HRBT EXPANSION Magazine

Winter 2020

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HRBT EXPANSION

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VDOT

HRTAC
Hampton Roads Transportation Accountability Commission

Message from Jim Utterback

A project of this magnitude can only be made possible through regional cooperation. We are proud to have reached a momentous milestone on October 29, 2020 when we held a groundbreaking event led by Virginia Governor Ralph Northam, Secretary of Transportation Shannon Valentine, VDOT Commissioner Stephen Brich, as well as state and local leaders. As the largest infrastructure construction project in the history of the Commonwealth, this is the culmination of the vision and efforts of State and local leadership to alleviate one of the most congested corridors in the region.

The HRBT Expansion Project has made significant progress over the past few months. The project recently received the necessary water quality and bridge permits. VDOT issued a Notice to Proceed to Hampton Roads Connector Partners (HRCP), which initiates full construction activities on the project. Crews continue to prepare for the arrival of the Tunnel Boring Machine (TBM) in 2021 and are working on expanding the existing North and South islands to accommodate the new twin tunnels. Additionally, crews are mobilizing to begin work to widen the interstate in Norfolk and Hampton.

As construction progresses during the COVID-19 pandemic, we have had to change how we work and have added additional safety protocols in accordance with CDC guidelines. This challenge has only reinforced our focus on safety, which remains our top priority. Through morning safety huddles, training and regularly scheduled meetings with first responders, safety is always first and foremost on the project. Our team is committed to delivering the HRBT Expansion Project on time, on budget and safely.

James S. Utterback
HRBT Expansion Project Director

View of new eight-lane superstructure.

PROJECT OVERVIEW

New Concept Video Provides Glimpse Of Finished Project

Scan the above QR CODE to view video.

We are getting a preview of what will eventually be the completed HRBT Expansion, thanks to a new concept video, which showcases the finished project including roadways, bridges and tunnels.

In addition to the future bridge work, tunnel structures and new lanes along I-64, you can also see the configuration of the new structures that will replace the trestle bridges to the Willoughby shoreline in Norfolk.

The existing trestle bridges currently support two lanes of traffic in each direction. The new superstructure will support eight total lanes of traffic, four going in each direction between Willoughby Spit and the HRBT South Island. Building the new superstructure to the west of the existing trestle bridges will result in less impact to motorists, as the HRBT will remain open with two lanes of traffic in each direction throughout construction.

IN THE NEWS

A Newsworthy Project

The HRBT Expansion Project has garnered dozens of news stories and articles over the past six months. With so many milestones covered and more yet to come over the next five years, these news stories provide the traveling public with a "behind-the-scenes" glimpse into fascinating aspects of the Commonwealth's largest infrastructure.

WAVY-TV provides an exclusive look into the HRBT Expansion Project.

