



Hampton Roads Bridge Tunnel Expansion: Project Development Update

May 17, 2018

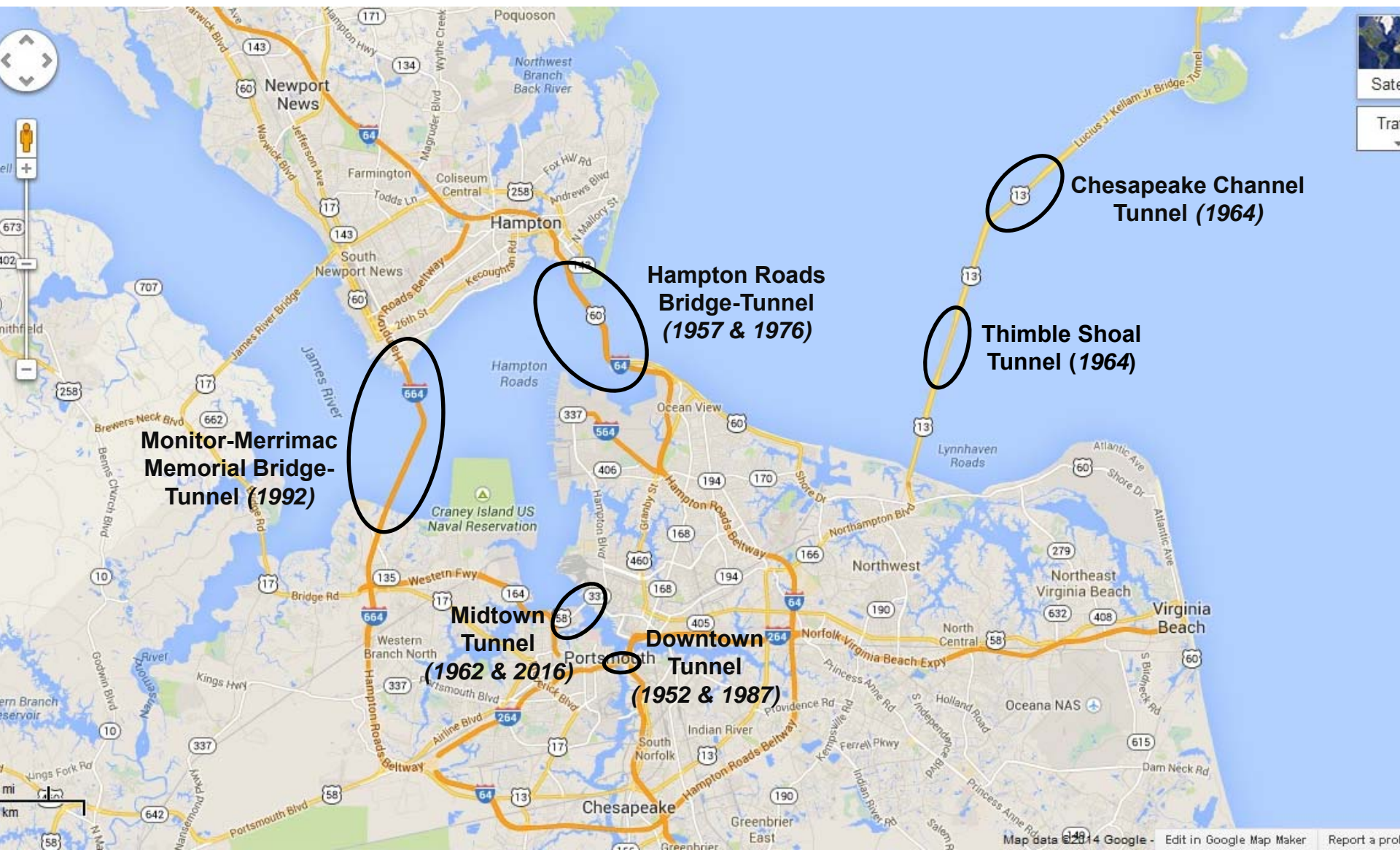
James S. Utterback

HRBT Project Director

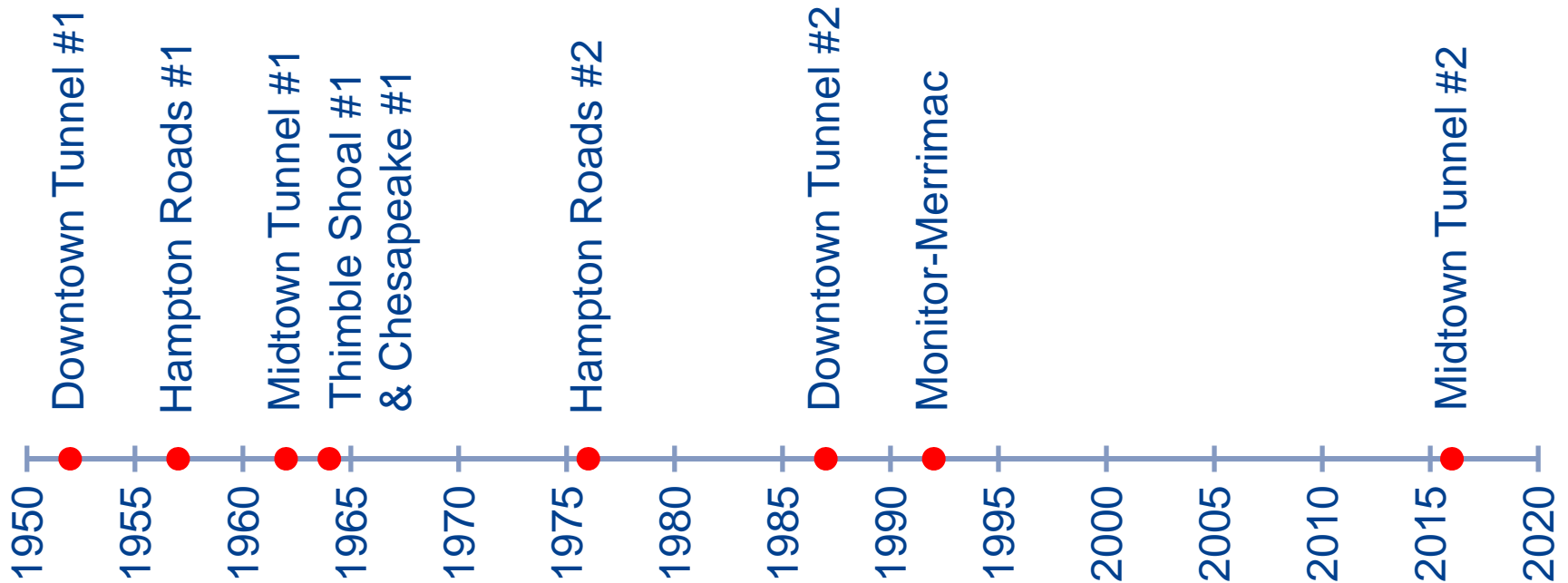
Virginia Department of Transportation



Ten Hampton Roads Tunnels



65 Years of Tunneling in Hampton Roads



- 9 tunnels are steel-shell immersed tubes
- 1 tunnel is concrete-box immersed tube
- Future tunnel #11 at Thimble Shoal will be bored tunnel

HRBT Expansion - Scope of Work

- Between Settlers Landing in Hampton and I-564 in Norfolk
- Improvements in I-64 including the construction of a new 4 lane HRBT tunnel
- New 4 lane HRBT tunnel will serve Eastbound traffic
- 2 existing HRBT tunnels will serve Westbound traffic



Proposed Tunnel Alignment (Hampton Side)

