

**PALM BEACH COUNTY  
BOARD OF COUNTY COMMISSIONERS**

**AGENDA ITEM SUMMARY**

Meeting Date: September 14, 2010

( x ) Consent

( ) Regular

( ) Workshop

( ) Public Hearing

Department

Submitted By: Environmental Resources Management

Submitted For: Environmental Resources Management

**I. EXECUTIVE BRIEF**

**Motion and Title:** Staff recommends motion to authorize: the County Administrator or his designee to enter into a Consent Order with the State of Florida, Department of Environmental Protection (DEP) to reach settlement of certain matters at issue between the DEP and the County on the South Lake Worth Inlet (SLWI) Projects.

**Summary:** The Consent Order was developed to clarify conditions of a Joint Coastal Permit pertinent to the construction of the SLWI Projects. The Consent Order format, as opposed to a permit modification, is being utilized because most of the construction is already completed. District 4 (SF)

**Background and Justification:** The DEP issued Joint Coastal Permit No. 0221058-001-JC on October 26, 2004 to demolish the old sand transfer plant and construct and operate a new plant at SLWI. The project was first bid in 2007, re-bid in late 2008, and construction began in early 2009. Because there is one (1) permit for the plant construction and another permit for the jetty rehabilitation, there were conflicting interpretations of permit conditions between the DEP and the County. This Consent Order describes the consensus on past and future work in the area.

**Attachments:**

1. Location Map
2. Consent Order

Recommended by:

Beth Miller  
Department Director

8-27-10  
Date

Approved by:

Adrian Lee  
County Administrator

8/31/10  
Date

## II. FISCAL IMPACT ANALYSIS

### A. Five Year Summary of Fiscal Impact:

Fiscal Years	2010	2011	2012	2013	2014
Capital Expenditures	_____	_____	_____	_____	_____
Operating Costs	_____	_____	_____	_____	_____
External Revenues	_____	_____	_____	_____	_____
Program Income (County)	_____	_____	_____	_____	_____
In-Kind Match (County)	_____	_____	_____	_____	_____
 NET FISCAL IMPACT	_____	_____	_____	_____	_____
 # ADDITIONAL FTE POSITIONS (Cumulative)	_____	_____	_____	_____	_____

Is Item Included in Current Budget?                      Yes \_\_\_\_\_ No \_\_\_\_\_

Budget Account No.:      Fund \_\_\_\_\_ Department \_\_\_\_\_ Unit \_\_\_\_\_ Object \_\_\_\_\_

Program \_\_\_\_\_

### B. Recommended Sources of Funds/Summary of Fiscal Impact:

There is no fiscal impact.

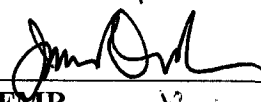
### C. Department Fiscal Review:

