Magron	J.P.	(212) 671-0180	JP.Magron@hdrinc.com	XX
HRCP/I-64 DJV	Joyner	David	(757) 222-1567	David.Joyner@hdrinc.com	XX

**Meeting Notes:**

Coordination meeting with the U.S. Coast Guard – 5<sup>th</sup> District Bridge Section to discuss the HRBT Expansion Project and USCG Bridge Permit.

No.	Description	Action
1.	<b>Introductions (1:00pm)</b>	
	Hal Pitts, USCG 5 <sup>th</sup> District Bridge Manager (USCG Prevention Division - Bridge Administration Branch [dpb]), opened the meeting and welcomed visitors. Mr. Pitts stated that Michael Thorogood (dpb) will be the USCG point of contact (POC) for the Bridge Permit Application (BPA) and that he will be POC for the tunnel, stakeholder, and Section 408 coordination	





No.	Description	Action
	<p>with the U.S. Army Corps of Engineers (USACE – Steve Powell is POC for 408).</p> <p>Captain Jerry Barnes (Chief for USCG 5<sup>th</sup> District Prevention Division [dp] responsible for Bridge [dpc] and Waterways Management [dpw] Branches) noted that he was there to also represent Commander Ed Munoz (Waterways Management Branch [dpw]) and Lieutenant Commander Peter Francisco (Chief of Waterways Management Division for USCG Sector Hampton Roads) who couldn't be there that day. Mr. Barnes briefly explained the roles of the USCG District 5, District Prevention Division. It was also noted that Captain Kevin M. Carroll is the Commander for USCG Sector Hampton Roads who essentially serves as the "Captain of the Port".</p> <p>Pete Reilly (Deputy District Administrator) with VDOT introduced himself and emphasized the significance of the project to the Commonwealth, followed by Dan Mott, Director of Technical Programs with Federal Highway Administration (FHWA) – Virginia Division. Introductions continued for the design and construction representatives of the Hampton Roads Connector Partners (HRCP) project team.</p>	
<b>2.</b>	<b>Design Segments and Construction Activities (1:05-2:00pm)</b>	
	<p>Mr. Gaffney and Mr. Duschang presented an overview of the HRBT Expansion project, supplemented by input from other team members. Mr. Magron led the USCG permit discussions. The presentation was open format, with questions, clarifications and comments discussed throughout the meeting.</p> <p>Mr. Duschang presented the design segments, phasing, and four construction areas. See slides for further information.</p>	
2.a	<p><b>HRBT Approach Bridges [aka. North/South Trestles] -:</b> The North Trestle and South Trestle bridges will be fully replaced as a result of multiple factors, including existing conditions, life expectancy and benefit-cost of full replacement. Mr. Duschang noted the new bridge spans would be longer than the existing spans, resulting in fewer pile bents. The existing bridge trestles are about 15-feet above mean high water (MHW) while the proposed new approach bridges would be between 18-25 feet above MHW. He explained the variability in bridge height on the new bridges was largely because of the roadway curves and associated super-elevation (banked curves). They are being designed in consideration of sea level rise projections, storm surge, and overall coastal resiliency engineering principles – which provides additional justification for the full bridge replacement instead of rehabilitating the existing bridges. Mr. Duschang further described the proposed construction sequences for the bridge-tunnel.</p>	



No.	Description	Action
	<p><b>USCG Comments:</b></p> <ul style="list-style-type: none"> <li>• <b>Terminology:</b> Mr. Pitts noted that USCG defines the terms “trestle” and “bridge” differently than the HRCP Team. He stated USCG does not use term trestle for a structure carrying traffic. For USCG, a bridge carries traffic, a trestle is a temporary structure used for construction access and that does not carry traffic. Mr. Pitts informed the group that a temporary bridge carrying traffic (i.e., MOT Trestle) will also require a bridge permit, while a temporary construction trestle does not (as it is permitted under the main bridge permit conditions).</li> <li>• <b>Bridge Height HRBT:</b> Mr. Pitts stated that generally, if bridge height is increasing from existing height outside the defined navigation channel, there shouldn’t be an issue. Mr. Pitts said there was a USCG bridge height guidance that takes into account factors such as sea level rise.</li> <li>• <b>Permitting:</b> Temporary MOT traffic trestles are bridges and need to be permitted – they would be part of the same bridge permit.</li> </ul>	<p><b>HRCP Team</b> to revise/align terminology used for all USCG document deliverables to USCG.</p> <p><b>USCG</b> to check/provide HRCP Team with USCG Bridge Height Guidance with respect to sea level rise.</p>
2.b	<p><b>North and South Island Expansions:</b> North and South Islands will require expansion to accommodate new, twin two-lane tunnels west of the existing tunnels. The North Island expansion is larger than South Island. Spud barges will be used in water greater than 4.5-feet mean low water (MLW). The HRCP Team briefly described island expansion construction method, with material for the North Island expansion generally approaching from the Bay/East side (away from Hampton Creek Approach Channel).</p> <p><b>USCG comments:</b></p> <ul style="list-style-type: none"> <li>• <b>Hampton Creek Approach Channel:</b> Mr. Pitts noted the close proximity of the North Island Expansion to the existing Hampton Creek Approach Channel and asked what the distance was. HRCP noted the north island expansion was about 100-feet from the Hampton Channel. He expressed that the close proximity would need evaluation of potential physical relationship as well as construction traffic coordination to minimize impact to the channel and vessels during construction and after. This should be addressed under the USACE’s Section 408 review; whereas the HRCP Team will need to demonstrate to the USACE that North Island Expansion won’t directly affect the stability and profile of the Hampton Creek Approach Channel.</li> <li>• <b>Section 408:</b> Mr. Pitts stated that USCG coordinates with USACE on the 408 process. The USACE leads the Section 408 process, as well as</li> </ul>	<p><b>HRCP Team</b> to confirm no impact to existing Hampton Creek Approach Channel under its Section 408 process.</p>



No.	Description	Action
	<p>Section 10 (Rivers and Harbor Act-RHA) and Section 404 (Clean Water Act); the USCG provides their review and input to the USACE.</p>	
<p><b>2.c</b></p>	<p><b>Tunnels:</b> Presentation on the two new, two-lane parallel bored tunnels to be constructed west of the existing tunnels with a Tunnel Boring Machine (TBM). Mr. Duschang, Mr. Gaffney and other team members provided background on the construction process, including temporary platform required for off-loading and handling the TBM. They also discussed the temporary trestle required for ground improvements and grouting to support TBM operations. This temporary trestle would extend in the direction of the channel area (north of the South Island), but outside the federally-dredged navigation channel. There was also a brief discussion about tunnel depth below the authorized dredge depth of 55-ft below MSL for the main navigation channel, which would not be impacted by the project.</p> <p><b>USCG comments:</b> Mr. Pitts acknowledged that, in comparison to the immersed tube tunnel (ITT) method, constructing the bored tunnels with the TBM would have much less waterway impact and thus eased USCG concerns about impacts to navigation in the main channel during construction. However, considerations of potential construction barge impacts to the main and secondary navigation channels will be still be important.</p> <p>USCG noted that the temporary trestle for tunnel ground improvements will likely require proper lighting for navigation safety; especially to warn recreational boaters. Maybe even private aids to navigation (ATON).</p>	
<p><b>2.d</b></p>	<p><b>Willoughby Bay Bridge (WBB):</b> The proposed work at the WBB was presented, stating the current plan was to widen the both existing bridges to the outside. This would include a new set of two piers on either side at each exiting pier bents. There were questions about an existing designated navigation span and its bridge fendering/lighting system since it is slated for removal by the contract. Based on available knowledge and geography, the small water-locked area north of the WBB is primarily accessed by recreational boaters. The recreational boaters appear to utilize the nearest gap in the pilings and do not necessarily require use of the navigation span.</p> <p><b>USCG Comments:</b> Mr. Pitts stated the WBB would likely require a USCG permit and be a separate permit action. One permit application with two bridge permits could be possible. Mr. Thorogood is going to review USCG information on the bridge to see if it was permitted separately or with HRBT and navigation channel status.</p>	<p><b>USCG</b> to check its records for the bridge permit; check bridge regulation with respect height/clearance with widening.</p>



No.	Description	Action
		<p><b>USCG</b> to check status/use of designated navigation channel underneath WBB and confirm if its fendering/lighting system is still necessary</p>
<p><b>2.e</b></p>	<p><b>Landside – Oastes and Mason Creek Crossing:</b> Roadway and bridge improvements, including Mallory Street Bridge Replacement and widening of the bridges over Oastes Creek and Mason Creek, which are both tidally-connected by a flood gate and culvert underneath the USN Naval Station Norfolk and to Willoughby Bay. Oastes Creek will be widened with use of an “extended” (&gt;12 month) temporary trestle. Mason Creek widening would occur to the south side to improve construction access and limit environmental impacts. There is a very low bridge/culvert for US 460 that is in proximity to the bridge, about 175 feet east of I-64 and that eliminates virtually all water access by any boat. Oastes and Mason Creek are primarily used for recreation and not listed as a navigable waterways on Section 10 maps.</p> <p><b>USCG Comments:</b> Oastes and Mason Creek would likely be exempt from a bridge permit; there is a questionnaire to fill out for such determination. USCG may issue an exception from a bridge permit, based on the nature of the waterway and vessel traffic on the waterway as provided for in the Coast Guard Authorization Act (CGAA) or Title 33 Code of Federal Regulations 115.70 Advance Approval of Bridges. A bridge permit exemption is good for 5 years.</p>	<p><b>USCG</b> to provide a copy of the Questionnaire to HRCF Team so that it be submitted along the Project Initiation Request (PIR) Letter.</p>
<p><b>2.f</b></p>	<p><b>Anchorage and Mooring Discussion:</b> The HRCF Team presented an overview of the existing channels and anchorages, and potential areas under investigation for anchoring and mooring. Moorings would be required near to construction trestles, with 500-foot buffer for barge operation and 1000-foot buffer for temporary barge placement. At the North/South Islands expansions, 42-inch mooring piles would be every 40-feet in order to provide secured mooring to construction barges; especially in such close proximity to existing navigation channels.</p> <p><b>USCG Comments:</b></p> <p>Two proposed anchoring areas include near south bank of James River between Monitor Merrimac Memorial Bridge-Tunnel and Craney Island Dredge Disposal Facility and on the north bank near Hampton/Newport News. Overall it was noted that the harbour is a crowded area. Mr. Barnes noted that they’ll need to be assessed in the NSRA and that a plan for alternate anchoring areas (if these don’t provide sufficient protection) should also be considered for severe weather events.</p>	



3.	<p><b>Project Schedule and USCG Bridge Permit Application (BPA) Process and Requirements (2:00-3:00pm)</b></p>	
	<p>Mr. Magron presented the schedule, BPA process and requirements, and concurrent Joint Permit Application (JPA) with USACE/VDEQ/VMRC.</p> <p><b>USCG comments/Discussions:</b></p> <p><b>JPA Schedule:</b> The Joint Permit Application (JPA) is scheduled for submission on August 30, 2019; seeking joint permit authorization April 2020. First activities in jurisdictional Waters of the U.S. (WOUS) would occur after receipt of the JPA. Anticipate HRBT bridges completion in late 2023; Activities commence in September 2024 +/- 6 months to remove structures.</p> <p><b>Project Initiation Request (PIR):</b> Even though a PIR was previously submitted by VDOT during the NEPA review; a new PIR submittal is required to present the full scope of the proposed project, including: 1) HRBT bridges; 2) WBB; 3) other inland waterway bridges.</p> <ul style="list-style-type: none"> <li>• For inland waterway bridges (Mason/Oastes Creek), they will require review/determination if exempt and what action (USCG questionnaire).</li> <li>• The PIR will need to include a schedule of anticipated submittals and construction start.</li> <li>• The PIR could be submitted at the same time as NIR.</li> </ul> <p><b>Navigation Impact Report (NIR):</b> In order to issue a Bridge Permit (CGBP) by April 2020; the USCG asked that the Navigation Impact Report (NIR) be accelerated and submitted earlier than October 2019 – i.e., more like late-August to early-September in order to allow for the Preliminary Public Notice (PPN) and Preliminary Navigation Clearance Determination (PNCD) to be publicly issued a month before the CGBP’s Public Notice (PN) in December 2019. If needed, the NIR could be submitted at the same time as the PIR above.</p> <ul style="list-style-type: none"> <li>• For the Waterway User Survey in the NIR, USCG stated that the Automatic Identification System (AIS) data won’t provide all the information needed, as many small vessels (less than 65’ beam) don’t have AIS tracking device. As such, USCG requested that the HRCP Team:             <ul style="list-style-type: none"> <li>○ Perform an outreach through local marinas/harbor masters, boat repair yards, and major docking facilities.</li> <li>○ Contact Mr. Francisco of USCG Sector Hampton Roads for additional guidance; size/types of vessels navigating through.</li> </ul> </li> </ul> <p><b>Preliminary Navigational Clearance Determination (PNCD):</b> Upon review of the PNCD and the PPN’s 30-day public comment period, the USCG provides written PNCD, which is good for three years. USCG indicated the PPN that was performed in 2017 (during NEPA review) was solely for the VDOT purpose of collecting waterway user information via</p>	<p><b>HRCP Team</b> to submit a new PIR along with Questionnaire for Oastes/Mason Creek exemption.</p> <p><b>HRCP Team</b> to accelerate NIR submission for PPN/PNCD before (at least a month) CGBP’s PN and USCG regulatory review of BPA.</p> <p>For NIR, <b>HRCP Team and VDOT</b> to collect AIS Data and perform survey/outreach to local waterway users.</p>





	<p>the online Survey Monkey” tool. No PNCD was issued during NEPA process.</p> <p><b>CG Bridge Permit (CGBP):</b> From time of BPA submission, one should typically assume 180 days for USCG Administrative and Regulatory Reviews to proceed before actual CGBP issuance. Mr. Pitts stated that upon CGBP issuance, we have 3 years to commence construction; and then a total of 5 years to complete construction. Given size/scope of project, USCG would be amenable to extension beyond five years for permit. July 2025 project completion.</p>	<p><b>USCG</b> to look in records and provide copies of the current bridge permits for HRBT Approach Spans and WBB.</p>
<p><b>4.</b></p>	<p><b>Section 408 Review (3:00-3:30pm)</b></p>	
	<p><b>Section 408 Review for Safety and Navigation:</b> A recurring theme expressed by USCG and acknowledged by everyone was the importance of safety for mariners and recreational boaters during and after construction and having minimal interruptions to navigation. USCG emphasized safety during construction, such as general requirements for lights on work trestles, marine operations plan, communications (USCG leads effort to provide information to mariners), and scheduling to avoid major marine traffic disruptions. Other safety topics included construction vessel mooring, anchorage areas, and severe weather plans. Mr. Pitts advised to coordinate with Mr. LCDR Francisco (Chief, Waterways Management Division at USCG Sector Hampton Roads) for several future items. Mr. Barnes, Mr. Pitts and Mr. Thorogood provided a great deal of information, guidance and ongoing support with respect to the Section 408 review that will run in parallel to the USCG BPA/CGBP and the USACE/VDEQ/VMRC JPA. Some of the key points included:</p> <ul style="list-style-type: none"> <li>• USCG reiterated minimization of their concerns regarding navigation impact from project since election of TBM vs. ITT method; no channel impacts anticipated.</li> <li>• In the August 2018 USCG Letter to Colonel Kinsman (USACE) for a Section 408 review recommendation; USCG noted that their proposed development for a Navigational Safety Risk Assessment (NSRA) and a Tunnel Construction Plan (TCP) was derived from a similar USCG guidance but for the offshore windfarm industry (i.e., CGTTP 3-71.7 and NVIC 02-07) since no similar guidance existed for tunnel/bridge construction. At that time of such recommendation, USCG also acknowledge that the ITT method was still under consideration; and therefore a major concern for navigation safety.</li> <li>• USCG noted that the proposed anchoring/mooring areas will also need to be assessed under the NSRA requirement.</li> <li>• USCG confirmed that USACE’s Section 408 review has to be complete before USCG can issue its CGBP under Section 9 of RHA (Bridge Permit-USCG).</li> <li>• HRCP noted that under ongoing USACE’s NWP6 review for the Geotechnical Boring Program, USACE had requested the preparation of a Marine Operations Plan (MOP) and that a similar MOP will likely be required for the proposed HRBT construction activities as well.</li> </ul>	<p><b>HRCP Team</b> will soon be holding a Section 408 Meeting with USACE.</p> <p><b>HRCP Team</b> to keep USCG (dp, dpw, dpb) in the loop who make appraise effort to any Section 408 meetings requested by VDOT or USACE.</p>



	<ul style="list-style-type: none"> <li>• Temporary Docks or Trestles for North/South Island Expansions – USCG has no concurrent jurisdiction over Section 10 structures (authorized by USACE) as long as they are not directly intended for bridge construction and thus subject to Section 9 of RHA.</li> <li>• USCG noted that HRCP will be expected to continuously coordinate/plan with key stakeholders with respect to seasonal changes in vessel traffic movements (military, commercial, recreational). As such, the NSRA/TCP/MOP will be considered living documents that may require necessary updates along the project lifetime.</li> <li>• To that end, USCG reiterated that such key stakeholders should at minimum include the following entities (as stated in USCG Letter of 2/14/2019 to USACE Colonel Kinsman):             <ul style="list-style-type: none"> <li>○ USCG Sector Hamptons Road (aka. “Captain of the Port”)</li> <li>○ Captain Moore – US Fleet Command</li> <li>○ Commander Denison – US Second Fleet</li> <li>○ Colonel Vedder – Joint Base Langley-Eustis</li> <li>○ Mr. David White – chair of the Virginia Harbor Safety Committee – part of the Virginia Marine Association (VMA). The committee includes representatives from VMA, Virginia Port Authority, USACE, Recreational Boater Representative</li> </ul> </li> <li>• USCG also suggested that the project be presented at next meeting of Harbor Safety Committee in September 2019.</li> </ul>	
<p><b>Meeting Adjourned at approximately 3:30 PM</b></p>		






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USCG BPA Meeting  
24 July 2019

I-64 Hampton Roads Bridge-Tunnel (HRBT) Expansion Project

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## Agenda



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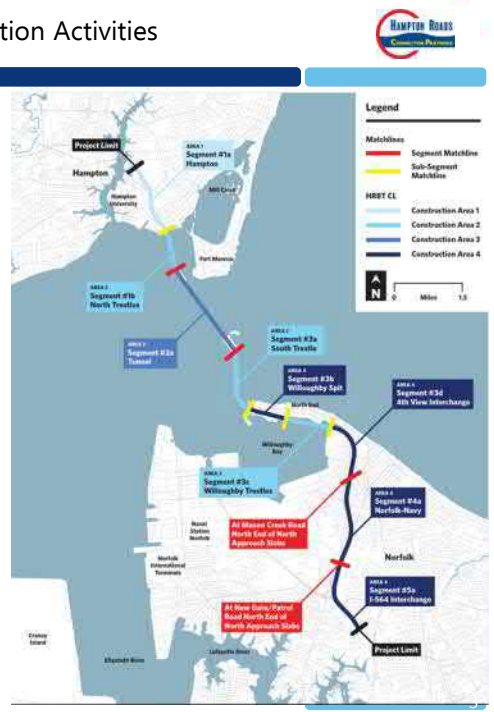
- Introductions (1:00pm)
- Design Segments and Construction Activities (1:05 – 1:45pm)
  - North and South Island Expansion, Trestles and Tunnel
  - Willoughby Bay Crossing
  - Oastes Creek and Mason Creek Crossing
- Project Schedule (1:45 – 2:00pm)
- USCG BPA Process and Requirements (2:00 – 2:30pm)
- JPA/ Section 408 Review (2:30 – 3:00pm)
- Adjourn (3:00pm)

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## 1. Design Segments and Construction Activities

### ■ Construction Areas

- Tunnels
  - Tunnel Boring
  - Tunnel Portals – South Portal, North Portal
  - Tunnel Approach Structures (TAS)
- Island Expansions
  - North Island
  - South Island
- Trestles
  - North Trestle
  - South Trestle
  - Willoughby Bay Bridge
- Landside
  - Roadway and bridge improvements
  - Roadway widening
  - New bridge abutments
  - Mallory Street Bridge replacement

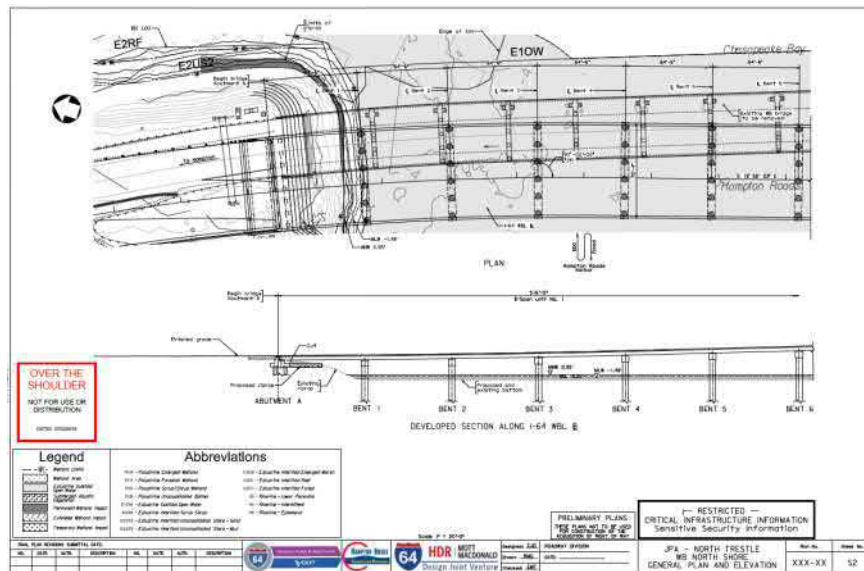


## 1. Design Segments and Construction Activities

### ■ Segment 1b – North Trestle Construction

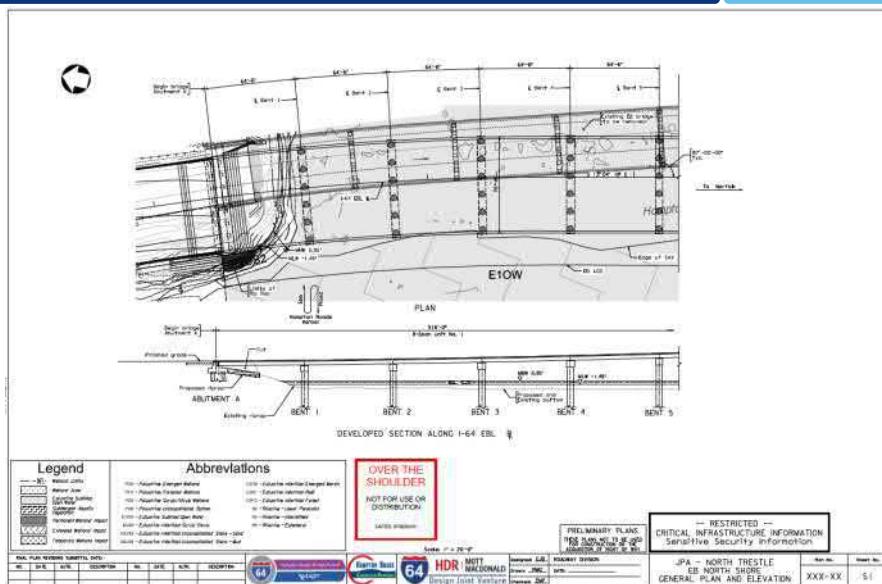


# 1. Design Segments and Construction Activities



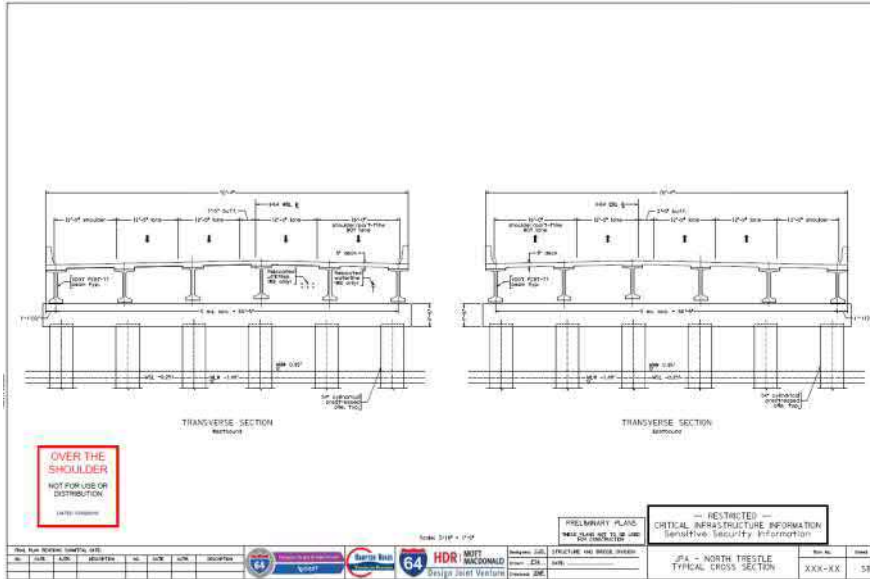
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# 1. Design Segments and Construction Activities



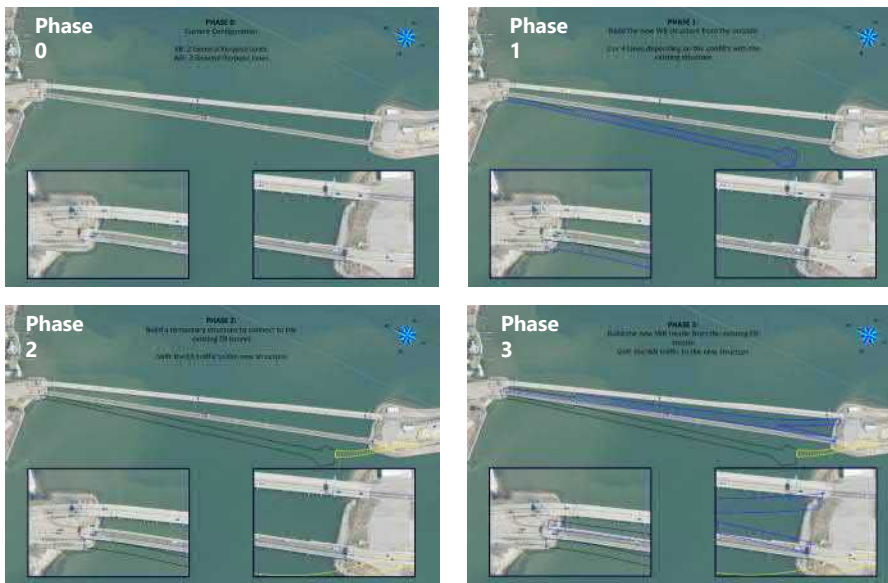
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# 1. Design Segments and Construction Activities




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# Segment 1b – Trestle Construction Sequence



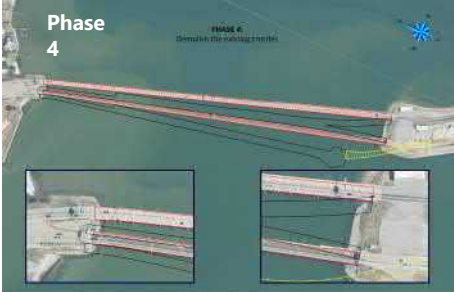
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### Segment 1b – Trestle Construction Sequence



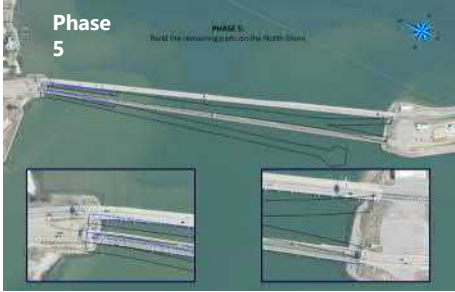
**Phase 4**

PHASE 4: Demolish the existing trestle



**Phase 5**

PHASE 5: Build the remaining spans on the North Island

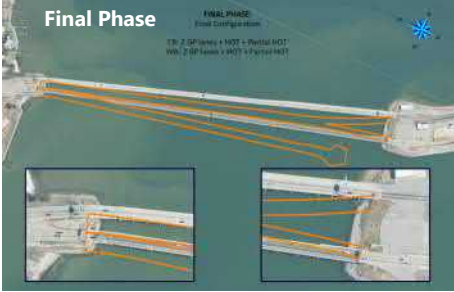


**Final Phase**

FINAL PHASE: Final Completion


TP: 2 SP Piles + 100' + Partial 40'

