BEACH MANAGEMENT PLAN
SYLVIA STATE BEACH

April 2008

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1.0 PURPOSE AND OBJECTIVE

Joseph A. Sylvia State Beach on Martha's Vineyard is a unique coastal resource that provides access to the waters of Sengekontacket Pond and Nantucket Sound for both Vineyard residents and tourists alike (Figure 1). The barrier beach provides a recreational resource for the public to enjoy, protects the thriving ecosystem found within and around Sengekontacket Pond, and provides protection to State Road. State Road provides secondary access between Oak Bluffs and Edgartown while providing vistas of the pond, the barrier beach, and the waters of Nantucket Sound. Sylvia State Beach provides approximately 2 miles of public access to the waters of Nantucket Sound in a state where public access to the waters of the Commonwealth of Massachusetts is rapidly disappearing. The use of the beach is available to anyone who chooses to use it for recreating in the sand and/or the waters of the Sound, enjoy the splendid vistas from many vantage points, or for fishing from the shore/beach. All of these factors make Sylvia State Beach a valuable resource that is important to protect and enhance through the development of a beach management plan.

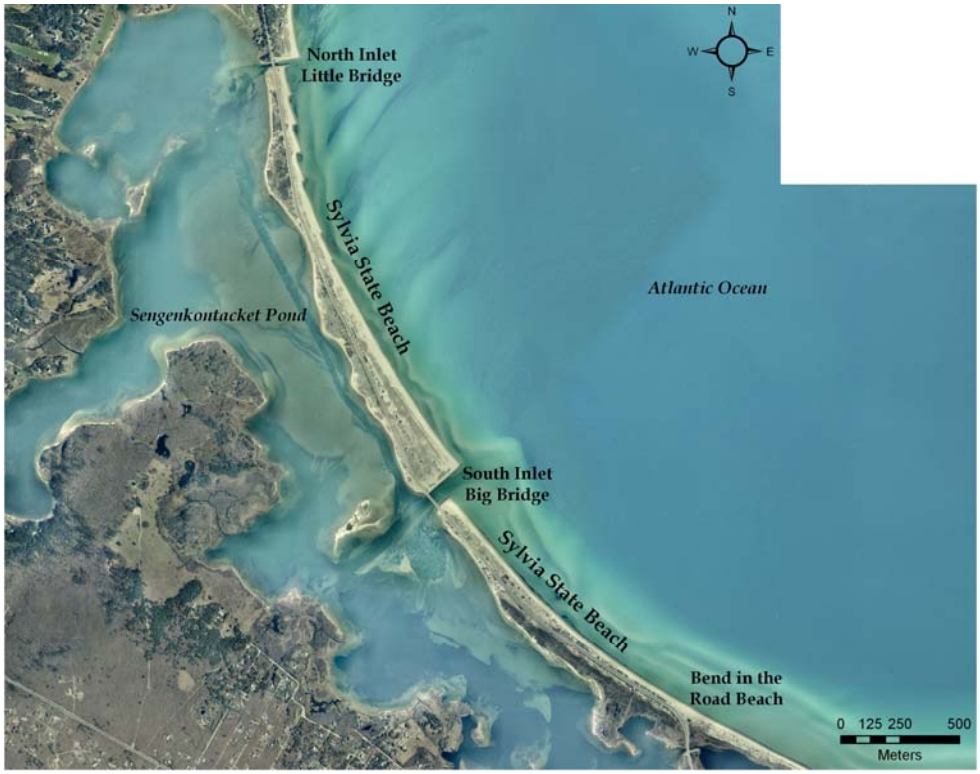


Figure 1. Locus map of Sylvia State Beach, Martha's Vineyard, MA.

Dukes County and the Friends of Sengekontacket formed the Barrier Beach Task Force (BBTF) to examine the present state of Sylvia State Beach and Sengekontacket Pond and to develop long-term plans for monitoring and maintaining this fragile and precious resource. The Woods Hole Group was hired to develop a Barrier Beach Management Plan that addresses the important aspects of managing the barrier beach in a way that balances the concerns of all. The goals of the Beach Management Plan are to preserve and enhance the natural and recreational functions of Sylvia State Beach and to guide

future coastal zone management decisions by balancing the needs of all stakeholders. To achieve these goals, the following objectives were identified for the Beach Management Plan:

- Identify planning activities that will facilitate improved management of the beaches.
- Identification of existing and recommended key beach management activities
- Define short- and long-term components of a beach restoration and management program, including post-storm response activities.
- Development of an emergency response plan
- Evaluation of permitting requirements for existing and recommended activities
- Recommended next steps

2.0 EXISTING CONDITIONS

Joseph A. Sylvia State Beach is located along the northeast shoreline of Martha's Vineyard within the Towns of Oak Bluffs and Edgartown (Figure 2). The coastline in this area stretches from East Chop at the north (Oak Bluffs) to Eel Pond in the southeast (Edgartown). Joseph A. Sylvia State Beach lies near the middle of this coastal embayment, stretching for nearly 2.0 miles as a barrier beach that separates Sengekontacket Pond from Nantucket Sound (Figure 3). The coastline between State Beach and East Chop is comprised of narrow coastal beaches and coastal bluffs interrupted by inlets and/or harbor entrances at Harthaven, Farm Pond and Oak Bluffs Harbor. South of Sylvia State Beach the barrier continues another 0.7 miles, and then transitions into a narrow headland-connected beach that stretches in an easterly direction to Eel Pond.

Figure 2. Location of Joseph A. Sylvia State Beach.

The only two openings between Sengekontacket Pond and Nantucket Sound occur within Sylvia State Beach. The northern inlet, or Little Bridge, forms the northern boundary of State Beach (Figure 3). The opening is approximately 65 ft wide and is protected by two stone jetties. The inlet at Big Bridge, located further to the south, forms the main passageway into Sengekontacket Pond. This inlet is approximately 230 ft wide and is also protected by two stone jetties. The barrier beach that comprises Sylvia State Beach also contains the state highway known as Beach Road, which serves as one of two primary access roads between Oak Bluffs and Edgartown (Figure 4).

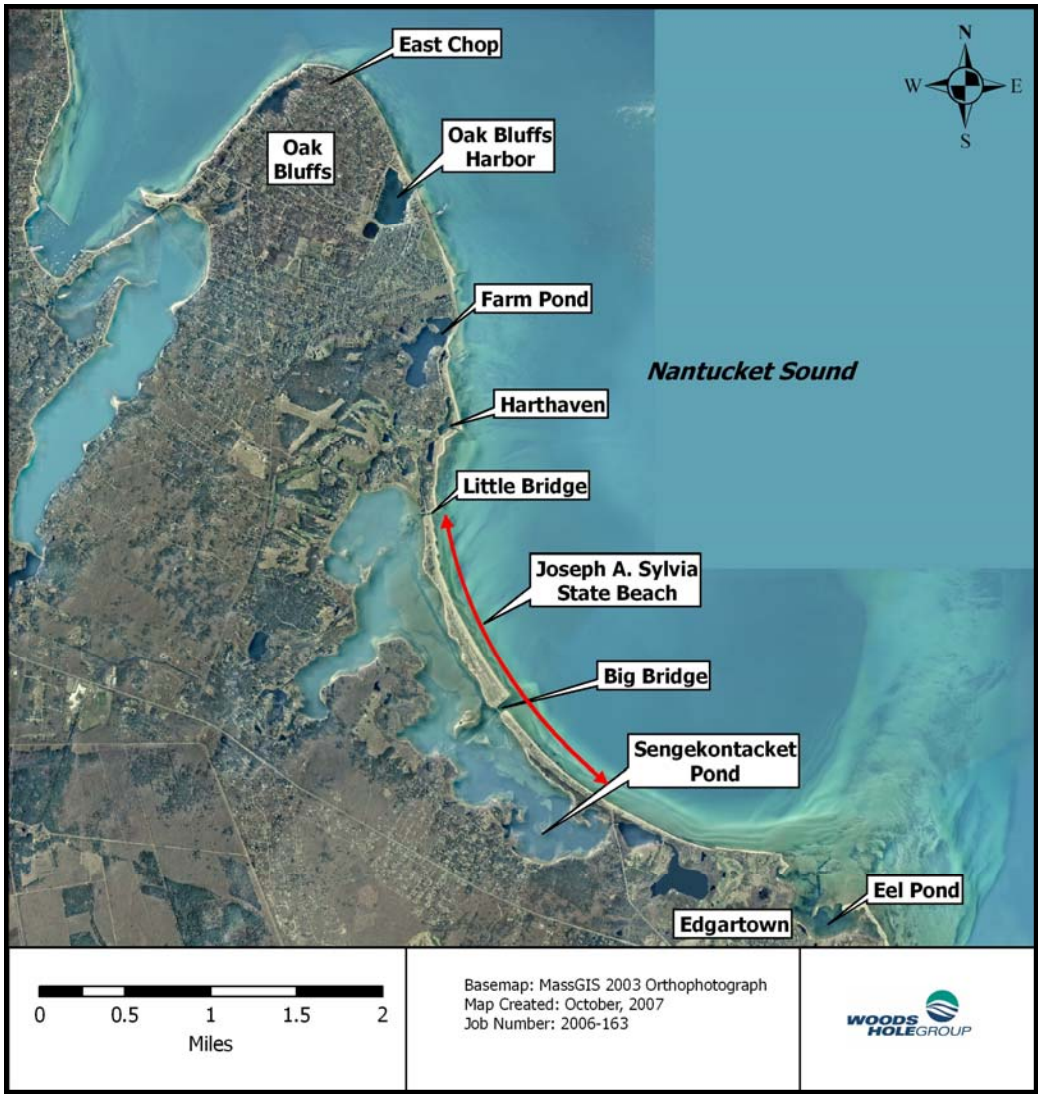


Figure 3. Coastal embayment between East Chop and Eel Pond.

State Beach contains coastal beach, coastal dune, barrier beach, and salt marsh resource areas. The beach and dune resources are primarily located on the Nantucket Sound side of Beach Road, with the salt marsh resources being located on the Sengekontacket Pond side of the road. The beach and dune areas are generally narrowest at the northern end of State Beach and immediately south of the Big Bridge opening. Dune heights are also

relatively low in these areas. Beach widths between the road and mean low water (MLW) range from 110 to 145 ft along the northern end of Sylvia State Beach. The beach width increases to greater than 600 ft wide further to the south, in the vicinity of Big Bridge (north of Big Bridge). Dune crest elevations between Little Bridge and Big Bridge range from 7 to 12 ft above MLW. The narrowest and lowest portion of the barrier beach, and thus the most vulnerable to storm overwash, occurs approximately mid way between the two inlets, near the northern end of the timber groin field.

Dune vegetation consists primarily of beach grass (*Ammophila breviligulata*) along the seaward more exposed sides of the dunes. Other plant species found in the dunes include panic grass (*Panicum virgatum*), beach pea (*Lathyrus japonicus*), dusty miller (*Artemesia stelleriana*), seaside goldenrod (*Solidago sempervirens*), beach heather (*Hudsonia sp.*), and evening primrose (*Oenothera biennis*). The landward sides of the dunes that are more protected and sheltered support shrub-type vegetation such as northern bayberry (*Myrica pensylvanica*), poison ivy (*Toxicodendron radicans*), beach plum (*Prunus maritime*), beach rose (*Rosa rugosa*), and Eastern red cedar (*Juniperus virginiana*).

Figure 4. Aerial photograph showing the state highway (Beach Rd.) along the center of the barrier beach.

Both the barrier beach and Sengekontacket Pond areas are mapped by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) as Priority and Estimated habitat sites for shorebird species including Piping Plover (*Charadrius melodus*), Common Tern (*Sterna hirundo*), Roseate Tern (*Sterna dougallii*), and Least Tern (*Sterna antillarum*). Based on Massachusetts Audubon monitoring data from 2005 and 2007, most of the shorebird activity occurs along the 3,000 ft long stretch of beach north of Big

Bridge (Figures 5 and 6). In 2007, a Least Tern colony and Piping Plover nests were found along the beach immediately south of Big Bridge.

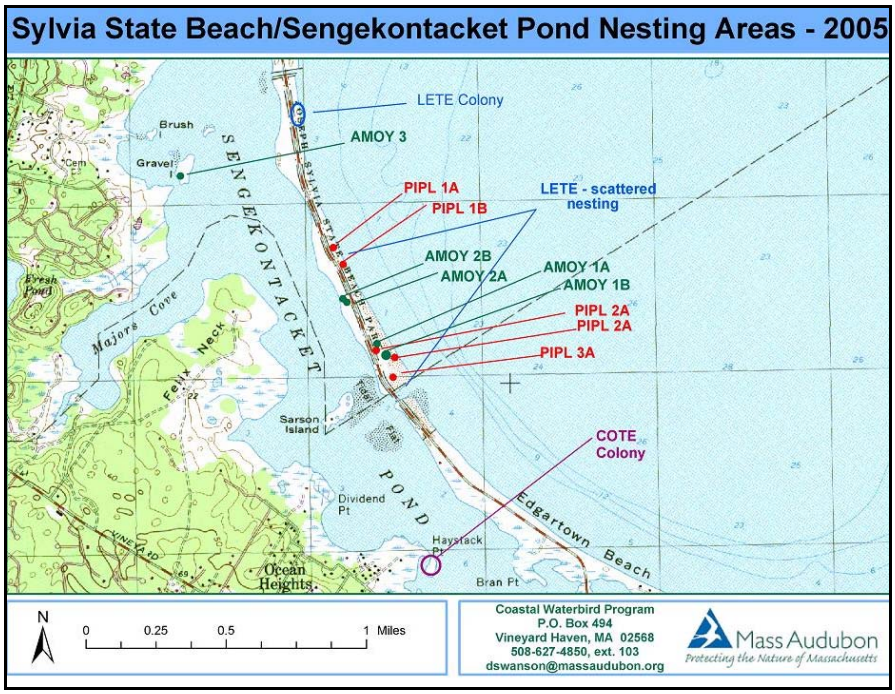


Figure 5. Mass Audubon shorebird monitoring results for 2005.

