

Dulles Metro is Coming

August 2011



Tunnels Connect Tysons Central 123 and Central 7 Stations

Complicated Designs and Construction Create Critical Links Below Ground

Construction of Phase 1 of the Dulles Corridor Metrorail Project has moved at a rapid pace since it began in March 2009. Roads have since been widened, concrete segments have been placed between piers, and cranes have taken over the skyline. However, the project has not only implemented aerial designs that can be seen while commuting, an abundance of fascinating work has been happening underground as well.

The Dulles Corridor Metrorail Project includes two 2,400-foot tunnels that will carry trains moving in opposite directions beneath Tysons Corner. These tunnels connect the Tysons Central 123 Station and the Tysons Central 7 Station by traveling under International Drive to Route 7 and ending between SAIC and Marshalls. Coincidentally, these tunnels travel through the highest natural point in Fairfax County.

Two different techniques were used in creating the tunnels. First, the New Austrian Tunneling Method, also known as NATM, was used to excavate the centermost 1,700 feet of the tunnel. The



A welder performing critical work at the Orange Line tie-in during one of two July 2011 outages. Photo by John Green, Dulles Transit Partners



A view from inside the Tysons Central 7 Station, facing west. Crews are pouring foundation slabs and building columns. The truss building the Tysons West guideway is in the distance, just before the Westpark/Gosnell intersection. Photo by Shea Daugherty, Dulles Transit Partners

remaining 700 feet, approximately 400 feet on one end and 300 feet on the other, were constructed by using a cut-and-cover process. These sections connect the NATM tunnels to the stations.

The Cut-and-Cover process is an excavation method that begins by digging a large trench in the ground. While this hole is open, construction workers place wooden boards, or lagging, on the outer walls to keep the ground from caving in. The lagging is supported by many steel beams that hold everything in place. When the mining is complete, the ground overhead is eventually restored, according to Rail Project officials.

The benefits of using this process were far more than alternate
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A view into the civil works under way in the east Cut-and-Cover section of the tunnel. This is located at the future Tysons Central 123 Station, which is along Route 123 between the two malls. Photo by Shea Daugherty, Dulles Transit Partners

For general information on the Dulles Corridor Metrorail Project, please visit our website at www.dullesmetro.com or call (703) 572-0506.

methods. Cut-and-Cover tunneling is predominantly used for constructing shallow tunnels, which made it an ideal choice for



View from the Cut-and-Cover into the NATM tunnel. This picture shows waterproofing (yellow), while crews in the distance are applying final smoothing concrete liner. Photo by Shea Daugherty, Dulles Transit Partners

Crews have many risks and difficulties in creating this tunnel. Cut-and-Cover tunneling requires a large amount of room to excavate, which in turn makes it complicated to build in this area. So far, the project has constructed this portion of the tunnels safely and without incident.

Construction Progress Happening All Along the Phase 1 Alignment

Dulles Corridor Metrorail Project crews continue to work all along the Phase 1 alignment from East Falls Church to Reston. Critical work has intensified on the tie-in to the existing Orange Line at the Dulles Connector Road (Route 267) and I-66. The work must be done weekends when Metro will allow single-tracking or full service outages between the East and West Falls Church stations. Eleven outages have been successfully completed. Others will take place in the coming months.

Moving west along the aerial guideway toward Tysons Corner, track subcontractors have begun laying the first sections of track along the Connector Road median and on the flyover to



Crews are now laying track for the future Dulles Corridor Metrorail Project. Photo by Chuck Samuelson, Dulles Corridor Metrorail Project

Route 123 and the Tysons East Station. Overnight lane closures will continue to take place in front of the station and at Capital One Drive when overnight bridge spans are put into place.

Overnight, multiple lane closures of both directions of I-495 will continue at the Route 123 interchange for the

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CONSTRUCTION HOTLINE

For construction-related emergencies, call the Dulles Corridor Metrorail Project Hotline at 877-585-6789.

rest of this year while the rail bridges over the Beltway are completed.

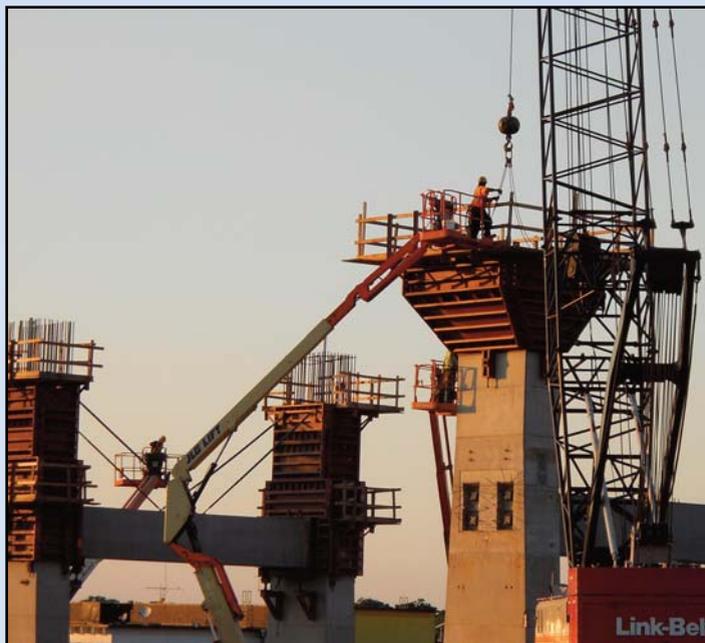
The Tysons Central 123 Station, at Tysons Boulevard, is more readily visible. Bridges into the station are nearing completion, and may require some nighttime closures of Tysons Boulevard.

Work has ramped up significantly in the Route 7 median, both at the Tysons Central 7 Station between SAIC and Marshalls, and the Tysons West Station at Spring Hill Road.

Also along Route 7, a large, blue and yellow horizontal crane (also known as a “truss”) has begun assembling bridge segments for the aerial guideway that will take the future rail line high above Route 7, causing overnight closures of the Westpark Drive/Gosnell Road intersection.

As the truss moves west to erect the segments over Spring Hill Road, closures will be announced.

Crews are nearing the completion of the large concrete “straddle bents” over the eastbound lanes of the Dulles International Airport Access Highway (DIAAH) and Dulles Toll Road (Route 267) for the bridges to carry rail from the median of those roads to Route 7.



A rail construction worker installs a preassembled rebar cage to form the pier cap with help from a crane. Photo by Mahir Gamil