WH: 2 SP Piles + 100' + Partial 40'

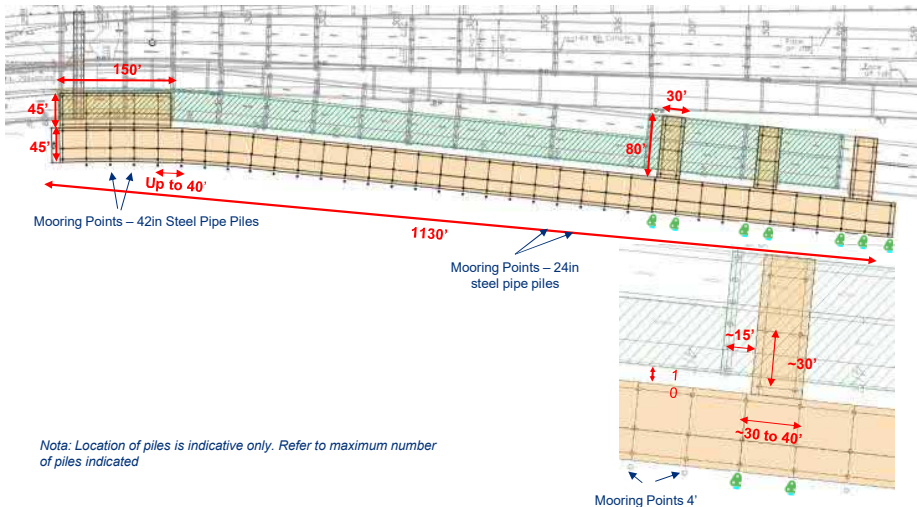


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### 1. Design Segments and Construction Activities



■ Segment 1b – Extended Temporary (>12 Months) - North Trestle



*Note: Location of piles is indicative only. Refer to maximum number of piles indicated*

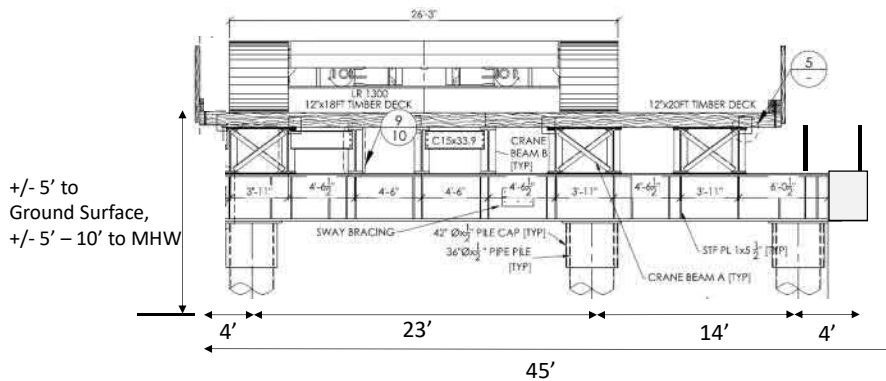
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1. Design Segments and Construction Activities



- Segment 1b – Extended Temporary Trestle (>12 Months) - Typical Temporary Trestle
  - 36" steel pipe piles

Main transverse section

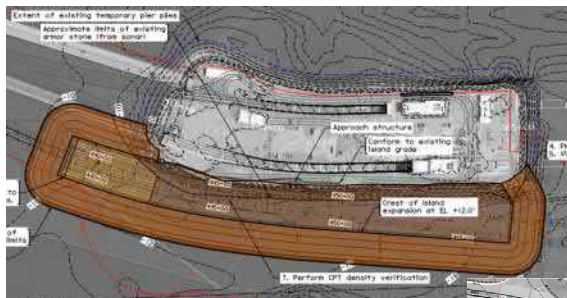


Nota: Dimensions / Measures subject to vary +/- 5ft

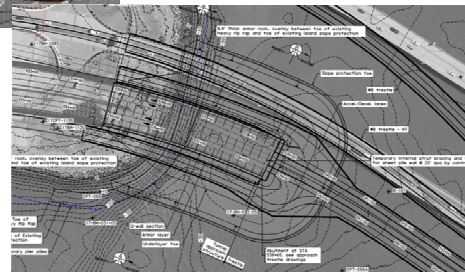
1. Design Segments and Construction Activities



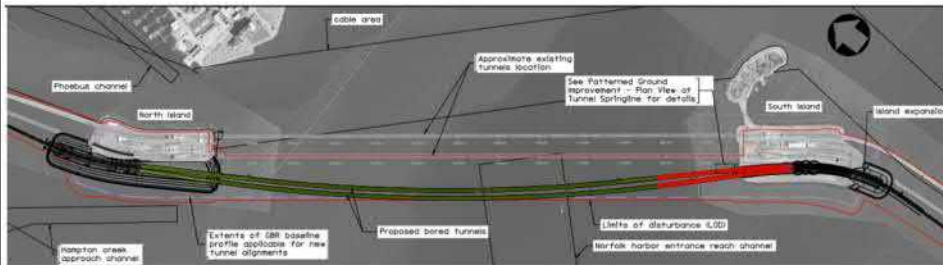
- Segment 2a – North Island Expansion, Dredging and Debris Removal



- Segment 2a – South Island Expansion, Dredging and Debris Removal



### 1. Design Segments and Construction Activities



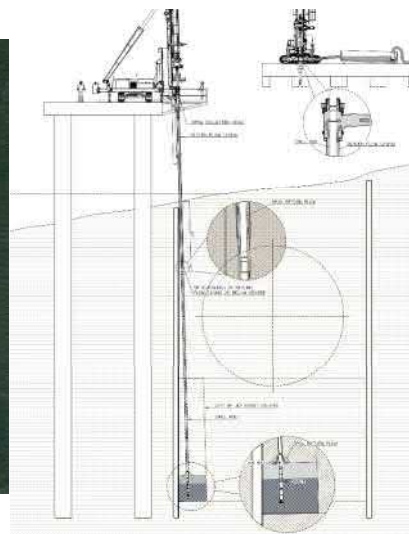
- Bored Tunnel Alignment between existing North and South Islands along a refined alignment
- The red line denotes the Limit of Disturbance (LOD)
- The red delineated area is the area of potential ground improvement
- Approximate offset of proposed works to Hampton Creek Approach Channel ~ 160 ft

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### 1. Design Segments and Construction Activities

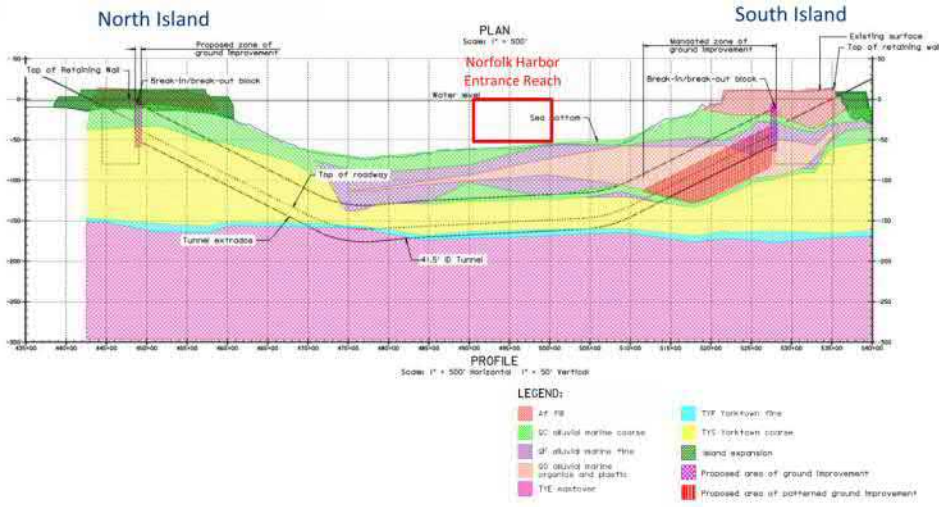


- Extended Temporary Impacts (>12 Months) - South Island Jet Grout Trestles



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1. Design Segments and Construction Activities

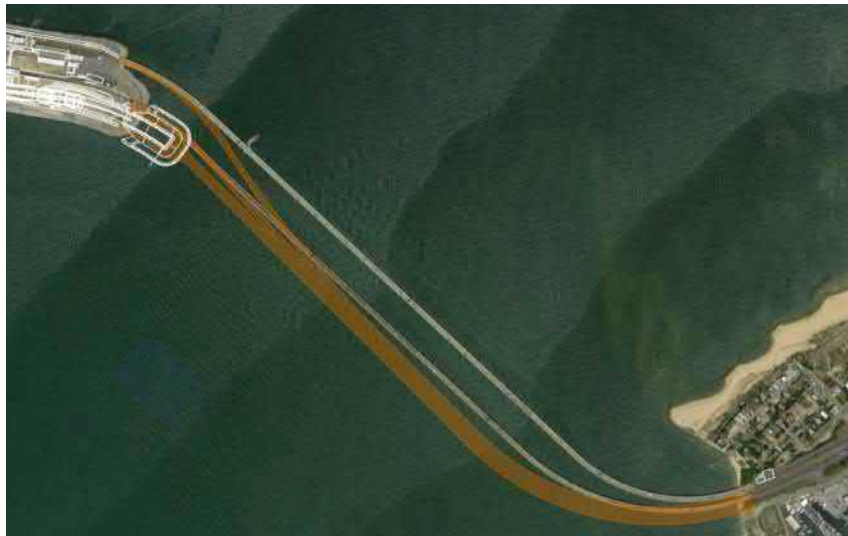


■ Proposed alignment for the bored tunnel between existing North and South Islands

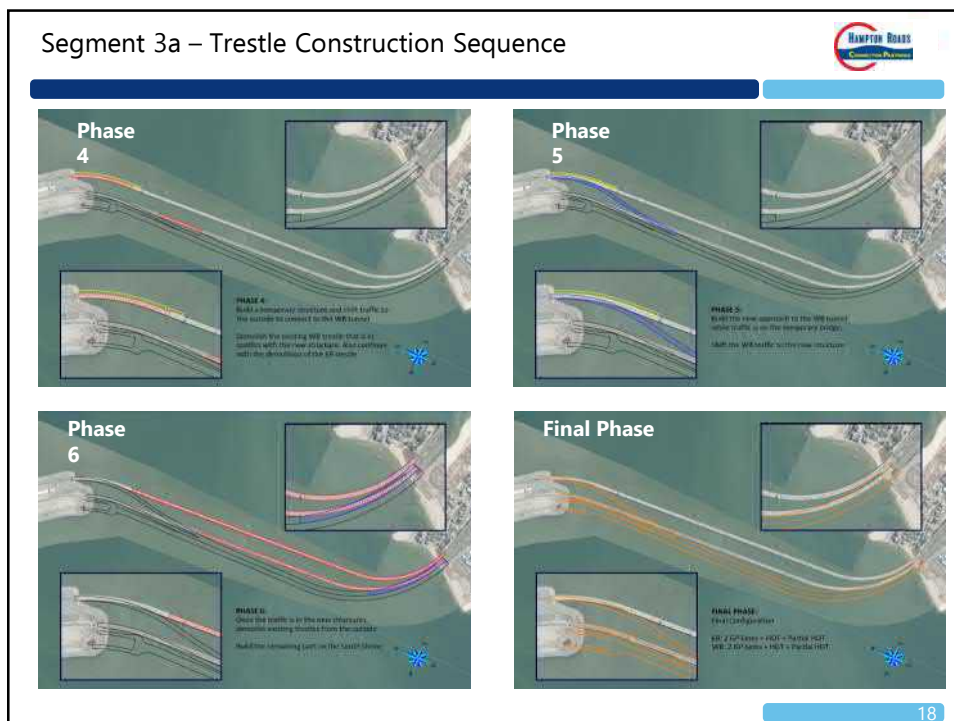
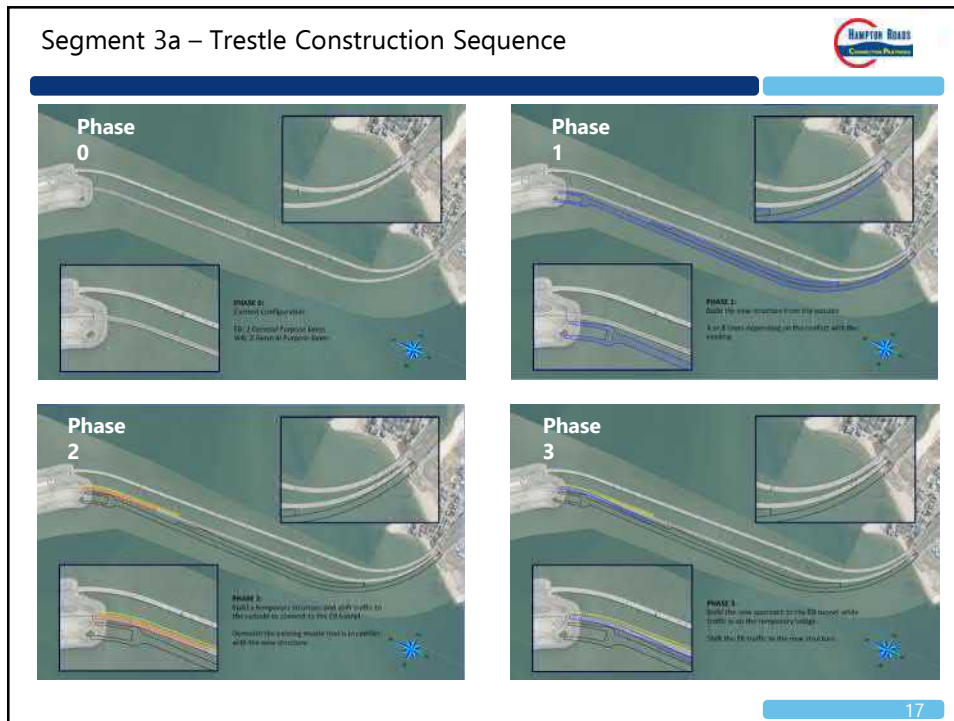
1. Design Segments and Construction Activities



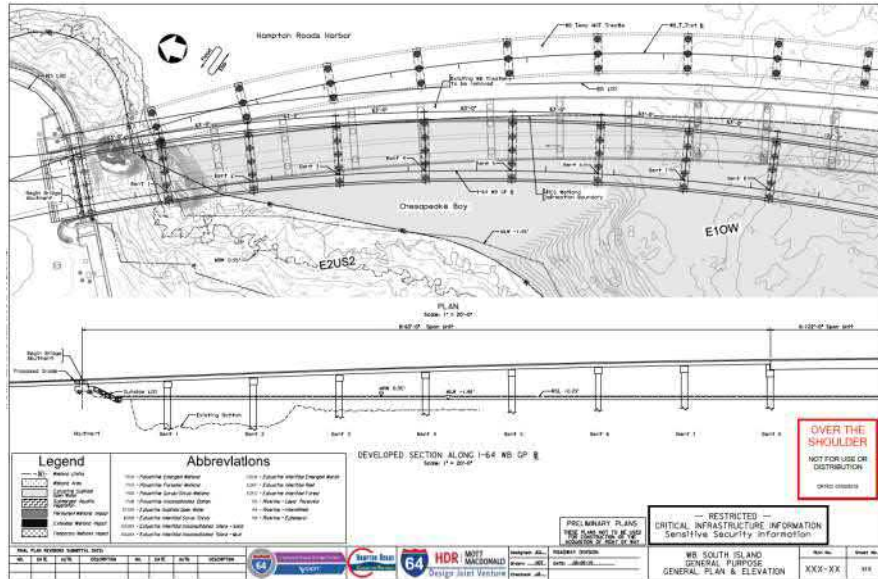
■ Segment 3a – South Trestle Construction



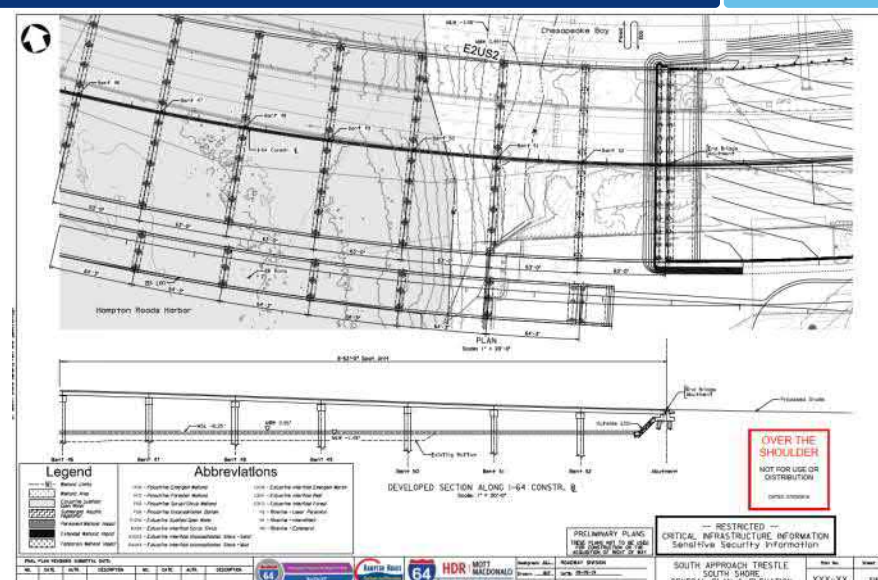




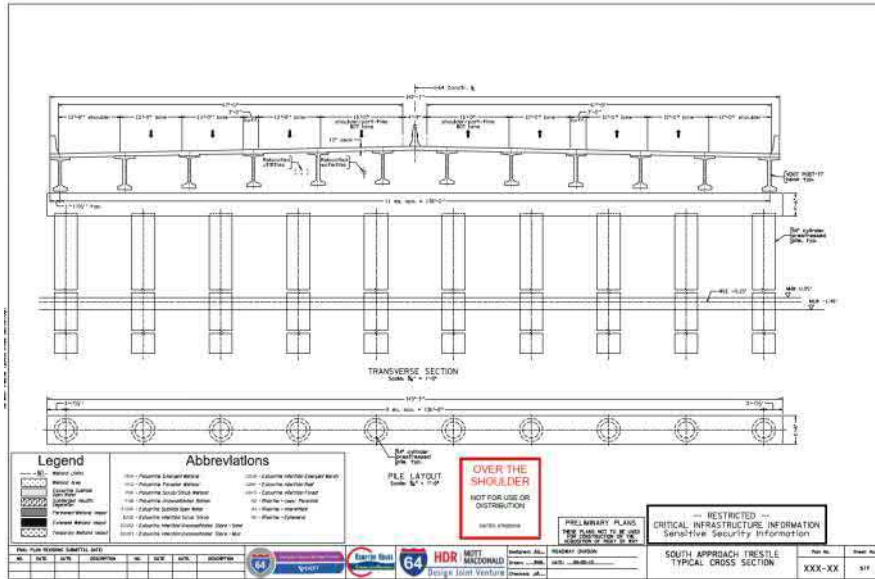
1. Design Segments and Construction Activities



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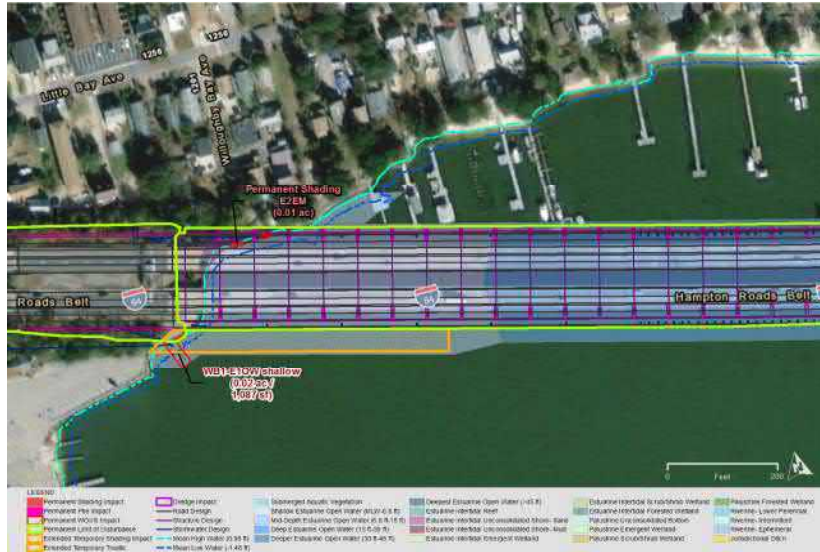
■ Segment 3c – Willoughby Bay Bridge Construction



1. Design Segments and Construction Activities



■ Segment 3c – Extended Temporary Trestle (>12 Months) - Willoughby Bay



23

1. Design Segments and Construction Activities

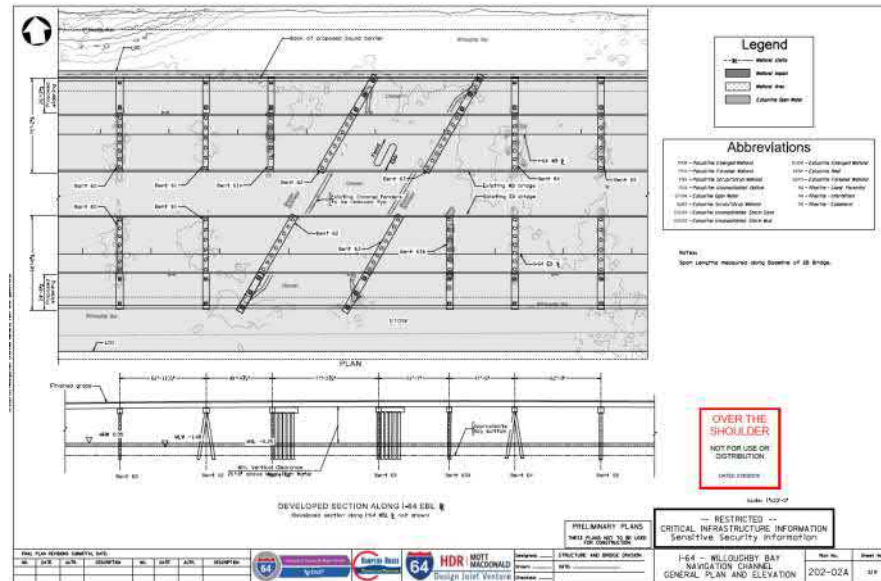


■ Segment 3c – Extended Temporary Trestle (>12 Months) - Willoughby Bay

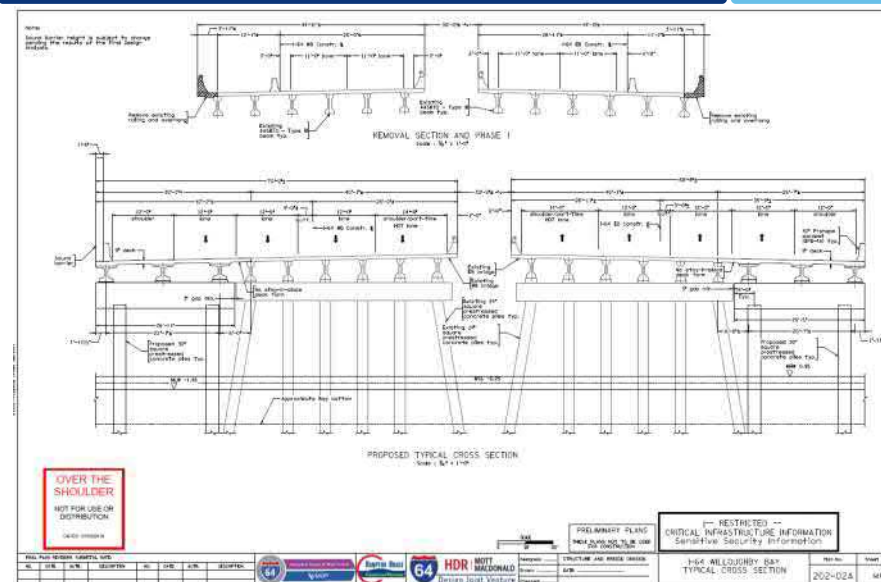


24

# 1. Design Segments and Construction Activities



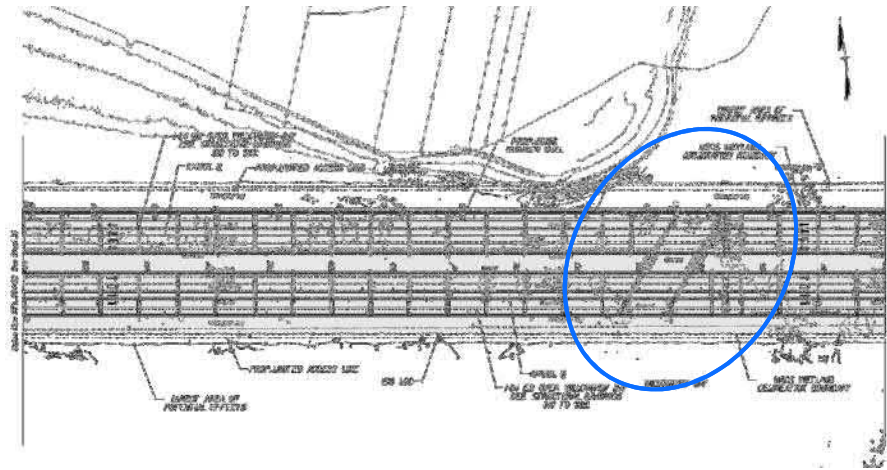
# 1. Design Segments and Construction Activities



1. Design Segments and Construction Activities



- Segment 3c – Willoughby Bay
  - Remove existing non-functioning lighting and fenders



27

1. Design Segments and Construction Activities



- Segment 4a – Mason/Oastes Creek – Closed Waterbody Controlled by Flood Gate



28

## 1. Design Segments and Construction Activities



### ■ Segment 4a – Oastes Creek



29

## 1. Design Segments and Construction Activities



### ■ Segment 4a – Mason Creek



30

1. Design Segments and Construction Activities



■ Segment 4a – Extended Temporary Trestle (>12 Months) - Bay Ave/Oastes



1. Design Segments and Construction Activities

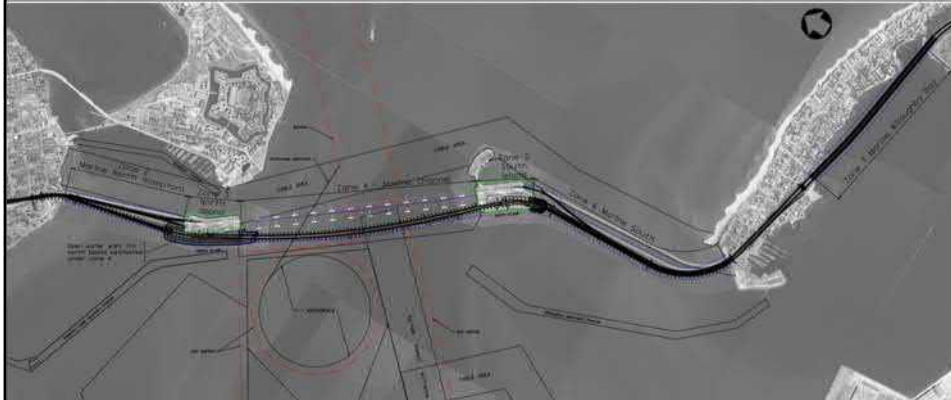


■ Segment 4a – Extended Temporary Trestle (>12 Months) - Mason Creek





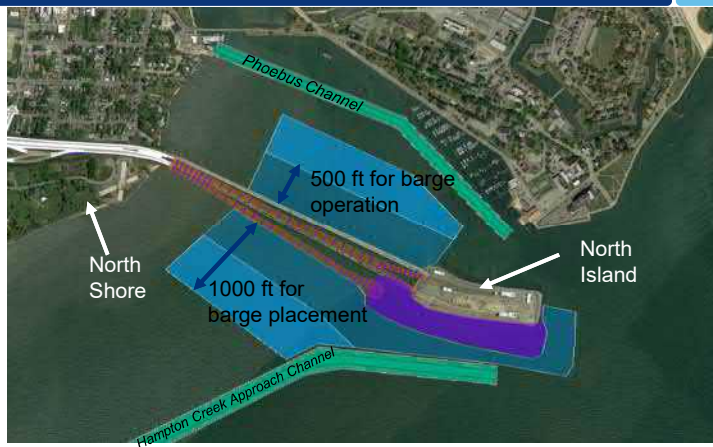
1. Design Segments and Construction Activities



