



INTRODUCTION

The purpose of this project is to develop concept alternatives for the realignment of the Fairfax County Parkway Trail along the east side of the Fairfax County Parkway (Rte. 286) near the eastbound ramp to the Dulles Toll Road (DTR) (Rte. 267). Currently, the trail crosses the DTR ramp at-grade and is considered to be hazardous. Fairfax County is considering two options. One is to construct a pedestrian bridge that will connect the south and the north portion of the trail above the DTR ramp. The second will be to provide a more visible and safer at grade crossing at the intersection of Fairfax County Parkway and Dulles Toll Road Ramp; the at grade crossing will create a raised refuge island in the existing gore between the Parkway and the Ramp entrance. Both options will be designed in accordance with the VDOT Road Design Manual, Appendix A, Section A-5 "Bicycle and Pedestrian Facility Guidelines" and the options will comply with the requirements of the Americans with Disabilities Act (ADA) standards.

OPTIONS

PEDESTRIAN BRIDGE OPTION

This alternative provides a pedestrian bridge crossing above the Dulles Toll Road Ramp. The existing at-grade crossing will be removed as part of this option. The impacts and constraints are as follows:

- The horizontal alignment uses a 12 mph design speed for bicycle facilities (minimum radius of 30').
- The vertical alignment uses a 4.5% maximum grade.
- A trail width of 14' is used on the bridge structure.
- A trail width of 10' is used on grade.
- The bridge has a 17' minimum vertical clearance over the Dulles Toll Road EBL On-Ramp.
- Bridge piers avoid an existing underground multicellular box culvert (quad 10' x 6' box culvert).
- Bridge piers avoid an existing underground stormwater detention tank (located from existing highway plans).
- Bridge piers avoid the following existing utilities: 36" petroleum line, a 48" water line, a 32" petroleum line, a 20" gas line, and a 12" sanitary line. Three bridge pier locations use a straddle bent (with a beam and two piers) to avoid the existing utility lines.
- Concrete traffic barrier is proposed along the Dulles Toll Road EBL On-Ramp to protect the bridge piers.
- The trail and bridge stay within the existing right-of-way except at the location where the existing trail is outside of the existing right-of-way from station 10+30 to station 12+90.

- The proposed trail ties into the existing trail before the existing roadway bridge over the Dulles Toll Road.
- The bridge option is out of conflict with the 12" sanitary line, including the use of a straddle bent at station 15+20.
- The total cost of this option is \$6,992,000.

AT-GRADE OPTION

This alternative provides a more visible at-grade crossing at the Fairfax County Parkway and Dulles Toll Road Ramp intersection. The At-Grade Option provides a crossing that improves sight distance for vehicles, bicyclists, and pedestrians. It will construct a signalized crosswalk along the east side of Fairfax County Parkway and Dulles Toll Ramp intersection and a visible unsignalized crosswalk with Rectangular Rapid Flash Beacons (RRFBs) across the right turn lane to the Dulles Toll Road Ramp. To construct this option the impacts and constraints are as follows:

- The horizontal alignment uses a 30 mph design speed for bicycle facilities (minimum radius of 100'), except for the 90 degree turns at the southern curb cut ramp and island approaches.
- A trail width of 10' is used on grade.
- The proposed island increases in size from the existing island. The island is offset 4' from the edge of the Fairfax County Parkway through lanes and the island is offset by 1' from the edge of the right turn lane.
- The uncontrolled crosswalk includes two proposed pedestrian crossing signs with RRFBs.
- Most of the existing concrete barrier can remain in place except as noted on the plans.
- Proposed handrail is included which is offset 3' where needed from the trail edge for the high fill slopes.
- A proposed impact attenuator is needed at the concrete barrier opening.
- Proposed guardrail is needed in the northeast quadrant of the intersection to protect the vehicles from the guide sign pole, traffic signal poles, traffic signal control cabinet, and high fill slopes/bridge approach.
- The at-grade option avoids an existing underground multicellular box culvert (quad 10' x 6' box culvert).
- The at-grade option avoids an existing underground stormwater detention tank, but does place additional fill soil on it.
- The vertical alignment uses a 4.28% maximum grade.
- The trail stays within the existing right-of-way except at the location where the existing trail is outside of the existing right-of-way between station 10+30 to station 12+90.
- The total cost of this option is \$633,000.

SUMMARY

A cost estimate has been developed for each alternative. Cost estimates consider construction mobilization, clearing and grubbing, earthwork, pavement, incidentals, drainage, erosion & sediment control, maintenance of traffic, and bridge construction. Engineering design cost and construction engineering inspection cost are also included in each cost estimate.