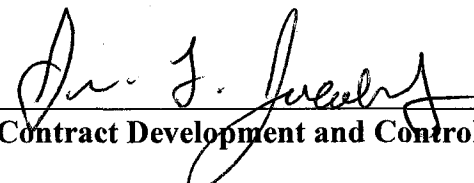


## III. REVIEW COMMENTS

### A. OFMB Fiscal and /or Contract Dev. and Control Comments:

*Fiscal impact is determinable*

  
\_\_\_\_\_  
OFMB      *13 3/23/10*      *2/15/10*

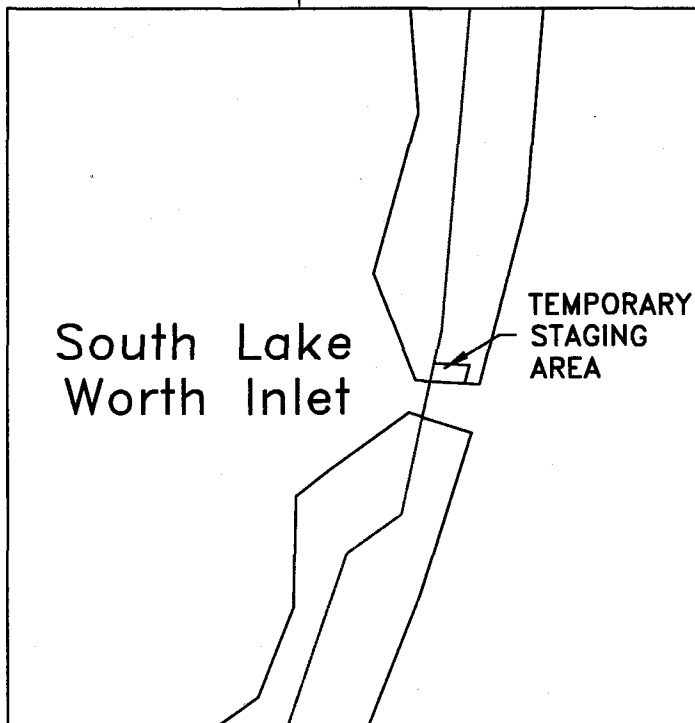
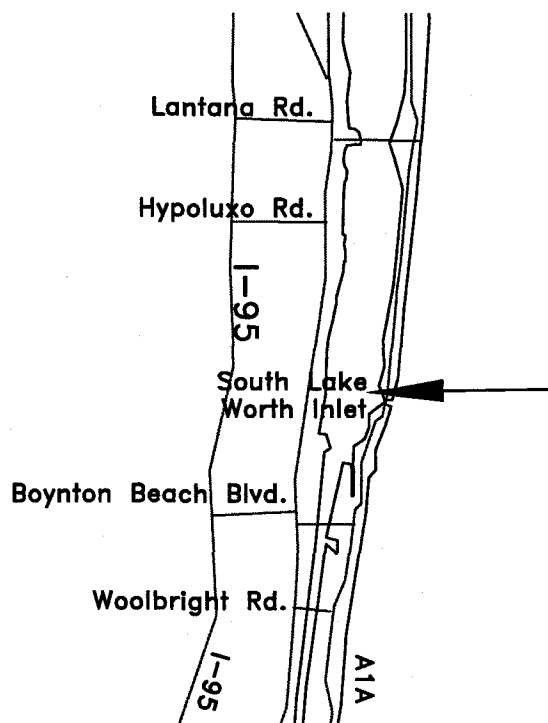
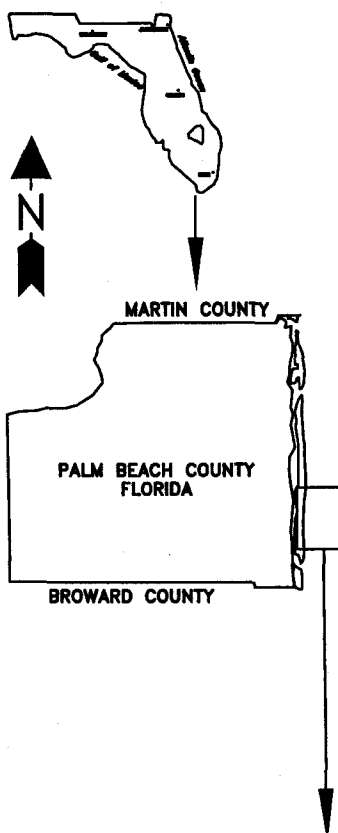
 *8/24/10*  
\_\_\_\_\_  
Contract Development and Control

### B. Legal Sufficiency:

  
\_\_\_\_\_  
Assistant County Attorney

### C. Other Department Review:

\_\_\_\_\_  
Department Director



3



PALM BEACH COUNTY  
DEPARTMENT OF  
ENVIRONMENTAL  
RESOURCES  
MANAGEMENT

# LOCATION MAP SOUTH LAKE WORTH INLET PROJECTS

SCALE: NTS

08/10/10



Attachment 2

BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL  
PROTECTION,  
IN THE BUREAU OF BEACHES  
AND COASTAL SYSTEMS,

vs.

OGC FILE NO. 10-1044

PALM BEACH COUNTY  
DEPARTMENT OF ENVIRONMENTAL  
RESOURCES MANAGEMENT

CONSENT ORDER

This Consent Order ("Order") is entered into between the State of Florida Department of Environmental Protection (Department) and Palm Beach County Environmental Resources Management ("County") to reach settlement of certain matters at issue between the Department and the County.