- Existing channels and anchorages
- The dashed red line denotes a buffer around the federal channel and anchorage

33

1. Design Segments and Construction Activities



- North Trestle
  - Spud barges used in areas with more than 4.5 ft of water (at MLW)
  - 15 +/- working barges
  - First activity after receipt of the JPA
  - Last activity in September 2024 + 6 months to remove structures

34

## 1. Design Segments and Construction Activities



### ■ North & South Island

- 1 mooring pile (42" pipe pile) every 40FT around the footprint of the expanded islands
- Spud barges used in areas with more than 4.5 ft of water (at MLW)
- 1000 ft from expansion boundary for barge anchoring
- 500 ft from expansion boundary for barge operation
- At peak, ~15 working barges
- First activity after receipt of the JPA
- Last activity in September 2024 + 6 months to remove structures

35

## 1. Design Segments and Construction Activities

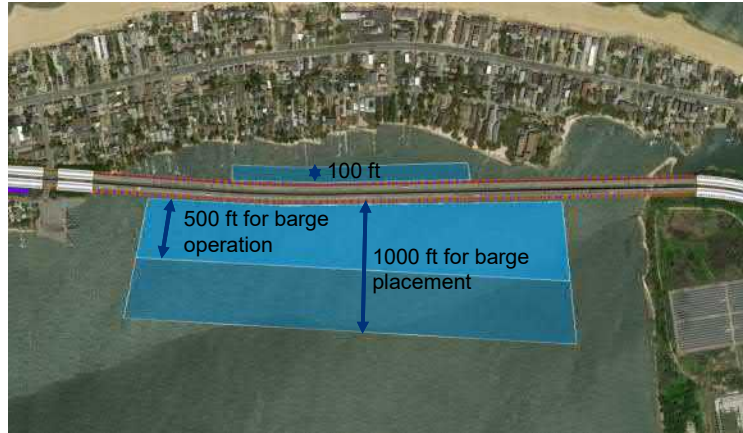


### ■ South Trestle

- Spud barges used in areas with more than 4.5 ft of water (at MLW)
- 25 +/- working barges
- First activity after receipt of the JPA
- Last activity in September 2024 + 6 months to remove structures

36

1. Design Segments and Construction Activities



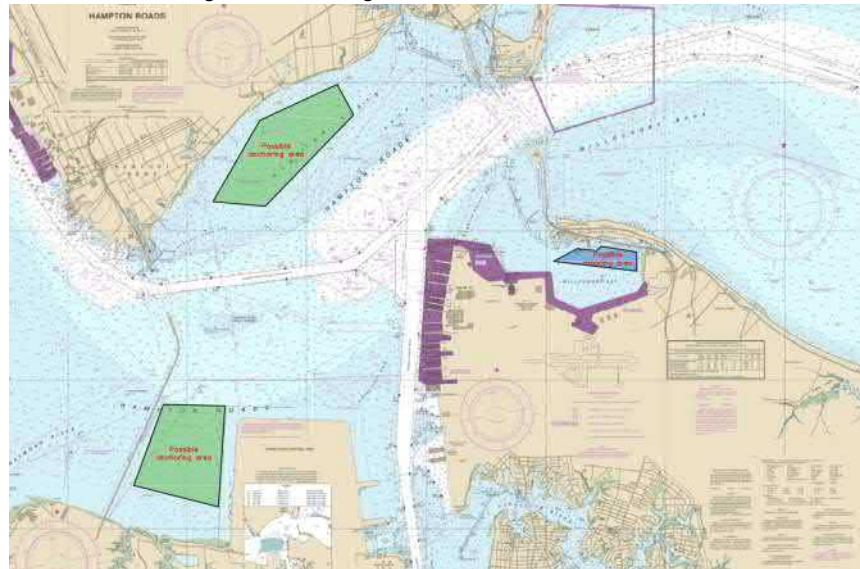
- Willoughby Bay
  - Mooring area to be created inside those 1000 ft with mooring piles (42" pipe piles)
  - Spud barges used in areas with more than 4.5 ft of water (at MLW)
  - At peak, ~15 working barges
  - First activity after receipt of the JPA
  - Last activity in December 2024 + 3 months to remove structures

37

1. Design Segments and Construction Activities



- Potential mooring and anchoring areas

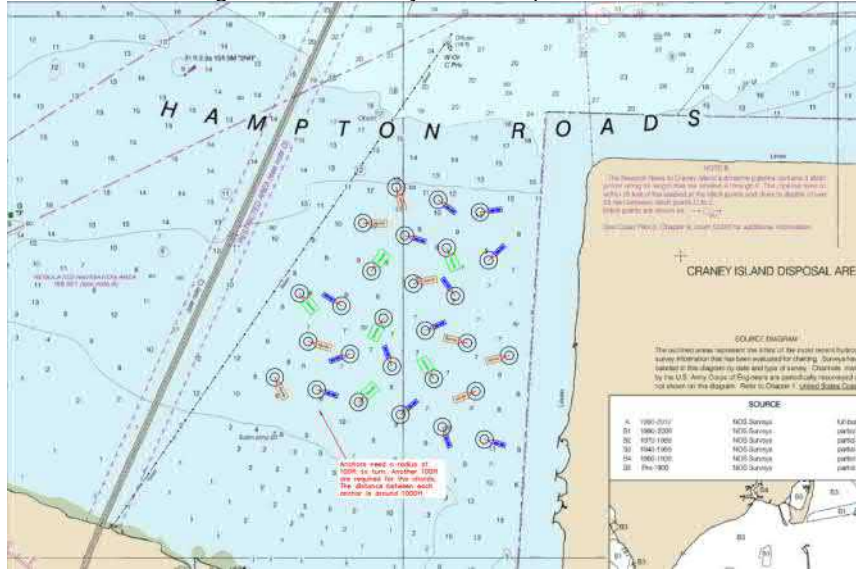


38

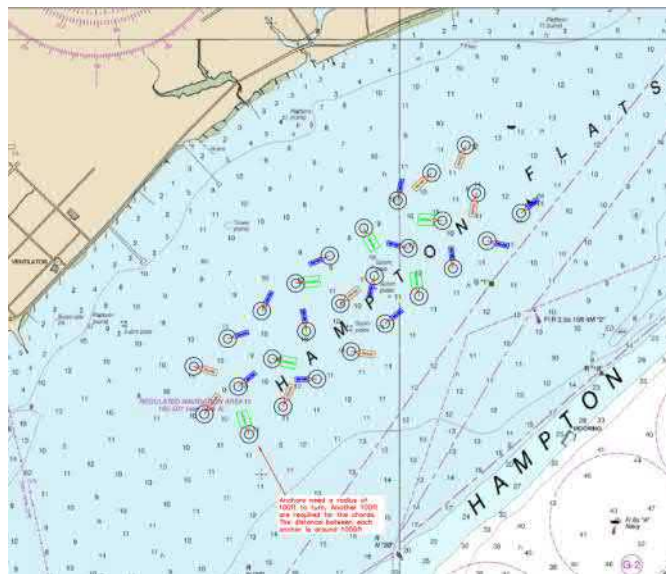
1. Design Segments and Construction Activities



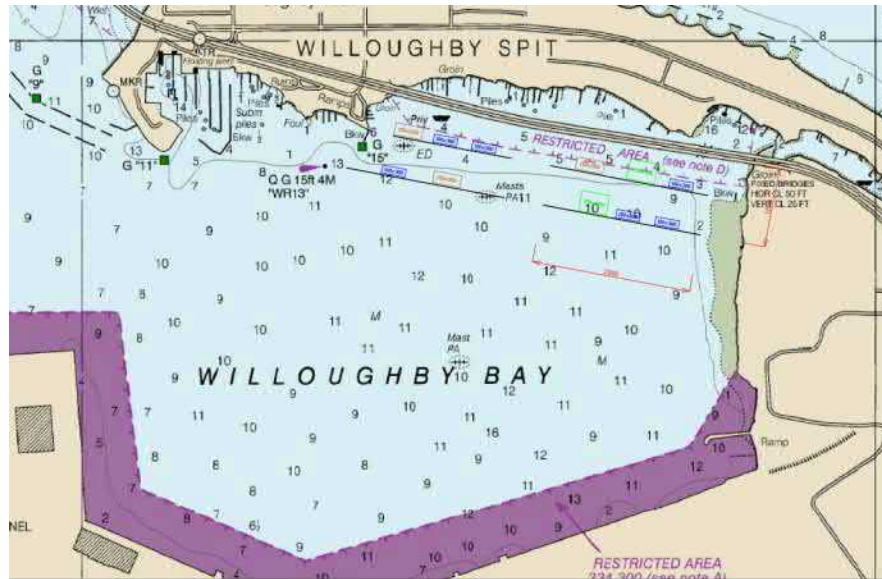
■ Possible anchoring area near Craney Island Disposal Area



1. Design Segments and Construction Activities



## 1. Design Segments and Construction Activities



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## 2. Project Schedule



- USACE/DEQ/VMRC JPA Permits
  - JPA Presubmittal Page Turn – August 20, 2019
  - JPA submission – August 30, 2019
  - Anticipated USACE PN – September 15, 2019
  - JPA Post-Submission Follow-up – September 26, 2019
  - Anticipated JPA permit issuance – April 2020
- USCG BP Permit
  - PIR and PPN done in 2017-2018 during NEPA Process
  - Submit NIR – October 2019
  - Anticipated PNCD Issuance – December 2019
  - Anticipated CGBP Issuance – April 2020
- Construction
  - Upland Early Work Start – November 2019
  - In-Water Construction Activities Start – April 2020
  - Project Completion – July 2025

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### 3. USCG BPA Process and Requirements



- Project Initiation Request (PIR)
  - Project Elements under USCG Jurisdiction
  
- Preliminary Navigational Clearance Determination (PNCD)
  - Preliminary Public Notice (PPN) of 10/23/2017
  - Navigation Impact Report (NIR)
  - Waterway User Survey Data (AIS Data)
  
- CGBPA Submission and Review/Period Timing with Section 408

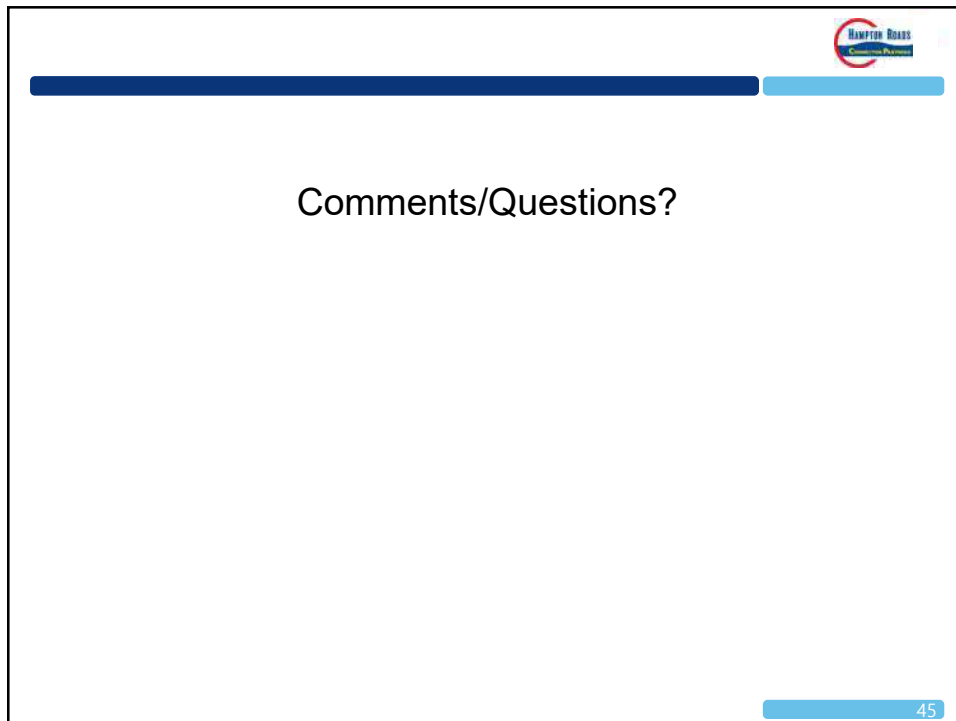
43

### 4. JPA/ Section 408 Review



- NWP6 – Geotech Boring Program (ongoing)
- Navigation Safety Risk Assessment (NSRA)
- Tunnel Construction Plan (TCP)
- Marine Operations Plan (MOP) for Construction
- Stakeholder Meeting

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A presentation slide with a white background and a black border. At the top right, there is a logo for 'HAMPTON ROADS' with 'Commonwealth' written below it. A thick blue horizontal bar spans across the top of the slide. The text 'Comments/Questions?' is centered on the slide. In the bottom right corner, there is a small blue box containing the number '45'.







# Meeting Summary

Project:	I-64 Hampton Roads Bridge-Tunnel Expansion
Meeting Title:	Project Update and Anadromous Fish Discussion
Date:	July 25, 2019
Location:	Virginia Department of Game & Inland Fisheries 7870 Villa Park Dr #400, Henrico, VA 23228

Attendees:

Company	Last Name	First Name	Phone Number	E-mail Address	Present
VDOT	Smizik	Scott	(804) 371-4082	scott.smizik@vdot.virginia.gov	XX
VCU	Garman	Greg	(804) 828-1574	ggarman@vcu.edu	XX
VDOT	Begg	Steve	(804) 786-4304	steven.begg@vdot.virginia.gov	XX
HRCP	Barrier	David	(514) 663-9198	dbarrier@hrcpjv.com	XX
HRCP	Vazelle	Solene	(757) 933-0878	svazelle@hrcpjv.com	XX
I-64 DJV	Gaffney	Doug	(856) 924-3363	douglas.gaffney@mottmac.com	XX
WRA	Sprenkle	Taylor	(804) 366-4097	tsprenkle@wrallp.com	XX
I-64 DJV	Duschang	John	(845) 596-7953	john.duschang@hdrinc.com	XX
I-64 DJV	Mace	Joshua	(804) 799-6861	joshua.mace@hdrinc.com	XX
I-64 DJV	Wilk	Rebecca	(804) 799-6873	Rebecca.Wilk@hdrinc.com	XX
DGIF	Fernald	Ray	(804) 367-8364	ray.fernald@dgif.virginia.gov	XX
DGIF	Aschenbach	Ernie	(804) 367-2733	ernie.aschenbach@dgif.virginia.gov	XX
DGIF	Greenlee	Bob	(804) 367-1407	bob.greenlee@dgif.virginia.gov	XX

Meeting Notes:

Discuss the HRBT project components that relate to aquatic resources, particularly anadromous fish, requiring pile driving, the technical aspects of pile driving and the approach to meeting Endangered Species Act (ESA) authorizations.

No.	Description	Action
1.	Introduction	
	S. Smizik (VDOT) opened the meeting and briefly described past work with DGIF pertaining to the HRBT Expansion project.  D. Gaffney (DJV) introduced the agenda and purpose of the meeting:	





No.	Description	Action
	<ul style="list-style-type: none"> <li>• Provide update of HRBT expansion project, and the project components;</li> <li>• Provide an overview of construction activities including island expansion, dredging, and pile driving;</li> <li>• Present project schedule and milestones;</li> <li>• Present Phase II data on the occurrence of Atlantic Sturgeon in the inventory corridor for the Hampton Roads Crossing Study; and</li> <li>• Discuss construction mitigation under consideration.</li> </ul>	
2.	Design Segments/Zones	
	<p>J. Duschang (DJV) briefly described the major construction segments. Areas include tunnels, island expansions, trestles, and landside construction.</p> <p>The project has been divided into design segments, see slides 3 – 11 for segment boundaries.</p>	
3.	Construction Activities	
	<p>The North Trestles will be replaced. Permanent impacts will include pile installation and shading of a small portion of the SAV bed. Construction of work trestles adjacent to the proposed permanent structure will result in extended temporary (&gt;12 months) impacts and shading of the SAV bed.</p> <p>A typical work trestle section was presented. Use of pile supported temporary trestles for construction access and maintenance of traffic (MOT) during construction will minimize impacts typically associated with temporary roads or causeways built on fill.</p>	
	<p>North and South Islands will be expanded to accommodate new, twin two-lane tunnels west of the existing tunnels. The island expansion areas will be dredged for ground improvement and obstruction removal. Construction for the expansions will include permanent fill, ground improvement (South Island settlement reduction piles), extended temporary work trestles, moorings and dredging.</p> <p>South Island critical path construction activities include:</p> <ul style="list-style-type: none"> <li>• Tunnel Boring Machine (TBM) platform (or Quay) to be constructed to receive the TBM. This is an extended (temporary) installation involving approximately 300+ steel hollow pipe piles and will be one of the first elements constructed</li> </ul>	



No.	Description	Action
	<ul style="list-style-type: none"> <li>• Jet Grouting Trestles – two temporary trestles to be constructed on the South Island to facilitate jet grouting</li> </ul>	
	The South Trestle and Willoughby Spit shore area will have permanent pile impacts from bridge replacement and be dredged for access and debris removal.	
	Willoughby Bay bridge will be expanded by widening each bridge to the outside. There will be some permanent shading in addition to the pile impacts. Temporary work trestles will be constructed at the east and west shores, and will have extended temporary impacts.	
	The bridges over Bay Ave, Oastes Creek and Mason Creek will be widened and will have permanent impacts from piles, shading and limited fills. Temporary work trestles will have extended temporary impacts.	
	A large portion of the project’s piles to be driven will be in place for a short-term (<12 months) and are used for temporary structures, or templates required to assist with the construction.	
	Temporary piles for temporary trestles will be vibrated in, and driven with an impact hammer to set.	
	<p>Sound source levels were used to estimate distances to in-water acoustic behavioural thresholds for fish, sea turtles and marine mammals known to occur near HRBT project area.</p> <p>See Slides 29 – 31 for preliminary estimates of distances to acoustic behavioural thresholds of unmitigated impact and vibratory pile driving.</p> <p>Some sound source levels still need to be confirmed for certain pile types (e.g., 54-inch cylindrical hollow concrete piles) and preliminary distances to thresholds need to be confirmed. Results from the Practical Spreading Loss Model (PSLM) and Simplified Attenuation Formula (SAF) were presented. Consultation with NOAA regarding the most appropriate model is on-going.</p> <p>B. Greenlee (DGIF) asked if there would be concurrent pile driving operations. J. Duschang responded that a maximum of five concurrent pile driving operations could occur, but in general 1 to 3 would be more typical.</p>	
	An overview of the existing channels and anchorages was presented, as well as potential areas for anchoring and mooring. Moorings would be required near to construction trestles, with 500-ft buffers	



No.	Description	Action
	for barge operation and 1000-ft buffers for temporary barge placement. At the North and South Islands 42-inch mooring piles would be driven every 40-feet to provide secured mooring to construction barges.	
4.	Project Schedule	
	<p>The following project milestones were presented for permitting and construction.</p> <ul style="list-style-type: none"> <li>• Permits                             <ul style="list-style-type: none"> <li>○ VPDES Pre-Application Meeting (VDEQ) – August 6th</li> <li>○ Pre-submittal JPA Page Turn – August 20, 2019</li> <li>○ JPA submission – August 30, 2019</li> <li>○ Anticipated USACE public notice date September 15, 2019</li> <li>○ JPA Post-Submission Follow-up – September 26, 2019</li> <li>○ Anticipated permit issuance – April 2020</li> </ul> </li> <li>• Construction                             <ul style="list-style-type: none"> <li>○ Commence field construction activities – scheduled for April 2020</li> <li>○ Project Completion – July 2025</li> </ul> </li> </ul> <p>R. Fernald (DGIF) requested GIS shapefiles depicting the permanent and temporary footprints/LOD for the project.</p>	J. Mace (HRCP)
5.	Atlantic Sturgeon	
	G. Garman presented the use of acoustic telemetry to document occurrence of Atlantic Sturgeon within the Inventory Corridor for the Hampton Roads Crossing Study. Data from the Phase II study, conducted between June 2018 and March 2019 was discussed.	



No.	Description	Action
	<p>Navy and VCU receivers were used. There are approximately 250 sturgeon with transmitters. See Slide 37 for the location of the receivers in the project area.</p> <p>There are two cohorts of genetically distinct sturgeon populations. One spring-spawning and one fall-spawning. The fall cohort is much larger.</p> <p>Adult sturgeon transit through the project area, with linger times of about 2 hours or less. They typically use the main channel for migration (due to deeper water) during 3 peak migration times:</p> <ul style="list-style-type: none"> <li>• Late-summer: Fish moving into the James River pre-spawn;</li> <li>• Late-fall: Post-spawn fish moving out of the James River</li> <li>• April: Spring cohort moving into the James River</li> </ul> <p>Adults and sub-adults are found to overwinter in Chesapeake Bay. Sub-adults migrate out in November and move back up the James River in April.</p> <p>Juvenile sturgeon should not occur in the project area from Age 0-4. The nursery grounds are several kilometers upstream of HRBT.</p> <p>DGIF requested the Phase I and II reports, to be transmitted via email.</p>	<p>J. Duschang (HRCP)</p>
5.	Construction Mitigation Considerations	
	Bubble curtains, ramp up/ soft start, hammer cushions/ cushion blocks, and use of protected species observers are among the mitigation methods being evaluated for use during pile installation and removal activities	
6.	Additional Issues/ Questions	
	<p>R. Fernald (DGIF) would like to be involved in the August 8, 2019 HCA and Mitigation Webinar.</p> <p>R. Fernald also asked for clarity on which model would be used. J. Duschang stated that final decision is forthcoming and will be based on further consultation with NOAA.</p> <p>A question was asked about other anadromous fish in the area. Dr. Garman responded that while no similar data sets exist, his research and experience indicate their behavior is very similar to sturgeon.</p> <p>B. Greenlee recognized there was not much project area-specific information for other anadromous species in the James River (e.g., river herrings, American shad) – but that DGIF might typically consider</p>	<p>J. Duschang (HRCP)</p>




No.	Description	Action
	a TOYR for seasonal anadromous fish. HRCP should demonstrate why a TOYR was not needed for maintaining a migration corridor through the project area.	
	END	



Virginia DGIF Project Update and  
Anadromous Fish Discussion  
25 July 2019  
I-64 Hampton Roads Bridge-Tunnel (HRBT) Expansion Project

1



## Agenda

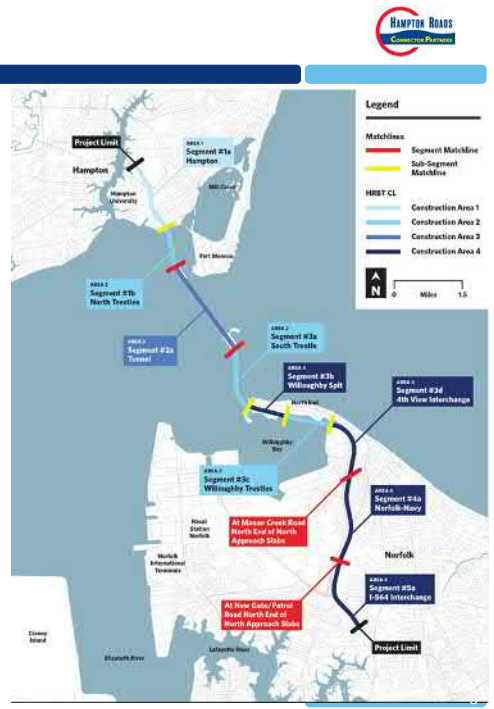
1. Introductions
2. Design Segments/Zones
3. Construction Activities
  - Island Expansion
  - Dredging
  - Pile Driving
4. Project Schedule
  - Permit Schedule
  - Construction Schedule
5. Atlantic sturgeon Update
6. Construction Mitigation Considerations

2

## 2. HRBT Segments/Zones

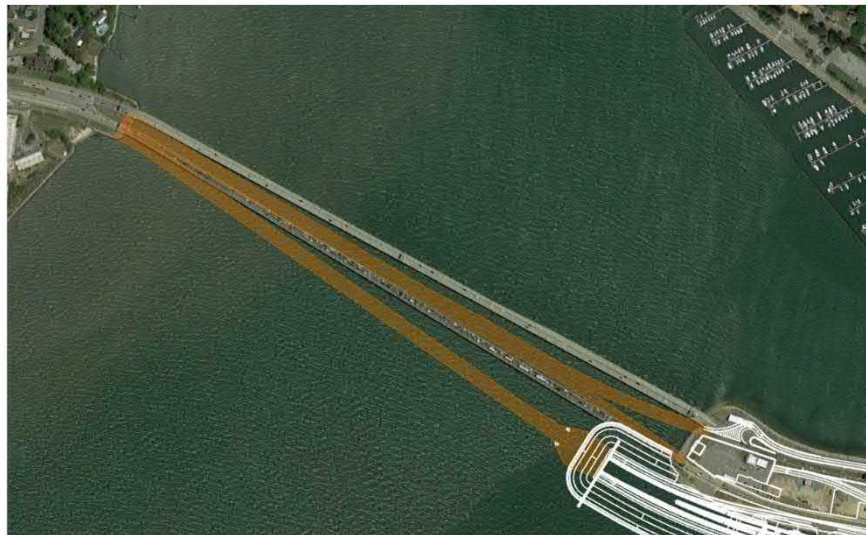
### ■ Construction Areas

- Tunnels
  - Tunnel Boring
  - Tunnel Portals – South Portal, North Portal
  - Tunnel Approach Structures (TAS)
- Island Expansions
  - North Island
  - South Island
- Trestles
  - North Trestle
  - South Trestle
  - Willoughby Bay Bridge
- Landside
  - Roadway and bridge improvements
  - Roadway widening
  - New bridge abutments
  - Mallory Street Bridge replacement