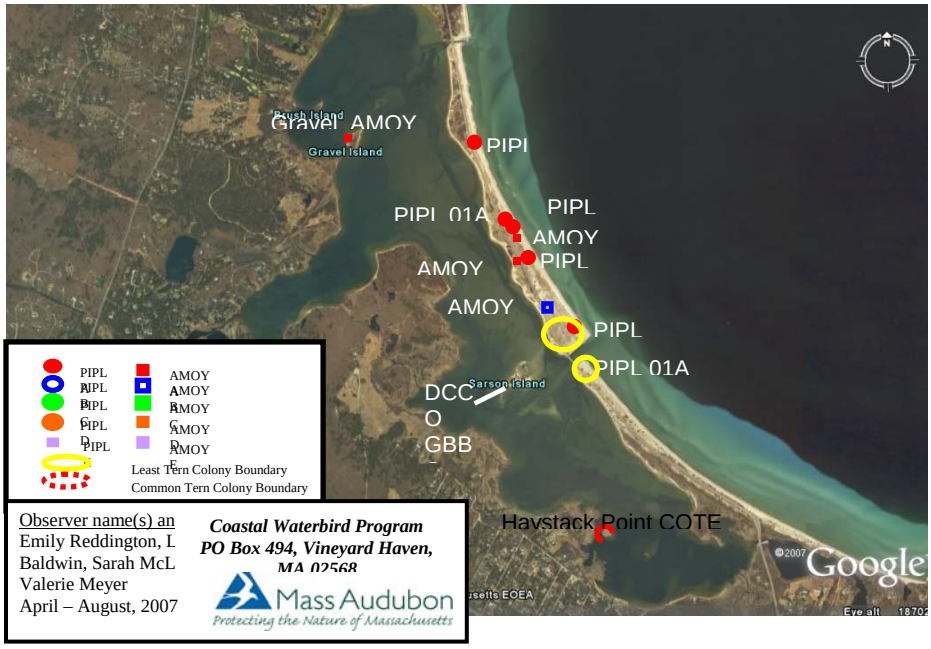


Figure 6. Mass Audubon shorebird monitoring results for 2007.

Federal Emergency Management Agency (FEMA) predicted stillwater elevations for the 10-, 50-, and 100-yr storm in this area are 4.3 ft, 7.2 ft, and 8.8 ft NGVD, respectively. Comparison of the FEMA stillwater elevations with topographic data from the barrier beach indicate that most of the barrier will be inundated during the 50-yr and greater storm. The Flood Insurance Rate Maps (FIRMs) for Sylvia State Beach indicate that the seaward-facing side of the barrier beach lies within a V Zone. V Zones are areas of the 100-year coastal floodplain where wave action during storms can cause significant damage. The V Zone elevations along the seaward side of the barrier range from 14 ft to 18 ft NGVD.

Historical shoreline change at Joseph A. Sylvia State Beach has been examined by the Massachusetts Shoreline Change Project (Thieler, O'Connell, Schupp, 2001). The Shoreline Change Project compiled relative positions of four to five historical shorelines between 1844 and 1994 for all coastal areas within the Commonwealth of Massachusetts. Shoreline positions for the State Beach area are provided for the following years: 1846, 1897, 1955, 1978, and 1994. Original sources for the historical shorelines were NOAA/NOS topographic maps, hydrographic maps, FEMA topographic maps, orthophotos, and aerial photographs. Shoreline change statistics at 40-meter intervals were developed using these five historical shorelines. Short-term rates of shoreline change (between successive years), total distance of landward or seaward excursion, and long-term rates of shoreline change were computed. The data set represents the most comprehensive "off the shelf" assessment of shoreline change available for the project area.

Results from the Massachusetts Shoreline Change Project for the Sylvia State Beach area are shown in Figure 7. The five (5) shoreline positions from 1846 to 1994 are illustrated along with the transect locations where shoreline change statistics were calculated. Select transect numbers are shown for cross-reference with Table 1 which summarizes the shoreline change statistics. Between Little Bridge and Big Bridge, the data indicate a long-term trend of erosion along the northern end of the barrier, and accretion along the southern end of the barrier. The hinge point between erosion and accretion appears to be between transects 26974 and 26976, which is also the area of the existing timber groins (Figure 7). Average long-term erosion rates between 1846 and 1994 along the northern end of the barrier beach are -0.62 ft/yr. Accretion rates gradually increase from the hinge point to the south, ranging from 0.20 ft/yr at transect 26977 to 2.69 ft/yr at transect 26999 immediately north of Big Bridge. Long-term rates of shoreline change south of Big Bridge are much less consistent. During the 39-year period between 1955 and 1994, the shoreline in this area showed significant erosion, on the order of 1.0 to 2.0 ft/yr. In general, the shoreline change data indicate that the net direction of longshore transport along this stretch of coast is from north to south.

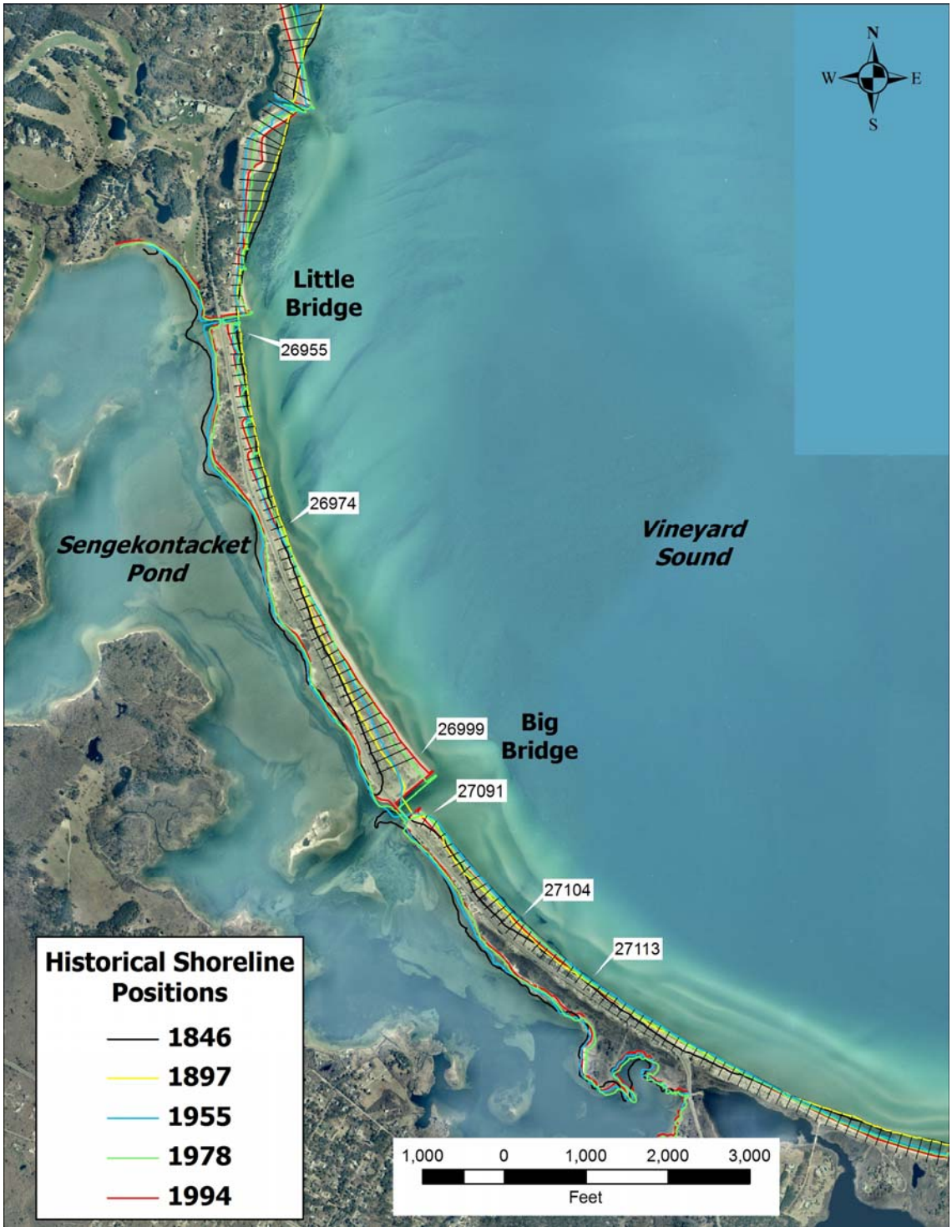


Figure 7. Historical shoreline positions from the Massachusetts Shoreline Change Project (Thieler, O'Connell, Schupp, 2001).

Table 1. Shoreline Change Statistics from 1846 to 1994

Transect No.	1846-1897 (ft/yr)	1897-1955 (ft/yr)	1955-1994 (ft/yr)	1846-1994 (ft/yr)
Little Bridge				
26955	0.75	-1.38	-1.57	-0.75
26956	0.62	-1.67	-0.36	-0.66
26957	0.79	-1.18	-0.82	-0.49
26958	0.36	-1.48	-0.43	-0.66
26959	0.46	-1.48	-0.33	-0.62
26960	0.33	-1.05	-0.13	-0.43
26961	0.43	-1.25	-0.52	-0.56
26962	0.62	-1.35	0.39	-0.36
26963	0.39	-0.92	0.56	-0.20
26964	0.00	-1.51	-1.18	-0.98
26965	0.13	-1.31	-0.95	-0.79
26966	0.39	-1.12	-0.72	-0.56
26967	0.30	-1.41	-1.54	-0.92
26968	0.07	-1.71	-0.98	-1.02
26969	0.39	-2.03	-0.43	-0.92
26970	0.75	-1.94	-0.16	-0.72
26971	1.05	-2.03	0.26	-0.59
26972	0.95	-1.97	0.52	-0.49
26973	0.85	-1.74	0.56	-0.43
26974	1.28	-1.54	0.23	-0.26
26975	1.38	-1.12	-0.16	-0.13

26976	1.15	-0.59	-0.36	0.00
26977	0.92	-0.23	0.10	0.20
26978	0.79	-0.23	0.13	0.16
26979	0.75	0.07	-0.13	0.23
26980	0.49	0.52	0.07	0.43
26981	0.56	0.92	0.07	0.62
26982	0.62	1.18	-0.69	0.59
26983	0.52	1.77	-0.79	0.82
26984	0.75	1.84	-0.56	0.98
26985	0.75	1.67	-0.30	0.95
26986	0.69	1.71	-0.13	0.98
26987	0.59	1.61	0.36	1.02
26988	0.36	1.71	0.85	1.12
26989	0.39	1.74	1.15	1.18
26990	0.59	1.64	1.48	1.28
26991	0.82	1.48	2.07	1.41
26992	0.89	1.54	2.53	1.54
26993	0.66	1.90	2.72	1.71
26994	0.98	1.77	3.44	1.90
26995	1.41	1.31	4.76	2.10
26996	1.71	1.08	5.35	2.20
26997	2.20	1.05	5.71	2.43
26998	2.56	0.66	6.23	2.46
26999	3.28	0.43	6.86	2.69

Big Bridge				
27091	2.30	0.10	-1.57	0.39
27092	1.97	0.33	-2.49	0.23
27093	0.49	0.92	-2.03	0.13
27094	-0.26	1.48	-1.84	0.23
27095	-0.23	1.67	-1.77	0.33
27096	-0.75	1.87	-1.54	0.33
27097	-0.26	1.97	-1.44	0.52
27098	0.92	1.77	-1.51	0.79
27099	1.67	1.61	-1.41	0.98
27100	2.17	1.28	-1.41	0.98
27101	2.40	1.05	-1.35	0.95
27102	2.33	0.89	-1.15	0.89
27103	2.40	0.89	-1.08	0.92
27104	1.71	1.15	-0.98	0.85
27105	1.21	1.08	-0.98	0.69
27106	0.72	1.05	-1.12	0.49
27107	0.07	0.85	-0.66	0.30
27108	0.39	0.75	-0.56	0.36
27109	0.00	1.05	-0.85	0.30
27110	-0.10	1.25	-1.12	0.33
27111	0.00	1.02	-1.12	0.23
27112	0.10	0.69	-0.95	0.13
27113	0.30	0.66	-1.02	0.16

Long-term changes in shoreline change shown in Figure 7 and Table 1 can in part be attributed to anthropogenic changes along the barrier beach. In 1846 the natural inlet to Sengekontacket Pond was located in the general vicinity of the existing inlet at Big Bridge. This inlet represented the only opening through the barrier beach at this time. By 1897, it appears that the inlet at Big Bridge had been stabilized, and the inlet at Little Bridge was not opened until 1937. Reports indicate that the Little Bridge opening was formed to enhance circulation within the northern end of Sengekontacket Pond. The inlet was stabilized with two stone jetties; the northern jetty was constructed 160 ft long and the southern jetty was constructed 85 ft long. Also during 1937, rip rap stone was placed along the edges of the channel at Big Bridge to minimize inlet migration. In June of 1954, four stone groins were constructed to the south of Little Bridge (Figure 8). The northernmost three groins were built 150 ft long, while the southern most groin was built larger at 125 ft long. The groins were spaced 400 ft apart. In 1961, two stone jetties were built at Big Bridge to further stabilize the location of the inlet. The northern jetty was built 400 ft long and the southern jetty was built 200 ft long. In 1970, the northern jetty at Big Bridge was extended further seaward, by approximately 220 ft. The most recent coastal engineering structures along Sylvia State Beach were installed in 1997. These structures included three wooden groins placed to the south of the previously existing stone groins. The groins were spaced approximately 380 ft apart, and were intended to mitigate on-going erosion at the narrowest portion of the barrier beach.

