

As a result of the clear roadway width and Average Daily Traffic volumes, the bridge is rated functionally obsolete. Current traffic volumes are projected to double by the year 2030 resulting in a substantial increase of traffic queues and travel delays.

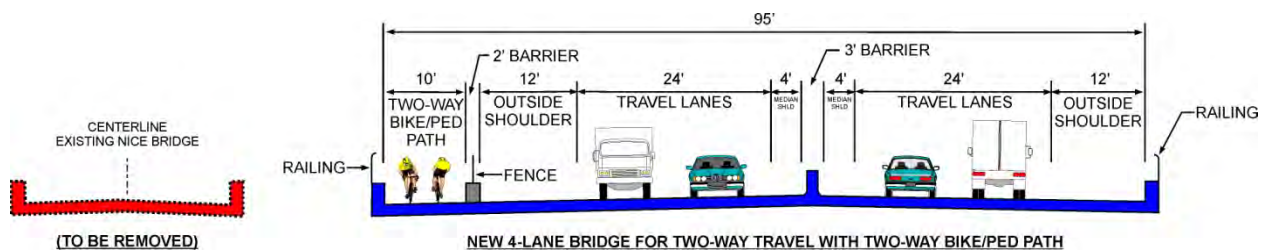
Required maintenance improvements to the Nice Bridge are anticipated to occur between 2020 and 2025, including structural improvements (i.e., replacing the bridge deck and improving load rating of structural members) and safety improvements at the approaches and on the bridge. These maintenance improvements are likely to result in substantial travel time delays as long-term, single-lane or complete bridge closures may be required. The nearest vehicular crossing of the Potomac River is 25 miles to the north, at the Woodrow Wilson Bridge on I-95. Currently, MDTA has \$14.7M programmed for FY 2014 and FY 2015 for maintenance activities (i.e., concrete deck repairs, deck sealing, and rehabilitation of the catwalk) to assist in extending the service life of the existing bridge until the Preferred Alternate can be constructed. These maintenance activities are scheduled to begin Summer 2013 with a two-year construction period.

## II. PROPOSED ACTION

### A. MDTA's Preferred Alternate

The Proposed Action consists of the Maryland Transportation Authority (MDTA) Preferred Alternate, Modified Alternate 7 (see mapping in *Appendix A*). The alternate was originally presented in the EA in July 2009 as Alternate 7. Modified Alternate 7 consists of the installation of a new four-lane bridge north of the existing bridge. As shown in *Figure 2*, the new bridge will provide four 12-foot travel lanes, two four-foot inside shoulders, two 12-foot outside shoulders, a median barrier to separate opposing traffic flows, and a single, 10-foot barrier-separated, two-way bicycle/pedestrian (bike/ped) path on the south side of the bridge. The bike/ped path crosses beneath the bridge on each shore to enable bicyclists and pedestrians to transition to the shoulders of US 301 without crossing the highway. Modified Alternate 7 also includes the installation of electronic toll collection from vehicles traveling at highway speeds.

*Figure 2: Typical Cross Section of Proposed Action*



Modified Alternate 7 will fully satisfy the project's purpose and need through the following features:

- Four 12-foot lanes will satisfy design year (2030) traffic forecasts, eliminate queues, and facilitate emergency evacuation;
- Twelve-foot outside shoulders will accommodate "wide loads," disabled vehicles, emergency responders, maintenance vehicles, and storage of plowed snow;
- The median barrier will separate opposing flows of traffic;
- The bridge cross section will be compatible with the cross section of the US 301 approach roadway in Maryland and Virginia;
- The flatter grade (3%, compared to the existing 3.75%) will better accommodate trucks, military vehicles, and bicyclists; and
- The design will satisfy current HS25 (45ton) loading requirements.

Modified Alternate 7 includes the replacement of the existing tollbooths at the Nice Bridge with Open Road Tolling (ORT) provisions, which permit the electronic collection of tolls without a reduction of vehicle speed. Modified Alternate 7 will provide reasonable tie-in points with the existing and planned highway network, capacity for 2030 demand, the ability to maintain two-way traffic flow, improved safety on the bridge and approaches, and the ability to comply with navigational channel requirements. The type of new bridge (e.g., steel girder, suspension, segmental construction, etc.) would be determined during the design phase, and is independent of the length and location of the crossing. Modified Alternate 7 requires a slight alignment shift of the US 301 approach roadway to connect to the structure's new location. In addition, the profile grade of the new bridge will not be as steep as the existing bridge grade (3% compared to the existing 3.75%), but would maintain or exceed the existing vertical and horizontal clearance of the navigational channel. The revised profile grade results in a shift in the location of the new bridge abutment in Maryland, approximately 800 feet east of the existing bridge abutment. This would not affect the location of the bridge abutment on the Virginia shore.