The Department and the County agree to the following:

1. The Department is the administrative agency of the State of Florida having the power and duty to protect Florida's air and water resources and to administer and enforce Chapters 161 and 373, Florida Statutes ("Fla. Stat."), and the rules promulgated thereunder, Florida Administrative Code ("Fla. Admin. Code") Titles 62 and 628. The Department has jurisdiction over the matters addressed in this Order.
2. The County is a local government as defined in Section 161.021(10), Fla. Stat., and a governmental agency within the meaning of Section 161.054(1), Fla. Stat.
3. On October 26, 2004, the Department issued Joint Coastal Permit Number 0221058-001-JC ("Permit") to the County to reconstruct and operate the sand transfer plant ("Plant") located at South Lake Worth Inlet ("Inlet").
4. Construction phase of the Permit authorized activities including:
  - a) Removal of the existing Plant (above grade of the jetty);

Palm Beach County  
Department of Environmental Resources Management  
OGC File No. 10-1044

- b) Construction of a new Plant with the following:
  - I. A larger pump house that extends north of the remaining Plant foundation;
  - II. A longer vacuum arm with an increased pumping capacity; and
  - III. Replacement of the existing 10-inch discharge pipeline, which extends from the pump house to the disposal site, with a 12- inch pipeline.

5. Operation phase of the Permit authorized activities including bypassing approximately 60,000 cubic yards of beach-quality sand per year around the Inlet to the shoreline on the down-drift side of the Inlet.

6. On May 26, 2009, the Department conducted an inspection of the Inlet and observed what it alleges to be the following unauthorized activities occurring at the North Jetty, approximately 250 feet to 320 feet south of Department reference monument R-151, in Palm Beach County, Florida ("Impact Site"):

- a) Construction-related, heavy equipment traveling over and on native dune vegetation located at the Impact Site between the Plant and the Plant's parking area, but not a large stand of mature Seagrasses that was previously roped off by the County ("Stand of Seagrasses"); and
- b) Supplies being stored on native dune vegetation located at the Impact Site between the Plant and the Plant's parking area, but not in the Stand of Seagrasses.
- c) For its part, the County believes that the above-described activities were authorized.

7. On August 14, 2009, the Department issued the County a letter titled "Warning Letter of Possible Permit Violations and Require Dune Restoration Plan" ("Warning Letter") notifying the County of the unauthorized dune and vegetation damage and requiring the County to submit a Dune Restoration Plan for approval by the Department.

8. On August 28, 2009, Department staff received a Minor Permit Modification request from the County to change the Plant design authorized by the Permit and information concerning the County's proposed Dune Restoration Plan.

5

Palm Beach County  
Department of Environmental Resources Management  
OGC File No. 10-1044

9. On November 25, 2009, the Department approved the County's Minor Permit Modification.

10. Since August 28, 2009, the Department worked with the County to develop the Inlet Dune Restoration Plan, which is attached hereto and incorporated herein as Attachment A.

11. The Inlet's North and South Jetties are currently being rehabilitated pursuant to the Department's De Minimus Exemption No. 0221058-006-BE.

**Having reached a resolution of the matters addressed herein, the County and the Department mutually agree to the following:**

12. The County may expand the Plant construction staging area one time, ("Staging Area"), depicted in Figure I, attached hereto and incorporated herein, during Plant reconstruction and rehabilitation of the Inlet's North and South Jetties by a maximum of 360 feet seaward of State Road A1A, excluding the Stand of Seagrasses and in accordance with Figure 1. Upon execution of this Order, and pursuant to Special Condition number 2 of the Department's De Minimus Exemption No. 0221058-006-BE, described in Paragraph number 11 above, the expansion of the Plant construction staging area does not authorize the operation, transportation, storage of equipment or materials outside of the temporary staging area identified in Figure 1 seaward of the dune crest during the marine turtle nesting season which occurs in Palm Beach County during the period of March 1 through October 31. The use of the temporary staging area depicted in Figure 1 is authorized one time only, through the expiration date of the De Minimus Exemption No 0221058-006-BE, which is June 2, 2011. Any proposed staging areas involving future authorization requests by the County will be re-evaluated by the Department.

13. The County may use the Staging Area for the temporary storage of materials and equipment during Plant reconstruction and rehabilitation of the Inlet's North and South Jetties, in accordance with the Permit.

14. Upon completion of the Plant reconstruction, the County shall begin restoration of the Impact Area to its pre-disturbed condition by implementing the Inlet Dune Restoration Plan, Attachment A, within the timeframes specified therein.

6

Palm Beach County  
Department of Environmental Resources Management  
OGC File No. 10-1044

15. Within 90 days of completion of Department authorized activities described in Paragraphs 3, 4, and 11 above, the County shall complete all restoration activities required in paragraph 14 above.