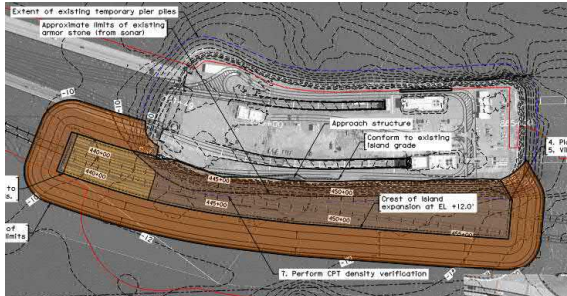
## 2. HRBT Segments/Zones

### ■ Segment 1b – North Trestle Construction



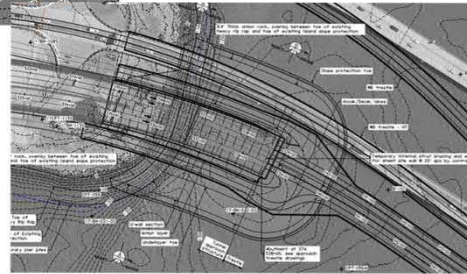


## 2. HRBT Segments/Zones



■ Segment 2a – North Island Expansion, Dredging and Debris Removal

■ Segment 2a – South Island Expansion, Dredging and Debris Removal

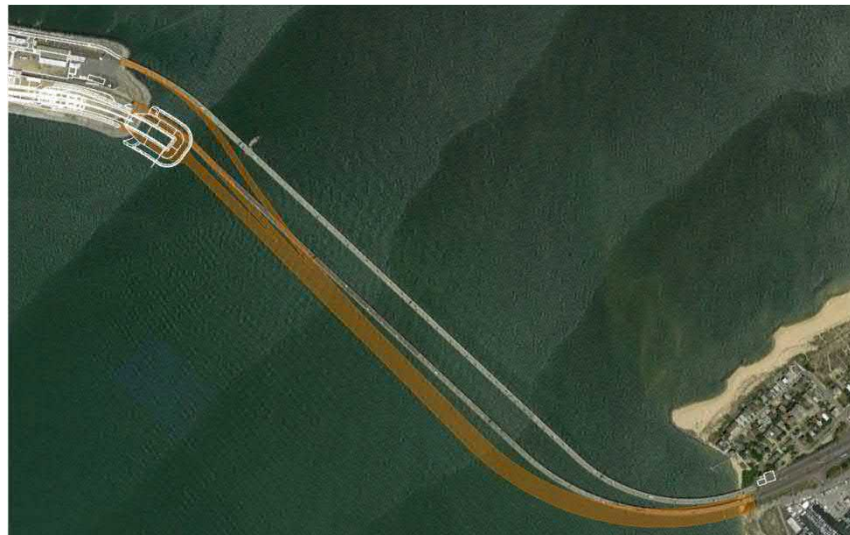


5

## 2. HRBT Segments/Zones



■ Segment 3a – South Trestle Construction



6

## 2. HRBT Segments/Zones



### ■ Segment 3b – Willoughby Spit



7

## 2. HRBT Segments/Zones



### ■ Segment 3c – Willoughby Bay Bridge Construction



8

## 2. HRBT Segments/Zones



- Segment 4a – Mason/Oastes Creek – Closed Waterbody Controlled by Flood Gate



9

## 2. HRBT Segments/Zones



- Segment 4a – Oastes Creek



10

## 2. HRBT Segments/Zones



### ■ Segment 4a – Mason Creek



11

## 3. Construction Activities



### ■ North Trestle

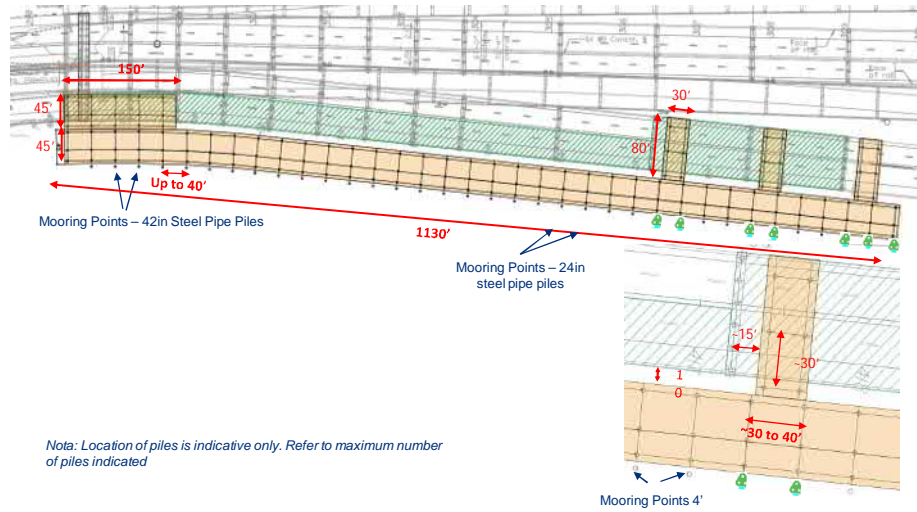


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### 3. Construction Activities



#### Extended Temporary Impacts (>12 Months) - North Trestle



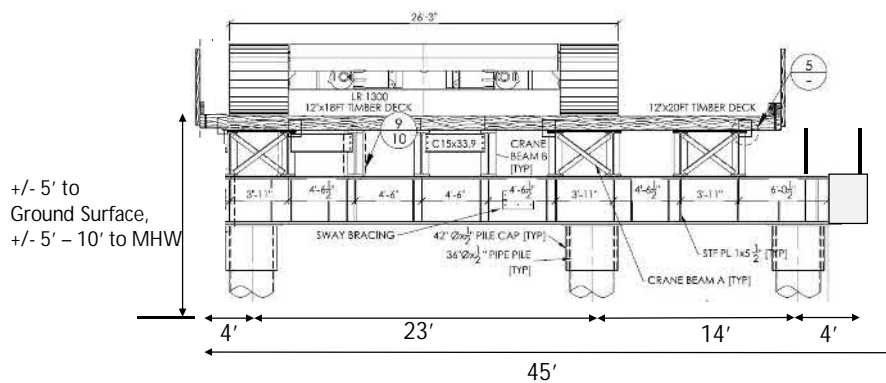
### 3. Construction Activities



#### Extended Temporary Impacts (>12 Months) - Typical Temporary Trestle

- 36" steel pipe piles

Main transverse section

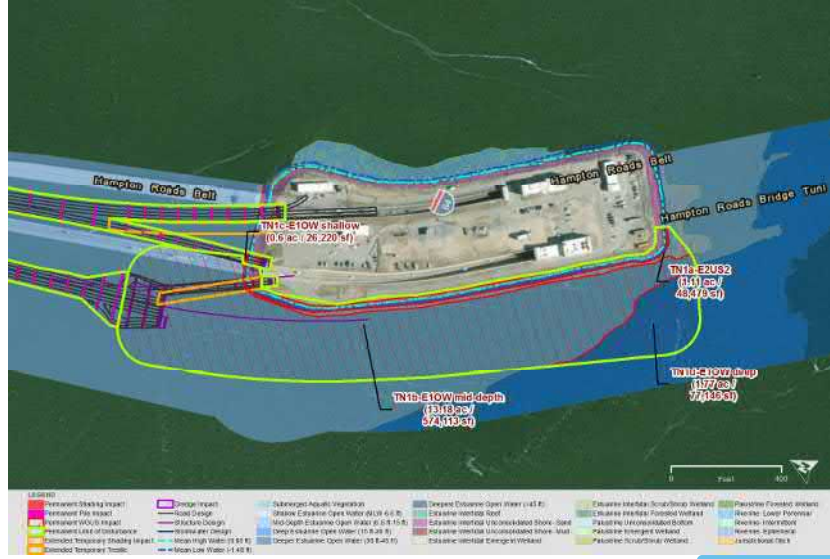


Note: Dimensions / Measures subject to vary +/- 5ft

### 3. Construction Activities



#### ■ North Island Expansion



### 3. Construction Activities



#### ■ South Island Expansion

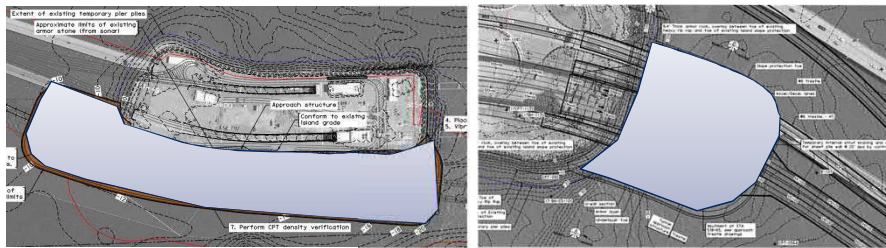


### 3. Construction Activities



#### ■ Dredging - North and South Island Ground Improvement and Obstruction Removal

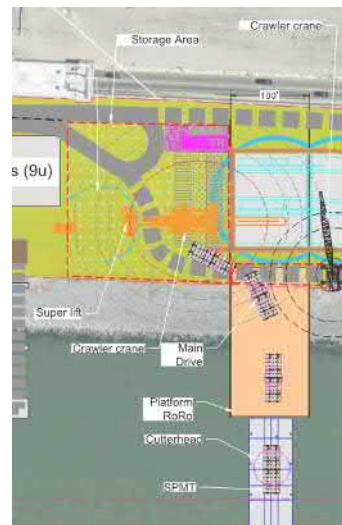
Resource	Area (acres)	Volume cyds
<b>North Island Expansion – Ground improvement and obstruction removal</b>		
Estuarine Subtidal Open Water - Shallow (photic zone): < 6.6ft	0.6	~95,000
Estuarine Subtidal Open Water - Mid-Depth: 6.6ft – 15ft	13.4	
Estuarine Subtidal Open Water - Deep: 15ft – 30ft	1.7	
<b>South Island Expansion – Ground Improvement and Obstruction Removal</b>		
Estuarine Subtidal Open Water - Shallow (photic zone): < 6.6ft	0.2	~20,000 – 125,000
Estuarine Subtidal Open Water - Mid-Depth: 6.6ft – 15ft	0.3	
Estuarine Subtidal Open Water - Deep: 15ft – 30ft	2.9	



### 3. Construction Activities



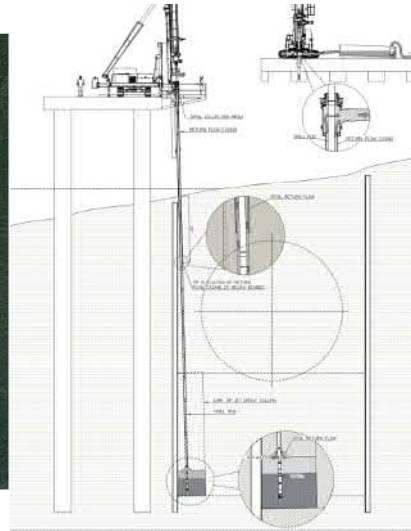
#### ■ South Island TBM/Supply Platform ■ Conveyor – TBM Spoil Movement



### 3. Construction Activities



#### ■ South Island Jet Grout Trestles

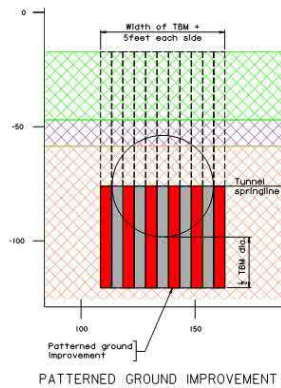
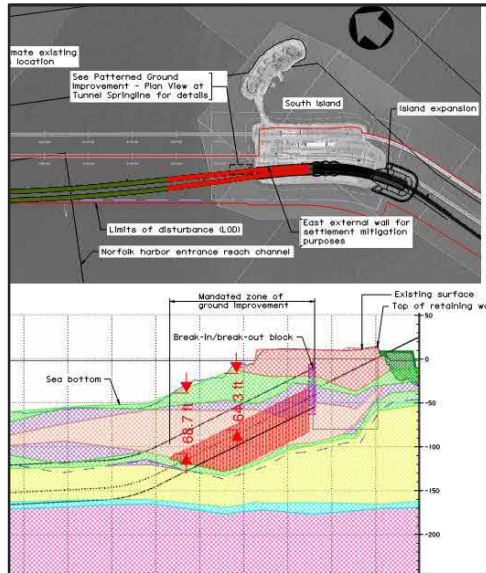


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### 3. Construction Activities



#### ■ South Island Jet Grout Trestles



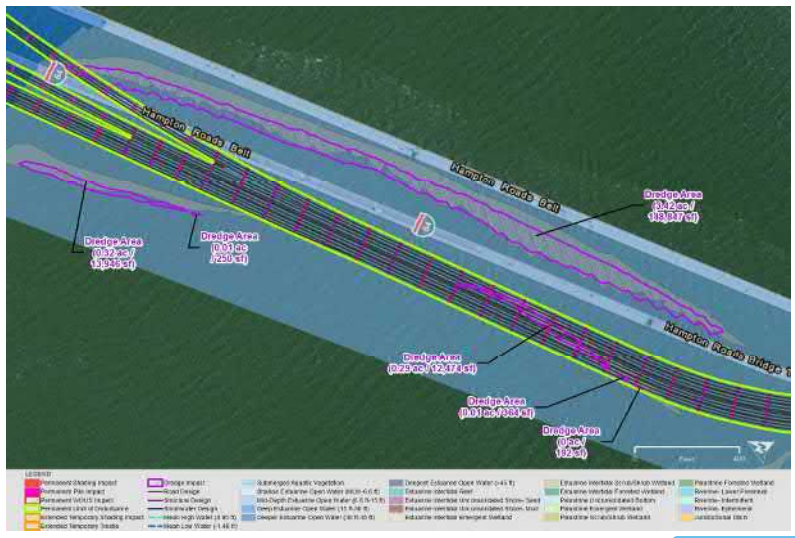
20



### 3. Construction Activities



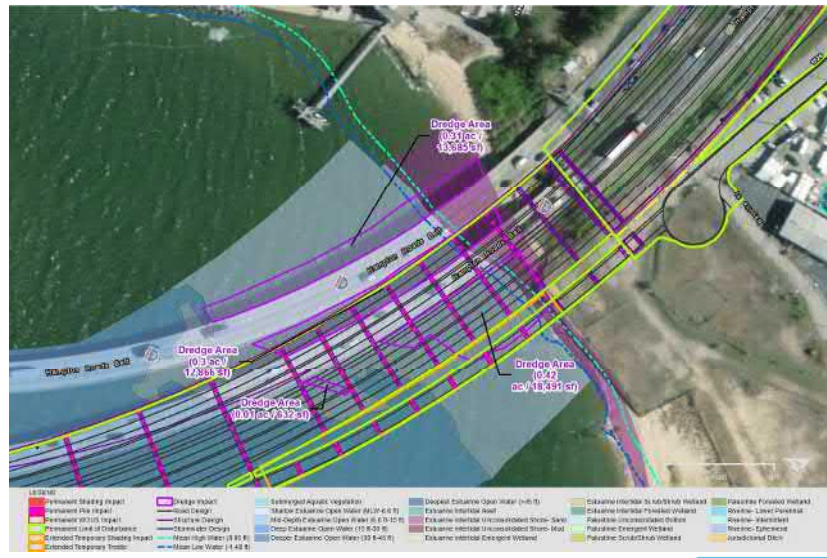
- South Trestle Dredging and Debris Removal



### 3. Construction Activities



- Willoughby Spit Dredging

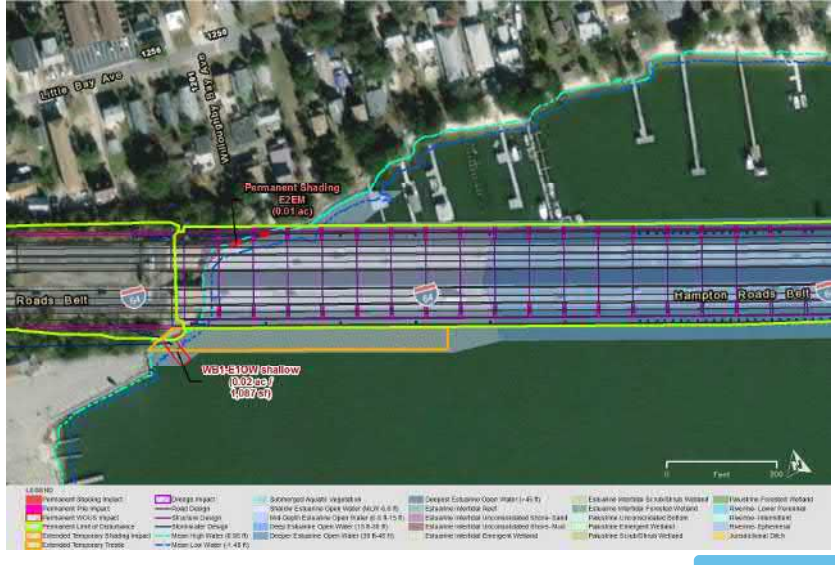


### 3. Construction Activities



#### ■ Willoughby Bay Trestle

WR4



23

### 3. Construction Activities



#### ■ Willoughby Bay Trestle

WR5

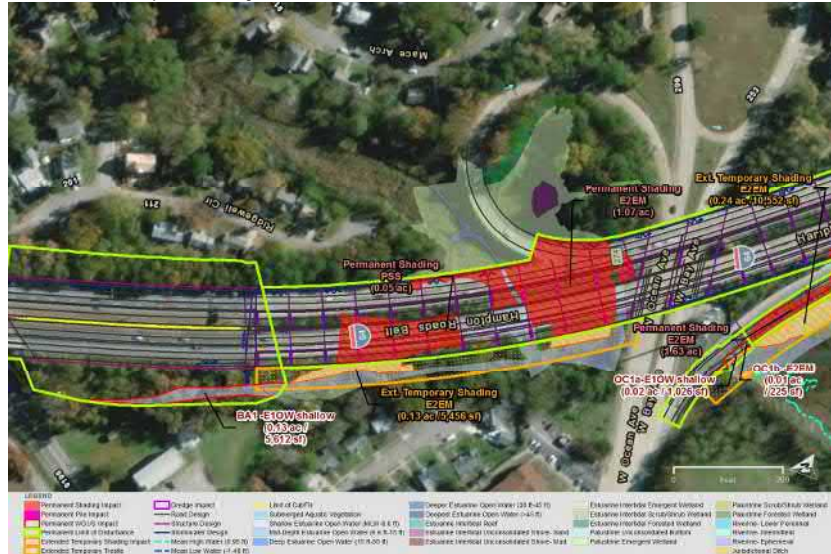


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### 3. Construction Activities



#### ■ Permanent Impacts - Bay Ave/Oastes Creek

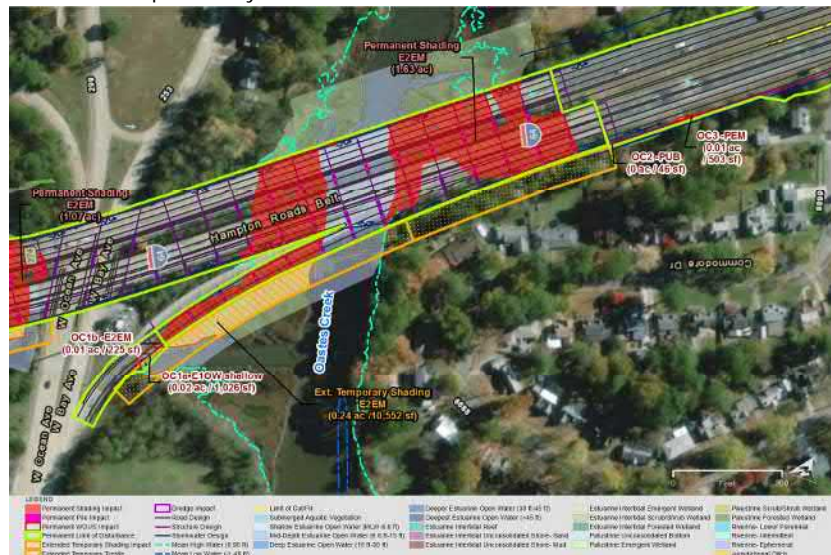


25

### 2. Habitat Condition Assessment (HCA) and Impacts



#### ■ Permanent Impacts - Bay Ave/Oastes Creek



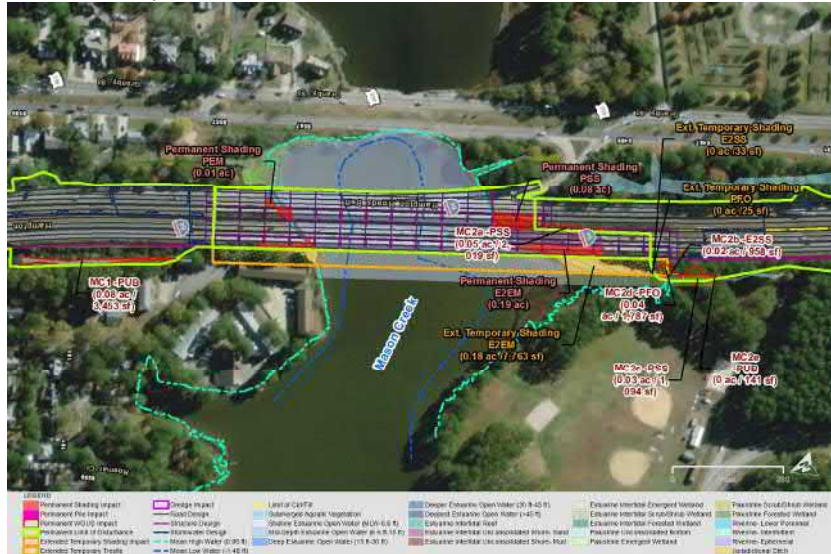
26

### 3. Construction Activities



#### ■ Permanent Impacts - Mason Creek

WR6



27

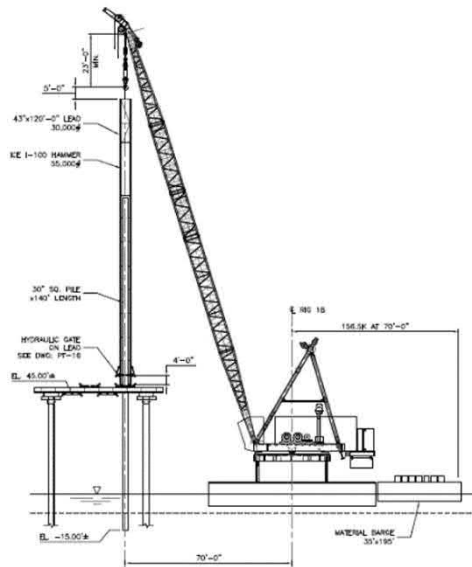
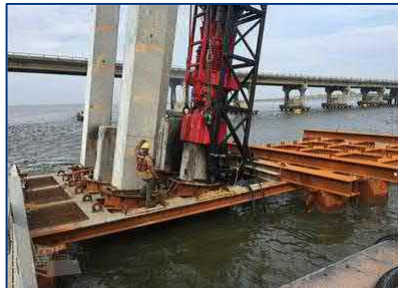
### 3. Construction Activities



#### ■ Pile Driving

##### ■ Templates

- Accommodates 3 permanent piles
- Four 42" pipe piles to set



28

### 3. Construction Activities



- Preliminary Results  
Distances to In-water Acoustic Behavioral Thresholds

#### Fish and Sea Turtles – Unmitigated Impact Pile Installation

Model	PSLM		SAF	
	Distance to 166 dB RMS (Sea Turtle) (meters)	Distance to 150 dB RMS (Fish) (meters)	Distance to 166 dB RMS (Sea Turtle) (meters)	Distance to 150 dB RMS (Fish) (meters)
24-inch steel pipe piles (impact)	736	8,577	87	140
30-inch steel pipe piles (impact)	858	10,000	58	90
36-inch steel pipe piles (impact)	631	7,356	58	90
42-inch steel pipe piles (impact)	858	10,000	105	185
30-inch square concrete piles (impact)	46	541	18	50
54-inch cylindrical hollow concrete pile (impact)	TBD	TBD	TBD	TBD

Practical Spreading Loss Model (PSLM)  
Simplified Attenuation Formula (SAF)

29

### 3. Construction Activities



- Preliminary Results  
Distances to In-water Acoustic Behavioral Thresholds

#### Fish and Sea Turtles – Unmitigated Vibratory Pile Installation

Model	PSLM		SAF	
	Distance to 166 dB RMS (Sea Turtle) (meters)	Distance to 150 dB RMS (Fish) (meters)	Distance to 166 dB RMS (Sea Turtle) (meters)	Distance to 150 dB RMS (Fish) (meters)
24-inch steel pipe piles (vibratory)	40	464	54	107
30-inch steel pipe piles (vibratory)	40	464	38	70
36-inch steel pipe piles (vibratory)	40	464	28	60
42-inch steel pipe piles (vibratory)	18	215	TBD	TBD
30-inch square concrete piles (vibratory)	34	398	TBD	TBD
54-inch cylindrical hollow concrete pile (vibratory)	TBD	TBD	TBD	TBD
24-inch AZ steel sheet (vibratory)	4	44	TBD	40

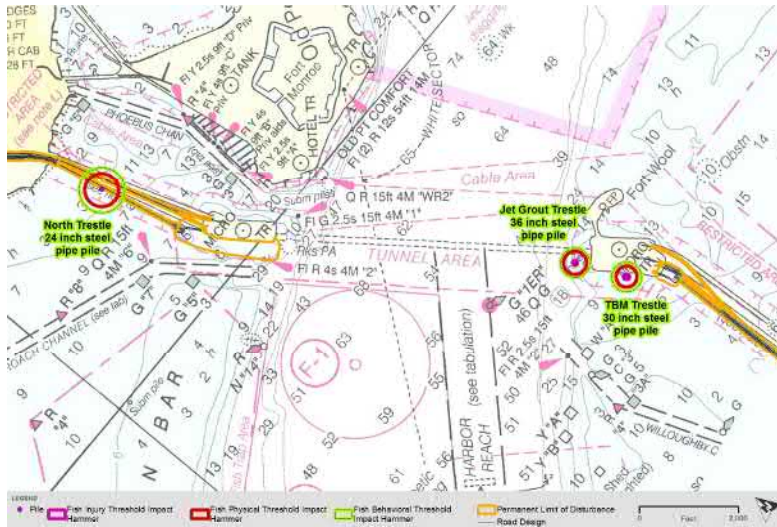
Practical Spreading Loss Model (PSLM)  
Simplified Attenuation Formula (SAF)

30

### 3. Construction Activities

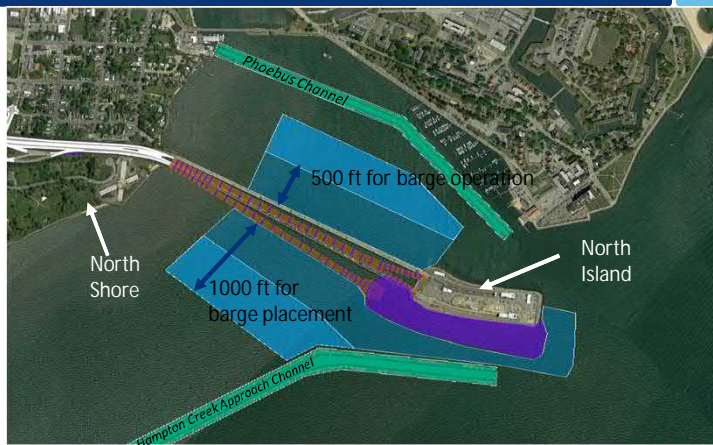


#### ■ Preliminary Results Distances to In-water Acoustic Behavioral Thresholds



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### 3. Construction Activities



- North Trestle
  - Spud barges used in areas with more than 4.5 ft of water (at MLW)
  - 15 +/- working barges
  - First activity after receipt of the JPA
  - Last activity in September 2024 + 6 months to remove structures

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### 3. Construction Activities



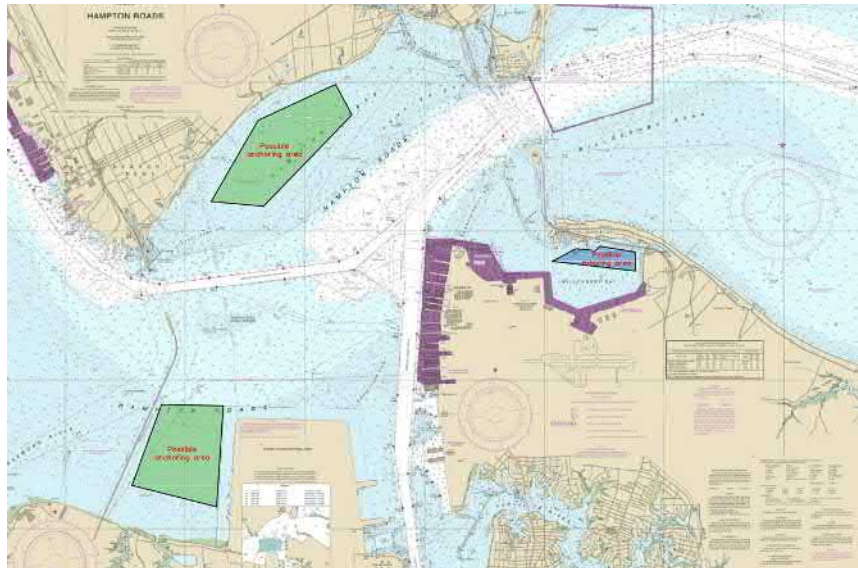
- South Trestle
  - Spud barges used in areas with more than 4.5 ft of water (at MLW)
  - 25 +/- working barges
  - First activity after receipt of the JPA
  - Last activity in September 2024 + 6 months to remove structures

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### 3. Construction Activities



- Potential mooring and anchoring areas



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#### 4. Project Schedule



##### ■ Permits

- VPDES Pre-Application Meeting (VDEQ) – August 6<sup>th</sup>
- Presubmittal Page Turn – August 20, 2019
- JPA submission – August 30, 2019
- Anticipated public notice date September 15, 2019
- JPA Post-Submission Follow-up – September 26, 2019
- Anticipated permit issuance – April 2020

##### ■ Construction

- Commence field construction activities – scheduled for April 2020
- Project Completion – July 2025

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#### 5. Atlantic Sturgeon Update



- Use of Acoustic Telemetry to Document Occurrence of Atlantic Sturgeon Within the Inventory Corridor for the Hampton Roads Crossing Study
- Phase II June 2018 – March 2019

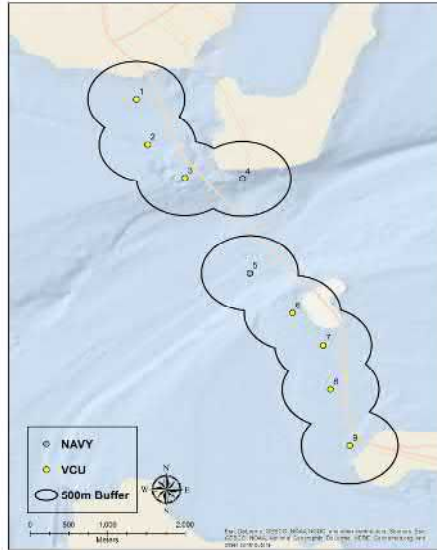
36



## 5. Atlantic Sturgeon Update



- Map of receiver array with conservative 500-m detection radii. The 500 m range is the detection range during the most adverse conditions. Typically the detection range is over 1 km, which closes the gap between receivers 3, 4, and 5

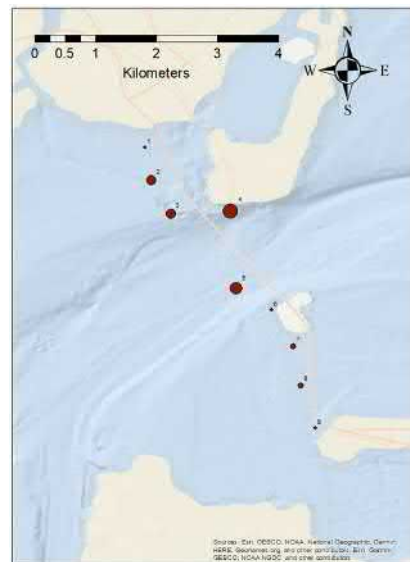


37

## 5. Atlantic Sturgeon Update



- Relative number of unique ATS detections per receiver, based on the size of the circle, within the project area



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## 6. Construction Mitigation Considerations



- Bubble curtain
- Protected species observers
- Ramp up

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Comments/Questions?