Click here to watch the 3-part series on HRBTExpansion.org

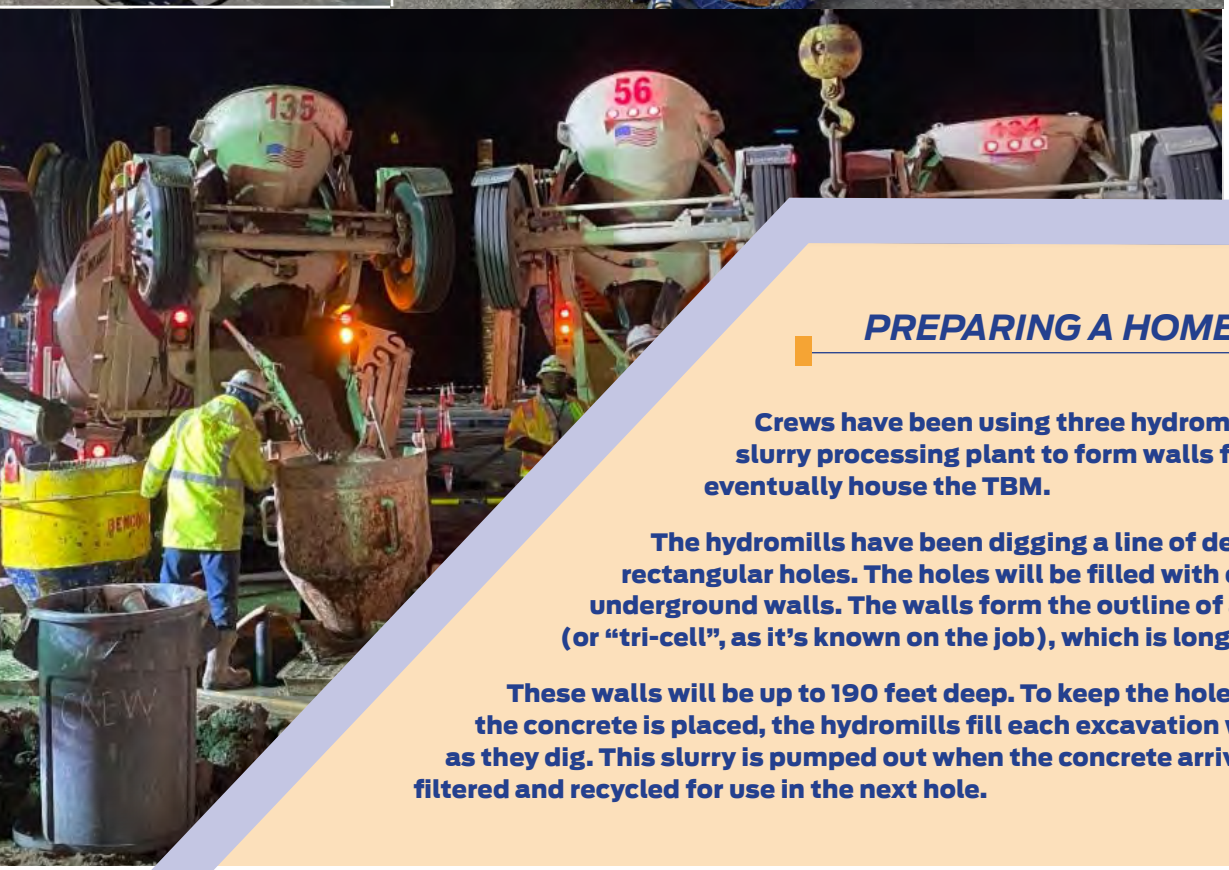
Full Speed Ahead On The HRBT

The HRBT Expansion Project Team is moving forward with construction, following the receipt of three critical permits from the United States Army Corps of Engineers (USACE), the Virginia Marine Resources Commission (VMRC), and the Virginia Department of Environmental Quality (VDEQ) this summer. With permits in hand, VDOT issued a Notice to Proceed (NTP) to Hampton Roads Connector Partners (HRCP) in September, which signaled construction activities to begin throughout the full corridor.

Crews have been using marine construction equipment, including three hydromills and a slurry processing plant, to excavate walls for a 65-foot pit that will be used to launch the Tunnel Boring Machine (TBM). When the concrete walls are complete, crews will be able to excavate the space inside the pit, which will be slightly longer than the length of a football field. Recent work on a portion of Willoughby Spit created a laydown area for additional construction equipment, office space and storage area.

With a completion date in November 2025, work will be happening simultaneously for the twin tunnels, new bridges and interstate widening. Crews are preparing for construction of a temporary trestle near the North Island and early roadway expansion work is underway to allow for the widening of two Norfolk bridges along the corridor. Construction on existing highways and bridge structures is set to begin in early 2021.

When excavation of the pit is complete, the TBM will be assembled and launched from the site. The TBM is expected to arrive from Germany in 2021.



1 Hydromill at work excavating the TBM pit.

2 Drone photo of the South Island early work including future site of TBM shaft.

3 Setting endwall closing panel in excavated pit.

4 The bottom half of a 190-foot reinforcing cage is lowered into the excavated pit to stabilize walls being formed for the TBM shaft.

5 Crane assembly of equipment being used on South Island.

6 Cutter wheels of hydromill machine.

7 Multiple Concrete trucks at work to place material for TBM pit walls.

PREPARING A HOME FOR THE TBM

Crews have been using three hydromill excavators and a slurry processing plant to form walls for a pit which will eventually house the TBM.

The hydromills have been digging a line of deep, side-by-side rectangular holes. The holes will be filled with concrete to form underground walls. The walls form the outline of a triple-cell cofferdam (or "tri-cell", as it's known on the job), which is longer than a football field.

These walls will be up to 190 feet deep. To keep the hole open until the concrete is placed, the hydromills fill each excavation with a thick slurry as they dig. This slurry is pumped out when the concrete arrives and is then filtered and recycled for use in the next hole.

Buildng the Machine

The Tunnel Boring Machine (TBM), a highly-specialized piece of equipment designed to dig through soils and construct tunnel segments, is being manufactured in Germany. Herrenknecht Tunneling Systems, a world-leader in mechanized tunneling, is manufacturing the TBM for the project. In addition to customized specifications such as diameter of the completed tunnel, Herrenknecht tailors the cutter head to accommodate the specific soil makeup along the tunnel's path.

