



Figure 2.2 Road Names in the Pointe Subdivision

The proposed project design includes using a portion of the dredged material (~200,000 cubic yards) to close the existing ebb channel with the balance of the material (830,300 cubic yards) used to nourish the beach along the west end of Bogue Banks. The Town of Emerald Isle presently has permits to nourish 51,100 feet (9.7 miles) of ocean shoreline using offshore Borrow Areas A and B2 shown on Figure 2.3. The Emerald Isle beach nourishment project is part of an island-wide project sponsored by Carteret County. The County project covers approximately 16.8 miles of ocean shoreline and begins at the eastern limits of the Town of Pine Knoll Shores and extends to the west to a point 8,000 feet (1.5 miles) east of Bogue Inlet. Phase 1 of the Bogue Banks Beach Nourishment Project, completed in April 2002, included the shorelines fronting the Towns of Pine Knoll Shores and Indian Beach as well as the County owned shoreline fronting the Village of Salter Path.

The Town of Emerald Isle has divided its segment of the project into two phases. As shown on Figure 2.4, Phase 2 covers the eastern 30,600 feet of the Town's shoreline and Phase 3 the western 20,500 feet. Construction of Phase 2 of the beach nourishment project was initiated in January 2003 and was completed in April 2003. The work was accomplished using a combination of ocean certified hydraulic and hopper dredges using direct pump-out with material being obtained from the offshore borrow areas. A total of 1,819,000 cubic yards of sand has been dredged from the borrow areas and distributed along the 30,600 feet of shoreline associated with Phase 2 of the project. The design template for Phase 3 of the beach nourishment project calls for the placement of 722,000 cubic yards of sand along the 20,500 foot Phase 3 project area.

3. **PLAN FORMULATION:** The primary purpose of the channel relocation project is to create a stable channel that will divert tidal flow away from The Pointe shoreline area of Emerald Isle. Therefore, the design focus is on developing channel dimensions that will capture the majority of the ebb tidal flow through the inlet. An added feature of the design is the closure of the existing channel by constructing a sand dike across the waterway in the vicinity of The Pointe. It is estimated that approximately 200,000 cubic yards of material will be required to construct the dike. The balance of the material removed from the new channel will be used to nourish the west end (Phase 3) of Emerald Isle.

The main concerns with channel relocation are the impacts on the adjacent shoreline of Bear Island (Hammocks Beach State Park), which lies west of the inlet, and the shoreline on the east end of Bogue Banks (Town of Emerald Isle) as well as possible changes in the configuration of the marsh islands located north of the inlet throat. Accordingly, a detailed geomorphic analysis of the inlet was conducted to document recent changes in the inlet and adjacent shoreline associated with varying channel positions and orientations. The results of the geomorphic analysis was used to select the channel position and alignment, as well as to predict changes expected to occur in the inlet (including the adjoining marsh areas) and along the adjacent shorelines if the channel is relocated. Geotechnical investigations were conducted within the possible channel corridor to determine the characteristics of the material that would be removed to reposition the channel and determine its compatibility for use as beach nourishment along