

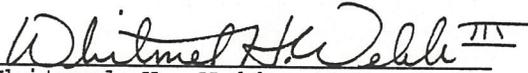
FEASIBILITY STUDY

FILE COPY  
DO NOT REMOVE

STATESVILLE  
US 21  
FROM SR 1933 TO I-77  
IREDELL COUNTY  
U-2731

Prepared by  
Program Development Branch  
Division of Highways  
N. C. Department of Transportation

  
\_\_\_\_\_  
W. J. Watson, P. E.  
Highway Planning Engineer

  
\_\_\_\_\_  
Whitmel H. Webb, III, P.E.  
Head of Feasibility Studies

10/14/91  
Date

Statesville  
US 21  
From SR 1933 to I-77 Iredell County  
U-2731

I. GENERAL DESCRIPTION

This preliminary study describes proposed improvements to US 21 in Statesville. A location map of the studied area is shown as Figure 1 and the recommended project location is shown as Figure 2. It is proposed to widen US 21 to a 5 lane curb and gutter section from SR 1933 to I-77, a distance of 2.6 miles. Also it is proposed to eliminate the offset on US 21 between Jane Sowers Road (SR 2171) and Shumaker Drive (SR 1922), and signalize the resulting intersection.

It is recommended that the proposed improvements be implemented in two stages. Stage I includes right of way purchase for the entire 2.6 mile project and construction of the widening on US 21 from SR 1933 to a point 500 feet north of Jane Sowers Road, a distance of 1.4 miles, and elimination of the offset between Jane Sowers Road and Shumaker Drive. Stage II includes construction only of the widening on US 21 from 500 feet north of Jane Sowers Road to I-77, a distance of 1.2 miles. The total cost of the recommended improvements is \$6,680,000.

This study is the initial step in the planning and design process for this project and is not the product of an exhaustive environmental investigation or design effort. The purpose of this study is to describe the problem and an attainable solution, and provide cost estimates for the right of way and construction required to realize the solution.

II. NEED FOR PROJECT

The purpose of these improvements is to relieve current and projected capacity and accident problems on US 21 and to relieve current and projected capacity and accident problems at the Jane Sowers Road - US 21 intersection.

Stage I portion of the study was requested by the City of Statesville and the Iredell County Board of Commissioners. This segment of roadway serves an area that has a great potential for continued development, and therefore is likely to see increased traffic generation and attraction.

US 21, Jane Sowers Road, and Shumaker Drive are designated as major arterials on the Statesville Thoroughfare Plan. US 21 is also classified as a Rural Major Collector in the North Carolina Functional Classification System. US 21 is a two lane roadway with a 22 foot wide pavement and grassed

shoulders 6 to 9 feet in width. The existing right of way width on US 21 is 60 feet.

The estimated Average Daily Traffic (ADT) on US 21 between SR 1933 and Shumaker Drive for the years 1991 and 2011 (the design year) are 13,500 vehicles per day (vpd) and 24,800 vpd respectively. The 1991 and 2011 ADT for US 21 between Jane Sowers Road and I-77 are 7,800 vpd and 14,400 vpd respectively.

Based on these traffic volumes, and the extensive roadside development, US 21 is currently operating at level of service E during daily peak hour periods. With the recommended improvements it is estimated that US 21 will operate at level of service C through the year 2011.

During the period from January 1, 1988 through April 30, 1991 there were 69 accidents reported on US 21 between SR 1933 and Jane Sowers Road. This resulted in an accident rate of 396.78 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a statewide average of 264.0 Acc/100 MVM for all urban primary routes over the same period. There were no fatalities reported during the period, but 30 of the accidents resulted in injuries. The most prevalent accident types were rear end, angle, left-turn, and ran-off-road accidents. Twenty-one of these accidents occurred at the Jane Sowers Road - Shumaker Drive offset intersection. The wider cross section with center turn lane proposed for US 21 and the relocation and signalization of the Jane Sowers Road intersection will reduce the potential for these types of accident.

### III. RECOMMENDATIONS

It is recommended to widen US 21, a two lane two-way road, to a 64 foot wide face - to - face, five lane roadway with curb and gutter. The new widened section is to tie into the existing five lane, 68 foot wide back-to-back, section near SR 1933 and extend northward to I-77; a total distance of 2.6 miles. A right of way width of 90 feet on US 21 is proposed. No control of access is proposed.

Further, the offset on US 21 between Jane Sowers Road intersection and the Shumaker Drive intersection is to be eliminated by relocating Jane Sowers Road about 50 feet south and relocating Shumaker Drive about 15 feet north. The resulting intersection of Jane Sowers Road - Shumaker Drive with US 21 will be signalized.

Four businesses will likely be required to relocate; however, there would be no residential relocatees.

It is recommended that these improvements be implemented in two stages as follows: In Stage I right of way for the entire 2.6 miles will be purchased and the widening from SR 1933 to 500 feet north of Jane Sowers Road will be constructed. In Stage II the widening from 500 feet north of Jane Sowers Road to I-77 will be constructed. The Stage I and Stage II widening lengths are 1.4 miles and 1.2 miles respectively.