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# Meeting Summary

Project: I-64 Hampton Roads Bridge-Tunnel Expansion  
 Meeting Title: VPDES Industrial Discharge Permit Pre-App Meeting  
 Date: August 6, 2019; 09:00 AM to 11:00 AM  
 Location: Virginia DEQ Tidewater Regional Offices, Norfolk, VA

Attendees:

Company	Last Name	First Name	Initial	Phone Number	E-mail Address
HRCP	Barrier	David	DB	(514) 663-9198	<a href="mailto:david.barrier@hrcpjb.com">david.barrier@hrcpjb.com</a>
HRCP	Vazelle	Solene	SV	(757) 933-0878	<a href="mailto:Solene.vazelle@hrcpjb.com">Solene.vazelle@hrcpjb.com</a>
HRCP	Rescamps	Yvonnick	YR		<a href="mailto:yvonnick.rescamps@vinci-construction.com">yvonnick.rescamps@vinci-construction.com</a>
HRCP	Sprenkle	Taylor	TSp	(804) 366-4097	<a href="mailto:tsprenkle@wrallp.com">tsprenkle@wrallp.com</a>
HRCP	Drahos	Emily	ED	(804) 822-2173	<a href="mailto:Edrahos@wrallp.com">Edrahos@wrallp.com</a>
HRCP (DJV)	Ryder	Matt	MR	(929) 396-8392	<a href="mailto:matthew.ryder@mottmac.com">matthew.ryder@mottmac.com</a>
HRCP (DJV)	Sword	Taylor	TS	(757) 672-4528	<a href="mailto:taylor.sword@mottmac.com">taylor.sword@mottmac.com</a>
HRCP (DJV)	Gaffney	Doug	DG	(856) 924-3363	<a href="mailto:douglas.gaffney@mottmac.com">douglas.gaffney@mottmac.com</a>
Stantec	Mickel	Blair	BM		<a href="mailto:Blair.mickel@stantec.com">Blair.mickel@stantec.com</a>
VDEQ	Hannah	Jeff	JH	(757) 518-2146	<a href="mailto:jeffrey.hannah@deq.virginia.gov">jeffrey.hannah@deq.virginia.gov</a>
VDEQ	Weyland	Janet	JW	(757) 518-2151	<a href="mailto:janet.weyland@deq.virginia.gov">janet.weyland@deq.virginia.gov</a>
VDEQ	Thomas	Carl	CT	(757) 518-2161	<a href="mailto:Carl.thomas@deq.virginia.gov">Carl.thomas@deq.virginia.gov</a>
VDOT	Ambrose	Larissa	LA	(757) 956-3187	<a href="mailto:larissa.ambrose@vdot.virginia.gov">larissa.ambrose@vdot.virginia.gov</a>
VDOT	Swanson	Chris	CS	(804) 786-6839	<a href="mailto:chris.swanson@vdot.virginia.gov">chris.swanson@vdot.virginia.gov</a>
VDOT (VHB)	Frye	Chris	CF	(757) 503-3796	<a href="mailto:cfrye@vhb.com">cfrye@vhb.com</a>
VIMS	Varnell	Lyle	LV	(804) 684-7764	<a href="mailto:lyle@vims.edu">lyle@vims.edu</a>

Attachments:

1. Presentation





Meeting Notes:

No.	Description	Action
I.	Presentation TS presented approach to VPDES permit application (see attachment).	
II.	Quantities	
a.	LV enquired about the total maximum discharge flow rate shown in the presentation to be certain that it is less than the threshold of 0.5 Million Gallons Per Day (MGPD). Several attendees were confused by the 15,000 L/day which was defined as the potential contribution of non-contact cooling water (NCCW). The Tunnel Boring Machine (TBM) uses fresh water in a closed-loop coolant system at the cutting head which is not in contact with the soils or bentonite slurry. Unlike the Parallel Thimble Shoal Tunnel (PTST) Project, there are no thermal (warm water) releases of the NCCW planned. TS responded that in practice, total discharges would be around 300-400 thousand Gallons Per Day (GPD).	
III.	Quality - Bench scale testing	
a.	DG - Bench scale testing of TBM materials will replicate the actual treatment process which includes screening, hydrocyclone and filter press followed by a water treatment plant. JW – Asked when data from bench-scale testing will be submitted? DG – replied that sampling is in Sep/Oct and testing in October, and the Report in November. DB - added that in-water borings will start upon receipt of the Nationwide Permit 6 (NWP6) from the US Army Corps of Engineers (USACE), hopefully in 3 weeks. DG – Noted that the planned Joint Permit Application (JPA) submission date is Aug 30.	
IV.	Contaminants	
a.	LV – noted that TS mentioned during the presentation that metals in the existing soils may be an issue and asked whether HRCP foresee any other contaminants of concern in the sediments. TS / DG - previous testing in Supplementary Environmental Impact Statement (SEIS) Technical Report (prepared for VDOT by Cardno) showed Chromium, and low level or sporadic detections of Total Petroleum Hydrocarbons (TPH), Volatile Organics, and DDT.	
b.	CT – asked whether reused (recycled) waste water is treated or untreated? TS clarified that it is the treated water from the on-site Water Treatment Plant (WTP) and would be used to supplement public water supply to the bentonite slurry mix tank.	



No.	Description	Action
	DG – added that we could draw a line in Process Flow Diagram (PFD) from 0.42 MGD to City Water line to show this.	HRCP
c.	<p>YR - Presented the treatment system.</p> <p>YR – noted that when slurry is modified (degrades), some slurry is removed from the loop and treated separately through the filter press. In addition YR explained when slurry additives were changed or added to slurry to help maintain flow properties. ** Post Notes</p> <p>** Post Notes - Slurry changes in composition because of the interaction with pore water and sediment matrix. When this happens, additional chemical will be added to maintain proper slurry properties. This would include a viscosity (between 2 and 5), and a density of 1.15 – 1.3.</p>	
V.	Permanent outfalls	
a.	<p>CF – asked whether the temporary outfalls under this permit action will be retained continuously?</p> <p>TS – stated that these will be removed and clarified that permanent outfalls for the new tunnels will be under a new separate Virginia Pollutant Discharge Elimination System (VPDES) permit (or a modification of the existing permit).</p>	
b.	<p>CT – asked whether outfalls would be siting within 5 years? DG – replied Yes.</p> <p>CT – stated that it would be convenient to include the outfalls in the reissuance of the permit for the existing outfalls. JW – added that the existing permit reissuances are in draft now.</p> <p>DG – agreed that HRCP will review the schedule.</p> <p>CT – added that the Virginia DEQ needs to inform riparian owners. This could be a major modification involving public notice.</p>	
c.	<p>LV – asked how the new outfall locations are determined? TS – responded that they were sited in proximity to the 2 existing outfalls.</p> <p>LV – asked how flexible are the locations? To which TS responded that there is flexibility.</p> <p>LV – stated that VIMS would question the placement of the outfalls. DG – asked whether VIMS prefer East or West? LV – responded that it is a dilution issue. Probably more at the ends of the islands where the laminar flow is higher. Currently it is not shown where the flow goes. LV added that HRCP may consider hydrodynamic modelling to show flows and dilution.</p>	
VII.	Toxicity	
a.	CT – Permit conditions (testing) will likely be similar to PTST, subject to	



No.	Description	Action
	<p>discussions. New data and equipment to look at.</p> <p>TS – stated that no foaming agents are required for this type of TBM. The TBM to be used at HRBT is a Multi Mode variable density with visitable cutter head – closed system.</p> <p>DB – Added that the TBM is different to the one used on PTST, and that the TBM was selected (in part) to avoid issues experienced on PTST. ** Post Notes</p> <p>** Post Notes - The PTST system is an earth pressure balance system (EPB) TBM where spoils are removed via a conveyor into muck bins. From the muck bins it is loaded for disposal.</p>	
VIII.	Quantities / flows	
a.	<p>CS asked about the quantities shown. In the presentation slides it looks like the 2021 flows are higher than the 500,000 GPD mentioned earlier. TS responded that this is due to phasing and confirmed that the anticipated quantities are below 0.5 MGPD.</p>	
IX.	JPA pre-submittal page turn meeting	
a.	<p>DG / JW - JPA pre-submittal page turn meeting - 20 August. Corps not available (G Janek (USACE) is on leave all week), so they will be addressed at a separate meeting.</p> <p>JH - It is important for Corps and agencies to hear each other's thoughts in the same room.</p> <p>DG - We will investigate other timing during the week but might be difficult to coordinate a single meeting within the necessary timeframe. BM looked up the timeframe that GJ was unavailable and it was agreed that rescheduling for a joint meeting was not practical.</p>	
X.	<p>JW questioned submittal of an incomplete VPDES application. Implication is that they could submit a later VPDES application so they can focus on JPA submittal right now. JW also indicated that the processing clock would not start until a complete application is submitted.</p>	
	END	



Pre Application Meeting VPDES  
06 August 2019  
VA DEQ Tidewater Regional Office, 5636 Southern Blvd  
I-64 Hampton Roads Bridge-Tunnel (HRBT) Expansion Project

1

## Agenda



- Introduction
- Background
- Activities in support of VPDES application
- Application Components
- Slurry Treatment Plants / Separation & Treatment Plant / Water Treatment Plant
- VPDES Discharge
- Anticipated Monitoring Requirements



2



## Introduction VPDES point discharge Pre Application Meeting



- HRBT I-64 Expansion
  - Construction of Tunnel Portions North Island and South Island with the focus on VPDES point discharge (industrial discharge minor permit) application
- Today's Purpose (Pre-Application Meeting)
  - Refamiliarize all with the processes of construction that are to be taken
  - Provide for status of VPDES permit application (industrial discharge minor)
  - Gain feedback on considerations for the application

3

## Background



- HRBT Project
  - TBM Planned for the boring of the tunnel
    - This construction process is utilizing a Multi mode and Variable Density with Visitable Cutterhead
    - Closed System
    - No foaming agents
    - Slurry is bentonite based



- Sampling
  - Some environmental sampling has been completed in accord with SAP
  - Additional land and marine samples yet to be obtained
  - Additional samples / testing yet to be completed and needed for the Bench Scale Testing

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## Background / Activities In Support of VPDES



### ■ Sampling

- Bench Scale Testing – set up considerations
  - Source Selection is underway for separation set up and chemical analysis
  - Other items being defined for bench scale testing; (defining standards for testing)
- Filtrate analysis
  - Toxicity – and a suite of environmental analysis for VOCs, SVOCs, Metals etc.
- Very Fines / Filter Cake
  - Elutriate

### ■ Slurry Make-up

- Evaluation of additives
  - Classes
    - Bentonites
    - Rheology stabilization agents/ viscosity stabilization/ density/
    - Flocculants/coagulation / to assist with desanding/desilting

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## Activities In Support of VPDES



### ■ Evaluation Considerations

- Toxicity/ Aquatic Toxicity
- Safety in handling/storage – ease of use
- Empirical chemistry and additive information vs. hazardous substance list (VADEQ, VPDES form 2C Table 2C-3 Toxic Pollutants and Hazardous Substances required to be identified if expected to be present)
- Comparison to Form 2C Table 2C-4 Hazardous Substances

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## VPDES Components


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- Application comprised of
  - Form 1 - General Information
  - Form 2A - Application Overview
  - Form 2C- Wastewater Discharge Information
  - Form 2D - New Sources and New Dischargers, Application for Permit to Discharge Process Wastewater

**Key Components**

- Outfall Location Map
- Process Flow Diagram
- Additional Information / Narrative

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## VPDES


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- Form 2C- Wastewater Discharge Information
- Specific information regarding the planned outfalls
  - Specific Location lat/long –
  - Flow Rate
  - Contributing processes, as to where the water is coming, how it was generated
  - Treatment codes from Table 2C-1 codes denoting treatment processes for the water, i.e. Chemical treatment through carbon adsorption and others

1. OUT-FALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1
001	Jet Grouting / Slurry Wall construct	300-500 gpm	residual return water	1-U, 1-T, 2-K
	Tunnel Boring Machine, TBM excavatio	~ 350 gpm	water from slurry/	1-T, 1-Q, 2-K, 2-
	excavation dewatering	200 gpm	water from dewatering excavation	1-U, 1-T, 2-K
	NCCW from TBM	50 gpm intermitten	non-contact coolant water/TBM	1-T, 1-Q, 2-K, 2-
002	Jet Grouting / Slurry Wall construct	300-500 gpm	residual return water	1-U, 1-T, 2-K
	excavation dewatering	200 gpm	water from dewatering excavation	1-U, 1-T, 2-K


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## VPDES Outfall Location



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- Map of Planned Outfalls




Notes:

1. Slurry Treatment Plant and Separation Treatment Plant (TBM) Water Treatment Plant Located at South Island.
2. Slurry Treatment Plant Located on North Island

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## VPDES




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- Narrative –
  - Current draft is being updated to include discussion on
    - Outfall flow schedule
    - Process flow diagrams
    - Sampling Information (additional data yet to be acquired)
    - Further discussion on Bench Scale testing and results
      - Results of toxicity analysis
        - Filtrate water
        - Solids: very fines, and filter cake

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VPDES



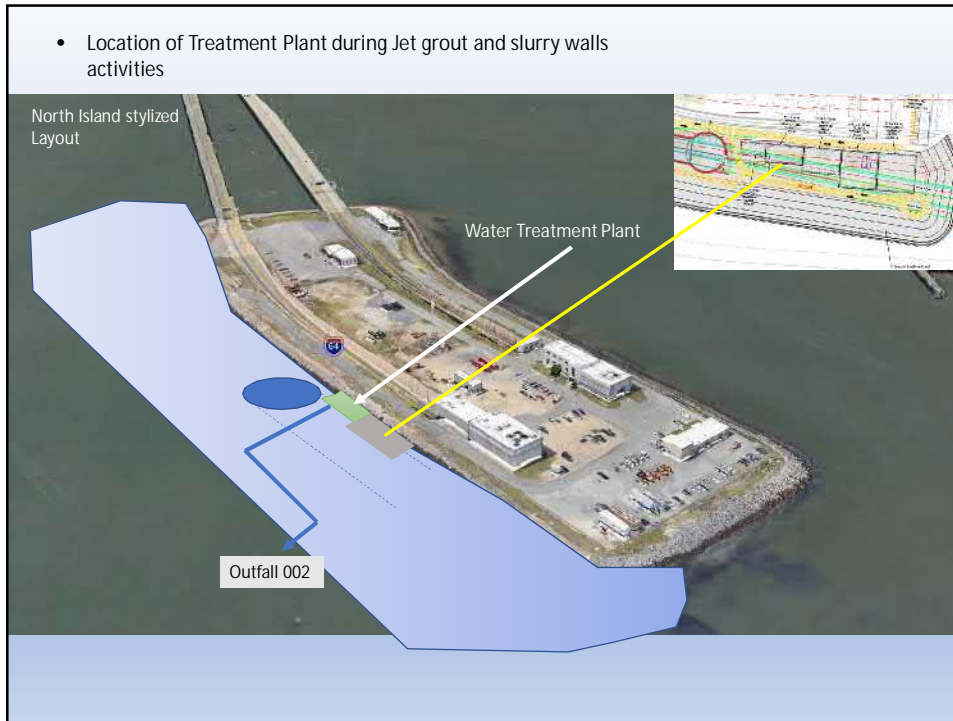
- Point source discharge of construction process water
- Characterized as Industrial Minor
- Flow rate <0.5 MGD
- Two planned outfalls 001 and 002
  - 001 South Island
    - Water treatment from
      - Jet Grouting – construction
      - Slurry Wall - construction
      - Excavation water of tri-cell (Pit for TBM entry) north bore
      - TBM boring of tunnels
  - 002 North Island
    - Water treatment from
      - Jet Grouting – construction
      - Slurry Wall - construction
      - Excavation of water entry cell for south bore of TBM

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- Phase 1: Location of Treatment Plant during Jet grout and slurry walls activities
- Phase 2: Location of Treatment Plant during tunnel boring



South Island with stylized layout for STP



### VPDES Outfall Flow Breakdown

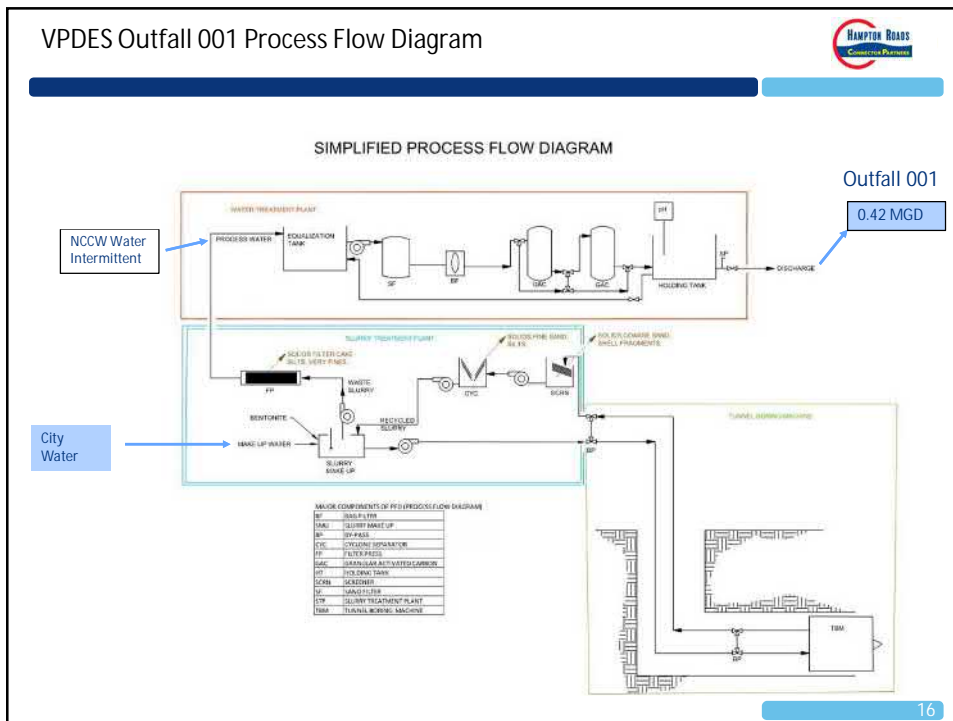
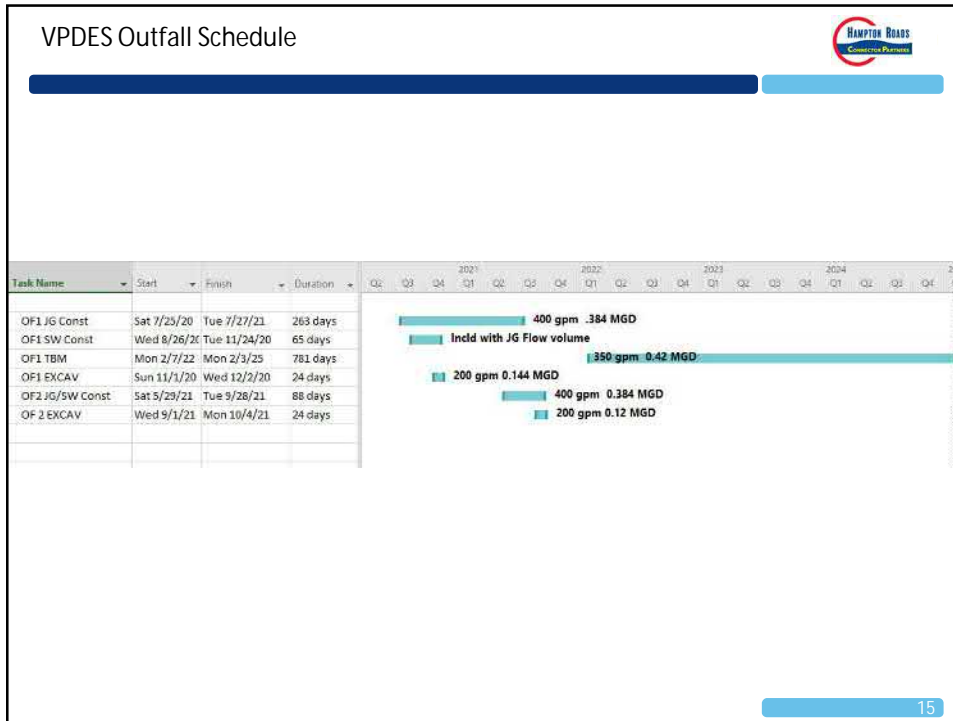


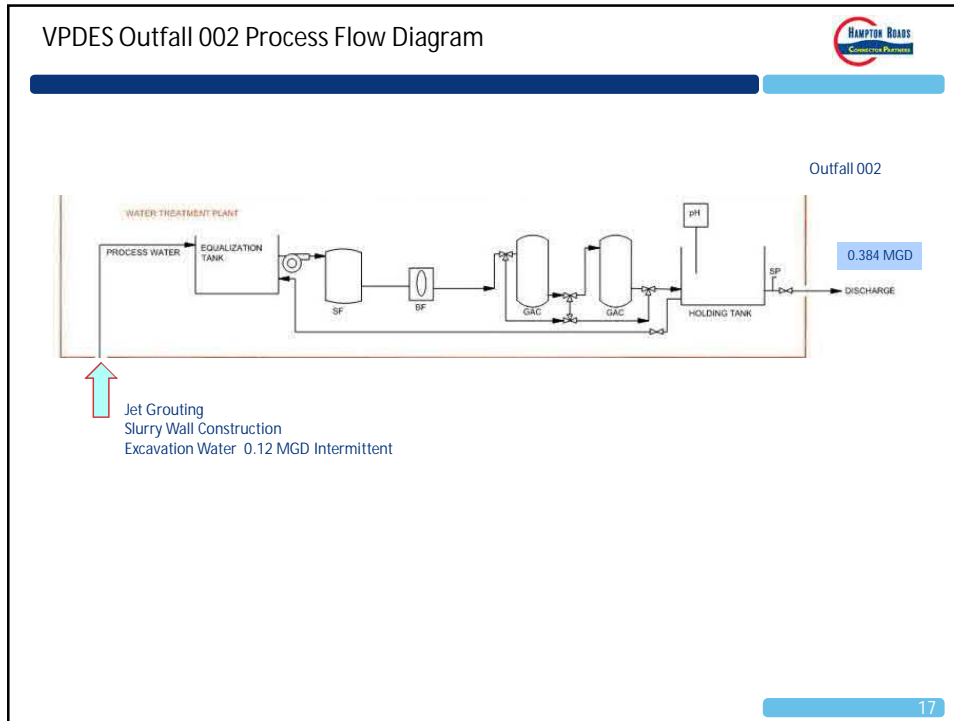
#### Outfall 001 South Island

Activity	Flow Rate gpm	Duration/ hr/day	Duration days	Gallon per day	MGD	Total vol in gal
Jet Grouting/Slurry Wall Construction	400	16	263	384,000	0.384	100,992,000
TBM construction	350	20	781	420,000	0.42	328,020,000
Excavation Dewatering	200	12	24	144,000	0.144	1,440,000
NCCW	50	10	8	30,000	0.03	240,000

#### Outfall 002 North Island

Activity	Flow Rate gpm	Duration/ hr/day	Duration days	Gallon per day	MGD	Total vol in gal
Activity	Flow Rate gpm	Duration/ hr/day	Duration days	Gallon per day	MGD	Total vol in gal
Jet Grouting/Slurry Wall Construction	400	16	104	384,000	0.384	39936000
Excavation Dewatering	200	10	8	120,000	0.12	1440000





- ### VPDES
- Nutrients N and P
    - If the discharge is in exceedance or planned exceedance of limit, offset credits are required to be purchased.
  - Treatment system nutrient limits for total Nitrogen and total Phosphorus are:
    - N = 2,300 lb/yr
    - P = 300 lb/yr

Based on a 0.5 MGD industrial minor discharge

    - Due to make up water containing N and P it is likely that credit purchases will be required due to the volume of water and mass loading. Mass loading indications are that P limits will possibly be exceeded. Upon completion of the N and P sampling the calculation will be conducted for determination – this information will be required in the application along with registration and proof of obtaining credits if needed.
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## VPDES Application Status



- Forms complete
  - Analytical pending
- Refined the PFDs and outfall schedule
- Planned location of outfalls
- Critical Path for completion
  - Acquiring analytical data from
    - Bench scale testing of
      - Slurry with cuttings content - segregated
      - Filtrate analysis including Toxicity
      - Toxicity analysis of very fines and filter cake
    - Additional analytical data from marine sediments (to be obtained)
    - N and P analysis

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## Anticipated / Permit Monitoring Requirements



- Strict requirements/ and a prescribed frequency
  - Planning at a minimum:
    - Flow
    - TPH
    - TSS
    - Some Metals
    - TP
    - TN
    - Nitrite and Nitrate
    - TKN

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VPDES



- Questions/ Comments / Suggestions





# Meeting Summary

Project: I-64 Hampton Roads Bridge-Tunnel Expansion  
 Meeting Title: Habitat Condition Assessment - Webinar  
 Date: August 8, 2019  
 Location: Webinar

Attendees:

Company	Last Name	First Name	Phone Number	E-mail Address	Present
VDOT	Ambrose	Larissa		larissa.ambrose@vdot.virginia.gov	XX
VDOT	Murray	Sean		seanmurray@vhb.com	XX
VDOT	Smizik	Scott	(804) 371-4082	scott.smizik@VDOT.virginia.gov	XX
VDOT	Utterback	James	(757) 802-0005	james.utterback@VDOT.virginia.gov	
VHB	Blossom	Kim		KBlossom@VHB.com	
VHB	Frye	Chris	(757) 503-3796	cfrye@vhb.com	XX
FHWA	Mazur	John		John.mazur@dot.gov	
FHWA	Sundra	Ed	(804) 775-3357	ed.sundra@dot.gov	XX
USACE	Janek	George	(757) 201-7135	george.a.janek@usace.army.mil	XX
Stantec	Hawley	Brian	(540) 908-5528	brian.hawley@stantec.com	
DEQ	Hannah	Jeff	(757) 518-2146	jeffrey.hannah@deq.virginia.gov	XX
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VMRC	Lay	Allison	(757) 247-2254	allison.lay@mrc.virginia.gov	XX
NOAA	O'Brien	David	804-684-7828	david.l.obrien@noaa.gov	XX
VIMS	Varnell	Lyle			XX
DGIF	Aschenbach	Erine	(804) 367-2733	Ernie.aschenbach@dgif.virginia.gov	XX
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VHB	DeBerry	Doug			XX
Stantec	Keeler	Carolyn		Carolyn.Keeler@stantec.com	XX
Stantec	Mickel	Blair			XX
HRCP	Barrier	David	(514) 663-9198	david.barrier@vinci-construction.com	XX
HRCP	Martin Alos	Jose Ignacio	(404) 702-1030	jimartinalosb@dragados-usa.com	
HRCP	Vazelle	Solene	(757) 933-0878	solene.vazelle@vinci-construction.com	





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I-64 DJV	Field	David	(371) 212-9332	<a href="mailto:david.field@mottmac.com">david.field@mottmac.com</a>	
I-64 DJV	Gaffney	Doug	(856) 924-3363	<a href="mailto:douglas.gaffney@mottmac.com">douglas.gaffney@mottmac.com</a>	XX
I-64 DJV	Han	Jeffrey	(646) 235-4288	<a href="mailto:jeffrey.han@hdrinc.com">jeffrey.han@hdrinc.com</a>	
I-64 DJV	Mace	Joshua	(804) 799-6861	<a href="mailto:Joshua.Mace@hdrinc.com">Joshua.Mace@hdrinc.com</a>	XX
I-64 DJV	Stowe	Angela	845-216-3052	<a href="mailto:angela.stowe@hdrinc.com">angela.stowe@hdrinc.com</a>	XX
I-64 DJV	Wilk	Rebecca	(804) 799-6873	<a href="mailto:Rebecca.Wilk@hdrinc.com">Rebecca.Wilk@hdrinc.com</a>	XX
WRA	Drahos	Emily	(804) 822-2173	<a href="mailto:edrahos@wrallp.com">edrahos@wrallp.com</a>	XX
WRA	Sprenkle	Taylor	804-366-4097	<a href="mailto:tsprenkle@wrallp.com">tsprenkle@wrallp.com</a>	XX

Meeting Notes:

Purpose: Discuss the HRBT Habitat Condition Assessment’s methodology and scoring results, as well as the proposed mitigation strategy to be included in the HRBT Expansion Project’s Joint Permit Application. Action items are indicated in bold text.

