

FEASIBILITY STUDY

NC 12
US 158 to Ocean Boulevard
in Southern Shores

Dare County

R-3335

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



David G. Modlin, Jr., Ph.D., P. E.
Feasibility Studies Unit Head

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Date

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I. GENERAL DESCRIPTION

This is a feasibility study for the widening of NC 12 from its intersection with US 158 northward for approximately 1.7 miles (2.7 km) to Ocean Boulevard in Southern Shores (See Figure 1). The recommended typical cross-section is a four-lane, 48-foot (14.6 m) shoulder section with 3-foot (0.9-m) paved shoulders on 90 feet (27.3 m) of existing right-of-way. The sandy nature of the soil precludes providing a definable shoulder. However, the existing right-of-way provides sufficient width to accommodate both disabled vehicles and drainage for surface runoff. Estimated cost of the project is \$ 2,090,000 (\$ 390,000 for right-of-way and \$ 1,700,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents recommended cross sections for improvements, general alignments of improvements, and estimated cost of construction and right-of-way. This study attempts to identify any potential environmental, permitting, or other observed issues which deserve consideration in the planning and construction stages.

II. NEED FOR PROJECT

This project was requested by Board Member R. V. Owens. NC 12 is classified as a Rural Major Collector on the Statewide Functional Classification System. On the preliminary Outer Banks Thoroughfare Plan, NC 12 is classified as a Major Thoroughfare. The recommended improvements are needed to relieve traffic congestion on NC 12. The Division will implement improvements to the existing, signalized US 158 - NC 12 intersection during the spring of 1995. The improved cross-section recommended in this study will improve traffic flow through this intersection and reduce the queue length on the southbound approach of NC 12. Access to NC 12 by residents along the widened section should also be improved.

The southern terminus of this study is at the proposed improved intersection of NC 12 with US 158. The northern terminus is at the intersection on NC 12 with Ocean Boulevard, a local Southern Shores street.

Within the study limits, NC 12 is a two-lane, two-way roadway. The cross-section is generally 21 feet (6.4 m) of pavement with 4-foot (1.2-m) shoulders. The soil is sandy and the shoulders are not defined. The existing right-of-way is 90 feet (27.3 m), 60 feet (18.2 m) on the west or sound side of NC 12 and 30 feet (9.1 m) on the east or ocean side. An existing traffic signal is located at the intersection of NC 12 and Chicahawk Trail. There is no control of access along this portion of NC 12.

Estimated 1995 Average Daily Traffic (ADT) on NC 12 is 20,800 vehicles per day (vpd). The estimated 1995 SUMMER volume is 27,800 vpd. By the year of 2020, anticipated ADT is estimated at 39,000 vpd with no Mid-Currituck Sound Bridge. If the Mid-Currituck Bridge is in place by the year 2020, then the ADT is estimated to drop to 28,400. The corresponding estimates of SUMMER volumes on NC 12 are 48,200 vpd and 38,000 vpd.

With the existing facility, traffic currently experiences a level of service (LOS) E. At LOS E the average highway speed is 35 mph or less and generally traffic is queued. With the recommended improvement, current traffic on NC 12 will experience a high LOS D, and an estimated LOS F in the year 2020 assuming construction of the Mid-Currituck Sound Bridge. With the Mid-Currituck Sound Bridge in place, the estimated ADT volume to capacity ratio for the studied section of NC 12 is 1.05 by the year 2020.

During the period from September, 1981, through August, 1994, a total of 59 accidents were reported along the studied section of NC 12. This resulted in an accident rate of 192.4 accidents per 100 million vehicle miles (acc/100mvm), compared to a statewide average of 254.9 acc/100mvm. Rear end accidents accounted for 31% of the accidents; angle accidents, 27%; and left-turn, same roadway, 17%. The proposed improvements should reduce the accident rate.

III. RECOMMENDATIONS

It is recommended that NC 12 be widened from US 158 northward approximately 1.7 miles (2.7 km) to Ocean Boulevard in Southern Shores. The recommended typical cross-section is a four-lane, 48-foot (14.6-m) shoulder section with 3-foot (0.9-m) paved shoulders on 90 feet (27.3 m) of existing right-of-way. The sandy nature of the soil precludes providing a definable shoulder. However, the existing right

of way provides sufficient width to accommodate both disabled vehicles and drainage.

NC 12 is offset within the existing 90 (27.3) feet of right of way. There is 60 feet (18.2 m) of right of way west of NC 12 centerline and 30 feet (9.1 m), east. The recommended widening should be contiguous to and along the west side of existing NC 12. Once the base for the new lanes is built, the entire cross-section should be paved.

The work scheduled by the Division for the existing intersection of NC 12 and US 158 will consider the proposed improvements to NC 12.