Figure 8. Photograph of stone groins installed south of Little Bridge in 1954.

Other anthropogenic activities that have impacted the evolution of Sylvia State Beach include channel dredging at Little and Big Bridge entrances, as well as a number of beach nourishment projects. Historical records indicate that both inlets have been dredged a number of times from the mid-1900s to the present. The inlet at Little Bridge has been dredged at least four times during the following periods: 1961, 1993, 2003, and 2005. Dredged sands are generally placed on the barrier beach south of the inlet. The inlet at

Big Bridge has been dredged at least five times during the following periods: 1950, 1961, 1966, 1978, and 1993. In addition, large-scale dredging projects within Sengekontacket Pond during 1993 and 1997 have provided significant quantities of sand for beach nourishment of Sylvia State Beach. Nourishment volumes of 44,000 cubic yards and 70,000 cubic yards were placed on the beach during each of these projects, respectively.

3.0 RECOMMENDED MANAGEMENT ACTIVITIES FOR SYLVIA STATE BEACH

Information gathered and analyzed as part of this study has been used to develop recommended management activities for Sylvia State Beach for the County of Dukes County. The recommendations represent a balance between preserving and restoring the natural functions of the various beach and dune resources, and providing a quality public beach resource for recreational purposes.

In some cases, the management recommendations include activities that are already being implemented by the County under existing management practices, and the course of action is simply to continue business as usual. In other cases, the management recommendations define new activities that will require changes to existing practices. Some of the recommendations can be implemented immediately, while others will require long-range planning, as well as potential permitting and fund raising before they can be implemented. Where possible, a schedule or frequency for implementation has been specified, as some activities require work on a routine or annual basis, while others are needed infrequently, for example only after storms. Although the management recommendations represent a thorough and comprehensive list of activities, the dynamic nature of the public beach sites dictates a need for flexibility in future application. As such, the Beach Management Plan and associated recommendations should be considered a "living document" that must be reviewed and updated periodically to adjust to the changing conditions of the beaches.

The recommended beach management activities have been broken into 7 distinct categories. These include the following: (1) management and planning-level activities, (2) routine monitoring activities, (3) routine maintenance activities, (4) restoration activities, (5) education and outreach activities (6) environmental statutes and regulations, and (7) emergency response. A description of each recommendation is provided below. Where possible, details are given on specific components of the recommendation including beach locations, responsible party, timing for implementation, purpose, relative priority, and additional resources. Where site-specific recommendations have been made for a particular location, annotations have been added to the existing conditions plans provided in Appendix A.

3.1 MANAGEMENT AND PLANNING-LEVEL ACTIVITIES

Activity 3.1.1: Establish a record keeping system for beach/dune restoration and inlet dredging activities, as well as storm damages at each beach.
Purpose: To maintain a history of work and storm response at each beach to guide future restoration and management decisions.
Details:

1. For all beach nourishment and/or dune restoration work, document dates of work, location, volume, elevation and slope of fill, as well as source and quality of sediment. Document each activity with photographs.
2. Maintain records for dredging work at inlets located adjacent to the public beaches, which include dates and location of work, volume and quality of material dredged, placement location(s), and construction methodology.

3. Document all storms and associated beach impacts, by recording date and duration of storm, beach sites impacted, extent of erosion, and impacts to infrastructure. Flag high marks as soon after major storm events as possible at all impacted beach sites. Survey and record the location and elevation of the high water flags.
4. Identify lead department/responsible party for updating and maintaining the necessary records.
5. The Massachusetts Coastal Hazards Commission (CHC) provided a similar recommendation (#5) for the statewide collection of post-storm event data (Coastal Hazards Commission, 2007). As such, the lead department from the County should coordinate with Massachusetts CZM to facilitate data sharing and to periodically update data collection techniques.

Timing: Annually and post-storm
Priority: High
Responsibility: County or FOS

Activity 3.1.2: Prepare spring letter to the Edgartown/Oak Bluffs Conservation Commission describing necessary beach activities required to open the public beach.
Purpose: To inform the Commission regarding the level of activity required and to ensure protection of the wetland resources.
Details:

1. Conduct site visits to each beach during early March to identify the necessary activities.
2. Identify the types of work, locations, schedule, and equipment needed, as well as the work methodology. The spring letter should reference the applicable Orders of Conditions, and describe all anticipated work that is allowed.
3. Provide opportunity for a meeting and/or site visit with the Conservation Commission to discuss the upcoming work.

Timing: Annually; March to April
Priority: High
Responsibility**:** County or FOS

Activity 3.1.3: Prepare fall letter to the Edgartown/Oak Bluffs Conservation Commissions describing activities undertaken during the previous year.
Purpose: To inform the Commissions of the required activities and resources protected, and to document compliance with the active Order of Conditions.
Details:

1. Describe all beach activities completed including location, dates and duration, and equipment utilized.
2. Describe all anticipated winter beach activities planned for construction under Sylvia State Beach Orders of Conditions.

Timing: Annually; October to November
Priority: High
Responsibility: County or FOS

Activity 3.1.4: Maintain active environmental permits for work on Sylvia State Beach.
Purpose: To allow work within the resource areas and buffer zones on Sylvia State Beach, as required by the Massachusetts and local Wetlands Regulations.
Details:

1. Maintain a database of all permits obtained for work on public beach sites, including issuing agency, permit and/or tracking number, dates of issuance and expiration, recording information, and dates of any extensions. The database should be readily available to all departments within the town; however, one lead department should be responsible for updating the database.
2. Maintain a notebook with all permits, referenced plans, and extension permits. The County or Friends of Sengekontacket should maintain the notebook.
3. Prepare all extension requests and applications for re-issuance 3 months prior to permit expiration.
4. Ensure that Certificates of Compliance are requested, received, and recorded.

Timing: As needed
Priority: High
Responsibility: County, FOS, Conservation Commission

Activity 3.1.5: Develop pre- and post-storm response plans for Sylvia State Beach.
Purpose: To minimize risks of storm damage to wetland resources and public/private infrastructure and to avoid adverse impacts to resources during post-storm clean up.
Details:

1. Identify specific activities that must be performed in advance of an upcoming hurricane or major storm, such as removing portable toilets, securing lifeguard stands, removing all unsecured items from the beach and parking areas, etc.
2. Identify responsible parties for all pre-storm activities
3. Develop a chain of command list with contact information for all pre- and post-storm activities. Points of contact should be included for local, state, and federal emergency management officials, utility suppliers for electricity and gas, local materials haulers, heavy equipment contractors, and tree trimming specialists. Update points of contact as necessary.
4. Replace all clean sand over washed from the public beaches to the roadways back to the beaches. All sandy material should be used to restore the dunes or the beach above the high water line.

Timing: 2008-2009
Priority: High
Responsibility: County of Dukes County

Activity 3.1.6: Review and update Beach Management Plan on a periodic basis.
Purpose: To ensure effective management of the public beaches by adjusting future management practices to respond to the changing conditions and uses of the beaches.
Details:

1. Review past maintenance and restoration activities, as well as storm damage records. Update the Beach Management Plan as necessary.

Timing: Every 5 years

Priority: Moderate
Responsibility: County of Dukes County

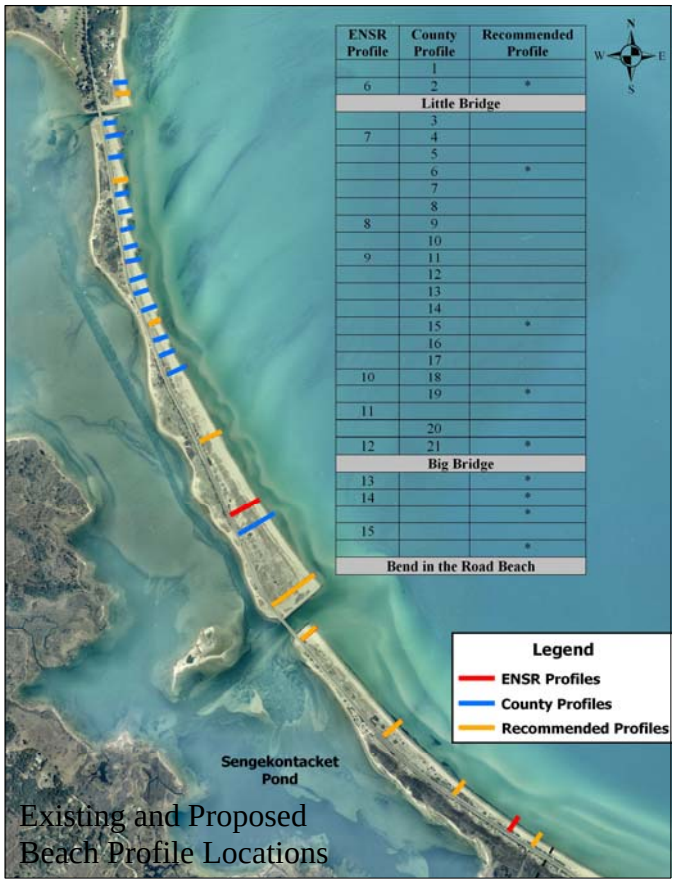
3.2 MONITORING ACTIVITIES

Activity 3.2.1: Conduct bi-annual beach profile and photographic surveys along the entire length of Sylvia State Beach.

Purpose: To quantify long-term and seasonal changes in beach profile and shoreline location, and to identify when beach nourishment and dune restoration are needed.

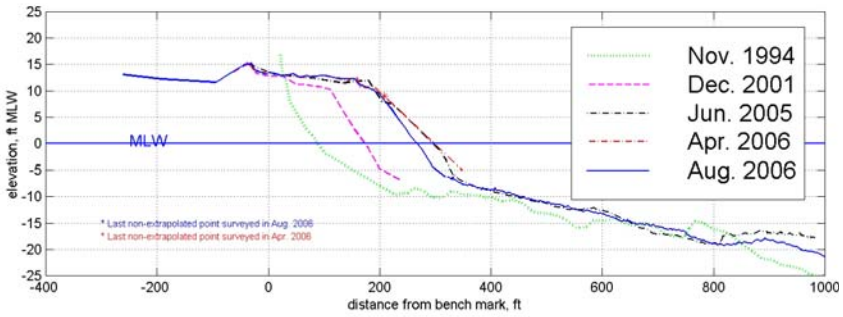
Details:

1. Collect beach profiles at all locations established as part of this Beach Management Plan (Appendix A,C; Table 1).
2. Establish BMs – permanent survey markers should be established in close proximity to the road edge so that transect locations can be re established over time; PVC pipes filled with concrete; establish elevation at top of each survey marker and keep database of transect info at County.



Existing and Proposed Beach Profile Locations

3. Survey beach profiles bi-annually in the late winter (Mar. to Apr.) and early fall (Sep. to Oct.) at ten transect locations extending from the edge of the roadway to -3 MLW.
4. Utilize GPS or total station survey equipment to collect horizontal (x,y) and vertical (z) positions along each beach profile. Collect information regarding position of high and low water during the surveys, as well as breaks in slope, type of resource area, and extent of vegetation.
5. Maintain the survey data in a GIS database or spreadsheet format such as Excel.



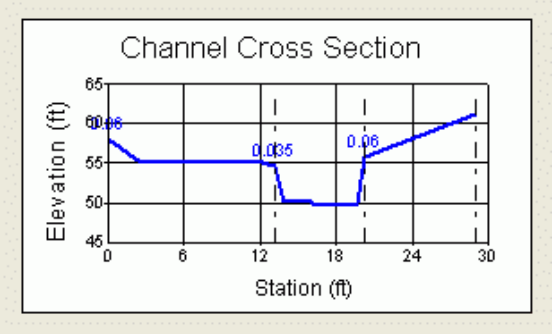
6. Compare successive surveys to evaluate changes in elevation, volume, and shoreline position. Review beach profile data on an annual basis to identify areas where beach width is consistently narrowing, or where dune width/height is compromised. Establish these areas as priority sites for beach nourishment and dune restoration.

Activity 3.2.2: Collect photographs at inlets beach profile locations, which can be used to document visual changes of the beach.

1. Collect the photography bi-annually along with the beach profile data. Document the dates and tide levels during the photography and maintain in a binder or electronic database.
2. The photographs would show changes in the various geomorphic features including beach width, position of mean high water, storm wrack, extent of vegetation and the wave climatology at time of photo.
3. Person responsible for beach profiling should attend quarterly BBTF meetings to report on beach profiles
4. Established stations for repeat photographs would provide the best archive. Appropriate photograph locations include:
    a) from north of Little Bridge looking south along water line,
    b) from the Little Bridge, looking east toward Nantucket Sound of the channel and of the two jetties
    c) From ach beach access pathway, looking north and south along the dune line and along the water line
    d) At each groin, along the up and down drift sides

Timing: Bi-annually
Priority: High
Responsibility: FOS, county

Activity 3.2.3: Collect bathymetric data at North Inlet and South Inlet.
Purpose: To monitor infilling before shoaling makes navigation hazardous and to reduce the need for "emergency dredging".
Details:



1. Simple inlet cross-sections collected at both of the inlets would serve as the basis for planned dredging and sand bypassing (beach nourishment on the downdrift beach).
2. Maintaining navigation will help to maintain adequate flushing of the Pond.
3. Monitoring the shoaling within the inlet channels would also be useful when planning for funding and for scheduling of dredging equipment.
4. It is recommended that at least six (6) cross sections be profiled at Little Bridge and six (8) cross sections at Big Bridge.