16. All costs of the expanded Plant construction staging area and dune restoration, including multi-year dune restoration activities, shall be borne by the County.

17. Entry of this Order does not relieve the County of the need to comply with applicable federal, state or local laws, regulations or ordinances.

18. The terms and conditions set forth in this Order may be enforced in a court of competent jurisdiction pursuant to section 120.69, Florida Statutes. Failure to comply with the terms of this Order shall constitute a violation of section 161.054, Florida Statutes.

Persons who are not parties to this Order, but whose substantial interests are affected by it, have a right to petition for an administrative hearing under Sections 120.569 and 120.57, Florida Statutes. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition concerning this Order means that the Department's final action may be different from the position it has taken in the Order.

The petition for administrative hearing must contain *all* of the following information:

- a) The OGC Number assigned to this Order;
- b) The name, address, and telephone number of each petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding;
- c) An explanation of how the petitioner's substantial interests will be affected by the Order;
- d) A statement of when and how the petitioner received notice of the Order;
- e) Either a statement of all material facts disputed by the petitioner or a statement that the petitioner does not dispute any material facts;
- f) A statement of the specific facts the petitioner contends warrant reversal or modification of the Order;
- g) A statement of the rules or statutes the petitioner contends require reversal or modification of the Order; and
- h) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the Department to take with respect to the Order.

11

Palm Beach County  
Department of Environmental Resources Management  
OGC File No. 10-1044

The petition must be filed (received) at the Department's Office of General Counsel, 3900 Commonwealth Boulevard, MS# 35, Tallahassee, Florida 32399-3000 within 21 days of receipt of this notice. A copy of the petition must also be mailed at the time of filing to the Bureau of Beaches and Coastal Systems at 3900 Commonwealth Boulevard, Tallahassee, Florida 32399, referencing mail station 300. Failure to file a petition within the 21-day period constitutes a person's waiver of the right to request an administrative hearing and to participate as a party to this proceeding under Sections 120.569 and 120.57, Florida Statutes. Before the deadline for filing a petition, a person whose substantial interests are affected by this Order may choose to pursue mediation as an alternative remedy under Section 120.573, Florida Statutes. Choosing mediation will not adversely affect such person's right request an administrative hearing if mediation does not result in a settlement. Additional information about mediation is provided in Section 120.573, Florida Statutes and Rule 62-110.106(12), Florida Administrative Code.

19. Rules referenced in this Order are available on the Department's website at <http://www.dep.state.fl.us/legal/Rules/rulelistnum.htm>.

Approved as to  
Legal Sufficiency:

\_\_\_\_\_  
Assistant County Attorney

FOR THE RESPONDENT



\_\_\_\_\_  
Palm Beach County  
Department of Environmental  
Resources Management  
Richard E. Walesky, Director

8



**Palm Beach County**  
**Department of Environmental Resources Management**  
**OGC File No. 10-1044**

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Palm Beach County  
Department of Environmental Resources Management  
OGC File No. 10-1044

DONE AND ORDERED this \_\_\_\_ day of \_\_\_\_\_ 2010, in Tallahassee,  
Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL  
PROTECTION

\_\_\_\_\_  
Michael R. Barnett, P.E., Chief  
Bureau of Beaches and Coastal Systems

**FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to §120.52,  
Florida Statutes, with the designated Department Clerk, receipt of which is  
hereby  
acknowledged.**

\_\_\_\_\_  
Clerk

\_\_\_\_\_  
Date

c: Lea Crandall, Agency Clerk  
Mail Station 35

Dan Bates, Palm Beach County, ERM  
Leanne Welch, Palm Beach County, ERM  
Paden Woodruff, BBCS-BECP  
Alex Reed, BBCS-BECP  
Tracy Logue, Palm Beach County, ERM  
Dr. Robin Trindell, FWC ISM  
Jeffrey Howe, USFWS  
John Dunphy, ACOE  
Jennifer Smith, DEP SE District  
Michael Barnett, BBCS  
Bob Brantley, BBCS-CE  
Jennifer Cheng, BBCS-CE  
Rob Buda, BBCS-BECP  
Mark Taynton, BBCS

10

Palm Beach County  
Department of Environmental Resources Management  
OGC File No. 10-1044

Martin Seeling, BBCS-JCP  
Steve MacLeod, BBCS-JCP  
Stephanie Gudeman, BBCS-JCP  
JCP Compliance  
Permit File

**SOUTH LAKE WORTH INLET  
DUNE RESTORATION PLAN  
JCP NO. 0221058-001-JC**

Following construction and demobilization of the sand transfer plant and jetty work at South Lake Worth Inlet, Palm Beach County (the County) will return the impacted dune area to the site's pre-project contours and elevations, then replant with native vegetation according to the enclosed plan drawing (Figure 1).

