

APPENDIX C

Overview of Cost Changes Since the ADHS 2002 Cost-to-Complete Estimate

PREFACE

The total cost to complete the Appalachian Development Highway System (ADHS) (as of September 30, 2006) is estimated at \$11.8 billion, an increase of \$3.3 billion since the ADHS 2002 Cost-to-Complete Estimate. The federal share of the cost to complete is \$8.8 billion, up from \$6.2 billion in the 2002 estimate. Remaining federal funding needed to complete the ADHS is estimated at \$6.5 billion; up from \$4.5 billion in the 2002 estimate. The remaining federal funding needed takes into account the unobligated balance of funds (as of September 30, 2006), allocations and apportionments under TEA-21 and SAFETEA-LU, allocations under the DOT and other Appropriations Acts, and the prospective FY 2008 and FY 2009 apportionments and allocations under SAFETEA-LU.

The increase in the cost to complete the ADHS was caused by several factors:

- Nationwide, highway construction costs have increased an average of 26 percent since the 2002 estimate was prepared; in the region construction costs have increased over 40 percent.
- A new, 65-mile corridor (Corridor X-1 in Alabama) was added to the ADHS by Congress in 2004.
- Route locations and designs have changed to accommodate local community needs and provide a safer design.
- Construction quantities and right-of-way costs have been refined based on engineering studies undertaken since the last estimate and on final design decisions.
- Design changes have been made to accommodate changes in standards and to add needed environmental mitigation measures.

Specific information on significant cost changes since the ADHS 2002 Cost-to-Complete Estimate is outlined in this Appendix.

Alabama

The estimated cost to complete Alabama's ADHS corridors has increased from \$531.2 million to \$3.001 billion since the 2002 estimate. This significant increase is mainly the result of the addition of Corridor X-1 around Birmingham, which added \$2.507 billion to the cost estimate. The cost to complete Corridor X-1 is based on planning estimates; no construction starts are projected in the next five years.

The cost to complete Corridor V has increased from \$138.7 million in the 2002 estimate to \$178.3 million. Design of the 16.3 mile segment from near the Mississippi state line to Russellville has been completed since the 2002 estimate; the cost increase reflects detailed quantities now available, and increases in roadway and bridge construction costs statewide (as much as 60 percent) since the 2002 estimate.

Georgia

The estimated cost to complete Georgia's ADHS corridors has increased from \$328.0 million to \$369.3 million since the 2002 estimate. The cost increase for Corridor A accounts for most of this increase.

The cost estimate for Corridor A increased from \$310.4 million in the 2002 estimate to \$351.2 million because of higher unit prices: statewide construction costs have risen 5 percent annually since the 2002 estimate.

Kentucky

The estimated cost to complete Kentucky's ADHS corridors has increased from \$997.3 million to \$1.018 billion since the 2002 estimate.

The cost to complete Corridor F increased from \$199.4 million in the 2002 estimate to \$409.0 million. This major increase reflects a change in the location of a 10.7-mile section of US 119 over Pine Mountain to Whitesburg. The change includes the addition of 300 feet of tunnel and added environmental mitigation measures and earthwork quantities.

The cost to complete Corridor Q decreased to \$506.6 million from \$581.9 million in the 2002 estimate. Over \$150 million of construction have been put underway since the 2002 estimate. Increases in the cost of roadway surfacing items and environmental mitigation measures have raised costs on the remaining 16.5-mile section from Corridor B to the Virginia state line.

Maryland

The estimated cost to complete Maryland's ADHS corridors has increased from \$99.6 million to \$228.5 million since the 2002 estimate. A major increase (over 50 percent) in construction costs statewide since the 2002 estimate accounted for much of the cost increase.

The cost to complete Corridor N increased from \$43.2 million in the 2002 estimate to \$145.0 million. This major increase reflects substantive changes to earthwork and bridge quantities and added environmental mitigation measures, the result of further design studies, and increased unit prices.

The cost to complete Corridor O has increased from \$56.4 million in the 2002 estimate to \$83.4 million. The higher estimate reflects an increase in construction costs.

Mississippi

The estimated cost to complete Mississippi's ADHS corridors has decreased from \$106.3 million to \$79.7 million since the 2002 estimate.