Herrenknecht is expected to deliver the TBM in Fall 2021. The machine will then be assembled in a 65-foot pit on the South Island. The assembly process will take four to six months. Tunneling is expected to begin in early 2022. The assembled TBM will be four-stories tall, over 400-feet long, and weighs over 4,000 tons or eight-million pounds. For perspective, the TBM is the weight of ten fully loaded Boeing 747s.

The TBM will take about a year to finish boring from its starting point on the South Island, moving towards the North Island at the rate of up to 50 feet per day. Upon reaching the North Island, it will take four months to turn the machine around before it spends another year digging a parallel twin tunnel on its way back to the South Island.

Crews are expected to run the machine six days a week, with mulitple shifts per day. Each tunnel will be about 8,000 feet long, and the deepest segments will be about 150 feet below the water's surface. That's about 50 feet deeper than the existing tunnels.

During active mining, the TBM will tunnel like an earthworm, cutting through soil and sediment while removing waste. It's expected to remove 1.2 million cubic yards of earth while boring. As the tunnel forms, the TBM simultaneously installs concrete rings, like interlocking pieces, which form the walls of the tunnel.

PHOTOS: (Left) A single bearing being constructed for the TBM in Germany.

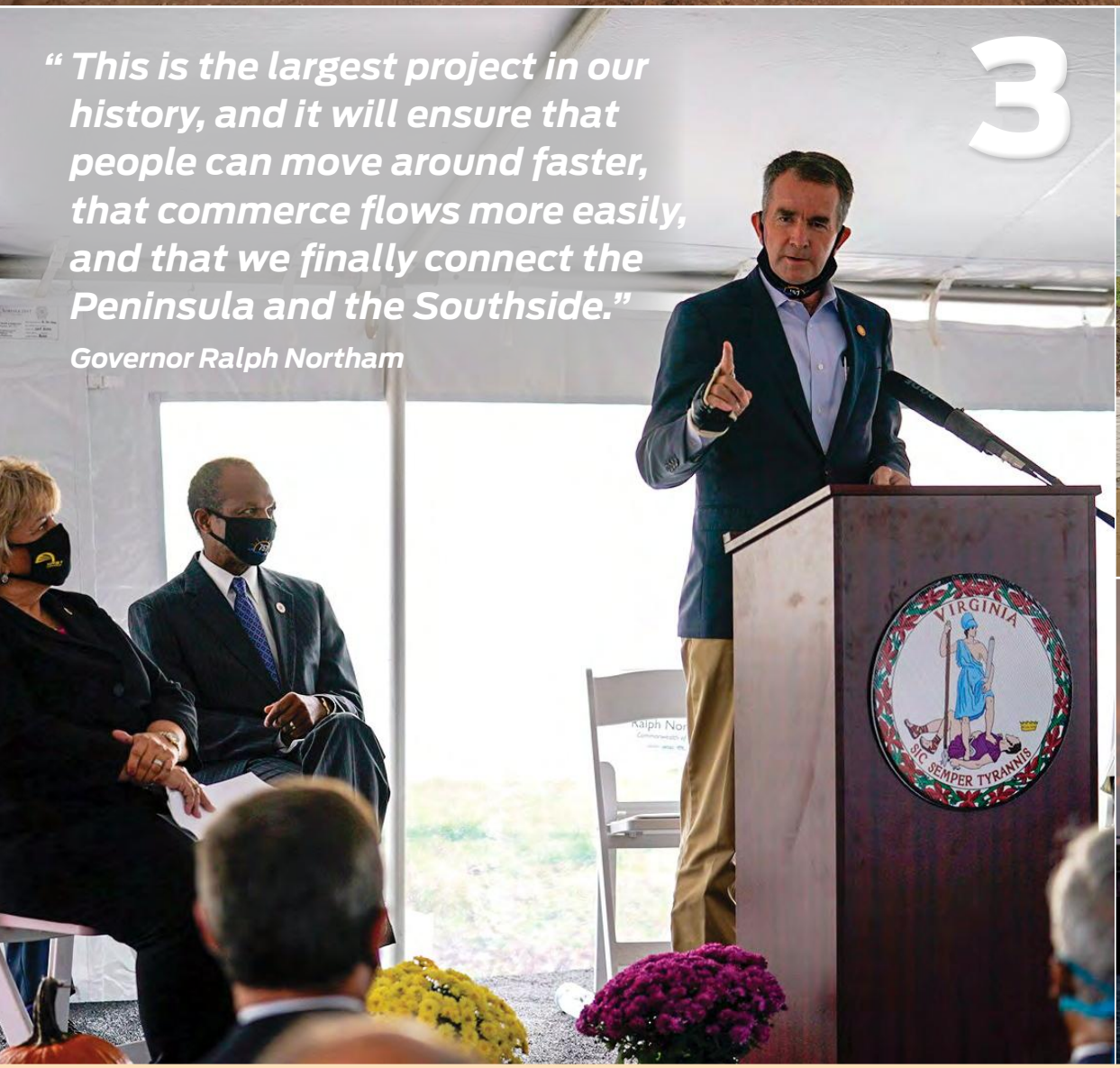
(Above) Front view of the TBM under construction.

