

**Dare County Hydrogeological Reports Summary
1972-2006**

1972 – Potential Ground-Water Supplies for Roanoke Island and the Dare County Beaches, North Carolina – Harry Peek, Likie Register, and Perry Nelson:

Study basically identifies the Principal aquifer on the southern end of Roanoke Island to be very favorable for development of large water supplies which should not place excessive stress on the aquifer. Significant detriment to the supply would probably not occur for many years and may never occur. Long range planning and proper development of the aquifer are essential.

1974 – Dare Beaches Water and Sewer Authority Preliminary Engineering Report – Henry Von Oesen and Associates:

The report concludes that the Principal Aquifer on the southern end of Roanoke Island is capable of supply 5 MGal/day from 10 to 14 individual water supply wells pumping 500 – 750 Gal/min.

1975 – Supplement to 1974 Preliminary Engineering Design Report – Henry Von Oesen and Associates:

Purpose of report is to investigate additional cost of providing water to Manteo and expanding the proposed distribution system to include a designated area on the north side of Roanoke Island. (California Area). *Our current distribution area outside of Manteo Town limits.*

1984 Comprehensive Engineering Report on Water System Improvements for County of Dare – Moore, Gardner, and Associates

This study was completed to address the rapid growth development which occurred on the beaches during the early 80's. The study states "The need for water service on the island will increase as demands from the County increases. The majority of the residential supply is provided by individual shallow wells which draw from the fresh water table. This water is susceptible to contamination by flooding and by wastewater discharge from septic tanks.

The Skyco Water Plant is at 90% of its capacity. The study asserted that the local Roanoke Island surface aquifer does not recharge the lower Primary aquifer. The Primary aquifer is recharged from the west on mainland Dare County. Based on their analysis, it is evident water supplies are available to supply 15 Mgal/day to the Dare County Water System. *This is the only study which makes this capacity projection.*

The study also explores future water production sources in Manns Harbor and suggest the construction of a reverse osmosis plant would not be cost effective.

The end result of the recommendations include the installation of two Skyco Wells, a raw water booster pump station, modifications to automate the softeners, updating the fresh pond, and construction of additional ground storage and booster pump station in Kitty Hawk.

1993* - Roanoke Island 1993 Ground Water Monitoring Report/ North Carolina Division of Environmental Health Division of Water Resources – Nat Wilson

The Town of Manteo requested the Environmental Management Commission to investigate the possible over-pumping of the aquifer beneath Roanoke Island supply groundwater to residents of Wanchese and the Dare County Regional Water Supply system.

The State investigated the data and concluded the Skyco Water Plant does draw down the aquifer during high water usage in the summer months. However water levels recover during periods of lower water use. No damage to the aquifer is apparent from 1973 through January 1994 data. Thus adequate groundwater is available for existing uses in the Wanchese area if proper wells and proper pumps are used. (deepwell injector type)

*Subsequent studies were completed for 1994 and a 1995/1996. The third study concluded that aquifer is capable of providing significant portions of Dare County's demand and that future reports by DWR would no longer be necessary. DWR believes that Dare County is committed to protecting their groundwater resources and looks forward to working with them in continuing their monitoring effort.

1998 – Dare County-Wide Hydrogeological Study and Groundwater Resource Evaluation
Missimer International, Inc.

Possibly expand the Skyco Water Plant and wellfield to a peak capacity of 7.0 MGD contingent on the installation of a public water system in Wanchese. Further hydrogeological investigation would be required. Drawdowns by increased pumpage would be mitigated to some extent by the reduction of domestic well pumpage.

2006 Dare County-Wide Hydrogeological Study and Groundwater Resources Evaluation Update – Scott Manahan, CDM, Inc.

Operation of the Skyco wellfield has not adversely impacted water quality conditions or water levels in Manteo based on data obtained from the new well constructed at the Volunteer Fire Department. Further investigation of water quality conditions with the aquifer is recommended to assess the long-term sustainability of withdrawals of this water source.