**Site Preparation:**

Prior to planting, the damaged areas will be prepared by leveling low areas and grading the site, and removing all exotic and nuisance plants, to return the area to its pre-project contours and elevations. Existing native dune vegetation shall be disturbed only to the minimum extent necessary.

**Plant Types and Planting:**

**Grasses and Other Herbaceous Plants**

The plant list that follows reflects the pre-impact ratio of sea oats to diversity species. The diversity species have been selected based on their representation in the dune prior to impact.

<u>Common name</u>	<u>%</u>	<u>Scientific name</u>	<u>Unit size</u>	<u>Spacing</u>
Sea oats	90	<i>Uniola paniculata</i>	liner, 24"	12"
Beach bean	2.5	<i>Canavalia rosea</i>	liner	12"
Dune sunflower	2.5	<i>Helianthus debilis</i>	liner	12"
Railroad vine	2.5	<i>Ipomoea pes-caprae</i>	liner	12"
Saltmeadow cordgrass	2.5	<i>Spartina patens</i>	liner	12"

**Method**

- Planting will begin immediately after demobilization.
- Thoroughly saturate the planting area to planting depth.
- Create holes at least 6" deep for all liners except for sea oats which will be planted in holes that are at least 12" deep.
- Plants will be installed in a diagonal pattern.
- Position plant in hole according to accepted practices for dune restoration projects.
- Backfill or close hole and tamp the soil around each plant.
- Thoroughly water all plants.

**Seagrapes**

A large stand of seagrapes, roped off for protection from construction activities, stands in the middle of the damaged area. To reduce the possibility of damage during construction, the County trimmed a number of the seagrape branches prior to construction. A 3 gallon container of seagrapes will be planted for each branch of seagrapes that was equal to or greater than 3" in diameter and was removed by activities related to the permit. The replanted seagrapes will be cared for and monitored in accordance with the following methodology.

**Method**

- In a sunny location, dig a hole that is twice the height and width of the root ball and place the seagrape plant into the hole.

**SOUTH LAKE WORTH INLET  
DUNE RESTORATION PLAN  
JCP NO. 0221058-001-JC  
Page 2 of 6**

- Mix native soil with the remaining garden soil, filling in the hole around the plant.
- While watering the plant thoroughly, tamp the soil tightly; continue to place additional soil around the plant, as needed, to remove any air pockets.
- The seagrasses will need water daily for a week, then every other day for the next week. After two weeks, the plants can be watered two to three times a week.

Alternately, planting and care instructions provided by the grower for the specific type and size planted may be used.

**Planting during marine turtle nesting season**

Planting of dune vegetation is authorized to occur during the marine turtle nesting season (March 1 through October 31) in Palm Beach County under the following conditions.

1. It is the responsibility of the permittee to ensure that the project area and access sites are surveyed for marine turtle nesting activity. All nest surveys, nest relocations, screening or caging activities etc. shall be conducted only by persons with prior experience and training in these activities and is duly authorized to conduct such activities through a valid permit issued by the Department, Division of Marine Resources, pursuant to Florida Administrative Code 62R-1. For information regarding whether the project beach is surveyed by qualified personnel, contact the Bureau of Protected Species Management at (561) 575-5455.
2. Marine turtle nest surveys shall be initiated at the beginning of the nesting season or 65 days prior to installation of plants (whichever is later). Surveys shall continue until completion of the project or through September 15 (whichever is earliest). Surveys shall be conducted throughout the project area and all beach access sites.
3. Any nests deposited in an area not requiring relocation for conservation purposes (as determined by the marine turtle permit holder) shall be left in situ. The marine turtle permit holder shall install a beach marker at any nest site and a secondary marker located at a point as far landward as possible to ensure that future location of the nest will be possible should the on-beach marker be lost. A series of stakes and survey ribbon or string shall be installed to establish an area of 3 feet radius surrounding the nest. No planting or other activity shall occur within this area nor shall any activity occur which might cause indirect impacts within this area. Nest sites shall be inspected daily to ensure nest markers have not been removed.
4. The use of heavy equipment (trucks) is not authorized seaward of the dune crest or armoring structure. A lightweight (ATV style) vehicle, with tire pressures of 10 p.s.i. or less can operate on the beach.