Recommended Bathymetric Profile Locations – South Inlet


Recommended Bathymetric Profile Locations – North Inlet

5. Annually for navigation channel, every 3-5 years for ebb and flood shoals.
6. Survey could be done by:
   (a) Professional Land Surveyor (PLS)
   (b) Engineer or Scientist

Timing: Bi-annually
Priority: High
Responsibility: DCR, FOS, County

Activity 3.2.4: Conduct annual condition surveys of all coastal engineering structures along Sylvia State Beach.
Purpose: To identify damaged or deteriorating structures in need of repair.
Details:

1. Document the condition of the rock structures by examining rip rap placement, filter cloth exposure, toe scour and undermining, concrete failure, backfill erosion, etc.


Rock groin – North Inlet

2. Document the condition of timber structures by examining
3. Collect photographs of structures during each survey.

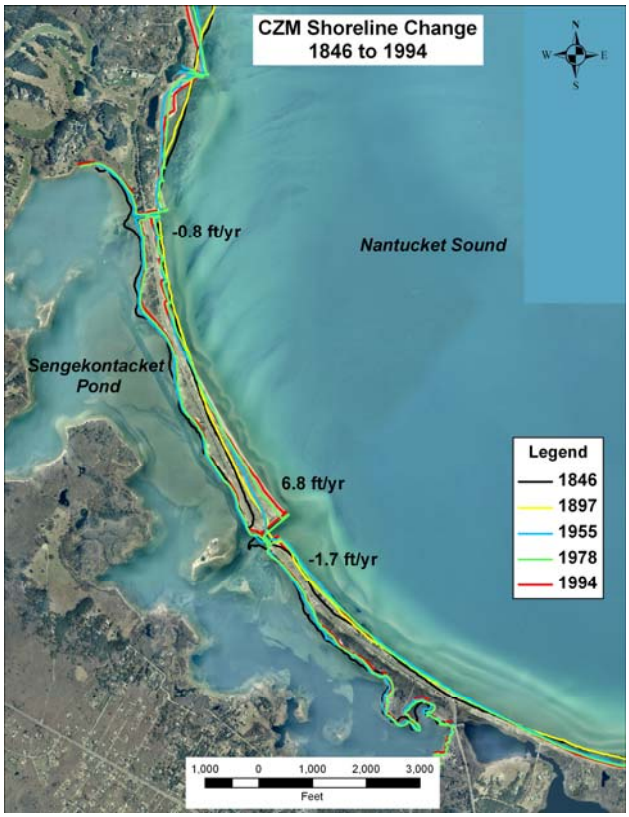
Timing: Annually
Priority: Moderate
Responsibility: BBTF, County

Activity 3.2.5: Conduct shorebird surveys at the public beach sites located within mapped Priority and Estimated Habitat Sites.

Purpose: To protect rare and endangered shorebird species.
Details:

1. Utilize trained observers to monitor the mapped beaches during the nesting season starting during the beginning of March.
2. Immediate notification to the MA NHESP should be made if any nesting sites are located.
3. An exclusionary zone 50 yards around each nest should be established using symbolic fencing. The nests should be monitored until such time as the chicks have fledged.

Timing: Annually
Priority: Moderate
Responsibility: FOS



Activity 3.2.6: Update estimates of shoreline change using additional aerial photography.
Purpose: To quantify long-term trends in shoreline change and to improve decisions regarding sediment management.
Details:

1. Review and update the CZM shoreline change database by incorporating additional aerial photography from 1950, 1960, 1968, 1975, 1986, 2001, and 2004.
2. Continue to update the shoreline change analysis with new photographs as they become available, approximately every 5 years.
3. Use the updated shoreline change data to forecast erosion rates as the basis for planning restoration opportunities.

Timing: 2009-2013
Priority: Low
Responsibility: BBTF, FOS

Activity 3.2.6: Establish a database manager.
Purpose: Catalogue and maintain all data pertaining to the management of the beach.
Details:

1. To hold all data, make plots, catalogue photographs
2. Interpret data and make recommendations about when remedial action is needed based on established thresholds
3. Establish manual on how to collect data so that there is consistency between surveys.

Timing: Ongoing
Priority: High
Responsibility: County

3.3 ROUTINE MAINTENANCE ACTIVITIES

Activity 3.3.1: Perform maintenance of the paved parking areas along State Road.
Purpose: To maintain and preserve existing parking spots and to ensure public safety.
Details:

1. Sweep paved parking lane and return clean sand back to the dune along the road.
2. Paint parking lines, directional arrows, and seal parking areas as needed.
3. Regrade natural surface parking area across from North Inlet at the beginning of the beach season, and as needed throughout the year to avoid the collection of rainwater.

Timing: Annual and as needed
Priority: Low
Responsibility: DPW, County


Parking Lane along State Road

Activity 3.3.2: Repair existing sand fencing, split rail fencing, and guard rail fencing as needed.
Purpose: To maintain fencing for public safety and protection of the resource areas.
Details:

1. Conduct an inventory of damaged fencing in March or April.
2. Repair and/or replace fencing as needed. All work in the Coastal Dune and Coastal Beach areas should be performed by hand, and should avoid disturbance of existing vegetation.
3. Dispose of old fencing in an approved off site location.


Handicap Beach Access

Timing: Annual – Spring or Fall
Priority: High
Responsibility: BBTF, County

Activity 3.3.3: Obtain Order of Conditions for routine maintenance of Sylvia State Beach.
Purpose: To ensure necessary permits are active for ongoing maintenance and restoration of the beach and to expedite coordination of work.
Details:

1. Notice of Intent filing should include beach grass plantings, sand fencing and signage.
2. A filing should be submitted to the Edgartown and Oak Bluffs Conservation Commission.
3. The engineering drawings should a recent existing conditions survey and identify priority areas for beach grass and sand fencing.
4. A component of Order of Conditions should include an annual site visit with the local Conservation Commission.
5. Requested activities should be flexible to include all areas of Sylvia State Beach, not just certain locations.
6. Requested activities should include maintenance in perpetuity.

Timing: Ongoing
Priority: High
Responsibility: County with support from towns

3.4 RESTORATION ACTIVITIES

Activity 3.4.1: Install sand fencing and/or symbolic fencing around Coastal Dunes.
Purpose: To promote sand accumulation and dune growth, and to minimize disturbance of the dunes by foot traffic.
Details:

1. Install new sand fencing and repair existing sand fencing around the seaward sides of all Coastal Dunes, and along the edges of all dune access paths. This type of fencing should be installed at all beaches,
2. The sand fencing should be attached to wooden posts installed about 10 ft apart. The posts could be installed using a rubber-tired backhoe with an auger attachment in locations where access will not disturb the dunes, and should be installed by hand in all other locations. The fencing should be stapled and/or wired to the posts by hand. The sand fencing should be no taller than 3 ft high.


Sand Fence

3. The sand fencing should be inspected after storm events to repair and maintain damaged fencing.
4. Temporary symbolic fencing should be installed along the roadside of Coastal Dunes that are susceptible to heavy foot traffic during special events (July 4th fireworks, etc.).

5. Symbolic fencing should be installed using wooden or metal stakes driven by hand and connected with string and delineated by fluorescent surveyor tape. All symbolic fencing should be removed after the events are complete.

Timing: Annually and as needed
Priority: High
Responsibility: County or FOS

Activity 3.4.2: Initiate a dune restoration program.
Purpose: To improve the ability of the Coastal Dunes to provide storm damage protection and flood control.
Details:

1. Identify suitable sources of sand that are compatible in size to the existing dune sands, including material from upland and dredging sources.
2. Facilitate the use of compatible sand sources generated from local dredging projects, both private and public, for restoration of eroding dunes. Applicants for private dredging projects should be made aware of beneficial reuse options on the town beaches during the Conservation Commission review and permitting process. Dredge quantities and sediment analyses should be made available to the County for determining suitability as beneficial reuse. Acceptance of compatible dredge sediments should be confirmed through a letter to the applicant, with a copy to the Conservation Commission.
3. Maximize the dune profile at each of the above referenced beaches by increasing the height and width. The ideal dune design would meet FEMA's 540 sq ft rule for protection during a 100-yr storm event; however, not all of the dune and beach systems provide sufficient area to create such a dune.
4. Vegetate dune restoration areas with beach grass and protect with sand fencing.

Timing: 2008-2013
Priority: High
Responsibility: DPW, Beach Department, Conservation Commission

Activity 3.4.3: Install sand fencing to delineate beach access areas.
Purpose: To Provide adequate access to beach and protect dune.
Details:

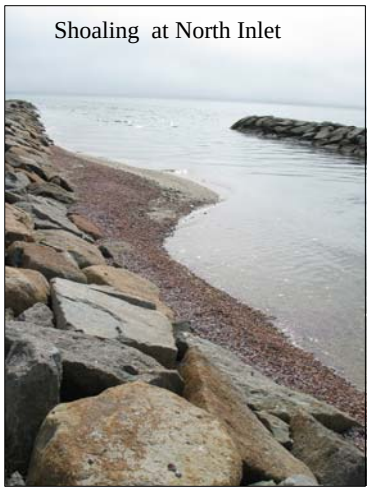
1. Create boardwalks at grade for handicap access.
2. Install sand fencing around perimeter of dune
3. Close beach access pathways near nests during bird season.


Sand fence delineating beach access

Timing: Annual
Priority: High
Responsibility: DPW, Beach Department, Conservation Commission

Activity 3.4.4: Utilize sand dredged from North Inlet following storm events as beach nourishment on nearby south shore beaches.
Purpose: To minimize shoaling, facilitate sediment bypassing, and mitigate on-going beach erosion.
Details:

1. The sand dredged from North Inlet should be placed on the beach east of the inlet and above the high water line. Dredged sand should be left in a stockpile area only as long as it takes to dewater.
2. As soon as the material is dewatered, it should be spread across the public beach area east of the inlet, between the dune and the high water line.
3. The dewatering area for sand dredged from the North Inlet can be either side of the inlet; however the stockpile area should always be above the high water line. Dredged sand should be left in the stockpile area only as long as it takes to dewater.


Shoaling at North Inlet

Timing: On-going; as needed
Priority: High
Responsibility:

Activity 3.4.5: Initiate program of revegetation within the Coastal Dunes.
Purpose: To promote sand accumulation and dune growth, and to minimize disturbance of the dunes by foot traffic.
Details:

1. Revegetate sparsely covered areas of the Coastal Dunes with beach grass and beach plum. Beach grass should be utilized for the seaward facing sides of the dunes and the beach plum should be planted along the more protected landward sides of the dunes.

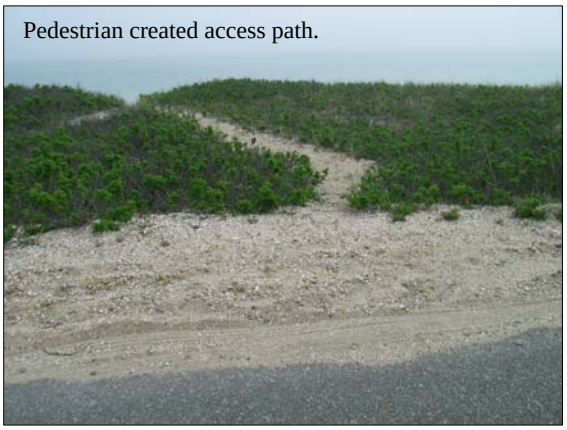

New beach grass plantings

2. All planting work should be conducted by hand, and care should be taken to protect existing vegetation.
3. The beach grass should be purchased as bare root culms and planted 2-3 culms per hole, spaced 12 inches on center.
4. All revegetation work should take place during the period Sept. 1 through April 1.
5. Fertilize newly planted beach grass.

Timing: Annually and as needed
Priority: High
Responsibility: Beach Department, DPW (Highways Division), and Conservation Commission

Activity 3.4.6: Eliminate unnecessary dune access paths.
Purpose: To minimize disturbance to the Coastal Dunes and to improve their ability to function as storm damage protection and flood control.
Details:

1. Eliminate unnecessary dune access paths by filling with dune compatible sand, revegetating with beach grass and/or beach plum, installing fencing, and educational signage.
2. Closure of dune paths is recommended only in areas where pedestrians have created new paths through the fragile dune, and not at County maintained paths.


Pedestrian created access path.

Timing: 2009-2013
Priority: Moderate
Responsibility: DPW (Highways Division), Beach Department

Activity 3.4.7: Reorient the angle of dune access paths and install at grade decking or elevated walkways.
Purpose: To minimize risks from storm damage and flooding.
Details:

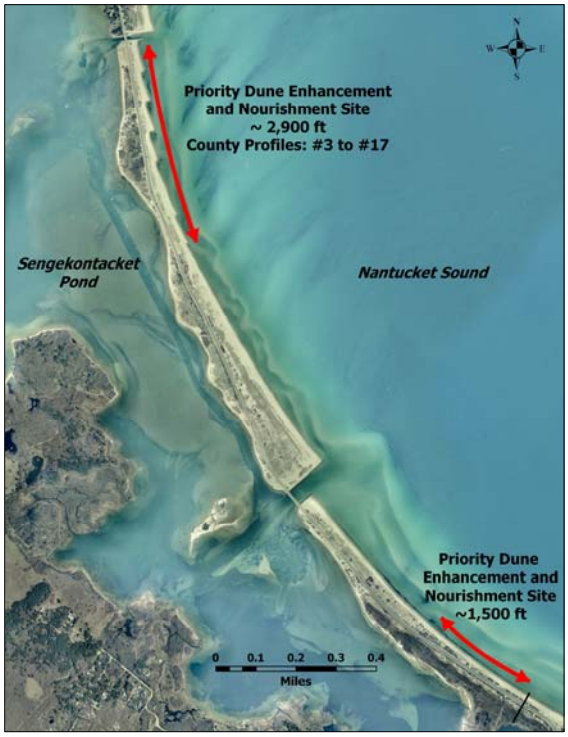
1. Dune access paths should be reoriented so that they are not perpendicular to the shoreline.
2. During the process of reorienting the paths, the old pathways should be filled with dune compatible sand and revegetated.
3. Paths that receive the greatest use should be protected with decking placed at grade. The decking should be used seasonally to protect the access paths from scour, and removed during the winter season. The decking should start at the edge of the parking lot or dune and extend several feet beyond the toe of the dune. Alternately, elevated walkways can be used; however, these are generally more costly, and may require maintenance following storms.


