

Option 5—Spot Improvements

Spot improvements were developed for five (5) separate locations, which correspond to locations with a higher than average incident or severity of crashes along the existing SR 93 corridor. Improvements along SR 93 include the addition of turn lanes, improvement of the horizontal and vertical sight distance, upgrade to ten (10)-foot shoulders or addition of sidewalks with curb and gutter within the Fall Branch Elementary School zone area. Consideration was given to the location of existing overhead and underground utilities along the corridor. A set of concepts on aerial photography of the five (5) improvements is in Appendix C. Detailed costs for each improvement can be found in Appendix D. Figure 10 shows the location of the five (5) spot improvements. These improvements encompass 4.51 miles of the 6.1 mile long corridor. A reduced right of way width for each improvement was also considered due to the impacts of a 120-foot right of way along the existing corridor, especially in Fall Branch.

Spot Improvement No. 1:

SR 93 from Log Mile 3.200 to 3.530, Washington County

Estimated Cost: \$1,056,461.00

This improvement is intended to enhance safety in the vicinity of the Fall Branch Elementary School. A two (2)-lane section with a left turn lane is proposed at the Fall Branch Elementary School on SR 93 in the Fall Branch community. The turn lane is proposed for southbound traffic turning into the parking lot of the Fall Branch Elementary School and Ruritan Road where there is additional parking for the school. The proposed typical section includes two (2) twelve (12)-foot travel lanes and one (1) twelve (12)-foot left turn lane for a total width of thirty-six (36) feet. Curb and gutter along with five (5)-foot sidewalks are also proposed throughout Spot Improvement 1 within a proposed sixty (60)-foot right of way. Sheet 3 in the concept set in Appendix C depicts the improvements.

Spot Improvement No. 2

SR 93 from Log Mile 3.460 to 3.850, Washington County

Estimated Cost: \$2,311,151.00

This improvement is intended to flatten the existing horizontal curves and improve intersection sight distance through this section of existing SR 93. The typical section is a continuation of the three (3)-lane section for Spot Improvement 1. The proposed typical section includes two (2) twelve (12)-foot travel lanes and one (1) 12-foot center turn lane for a total width of thirty-six (36) feet. Curb and gutter along with five (5)-foot sidewalks are also proposed throughout the Spot Improvement 2 segment within a proposed sixty (60)-foot right of way. With this section, there are three (3) residential relocations. Potentially historic properties in this segment of roadway could also be adversely affected by this spot improvement. Coordination between Spot Improvement 1 and 2 is required. Sheet 4 in the concept set in Appendix C depicts the improvements.

Spot Improvement No. 3

SR 93 from Log Mile 4.850 in Washington County to 0.300 in Sullivan County

Estimated Cost: \$4,974,261.00

This option considers improvements to the existing vertical alignment and construction of a two (2)-lane section with shoulders to improve sight distance and safety through this section of existing SR 93 located between Horse Creek and an existing rock cut. The