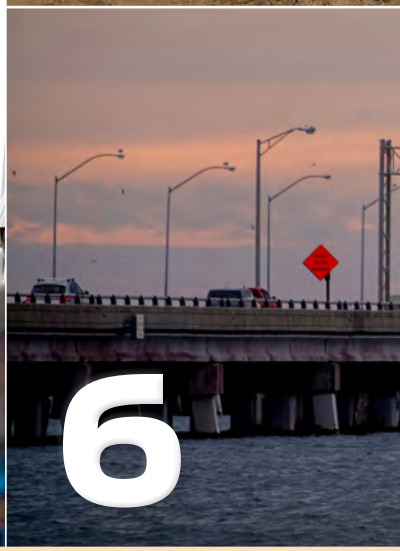
DID YOU KNOW?

The HRBT Expansion Project Team invited local middle school students to participate in a naming contest for the TBM. Names were judged based on creativity and the tie to the Hampton Roads community, Commonwealth of Virginia, transportation, or engineering. Historically, naming a TBM has been thought to bring good luck to a project, and similar contests have occurred locally, across the United States, and internationally. Names were judged in December and will be announced in Spring 2021 when it is placed on the TBM before being shipped to the U.S.

" This is the largest project in our history, and it will ensure that people can move around faster, that commerce flows more easily, and that we finally connect the Peninsula and the Southside."

Governor Ralph Northam





GROUNDBREAKING EVENT

VDOT Breaks Ground on the Largest Infrastructure Project in Virginia History

Governor Ralph Northam, VDOT administrators, and state and local leaders joined together while practicing social distancing to break ground on the HRBT Expansion Project on Oct. 29. "This is the largest project in our history, and it will ensure that people can move around faster, that commerce flows more easily, and that we finally connect the Peninsula and the Southside," said Governor Northam. "This project will make everyone's lives easier when it is completed."

The HRBT Expansion Project is only the fourth roadway project in the United States to use a bored tunnel approach. "VDOT is using this advanced boring technology for the first time ever," said VDOT Commissioner Stephen Brich. "We're doing it because this is one of the nation's most important maritime channels, and this technology means less disruption to military and commercial activity, and less impact on marine life."

Attendees, all wearing masks, gathered under the tent seated six feet apart to hear remarks from Gov. Northam, Secretary of Transportation Shannon Valentine, Hampton Roads Transportation Accountability Commission (HRTAC) chair Linda Johnson, and mayors from the cities of Hampton and Norfolk before stepping outside the tent to 'break ground' near the tie-in point for the temporary trestle connecting to the North Island. In addition to the 50 attendees, hundreds of virtual attendees viewed the live streamed groundbreaking event from a distance.

The groundbreaking officially kicked off full construction activities for the HRBT Expansion Project. The project is a prime example of regional cooperation to provide solutions to the gridlock in the region. In addition to alleviating congestion for motorists, the completed project will benefit tourism, the Port of Virginia, and the military—three critical industries in Hampton Roads. The expansion is projected to bolster the economic competitiveness in Hampton Roads with more than $4.6 billion in investments and an estimated 28,000 new jobs over the life of the project.

1 (FROM LEFT) HRBT Project Director, Jim Utterback; HRCP Project Executive, José Martin; President of Dragados USA, José Mendez; Governor Ralph Northam; Chairman of VINCI Construction LLC, Christian Tricoire; Secretary of Transportation Shannon Valentine; Sr. Vice President of Flatiron, Kevin Powell; VDOT Commissioner Stephen Brich. 2 Secretary of Transportation Shannon Valentine kicks off the groundbreaking ceremony. 3 Governor Ralph Northam tells attendees that for too long traffic in Hampton Roads has been bottlenecked at the tunnel. 4 Project Director Jim Utterback and VDOT Commissioner Stephen Brich participated in the ceremonial groundbreaking. 5 Congresswoman Elaine Luria discusses project with VDOT Communications Manager Paula Miller. 6 A view of the north trestle bridges from Hampton before the groundbreaking ceremony.

BIRD MANAGEMENT PLAN

Migratory Birds Successfully Adapt To New Home Thanks To Coordinated Agency Efforts

Thanks to the combined efforts of state agencies and HRCP, migratory birds were safely relocated this past nesting season.

