

FEASIBILITY STUDY

Raleigh
Tryon Road (SR 2684) Extension
From Old Garner Road (SR 1004)
To Rock Quarry Road (SR 2542)
Wake County
U-3111

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



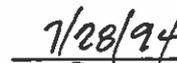
W. J. Watson, P.E.
Highway Planning Engineer



David W. Conner
Highway Planning Engineer



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



Date

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I. GENERAL DESCRIPTION

This is a feasibility study for the extension of Tryon Road (SR 2684) in the Raleigh-Garner area. It is proposed to extend Tryon Road from Old Garner Road (SR 1004) to Rock Quarry Road (SR 2542), a distance of approximately 2.9 miles (4.6 km). Please see Figure 1 for the project location.

The proposed cross section is a 5-lane, curb-and-gutter cross section with opposing travel lanes and a center turn lane. The section is 64 feet (19.5 m) wide from face-to-face of curbs with 8-foot (2.4-m) wide berms. The proposed project will require a 100-foot (30.5-m) wide right-of-way for the entire length.

It is estimated there will be 4 residences and no businesses relocated due to this project.

The total estimated cost including construction and right-of-way is \$ 9,600,000.

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 the study is to describe the problem, recommend a treatment including costs, and identify potential problems that may require consideration in the planning and design phases.

II. NEED FOR PROJECT

This proposed project is a link in a major circumferential route in the City of Raleigh's road network and will enhance traffic flow between the northeast metropolitan area and south Raleigh/north Garner.

Existing Tryon Road is classified as a Minor Arterial in the North Carolina Statewide Functional Classification System. Tryon Road and its extension to Rock Quarry Road are designated a Major Thoroughfare on the Greater Raleigh Urban Area Thoroughfare Plan.

At the west project terminal, Tryon Road forms a T-intersection with Old Garner Road. Old Garner Road is a

2-lane, two-way, 25-foot (7.6-m) wide road (edge-of-pavement to edge-of-pavement) with soil shoulders. On the south (Old Garner Road) leg, the northbound approach has been widened at the intersection to provide a left-turn lane. The existing west leg of the intersection is a 5-lane, curb-and-gutter facility which is 64 feet (19.5 m) wide from face-to-face of curbs. It includes a right-turn lane, a left-turn lane, a westbound left-turn lane, and two lanes exiting the intersection. The east side of Old Garner Road is developed with residences and the west side with state government facilities. The intersection is controlled with a traffic signal.

At the east project terminal, Sunnybrook Road forms a T-intersection with Rock Quarry Road. At the intersection, Rock Quarry Road is a 4-lane, two-way roadway with soil shoulders and is 48 feet (14.6 m) wide from edge-of-pavement to edge-of-pavement. The east leg of the intersection includes a right-turn lane, a through lane, a lane exiting the intersection, and a painted island separating the eastbound and westbound lanes. This leg of the intersection tapers to a 2-lane section approximately 0.4 miles (0.6 km) east of the intersection. The west leg of the intersection includes a through lane, a left-turn lane, and two lanes exiting the intersection. This leg tapers to a 3-lane section approximately 0.2 miles (0.3 km) west of the intersection. The existing Sunnybrook Road leg of the intersection is a 2-lane, 24-foot (7.3-m) wide road with soil shoulders. It has been widened at the intersection to include a right-turn lane, a left-turn lane, and a lane exiting the intersection. The exit lane is separated from the southbound lanes by a raised island. The intersection is stop sign controlled on Sunnybrook Road. At this intersection, the south side of Rock Quarry Road is developed with residences, the northwest corner includes an abandoned automotive garage, and the northeast corner is undeveloped.

The area between project terminals is generally undeveloped woodlands.

It is estimated that if the Tryon Road extension was in place at this time, the current (1994) average daily traffic (ADT) would be approximately 10,300 vehicles per day (vpd). The projected traffic volume for the design year (2015) is approximately 19,100 vpd. Based on projected peak hour traffic volumes, the studied 5-lane roadway segment will initially operate at a level of service (LOS) A and will reach LOS B by the design year. A 2-lane shoulder section would operate at a LOS E in the design year.

III. RECOMMENDATIONS

It is recommended that Tryon Road be extended from Old Garner Road (SR 1004) to Rock Quarry Road (SR 2542), a distance of approximately 2.9 miles (4.6 km). Please see Figure 1 for the project location.

The proposed cross section is a 5-lane, curb-and-gutter cross section with opposing travel lanes and a center turn lane. The section is 64 feet (19.5 m) wide from face-to-face of curbs with 8-foot (2.4-m) wide berms. The proposed project will require a 100-foot (30.5-m) wide right-of-way for the entire length.

At the east project terminal, the south leg of the intersection should include a right-turn lane, a through lane, a left-turn lane, and two lanes exiting the intersection. The east and west legs should include a right-turn lane, a through lane, a left turn lane, and one lane exiting the intersection. The Sunnybrook Road leg of the intersection should include a through/right-turn lane, a left-turn lane, and one lane exiting the intersection.

Existing Sunnybrook Road is a 2-lane road at the east project terminal. The Greater Raleigh Urban Area Thoroughfare Plan includes Sunnybrook Road as a major thoroughfare.

It is recommended that the proposed intersections of Tryon Road with Creech/Sanderford Road and with Rock Quarry Road be signalized.

