

FEASIBILITY STUDY

Feasibility Study
US 221 from the South Carolina State Line
to Rutherfordton, Rutherford County
R-2233

Prepared by
Planning and Research Branch
Division of Highways
N. C. Department of Transportation

August, 1987

Feasibility Study
US 221 from the South Carolina State Line
to Rutherfordton, Rutherford County
R-2233

This project is included in the 1987-1995 Transportation Improvement Program (TIP) for feasibility study and/or right of way protection. The project is not currently funded.

The recommended improvements are discussed in Alternate A on page 2. The total estimated cost is \$6,800,000.

I. EXISTING CONDITIONS

PROJECT LENGTH: 13.5 miles

HISTORICAL RESUME: US 221 between Rutherfordton and SR 2164 was constructed in 1934, and subsequently paved and resurfaced as an 18-foot asphalt pavement. The portion of US 221 from SR 2164 to the South Carolina State Line was constructed in 1940 and 1941 as a 20-foot asphalt pavement.

CROSS SECTION DESCRIPTION: The existing cross-section between the Rutherfordton Corporate Limits and SR 2164 consists of an 18-foot asphalt pavement and 6-8 foot grassed shoulders. From SR 2164 to the South Carolina State Line, the existing cross-section consists of 20-foot asphalt pavement and 6-8 foot grassed shoulders.

RIGHT-OF-WAY: Claimed right of way width from Rutherfordton to SR 2164 is 60 feet, and from SR 2164 to the South Carolina State Line is 100 feet.

ESTIMATED TRAFFIC VOLUMES:

At Rutherfordton	1987 ADT = 5,200 vpd
	2007 ADT = 8,500 vpd
Between SR 2164 and SR 1138	1987 ADT = 6,000 vpd
	2007 ADT = 9,800 vpd
Between SR 1117 and SR 1116	1987 ADT = 5,300 vpd
	2007 ADT = 8,600 vpd

The above estimates include 3% dual tired vehicles and 1% truck-tractor semi-trailers. The design hourly volume is 10% of the ADT.

STRUCTURES:

- 1) Bridge #19 carrying C.C. & D railway over US 221, 0.7 mile north of the South Carolina State Line.
Sufficiency rating = N/A
Length = 46 feet
Lateral clearance under bridge = 33 feet
Vertical clearance under bridge = 14 feet 8 inches
- 2) Bridge #30 carrying US 221 over the Broad River.
Sufficiency rating = 49.3
Load Posting = none
Length = 523 feet
Clear roadway width = 24 feet
- 3) Bridge #55 carrying US 221 over Floyd's Creek near Harris.
Sufficiency rating = 73.5
Load Posting = none
Length = 150 feet
Clear roadway width = 26 feet
- 4) Bridge #74 carrying US 221 over C.C. & D railway north of Harris.
Sufficiency rating = 66.4
Length = 120 feet
Clear roadway width = 26 feet

ACCIDENT INVENTORY: During the period starting in January 1984 and ending in January 1987, a total of 155 accidents on the studied section of US 221 were reported. The resulting accident rate was 243.06 accidents per 100 million vehicle-miles (acc/100 mvm). The 1986 statewide accident rate for similar routes was 167.5. 33% of the accidents involved vehicles that ran off the road.

II. RECOMMENDATIONS

ALTERNATE A:

- 1) Widen the studied portion of US 221 to a 28-foot pavement (two 12 foot lanes with 2 foot full-depth paved shoulders).
- 2) Replace bridge #19 with a 65± foot long bridge to allow for sufficient (44-foot) lateral clearance under the bridge.
- 3) The following bridge replacements/widenings will also be needed:
 - i - Bridge #30 with a 550-foot long bridge with a clear roadway width of 32 feet (an exception from the Bridge Policy will be needed).

- ii - Bridge #55 should be widened/replaced to have a 44-foot clear roadway width.
- iii - Bridge #74 should be widened/replaced to have a 44-foot clear roadway width.

ALTERNATE B:

Same as Alternate A, except project length would be reduced by 1 mile near the South Carolina State Line to exclude Bridge #19 from the improvements and its replacement.