For decades, thousands of seabirds would come to occupy nearly every inch of prime nesting territory at the South Island of the Hampton Roads Bridge-Tunnel (HRBT) every spring. The South Island had supported the single largest seabird colony in all of Virginia including several species designated as Species of Greatest Conservation Need in Virginia's Wildlife Action Plan. While these seabirds spend much of their time either over open water or close to coastlines, the South Island provided a safe nesting ground for these flocks to hatch their young each spring for decades.

With the start of the HRBT Expansion Project and the need for the South Island to be used as a staging area for the project's construction equipment, it became imperative for multiple state agencies to come together to develop a successful plan to humanely relocate the bird species that nest on the island each year.

An alternative location for nesting was necessary to prevent a decline in seabird population. With competition for available sites combined with the potential of some birds moving to the mainland, where predators would pose a threat, a lack of an alternative site could have proven detrimental to the 2020 nesting season.

For several months, VDOT, Hampton Roads Connection Partners (HRCP) and the Department of Wildlife Resources (DWR) worked to safely relocate the birds nesting habitat. DWR prepared nearby Fort Wool, which is closed to the public, to receive thousands of birds during the spring and summer months. The agency removed vegetation and spread sand and gravel, giving the birds the open ground habitat they prefer. They also anchored sand-covered barges in the bay, to provide ample space for the birds.

From February to September, dog handlers and border collies safely and humanely coaxed the migratory birds from the South Island to the neighboring nesting grounds. Stephanie Boyles Griffin, Senior Scientist with the Humane Society of the United States, says "The use of herding dogs that are specially trained to flush birds without making contact is a humane and effective approach that will help keep the birds from nesting on the South Island."

Thanks to the coordinated collaboration between various agencies, these migratory birds, which were used to nesting on the South Island of the HRBT, successfully spent the nesting season at nearby historic Fort Wool.

"Through collaboration and cooperation between VDOT and the Virginia Department of Game and Inland Fisheries (now known as DWR), a plan to protect the birds took flight. Fort Wool was prepped to take thousands of the feathery flocks. We came together to help the migratory birds nest safely as we deliver the largest transportation project in Virginia's history," stated Shannon Valentine, Secretary of Transportation.

The Bird Management Plan received support from Secretary Shannon Valentine and Secretary of Natural Resources Matt Strickler.

The plan will continue long-term monitoring, passive control measures, and plans to respond to future nesting attempts, if necessary. These measures are expected to remain in place throughout the life of the project.

> ***"The use of herding dogs that are specially trained to flush birds without making contact is a humane and effective approach that will help keep the birds from nesting on the South Island."***
>
> — Stephanie Boyles Griffin, Senior Scientist, Humane Society of the United States

Safety In Numbers

HRBT Expansion Project Team Ensures Coordination and Communication with First Responders

Safety is the number one priority for VDOT and it is how the HRBT Expansion Project team starts off each and every day – with a safety message. These messages range from reminders to use back-up lights and sound when operating vehicles, to reminders about using proper lifting techniques. However, not all safety messages are simple reminders and some safety precautions and practices take a concerted effort to make sure safety stays top of mind.

Over the next five years, the HRBT Expansion Project landscape will continually change as project milestones are met and construction progresses, and this could affect how first responders arrive on-scene when needed. The HRBT Expansion team operates 24/7 with several hundred employees onsite at any given time. These employees work across various project locations, including the islands, interstate, bridges and newly formed construction sites in and out of water. With a project of this size and complexity, anything could become a safety hazard, and can put many others at risk without a well-coordinated and well-communicated safety plan in place.

To help keep everyone abreast of site location work and road access, Hampton Roads Connector Partners (HRCP) and VDOT established monthly meetings with first responders and administration from the cities of Norfolk and Hampton to make them aware how project changes could affect emergency responses. The initial First Responders Workshop was held in August, led by HRCP Incident Management Coordinator Jeff Singleton and VDOT's Incident Management Coordinator Jim Stanek along with fire, police and EMS from both cities. The City of Hampton Fire Department services the North and South islands of the HRBT, as well as the tunnels and bridges.

Emergency response planning includes the specific details of the project footprint, highlighted areas with access capabilities, methods for traffic management and ways to handle disabled or damaged vehicles. The project team also coordinated site tours for first responders and tabletop exercise conversations on how various agencies would respond to specific scenarios. These interactive exercises will continue throughout the life of the project to ensure continued communications and regional cooperation.

As the HRBT Expansion Project grows, one thing will not change: Safety is our number one priority.

