Virginia Avenue Tunnel Reconstruction Project

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Two New Tunnels
CSX connects the nation and the globe

The 23 State CSX Network...

- 30,000 employees
- 21,000 route miles
- 1,200+ trains/day
- 5 million+ carloads
- 3,500+ locomotives
- 80,000+ freight cars
- Serves 70 ocean, lake and river ports
National Gateway: Critical to meeting future freight demands

- 61 clearance projects in 6 states and the District of Columbia to achieve 21’0” clearance
- Construction work varies from minor modifications to complete reconstruction of bridges, tunnels and other infrastructure
- 5 new/enhanced terminals along the National Gateway corridors utilizing the latest technology

Map showing major cities and current and planned double stack routes.
National Gateway Projects
Virginia Avenue Tunnel

- A single track, low clearance tunnel in Southeast DC
- 3800 feet long / 109+ years old
- A major bottleneck to east coast rail operations
Tunnel Location

- New Jersey Ave. SE Overpass
- Virginia Ave. Tunnel West Portal
- Virginia Ave. Park
- Virginia Ave. Tunnel East Portal
- Marine Corp Recreation Facility
Existing Virginia Avenue Tunnel

- Constructed in two phases between 1872 and 1904
- Approximately 3,800’ long
- Lies generally beneath Virginia Ave. SE
- Single track through the tunnel with double track on either side
- Vertical clearance is insufficient for double stack intermodal container freight trains (≈ 18’)
- Increased maintenance costs as the tunnel nears the end of its useful life – 350’ section collapsed in 1985
The purpose is to preserve, over the long term, the continued ability to provide efficient freight transportation services in the District of Columbia, the Washington Metropolitan Area, and the eastern seaboard.

- Address the structural deficiencies of the tunnel.
- Accommodate expected increases in freight transportation that, in part, would stem from the expansion of the Panama Canal.
- Ensure that during construction freight transportation services remain uninterrupted.
Project Development

- NEPA
  - Project began as an EA in early 2011 and was changed to an EIS in May 2012
  - Lead federal agency – FHWA
  - Lead local agency - DDOT
  - 11 Initial concepts with 4 retained in the EIS
  - Draft EIS – July 2013
  - Final EIS with Preferred Alternative – June 2014
  - Record of Decision – November 2014
Selected Alternative

- Two tunnels with shared middle wall
- Double stack clearance
- Rebuild using protected open trench construction methods
- New length: 4,132’
- Upgraded security and drainage features
- Estimated construction duration: 30 – 42 months
NEPA Mitigations

- Residential Property Mitigation (RPM)
- Air, noise, and vibration monitoring
- Pile Drilling
- Construction protection plan
- Archeological work plan
- VA Ave. pavers
- Community outreach program
- Virginia Avenue Park – Dog Park
- Restoration of CP VA Tower
- Preservation of tunnel portal stones
- Enhanced streetscape, landscaping, and greenspace
Post ROD World

- Final design and permitting
- Agreements
- Utility design approvals and relocations
- Site preparation
- NEPA mitigation implementation
- Major Construction Start – May 2015
Final Design Features

- Steel reinforced, cast in-place concrete structure
- 21’3” Vertical Clearance – 18’ Horizontal Clearance
- Roof design: AASHTO HS25 (per DDOT standards)
- Drilled “H-pile” and “secant pile” design support-of-excavation (SOE) in lieu of driven piles
- Track: CWR on concrete ties
- Access from street level – cross passage access to both tunnels
- Improved drainage system with dual electric pumps and control valves
- Safety / inspection walkway incorporated on top of duct banks
- Upgraded security system
- LED lighting and ventilation fans
- Back up generators
- PTC communication compatible
Unique Tunnel Features

- Three typical tunnel cross-sections
  - West segment – shared tunnel
  - Middle segment – shared middle tunnel wall (majority)
  - East segment – split tunnels
- Tiber Creek Sewer
- 6th Street Siphon
- Marine Chiller Underpinning
- Six Cross-street bridges
- Phase 1 Tunnel demolition – 370’ under live traffic
Sequence of Construction
West Segment
East Segment
Virginia Avenue Tunnel Reconstruction Project
Summary Schedule

As of 4/01/16

Note: Activity start dates are contingent upon receipt of the required permits.
VIRGINIA AVENUE TUNNEL CONSTRUCTION PROGRESS

Data effective March 1, 2016

1,169 of 1,600 pilings drilled

7,600 truckloads of dirt excavated

7,400 cubic yards of concrete poured

185 workers received safety training and employed on-site

3,944 hours of air, noise and vibration monitoring

39,676 contacts with neighbors

10 months of the total 42 months of construction
Major Milestones Completed

- Utility relocations – 95% complete
- Phase 1 tunnel demolition complete
- 4th St. temporary bridge deck open
- Tunnel Invert – 10% compete
- Walls – 9%
- 1st Precast roof segment installed
- Tiber Creek bridge construction started
Utility Relocations
East End Retaining Wall
Support of Excavation and Secant Pile Wall Construction
Mass Excavation in the 400 Block of VA Ave.
Mass Excavation Adjacent to the Marines Facility
Mass Excavation Adjacent to the Marines Facility

Excavate to Subgrade
Mass Excavation in Virginia Avenue Park

Excavate to Subgrade
Cross-Street Bridges
Tunnel Demolition - Phase I 100% Complete
Tunnel Demolition - Phase I 100% Complete
Tunnel Demo - 200 Block of VA Ave.
“Four-level” crossing at Tiber Creek

(I-695 above 2nd Street)

14’ 6”
Marine Chiller Underpinning
Tunnel Concrete Construction – 400 Block of VA Ave.
East End Tunnel Construction
East End Tunnel Construction
East end Tunnel Construction
East End Tunnel Construction
Upcoming Events and Ways to Stay Connected

- **Coffee with Chuck - CSX Community Office**
  - Wednesday, May 18, 2016
  - Wednesday, June 15, 2016

- **Quarterly Open House - Courtyard Marriott**
  - Thursday, April 14, 2016
  - Thursday, July 21, 2016

- [www.virginiaavenuetunnel.com](http://www.virginiaavenuetunnel.com)
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Thank You!