STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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Concurrence Point 2 (Design Options for Detailed Study) Revision

To: Interagency Merger Team

From: Beverly Robinson, Project Management Unit

Date: November 12, 2018

Subject: STIP Number A-0010A, CP2 Revision, US 19/23 (Future I-26) Improvements, Buncombe County, North Carolina

Project Description

NCDOT is proposing to improve approximately 12 miles of US 19/23 from north of I-240 in Asheville to just south of Exit 13 (Forks of Ivy – Stockton Road) near Mars Hill in Buncombe County, North Carolina, as presented in **Figure 1**. This project includes adding lanes, reconfiguring interchanges, rehabilitating or replacing several bridges, and other roadway design improvements.

Purpose and Need

The purpose and need, as concurred upon by the Merger Team at Concurrence Point (CP) 1 (February 2015), is as follows:

The needs to be addressed by this proposed action include:

- Existing and Projected Roadway Capacity Deficiencies.
- Geometric Deficiencies along the Corridor.
- Deteriorating Pavement Structure and Substructure.
- Functionally-Obsolete and/or Structurally-Deficient Bridges.

The purposes of this proposed action include:

- Reduce congestion to achieve Level of Service D for all freeway segments and intersections that impact the mainline in the design year.
- Address geometric deficiencies using current freeway design criteria.
- Rectify the deteriorating pavement structure and substructure.
- Evaluate and rehabilitate or replace bridges.

Design Options for Detailed Study

On March 20, 2014, the Merger Team met in order to consider CP 2 (Design Options for Detailed Study) for the US 19/23 (Future I-26) Improvements project. As a result of this meeting, several

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action items were addressed by NCDOT, and a revised CP2 Meeting Packet was shared with the Merger Team in January 2015. Concurrence was reached shortly thereafter in February 2015. The following alternatives were eliminated from further consideration:

- Transportation Demand Management (TDM) Alternative
- Transportation Systems Management (TSM) Alternative
- Mass Transit Alternative
- New Location Alternatives
- Upgrade Parallel Facilities Alternative

The No-Build Alternative and Upgrade Existing Alternative were carried forward for detailed study, with the following design options:

Two design options from north of I-240 to Exit 23:

- Design Option 1A: Best-Fit Widening to 8 Lanes (variable median width)
- Design Option 1B: Best-Fit Widening to 6 lanes (variable median width)

Two design options from Exit 23 to Exit 19:

- Design Option 2A: Best-Fit Widening to 6 Lanes with 46-foot Grassed Median
- Design Option 2B: Upgrade Existing 4-Lane Section with 46-foot Grassed Median

One design option from Exit 19 to Exit 13:

- Design Option 3: Upgrade Existing 4-Lane Section with 46-foot Grassed Median

At the March 2014 meeting, it was noted that the Build Alternative design options were developed based on no-build traffic capacity analysis information, and that the number of lanes and location of breakpoints between the 8-lane, 6-lane, and 4-lane design options could change pending the completion of traffic capacity analysis for the Build Alternative. By the time of the January 2015 meeting, NCDOT had prepared a preliminary traffic capacity analysis for the Build Alternative and confirmed the breakpoints and design options. (Note: this analysis resulted in a change in the breakpoint between sections 2 and 3 from Exit 17 to Exit 19, as shown in the agreed-upon design options above.)

NCDOT also presented a proposal recommending that preliminary design plans be prepared only for the design options meeting the purpose and need for the project (i.e., the minimum typical section/least number of lanes required to achieve LOS D in each freeway segment). Based on the preliminary traffic capacity analysis for the Build Alternative, NCDOT requested that preliminary design plans be prepared only for design options 1A, 2A, and 3.

2018 Traffic Forecast and Capacity Analysis Update

AECOM prepared an updated traffic forecast for the A-0010A project in February 2018. The previous Final Traffic Forecast for the A-0010A Project was completed on August 13, 2013, and utilized traffic counts conducted in 2012 and 2013, which are older than the preferred maximum age of 3 years for traffic forecasts. Further, the A-0010A forecast used a previous version of the French Broad River Regional Travel Demand Model (FBRM), which was adopted in March 2010. This model has been superseded by a new FBRM adopted in January 2016. The adjacent I-2513 project's traffic forecast was revised in 2016 to use the most recent version of the FBRM, and the revised

forecast overlaps several locations with the A-0010A project area, including the interchanges at Broadway (Exit 25) and Elk Mountain Road (Exit 24). A comparison of the forecasts for these locations revealed substantial enough changes in peak hour volumes that it was determined than an update to the A-0010A forecast was warranted.