The Norfolk Fire Department visited the South Island of the HRBT over the summer to learn how project activities may impact an emergency response.

STAFF SPOTLIGHT

Island Expansion Makes Way For New Tunnels

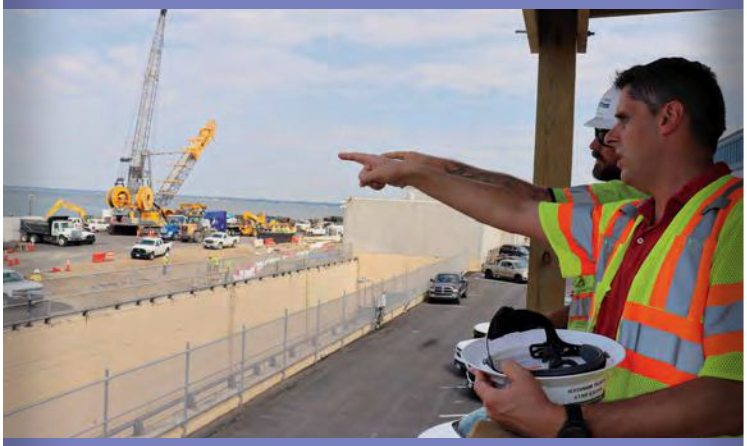
The Hampton Roads Bridge-Tunnel was the first tunnel ever built between two man-made islands. Those original islands have to be expanded in order to accommodate the new twin tunnels. That's where Todd Grifka and Xavier Billy come in. Meet the two individuals who are working to prepare the South Island to receive the Tunnel Boring Machine (TBM) and excavating the new twin tunnel approaches. As the Tunnel Approach Structure Construction Manager for HRCP, Xavier Billy oversees the work on the South Island to build the TBM launch pit and tunnel approaches. Todd Grifka ensures that the work meets VDOT standards as outlined in the technical requirements of the Contract in his role as the Resident Engineer supporting VDOT.

While the tunneling won't start until 2022, there is much work to be done on the South Island to prepare for the TBM and the tunnel approaches. In addition to the excavation of the launch pit and tunnel approaches, a quay dock is being constructed to receive the TBM. The project team also has to ensure the structural integrity of the soil, by testing and mixing in other elements as needed to strengthen the soil to hold the weight of the TBM and ultimately facilitate the tunnel boring process. The ground improvement program is a critical part of the island preparation work.

TODD GRIFKA

Resident Engineer

With a background in geotechnical engineering, Todd works as the Resident Engineer overseeing a team of field inspectors who monitor the quality of the construction on the islands and tunnel approaches, as well as the TBM launch pit. Todd has a Bachelor's in Civil Engineering and a Master's in Geotechnical Engineering. Todd previously worked on the construction of the new Midtown Tunnel between Norfolk and Portsmouth, Virginia.



XAVIER BILLY

Tunnel Approach Structure Construction Manager

Xavier manages the support of excavation work for the tunnel approaches and TBM launch pit. Xavier worked as a combat engineer for the French army for over a decade prior to going into construction management where he has overseen tunnel and roadway projects in France. Xavier has a degree in mechanical engineering.

ECONOMIC IMPACT

An Opportunity to Shine for REMSA

Hampton SWaM/DBE Firm Supports HRBT Expansion

The HRBT Expansion Project is poised to be a significant contributor to the economy of the region. The project has established SWaM and DBE goals to encourage participation and ensure that small and minority-owned businesses also have the opportunity to work on the project. One local, SWaM and DBE-certified business, REMSA, Inc., has been able to shine a spotlight on their specific niche. REMSA, a Hampton, VA based company, stands for Research, Environmental, and Management Support. REMSA provides environmental consulting, technical, and staffing services nationwide. Founded in 1986 by Ms. Rosetta Billups, REMSA has been recognized for their work around the National Environmental Protection Act (NEPA), regulatory compliance, endangered species management, pollution prevention, and natural resource planning.

A construction project in a marine environment presents specific, unique challenges and must take environmental concerns into consideration. This is where REMSA comes in with their array of specialized services. They provide site assessments, stream and wetlands surveys and permitting, soil remediation, HAZMAT surveys, asbestos and lead surveying and reporting, and Corrective Action Plans. They also support coastal and marine projects by training and providing Marine Endangered Species Observers who work closely with contractors to find a work balance that minimizes impacts on protected species and ensures compliance with environmental regulations.