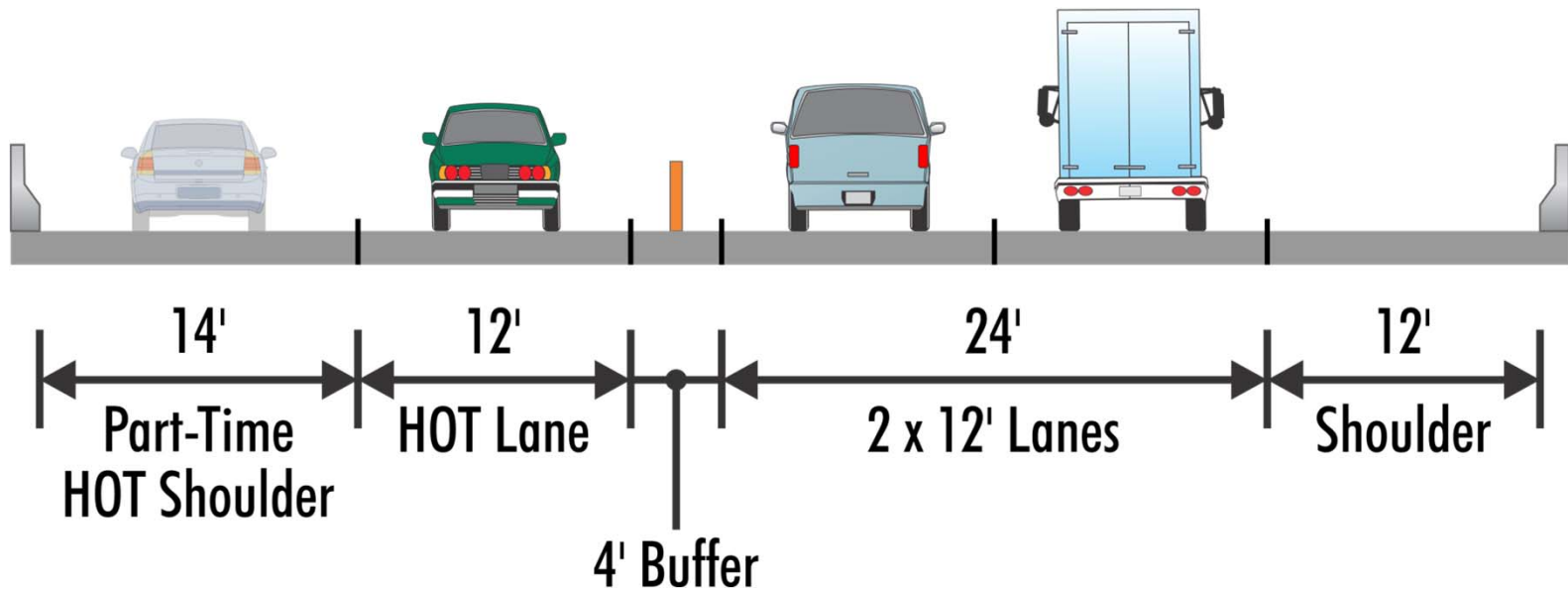


Proposed Tunnel Alignment (Norfolk Side)



Proposed Lane Configuration for Tunnel and Approach Bridges

- **2+1+1 concept in each direction:**
 - 2 free General Purpose lanes
 - 1 full-time HOT lane
 - 1 peak-hour HOT lane on left shoulder



