APPENDIX B - COASTAL ZONE MANAGEMENT CONSISTENCY

FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES

BROWARD COUNTY SHORE PROTECTION PROJECT
SEGMENTS II AND III
BROWARD COUNTY, FLORIDA

1. Chapter 161, Beach and Shore Preservation. The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed plans and information will be submitted to the state in compliance with this chapter.

2. Chapters 186 and 187, State and Regional Planning. These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. It's purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: The proposed project has been coordinated with various Federal, State and local agencies during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the shorefront development and infrastructure.

3. Chapter 252, Disaster Preparation, Response and Mitigation. This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The proposed project involves the placement of beach compatible material onto an eroding beach as a protective means for residents, development, and infrastructure located along the Atlantic shoreline within Broward County. Therefore, this project would be consistent with the efforts of Division of Emergency Management. Appropriate mitigation for unavoidable impacts to nearshore hardbottom habitat has been proposed.

4. Chapter 253, State Lands. This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: The proposed beach nourishment would create increased recreational beach and potential sea turtle nesting habitat. No seagrass beds are located within the areas proposed to receive fill or within the five proposed offshore borrow areas. The proposed project would comply with the intent of this chapter.

5. Chapters 253, 259, 260, and 375, Land Acquisition. This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: Since the affected property already is in public ownership, this chapter does not apply.

6. Chapter 258, State Parks and Aquatic Preserves. This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: A 1.5 mile section of beach between R-86 and R-94 at John U. Lloyd State Park has already been restored through nourishment with a periodic renourishment interval of 6 years. Biological monitoring of the J. U. Lloyd Beach Renourishment of 1989 revealed that although major faunal shifts occurred in the softbottom communities within the toe of fill site of the beach nourishment area, no pattern of hardground organism abundance relative to dredge or fill activities was observed (Dodge et al., 1991). Coordination with the Ranger of the John U. Lloyd State Park revealed that beach nourishment was needed to combat erosion near the parking areas.

Approximately 0.9 acres of low-profile hardbottom dominated by macroalgae and blue-green algae will be directly buried at the time of construction in John U. Lloyd State Park. This habitat exhibits a high level of nutrification, evidenced by the extensive coverage of macroalgae and blue-green algae and depauperate faunal communities. Anthropogenic influences upon this habitat are likely the result of Port Everglades Inlet output of nutrient and freshwater flow, creating turbidity and sudden temperature and salinity fluctuations. Given the possible degradation of this habitat by Port Everglades Inlet-related influences, alternative replacement habitat can be created which provides higher faunal utilization. Therefore, no adverse impacts to irreplaceable hardbottom biological resources are expected. No other State Park or aquatic preserves would be directly or indirectly impacted by the proposed Broward County Shore Protection Project.

Segment II of the project area includes a 0.5 mile section of beachfront located in Hugh Taylor Birch State Park. Hugh Taylor Birch State Park is located approximately five miles north of Port Everglades between DEP monuments R-67 and R-69.5. The Park contains one of the last significant remnants of a maritime hammock in Broward County. Park visitors can access the beach, although the shoreline is not actively managed by the Park. Beach renourishment has not occurred in the section of beach, but will in the near future with the Broward County Renourishment Project.

Approximately 0.57 acres of macroalgae dominated hardbottom exists in the vicinity of R-67 adjacent to the Park. Broward County has included this area of impact in their mitigation plan which has been accepted by Federal and State regulatory authorities. There are no other state parks or aquatic preserves that will be directly or indirectly impacted by this proposed project.

7. Chapter 267, Historic Preservation. This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: No significant impacts to historical properties are expected from construction of the proposed Broward County Shore Protection Project based upon the results of this coordination. A magnetometer survey of the proposed borrow areas for the Broward County Shore Protection Project was conducted in December 1996/January 1997 by Coastal Planning & Engineering (Baer, 1999). The survey located twenty-seven (27) magnetic anomalies, sixteen (16) of which were located in or immediately adjacent to the original seven, proposed borrow areas. SCUBA divers investigated nineteen (19) of the 27 magnetic anomalies, three of which were not visually identified. In January 2000, the State Historic Preservation Officer specified that the magnetic anomalies not visually identified during the survey be ground-truthed prior to dredging activities (Letter dated January 26, 2000, see Appendix C).