At the west project terminal, both the north and south legs of Old Garner Road should be widened to provide a through/right-turn lane, a left-turn lane, and a lane exiting the intersection. The existing west leg and the new east leg should each include a right-turn lane, a through lane, a left-turn lane, and two lanes exiting the intersection.

A grade separation is recommended at the proposed crossing with I-40/US 70. Construction of a 68-foot (20.7-m) wide bridge will be required.

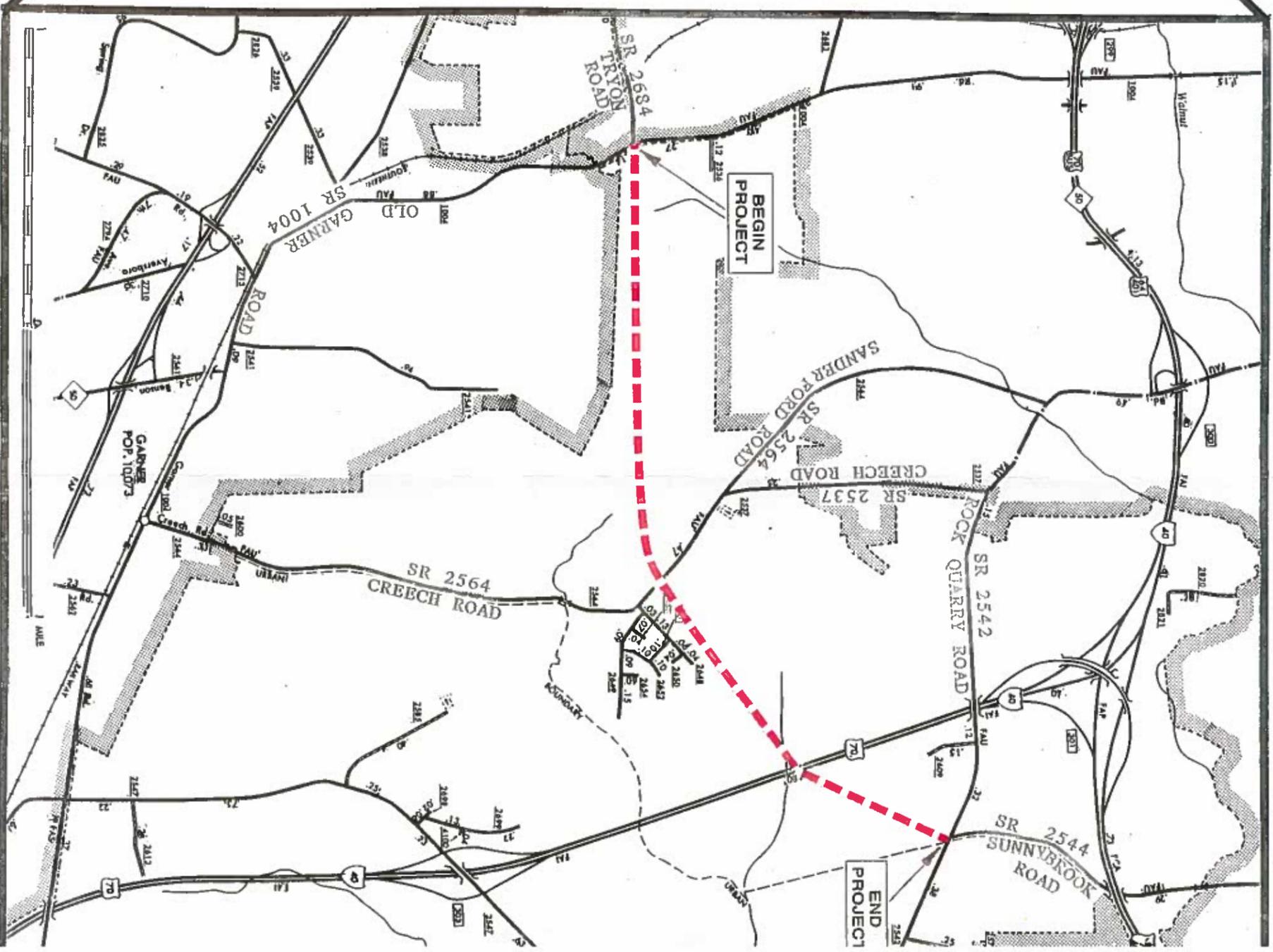
It is estimated there will be 4 residences and no businesses relocated due to this project. The total project cost is \$ 9,600,000 estimated as follows:

Construction	\$ 8,000,000
Right of Way	1,600,000
Total Cost	\$ 9,600,000

V. OTHER COMMENTS

An environmental screening was not conducted for this study; however, at the south project terminal there appears to be some wetlands involvement.

The Office of Bicycle and Pedestrian Transportation has suggested that this project include 14-foot (4.2-m) wide outside lanes to accommodate motorists and bicyclists in the same lane. This section of roadway is not included in the current Raleigh Bicycle Plan and the project connects (at both terminals) to existing facilities which are not designed to facilitate bicycle usage. Therefore, no special provisions for bicycle usage are incorporated into this project. It is estimated the added width to accommodate bicycles would increase the project cost by approximately \$200,000.



FEASIBILITY STUDIES UNIT

FIGURE 1. LOCATION MAP

TRYON ROAD (SR 2684) EXTENSION
FROM OLD GARNER ROAD (SR 1004)
TO ROCK QUARRY ROAD (SR 2542)

RALEIGH, WAKE COUNTY

U-3111 DIVISION 5