III. ESTIMATED COST

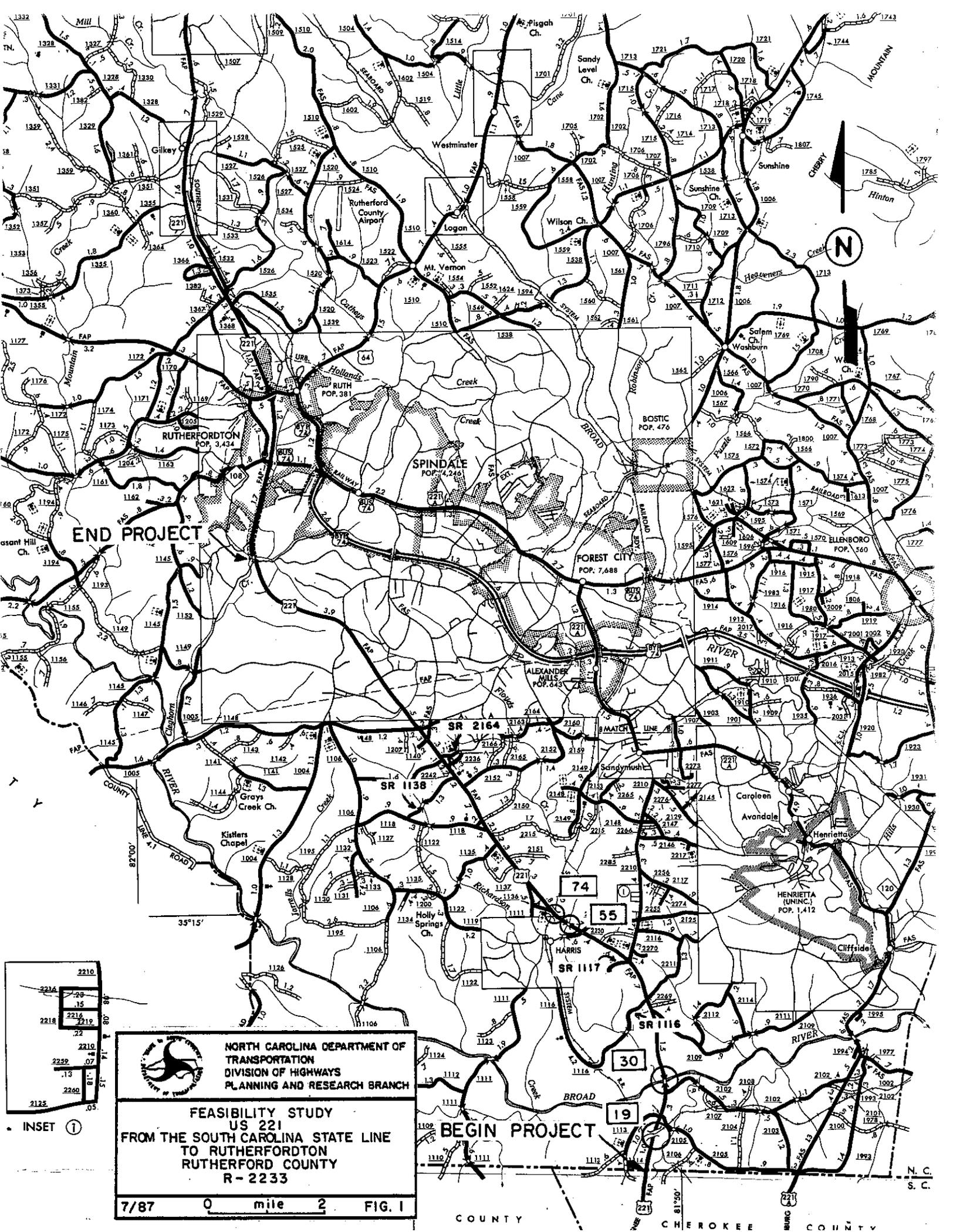
The following estimated costs are for construction only, since it is assumed that additional right of way will not be needed.

Alternate A :	\$6,800,000
Alternate B :	\$5,900,000

IV. FUTURE ACTIVITIES

If the project is to be implemented at a future date, all feasible alternatives and their associated impacts will need to be evaluated in a planning/environmental document prior to that time, and a final decision made as to the most appropriate improvement.

MM/sdt



END PROJECT

BEGIN PROJECT

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH**

**FEASIBILITY STUDY
US 221
FROM THE SOUTH CAROLINA STATE LINE
TO RUTHERFORDTON
RUTHERFORD COUNTY
R-2233**

7/87 0 mile 2 FIG. 1

INSET ①

2210	0.00
2215	0.05
2220	0.10
2225	0.15
2230	0.20
2235	0.25
2240	0.30
2245	0.35
2250	0.40
2255	0.45
2260	0.50
2265	0.55
2270	0.60
2275	0.65
2280	0.70
2285	0.75
2290	0.80
2295	0.85
2300	0.90
2305	0.95
2310	1.00