Underwater archaeological SCUBA investigations and ROV video inspection were conducted during the first half of January 2001 (Gifford, 2001) to locate, physically examine, and document each of the previously undescribed anomalies according to National Register criteria. Results of the 2001 survey indicated that thirteen (13) of the fifteen (15) magnetic anomalies were modern debris. Two of the anomalies were identified as relatively large anchors of probable post-1950 vintage. Four anomalies were identified as modern wire rope cable; and two anomalies were identified as large modern metal objects resembling a pontoon boat and a steel tube. The remaining five anomalies are modern debris described as “small and innocuous” (Gifford, 2001). Only one of the anomalies, Anomaly A27, the bow section of the *S.S. Copenhagen* located approximately 300 feet north of

Borrow Area VI, represents a known submerged cultural resource. In a letter dated June 20, 2001, the State Historic Preservation Officer recommended that three of the anomalies be avoided by establishing a 100 foot buffer around them, and that the *S.S. Copenhagen* bow be protected by establishment of a 1500 foot buffer around the center of the vessel. After further review, the Division of Historical Resources State Historic Preservation Officer approved a 300 foot buffer around the *S.S. Copenhagen* bow (letter of August 20, 2001 from Dr. Janet Snyder Matthews, SHPO, Tallahassee to Mr. Stephen Higgins, Department of Planning and Environmental Protection, Broward County- see Appendix C). The project will be consistent with the goals of this chapter.

8. Chapter 288, Economic Development and Tourism. This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The proposed beach nourishment would provide more space for recreation and the protection of recreational facilities along the receiving beach. This would be compatible with tourism for this area and therefore, is consistent with the goals of this chapter.

9. Chapters 334 and 339, Public Transportation. This chapter authorizes the planning and development of a safe balanced and efficient transportation system.

Response: No public transportation systems would be impacted by this project.

10. Chapter 370, Saltwater Living Resources. This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and other studies and research.

Response: The proposed project is expected to impact a gross amount of up to 13.6 acres of sand and nearshore hardground by renourished sand. The actual net amount of hardbottom to be covered is 10.1 acres. Impacts during construction will result in the direct burial of approximately 2.0 acres: 0.9 acres of low profile hardbottom in John U. Lloyd State Park and 1.1 acres of wormrock habitat in Hollywood in Segment III. No hardbottom will be directly buried at the time of construction in Segment II. The total impact to nearshore hardbottom habitat in Segment II is 6.0 acres, and will be the result of the gradual transition of the construction beach to the more stable equilibrium profile. These impacts represent approximately 0.2% of the hardbottom in the 10 to 17 foot range in Segment II. The total impact to nearshore hardbottom in Segment III is 7.6 acres, which includes 2.0 acres of direct impact and 4.6 acres of impact resulting from beach fill equilibration. These impacts represent approximately 0.1% of the nearshore hardbottom area in Segment III.

Nearshore hardbottom habitat in the project area vicinity is determined to be significant as defined by the U.S. Fish and Wildlife Service's Mitigation Policy. The nearshore hardbottom habitats in Broward County are considered Resource Category 2 habitats, and no net loss of in-kind habitat value is recommended (U.S. Fish & Wildlife Service Final Coordination Act Report, June 2002, Appendix C). The 2001 nearshore biological investigations indicate that suitable replacement habitat can be created for impacted epibenthic species inshore of the equilibrium toe of fill. Following the goals of the Service's Mitigation Policy and guidelines of the South Atlantic Fishery Management Council (SAFMC) for habitat mitigation, Broward County is proposing the creation of 13.6 acres of nearshore mitigative reef using limestone boulders as compensation for resource losses. The eleven placement sites are located inshore of the nearshore hardbottom, offshore of the predicted equilibrium toe of fill, and in water depths of 15 to 20 feet. A 50 foot buffer from all significant nearshore hardbottom will be maintained during boulder placement. The proposed time frame for construction of the boulder reefs is to begin deployments at Mitigation Area 8 offshore of a DEP monument R-103 beginning in spring, 2003. Segment III mitigative artificial reef deployment will be carried out from April 1 through September 30. Areas not completed in 2003 will be completed in 2004, but it is anticipated that all Segment III deployments will be completed in 2003. Segment II mitigative artificial reef deployment will occur prior to commencement of beach fill activities.