The updated traffic forecast was completed in February 2018 for the No-Build Alternative and three build scenarios, and traffic capacity analysis was completed for each of the forecast scenarios in September 2018. The build scenarios differed in the number of freeway lanes on US 19/23 (Future I-26):

- **NB** (No-Build): 4 lanes from north of I-240 to Stockton Branch Road (Exit 13)
- **B1**: 8 lanes from north of I-240 to Newbridge Parkway (Exit 23); 6 lanes from Newbridge Parkway (Exit 23) to Weaver Boulevard (Exit 19); 4 lanes from Weaver Boulevard (Exit 19) to Stockton Branch Road (Exit 13) ***(Design Options 1A, 2A, and 3)***
- **B2**: 6 lanes from Broadway Street (Exit 25) to Weaver Boulevard (Exit 19); 4 lanes from Weaver Boulevard (Exit 19) to Stockton Branch Road (Exit 13) ***(Design Options 1B, 2A, and 3)***
- **B3**: 6 lanes from north of I-240 to Newbridge Parkway (Exit 23); 4 lanes from Newbridge Parkway (Exit 23) to Stockton Branch Road (Exit 13) ***(Design Options 1B, 2B, and 3)***

The results of the traffic capacity analysis are shown on **Figure 2**, and indicate none of the current design options, as defined at the 2015 CP2 meeting, would meet the purpose and need of the project. Specifically, the design options do not meet the project purpose of reducing congestion to achieve LOS D for all freeway segments in the design year 2040. As shown in the figure, all forecast scenarios have at least one segment at LOS E or worse in 2040 (indicated in red on the figure).

In order to meet the purpose and need for the project and achieve LOS D on all freeway segments, an additional scenario was evaluated. This scenario is shown on Figure 2 as **B1 ADJ**:

- **B1 ADJ**: 8 lanes from north of I-240 to New Stock Road (Exit 21); 6 lanes from New Stock Road (Exit 21) to Weaver Boulevard (Exit 19); 4 lanes from Weaver Boulevard (Exit 19) to Stockton Branch Road (Exit 13)

As indicated on Figure 2, B1 ADJ would achieve LOS D on all freeway segments through the design year 2040. B1 ADJ is similar to the combination of Design Option 1A and Design Option 2A included in scenario B1, but revises both options by shifting the breakpoint between the 8-lane section and the 6-lane section north from Newbridge Parkway (Exit 23) to New Stock Road (Exit 21).

Revised Design Options for Detailed Study

NCDOT is recommending that based on the results of the recent traffic forecast and capacity analysis updates, as well as the best available data at this time, the following design options be carried forward for detailed study and preliminary design:

One design option from north of I-240 to New Stock Road (Exit 21):

- Design Option 1A (revised): Best-Fit Widening to 8 Lanes (variable median width)

One design option from New Stock Road (Exit 21) to Weaver Boulevard (Exit 19):

- Design Option 2A (revised): Best-Fit Widening to 6 Lanes with 46-foot Grassed Median

One design option from Weaver Boulevard (Exit 19) to Stockton Branch Road (Exit 13):

- Design Option 3: Upgrade Existing 4-Lane Section with 46-foot Grassed Median

The revised design options are shown on Figure 1. If additional data becomes available that affects the minimum typical section required to meet the project purpose, NCDOT may revisit the breakpoints between project sections and shift them as needed to meet the project purpose.

Original Design Options for Detailed Study

Exit 19 (Weaver Blvd.) to Exit 13 (Forks of Ivy – Stockton Road)
- Design Option 3: Upgrade Existing 4-Lane Section with 46-foot Grassed Median

Exit 23 (Woodfin – N. Asheville – Merrimon Ave.) to Exit 19 (Weaver Blvd.)
- Design Option 2A: Best-Fit Widening to 6 Lanes with 46-foot Grassed Median
- Design Option 2B: Upgrade Existing 4-Lane Section with 46-foot Grassed Median

North of I-240 to Exit 23 (Woodfin – N. Asheville – Merrimon Ave.)
- Design Option 1A: Best-Fit Widening to 8 Lanes (variable median width)
- Design Option 1B: Best-Fit Widening to 6 Lanes (variable median width)

Current Proposed Design Options for Detailed Study

Exit 19 (Weaver Blvd.) to Exit 13 (Forks of Ivy – Stockton Road)
- Design Option 3: Upgrade Existing 4-Lane Section with 46-foot Grassed Median

Exit 21 (New Stock Road)
- Design Option 2A (revised): Best-Fit Widening to 6 Lanes with 46-foot Grassed Median

North of I-240 to Exit 21 (New Stock Rd)
- Design Option 1A (revised): Best-Fit Widening to 8 Lanes (variable median width)

