

APPENDIX P

DRAFT PIPELINE MONITORING PLAN

PIPELINE MONITORING PLAN

St. Lucie County

SOUTH COUNTY BEACH AND DUNE RESTORATION PROJECT

A. INTRODUCTION

This plan is for use during construction of the St. Lucie County, South County Beach and Dune Restoration Project in the event the offshore borrow area (Area 5) is used for construction of the Project. Fill material from Area 5 will be excavated and transferred to the beach by a hopper dredge with pump-out capabilities. Fill will be offloaded from the dredge hydraulically via pipelines on the ocean bottom. Six potential pipeline corridors were initially identified, based upon 2008 aerials. These six proposed pipeline corridors were diver-surveyed in 2009 which resulted in the elimination of one proposed corridor at R-101 due to a 62m (203 ft) extent of hard bottom in the nearshore region of that proposed pipeline corridor. Five pipeline corridors are currently proposed (at R-89.5, R-100, R-104, R-108 and R-114). The intent of the Pipeline Monitoring Plan is to ensure that the placed pipeline location is recorded and if the pipeline moves and results in impacts to hardbottom, impacts would be immediately quantified and corrective actions will be immediately undertaken.

B. PIPELINE CORRIDOR MONITORING

Pre-Placement of Pipelines

A pre-construction diver-survey with video will be conducted along the length of each of the permitted pipeline corridors within 30 days but no later than 48 hours prior to pipeline placement. This will serve as a basis for identification of any hard-bottom areas within the pipeline corridors where special attention shall be paid by the CONTRACTOR during the placement of the pipeline and pipeline collars (or similar type of stand-off devices) to avoid impact to these areas. The CONTRACTOR shall demonstrate to the COUNTY and ENGINEER prior to deployment of pipeline within each corridor that the CONTRACTOR has documented bottom conditions and avoided impacts to hard bottom to the maximum extent possible. If the CONTRACTOR encounters hardbottom or bottom conditions that differ significantly from those characterized by the pre-construction video transects conducted within 30 days of commencement of construction, the CONTRACTOR shall immediately notify the COUNTY and ENGINEER prior to placing pipeline within the corridor. If deemed necessary by the COUNTY and the ENGINEER, the appropriate permitting agencies will be notified and a meeting shall be scheduled with the CONTRACTOR, COUNTY and ENGINEER to determine the appropriate plan of action. Once the appropriate plan of action has been developed, the CONTRACTOR shall proceed with strict adherence to the plan of action. Upon placement of the pipeline within the approved pipeline corridor, the CONTRACTOR shall mark the pipeline location in a manner such as stakes, markers, GPS coordinates or other method (as approved by the ENGINEER and/or COUNTY) at each joint along the pipeline. The marks shall be used to determine if the pipelines have shifted following placement.

During Construction

Once the pipeline is in place and the pumping of fill material commences, the CONTRACTOR shall deploy divers once daily during the pumping process to conduct visual observation to ensure (a) the pipeline has not moved and resulted in impacts to hardbottom which were not predicted and (b) each joint is sealed and not allowing significant leakage of fill material which may result in sedimentation of adjacent hardbottom or excessive turbidity in the water column.

In the event the CONTRACTOR's divers encounter a pipeline that has moved and resulted in impacts to adjacent hardbottom or is showing signs of significant leakage on adjacent hardbottom, the CONTRACTOR shall immediately halt use of the pipeline and notify the ENGINEER and COUNTY. The CONTRACTOR shall confer with the ENGINEER and COUNTY to document and quantify impacts (if any) associated with the moved pipeline or the leakage of fill material. Significant leakage shall be characterized as any quantifiable impacts to hardbottom which would not be considered temporal in nature. The CONTRACTOR shall identify a plan of action to correct the problem. Depending upon the nature of the problem, the CONTRACTOR may plan to move the pipeline and/or develop a method for removal of fill material from hardbottom while insuring zero impact to adjacent hardbottom. The CONTRACTOR shall obtain approval from the ENGINEER and/or COUNTY prior to execution of the plan. Upon approval from the ENGINEER and/or the COUNTY, the CONTRACTOR shall execute the plan to correct the problem(s).