Shore perpendicular access path.

Timing: 2 009-2013
Priority: Moderate
Responsibility: DPW (Facilities Maintenance, Highway Division), Beach Department, Conservation Commission

Activity 3.4.8: Initiate a program of ongoing beach nourishment.
Purpose: To increase the ability of the coastal beach to provide storm buffers, flood control, sediment to adjacent beaches, to mitigate on-going erosion, and to enhance the recreational resource.
Details:

1. Priority areas include the northern 2,900 feet and southern 1,500 feet of the beach.
2. Nourishment sources may include Sengekontacket Pond, North or South Inlet, offshore borrow site, sediment bypassing from updrift, upland or off-island.
3. Explore opportunities for cooperation with other municipalities, private stakeholders, and state and federal agencies for the implementation of large-scale nourishment projects.
4. Further analysis would be required to determine minimum profile.
5. Identify potential funding sources for large-scale beach nourishment projects.
6. Biannual profile data could be used to update priority areas.
7. Securing appropriate permits will be necessary.



Timing: As needed to meet minimum profile
Priority: High
Responsibility:

Activity 3.4.9: Conduct an evaluation of jetty function for jetties at North and South Inlets.
Purpose: To stabilize inlets and natural sand transport.
Details:

1. Perform sediment transport analysis to evaluate possible sand bypassing mechanism (inlet/shoal dredging, beach bypassing)
2. Perform analysis to determine of modifications to length are recommended.

Timing: Annually
Priority: Moderate
Responsibility:

Activity 3.4.10: Conduct an evaluation of groin function for timber and rock groins.
Purpose: Stabilize beach & maximize natural longshore sand transport.
Details:

1. Perform sediment transport analysis to evaluate sand bypassing potential through modifications to length, height or spacing of adjustable groins.
2. Keep filled to entrapment with nourishment.Timing: Annually

Priority: Moderate
Responsibility: County

Activity 3.4.11: Obtain local, state, federal permits for beach nourishment and dune restoration (Conservation Commission, DEP Chapter 91, Army Corps of Engineers)
Purpose: To ensure necessary permits are active for ongoing maintenance and restoration of the beach.
Details:

1. Must be flexible to allow sand from different sources.
2. Identify suitable sources of sand that are compatible in size to the existing dune and beach sands, including material from upland and dredging sources.
3. Specify location of possible nourishment sites, suspected timing and grain size analysis for dune, beach and sediment sources.
4. Maintain permit database and record book of all permits pertaining to the beach nourishment and dune restoration.
5. Renew permits regularly – typically good for five years.

Timing: 2008
Priority: High
Responsibility: County with support from towns

Activity 3.4.12: Obtain local, state, federal permits to maintain inlets via dredging (Conservation Commission, DEP Chapter 91, Army Corps of Engineers, Water Quality)
Purpose: To ensure necessary permits are active for ongoing maintenance dredging to reduce the need for "emergency dredging" and decrease shoaling.
Details:

1. Identify high priority beach nourishment sites along Sylvia State Beach.
2. Must be flexible to allow for varying volumes of sand to be dredged from the inlets based on extent of shoaling
3. Must be flexible to allow sand to be placed at various locations on the beach depending upon critical need.
4. Specify location of possible nourishment sites, suspected timing and grain size analysis for dune, beach and sediment sources.
5. Renew permits regularly

Timing: 2008-2009
Priority: High
Responsibility: County with support from towns

3.5 EDUCATION AND OUTREACH ACTIVITIES

Activity 3.5.1: Update signage for all public beach areas.
Purpose: To improve the dissemination of important information regarding the beaches and to increase public safety.
Details:

1. Prepare a comprehensive list of necessary signage for the public beach sites (ex. hours of operation, dog access and leashing, dune protection, no feeding of birds, etc.).
2. Develop a plan to upgrade the signs as necessary, using a consistent format and unified design.

3. Identify strategic locations where signs will have the greatest impact and determine the number of signs needed at each beach.
4. Install and replace signs as needed.

Timing: On-going
Priority: High
Responsibility: County, FOS

Activity 3.5.2: Increase activities associated with enforcement of dog regulations on the public beaches.
Purpose: To protect public health and safety.
Details:

1. Consider increased patrolling of public beach areas by the police department before and after regular beach areas.
2. Issue citations for violations of dog regulations.

Timing:
Priority: High
Responsibility:

Activity 3.5.3: Initiate an annual fundraising or educational awareness event such as "Sylvia State Beach Day".
Purpose: To promote interest and awareness of issues associated with and impacting Sylvia State Beach.
Details:

1. Scope out event details – fundraiser vs. casual raise awareness event
2. Recruit volunteers
2. Distribute pamphlets describing beach activities needing support
3. Consider requesting local merchant donations or gift certificates to raffle.
4. Consider silent auction

Timing: Annual
Priority: Moderate
Responsibility: County, FOS, support from Towns

Activity 3.5.4: Increase awareness associated with beach parking.
Purpose: To protect the stability of the coastal dunes.
Details:

1. Increase signage explaining reasons why parking in the dune is destructive and prohibited.
3. Consider increased patrolling of public beach areas by the police department.
4. Issue citations for parking violation.
5. Consider public parking fees to raise money for signage and public awareness brochures.

Timing:
Priority: High
Responsibility:

4.0 ENVIRONMENTAL STATUTES AND REGULATIONS

A variety of environmental statutes and regulations apply to work on Sylvia State Beach. A summary is provided as follows:

Agency: Edgartown or Oak Bluffs Conservation Commission
Activities Subject to Regulation: Any activity within a resource area, or within 100 feet of a resource area, that will remove, fill, dredge, build upon, degrade, or otherwise alter an area subject to protection under the bylaw.
Application: Notice of Intent
Permit: Order of Conditions
Example Projects: dune or beach nourishment, beach grass plantings, sand fence installation, dredging, groin or jetty

Agency: Massachusetts Department of Environmental Protection - Wetlands
Activities Subject to Regulation: Any activity within a resource area, or within 100 feet of a resource area, that will remove, fill, dredge, or alter an area subject to regulation under M.G.L. c. 131, § 40.
Regulations: 310 CMR 10.00
Application: Notice of Intent (filed jointly with local Conservation Commission)
Permit: Order of Conditions (issued jointly by local Conservation Commission)
Example Projects: dune or beach nourishment, beach grass plantings, sand fence installation, dredging

Agency: Massachusetts Division of Fisheries and Wildlife
Activities Subject to Regulation: Any activity within sites mapped as Estimated or Priority Habitat.
Regulations: 321 CMR 10.00
Application: MESA Project Review
Permit: MESA Project Review Decision
Example Projects: dune or beach nourishment, beach grass plantings, sand fence installation

Agency: Massachusetts Environmental Policy Act Unit (MEPA)
Activities Subject to Regulation: Projects that exceed review thresholds listed in 301 CMR 11.03.
Regulations: 301 CMR 11.00 – 12.00
Application: Environmental Notification Form (ENF) or Environmental Impact Report
Permit: Certificate from the Secretary of Environmental Affairs
Example Projects: large scale beach nourishment, dredging

Agency: Massachusetts Department of Environmental Protection - Waterways
Activities Subject to Regulation: In general, any activities that require work below the mean high water line, or in Commonwealth Tidelands.
Regulations: 310 CMR 9.00
Application: Chapter 91 License or Permit application

Permit: Chapter 91 License/Permit
Example Projects: beach nourishment, dredging, coastal engineering structure installation or maintenance

Agency: Massachusetts Department of Environmental Protection – Water Quality
Activities Subject to Regulation: Activities that involve the discharge of dredged or fill material, dredging, and dredged material disposal activities in waters of the Commonwealth.
Regulations: 314 CMR 9.00
Application: Water Quality application
Permit: Water Quality Certificate
Example Projects: beach nourishment, dredging, coastal engineering structure installation or maintenance

Agency: US Army Corps of Engineers
Activities Subject to Regulation: In general, any activities that require work below the extreme high water line.
Regulations: 33 CFR 320-331, 40 CFR Part 230
Application: Programmatic General Permit or Individual Permit applications
Permit: Programmatic General Permit, Individual Permit
Example Projects: beach nourishment, dredging, coastal engineering structure installation or maintenance

5.0 EMERGENCY RESPONSE PLAN

The emergency response plan is designed to provide the County of Dukes County with the information necessary to expeditiously protect State Road and restore the beach and dune after damaging storms. The following action items are recommended for preparing for a storm, assessing storm damage, selecting a course of action to restore/repair the damage, and to implement the appropriate solution(s).

5.1 PREPARE - ACTION ITEM #1: ESTABLISH EMERGENCY RESPONSE TEAM

A critical component of the emergency response plan is the establishment of an emergency response team. The team would be responsible for pre- and post-storm coordination of resources, damage assessment and coordination and implementation of mitigation alternatives recommended within the plan. The team should include at least one representative from each of the following organizations/agencies:

- Division of Conservation and Recreation (DCR)
- County of Dukes County
- Massachusetts Highway Department (MHD)
- Friends of Sengekontacket (FOS)
- Oak Bluffs and Edgartown Conservation Commission
- Massachusetts Emergency Management Agency
- Oak Bluffs and Edgartown Emergency Response Officials
- Coastal Engineering Consultant
- Martha's Vineyard Commission (MVC)

A detailed list that includes the point of contact for each agency listed above, with emergency phone numbers and email addresses should be available to the entire emergency response team. A lead advisor should be appointed who will coordinate the group efforts in the event of an emergency.

5.2 PREPARE - ACTION ITEM #2: ESTABLISH RANGE OF SOLUTIONS

A number of viable alternatives are possible for repair and restoration of Sylvia State Beach in the aftermath of significant storm damage. These range from "soft" solutions such as beach and dune nourishment, beach grass plantings, and the installation of sand fencing, to "hard" solutions such as rock or sand filled geotextile solutions, riprap, or sheet pile armoring. The soft solutions, such as nourishment and plantings are recommended to restore the beach to pre-storm conditions, and provide protection against future storms. The hard solutions should be considered as long-term alternatives implemented only after extreme erosion that threatens the safety of State Road.

The use of a structural vs. a soft-based solution will depend on the extent and type of the damage to the beach and road. Although raising the elevation of the beach and dune with nourishment would be the most desirable method of restore the areas damaged by the storm, structural solutions would be required if erosion of the beach and dune was such that the integrity of the roadway was imminently threatened. This is more likely in areas

where the beach and dune system is narrow and low in elevation, such as to the south of both North and South Inlet.

Within the alternatives described above, a myriad of possible combinations could be implemented depending on the extent of the damage. It should be the responsibility of the emergency response team to determine the most appropriate course of action. Consultation with a Professional Engineer or Coastal Scientist is recommended before a course of action is decided upon and implemented.

5.3 PREPARE - ACTION ITEM #3: CONTRACTOR COORDINATION

Establishing a list of qualified contractors who would be committed to perform emergency response work immediately following a damaging storm should be a priority of the emergency response team. Identifying local sources of materials (sand, rocks, etc.) that would be readily available following a large storm would help to expedite repairs to the natural resource areas, roadway and coastal engineering structures. Listed below are six possible contractors who perform the type of work that may be necessary following a storm, or who supply the type of construction materials that would be required, such as sand and rocks. A relationship should be established with each of these contractor/vendors to ensure participation. Once it has been determined what resources (materials and/or labor) each of these contractors/vendors is adept at handling, emergency response contracts should be established to guarantee that services would be provided in the event of an emergency.

DECA
PO Box 2169
Vineyard Haven, MA 02568
508-693-3322 (office)

Watercourse Construction
11 Evelyn Way
Vineyard Haven, MA 02568
508-693-9456

White Brothers Lynch Corporation
8 Vineyard Avenue
Vineyard Haven, MA 02568-3234
508-693-0845

Goodale Construction Company
Edgartown Road
Vineyard Haven, MA 02568
508-693-0768

R.M. Packer Company, Inc.
199 Beach Road
Vineyard Haven, MA 02568
508-693-0900

Aqua Marine Dock Builders
PO Box 1178
Edgartown, MA 02539
508-627-8851

5.4 PREPARE – ACTION ITEM #4: ESTABLISH SAND STOCKPILE

Stockpiling beach compatible sand at an accessible location to be used for emergency repairs following a storm would expedite the restoration process. Beach compatible sand is a rare commodity on Martha's Vineyard and only available from a very limited number of vendors. Goodale is the only commercial sand mining pit on the island, and has a limited supply of beach compatible sand. RM Packer Company in Vineyard Haven

barges sand to the Vineyard from the mainland; however, costs associated with this are very high. It would be advantageous to coordinate acquisition of sand from smaller, local excavation projects on the Vineyard, to be stockpiled and used as needed. A suitable location for the stockpile would have to be determined.

5.5 ASSESSMENT - ACTION ITEM #5: DEPLOY EMERGENCY RESPONSE TEAM

The emergency response team should be deployed as soon as possible following a significant storm to evaluate damage to the natural resources (beach, dune, vegetation etc.), roadway and coastal engineering structures (jetties, wooden and rock groins). The lead advisor of the group should be responsible for contacting the other emergency response team members to coordinate an onsite meeting as soon after the storm as possible. A field notebook should be kept to log the extent of the damage to the natural resources (beach, dune etc), coastal engineering structures and State Road. This will help to identify and prioritize areas requiring immediate mitigation. Photographs of the beach, dune, inlets, and roadway should be taken and details such as such as time of day, phase of the tide, photograph location and extent of damage should be recorded. The emergency response team should have a meeting following the onsite to discuss the course of actions for damage mitigation.