A nearshore turbidity monitoring program with a plume mixing zone of 150 meters (492 feet) from the discharge site will be implemented to address turbidity impacts during project construction. The potential exists for long-term, secondary impacts to hardbottom communities adjacent to the equilibrium toe of fill resulting from sedimentation and/or chronic turbidity generated from the advancement of the beach swash zone. In order to assess the potential for a gradual shift in community structure and corresponding reduction in biodiversity related to sedimentation impacts, a long-term, nearshore hardbottom monitoring program will be implemented. A network of beach fill stations and control stations will be established offshore of the expected equilibrium toe of fill to assess changes in epibenthic community structure and fish utilization and provide long-term sedimentation data. A four-year monitoring program will be established to assess secondary impacts and evaluate possible shifts in community structure and biodiversity (See Appendix E for the Biological Monitoring Program).

The Corps and Broward County have demonstrated their commitment to avoidance and minimization of impacts to offshore hardbottom communities deemed significant by the U.S. Fish & Wildlife Service's Mitigation Policy. These avoidance efforts include elimination of two borrow areas from the project design due to the discovery of significant biological resources within and adjacent to the proposed borrow areas. The boundaries of the remaining five borrow areas have been redefined to avoid small patch reef formations, rubble areas with dense reef benthic assemblages, and areas containing seagrass (*Halophila decipiens*). The revised buffer zones vary between approximately 200 feet to the inshore reef edge to more than 1,200 to the offshore reef edge. The average buffer on the inshore edge ranges from 235 feet for Borrow Area VI to 375 feet for Borrow Area III. The average buffer on the offshore edge ranges from 512 feet for Borrow Area IV to 718 feet for Borrow Area II.

During project construction, turbidity monitoring will be conducted by Broward County. Past monitoring of Broward County nourishment projects (John U. Lloyd State Park 1991 and Hollywood/Hallandale 1995) did not document any turbidity and sedimentation rates on adjacent hardbottom communities that produced statistically significant long-term resource affects directly attributable to nourishment actions (Dodge et al., 1991, 1995). However, to minimize the potential impacts of turbidity and sedimentation observed during Miami-Dade County projects, Broward County has proposed a detailed sedimentation plan adjacent to the borrow areas which incorporates real time measurement of accumulated sediments and observations of biological stress indicators for stony and soft coral species (See Appendix E for the reef edge sedimentation monitoring plan).

Preventative measures to minimize potential sedimentation impacts to hardbottom communities are included in the County's monitoring plan. Observations of biological stress indicators will be used to evaluate the level of stress upon the epibenthic communities and to provide a check for the proposed sedimentation monitoring protocol. The intent of the histological tissue analyses of the corals is to provide a mechanism to judge the effectiveness of the sediment rate value and to provide a scientifically valid justification for changes in sedimentation rate monitoring.

Expected direct impacts to offshore hardbottom habitat are restricted to the hardbottom areas within the eight proposed pipeline corridors. Although eight corridors are proposed, one is an alternative location at R-120 or R-121 in Hollywood. It will be determined at the time of project construction if the alternative pipeline is necessary for fill to the southernmost limit of the project. The eight proposed pipeline corridors have been documented with DGPS integrated digital video. Bottom features were mapped from the video tracklines to identify the least impactive corridors feasible, given the limitations of the dredging equipment. Prior to construction Broward County DPEP staff will determine the least impactive routes through these corridors for actual pipeline placement, and site the pipelines through these routes using buoys for demarcation of routes. Pumpout terminal anchors or spuds will be sited by Broward County DPEP

SCUBA divers such that anchors or spuds are located entirely in sand. Weekly monitoring of all pipelines to shore will be performed to check for sand movement and leaks. Continuous leak monitoring will be required by the dredging contractor through fluctuations in pressure through the pipelines. A detailed mitigation plan has been developed to compensate for unavoidable impacts to nearshore hardbottom habitat.

