



Transform 66 Outside the Beltway Concessionaire Funding Project Submittal Form

Project Information

Submitting Jurisdiction/Agency: Fairfax County

Project Title: Route 50 and Waples Mill Road Intersection Improvements

Project Location:



Project Description:

Intersection Improvement at Route 50 and Waples Mill Road by providing a second left turn lane from Route 50 Westbound onto Waples Mill Road. In addition to the second turn lane, other intersection modifications that would help facilitate access to and from I-66 to this intersection include:

- Split phase operations along Waples Mill Road
- Three eastbound through lanes
- Three northbound left-turn lanes
- Reconfigure the I-66 eastbound on-ramp from US 50 westbound to an option lane

General Project Eligibility Consideration Criteria. Please check all that apply.

Provide supporting documentation

Project in a Regionally Adopted Plan/ Document:

- a. TransAction 2040 _____
- b. VTrans 2040 X
- c. I-66 Corridor of Statewide Significance X
- d. Comprehensive Plan _____
- e. Capital Improvement Plan _____
- f. Regional Transportation Priorities Plan _____
- g. Constrained Long Range Plan _____
- h. Transportation Improvement Program _____
- i. Other Regionally Adopted Plan (*please specify*) _____
- j. Letter or resolution of support via formal approval by the governing body X

VTrans Northern Virginia Corridor (I-66) Segment H2, Need I references congestion on US 50 from VA Route 606 to I-66 and George Washington Memorial Parkway, while Need L notes reliability issues on US 50 at I-66 interchange (pg 32-33): http://vtrans.org/resources/VTRANS2040_CoSS_H_NoVa_I-66_071816.pdf

Fairfax County Letter with Recommended List of Potential Improvements for Consideration (attached)

Additional Project Criteria.

Provide supporting documentation

Projects must meet all of the following criteria:

Projects must be in the I-66 Outside the Beltway Corridor or demonstrate a clear and compelling nexus to the I-66 Outside the Beltway Corridor.

Projects can demonstrate utilization of concessionaire funding by toll day-one (mid- 2022).

Projects must demonstrate commitment of any required operation and/or maintenance funds.

Projects must show benefit to users within the corridor.

Studies are ineligible for funding consideration.

The intersection of US 50 and Waples Mill Road is a signalized intersection located directly east of the I-66/US 50 Interchange. While it has been improved several times, the last at-grade improvement was completed in 2006, the operational quality of the intersection continues to decline.

This intersection currently operates over capacity during peak conditions, and these peak period traffic volumes result in significant congestion during the morning and evening weekday rush periods. In addition, surges in traffic volumes during incidents on I-66 contribute to congestion at this intersection due to the fact that US 50 functions as a parallel route to I-66. The Fairfax County Department of Transportation funded a

study/operational analysis of this intersection with a goal to identify near-term capacity improvements. Results of this analysis, which uses VISSIM, were that the intersection does not process the full demand during the peak hour. The variance in throughput versus forecast demand is even greater in the no build condition. This will translate to longer delays, lower levels of service, and greater peak hour spreading if capacity improvements are not implemented.

The existing westbound left-turn lane on US 50 at Waples Mill Road operates as a single lane movement and does not effectively process traffic volumes during peak periods. In an effort to maximize the allocation of green time to all movements at the intersection, the study focused on the evaluation of potential benefits to signal operations, given the construction of a second westbound left-turn lane. It appears that available median width makes this type of improvement feasible to quickly construct with no impact on adjacent properties.

With the construction of the second left-turn lane, green time can be reallocated and increase the capacity of other movements at the intersection. The study area network is also expected to reduce the level of congestion and delay from the no build conditions, especially along Waples Mills Road between US 50 and Random Hills Road.

This intersection is listed as a future interchange location on the Fairfax County Comprehensive Plan and in TransAction 2040, near-term improvements are necessary until funding for the design and construction of the future interchange are identified.