Total project cost is estimated at:

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| Right-of-way | \$ 390,000 |
| Construction | \$ 1,700,000 |
| Project Cost | \$ 2,090,000 |

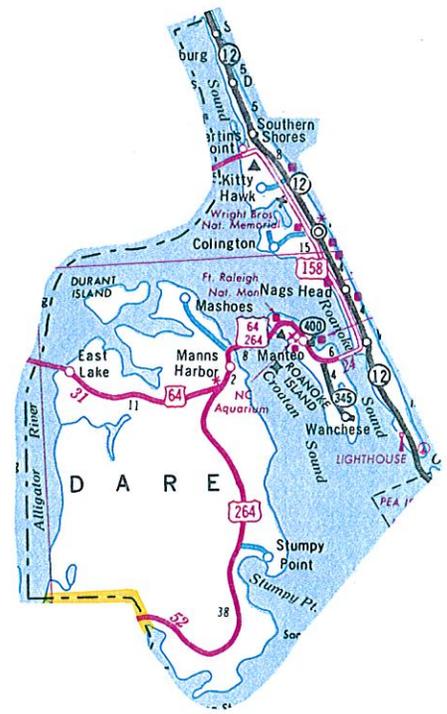
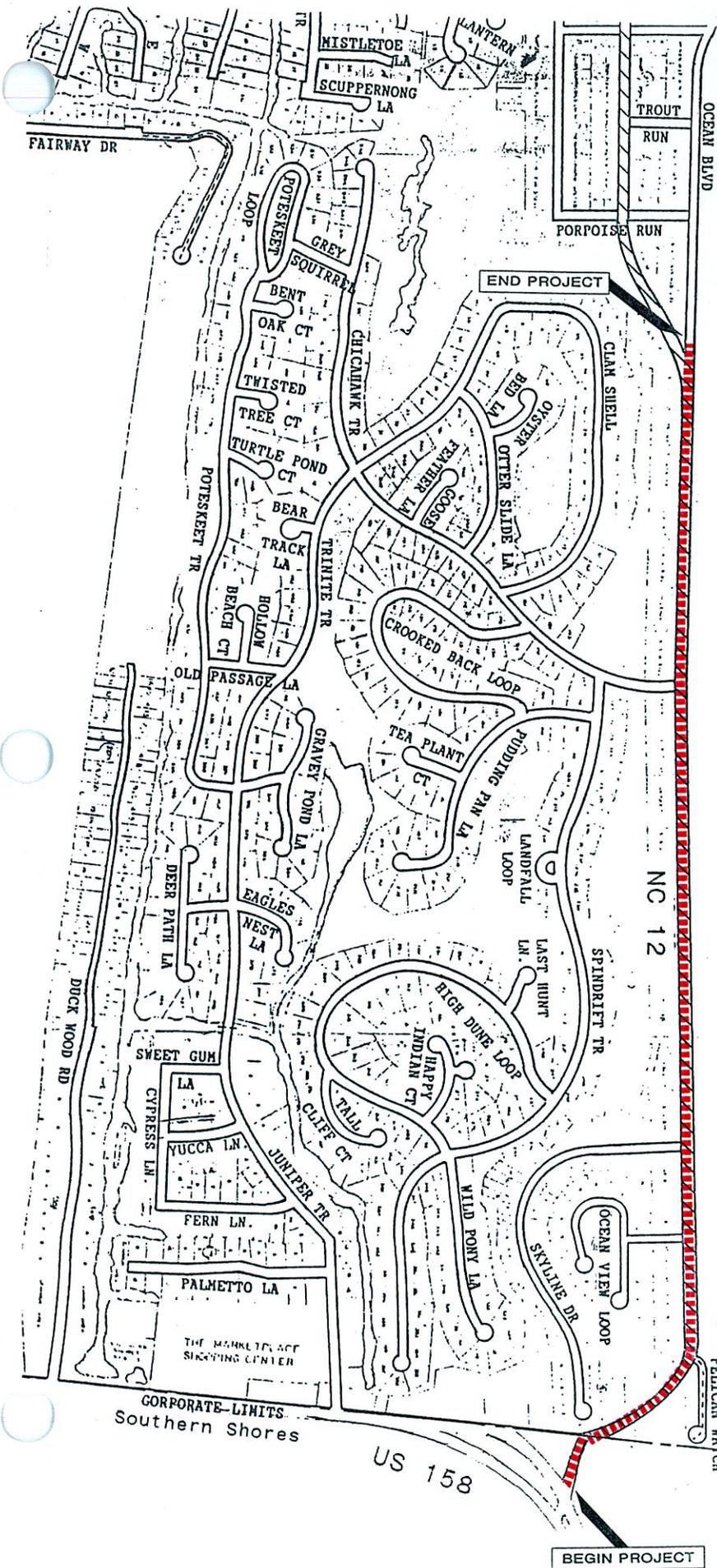
Utility conflicts are expected to be moderate. The right of way estimate includes \$ 100,000 for relocating existing overhead telephone lines. The right of way estimate also includes providing 70 feet (21.3 m) of right of way along the west side of US 12, measured from the eastern edge of the existing pavement, from US 158 to the north property line of Southern Shores Realty. Right of way acquisition would stop at the north property line of Southern Shores Realty.

IV. OTHER COMMENTS AND CONCERNS

It is estimated that this project will not require the relocation of any residences or businesses.

An additional right of way alternate was considered near the intersection of US 158. The primary properties impacted belong to Southern Shores Realty and to a lesser degree Kitty Hawk Hotel Associates. Southern Shores Realty has expressed an interest in having the portion of NC 12 adjacent to their offices be improved to a 5-lane section with a center turn lane. The right of way estimate to provide this accommodation is \$ 572,000, an increase of \$ 182,000 for an additional 10 feet (3.0 m) of right of way. Provision of this center turn lane is not recommended.

The placing of fill on this project will require a Corps of Engineers, Section 404 Permit. In addition, a CAMA permit may be required. No historical or architectural sites are known to be impacted. No public parks are affected.



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| FEASIBILITY STUDIES UNIT | |
| R-3335 | |
| NC 12 | |
| from US 158 to Ocean Boulevard in Southern Shores | |
| Dare County | |
| Division 1 | Figure 1 |