#### IV. ADDITIONAL COMMENTS

The relocation of Jane Sowers Road will necessitate the closing of a shopping center entrance on US 21, however, the shopping center does have another entrance on US 21. No significant environmental issues were identified during the study, however, Fort Dobbs, an historic site, is located about one mile west of the project.

A feasibility study (I-2514) has been completed for an interchange on I-77 at Jane Sowers Road. If this interchange is constructed, there may be a greater need to widen Jane Sowers Road between I-77 and US 21 than to widen US 21 from Jane Sowers Road to I-77 as recommended in this study.

#### V. COST ESTIMATES

##### Recommended Improvements

##### Stage I

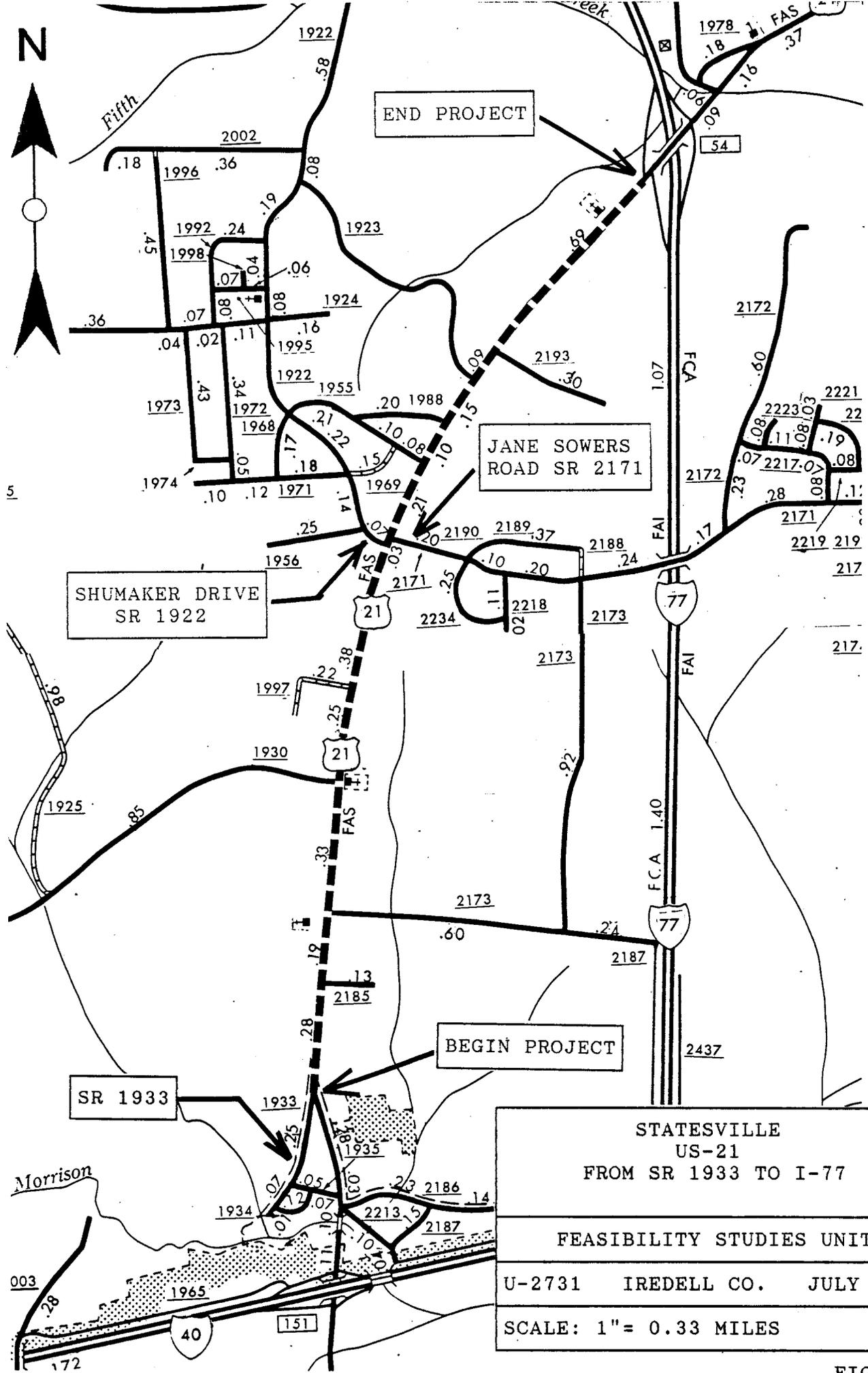
Construction	:	\$2,200,000
Right of Way (SR 1933 to SR 2171)	:	2,030,000
Right of Way (SR 2171 to I-77)	:	800,000
Total	:	\$5,030,000

##### Stage II

Construction	:	\$1,650,000
--------------	---	-------------

<b>Total Stage I &amp; II</b>	:	<b>\$6,680,000</b>
-------------------------------	---	--------------------





SHUMAKER DRIVE  
SR 1922

JANE SOWERS  
ROAD SR 2171

SR 1933

BEGIN PROJECT

END PROJECT

STATESVILLE US-21 FROM SR 1933 TO I-77		
FEASIBILITY STUDIES UNIT		
U-2731	IREDELL CO.	JULY 1991
SCALE: 1" = 0.33 MILES		

FIGURE 2