Hardbottom impacts will be minimized through the use of pipeline support using either tires and/or H frames when needed. Impacts from pipeline placement have been estimated at 190 square feet per corridor. This damage estimate is based on a 2,500 foot distance to shore, a 50 percent hardbottom coverage with a 15 percent resource damage. For seven corridors, hardbottom resource impacts are estimated to be 1,330 square feet (0.03 acres). If eight corridors are necessary for project construction, hardbottom impacts would increase by 190 square feet to 1,520 square feet. Mitigation for hardbottom communities from pipeline placement is proposed (See Appendix F – Nearshore Hardbottom Mitigation Plan).

The potential for pipeline impacts from sand leakage at the joints during operation and from accident breakage of the pipe exists during project construction. Pipelines will be visually surveyed weekly during operation to check for sand leakage. No significant impacts are expected to occur from pipeline leakage or accidental breakage. The potential exists for direct mechanical damage to offshore hardbottom communities adjacent to the borrow areas during dredging operations. Proper controls and procedures will be used to avoid mechanical damage; and no significant impacts are expected to occur from the mechanical operation of the dredge. Construction specifications proposed by the Corps and Broward County include the use of recording and real-time precision electronic location equipment during dredging operations.

An extensive area of live staghorn coral (*Acropora cervicornis*) has been identified on the seaward edge of the first reef offshore of Fort Lauderdale (in the vicinity of FDEP monument R-66). This area of hermatypic coral coverage is located approximately 1,500 from shore, and is approximately 700 feet seaward the equilibrium toe of fill. This habitat is considered as Resource Category I by the U.S. Fish & Wildlife Service. No loss of habitat value is recommended for Resource Category I habitats, as these unique areas cannot be replaced. No impacts to this community are anticipated from project construction. The pipeline corridor originally proposed at R-66.5 was relocated to approximately 200 feet south of R-68 to avoid impacts and provide adequate buffers to irreplaceable resources within

this area. Appropriate buffer distances will protect this area from the proposed Fort Lauderdale pipelines. Potential secondary impacts from turbidity are also not anticipated due to its distance offshore of the equilibrium toe of fill. In order to address any potential, long-term turbidity impacts to this community, two monitoring stations will be located.

11. Chapter 372, Living Land and Freshwater Resources. This chapter establishes the Game and Freshwater Fish Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: The project will have no effect on freshwater aquatic life or wild animal life.

12. Chapter 373, Water Resources. This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: This project does not involve water resources as described by this chapter.

13. Chapter 376, Pollutant Spill Prevention and Control. This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. A spill prevention plan will be required.

14. Chapter 377, Oil and Gas Exploration and Production. This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This project does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore, this chapter does not apply.

15. Chapter 380, Environmental Land and Water Management. This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development.

Response: The proposed renourishment project will not have any regional impact on resources in the area. Therefore, the project is consistent with the goals of this chapter.

16. Chapter 388, Arthropod Control. This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The project will not further the propagation of mosquitoes or other pest arthropods.

17. Chapter 403, Environmental Control. This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Regulation (now a part of the Florida Department of Environmental Protection).

Response: A Draft Environmental Impact Statement addressing project impacts has been prepared and reviewed by the appropriate resource agencies including the Florida Department of Environmental Protection. Environmental protection measures will be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources will occur. Water Quality Certification will be sought from the State prior to construction. The project complies with the intent of this chapter.

18. Chapter 582, Soil and Water Conservation. This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: The proposed project is not located near or on agricultural lands; therefore, this chapter does not apply.