**SOUTH LAKE WORTH INLET  
DUNE RESTORATION PLAN  
JCP NO. 0221058-001-JC  
Page 3 of 6**

5. Any vegetation planting or placement of irrigation materials shall be installed by hand labor/tools.
6. Irrigation (if proposed) shall be entrenched 1 to 3 inches below grade so as not to pose a barrier to hatchlings and to allow for easy removal. Irrigation piping shall avoid all marked nests by a minimum of ten (10) feet. The irrigation system shall be designed and maintained so that watering of the unplanted sandy beach does not occur. In the event a marine turtle nest is deposited within the newly established dune planting area, the permittee shall modify the irrigation system so that watering within 10 feet of the nest does not occur. Daily inspection of the irrigation system shall be accomplished by the permittee to ensure compliance with this condition.
7. All activity shall be confined to daylight hours and shall not occur prior to the completion of all necessary marine turtle surveys and conservation activities within the project area. Nighttime storage of equipment or materials shall be off the beach (landward of the dune crest, existing seawalls or bulkheads).
8. In the event a nest is disturbed or uncovered during planting activity, the permittee shall cease all work and immediately contact the person(s) responsible for marine turtle conservation measures within the project area. If a nest(s) cannot be safely avoided during construction, all activity within the affected project area shall be delayed until complete hatching and emergence of the nest.

**Fencing**

Fences shall be constructed to discourage foot traffic in the planted beds and direct traffic to authorized footpaths. The fencing will be installed and maintained during the monitoring period, as shown on Figure 1. Post and rope fence is to be used along the waterward edges of the planting perimeter where sea turtles may encounter the restoration area. The lowest point of rope will be a minimum of 3 feet above the ground. Wooden sand fencing shall be placed in areas away from nesting sea turtles and shall be installed in accordance with the FWC Sand Fencing Guidelines provided below.

**FWC Sand Fencing Guidelines:**

Sand fencing should be designed and installed in accordance with these conceptual guidelines. This method of sand fencing should provide good dune building performance, while minimizing impacts to nesting marine turtles. The types of sand fencing vary. Standard fencing consists of wooden slats wired together with space between the slats. Segments of fencing are supported by posts. The use of woven fabric type fencing has also been successfully used in dune restoration projects. However, it is important that fabric type fencing sustains a 40% to 60% open space to closed space ratio. It should also be noted that fabric type fences may not perform as well as the wooden slats. Fabric type fences are

14

**SOUTH LAKE WORTH INLET  
DUNE RESTORATION PLAN  
JCP NO. 0221058-001-JC  
Page 4 of 6**

susceptible to ultraviolet degradation and may sag and lose the original shape, thus reducing performance. However with sufficient maintenance, this problem can be reduced or avoided.

In order to maximize the benefits of sand fencing, routine maintenance and adjustments are necessary. Therefore, it is necessary to remove and reposition the fencing prior to the fence becoming buried.

1. Individual sand fencing projects that exceed 500 feet in length, shore parallel shall not be permitted without consultation with the Bureau of Protected Species Management.
2. Sand fencing located seaward of the crest of the primary dune shall be designed and installed as follows in accordance with the conceptual drawing provided below, described as follows: a maximum of ten (10) foot long spurs of sand fencing spaced at a minimum of seven (7) feet on a diagonal alignment (facing the predominate wind direction) for the shore parallel coverage of the subject property. Alternative sand fence designs shall require pre-approval from the Bureau of Protected Species Management.
3. If the primary reason for sand fencing is to control pedestrian access, a post and rope fence with a single strand of rope at a minimum of three feet in height should be used to prevent human intrusion into existing dunes or vegetation. Where a demonstrated need is identified, the installation of post and rope fences may be permitted with standard permit conditions attached (precluding work during the marine turtle nesting season).

Additional fencing, as specified above, will be constructed and maintained in areas where foot traffic appears to be impairing vegetation growth, until the required success rate is achieved.

**Irrigation**

Irrigation will be provided as needed until plants are established.

**Fertilizer**

Since the plants to be installed come with fertilizer already in the soil, within the liner, application of a separate fertilizer is not required.

