

ATTACHMENT NO. 34
WATER QUALITY MONITORING PLAN

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For the beach construction portion of the proposed project, the applicant is proposing the same water quality monitoring plan outlined in the existing FDEP Permit Modification No. 0270032-004-JN for the Lido Key Beach Nourishment Project that is currently under construction. For the groin construction, water quality monitoring is not proposed since it is not expected that any phase of construction will have any substantial change to water quality. Temporary suspension of sediment particles in the water column may occur, but no significant turbidity levels greater than 29 NTU's above background levels are foreseen.

MONITORING REQUIRED FOR BEACH CONSTRUCTION:

Turbidity shall be monitored and reported as follows:

- Units: Nephelometric Turbidity Units (NTUs).
- Frequency: Every six hours during all daytime dredging and sand placement operations.
- Location: Background: At mid-depth, clearly outside the influence of any artificially generated turbidity plume.

Dredge Site: approximately 300 meters in the opposite direction of the prevailing current flow.

Beach Site: approximately 500 meters upcurrent of the point where the return water from the dredged discharge reenters the Gulf of Mexico, and the same distance offshore as the associated compliance sample.

Compliance: At mid-depth, within the densest portion of any visible turbidity plume generated by this project.

Dredge Site: Samples shall be collected 150 meters downcurrent from the dredge head, in the densest portion of any visible turbidity plume.

Beach Site: Samples shall be collected where the densest portion of the turbidly plume crosses the edge of the mixing zone, which measures 150 meters downcurrent from the point where the return water from the dredged discharge reenters the Gulf of Mexico. Note, see criteria (below) for extending the beach mixing zone.

The compliance locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. If monitoring reveals turbidity

levels at the compliance sites that are greater than 29 NTUs above the corresponding background turbidity levels, or the value established in the permit as natural variability above background within the OFW, construction activities shall **cease immediately** and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. Any such occurrence shall also be immediately reported to the JCP Compliance Officer at JCPCCompliance@dep.state.fl.us and the Department's Southwest District office in Sarasota.

If 2 exceedances of the turbidity standard occur per month at the edge of the 150-meter mixing zone, in the offshore direction, the offshore dimension of the mixing zone would be increased to 300 meters. If 2 exceedances occur per month at 150 meters in the alongshore direction, the alongshore dimension of the mixing zone will be increased to 500 meters. If 2 additional exceedances occur per month at 500 meters in the alongshore direction, the alongshore dimension of the mixing zone will be increased to 1,000 meters. These increases shall not take effect until the JCP Compliance Officer has been notified of the change by email.

In addition to the compliance monitoring required above, the following turbidity monitoring shall be conducted within the expanded mixing zone to establish the appropriate size of mixing zone for future nourishment events, if the mixing zone is larger than 150 meters:

Frequency: Once each day during daylight construction, at approximately mid-day.

Location: Background: At mid-depth, at least 500 meters upcurrent from the point where the return water from the dredged discharge reenters the Gulf of Mexico, and clearly outside the influence of any turbidity generated by the project, taken at a distance offshore to correspond with the distance of the intermediate measurements sites (listed below).

Intermediate measurement sites: At mid-depth, in the densest portion of the turbidity plume, at 150 meters, 300 meters, 500 meters and 750 meters downcurrent from the point where the return water from the dredged discharge reenters the Gulf of Mexico, if any of those distances are located within the beach mixing zone that is in effect at the time.

Weekly summaries of all monitoring data (including data from the intermediate stations, which is not used for compliance) shall be submitted to the JCP Compliance Officer of the Bureau of Beaches and Coastal Systems and to the Southwest District Office within one week of collection, with documents containing the following information: (1) permit number; (2) dates of sampling and analysis; (3) a statement describing the methods used in collection, handling, storage and analysis of the samples; (4) a map indicating the sampling locations; (5) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection, calibration of the meter and accuracy of the data.

Monitoring reports shall also include the following information for each sample that is taken:

- (a) time of day samples taken;
- (b) depth of water body;
- (c) depth of sample;
- (d) antecedent weather conditions;
- (e) tidal stage and direction of flow;
- (f) wind direction and velocity; and
- (g) water temperature.

Monitoring reports shall be submitted to the JCP Compliance Officer and to the Department's Southwest District office. When submitting this information to the Department, at the top of each page or as a cover page to the submittal, the following will be included: "This information is provided in partial fulfillment of the monitoring requirements in Permit No. XXXXXXXX-XX-XX, for the Lido Key Hurricane and Storm Damage Reduction Project."