End Project

Begin Project

Marshall · Mars Hill · Weaverville · Woodfin · Asheville

MADISON COUNTY · BUNCOMBE COUNTY

0 0.65 1.3 Mile

A-0010A: US 19/23 (Future I-26) Improvements Project

Figure 1

Design Options for Detailed Study

October 2018

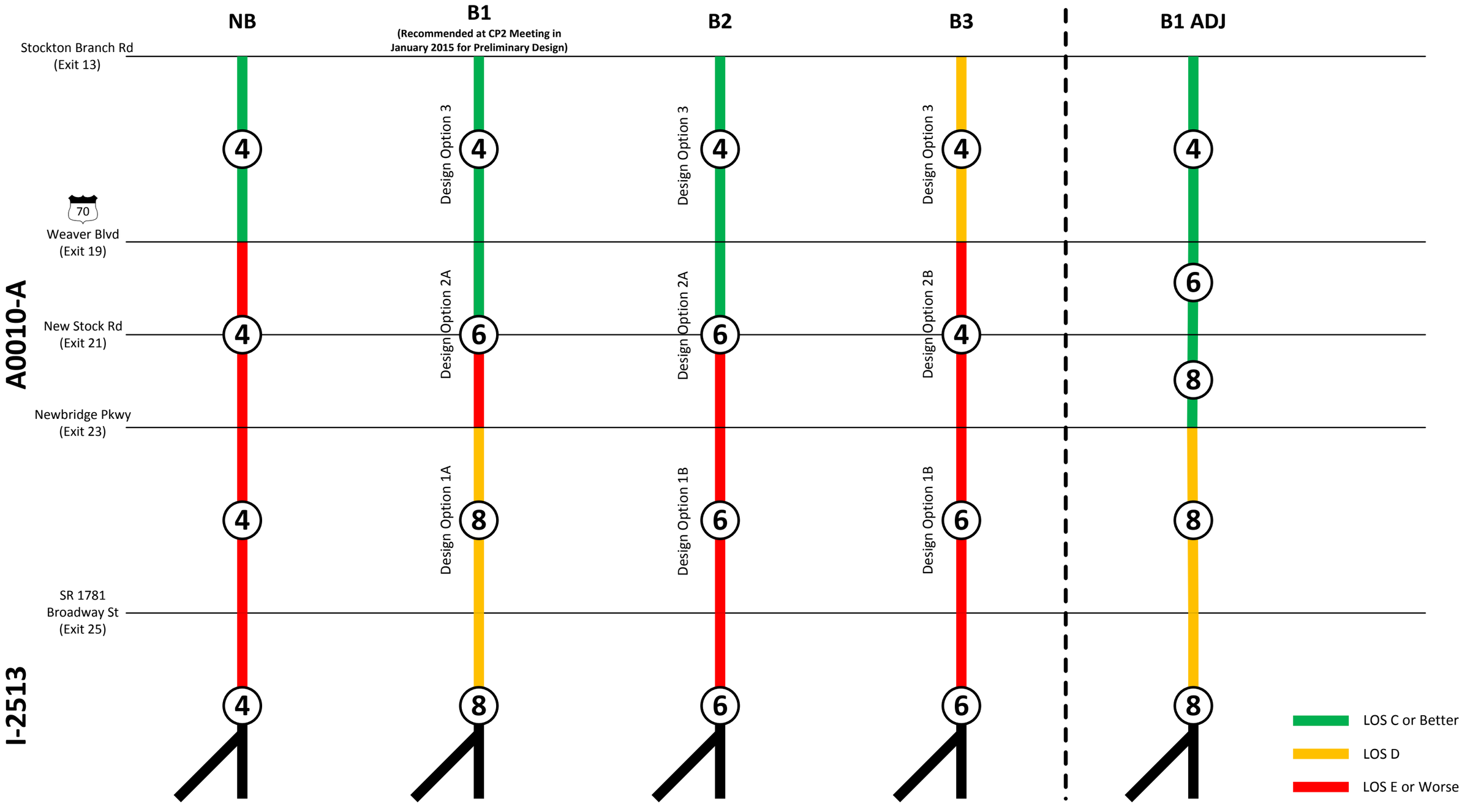
Legend

- A-0010A Study Area
- Interstate
- US Highway
- NC Highway
- State Road
- Railroad
- Exit Number
- University
- State Owned Land
- Municipal Boundary
- Water
- County

This map is for reference only.
Sources: Data was received by NC Department of Transportation, ESRI, NCFPM, AECOM

Figure 2: Future Year 2040 Freeway Level of Service

A0010-A



Source: Traffic Forecast for STIP No. A-0010A (AECOM, January 2018) and Draft Traffic Capacity Analysis for A-0010A US 19/23 (Future I-26) Improvements (AECOM, September 2018)