With the construction of a new four-lane bridge and two-way bike/ped path, there will no longer be a transportation need for the existing historic bridge. Therefore, Modified Alternate 7 includes removal of the existing bridge following the opening of the new four-lane bridge to traffic (see Final Section 4(f) Evaluation).

Consideration was given to phasing the construction of Modified Alternate 7. A phased Modified Alternate 7 could involve the construction of the substructure for an ultimate four-lane bridge, but initially only the superstructure for two lanes of traffic. The additional two lanes of traffic would be constructed in the future, followed by the removal of the existing bridge. However, the delay in the installation of the superstructure for the additional two lanes of traffic would result in higher costs due to the need to fund rehabilitation of the existing bridge and the likely higher costs for materials and labor in the future. A phased installation would also require a second period of traffic disruption, and repeat disturbance of the benthic environment due to dredging for barge access to remove the existing bridge. Therefore, phasing the construction of the Modified Alternate 7 is not effective in terms of cost, traffic impacts, or aquatic impacts.

### **B. Modifications to Alternate 7**

Comments received during the public hearing comment period were overwhelmingly in favor of a build alternate for constructing a new bridge. Of the retained alternates included in the EA, Alternate 7 was the alternate most frequently supported by those who commented, including local elected officials and the Commanding Officer at the Naval Support Facility (NSF) Dahlgren. However, Alternate 7 was modified by the study team for the purpose of reducing costs and impacts. The new alternate, Modified Alternate 7, differs from Alternate 7 with the bike/ped option by consolidation of the two, one-way bike/ped paths on each side of the proposed bridge into a single, two-way path on the south side of the proposed bridge. The single two-way path would incorporate a crossing beneath the structure on each shore to direct bicyclists/pedestrians to the outside shoulders of US 301 without having to cross the highway. Compared to Alternate 7, Modified Alternate 7 would result in approximately \$65-70 million in cost savings and slightly less environmental impact.

### **C. Cost Estimate Review**

In July 2012, FHWA conducted a risk-based review of the project's cost estimate to verify its accuracy and reasonableness and develop a probability range for the project cost estimate recognizing the current stage of design. This Cost Estimate Review (CER) was not an independent FHWA estimate, and did not seek to verify quantities or unit prices. Based on MDTA's cost estimate (in 2012 dollars), results of the CER identified a reasonable, estimated cost range for Modified Alternate 7 to be from \$961 million to

\$1.26 billion, in the year of expenditure. Additionally, it was found that an estimated \$30 million cost or savings would be realized for every one-year change in the start of construction.

**D. MDTA Financial Commitments**

The Nice Bridge meets FHWA requirements for a subsequent phase to be programmed in the STIP/TIP upon completion of the NEPA process. Preventive maintenance activities are programmed in the 2013 Maryland CTP/STIP and the National Capitol Region’s TIP. Preventive maintenance activities will continue to be programmed in the STIP/TIP until the bridge reaches the appropriate structurally deficient rating, at which time replacement activities would occur.

The project is also consistent with the Statewide and MPO planning process. The project is listed in the National Capital Region’s Constrained Long Range Transportation Plan in the amount of \$850M and is planned to be constructed by 2030.

MDTA has identified the following schedule for the Nice Bridge:

- System Preservation (preventive maintenance/rehabilitation): 2012-2018 (\$14.8M)
- Preliminary Engineering: 2022-2025 (\$105M - \$137M)
- ROW: 2024-2026 (\$49M - \$64M)
- Construction: 2025-2030 (\$807M - \$1.059B)

The above information clearly demonstrates MDTA’s commitment to continue to advance the project upon completion of the NEPA process.

**III. ALTERNATES EVALUATION**

This section discusses the alternates evaluated for the Nice Bridge project and the evaluation process that led to identification of MDTA’s Preferred Alternate.

**A. Preliminary Alternates**

Fourteen preliminary build alternates were analyzed to determine overall feasibility (*Table 1*).

*Table 1: Preliminary Alternates*

Alternate	Description	Determination
1: No Build	Conditions in 2030 if a build alternate is not selected	Retained
2: Rehab South	New 2-lane bridge to the south, rehabilitate existing bridge	Retained
3: Replace South	New 2-lane bridge to the south, replace existing bridge	Retained
4: Rehab North	New 2-lane bridge to the north, rehabilitate existing bridge	Retained
5: Replace South	New 2-lane bridge to the north, replace existing bridge	Retained
6: 4-Lane South	New 4-lane bridge to the south, take exist bridge out of service	Retained
7: 4-Lane North	New 4-lane bridge to the north, take exist bridge out of service	Retained – Eventually preferred as Modified Alternate 7
8 North: Off Alignment	Relocate US 301 2.5 miles north of existing bridge	Eliminated - 9.9 miles long, \$1.9 billion cost, displaces over 100 residences & businesses, impacts 4 acres wetlands, 17 acres farmland, 58 acres forest.