The cost decrease was primarily due to progress on the construction of Corridor V.

New York

The estimated cost to complete New York's ADHS corridors has decreased from \$327.3 million to \$205.5 million since the 2002 estimate.

The cost to complete Corridor T decreased from \$215.9 million in the 2002 estimate to \$82.4 million, including \$61.3 million in prefinanced projects currently underway. Since the 2002 estimate over \$240 million has been obligated for work on Corridor T including two rest areas. Remaining work is a 5.5-mile section from Water Street to Chemung scheduled to start in 2008.

A system action approved by ARC in November 2001 transferred eligibility of 5.8 miles of Corridor U to newly designated Corridor U-1. Corridor U was retained with remaining work at the interchange with Corridor T to be completed using non-ADHS funds.

The cost to complete newly designated Corridor U-1 is \$123.2 million in the 2007 estimate. The 12.5-mile corridor includes 5.8 miles with ADHS funding limited to \$79,352,000, in accordance with the Corridor U system action.

North Carolina

The estimated cost to complete North Carolina's ADHS corridors has increased from \$534.1 million to \$757.3 million since the 2002 estimate.

The cost to complete Corridor A increased from \$28.5 million in the 2002 estimate to \$56.3 million, due to construction cost increases of up to 75 percent statewide.

The cost to complete Corridor K increased from \$457.3 million in the 2002 estimate to \$676.7 million in the 2007 estimate. This major increase reflects a substantive increase in right-of-way costs (40 to 65 percent), increases of 25 to 50 percent in unit prices, and the cost of design changes, on the 13.3-mile section of Corridor K northeast of Andrews.

Ohio

The estimated cost to complete Ohio's ADHS corridors has increased from \$341.3 million to \$413.2 million since the 2002 estimate.

The cost to complete Corridor B increased from \$166.5 million in the 2002 estimate to \$333.8 million. Design changes to minimize environmental and right-of-way impacts involved significant increases in earthwork costs due to increased quantities and higher unit costs (and added rock excavation). The increase in earthwork costs alone account for 50 to 75 percent of the increased costs. Costs also reflect increases in the cost of construction materials (aggregate, cement, steel, and lumber) and fuels.

The cost to complete Corridor C increased from \$56.2 million in the 2002 estimate to \$79.4 million. Corridor C is complete except for a 4.2-mile section at Waverly and a 3.2-mile section at Asheville. Both sections are in the location phase of development and the increase reflects construction cost increases due to the higher costs of construction materials such as steel, cement, aggregate and diesel fuel.

Pennsylvania

The estimated cost to complete Pennsylvania's ADHS corridors has increased from \$2.469 billion to \$2.748 billion since the 2002 estimate. Construction costs have increased nearly 48 percent statewide, reflecting substantial increases in costs for construction materials including steel, cement, aggregate, and diesel fuel.

The cost to complete Corridor M increased from \$1.030 billion in the 2002 estimate to \$1.406 billion. The major cost increase was for the remaining work on the sections from Hollidaysburg to the Lewistown Bypass. These 59.8 miles are currently not under development. The estimated cost on these sections has increased from \$679 million in the 2002 estimate to \$1.266 billion. The costs are based on per mile cost reflecting average costs in the state for similar four-lane facilities, which increased 47.7 percent since the last estimate due in part to increased construction material costs.

The cost to complete Corridor N increased from \$203.3 million in the 2002 estimate to \$373.8 million, reflecting increases in construction costs and updated quantity estimates on uncompleted sections of the corridor.

A system action on Corridor O authorized in Section 1117(d) of TEA-21 resulted in the shifting of eligibility for ADHS funding from a 23.7-mile section of Corridor O from the Maryland state line to south of Bedford to a new corridor (Corridor O-1) from Corridor O at Port Matilda to I-80 northeast of Clearfield.

The cost to complete the remaining portion of Corridor O decreased from \$163.3 million in the 2002 cost estimate to \$103.1 million. Since the last estimate, 8.8 miles have been completed. As result of the agreement reached for the designation of the new corridor (Corridor U-1), the cost of constructing the I-80 interchange was made eligible for ADHS funding, limited as outlined below.