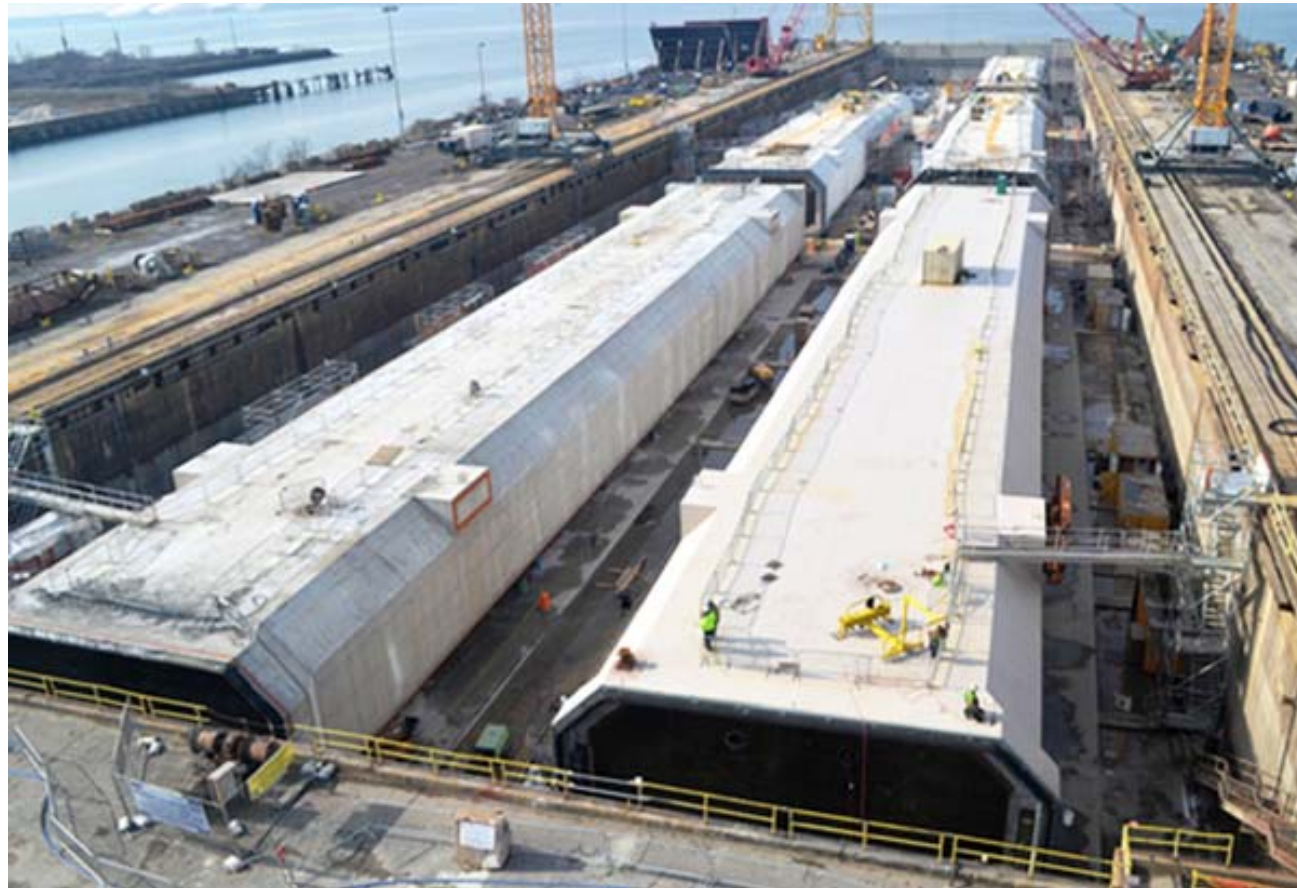
Tunnel Considerations

- **Landside work has risks but is largely conventional**
- **Tunnel work is less conventional and will generate greatest risks from cost and schedule standpoint**
- **This is a rare location where both immersed-tube and bored-tunnel construction methods are feasible**
 - **All ten Hampton Roads tunnels to date have been immersed tubes**
 - **Until recently, bored tunnels were not feasible in soft soils**
 - **But recent advances in technology now make bored tunnels possible in soft soils**
- **These methods were directly compared in the nearby Thimble Shoal Tunnel procurement in 2015**

Immersed-Tube Tunneling (ITT)