No.	Description	Action
1.	Introduction	
	<p>J. Duschang (HRCP) opened the meeting and made introductions.</p> <p>Agenda:</p> <ul style="list-style-type: none"> <li>• Methods and Results</li> <li>• Mitigation Recommendations</li> <li>• Questions</li> </ul> <p>The Habitat Condition Assessment (HCA) has been based on the Preliminary Jurisdictional Determination (PJD) and 2018 Benthic Survey.</p> <ul style="list-style-type: none"> <li>• Original PJD – September 19, 2017</li> <li>• Supplemental PJD – October 8, 2018</li> </ul>	
	<p>The HCA scoring has been largely dependent on water depth. The depth classes were presented for Estuarine Subtidal Open Water:</p> <ul style="list-style-type: none"> <li>• Shallow (photic zone): &lt; 6.6ft</li> <li>• Mid-Depth: 6.6ft – 15ft</li> <li>• Deep: 15ft – 30ft</li> <li>• Deeper: 30ft – 45ft</li> </ul> <p>See slide 4 for a cross section of the proposed island expansion and resulting shoreline slope and materials.</p>	
2.	Methods and Results	

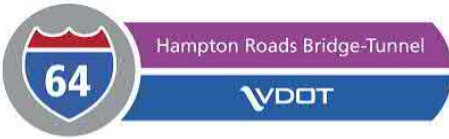




No.	Description	Action
	<p>J. Mace (HRCP) reviewed the HCA scoring approach by indicator or feature. See slides 5 through 8 for a table detailing the scoring factors.</p>	
	<p>G. Janek (USACE) asked for clarification on the SAV scoring. If the DJV's position is that water deeper than 6.6 ft is not suitable SAV habitat why are we scoring 1 instead of 0?</p> <p>J. Mace (HRCP) responded that a 1 score was used for all water deeper than 6.6 ft and the report would be revised to include additional discussion on the rational used to determine scores of 1 vs. 0.</p>	<p>J. Mace (HRCP)</p>
	<p>J. Mace (HRCP) discussed the 2018 Benthic Survey (Versar) report. The report identified 38 locations. The HCA adopted the scoring provided in the report and filled in missing data.</p> <p>G. Janek (USACE) asked for further refinement to the habitat condition scores based on the HAPC (fish). The table identified "No HAPC present" as the condition for a score of 1 - 3 and "Mapped HAPC present in Shallow Water and Mid-Depth Areas" as the condition for a score of 4 - 5.</p> <p>D. O'Brien (NOAA) agreed with G. Janek and can provide additional information to support refined scoring.</p>	<p>J. Mace (HRCP)</p>
	<p>L. Varnell (VIMS) suggested re-evaluating the shellfish scoring that was based on a maximum depth of 15ft. Depth zones may be used, in general, as a determining factor. However, VIMS has data identifying shellfish populations at depths of 20 ft – 25 ft and some evidence of viable clams down to 50 ft.</p> <p>L. Varnell suggested an offline/follow up conversation to discuss revising the shellfish scoring to account for shellfish populations at greater depths.</p>	<p>J. Mace (HRCP) to discuss with L. Varnell (VIMS)</p>
	<p>J. Mace (HRCP) discussed scoring for protected species. Recent sturgeon data shows a short linger time indicating transient use.</p>	
	<p>J. Mace (HRCP) presented the pre-construction Habitat impact factor score and habitat units. See Slides 9-11 for the scoring tables.</p> <p>The project is not expected to degrade existing conditions. The driving factor for the loss in habitat units is the reduction in mid-depth acreage.</p>	



No.	Description	Action
	<p>G. Janek (USACE) asked for clarification on how the upland habitat type was scored. The pre-construction upland acreage is 0. He requested that the HRCP DJV add a note to clarify how the upland scoring number was determined.</p> <p>G. Janek also asked for confirmation that there were no seals identified on the portal island. J. Mace, responded that HRCP believes there have not been any haulouts identified. HRCP will confirm.</p>	<p>J. Mace (HRCP)</p> <p>J. Mace (HRCP)</p>
	<p>C. Keeler (Stantec) noted that it would be helpful to have a map key to identify areas.</p> <p>G. Janek (USACE) requested that HRCP confirm all categories agree and are correlated in the same order and make narrative, figures, and tables consistent in nomenclature and order. J. Mace confirmed that HRCP will revise for consistency.</p>	<p>J. Mace (HRCP)</p>
	<p>G. Janek (USACE) wanted to state for the record that although HCAs can be a good tool and have been used on other recent projects, each project is different. Regulatory agencies are not currently requiring or recommending the use of a HCA so the reference to "current regulatory policy" in the HCA text should be deleted. Regulators are still refining and revising the HCA tool and how it is applied.</p> <p>G. Janek stated that in general USACE looks for 1:1 mitigation for aquatic resources.</p> <p>J.Mace (HRCP) agreed with the assessment and will revise the text accordingly.</p>	<p>J. Mace (HRCP)</p>
	<p>L. Varnell (VIMS) VIMS is still assessing the validity of the HCA as a tool. He specifically asked for justification as to why rocky intertidal was scored as a 1 when it can have good habitat for juvenile fish.</p> <p>J. Mace (HRCP) stated that HRCP would revisit the fish scoring.</p> <p>J. Duschang (HRCP) suggested that information from the references could be pulled back into the text of the assessment to provide additional background for the methodology and scoring.</p>	<p>J. Mace (HRCP)</p>
	<p>L. Varnell (VIMS) stated that VIMS will also be looking for impacts during construction, not just pre- and post-conditions</p> <p>J.Mace agreed to look at conditions during construction</p>	<p>J. Mace (HRCP)</p>
	<p>A. Lay (VMRC) echoed what other agencies had stated. VMRC will take into account the HCA as well as other factors.</p>	



No.	Description	Action
	<p>J. Mace (HRCP) presented the pre- and post-condition at select impact areas. The vast majority of the loss in open water acreage as well as habitat units is a direct result of the island expansion.</p> <p>At the Willoughby Bay – West Shore location and Fourth View Street location (Monkey Bottom Mitigation Site), HRCP may be able to reduce conversions. Final design will be dependent on the results of the pipe/culvert inspections.</p>	
2.	Mitigation Recommendations	
	<p>George Janek – mitigation rule says you need to provide as close to in-kind compensation as practicable. George has spoken with LRRT and thinks we could crosswalk our sub-aqueous impacts to available LRRT sub-aqueous credits. George would require 1:1 ratio.</p> <ul style="list-style-type: none"> <li>○ George clarified that we would need to follow the 2008 Final Mitigation Rule hierarchy by using available bank credits, then in-lieu, then PRM.</li> <li>○ George stated that using the VIMS SAV program has been problematic in the past.</li> <li>○ George would treat using the VIMS SAV program as PRM that would be subject to all of the requirements outlined in the Norfolk District Corps and Virginia DEQ Recommendations for Wetland Compensatory Mitigation document including site design, restrictive covenants, financial assurances, and monitoring and long-term management.</li> <li>○ George stated that VIMS does not have a banking instrument and is typically not set up to provide everything required for PRM and that the monitoring and meeting success criteria have typically fallen on the applicant.</li> <li>○ George suggested that an agreement could be negotiated between the applicant and VIMS to make VIMS responsible for long term monitoring and success and all of the reporting associated with it.</li> <li>○ Taylor Sprenkle – for subaqueous impacts, if we have in-lieu “in-kind” (subaqueous) credits versus “out-of-kind” (tidal vegetated wetland) bank credits, would you prefer bank credits over in-lieu credits per the mitigation rule? <ul style="list-style-type: none"> <li>▪ George – would prefer to use “in-kind” first. So, for sub-aqueous impacts, LRRT subaqueous credits would be closest to “in-kind” and would prefer that over tidal</li> </ul> </li> </ul>	





No.	Description	Action
	<p>vegetated wetland credits. George's preferred compensation for sub-aqueous impacts in order of preference would be: 1) LRRT subaqueous 2) LRRT oyster 3) tidal vegetated and 4) VIMS SAV. If we use tidal vegetated bank credits would need to tie back to functions and how they replace subaqueous bottomland. HRCP will consider this in the JPA.</p> <ul style="list-style-type: none"> <li>▪ LRRT MBI structured such that IRT can release additional advanced credits if there is a demonstrated need.</li> </ul>	<p>Josh Mace/Taylor Sprenkle (HRCP)</p>
	<p>SAV impacts – George – would need to discuss best method for compensation. Subaqueous credits? Payment to VIMS and subsequent tracking? George would need more time to think (and info from permit app) and run by chiefs.</p> <p>George will rely on HRCP to demonstrate that lost functions are replaced.</p>	<p>J. Mace/Taylor Sprenkle (HRCP)</p>
	<p>HRCP considered two options to compensate for extended temporary shading impacts: 1. Treat as a permanent impact and purchase bank credits or 2. Restore the wetlands post-construction and monitor for success. HRCP is proposing Option 1, to purchase bank credits.</p>	
	<p>Taylor Sprenkle – If we need more subaqueous credits than LRRT currently has available, would you rather us request LRRT get more credits from IRT, or would you rather us jump to the next available option?</p> <p>George needs to consider this. Needs to see final impacts and proposed compensation in JPA.</p>	
	<p>Lyle V. (VIMS) – currently VIMS SAV program is the only outlet for SAV mitigation and the concept is relatively new. Lyle clarified that funds accepted as compensatory mitigation for SAV impacts are not used to fund research, rather VIMS uses the money to seed and monitor SAV beds. Dr. Orth is retiring. Replacement will be in place by end of year. Costs of SAV mitigation will likely go up. VIMS has discussed implementing projects in the Bay, but can be problematic and expensive. HRCP would have to discuss with VIMS SAV people if we wanted to explore that as an option.</p>	
	<p>Allison L. (VMRC) – wants to work with VIMS to make sure SAV gets mitigated at 1:1.</p> <p>Allison will also want compensation for impacts to clams. They are going to look at mitigation options. 1.3:1 (to account for mortality) for</p>	



No.	Description	Action
	<p>chowders that are transplanted. VMRC is having internal conversations on how to handle this.</p> <ul style="list-style-type: none"> <li>o Taylor – George, would you require any monitoring with this? George – would take this into account but are generally looking for subaqueous. Clams may be an element of that. Does not know if they would be looking at monitoring for that</li> <li>o John – how best do we advance clam discussion? <ul style="list-style-type: none"> <li>▪ VMRC is going to look at permit app for loss of subaqueous and then look at clam survey to determine loss. VMRC will continue to look at after permit application.</li> </ul> </li> <li>o John – will indicate in JPA that coordination will continue.</li> <li>o Taylor – who runs clam program? What entity would receive the compensation payment?</li> </ul> <p>Allison – VMRC does the work of placing clams onto appropriate grounds. Allison needs to check into how the funds are actually collected and allocated.</p>	<p>Allison Lay (VMRC)</p>
	<p>Jeff H. (DEQ) – other projects have come up with ratios for mudflat impacts. Thinks we could come up with ratio for “out-of-kind” that everyone could agree on</p>	
	<p>George J. (USACE) – thinks we need to have this conversation with all interested mitigation parties. Thinks that could happen after JPA is submitted. George could just say mitigation would be covered by banks, in-lieu fee, and some out-of-kind impacts. That is all he would need for public notice. Allison agrees.</p>	
	<p>Jeff H. (DEQ) - said he would accept tidal vegetated wetland credits at 0.33:1 as compensation for subaqueous conversion (for dredging). Dredging would be conversion of subaqueous to subaqueous (so not losing to upland), so may not directly translate. But DEQ is amenable to accepting “out-of-kind” for subaqueous impacts.</p>	
	<p>END</p>	



Habitat Condition Assessment Meeting  
8 August 2019  
I-64 Hampton Roads Bridge-Tunnel (HRBT) Expansion Project



## Agenda



- Introduction (2:00 – 2:10 pm)
- Methods & Results (2:10 – 2:30 pm)
- Mitigation Recommendations (2:30 – 2:50 pm)
- Questions





# Introduction

## ■ Preliminary Jurisdictional Determination (PJD)

- Original PJD – September 19, 2017
- Supplemental PJD – October 8, 2018
  - Additional Limits of Disturbance

## ■ 2018 Benthic survey

- Soft Bottom
  - Fine to medium sand
  - Reef building polychaetes
  - Amphipods
  - Oligochaetes
  - Sand Lancelets
  - Mud crabs
- Intertidal Rocky Shore
  - Barnacles
  - Amphipods
- Subtidal Rocky Shore
  - Oyster
  - Ribbed mussels
  - Algae
  - Sponges Bryozoans
  - Amphipods/Polychaetes
  - Bryozoans
  - Anemones



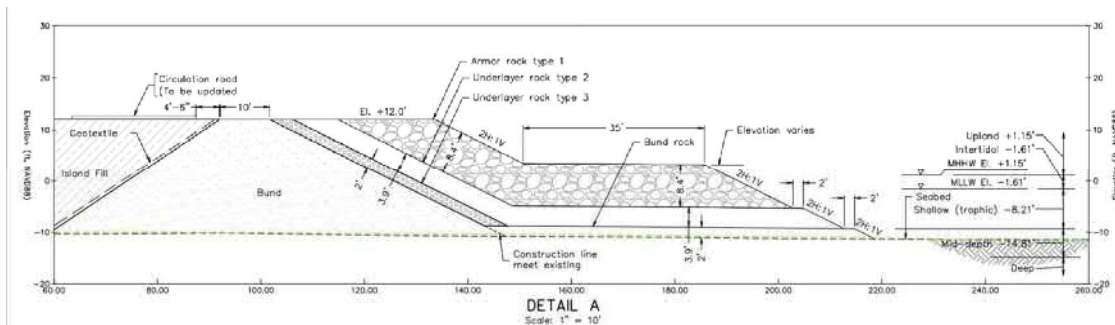
Figure E-3. Diver scraping the rock and suctioning the sample into a collection bag at a subtidal site during the portal island benthic survey

# Introduction



## ■ Depth Classes

- Estuarine Subtidal Open Water
  - Shallow (photic zone): < 6.6ft
  - Mid-Depth: 6.6ft – 15ft
  - Deep: 15ft – 30ft
  - Deeper: 30ft – 45ft





## Methods & Results

### Habitat Condition Factor Scoring Approach

Indicator or Feature	Habitat Condition Scores				
	1	2	3	4	5
<b>Water Quality based on CBP and VECOS data</b>	Poor water quality; dissolved oxygen DO meets restoration goal up to 50% of the time.	Seasonally low DO; DO meets restoration goal 51 to 75% of the time.	DO usually supports aquatic life year-round; DO meets restoration goal 76 to 90% of the time.	DO supports aquatic life year-round; stable foraging habitat; DO meets restoration goal 91 to 99% of the time.	DO supportive of aquatic life; DO meets restoration goal 100% of the time (HRBT pre-construction condition)
<b>Shellfish Resources (based on data in VIMS 2018 clam survey)</b>	No shellfish habitat (0 live clams m <sup>-2</sup> ); depth >15 ft. and substrate does not support bivalves.	Isolated patches of potential shellfish habitat; No existing or historic shellfish beds; depth <15 feet.	Existing shellfish beds limited or absent (<1 live clams m <sup>-2</sup> ); historic record of shellfish beds; depth <15 feet.	Some/moderate shellfish habitat (1-2 live clams m <sup>-2</sup> ; known moderate/l productive existing shellfish beds/reefs; depth <15 ft.	Extensive shellfish habitat (2-3 live clams m <sup>-2</sup> ); known highly productive existing shellfish beds/reefs; depth <15 ft.
<b>SAV (based on 2013-2017 VIMS SAV data)</b>	No suitable SAV habitat present; depth >6.6 feet.	No SAV present; no historic record of SAV; depth <6.6 ft.	No SAV present; historic presence of SAV in area documented; depth <6.6 ft.	Sparse SAV present; depth <6.6 feet.	Stable SAV population present; depth ≤6.6 ft.

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## Methods & Results



### Habitat Condition Factor Scoring Approach

Indicator or Feature	Habitat Condition Scores				
	1	2	3	4	5
<b>Epibenthic Habitat (based on Versar 2018 epibenthic survey and VIMS 2018 clam survey)</b>	Predominantly silt/clay substrate conditions, habitat does not support epibenthic organisms.	Predominantly soft bottom (sand) substrate in depths of >6.6 feet; limited hard surface for epibenthic organisms.	Predominantly soft bottom substrate in depths of <6.6 feet.; some hard surface for epibenthic organisms (e.g., gravel).	Predominantly rock substrate >6.6 feet; majority of the area provides hard substrate for epibenthic organisms.	Predominantly rock substrate <6.6 feet.; Varied substrate sizes that provide extensive/diverse habitat for epibenthic organisms.
<b>Benthic Community (based on Versar 2018 benthic survey)</b>	Severely degraded benthic community; Benthic Index of Biotic Integrity (B-IBI) score of <2.0; poor abundance and diversity of species; populations present only seasonally.	Degraded community; B-IBI score of 2.0 – 2.5; low abundance and diversity of species. Areas encompassing Deepest Water not included in 2018 benthic survey are scored as “2.25” to reflect seasonal DO impairments expected to control benthic community structure at those depths.	Fair community; B-IBI score of 2.6 – 2.9; to account for potential (seasonal) DO reduction, a score of “2.75” is assigned to Deeper Water areas not included in the 2018 benthic survey.	Good community; B-IBI score of 3.0 – 4.0; moderate to high diversity and abundance; populations present year-round.	Excellent community; B-IBI score of 4.1 – 5.0; high diversity and abundance; stable community present year-round.



## Methods & Results

### Habitat Condition Factor Scoring Approach

Indicator or Feature	Habitat Condition Scores				
	1	2	3	4	5
Fish	<u>General</u> : few or no fish present; present species are irregular transients; habitat does not support fish populations.	<u>General</u> : poor diversity; relatively high abundance of one species; poor habitat for fish populations; population is marginally sustainable	<u>General</u> : moderate diversity and abundance of species; adequate habitat for fish populations.	<u>General</u> : moderate to high diversity of species; high abundance of several species; good habitat for fish populations; stable fish population.	<u>General</u> : high diversity and abundance of species in all seasons excellent habitat for fish populations; stable fish population at carrying capacity for available habitat.
	<u>Anadromous</u> : none present.	<u>Anadromous</u> : historic use; no known current activity.	<u>Anadromous</u> : present during migration season; no known spawning habitat in project area.	<u>Anadromous</u> : present during migration season; opportunistic spawning documented in project area.	<u>Anadromous</u> : present during migration season; suitable spawning habitat present, documented spawning in project area.
	<u>EFH</u> : no EFH species present.	<u>EFH</u> : transient EFH species present.	<u>EFH</u> : Seasonal use by EFH species.	<u>EFH</u> : use by transient/seasonal EFH species.	<u>EFH</u> : EFH species present.
	<u>HAPC</u> : no HAPC present	<u>HAPC</u> : no HAPC Present.	<u>HAPC</u> : no HAPC present.	<u>HAPC</u> : managed HAPC present in Shallow Water and Mid-Depth Areas	<u>HAPC</u> : managed HAPC Present in Shallow Water and Mid-Depth areas

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## Methods & Results



### Habitat Condition Factor Scoring Approach

Indicator or Feature	Habitat Condition Scores				
	1	2	3	4	5
Protected Species	<u>Whales/Dolphins</u> : habitat not present.	<u>Whales/Dolphins</u> : transient use.	<u>Whales/Dolphins</u> : Seasonal use.	<u>Whales/Dolphins</u> : species present year-round.	<u>Whales/Dolphins</u> : species present year-round; breeding grounds present.
	<u>Seals</u> : suitable habitat not present.	<u>Seals</u> : transient/occasional use of Shallow and/or Mid-Depth areas as potential foraging habitat; resting or "haul-out" areas present.	<u>Seals</u> : seasonal use; a variety of water depths available as potential habitat.	<u>Seals</u> : species present year-round.	<u>Seals</u> : breeding grounds and species present.
	<u>Sea Turtles</u> : suitable habitat not present.	<u>Sea Turtles</u> : transient/occasional use.	<u>Sea Turtles</u> : seasonal use.	<u>Sea Turtles</u> : year-round use	<u>Sea Turtles</u> : year-round use; beach/nesting habitat and species present.
	<u>Atlantic Sturgeon</u> : suitable habitat not present.	<u>Atlantic Sturgeon</u> : transient use.	<u>Atlantic Sturgeon</u> : seasonal use.	<u>Atlantic Sturgeon</u> : species present year-round.	<u>Atlantic Sturgeon</u> : spawning habitat and species present.



# Methods & Results

Pre-Construction Habitat Impact Factor Scores and Habitat Units

Habitat Type	Area (acres)	Epibenthic Habitat	Water Quality	Shellfish Resources	SAV	Benthos	Fish	Protected Species	Average Score	Existing Habitat Unit (Average Score x Acres)
1 Upland	0	0	0	0	0	0	0	0.5	0.07	0.00
2 Intertidal Rock	0.67	5	5	4	0	1	1.25	1	2.46	1.65
3 Intertidal Sand	0.47	3	5	4	0	3	2	0.75	2.54	1.19
4 Intertidal Mud	0	1	5	4	0	2	1.5	0.75	2.04	0.00
5 Shallow Water	1.38	2	5	4	3	2.8	3.25	1	3.01	4.15
6 Mid-Depth	13.4	2	5	4	1	3.1	4.25	2	3.05	40.87
7 Deep Open Water	3.49	2	5	1	1	3.1	3.75	2.75	2.66	9.27
8 Deeper Open Water	0.03	2	5	1	1	3.1	3.75	3	2.69	0.08
9 Deepest Open Water	0	2	5	1	1	2.25	3.75	3	2.57	0.00
									Habitat Units	57.22

# Methods & Results



Post-Construction Habitat Impact Factor Scores and Habitat Units

Habitat Type	Area (acres)	Epibenthic Habitat	Water Quality	Shellfish Resources	SAV	Benthos	Fish	Protected Species	Average Score	Existing Habitat Unit (Average Score x Acres)
1 Upland	14.15	0	0	0	0	0	0	0.5	0.07	1.01
2 Intertidal Rock	0.99	5	5	4	0	1	1.25	1	2.46	2.44
3 Intertidal Sand	0	3	5	4	0	3	2	0.75	2.54	0.00
4 Intertidal Mud	0	1	5	4	0	2.75	1.5	0.75	2.14	0.00
5 Shallow Water	2.09	2	5	4	3	3	3.25	1	3.04	6.34
6 Mid-Depth	0.83	2	5	4	1	3	4.25	2	3.04	2.52
7 Deep Open Water	1.37	2	5	1	1	3	3.75	2.75	2.64	3.62
8 Deeper Open Water	0	2	5	1	1	2.75	3.75	3	2.64	0.00
9 Deepest Open Water	0	2	5	1	1	2.25	3.75	3	2.57	0.00
									Habitat Units	15.94



# Methods & Results

Pre-Construction Habitat Impact Factor Scores and Habitat Units

Habitat Type	Area (acres)	Average Score	Existing Habitat Unit (Average Score x Acres)
1 Upland	0	0.07	0.00
2 Intertidal Rock	0.67	2.46	1.65
3 Intertidal Sand	0.47	2.54	1.19
4 Intertidal Mud	0	2.04	0.00
5 Shallow Water	1.38	3.01	4.15
6 Mid-Depth	13.4	3.05	40.87
7 Deep Open Water	3.49	2.66	9.27
8 Deeper Open Water	0.03	2.69	0.08
9 Deepest Open Water	0	2.57	0.00
		Habitat Units	57.22

Post-Construction Habitat Impact Factor Scores and Habitat Units

Habitat Type	Area (acres)	Average Score	Existing Habitat Units (Average Score x Acres)
1 Upland	14.15	0.07	1.01
2 Intertidal Rock	0.99	2.46	2.44
3 Intertidal Sand	0	2.54	0.00
4 Intertidal Mud	0	2.14	0.00
5 Shallow Water	2.09	3.04	6.34
6 Mid-Depth	0.83	3.04	2.52
7 Deep Open Water	1.37	2.64	3.62
8 Deeper Open Water	0	2.64	0.00
9 Deepest Open Water	0	2.57	0.00
		Habitat Units	15.94

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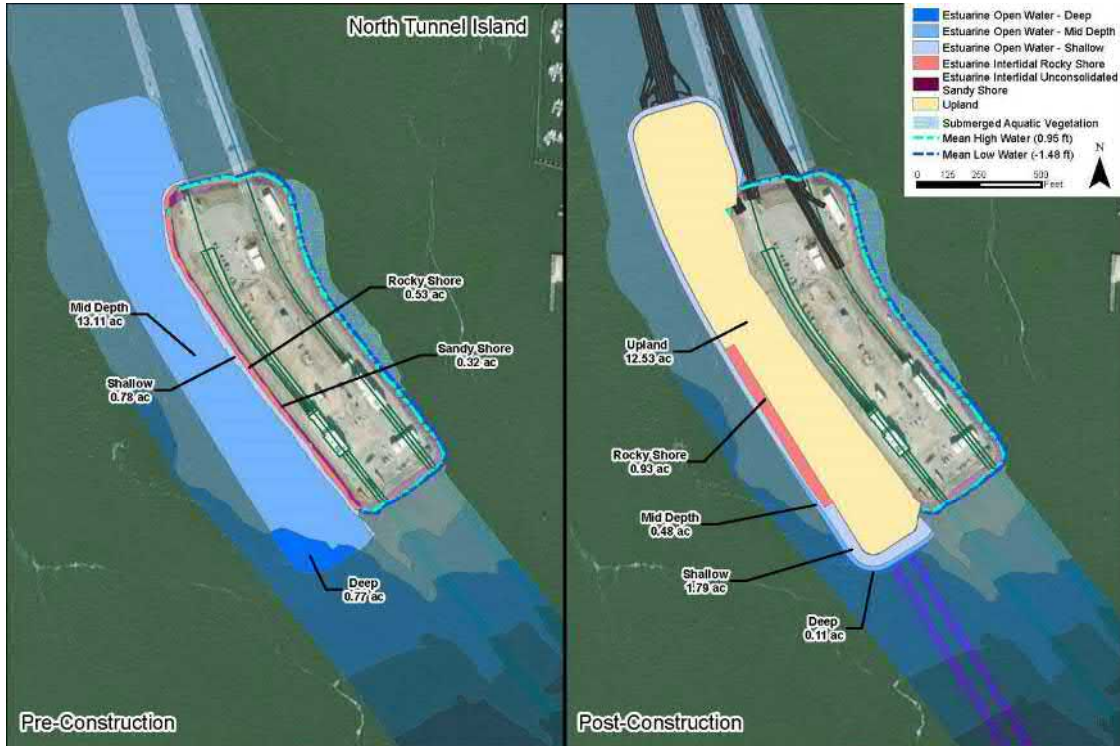
# Methods & Results