The amount of ADHS funding on Corridor O-1 is limited, in accordance with Section 1117(d) of TEA-21, to \$194,681,098 (federal funds). That is the federal share of the cost in the 1997 estimate of the subtracted section of Corridor O minus funds obligated (\$18,880,000) adjusted for inflation to 2005 dollars. Corridor O-1 is in the location phase of development. In addition as provided in the agreement reached for the designation of the new corridor (Corridor U-1) the cost of construction of the 3-mile section from Port Matilda to Clearfield was made eligible for limited ADHS funding as outlined below.

A system action approved in December 2001, which included limitations on ADHS funding eligibility, is as follows:

- The designation of a new 3.6 mile corridor, Corridor U-1, with ADHS funding limited to \$36,020,098 less the \$33,240,829 obligated with the \$2,779,269 remaining adjusted to \$4,104,424 (in 2005 dollars);

- The transfer of 2.0 miles to Corridor O for the construction of the interchange with I-80 with ADHS funding limited to \$61,331,519 less the \$11,840,000 obligated with the \$49,491,519 remaining adjusted to a current maximum of \$65,453,00 (in 2005 dollars);
- The transfer of 4.8 miles to Corridor P to construct the section from PA 287 to US220 at Williamsport with the ADHS funding limited to \$9,735,161 adjusted to \$14,376,886 (in 2005 dollars); and
- The transfer of 3.0 miles to Corridor O-1 made available to the corridor and adding \$19,470,323 (federal funds) to the limited ADHS funds available toward completion of the corridor adjusted to \$28,753,773 (in 2005 dollars).

The cost to complete Corridor U decreased from \$293 million in the 2002 estimate to \$48.7 million as the result of the completion of construction on 9.6 miles of the corridor and the transfer of 13.4 miles to Corridors O, O-1, P, and U-1, as outlined above.

South Carolina

The estimated cost to complete South Carolina's ADHS corridors has increased from \$42.3 million to \$63.6 million since the 2002 estimate.

The cost increase reflects the increased cost of acquiring right-of-way in the greater Greenville area for the widening the remaining 4.3 miles on Corridor W. The state has advanced work on the corridor with \$22.3 million in prefinanced projects.

Tennessee

The estimated cost to complete Tennessee's ADHS corridors has increased from \$680.6 million to \$827.2 million since the 2002 estimate.

The estimated cost of completing Corridor K increased from \$394.7 million in the 2002 estimate to \$527.9 million, reflecting a 68 percent increase in right-of-way acquisition costs and a 40 percent increase in statewide construction costs.

Virginia

The estimated cost to complete Virginia's ADHS corridors has increased from \$656.3 million to \$1.179 billion since the 2002 estimate.

The estimated cost of completing Corridor H increased from \$68.5 million in the 2002 estimate to \$107.0 million. Corridor H is not in Virginia's current development plan. The cost estimate for the corridor is based on a four-lane section as was approved by ARC for all of Corridor H and now includes reconstruction or replacement of bridges, added right-of-way, and construction for widening the roadway from two to four lanes.

The cost to complete Corridor Q cost increased from \$587.8 million in the 2002 estimate to \$1.072 billion. The major portion of the increased cost is the result of design changes and the difficulty of the terrain. ADHS participation in the construction cost on the section common with the Coalfields Expressway was limited to the cost in the 1997 estimate, adjusted to \$89.4 million for inflation, plus \$52.8 million as requested by Virginia. The total cost on the section west of Grundy is \$588.0 million (state and federal) with full ADHS funding participation in right-of-way and engineering costs, and construction costs limited to \$113.8 million (federal funds).

West Virginia

The estimated cost to complete West Virginia's ADHS corridors has decreased from \$1.392 billion to \$902.3 million since the 2002 estimate.

The cost to complete Corridor D decreased from \$223.4 million in the 2002 estimate to \$5.9 million. The corridor is substantially complete.

The cost to complete Corridor H decreased from \$1.169 billion in the 2002 estimate to \$896.4 million. Twenty-five miles of Corridor H have advanced to the construction phase since the 2002 cost estimate.