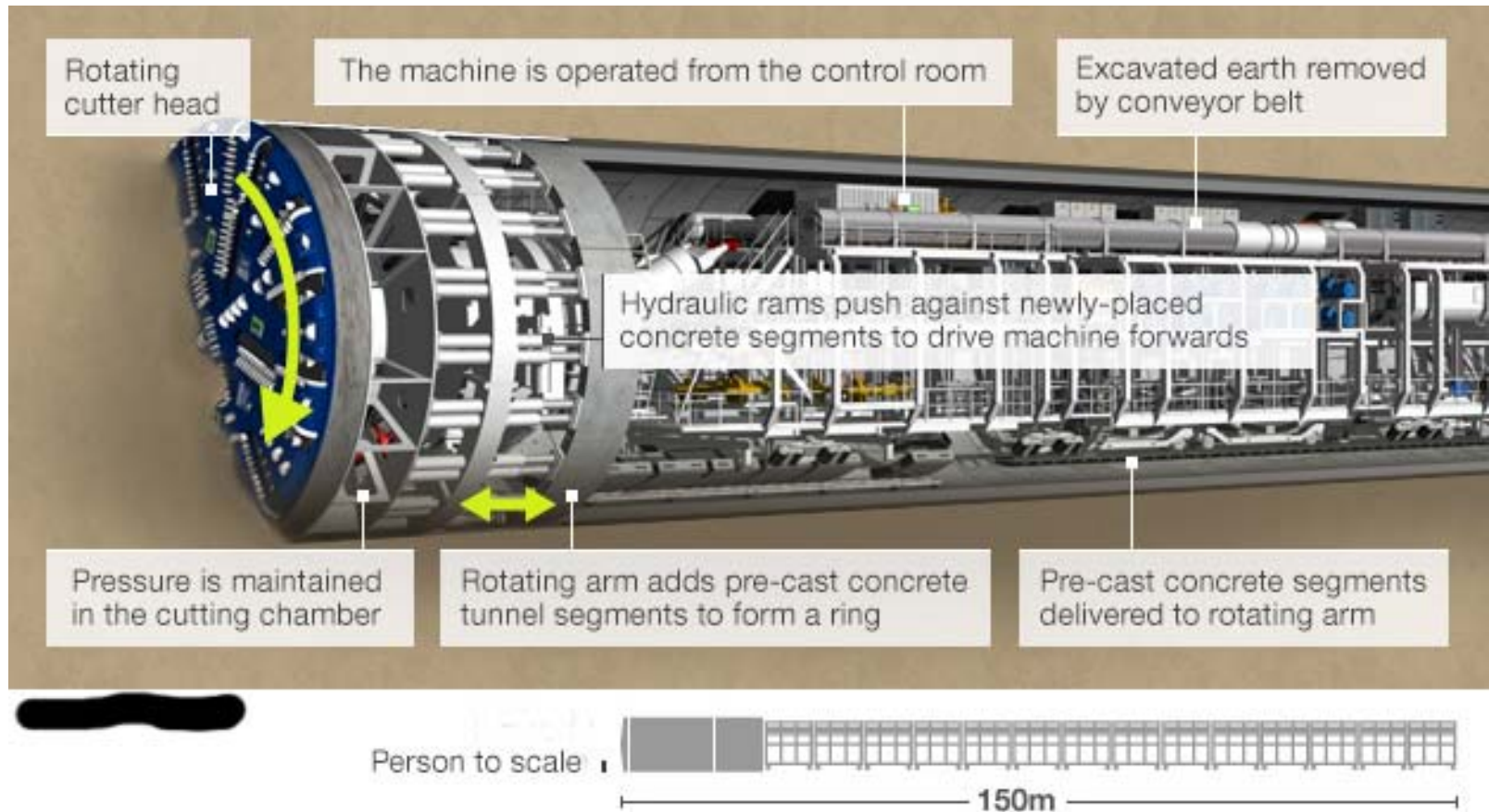
Immersed Tube Elements



Conceptual Tunnel Section (Immersed)



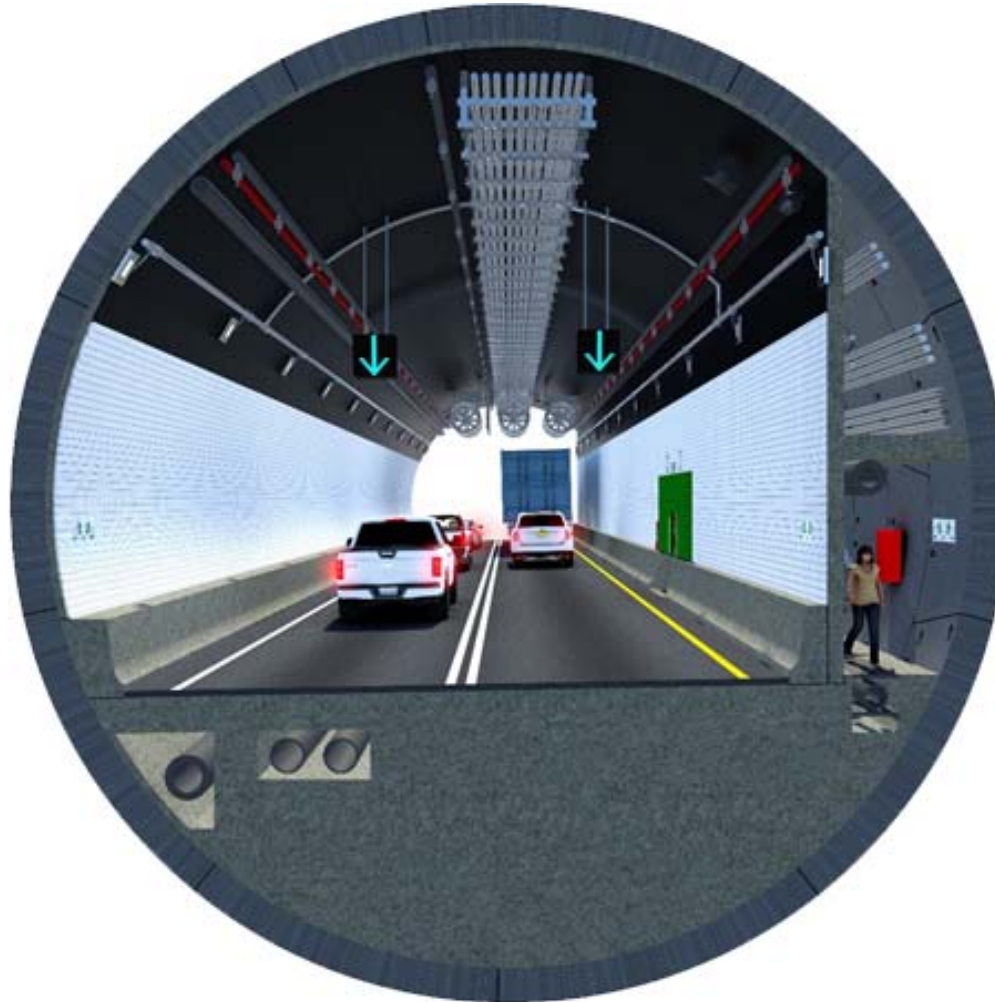
Tunnel Boring Machine



Twin Bore with TBM



Conceptual Tunnel Section (Bored)



