

## **I-4401 Project Synopsis**

### **Purpose and Description of Project:**

- The section of I-40 between SR 1224 (Monte Vista Road) and the I-240/I-26 interchange currently operates at an unacceptable level of service (LOS F). T.I.P. Project I-4401 will construct auxiliary lanes (and necessary structures) along this portion of I-40 in order to improve traffic flow and operational functions for both local project area drivers and for regional and interstate users of the I-40 facility.

### **Planning:**

- Planning studies are currently underway. An Environmental Assessment (EA) was approved on March 31, 2004. A Finding of No Significant Impact (FONSI) is currently being prepared and is scheduled for completion in November. Copies of the environmental documents will be made available to the short-listed Design-Build (D/B) teams.
- A municipal agreement with the City of Asheville is currently being procured. Any commitments outlined in that agreement will need to be addressed by the Design-Build Team. A copy of the agreement will be provided to the short-listed Design-Build Teams.

### **Public Involvement:**

- During the project's construction, the Design-Build Team must coordinate with the Division 13 Office, the Construction Unit, and the City of Asheville to inform the public of lane closures, construction progress, etc.

### **Roadway Design:**

- Design and construct one auxiliary lane (12' FDPS) in the eastbound direction to connect the entrance ramp from US 19/23 (Smoky Park Highway) to the outside exit lane of I-26.
- Design and construct one auxiliary lane (12' FDPS) in the westbound direction to connect the entrance lane from I-240 to the exit ramp of US 19/23 (Smoky Park Highway).
- Design and re-construct a portion of the EB US 19/23 on-ramp.
- Design and construct two lanes in the I-40 median with paved (8-10' FDPS) shoulders and concrete median barrier from 1300' west of SR 1224 (Monte Vista Road) to 1400' west of Sand Hill Road (approximate length of 8900').
- Design and re-construct roughly 1800' of the final typical section surrounding the US 19/23 (Smoky Park Highway) interchange.
- The Design-Build Team will be responsible for resurfacing the existing pavement per the final pavement design that will be provided to all short-listed Design-Build Teams.

### **Structure Design:**

- Replace bridges 301 (I-40EBL) and 304 (I-40WBL) over US 19/23 (Smoky Park Highway).
- Replace bridges 313 (I-40EBL) and 319 (I-40WBL) over the Norfolk Southern Railroad. Coordination with the railroad will be the responsibility of the Design-Build Team.

- Extend both ends of 7' x 9', triple-barrel culvert located approximately 1,300 feet east of US 19/23 (Smoky Park Highway).
- The Design-Build Team will design and construct a noise wall on the south side of I-40. The preliminary design of the noise wall is approximately 4600 feet long with an exposed height ranging from 13 to 22 feet high starting approximately at Station 48+00 (-L- Line) and ending at Station 30+50 (EBL).

**Hydraulics Design:**

- The Design-Build Team will be responsible for all storm drainage design.
- The Design-Build Team shall employ a Private Engineering Firm (PEF) pre-qualified with the NCDOT to perform hydraulic design for all work required under this contract.

**Location & Surveys:**

- Electronic surveys are completed and will be available to the short-listed teams.
- Existing utilities are located and are included with the survey data. Any additional SUE work will be the responsibility of the Design-Build Team.
- Any structure surveys will be the responsibility of the Design-Build Team.

**Geotechnical Investigations and Design:**

- Roadway and Structure Subsurface investigations will be provided to the short-listed Design-Build Teams. Any additional geotechnical work will be the responsibility of the Design-Build Team.
- All foundation designs and recommendations will be the responsibility of the Design-Build Team.

**ITS:**

- The ITS work for this project will include the design and installation of four closed circuit television cameras (CCTV), eight Microwave Vehicle Detectors (MVD) and three overhead Dynamic Message Signs (DMS). Wireless radio communication will be required for use with CCTV cameras and MVDs. Wired telephone lines will be required for use with the DMSs.
- The ITS functional plans shows approximate locations for all ITS devices to be installed. The Design-Build Team will be responsible for determining the actual locations of all devices that will provide the optimal performance.
- The Design-Build Team will be responsible for the integration of all devices and final testing of the completed system to demonstrate proper functionality and command and control for the central location.

**Lighting:**

- Lighting will be designed by the NCDOT, but installed by the Design-Build Team.

**Environmental Permits:**

- The Design-Build Team will be responsible for obtaining all necessary environmental permits for this project. The Design-Build Team will also be responsible for all TVA coordination and for obtaining a letter of approval

**Erosion Control Design:**

- All erosion control designs will be the responsibility of the Design-Build Team.

**Traffic Control and Pavement Marking Design:**

- The Design-Build Team will be responsible for developing the Traffic Control and Pavement Marking Plans.

**Pavement Design:**

- A final pavement design will be provided to all short-listed Design-Build Teams. This will include concrete widening and unbonded, concrete overlay for the existing pavement on the mainline.
- Temporary pavement designs will be the responsibility of the Design-Build Team.

**Signing:**

- Signing will be required and will be the responsibility of the Design-Build Team.

**Signal Design:**

- Design and upgrade of signals and associated equipment for intersections of I-40 ramps at US 19/23 (Smoky Park Highway) may be included as part of this project.

**Right of Way Acquisition:**

- It is anticipated that no right of way will be acquired as part of this project. Any needed right of way or easements based on final design will be the responsibility of the Design-Build Team.
- If any UST's are discovered within the proposed Right of Way, it will be the Design-Build Team's responsibility to contact the Geotechnical Unit and arrange for removal.

**R/W Utilities, Conflicts and/or Construction Work:**

- The Design-Build Team will be responsible for all utility coordination and relocation work. Coordination shall include any necessary utility agreements when applicable.
- The Design-Build Team shall obtain the services of a firm pre-qualified by NCDOT and knowledgeable in the utility coordination process involved with utility relocation/installation and highway construction. The Firm will be responsible for non-betterment utility relocation cost when the utility company has prior rights of way/compensable interest. The utility company will be responsible for the relocation cost if they cannot furnish evidence of prior rights of way or a compensable interest in their facilities.

**Construction Engineering Inspection (CEI):**

- The Design-Build Team will be responsible for CEI work on this project.

**Cost Estimates:**

- The latest estimated construction cost for the project is \$30,750,000.