For the HRBT Expansion Project, REMSA was contracted to provide geotechnical services for soil sample analysis, and they also provided the Environmental Phase I assessment of Strawberry Banks. "This is a once-in-a-lifetime opportunity to work on a large-scale infrastructure project that will provide REMSA with visibility in the industry and spur future growth," said chief operating officer Bernard Zachary. Through the SWaM and DBE program, REMSA has been able to demonstrate their capabilities and will continue to contribute to the success of the HRBT Expansion Project.

PHOTOS: (Top) REMSA provides marine mammal observation for the HRBT Expansion Project. (Above) REMSA works to minimize impacts to protected marine life such as the dolphins pictured here.

More than 159
DBE/SWaM firms contracted

Opportunities Abound

The HRBT Expansion Project continues to hold regular virtual outreach events to provide opportunities to DBE and SWaM firms interested in working on the project. A virtual conference was held in October with Virginia's leading decision makers, including Governor Ralph Northam.

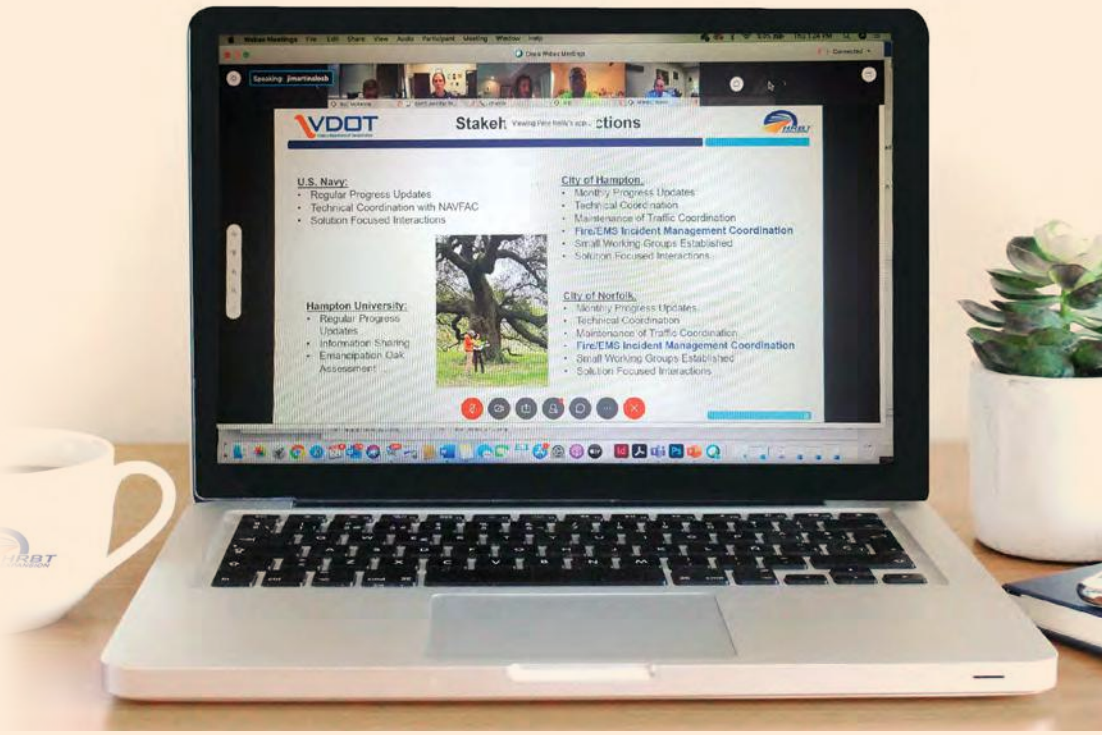
CERTIFIED SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
Virginia Department of Small Business and Supplier Diversity

DBE CERTIFIED

Staying Connected with the Community

COVID-19 has made 2020 a challenging year in many ways, including changing the landscape of how community outreach is conducted.

Community, Connection, Collaboration and COVID



COVID-19 has made 2020 a challenging year in many ways and has influenced the methods that communities use to connect and collaborate. While current pandemic restrictions do not encourage in-person participation, HRBT Expansion team leaders strive to keep stakeholders and the public informed through our web presence, virtual meetings and social media. Thanks to community interest, we have been able to update hundreds of citizens through virtual participation.

VDOT project team leaders traditionally meet in person at a public location to share project presentations and answer questions from all stakeholders. This will resume as soon as it is responsibly possible. In the meantime, safety requires the project team to conduct outreach online.

In August, Project Director Jim Utterback led the quarterly stakeholders committee meeting online, where Hampton Roads Connector Partners (HRCP) Project Executive José Martin Alos provided an update on current construction operations as well as upcoming work in the Fall.

Committee members also received updates on recent state and federal permits issued for the project, the success of ongoing DBE/SWaM outreach and engagement activities, and highlights of the Tunnel Boring Machine (TBM) naming contest involving area middle schools.