5.6 ASSESSMENT - ACTION ITEM #6: FIELD DATA COLLECTION AND ANALYSIS

Immediately following the storm, topographic beach profiles should be collected by an competent surveyor and digital photographs should be taken of the beach and dune at each established profile location to capture the visual extent of the damage. Details such as such as time of day, phase of the tide, photograph location, and extent of damage should be recorded for the photographs. The beach profiles should be analyzed and compared with previous profile data to help quantify the volume of sand that would be required to restore the beach to the pre-storm condition.

5.7 ASSESSMENT - ACTION ITEM #7: CHOOSE ALTERNATIVE(S)

The information gathered during the emergency response team's onsite following a storm should be used to determine the appropriate solution(s) for restoring Sylvia State Beach. Based on the extent and type of damage, more than one alternative may be required to mitigate storm damage. The emergency response team should consult with a Professional Engineer or coastal scientist familiar with Sylvia State Beach to discuss the probable course of action for storm damage mitigation prior to commencing work.

If damage is limited to erosion of the beach and foredune, and there is no imminent threat to State Road, a soft solution such as beach nourishment and/or dune restoration should adequately restore the barrier beach resource. A viable source and sufficient quantities of sand must be readily available through one of the emergency response team contractors or within the designated sand stockpile. Dredging one of the inlets or Sengekontacket Pond would also provide a suitable source of sand; however, the use of the Town dredge must be available and capable of being mobilized to the project site at short notice. Necessary funding should be available to implement a renourishment project promptly following a major storm.

If the erosion of the beach creates a threat to State Road, or if State Road is damaged during a storm, a structural solution, whether temporary or permanent will likely be required in addition to beach the nourishment. The placement of rock mattresses, sand filled geotextile bags, riprap, or sheet pile armoring along seaward side of State Road to protect the roadway from continued wave action may be considered to prevent further damage to the remaining sections of the roadway.

5.8 IMPLEMENTATION - ACTION ITEM #8: OBTAIN EMERGENCY PERMITS

Woods Hole Group recommended obtaining "blanket" permits for a number of maintenance activities (beach grass plantings, dune renourishment etc.), maintenance dredging in North and South Inlets, and routine beach nourishment along Sylvia State Beach; however, emergency permits may be required if the necessary emergency repairs are beyond what is allowed under the scope of work of these existing permits. Emergency Procedures for local, state and federal emergency permits are located in Appendix A. Below is a list of local, state and federal regulatory personnel that emergency permits should be coordinated through.

Edgartown Conservation Commission
Jane Varkonda – Administrator
70 Main Street
Edgartown, MA 02539
508-627-6165 (Edgartown)

Oak Bluffs Conservation Commission
Liz Durkee - Administrator
PO Box 1327
Oak Bluffs, MA 02557
508-693-3554 x118

US Army Corps of Engineers Regulatory Division
696 Virginia Road
Concord, Massachusetts 01742-2751
978-318-8703

Liz Kouloheras
MA DEP - SE Regional Office
20 Riverside Drive
Lakeville, MA 02347
508-946-2700

Dave Hill
MA DEP - SE Regional Office
20 Riverside Drive
Lakeville, MA 02347
508-946-2730

Ken Chin
Waterway Program
MA DEP – Boston
1 Winter Street
Boston, MA 02108
617-292-5893

5.9 IMPLEMENTATION - ACTION ITEM #9: CONTRACTOR SELECTION AND SOLUTION IMPLEMENTATION

Once the appropriate solution(s) are decided upon, the emergency response team should select the appropriate contractor(s) for the chosen alternative(s) and implement emergency repairs as quickly as possible.

6.0 NEXT STEPS

This Management Plan incorporates numerous recommendations for beach management activities (Section 3.0) and Emergency Response Action Items (Section 5.0). Included with each recommended activity and action item is information related to the purpose, details of implementation, timing, priority, and responsibility. The priority is a recommendation from Woods Hole Group based upon our understanding of the stakeholder interests for Silvia State Beach. However, the final priorities must be defined by the stakeholders involved (e.g., Dukes County, DCR, Barrier Beach task Force (BBTF), Friends of Sengenkontacket (FOS), Town of Oak Bluffs, Town of Edgartown, general public, and others). In this regard, the draft Management Plan is a working document that we present to the stakeholders for review and action. We recommend that the stakeholders convene working sessions, after careful review of the draft Management Plan, to decide on the most important next steps that fulfill the requirements of the local stakeholders involved. To assist with this process, Tables 2 and 3 were developed. Table 2 summarizes the recommended management activities, and Table 3, summarizes the action items for the emergency response plan for the stakeholders to work with.

Once the items are prioritized, an action plan with concrete next steps, permitting requirements, and funding commitments can be developed by the stakeholders. We also recommend development of an implementation schedule based on the priorities and available resources [e.g., manpower to implement the recommendations and financial resources to support the effort(s)]. Certain items will be implemented immediately in 2008, and other items can be reserved for later years as resources become available. Woods Hole Group can facilitate the working sessions, and develop the action plans, if requested by the stakeholders; however, this level of effort would be beyond the existing scope.

One of the obvious constraints on implementing the management plan is the availability of finances. Several of the recommendations above address avenues to raise funds for more proactive management and restoration of Silvia State Beach. Some examples might include:

- Public outreach and fund raising (e.g., annual event with auctioned goods donated from local businesses and citizens, or merchandise/memorabilia sales)
- Appeals/membership to stakeholders through not-for-profit organizations (e.g., Friends of Sengekontacket Pond)
- Sponsorship sales drives (e.g., citizens can make donations to cover certain items such as fencing, or sponsor activities such as annual monitoring, perhaps as a tax deductible charitable contribution with some local recognition such as an onsite plaque)
- Parking fees/fines
- County/Town matching funding, and
- Grant monies through state agencies, such as Mass Highways, DCR, or MCZM.

Once the recommendations are prioritized and scheduled, a corresponding financial requirements schedule can be developed as the basis for defining fund raising activities, objectives, and goals.

Table 2. Summary of Recommended Management Activities

Activity	Priority	Time Frame	Frequency	Responsibility and Outside Support
Management & Planning				
Record Keeping System	Moderate	2008/2009	Ongoing	County
Conservation Commission Updates	Moderate	2008/2009	Spring & Fall	County, FOS
Maintain Active permits	High	2008/2009	Ongoing	County
Pre-Post Storm Response Plans	High	2008/2009	As Needed	County, FOS
Beach Management Plan Updates	High	2008/2009	Every Year	Consultant
Monitoring				
Beach Profiles	High	2008	Annually and Post Storm	Consultant
Photographs	High	2008	Annually and Post Storm	County, FOS
Bathymetry - Channel	Moderate	2008-2009	Bi-annually	Consultant
Bathymetry - Shoals	Moderate	2008-2009	Every 3-5 Years	Consultant
Existing Conditions Surveys of Structure (groins, jettys)	Moderate	2008-2009	Annually	Consultant
Shorebird Surveys	High	2008	Annually	FOS
Shoreline Change	Low	2008	Every 5 Years	Consultant
Maintenance				
Parking Lane Maintenance	Low	2008	As Needed	DPW, County
Fence Repair	High	2008-2009	As Needed	BBTF, County
Routine Maintenance Permits	High	2008-2009	Ongoing	County with support from Towns
Restoration				
Install Sand Fence (Dunes)	Moderate	2008	Annual and as needed	County, FOS
Dune Restoration	High	2008-2009		DPW, Beach Department, Conservation Commission
Install Sand Fence (Beach Access)	High	2008-2009	Annually	DPW, Beach Department, Conservation Commission
Beach Nourishment from Dredging	High	2008-2013	On-going as needed	County
Dune Revegetation	High	2008-2013	Annual and as needed	Beach Department, DPW (Highways Division), Conservation Commission
Dune Access Path Maintenance	Moderate	2008-2009	Annually	Beach Department
Beach Nourishment	High	2008-2013	As needed to meet minimum profile	County, DCR
Groin/Jetty Function Analysis	Moderate	2008-2009	3-5 Years	Consultant
Beach Nourishment Permits	High	2008-2009	Ongoing	County with support from Towns
Dredging Permits	High	2008-2009	Ongoing	County with support from Towns
Education Outreach				
Signage	Moderate	2008-2009	Ongoing	County, FOS
Parking Lane Maintenance		2008-2009	Ongoing	County, FOS
Dog Regulations	Moderate	2008-2009	Ongoing	County, FOS
Annual Event	Moderate	2008-2009	Annually	County, FOS

Table 3 Summary of Recommended Emergency Response Action Items

Action Items	Timeframe
Prepare	
Establish Emergency Response Team	2008
Establish Range of Solution	2008/2009
Contractor Coordination	2008/2009
Establish Sand Stock Pile	2008/2009
Assessment	
Deploy Emergency Response Team	Within 24 hours post storm
Choose Alternatives	Within 48 hours post storm
Field Data Collection and Analysis	Within 72 hours post storm
Implementation	
Obtain Emergency Permits	Within 72 hours post storm
Contractor Selection and Solution Implementation	Within 72 hours post storm

7.0 REFERENCES CITED

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Massachusetts Division of Fisheries and Wildlife, 2008. Priority and Estimated Habitat Maps, Natural Heritage and Endangered Species Program, http://www.mass.gov/dfwele/dfw/nhesp/gis_resources.htm.

Oldale, R. N., 1982. Pleistocene Stratigraphy of Nantucket, Martha's Vineyard, the Elizabeth Islands and Cape Cod, Massachusetts, *in* Larson, G. H., and Stone, B. D., eds., Late Wisconsinan Glaciation of New England: Dubeque, Kendall/Hunt Publishing Co., p. 1-34.

Strahler, A.N., 1966. A Geologist's View of Cape Cod. The Natural History Press, Garden City, New York, 115 p.

Thieler, E.R., J.F. O'Connell, and C.A. Schupp, 2001. The Massachusetts Shoreline Change Project: 1800s to 1994, Technical Report prepared in collaboration with USGS, WHOI Sea Grant, Cape Cod Cooperative Extension, and Massachusetts Office of Coastal Zone Management, 39 pp. + Appendices.

APPENDIX A – EMERGENCY PROCEDURES

DEP Wetlands 310 CMR 10.06

10.06: Emergencies

(1) Any person requesting permission to do an emergency project shall specify why the project is necessary for the protection of the health or safety of the citizens of the Commonwealth and what agency of the Commonwealth or subdivision thereof is to perform the project or has ordered the project to be performed. If the project is certified to be an emergency by the conservation commission or the Commissioner, the certification shall include a description of the work which is to be allowed and shall not include work beyond that necessary to abate the emergency. A site inspection shall be made prior to certification.

(2) An emergency certification shall be issued only for the protection of public health or safety.

(3) The time limitation for performance of emergency work shall not exceed 30 days, or 60 days for Immediate Response Actions approved by the Bureau of Waste Site Cleanup (BWSC) of the Department of Environmental Protection in accordance with the provisions of 310 CMR 40.0410, unless written approval of the Commissioner is obtained.

(4) A copy of an emergency certification shall be sent to the Department when it is issued by a conservation commission, and to the conservation commission when it is issued by the Department.

(5) The Department may, on its own motion or at the request of any person, review: an emergency certification issued by a conservation commission and any work permitted there under; a denial by a conservation commission of a request for emergency certification; or the failure by a conservation commission to act within 24 hours of a request for emergency certification. Such review shall not operate to stay the work permitted by the emergency certification unless the Department specifically so orders. The Department's review shall be conducted within seven days of: issuance by a conservation commission of the emergency certification; denial by a conservation commission of the emergency certification; or failure by a conservation commission to act within 24 hours of a request for emergency certification. If certification was improperly granted, or the work allowed there under is excessive or not required to protect the health and safety of citizens of the Commonwealth, the Department may revoke the emergency certification, condition the work permitted there under, or take such other action as it deems appropriate.

(7) Notwithstanding any other requirement of 310 CMR 10.06, Immediate Response Actions receiving oral approval from the Bureau of Waste Site Cleanup (BWSC) of the Department of Environmental Protection pursuant to 310 CMR 40.0420(2), or initiated up to 24 hours prior to notification to and oral approval by BWSC pursuant to 310 CMR 40.0420(7) and (8), may commence before requesting the conservation commission to issue an emergency certification under 310 CMR 10.06, so long as such request is made within 24 hours after BWSC has orally approved commencement of the Immediate Response Action. Once a request for emergency certification has been made pursuant to 310 CMR 10.06(7), work that commenced before such filing may continue pending a decision on the request by the conservation commission. Such work may also continue pending a decision on a request for Departmental review unless the request has not been

filed with the Department within one business day of: issuance by the conservation commission of the emergency certification; denial by a conservation commission of the emergency certification; or failure by a conservation commission to act within 24 hours of a request for emergency certification.

Waterways Emergency Procedures 310 CMR 9.20

9.20: Authorization of Emergency Actions

In an emergency situation where swift and immediate action is essential to avoid or eliminate a serious and immediate threat to health, safety, or the environment, the Department may approve a project or portion thereof, without a license or permit, in accordance with the following procedures.

(1) A written request shall be submitted to DEP which describes the location, and work to be performed and specifies why the project is necessary for the protection of the health or safety of the public or the environment. Accompanying this request shall be a written statement from a federal, state or municipal agency certifying that there is an emergency and specifying why said project is necessary to avoid or eliminate a serious and immediate threat to public health, safety, or the environment.

(2) Emergency approval shall be issued in writing and shall specify the limits of activities necessary to abate the emergency.

(3) When the necessity for undertaking the emergency action no longer exists, any emergency action taken under 310 CMR 9.20 shall cease until the provisions of 310 CMR 9.00 have been complied with. In any event, the time limit for performance of emergency work shall not exceed 30 days, unless a written extension is approved by the Commissioner or appropriate Regional Director.