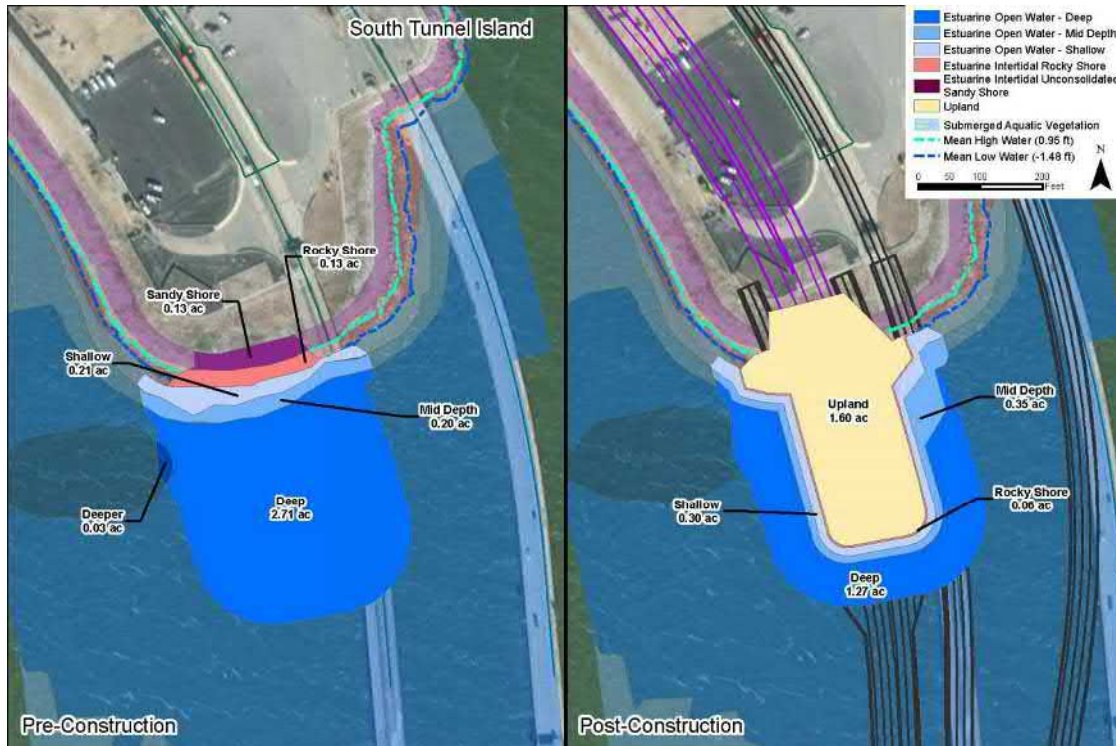




# Methods & Results



# Methods & Results

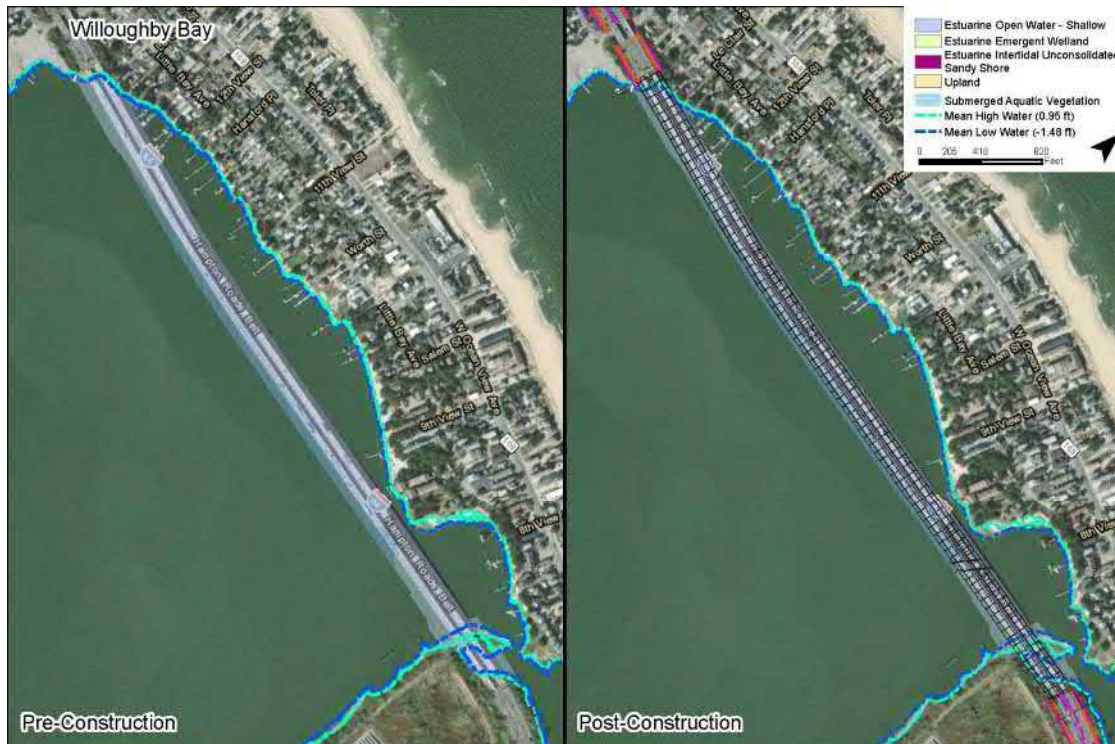




# Methods & Results



# Methods & Results





# Methods & Results

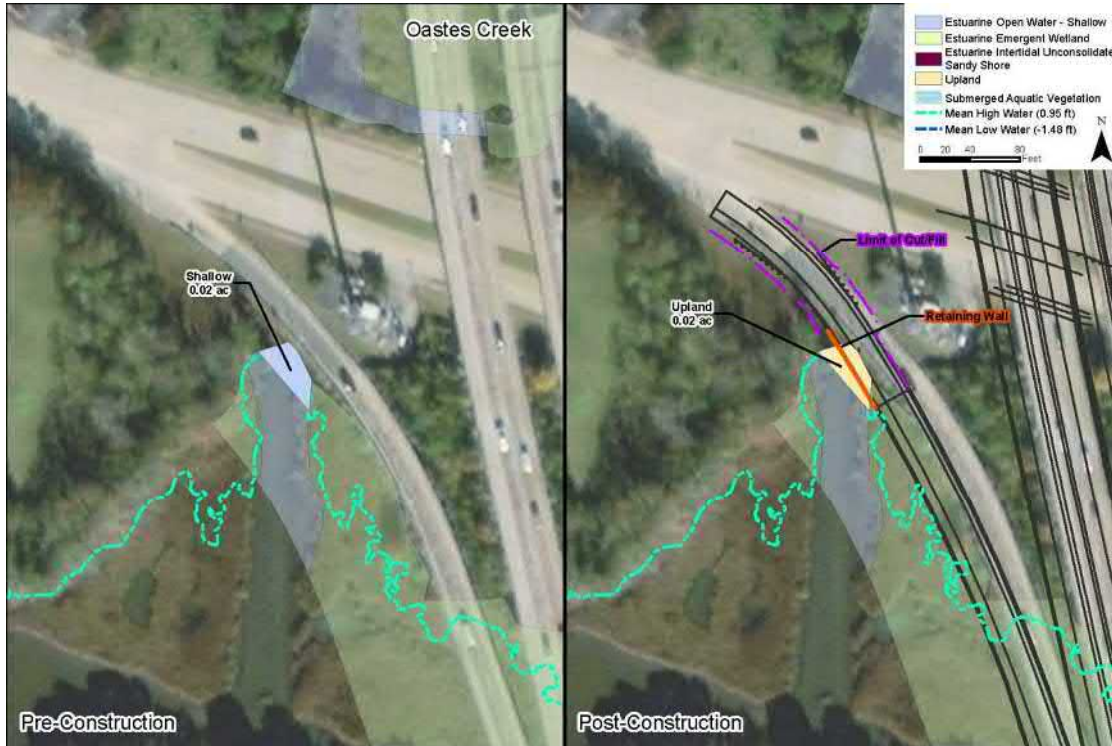


# Methods & Results





## Methods & Results



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## Methods & Results



### Existing Trestle Piles to be demolished

	North Trestles	South Trestles
Piles (EA) – 24” Square	0	672
Piles (SF) – 24” Square (4.00 SF)	0	2,688.00
Piles (EA) – 30” Square	815	0
Piles (SF) – 30” Square (6.25 SF)	5,093.75	0
Piles (EA) – 54” Round	0	287
Piles (SF) – 54” Round (15.90 SF)	0	4,564.53
Piles (EA) – TOTAL	815	959
Piles (SF) – TOTAL	5,093.75	7,252.53

### Proposed Trestle Piles Impacting Wetlands

	North Trestles	South Trestles	Willoughby Trestles	Bay Ave / Oastes Creek	Mason Creek
Piles (EA) – 30” Square	472	564	307	94	46
Piles (SF) – 30” Square (6.25 SF)	2,950	3,525	1,918.75	587.5	287.5

### Comparison

	Demo	Proposed
Total Count	1,774	1,483
Total SF	12,346.28	9,268.75



## Mitigation Recommendations

### ■ Mitigation Sources in Watershed

- Subaqueous restoration/rehabilitation (LRRT)
  - PCB remediation in Elizabeth River
- Oyster reefs (LRRT)
- Tidal vegetated wetlands (mitigation banks; LRRT, VARTF)
- SAV Research Program (VIMS)
- Non-tidal vegetated wetlands (pre-purchased credits)
- Streams (mitigation banks)

## Mitigation Recommendations



Resource	Compensation Required (Credits)	Availability of Potential Compensation Source(s)		
		Source	Current	Future
Tidal Subaqueous and Non-vegetated Converted to Upland	14	subaqueous restoration/rehabilitation (LRRT)	10	TBD
		oyster reef (LRRT)	2	TBD
		tidal vegetated wetlands LRRT banks VARTF)	4	8
		SAV Research Fund (VIMS)	?	?
SAV beds	0.6	subaqueous restoration/rehabilitation (LRRT)	10	TBD
		oyster reef (LRRT)	2	TBD
		tidal vegetated wetlands LRRT, banks, VARTF)	4	8
		SAV Research Fund (VIMS)	?	?
Tidal Vegetated, mudflats, sandy shore	4.57	Tidal vegetated wetland credits LRRT, banks, VARTF)	4	8
Jurisdictional Ditch		no compensation proposed		
Palustrine Emergent	1.38	non-tidal wetland credits pre-purchased		
Palustrine Forested				
Palustrine Scrub Shrub				
Palustrine Unconsolidated Bottom				
Lower Perennial, Riverine	4.5	Mitigation Bank	>6,500	-





# Meeting Summary

Project: I-64 Hampton Roads Bridge-Tunnel (HRBT) Expansion  
 Meeting Title: USACE Section 408 Coordination Meeting  
 Date: August 14, 2019 – 2:00-4:00pm  
 Location: USACE-NAO District Office  
 803 Front Street, Norfolk, VA

Attendees:

Company	Last Name	Initials	Phone Number	E-mail Address	Present
USACE <sup>(1)</sup>	Steve Powell	SP	(757) 201-7788	Stephen.J.Powell@usace.army.mil	XX
USACE <sup>(1)</sup>	Mike Anderson	MA	(757) 201-7584	michael.l.anderson@usace.army.mil	XX
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(1) Operation Branch / Design Section (2) Regulatory Branch / Eastern Section (3) Civil Programs Branch / Programs and Project Management Division					

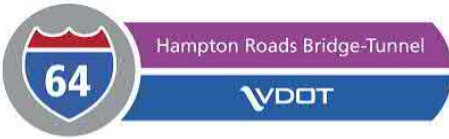
Agenda:

- Meeting Purpose and Desired Outcomes
- Description of Project Including Joint Permit Application
- Definition of Geographic Footprint/Authorized Projects to be Considered in Section 408
- Identification of Specific Section 408 Work Products Required by the USACE
- Aligning Section 408 to Meet Overall Joint Permit Application Schedule
- Identification of Meeting Agreements Reached, Deliverables Due from Meeting, and Next Steps
- Identification of Next Meeting Purpose, Participants, Location, and Date

Meeting Notes:

No.	Description	Action
1.	Definition of Geographic Footprint/Authorized Projects to be considered in Section 408	





No.	Description	Action
	<p><u>Anticipated Civil Works Projects Affected by HRBT:</u></p> <p>SP – Clarified that USACE requires the 408 evaluation to address Navigation (including channels and anchorages) as well as Flood Risk Management (FRM) and Environmental projects that would be impacted.</p> <p>USACE will be looking at both short-term impacts from construction and long-term impacts from final constructed HRBT project on appropriate USACE Civil Works Projects.</p> <p>Upon MM’s question for a list or database of all Civil Works projects, SP noted that all USCE-NAO Civil Works Projects are listed on their webpage at <a href="https://www.nao.usace.army.mil/Missions/Civil-Works/">https://www.nao.usace.army.mil/Missions/Civil-Works/</a>.</p> <p><u>Anchorage Areas:</u></p> <ul style="list-style-type: none"> <li>The authorized depth of Area F-1 Anchorage will increase from 50 to 55 feet which will result in widening. Our mapping already provides buffering at 200’ to account for this.</li> <li>In looking at the Navigation Channel map provided in the NWP6 application, SP noted that HRBT Team also needs to add a 200-ft buffer to F-1 Anchorage Approach.</li> </ul> <p><u>Secondary Navigation Channels:</u></p> <ul style="list-style-type: none"> <li>MA – for Phoebus Channel, USACE getting calls about the channel, so HRBT can expect to get public comments on Phoebus Channel.</li> <li>JPM asked if MA could provide the names of the community members who are making calls on Phoebus/HC channels. It would help to know these folks for the sake of the USCG Bridge Permit Application. MA will see if these persons will accept their names to be divulged.</li> </ul> <p><u>FRM Projects/Studies:</u></p> <ul style="list-style-type: none"> <li>MA– <a href="#">Willoughby Spit and Vicinity Storm Damage Reduction</a> will also be part of the 408 review. USACE stated that due to the proximity of the HRBT project, the Corps’ H&amp;H Branch would be consulted re: potential impacts on that beach nourishment project.</li> <li>The ongoing study for <a href="#">Norfolk Coastal Storm Risk Management</a> is to be reviewed since it includes the Willoughby Bay and its shoreline.</li> </ul> <p>MA offered to check with Navigation, Flood-Risk Management, and Environmental Restoration groups to get a list of all federal projects along with their framework plans. Navigation can provide a list by next week but may take a couple of weeks for Flood-Risk Management and Environmental.</p> <ul style="list-style-type: none"> <li>MM will facilitate delivery of Construction Impact Zone map to USACE NAO to assist in the identification of impacted projects.</li> </ul>	<p>HRBT Team to add 200-ft buffer to F-1 Approach on Navigation Channel Map. See screenshot at end of Mtg Mn.</p> <p>MA (USACE) to confirm who the non-federal sponsors are for Phoebus/HC Channels and also provide name of callers.</p> <p>USACE to provide list of all Civil Works Projects to be affected by HRBT Project, along with framework plans.</p>





No.	Description	Action
	<p><u>Mason and Oastes Creek:</u></p> <p>For both Mason and Oastes Creeks – which are interconnected and microtidal (connected to Willoughby Bay by a flood gate controlled by US Navy), boat owners may weigh in on Section 408 review (even if not directly tied to 408 regulations) because of recurring concerns local residents have with water quality and small-boat navigation for recreational boaters.</p> <p>However, it was confirmed that neither of these two creeks would be subject to Section 408 review since the USACE does not maintain any Federal Civil Works project in this microtidal watershed.</p>	
	<p><u>Temporary Relocation of Federal Channels:</u></p> <p>In presenting the details of the North Island Expansion vis-à-vis its proximity to the Hampton Creek Approach Channel, the HRBT Team showed profile sections of a new island embankment being more than 100 ft from the Channel itself (or about 48 ft from its 100-ft buffer). One idea to deconflict potential navigation issues was to temporarily move the navigation channel temporarily during construction. MA stated that this would be possible if the natural bathymetry was equal to the authorized depth of -12 feet.</p> <ul style="list-style-type: none"> <li>MA – To move a channel during construction, USACE would provide updated charts to NOAA and USCG may move aids to navigation. Non-federal sponsor would also be involved. Requires action from three federal agencies and non-federal sponsor, so biggest risk is time.</li> <li>SP requested that such digital copies of the handouts presented at this meeting be attached to the meeting minutes.</li> </ul>	<p>HRBT Team to provide USACE with digital copies of North Island Expansion Plan and Profile Views.</p>
2.	<p><b>Aligning Section 408 Process/Public Review to Meet Overall JPA Schedule &amp; Other Permits</b></p>	
	<p>DG asked about the revised 408 process in light of the new Engineering Circular and what the application should contain.</p> <p>SP – The JPA will serve as the formal initiation request. Try to limit redundancy. If information is already included in the JPA, do not resubmit for Section 408, just refer to the appropriate JPA section. For example, the JPA already has a signature page, so don't include another signature page.</p> <p>MA – Upon submission of 408 package, there will be a 30-day completeness review (administrative review); followed by a 90-day review period.</p> <p>GJ – Typically for the USACE environmental regulatory review (Section 10/404) and during its Public Notice (PN) and 30-day public review period, if navigation or other 408 related issues are raised, GJ would forward those along to USACE-NAO's Operation Branch / Design Section so they can be addressed.</p> <p>MA – USACE-NAO's Operation Branch / Design Section tends to use the Regulatory Public Notice (PN) as their public outreach, so don't usually need their own 408 PN. However,</p>	





No.	Description	Action
	<p>for the HRBT Project, MA stated that they may conduct their own public interest review for the Section 408 Review.</p> <p>As part of overall public outreach, DG also noted that HRBT Team is on the agenda for next VMA Harbor Safety Committee scheduled for September 2019.</p> <ul style="list-style-type: none"> <li>MA, SP, GJ and HC should be invited to the VMA meeting and all other 408-related public outreach meetings.</li> </ul> <p>MA asked if HRCP/DJV would like the USACE to take the lead on public outreach. DG clarified that that VDOT/HRCP will lead it. MA stated that the Corps may also conduct outreach to maritime community.</p> <ul style="list-style-type: none"> <li>MA – The key to success when working with maritime stakeholders is to acknowledge that navigation is very important, and then provide them with detailed schedule for construction that may affect navigation.</li> <li>MA – When meeting with maritime community, stay focused on marine work and the parts that could affect users of the channels and other federal projects.</li> <li>SP – As part of the 408 application package, USACE would like to see a communication plan as well. DG stated that this will be in the Marine Operations Plan (MOP)</li> </ul> <p>Re: the USCG Bridge Permit Application (BPA), the following points were clarified to USACE:</p> <ul style="list-style-type: none"> <li>Two public comment periods (each 30 days) are expected, (1) the Preliminary Public Notice (PPN) for the USCG to issue their Preliminary Navigation Clearance Determination (PNCD); and (2) the regulatory Public Notice (PN) following the submission of the formal BPA and its design plans. It is likely that the USCG will require a public meeting during such PN period.</li> <li>Hal Pitts (USCG Chief of Bridge Program) will not make a permit decision until 408 is completed and approved.</li> <li>GJ also noted that typically USCG waits for USACE Section 404/10 permits before issuance of the USCG bridge permit.</li> </ul>	<p>HRBT Team to always invite USACE to any 408 outreach meetings.</p> <p>HRBT Team to include a Communication Plan into the 408 package.</p>
3.	<p><b>Identification of Specific Section 408 Work Products Required by the USACE</b></p>	
	<p><u>USCG Request for NSRA/TCP:</u></p> <p>MA – For the Section 408 review, the USACE will also need the two items requested in the August 2018 USCG letter. That is the Tunnel Construction Plan (TCP) and Navigational Safety Risk Assessment (NSRA).</p> <ul style="list-style-type: none"> <li>JPM – During the 7/24/19 USCG Pre-App Meeting, USCG noted that they were a lot less concerned about the HRBT Project since the Tunnel Boring Machine (TBM) method will be used instead of the Immersed Tube Tunnel (ITT) method. In separate follow-up calls between JPM and Hal Pitts, USCG indicated that the August 2018 letter was written when ITT was still proposed. Now with TBM</li> </ul>	



No.	Description	Action
	<p>method, USCG noted that the proposed outline for the NSRA/TCP doesn't need to fully abide to the enclosures that USCG had attached to their August 2018 letter as long as the concerns on navigation safety during construction and post-construction will be addressed in some other fashion as part of the Section 408 Application.</p> <ul style="list-style-type: none"> <li>MA – The USACE won't deviate from what the USCG had formally requested in August 2018. When TCP and NSRA are submitted to USACE, MA will pass along to USCG for review and will go with USCG's recommendations.</li> <li>SP – Agreed, USACE anticipates coordinating closely with USCG during review as stated in Appendix G of the EC 1165-2-220.</li> </ul> <p>MA – The HRBT project is a high-profile project, so USACE anticipates working on it continuously and beginning review of the 408 application as soon as it is submitted. But technically, the 408 application won't be deemed complete until the USACE has also received TCP and NSRA.</p> <p>MA – The USACE also recognizes that TCP and NSRA are working documents and can be changed at later time during project lifetime. Submit plans based on current knowledge and can modify during the process.</p>	<p>HRBT Team to include NSRA/TCP in 408 Application Package in order to be administratively complete.</p>
	<p><u>USACE-NAO Review Steps and Execution:</u></p> <p>MA – the USACE will conduct 408 review in single or multi-phase depending on how the application is submitted to him. If JPA includes entire project, then will issue single 408 authorization for whole project. The worst thing you can do is not include all elements needed to build the Project. For example, changes to 404 permit could trigger additional 408 review. Therefore, MA recommended that HRBT Team lay out everything on the table upfront.</p> <ul style="list-style-type: none"> <li>It was agreed that 408 review will be the Single-Phase Review since the JPA will include entire project.</li> </ul> <p>MM – Will 408 approval occur at the District level (NAO)?</p> <ul style="list-style-type: none"> <li>MA – For now, only USACE NAO approval is anticipated, unless something comes up. Could be elevated to North Atlantic Division Commander.</li> </ul> <p>MP – Are there any examples of 404 mods triggering additional 408?</p> <ul style="list-style-type: none"> <li>GJ – Yes, the Midtown Tunnel (between Norfolk and Portsmouth) didn't want to remove piles 2' below mudline. Wanted to leave even with mudline. Triggered additional 408 review.</li> </ul>	<p>USACE will consider a single phase review of the 408 submission package – to the extent feasible.</p>
	<p><u>NEPA and Section 106 Consultation:</u></p> <p>MA – Typically a 408 review requires its own NEPA and Tribal Consultation but for HRBT Project, USACE will use existing NEPA/Section 106 documents produced by VDOT/FHWA.</p>	

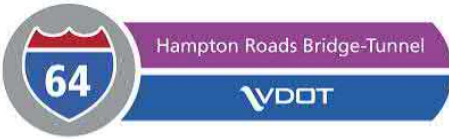


No.	Description	Action
	<ul style="list-style-type: none"> <li>GJ recognized that new tribes have since been identified and federally recognized.</li> <li>DG - How do we engage?</li> <li>GJ – USACE NAO Commander will engage with Chief(s) of the Tribe(s).</li> <li>GJ – Typically, FHWA will be responsible for Section 106 coordination, which includes tribal coordination.</li> <li>GJ – The JPA’s or Section 408’ PN could be the vehicle for tribal coordination. Passive coordination is generally preferred, as it lets the PN serve as the vehicle to address tribal concerns. GJ will seek confirmation of preferred approach from USACE Planning and Legal Counsel (Tom Walker). For now (and until told otherwise), the plan is to rely on the PN to see if these new tribes have any comment.</li> <li>MA- The 408 scope is very narrow. He is only concerned with impacts to federal projects.</li> </ul>	<p>SP/GJ (USACE) to provide confirmation on how to conduct Tribal Consultation.</p>
	<p><u>Statement of No Objection (SONO):</u></p> <p>MM – will a SONO be needed in the 408 application?</p> <ul style="list-style-type: none"> <li>MA – SONO should come from the non-federal sponsors for the Civil Works Project that would be affected by the HRBT Project. Therefore, it is still somewhat unclear until all Civil Works Projects to be affected by HRBT Project are fully identified.</li> <li>MA – The intent of EC is to address whether or not scope affects federal projects. The VPA may want to wait until later in process to provide a SONO letter.</li> <li>As such, there could be at minimum three (3) non-federal sponsors unless more are identified from other Civil Works Project not discussed today:               <ol style="list-style-type: none"> <li>City of Norfolk for Willoughby Spit Beach Nourishment.</li> <li>City of Hampton for Phoebus and Hampton Creek Channels (secondary navigation channels).</li> <li>The Virginia Port Authority (VPA) for the primary navigation channels.</li> </ol> </li> <li>In any event, VDOT/HRCP should invite all 3 to public meetings.</li> </ul>	<p>HRBT Team to always invite non-federal sponsors to 408 outreach meetings.</p>
	<p><u>Operations and Maintenance (O&amp;M) Plan:</u></p> <p>USACE confirmed that an O&amp;M Plan (referenced in the EC Section 6.0) would not be part of the HRBT 408 Application because such plan would only be required for a proposed Federal project. Although, the HRBT construction and permanent impacts will be assessed against the existing O&amp;M Plans of the affected Federal Navigation Channels.</p> <ul style="list-style-type: none"> <li>MA also noted that HRBT construction activities would need to pause if USACE needed to perform maintenance dredging on one of these Federal Navigation Channels. In other words, existing Federal O&amp;M Plans take precedent over the HRBT actions.</li> </ul>	