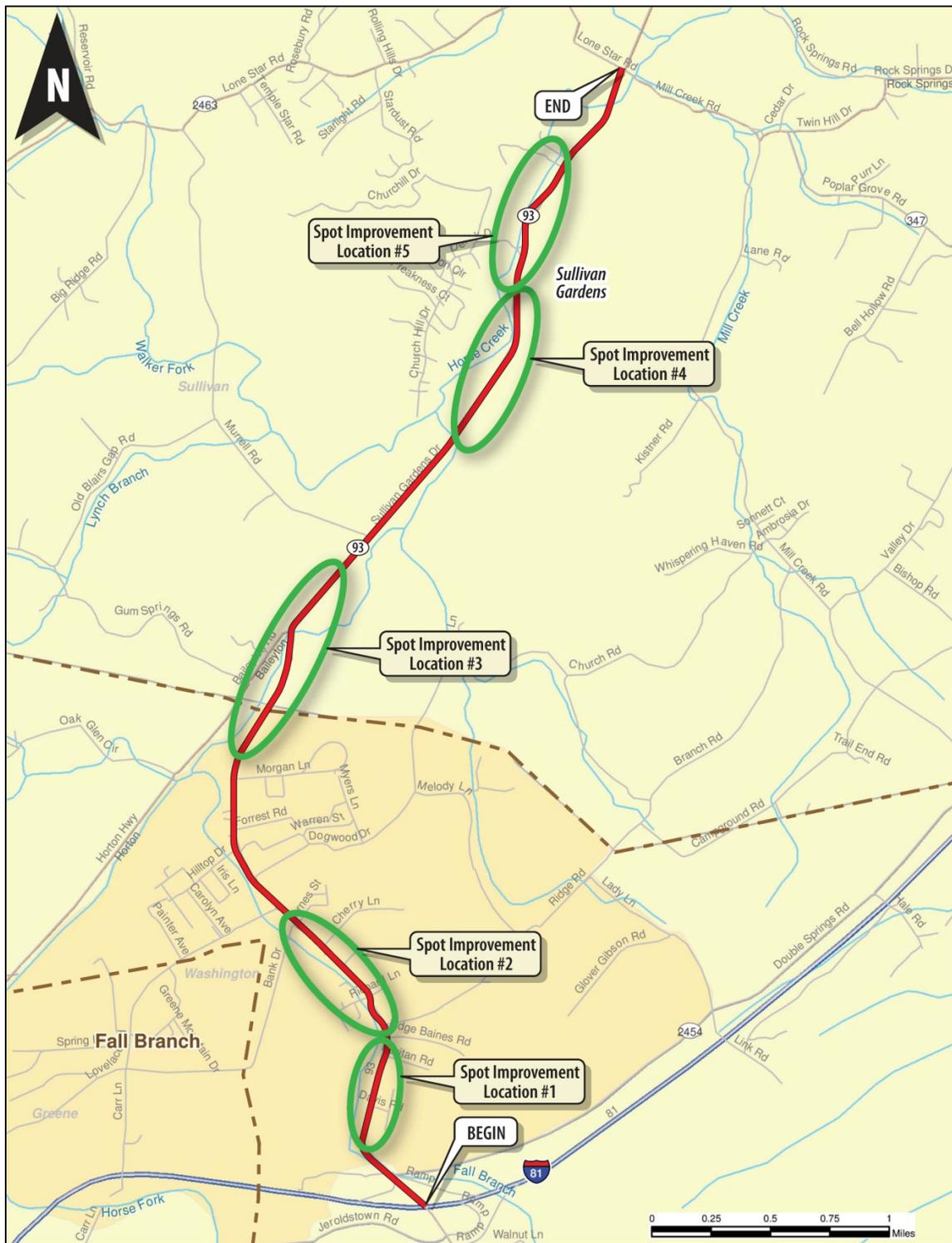


Figure 10. Spot Improvement Locations

proposed typical section consists of two (2) twelve (12)-foot travel lanes, ten (10)-foot shoulders, and 6:1 ditch slopes as required by Standard Drawing RD01-TS-3 for a two (2)-lane arterial highway with the given traffic volumes within a proposed 100-foot right of way. SR 93 is proposed to be shifted east to avoid impacts to the creek and tie to the existing roadway embankment on the west side. Traffic control phasing will need to be considered early in development of plans for this improvement due to the significant amount of rock excavation that will likely be required and the difficulty in maintaining existing traffic during construction. Due to the additional excavation, a truck lane may be considered during design if traffic volumes warrant such lane. Additional right of way and/or slope and construction easements will also be required.

Sheet 4 of the concept set in Appendix C depicts the improvement and a representative typical section of the proposed phasing.

Spot Improvement No. 4

SR 93, from Log Mile 0.950 to 1.180, Sullivan County

Estimated Cost: \$2,056,392.00

This improvement considers adding a three (3)-lane section at the industrial area along existing SR 93 where truck traffic enters and exits SR 93, and vehicles drive from one side of the road to the other for the industry that occupies both sides of the road. This would improve safety in this area where slow turning trucks enter and turn off SR 93 into the businesses. The typical section includes two (2) 12-foot travel lanes and one (1) 12-foot center turn lane for a total width of 36 feet, with 10-foot shoulders and ditches within a proposed 120-foot right of way. Right of way, which includes parking and parts of buildings, would be acquired from the businesses. There is also one (1) commercial relocation. The existing bridge located at Horse Creek would require widening. Access management should also be considered for each of the industrial businesses. Sheets 6 and 7 of the concept set in Appendix C depict the improvements.

Spot Improvement No. 5

SR 93 from Log Mile 1.180 to 2.400, Sullivan County

Estimated Cost: \$4,210,821.00

This option considers improvements to the existing horizontal and vertical alignment and construction of a two (2)-lane section with shoulders to improve sight distance and safety through this section of existing SR 93. The proposed typical section consists of two (2) twelve (12)-foot travel lanes, ten (10)-foot shoulders, and 6:1 ditch slopes as required by Standard Drawing RD01-TS-3 for a two (2)-lane arterial highway with the given traffic volumes within a proposed 100-foot right of way. SR 93 is proposed to be shifted east to avoid impacts to existing Horse Creek at the beginning of the section, and then to tie into the existing roadway embankment on the west side. At Derby Drive, the existing reverse curvature of SR 93 is proposed to be removed. As mentioned in Spot Improvement 3, traffic control phasing will need to be considered early in the plans development, due to the significant amount of rock excavation that will likely be required. Coordination between Spot Improvement 4 and 5 is required. Sheets 7 and 8 of the concept set in Appendix C depict the improvements.

ESTIMATED COSTS

Planning level cost estimates for Corridors 1 and 2 and for the spot improvements are summarized below. Detailed cost estimates, which were based on the minimum typical sections previously shown in this Chapter (Figures 8 and 9), are found in Appendix D.

CORRIDORS*

Option A: three (3)-lane section

Corridor 1 East of Fall Branch	\$29,484,217
Corridor 2 West of Fall Branch	\$30,212,437

Option B: four (4)-lane raised median section

Corridor 1 East of Fall Branch	\$41,181,294
Corridor 2 West of Fall Branch	\$45,700,818

* As previously stated, costs were not developed for Corridor 3 because the option is not prudent due to the environmental impacts to the Fall Branch community. The cost estimates are attached.

PRIORITIZED LIST OF SPOT IMPROVEMENTS

<u>#</u>	<u>Description</u>	<u>Cost Estimate</u>
5	1,600 feet South and 2,600 feet north of Derby Drive, 4,200 feet	\$ 4,210,821
4	North of Murrell Drive to South of Derby Drive, 2,800 feet	\$ 2,056,392
3	Morgan Lane to South of Balleyton Road, 2,800 feet	\$ 4,974,261
1	North of Davis to North of Judge Baines Road, 1,600 feet	\$ 1,056,461
2	Ruritan Road to North of Fire Hall Road, 2,400 feet	<u>\$ 2,311,151</u>
	TOTAL	14,609,086