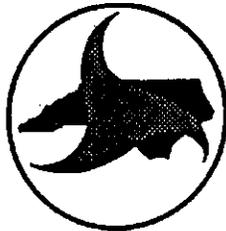


FEASIBILITY STUDY

SR 1500 (Midway Rd.) and SR 1401 (Galloway Rd.)  
from NC 211 to US 17 Bypass  
Brunswick County  
R-3434



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### **I. General Description**

This feasibility study describes roadway improvements along SR 1500 (Midway Rd.) and SR 1401 (Galloway Rd.) from NC 211 to US 17 Bypass in Brunswick County, a distance of 7.5 miles (12.1 km). The project location is shown on Figure 1. The recommended cross-section is a two-lane, 24-foot (7.3-m) roadway with 8-foot (2.4-m) shoulders, including 2-foot (0.6-m) wide paved shoulders, on 100 feet (30.5 m) of right-of-way with no control of access. It is proposed to replace three structures within the project limits.

It is anticipated that there will be 3 residences and 1 business relocated due to this project. The total cost of the project, including construction and right-of-way, is estimated to be \$10,600,000.

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the proposed project including costs, and to identify potential problems that may require consideration in the planning and design phases.

### **II. Need for Project**

The purpose of this project is to provide improved access to and from Oak Island upon completion of a new bridge over the Intercoastal Waterway. This project is supported by the Brunswick County Commissioners, the Southport-Oak Island Chamber of Commerce, the Town of Yaupon Beach, and by local residents.

SR 1500 and SR 1401 are designated as minor rural collectors in the North Carolina Statewide Functional Classification System.

Development along the project is of low density. There are several single family residences in the immediate vicinity of the project. There are also several businesses and churches along SR 1500. Most of the land in the area is primarily of agricultural use.

Both SR 1500 and SR 1401 are currently two-lane roadways with pavement 20 feet (6.1 m) wide and soil shoulders 6 feet (1.8 m) wide. The right-of-way along both roads is approximately 60 feet (18.3 m) wide.

There are three bridges within the limits of the project. Bridge No. 23 is located 0.1 miles (0.2 km) south of the intersection at SR 1500 and SR 1501 (Gilbert Rd.). This bridge spans a branch of River Swamp and was built in 1952. It is 37 feet (11.3 m) long and has a sufficiency rating of 46.2.

Bridge No. 25 carries SR 1500 over River Swamp. This bridge is located 0.1 miles (0.2 km) south of the intersection between SR 1500 and SR 1506 (Lewis Loop Rd.) Built in 1951, this bridge is 81 feet (24.7 m) long and currently has a sufficiency rating of 12.5. This bridge is scheduled for replacement under project B-3308.

Bridge No. 104 is located 0.7 miles (1.1 km) south of the intersection of SR 1500 and US 17 Business (Old Ocean Hwy.). This bridge is 55 feet (16.8 m) long with a clear deck width of 25.4 feet (7.5 m). It was built in 1951 and has a sufficiency rating of 43.0.

Project R-2245 will construct a two-lane facility on new location from the SR 1500 / NC 211 intersection to SR 1190 (East Ocean Hwy.) on Oak Island. This Midway Road Extension will include the construction of a new bridge spanning the Intercoastal Waterway to Oak Island and is scheduled for construction in 1998.

*Traffic.* The 1995 Average Daily Traffic (ADT) along SR 1401 is 3,300 vehicles per day (vpd), and 2,600 vpd on SR 1500. If no improvements are made, the estimated traffic volume on SR 1401 will be 6,300 vpd and 4,900 vpd on SR 1500 in the design year, 2020. If the roadway is improved and SR 1500 is realigned with SR 1401, the 1995 ADT on SR 1401 will increase to 4,000 vpd, while SR 1500 would remain the same. These improvements will create a design year ADT of 7,700 vpd on SR 1401 and 4,900 vpd on SR 1500. Upon completion of the new Oak Island bridge, the projected summer peak ADT in the design year will be 10,000 vpd for SR 1401 and 9,300 vpd for SR 1500. Truck traffic is 5% of daily traffic on SR 1401 and 2% on SR 1500.

*Level of Service (LOS).* Currently, SR 1401 and SR 1500 are operating at LOS B. If no improvements are made, SR 1401 and SR 1500 will operate at LOS C in the design year 2020. If the proposed improvements are made, both roads will operate at LOS B with current traffic. In the design year, SR 1401 will operate at LOS D and SR 1500 will operate at LOS C if improved. At summer peak, the improved roadways will operate at LOS D in the design year 2020.

*Accident Data.* During the three-year period from June 1992 to May 1995, there were 43 accidents reported on SR 1500 and SR 1401 within the project limits. There were 41 injuries were reported as a result of these accidents. The accident rate along SR 1500 and SR 1401 is 285.85 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1994 statewide rate of 362.40 acc/100mvm for rural secondary routes.

### III. Recommendations

It is recommended to improve SR 1500 (Midway Rd.) and SR 1401 (Galloway Rd.) from NC 211 to US 17 Bypass in Brunswick County, a distance of 7.5 miles (12.1 km). The project location is shown on Figure 1. The recommended cross-section is a two-lane, 24-foot (7.3-m) roadway with 8-foot (2.4-m) shoulders, including 2-foot (0.6-m) wide paved shoulders, on 100 feet (30.5 m) of right-of-way with no control of access.

It is proposed to replace Bridges 23, 25, and 104 with structures with clear deck widths of 40 feet (12.2 m). Project B-3308, which replaces Bridge No. 25 over Swamp River, should be incorporated into this project. The cost of replacing these bridges is outlined below.

In order to improve the safety and the design of the roadway, it is recommended to make several adjustments to the roadway alignment. The intersection of SR 1500, SR 1401, and US 17 Business (Old Ocean Hwy.) should be realigned to eliminate the existing dog-leg intersection. It is also recommended to signalize this intersection.

SR 1500 should be realigned to eliminate the sharp curve at the intersection with SR 1511 (McKay Rd.). The roadway should also be realigned in the vicinity of Antioch Church in order to avoid the church's graveyard and improve the curvature of the road. This realignment can be coordinated with the detour of Bridge No. 23. There is also a curve located north of the intersection of SR 1500 and NC 211 that should be realigned.

It is anticipated that 3 residences and 1 business will be relocated due to the project. The total cost is as follows:

Construction	
Roadway .....	\$ 7,200,000
Bridge Structures .....	\$ 1,200,000
Right-of-way.....	\$ 2,200,000
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Total Cost .....	\$ 10,600,000

#### **IV. Other Comments**

This project may require a Section 404 Corps of Engineers Nationwide Permit for construction in the vicinity of each bridge.

B-3308 is currently funded for \$450,000 and is scheduled for right-of-way acquisition in FY 2000 and construction in FY 2001. Construction of this bridge under R-3434 will cost \$300,000 by offsetting the cost of mobilization.

An environmental screening was not conducted for this study.

No special accommodation for bicycles is recommended on this project.