This intersection improvement can be quickly implemented and the concessionaire funding would be utilized by toll-day 1. As the intersection is a state-maintained facility, the Commonwealth (VDOT) would continue to be responsible for the operation and maintenance of the widened facility.

This intersection improvement will facilitate improved movement for commuters entering and exiting the I-66 General Purpose and Express Lanes at the I-66/Route 50 interchange from the east, as well as improve local traffic on Route 50 that is crossing I-66. Currently, eastbound queuing during the AM and PM peak hours at US 50 and Waples Mill Road approaches the I-66 eastbound off-ramp, but does not extend onto the ramp itself. During the PM peak hour, southbound queues extend up to 1,500 feet from the intersection at US 50 and Waples Mill Road. According to the study undertaken in 2016, compared to existing traffic volumes, mainline hourly traffic volumes along US 50 are expected to increase approximately 15 percent during the AM peak hour and approximately 5 percent during the PM peak hour in 2025. The majority of turning movements are expected to increase in volume over the next ten years. Overall, the 2025 traffic volumes do not indicate any significant shifts in travel patterns, just an increase in total volume.

In addition to the second turn lane, other intersection modifications that would help facilitate access to and from I-66 to this intersection include:

- *Split phase operations along Waples Mill Road* – given the balanced demand of these side street approaches, there could be operational benefits to running the through and left-turn movements concurrently.
- *Three eastbound through lanes* – the eastbound departure lanes of US 50 at Waples Mill Road provide sufficient roadway width for 3 receiving lanes (1 lane is currently striped as a gore area). To increase the capacity of the eastbound approach, consider widening to provide a third eastbound

through lane. This reconfiguration would require widening into the existing median to retain the dual eastbound left-turn lanes. The configuration might also trap eastbound vehicles traveling in the leftmost lane in the downstream left-turn lane at Jermantown Road.

- *Three northbound left-turn lanes* – in order to reduce green time allocation to Waples Mill Road, a third left-turn lane could be designated for traffic along the northbound approach. This configuration would require a shared through and left-turn lane to be constructible within the existing pavement width. The signal would need to operate with split phase side street operations, and additional signage and marking would be recommended as the rightmost left turn lane would feed into the I-66 eastbound on-ramp.
- *Reconfigure the I-66 eastbound on-ramp from US 50 westbound to an option lane* – PM peak operations indicate heavy congestion in the westbound direction, with poor lane utilization of the rightmost through lane. This is likely due to the fact it becomes the on-ramp to I-66 eastbound. The lane could be reconfigured to be a through and right-turn lane at the on-ramp to I-66 eastbound, tapering from 3 to 2 lanes in the westbound direction before the bridge downstream.

Project Milestones

Specify start and end dates

Project Milestones by Project Phase: If the project is selected for funding, the project milestones are expected to be:

- **PE/Design:** 2017-2018
- **Right of Way Acquisition/Utilities:** 2018-2019
- **Construction:** 2019- 2021
- **Capital Asset Acquisitions:**
- **Other:**

Project Cost

Total Requested Concessionaire Funds: \$2,000,000

Total Cost to Complete Project: \$2,000,000

Project Phases	Requested Concessionaire Funding	Other Sources of Funding (Amount by source)	Total Cost by Phase
PE/Design	\$450,000		\$450,000
Right of Way Acquisition			
Construction (Including Utilities)	\$1,550,000		\$1,550,000

Capital Asset Acquisitions			
Other			
TOTAL	\$2,000,000		\$2,000,000

Prioritization

Priority consideration will be given to projects that can accomplish two or more of the following:

- Project has undergone a performance based evaluation process (i.e. TransAction 2040, SmartScale).
- Project can demonstrate the ability to reduce congestion.
- Project is a joint effort between two or more localities or agencies.
- Project is an extension/expansion of a project currently encompassed as part of the Transform 66 OTB project.
- Project was requested to be included in the Transform 66 OTB project (must be demonstrated via documentation).
- Project can be constructed prior to toll day one (mid-2022).

Additional Documentation/Information in Support of this Project