**Exotic or Nuisance Plant Removal Requirements After Planting**

The County shall remove exotic and nuisance plants from the revegetated dune twice yearly until the desired dune plants are established and the Department has determined that success is achieved.

**Success**

The success of the Dune Restoration Plan will be determined as follows:

15

**SOUTH LAKE WORTH INLET  
DUNE RESTORATION PLAN  
JCP NO. 0221058-001-JC  
Page 5 of 6**

At the end of the first 12-month period, starting from the time the last plant was installed (or replaced at any time after the initial planting), if 90% or more of the 11,500 plants that were planted survive, then continued monitoring and maintenance is not required.

- If mortality is concentrated in a specific area, then that area will be replanted, even if the total mortality for the entire planting site is less than 10%, so that the integrity of the dune can be preserved. However, this replanting will restart the one-year monitoring period.
- If mortality appears to be caused by human encroachment, temporary fencing will be erected and maintained until the success criteria are met.

If 90% survival has not been achieved at the end of the first year, then replanting and monitoring shall continue until **80% coverage** of native dune plants is achieved in the 10,007 square-foot planting area and 80% coverage is maintained for one full year (without additional planting during the year). Monitoring shall be conducted using any standard method for assessing total aerial plant cover; however, the Department recommends using the simple *Flat Vegetative Cover Test Method*, which is included as an appendix to this Plan.

**Monitoring Reports**

A monitoring report shall be submitted after initial planting and at the end of each 12-month period following the last planting, as described in the **Success** section above.

- An initial planting report shall be submitted that addresses the components of the sections listed above for all species planted in the initial planting event. Any variations or discretionary areas should be noted. Specific planting designs, species planted and planting dates should also be included.
- Monitoring reports shall be submitted to the Department, to the attention of the JCP Compliance Officer, within 60 days of each monitoring event. Reports shall describe monitoring method(s), results and conclusions. The Methods section should describe and quantify transects and sampling stations. Results should include observations of species (or bare ground) at each sampling station, in tabular form, and survival or cover percentages, as appropriate. Analysis of plant survival and cover results shall consider only native dune species when determining if success criteria have been met.
- Annual monitoring reports shall also include a proposed course of action for the next year, which may include no action (i.e., success criteria met) or additional action required (i.e., success criteria not met, so additional planting is required). If additional action is required, the report shall discuss the new planting plan and propose recommendations to increase chances of success.

If the contractor believes that any aspect of the planting plan is insufficient to promote optimal success of the dune revegetation, the contractor has the responsibility to request appropriate deviations to the plan. The request must be submitted to the Department, and written approval by the Department is required to authorize any deviations to the planting plan.

16



### **Appendix - Line Transect Test Method**

**Equipment:**

- 100-foot measuring tape
- Two screwdrivers
- 3/32 inch diameter brazing rod or wooden dowel
- Pencil/Pen and paper

**Method:**

Stretch a 100 foot measuring tape across a survey area that represents a random portion of the overall conditions of the site. Firmly anchor both ends of the measuring tape into the surface using a tool such as a screwdriver, with the tape stretched taut and close to the soil surface. If vegetation exists in regular rows, place the tape diagonally (at approximately a 45° angle) away from a parallel or perpendicular position to the vegetated rows. Pinpoint an area the size of a 3/32 inch diameter brazing rod or wooden dowel centered above each 1 foot interval mark along one edge of the tape. Count the number of times that *native* vegetation lies directly underneath the pinpointed area at 1 foot intervals. Consistently observe the underlying surface from a 90° angle directly above each pinpoint on one side of the tape. Do not count the underlying surface as vegetated if any portion of the pinpoint extends beyond the edge of the vegetation underneath in any direction. If any live plant part lies underneath the pinpointed area, count the surface as vegetated, unless bare soil is visible directly below the pinpointed area. Conduct a minimum of 100 observations, establishing additional transect lines as necessary to reach the minimum number of observations. To calculate the percentage of native plant cover, divide the number of times a surface was counted as vegetated by a native plant by the number of observations, and multiply by 100.

**Conduct the line transect test method, as described above, an additional two times on areas that represent a random portion of the overall conditions of the site, and average results.**

Adapted from Appendix B, *Flat Vegetative Cover Test Method*, University of Nebraska Cooperative Extension, Institute of Agriculture and Natural Resources.

Figure 1