Virtual meetings included updates on the TBM, anticipated traffic impacts from the project, High-Occupancy Toll (HOT) lane usage and wildlife preservation efforts. Ongoing community outreach efforts include monthly newsletters. Our social media presence includes a HRBT Expansion Project Facebook group that encourages participation and a HRBT Expansion Project Twitter handle that provides project updates. A dedicated project website and regular podcasts offer continual construction updates and behind-the-scene insights.

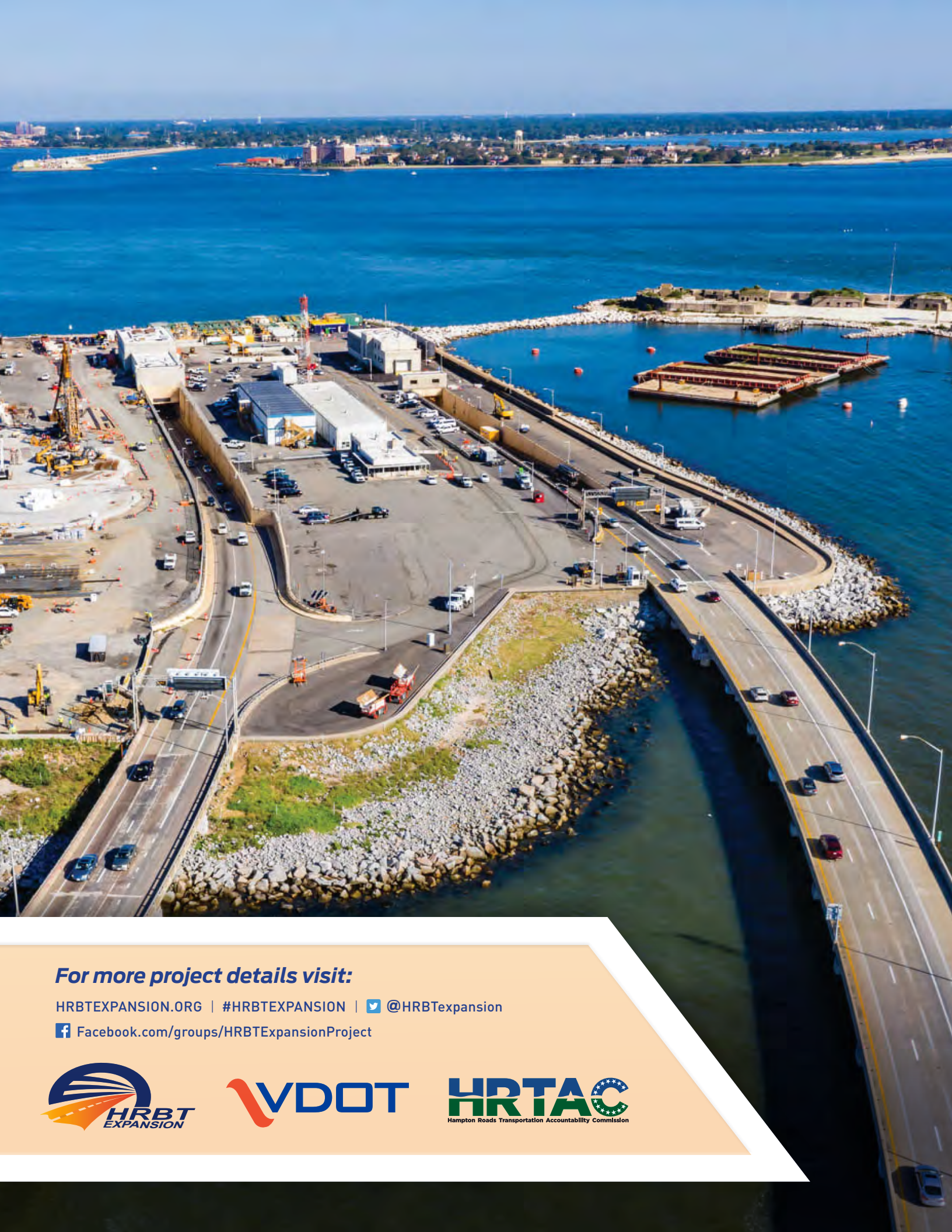
WANT MORE UPDATES ON THE HRBT EXPANSION?

Follow our new social media channels:

HRBTEXPANSION.ORG | #HRBTEXPANSION | @HRBTexpansion

Facebook.com/groups/HRBTExpansionProject

And we are excited to announce the launch of the updated website hrbtexpansion.org



For more project details visit:

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