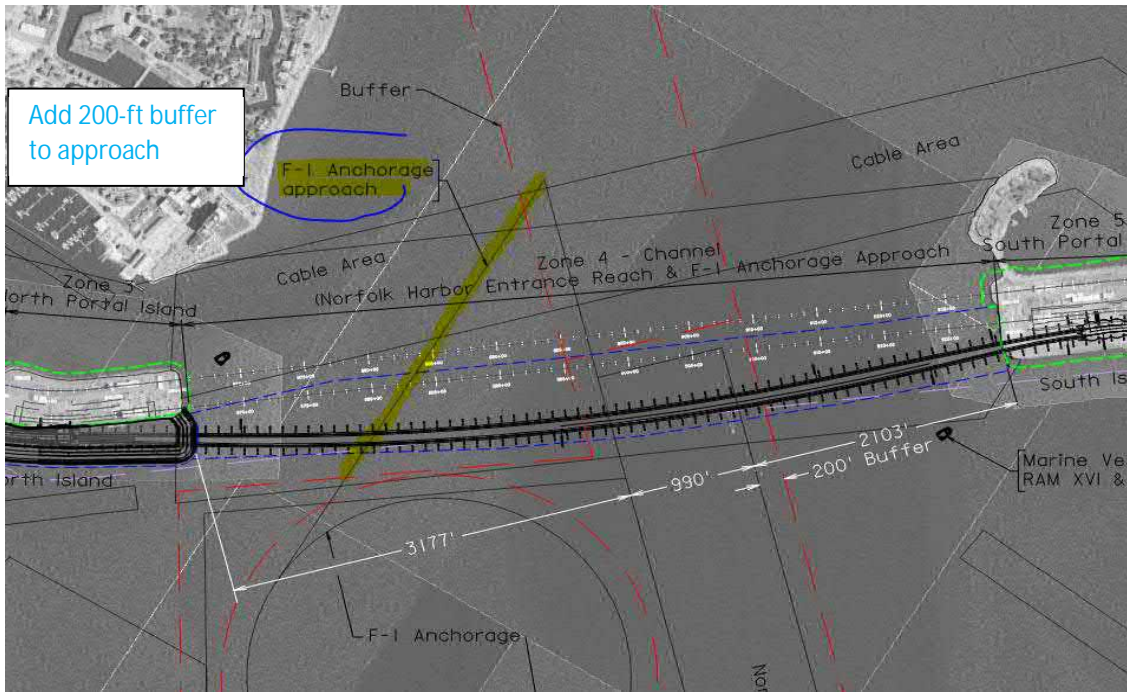


No.	Description	Action
	<p><u>408 Design Plans:</u></p> <p>While the Section 404/10 JPA permit plans typically suffice to satisfy the 408 needs, SP suggested that a separate set of plates may be valuable to focus on 408 work.</p>	<p>HRBT Team to consider a separate set of drawing plans for 408 only.</p>
4.	<p><b>USACE Section 408 Permitting Review and Schedule</b></p>	
	<p>DB – Is a scheduled section 10/404 permit approval of April 2020 still reasonable?</p> <ul style="list-style-type: none"> <li>• SP/MA – USACE will work very hard to meet schedule as best as they can. However, it is in the hands of the HRBT Team to get documents submitted as soon as possible.</li> <li>• MA – it will also depend on comments/concerns from maritime community. USACE will be mainly concerned with federal projects to be impacted.</li> <li>• De-conflicting use of federal projects from Project construction activities is important.</li> <li>• MA– how soon can we get TCP and NSRA? HRBT Team – To be confirmed at a later time. However, HRBT Team is working toward the goal for the official 408 submission in November 2019.</li> <li>• MA/SP – Overall the April 2020 target is ambitious but doable.</li> </ul>	<p>USACE to keep HRBT team appraised if schedule is falling behind.</p>
	<p><u>408 Outline / Schedule Review:</u></p> <p>As noted above, the Section 404/10 PN will be done separately from any additional 408 PN. It was noted that the HRBT Team is working toward November 2019 for a complete submittal of 408 package.</p> <p>With this in mind, it was agreed that HRBT Team will develop an outline of the Section 408 Application Package along with an anticipated Permitting Schedule for USACE review/approval.</p> <ul style="list-style-type: none"> <li>• Include all elements that we think comprises a “complete” application</li> <li>• Develop a schedule of deliverables.</li> <li>• USACE will review and tell us if we are missing anything</li> <li>• MA – Need to include at a minimum design analysis, plans and specs, construction sequencing, work zone, footprints, anchoring and mooring, equipment, TCP, NSRA, list of civil works projects.</li> <li>• SP – Need to address any real estate issues and maybe even Geotechnical/H&amp;H concerns.</li> </ul>	<p>HRBT Team to submit 408 outline/schedule for USACE review and approval.</p>
5.	<p><b>Upcoming submission of JPA</b></p>	
	<p>DG stated that in contrast to Thimble Shoal, this project will have a VPDES permit application much earlier in the process. The chemistry of the discharge water will be regulated similar to the stringent thresholds provided in the Thimble Shoal VPDES permit conditions.</p> <ul style="list-style-type: none"> <li>• SP– not allowed to alter federal channel which includes discharge of pollutants. So would need to see test results from monitoring during construction.</li> <li>• Robert Pruhs (Chief of Technical Section 103) should be invited to meetings.</li> </ul>	



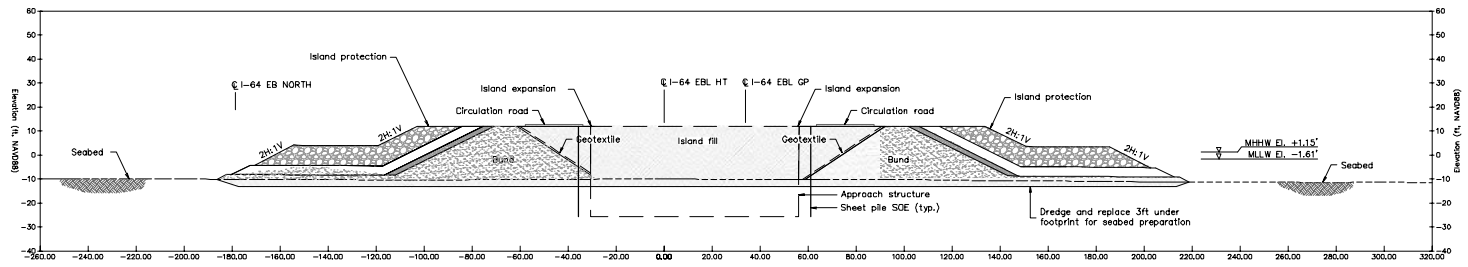


No.	Description	Action
	<p>MA asked what will be included in JPA.</p> <ul style="list-style-type: none"> <li>• DG recited several of the JPA sections: JPA form, project description, Appendix G (cross sections, plates); Appendix Q (previous meetings; agency coordination, etc.); schedule; etc.</li> <li>• 1 hard copy of JPA for 408 (include CD).</li> <li>• 1 hard copy of JPA for GJ (include CD).</li> <li>• MA – He would like JPA Appendix G (Impact Drawings) to be fully fleshed out in detail in the 408 submittal. Include plan views of work zones overall including in-water anchoring and mooring areas. Important to show maximum impacts.</li> <li>• SP – Also clearly identify federal channels on mapping.</li> <li>• MA – To the extent feasible, include maximum impacts to make scope broad; and avoid permit mods.</li> <li>• MA – Also include anchoring points, mooring areas, work zones, etc. He will really scrutinize top of tunnel elevations and maintenance of tunnel.</li> </ul> <p>GJ – For the PN, there is 10 MB limit file size for the design plans:</p> <ul style="list-style-type: none"> <li>○ Enough sketches for public to look at, but if need more info, public can request. (maybe one mile on each page). GJ held up Figure 2; 1" = 800' scale map as an example of the map.</li> <li>○ GJ would also like a copy of the Species Conclusion Table in the PN.</li> <li>• Requested that HRBT Team provide a list of Adjacent Property Owners (APOs) and adhesive Mailing Labels by August 28 to expedite his mailing effort. GJ will send out postcards.</li> </ul>	<p>TS to provide DG w/ an example of Species Conclusion Table.</p> <p>HRBT Team to provide GJ with Mailing Labels.</p>
	Meeting Adjourned at approximately 4:15 PM	

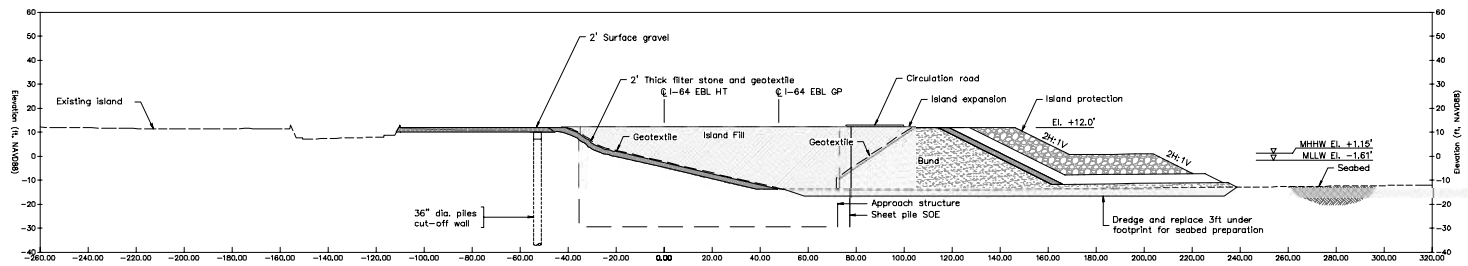








SECTION A  
PROTECTION BERM  
Scale: 1" = 20'



SECTION B  
PROTECTION BERM  
Scale: 1" = 20'

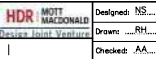
LEGEND:

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	Underlayer type 2		Concrete ballast
	Underlayer type 3		Reinforced concrete
	Gravel		Scour protection rock
	Island fill		Bund

PRELIMINARY PLANS  
THESE PLANS NOT TO BE  
USED FOR CONSTRUCTION

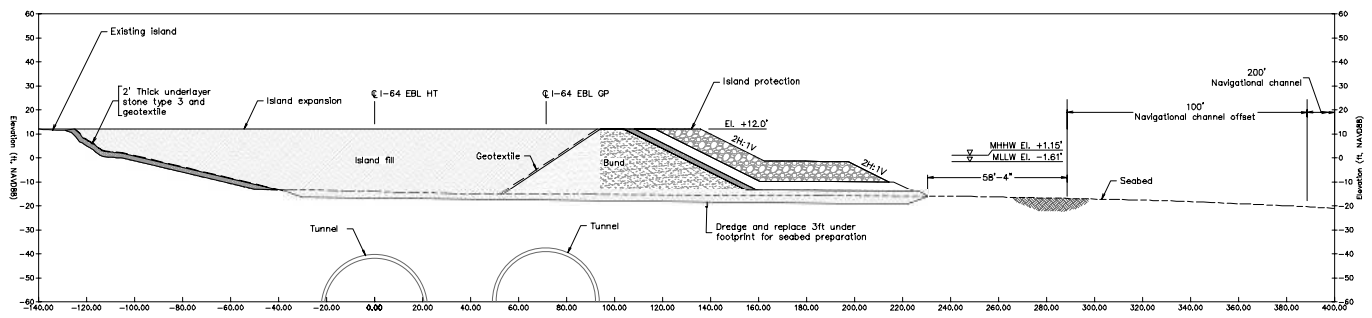
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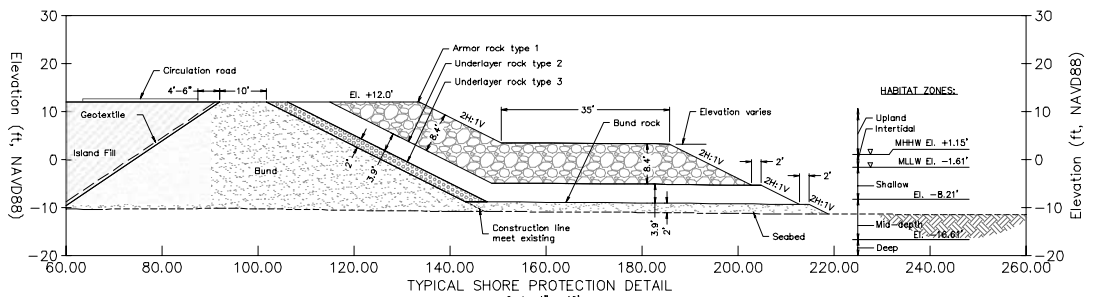


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Drawn: RH... DATE: August 15, 2019  
Checked: AA...

NORTH ISLAND EXPANSION  
JPA CROSS SECTIONS SHT 1 of 2  
Plan No. 3 of 6



SECTION C  
PROTECTION BERM  
Scale: 1" = 20'



TYPICAL SHORE PROTECTION DETAIL  
Scale: 1" = 10'

LEGEND:

	Armor layer		Concrete fill
	Underlayer type 2		Concrete ballast
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	Gravel		Scour protection rock
	Island fill		Bund

PRELIMINARY PLANS  
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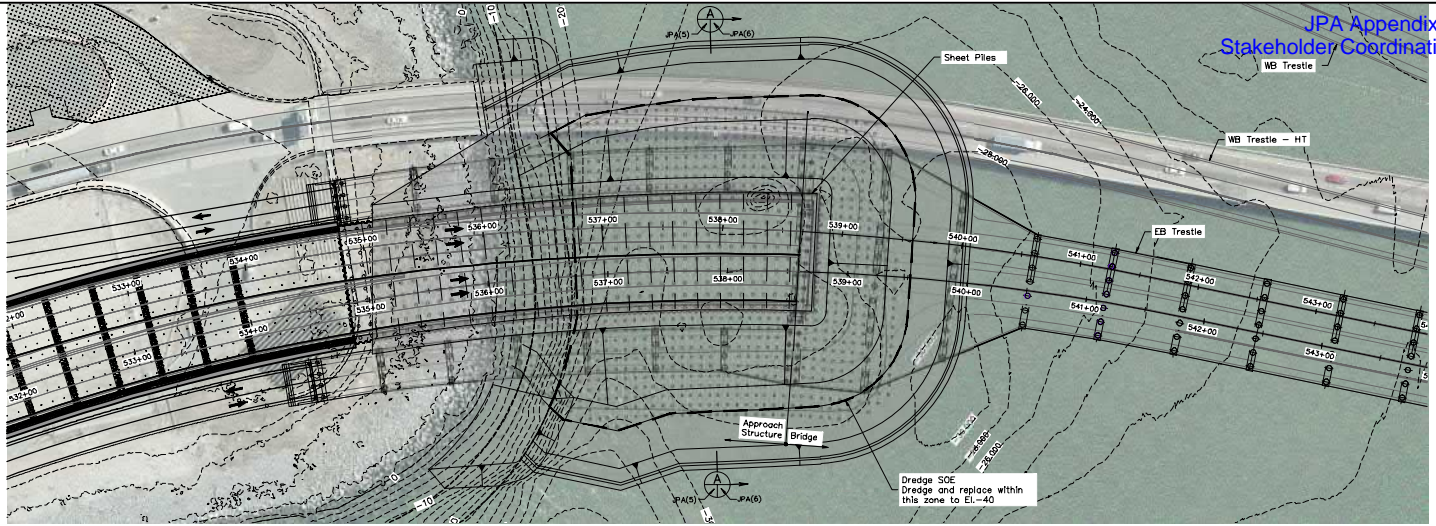
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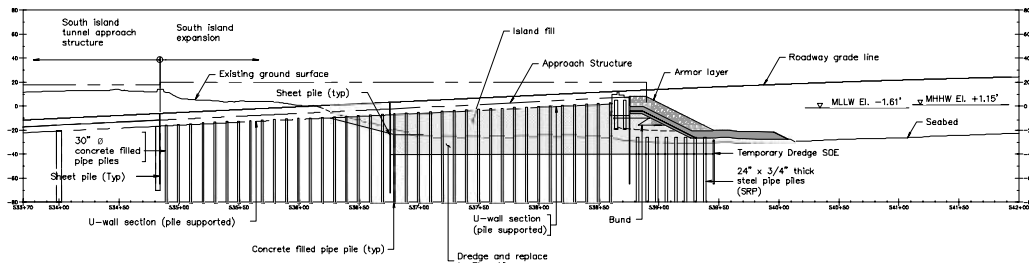
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NORTH ISLAND EXPANSION  
JPA CROSS SECTIONS SHT 2 of 2  
Plan No. 4 of 6



SOUTH PORTAL - PLAN

Scale: 1" = 40'



SOUTH PORTAL - PROFILE

Scale: 1" = 40'

LEGEND:

- Armor layer
- Underlayer type 2
- Underlayer type 3
- Gravel
- Island fill
- Concrete fill
- Concrete ballast
- Reinforced concrete
- Bund
- SRP Piles (24" x 3/4" c/c)
- Foundation Piles (30" x 10' c/c)

PRELIMINARY PLANS  
THESE PLANS NOT TO BE  
USED FOR CONSTRUCTION

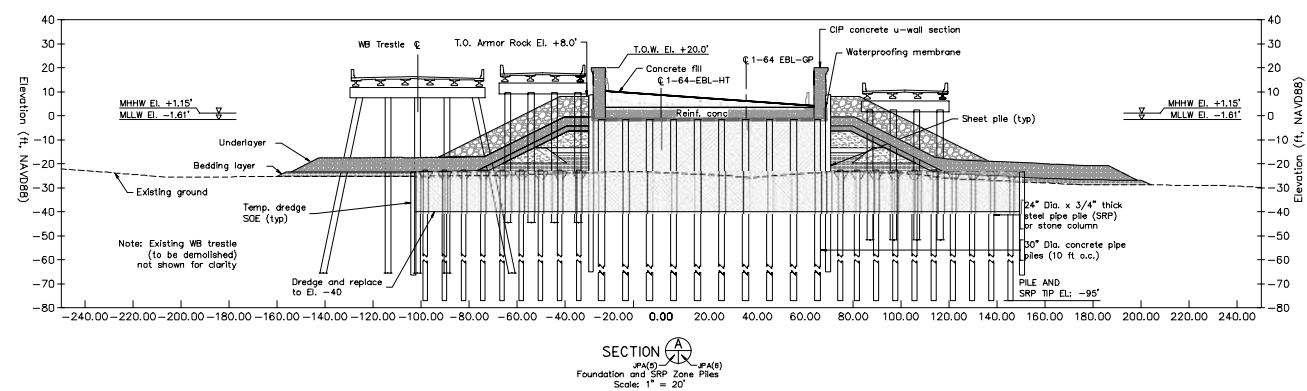
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STRUCTURE AND BRIDGE DIVISION  
DATE: August 15, 2019  
Designed: NNE  
Drawn: RH  
Checked: JNE

SOUTH ISLAND EXPANSION  
JPA PLAN AND PROFILE  
Plan No. \_\_\_\_\_  
Sheet No. 5 of 6



SECTION A-A  
Foundation and SRP Zone Piles  
Scale: 1" = 20'

- Armor layer
- Underlayer type 2
- Underlayer type 3
- Gravel
- Island fill
- Concrete fill
- Concrete ballast
- Reinforced concrete
- Bund

PRELIMINARY PLANS  
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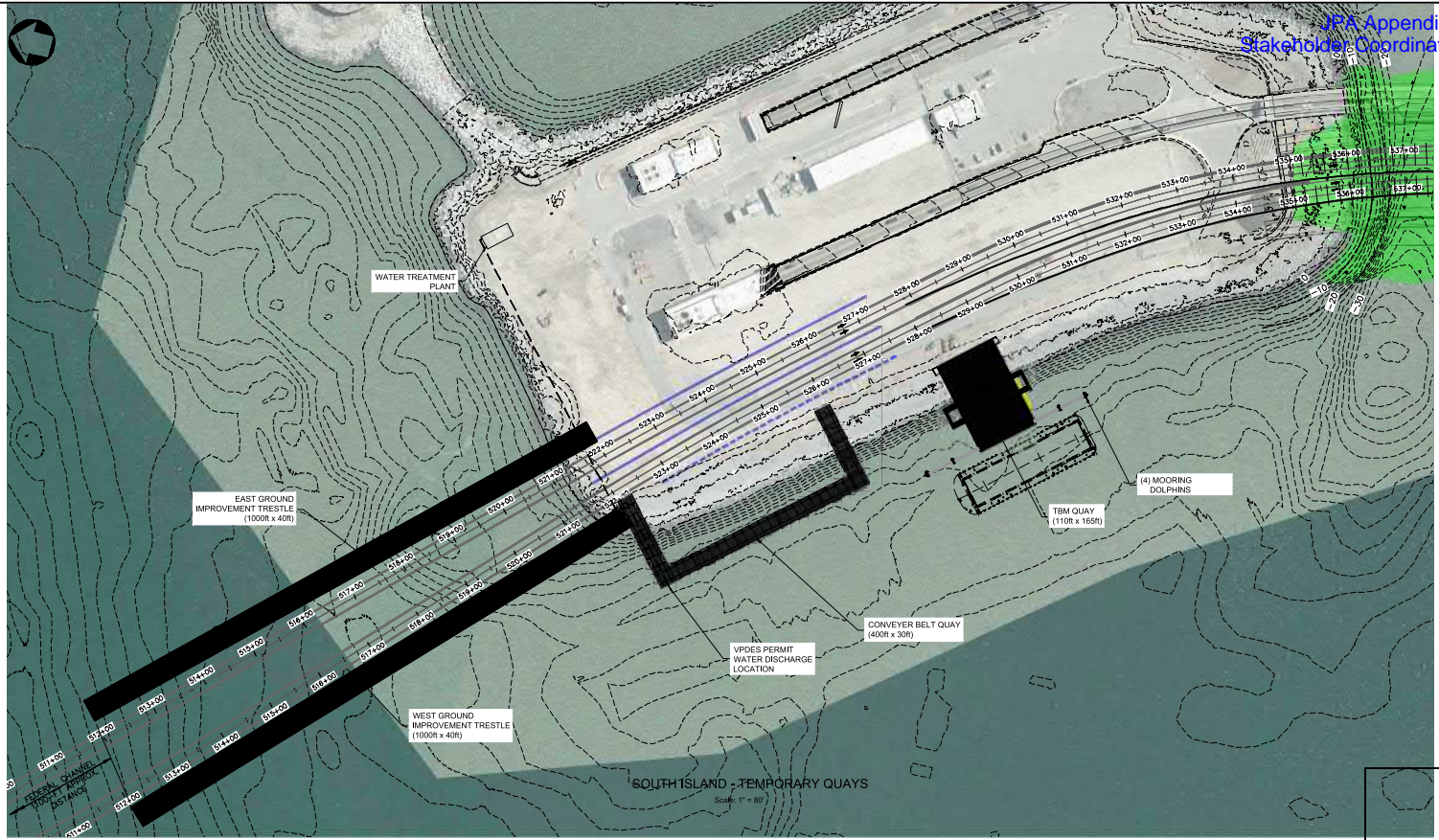
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FINAL PLAN REVISIONS SUBMITTAL DATE:							
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STRUCTURE AND BRIDGE DIVISION  
DATE: August 15, 2019  
Designed: NNE  
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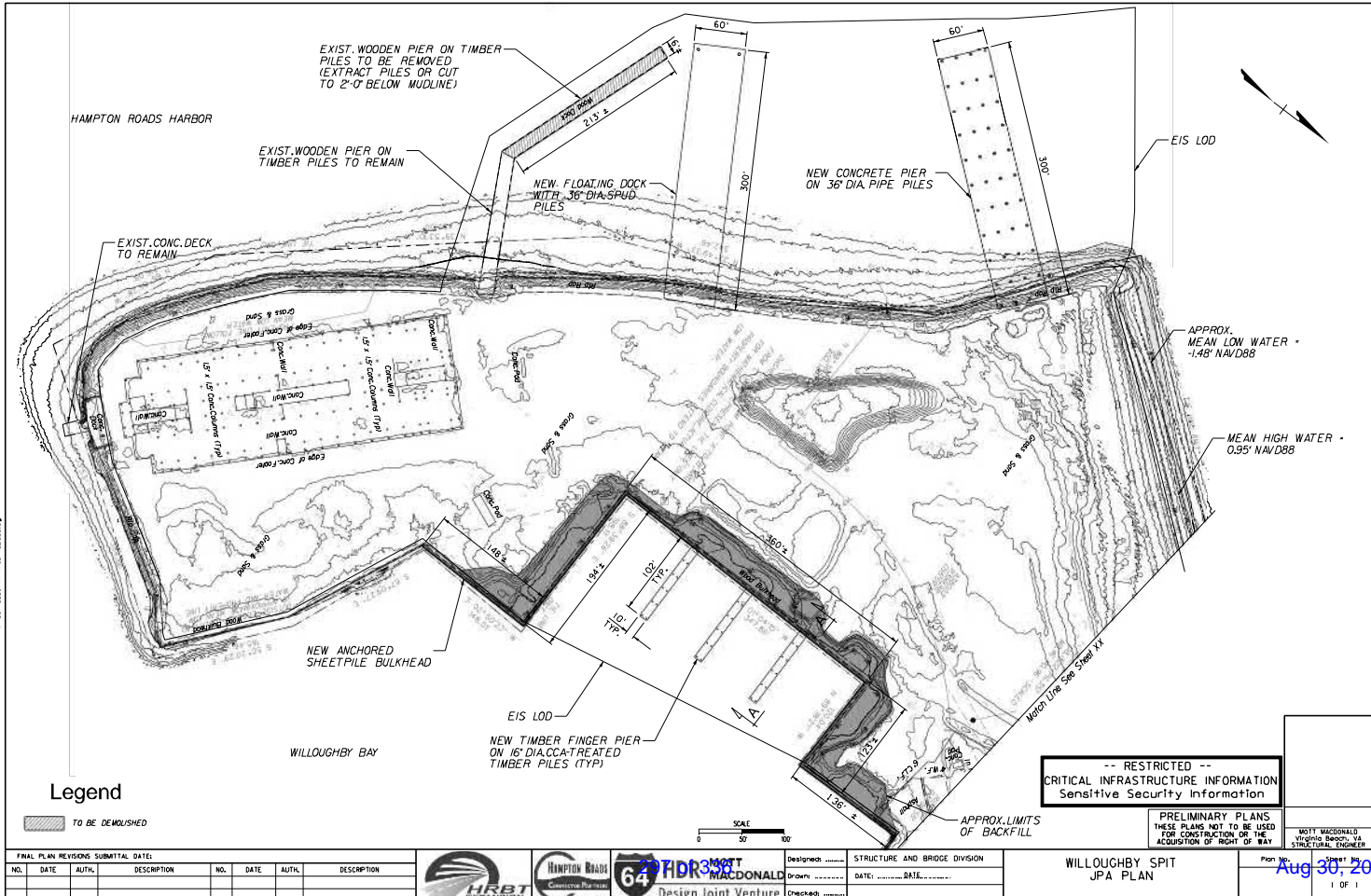
SOUTH ISLAND EXPANSION  
JPA SECTION  
Plan No. \_\_\_\_\_  
Sheet No. 6 of 6



PRELIMINARY PLANS  
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Sensitive Security Information

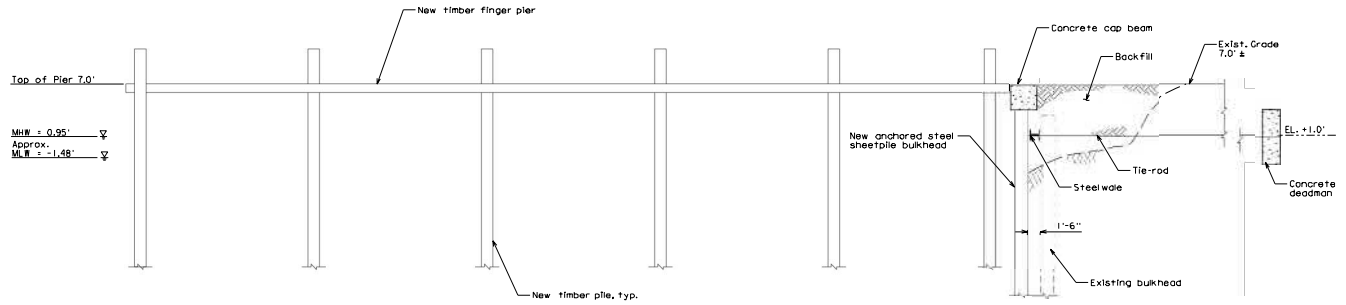
FINAL PLAN REVISIONS: SUBMITTAL DATE:				NO. DATE AUTH. DESCRIPTION				NO. DATE AUTH. DESCRIPTION						STRUCTURE AND BRIDGE DIVISION DATE: AUGUST 15, 2019		SOUTH ISLAND - SITE LAYOUT JPA PLAN		Plan No. _____ Sheet No. 7 OF 7	
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Legend  
 TO BE DEMOLISHED

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SECTION 4-4  
Scale: 1" = 5'

PRELIMINARY PLANS  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY

NOT BE USED  
FOR CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY

FINAL PLAN REVISIONS SUBMITTAL DATE:						   	Designed: <u>        </u> DES. Drawn: <u>        </u> DRW. Checked: <u>        </u> CHK.	STRUCTURE AND BRIDGE DIVISION DATE: <u>        </u> / <u>        </u> / <u>        </u>	WILLOUGHBY SPIT JPA SECTION	Plan No.	Sheet No.
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE					AUTH.	DESCRIPTION

Project File Location: \\MP\XANVALL\FATH\DESCH  
 Plot File: 011.dwg  
 Date & Time: 8/15/2019