I-495/MWAA Dulles Toll Road Interchange Justification Report

Through the VDOT General Engineering Consultant services, ATCS in partnership with CH2M HILL is currently preparing an Interchange Justification Report (IJR) for the preferred plan alternative. The IJR is requesting approval for new access and modified access for the three proposed ramp movements that will directly serve the Dulles Airport Access Road. A comprehensive operational analysis of the Dulles interchange is being performed in support of the design of the Preferred Plan.

ATCS staff is responsible for the following tasks:

- HCS/VISSIM/SYNCHRO Traffic Analysis – HCS analysis to determine the operational performance of the No Build (2015 conditions as approved in Capital Beltway HOT lane IJR) and Build (2030 conditions with proposed MWAA ramps) scenarios for the study area network. The measures of effectiveness (average density, LOS, and speed) values resulting from the analysis were reported for the freeway mainline segments, weaving segments, and ramp terminals (merge and diverge). VISSIM traffic analysis has been used to supplement HCS for determination of upstream and downstream impacts. For critical segments (those directly impacted by the proposed new ramps), measures of effectiveness values such as queue lengths and travel time are broken down by lane. SYNCHRO traffic analysis has been performed to optimize existing and proposed traffic signals in the vicinity of the interchange.

- Crash History Assessment – A qualitative assessment on the most recent crash history is being prepared. In addition, the issues raised by MWAA regarding safety of the current access configuration at the Dulles Airport Access Road will be addressed.

- Report Document Preparation Incorporate traffic engineering and operational analysis, as well as results from the design development to prepare part of the draft IJR.

- QA/QC Review of Analysis and Results – Throughout the course of this project the ATCS team is also responsible for following documented VDOT GEC QA/QC procedures, both internally, as well as with VDOT management.