Key Differences between Bored and Immersed-Tube Tunneling

– Alignment

- ITT alignment must be further away from existing tunnel (Hampton Roads rule of thumb → about 200 feet)
- Bored tunnel can be much closer to existing facilities (general rule of thumb → about one diameter \approx 50 feet)

– Geotechnical

- ITT method has limited concern for soil properties, since soil along tunnel path is dredged out and removed
- Bored method is specifically tailored to local soil properties

– Environmental and Permitting

- Section 408 coordination with marine stakeholders / federal channel
- Section 103 concurrence for offshore disposal of ITT spoils
- JPA permit for disposal of bored-tunnel spoils

D-B Procurement (PPTA vs VPPA)

VDOT has the authority to pursue a Design-Build (D-B) procurement under both the PPTA or VPPA:

- **Current VDOT D-B (VPPA) template was not developed to handle a project of HRBT magnitude**
- **PPTA provides contractual flexibility for complex risk profile (significant construction and geotechnical risk)**
- **PPTA encourages innovation through extensive use of Alternative Technical Concepts (ATCs) process**
- **PPTA provides for iterative process that invites feedback and collaboration from the proposers in order to develop more responsive procurement documents**



Procurement Activities Completed to Date

DATE	ACTIVITY
December 15, 2017	RFQ issued
December 15, 2017 to February 7, 2018	Q&A period
January 19, 2018	Project Information Meeting
February 2018	SOQ Evaluation Manual developed
February 1, 2018	Addendum No. 1 issued
February 5 to 6, 2018	One-on-one meetings
February 16, 2018	Addendum No. 2 issued
March 2, 2018	3 teams submitted SOQs
March 5 to 9, 2018	SOQ evaluation (sequestration)
March 12 to April 10, 2018	Reference checks, clarification questions
April 2, 2018	Selection Committee met
April 26, 2018	Announcement of Short-listed Offeror-teams

Key Points in SOQ Evaluation

Two-part Evaluation Method

Pass/Fail Review

- ✓ Compliance and completion of submission
- ✓ Offeror legal information and financial capability

Qualitative Evaluation

- ✓ Equal emphasis on General Technical Qualifications (50 points) and Tunnel Delivery Qualifications (50 points)
- ✓ Option to submit for either or both Immersed Tube Tunnel and Bored Tunnel methodologies

Key Points in SOQ Evaluation

Qualitative Evaluation

Objective is to short-list well-integrated teams that demonstrate experience in:

- ✓ Design and construction of large diameter roadway or rail tunnels
- ✓ Bridge design and construction in marine environments and in close proximity to existing structures and bridges
- ✓ Widening heavily-traveled environments in urban environments requiring complex maintenance of traffic
- ✓ Land reclamation/island construction in a tidal marine environment
- ✓ Construction in an active navigable channel



SOQ Submissions

TEAMS	Skanska – Kiewit JV (ITT)	Hampton Roads Capacity Constructors (ITT + BT)	Hampton Roads Connector Partners JV (ITT + BT)
Lead Contractor	Skanska USA Civil Southeast Inc. Kiewit Infrastructure Co.	Fluor Enterprises, Inc. The Lane Construction Corporation Traylor Bros., Inc. Dragages Civil Works Virginia, LLC (Boygues subsidiary)	Dragados USA Vinci Construction Grands Projects Dodin Campenon Bernard SAS
Lead Designer	WSP USA Inc.	AECOM Technical Services, Inc.	I-64 Design JV <ul style="list-style-type: none"> • HDR Engineering, Inc. • Mott MacDonald



Next Procurement Activities

Activity	Target Date
Draft Request for Proposals	May 2018
Alternative Technical Concept Process	Summer/Fall 2018
Final Request for Proposals	Fall 2018
Selection of Best Value Proposal	January 2019
PPTA Statutory Audit	Early 2019
Execution of Comprehensive Agreement	Early 2019
PPTA Steering Committee Briefing	No later than 60 days from execution of CA