(4) In all cases under 310 CMR 9.20, the person performing any emergency work is required to submit a license or permit application in accordance with 310 CMR 9.11 within 30 days of the date of emergency approval unless a written extension is approved by the Commissioner. Following the review of the application, the Department may require any modification to the emergency work that it deems necessary.

(5) In emergency situations where written notice is not feasible, verbal notice to and approval by the Commissioner or appropriate Regional Director may be substituted until written notice can be feasibly submitted.

(6) No work authorized under an emergency approval pursuant to 310 CMR 9.00 may be undertaken without emergency authorization under M.G.L. c. 131, § 40 and 310 CMR 10.00 and M.G.L. c. 30, §§ 61 through 62H, where applicable.

Army Corps of Engineers Emergency Procedures as regulated in MPGP

Emergency Situations Procedures
Emergency situations are limited to sudden, unexpected occurrences that could potentially result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. If an emergency situation requires action in less than 30 days after the occurrence, it qualifies for the amended notification procedures described below.

Notification Procedures for Emergency Situations:
Any project proponent may request emergency authorization from the Corps. However, the Corps will determine if a project qualifies for these emergency situation procedures. The Federal resource agencies, the Massachusetts Historical Commission, and the tribes will each designate an emergency contact and an alternate in the event the regular contact is unavailable. When an application for Category 2 work is received that the Corps determines is an "emergency" as defined above, the Corps will fax a copy of the plans and Determination of Eligibility to the agency representatives and their alternates. The resource agencies would then have 16 business hours to notify the Corps if they have any comments on authorization of the project under the PGP. Objections to the Corps' determination of an "emergency" situation will not be accepted. If no response is received within 16 business hours, the Corps will proceed with a decision on the application. If the resource agencies have comments on the proposal, they will have 16 business hours to put their comments in writing. If written comments from the Federal agencies are not received within 16 business hours, the Corps will proceed with a decision on the application.

If a Federal agency requests that an Individual Permit be required for a project or requests modifications to the project based on concerns within their area(s) of expertise, the Corps will notify the applicant within one business day of receipt of that request that the project as proposed does not qualify for authorization under this PGP and the emergency Individual Permit procedures may be followed. In any event, the Corps will notify the applicant within 16 business hours of commencement of the screening process as to whether the project may proceed under this PGP.

Notification Procedures for FEMA and MEMA Declared Emergency Situations
The Massachusetts DEP, Massachusetts Emergency Management Agency (MEMA), or the Federal Emergency Management Agency (FEMA) will notify the Corps within 24 hours of the occurrence of a disaster and advise the Corps of the nature of the occurrence and any known remedial and/or protective measures. The Corps will notify the emergency contact of the Federal resource agencies, the Massachusetts Historical Commission, and the tribes that a disaster has occurred within one business day of being notified by the MA DEP, MEMA or FEMA. The Corps will work with FEMA, MEMA and the emergency contacts under the "Notification Procedures for Emergency Situations" section above to expedite authorization under this PGP.

MEPA Emergency Procedures
301 CMR 11.00: MEPA REGULATIONS

Section 11.13: Emergency Action

(1) Commencement of Project for Emergency Action and Initial ENF. *In the rare case when Commencement of a Project is essential to avoid or eliminate an imminent threat to environmental resources or quality or public health or safety, the Proponent may undertake Commencement of the Project without prior due compliance with MEPA and 301 CMR 11.00 provided that the Proponent shall make all reasonable efforts to obtain the prior written approval of the Secretary. The Proponent shall limit any emergency action taken without prior due compliance with MEPA and 301 CMR 11.00 to the minimum action necessary to avoid or eliminate the imminent threat. The Proponent shall file an initial ENF describing the Project in as much detail as is then known within ten Days of Commencement of the Project. The initial ENF shall describe all measures taken to avoid or minimize potential environmental impacts from the emergency action, describe any additional measures to be taken to mitigate potential environmental impacts from the emergency action, and list any Agency to which the Proponent provided prior notification of, or from which the Proponent received prior approval for, the emergency action. Within the earlier of 60 Days of Commencement of the Project or when the threat is no longer imminent, the Proponent shall undertake full due compliance with MEPA and 301 CMR 11.00 by filing an amended or substitute ENF or any other review document that the Secretary may require after reviewing the initial ENF.*

(2) EIR After Emergency Action. *An EIR for a Project on which the Proponent undertook emergency action shall describe specific alternatives to the emergency action, the necessary duration of the emergency action, and the appropriateness or necessity of undertaking similar action in similar future circumstances.*

(3) Programs or Projects Not Considered Emergency Action. *Any program, regulations, policy, or other Project implemented or undertaken to deal with future emergencies, or periodic recurrence of an emergency condition, shall not be considered an emergency action.*

MEPA Thresholds

(3) Wetlands, Waterways and Tidelands.

(a) ENF and Mandatory EIR.

1. Provided that a Permit is required:

a. alteration of one or more acres of salt marsh or bordering vegetating wetlands; or

b. alteration of ten or more acres of any other wetlands.

2. Alteration requiring a variance in accordance with the Wetlands Protection Act.
3. Construction of a New dam.
4. Structural alteration of an existing dam that causes an Expansion of 20% or any decrease in impoundment Capacity.
5. Provided that a Chapter 91 License is required, New non-water dependent use or Expansion of an existing non-water dependent structure, provided the use or structure occupies one or more acres of waterways or tidelands.
(b) ENF and Other MEPA Review if the Secretary So Requires.
1. Provided that a Permit is required:
a. alteration of coastal dune, barrier beach or coastal bank;
b. alteration of 500 or more linear feet of bank along a fish run or inland bank;
c. alteration of 1,000 or more sf of salt marsh or outstanding resource waters;
d. alteration of 5,000 or more sf of bordering or isolated vegetated wetlands;
e. New fill or structure or Expansion of existing fill or structure, except a pile-supported structure, in a velocity zone or regulatory floodway; or
f. alteration of one half or more acres of any other wetlands.
2. Construction of a New roadway or bridge providing access to a barrier beach or a New utility line providing service to a structure on a barrier beach.
3. Dredging of 10,000 or more cy of material.
4. Disposal of 10,000 or more cy of dredged material, unless at a designated in-water disposal site.
5. Provided that a Chapter 91 License is required, New or existing unlicensed non-water dependent use of waterways or tidelands, unless the Project is an overhead utility line, a structure of 1,000 or less sf base area accessory to a single family dwelling, a temporary use in a designated port area, or an existing unlicensed structure in use prior to January 1, 1984.
6. Construction, reconstruction or Expansion of an existing solid fill structure of 1,000 or more sf base area or of a pile-supported or bottom-anchored structure of 2,000 or more sf base area, except a seasonal, pile-held or bottom-anchored float, provided the structure occupies flowed tidelands or other waterways.

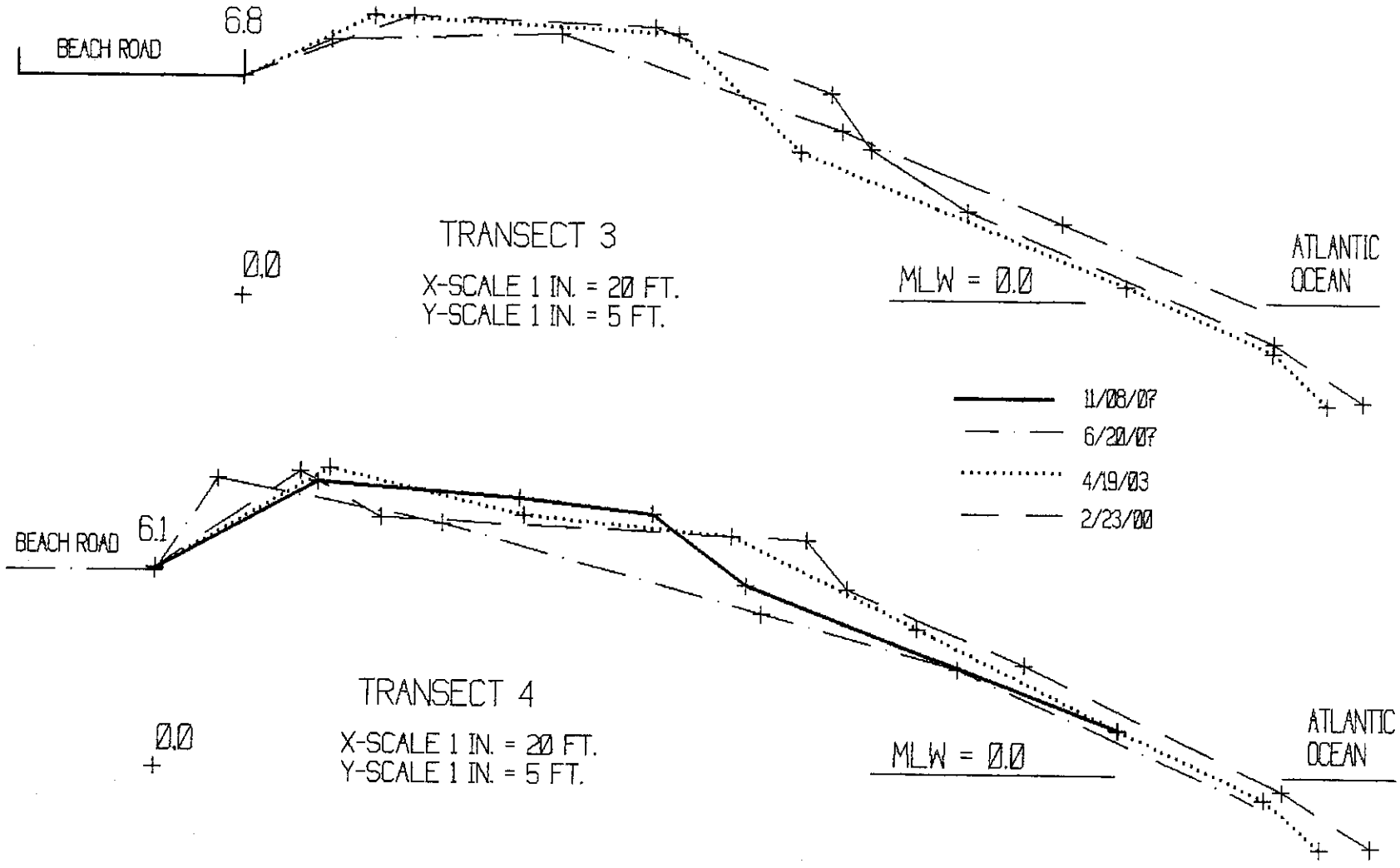
APPENDIX B – BEACH PROFILES

PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 3 & 4

SYLVIA STATE BEACH

DATE	SCALE	SITE ENGINEERING ASSOCIATES
NOV. 8, 2007	AS SHOWN	17 MOSHUP TR, GAY HEAD MA 02535 D HICKOX PE/R SMITH 508 693 4263



PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 5 & 6

SYLVIA STATE BEACH

DATE	SCALE	SITE ENGINEERING ASSOCIATES
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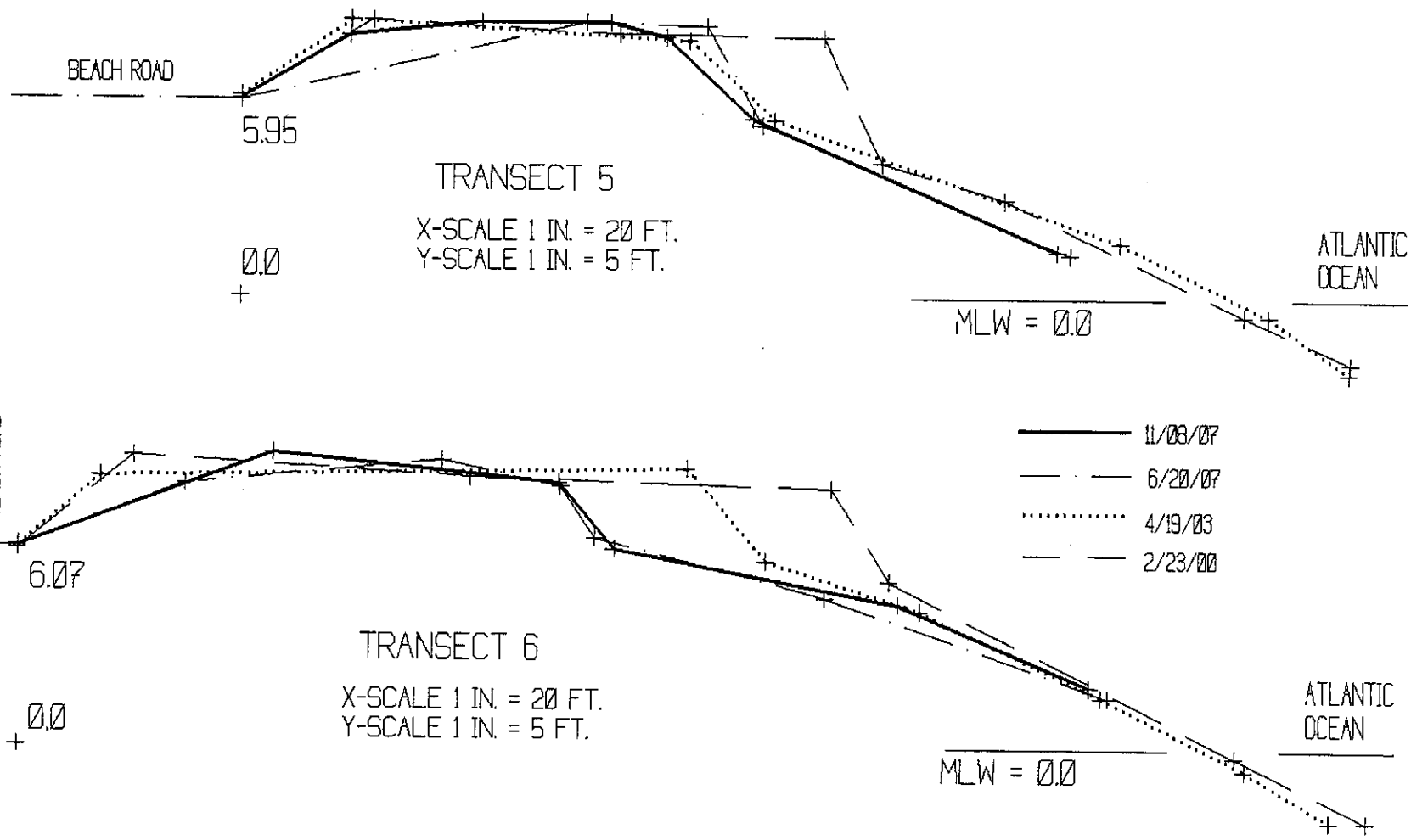

PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 7 & 8

SYLVIA STATE BEACH

DATE	SCALE	SITE ENGINEERING ASSOCIATES
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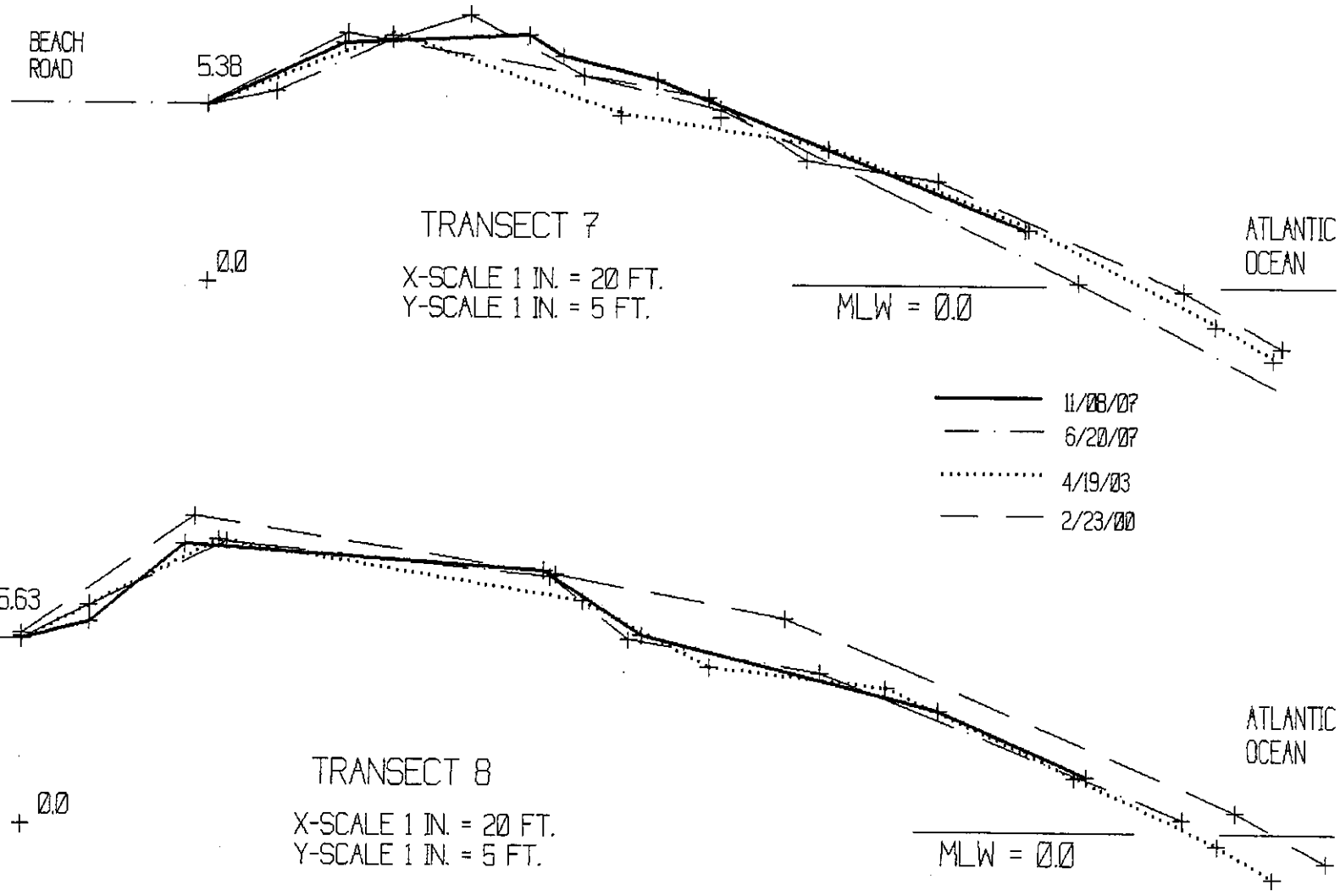

PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 9 & 10

SYLVIA STATE BEACH

DATE	SCALE	SITE ENGINEERING ASSOCIATES
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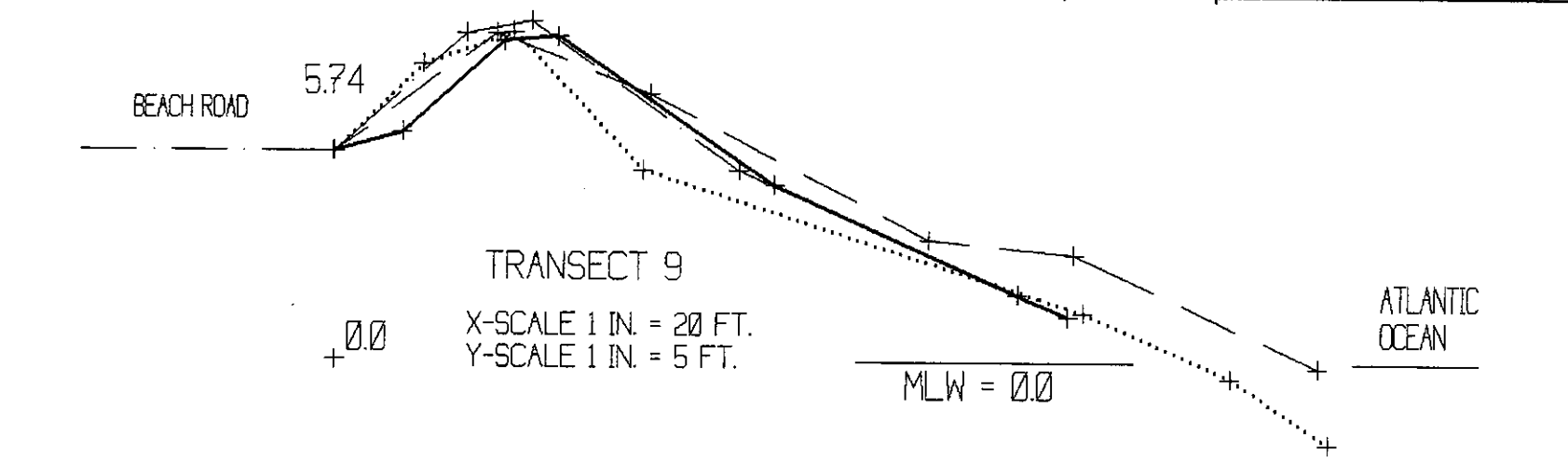

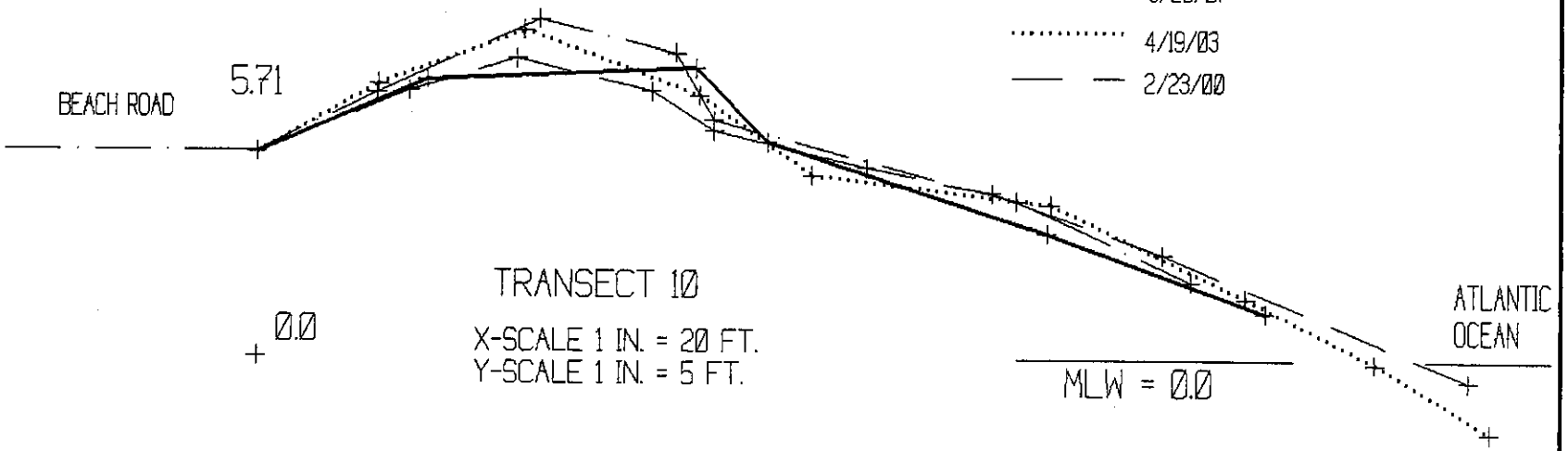

PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 11 & 12

SYLVIA STATE BEACH

DATE	SCALE	SITE ENGINEERING ASSOCIATES
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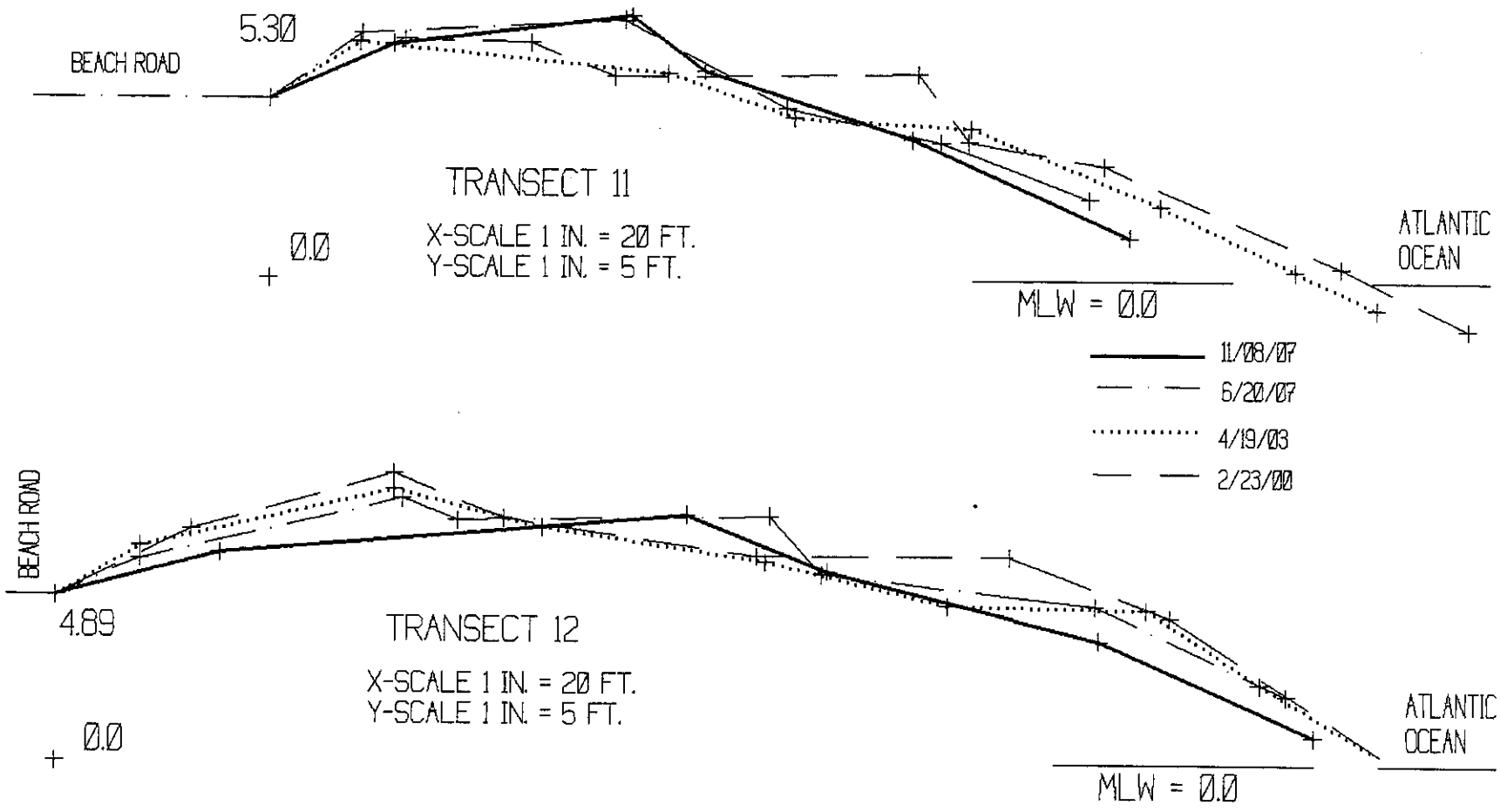

PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 13 & 14

SYLVIA STATE BEACH

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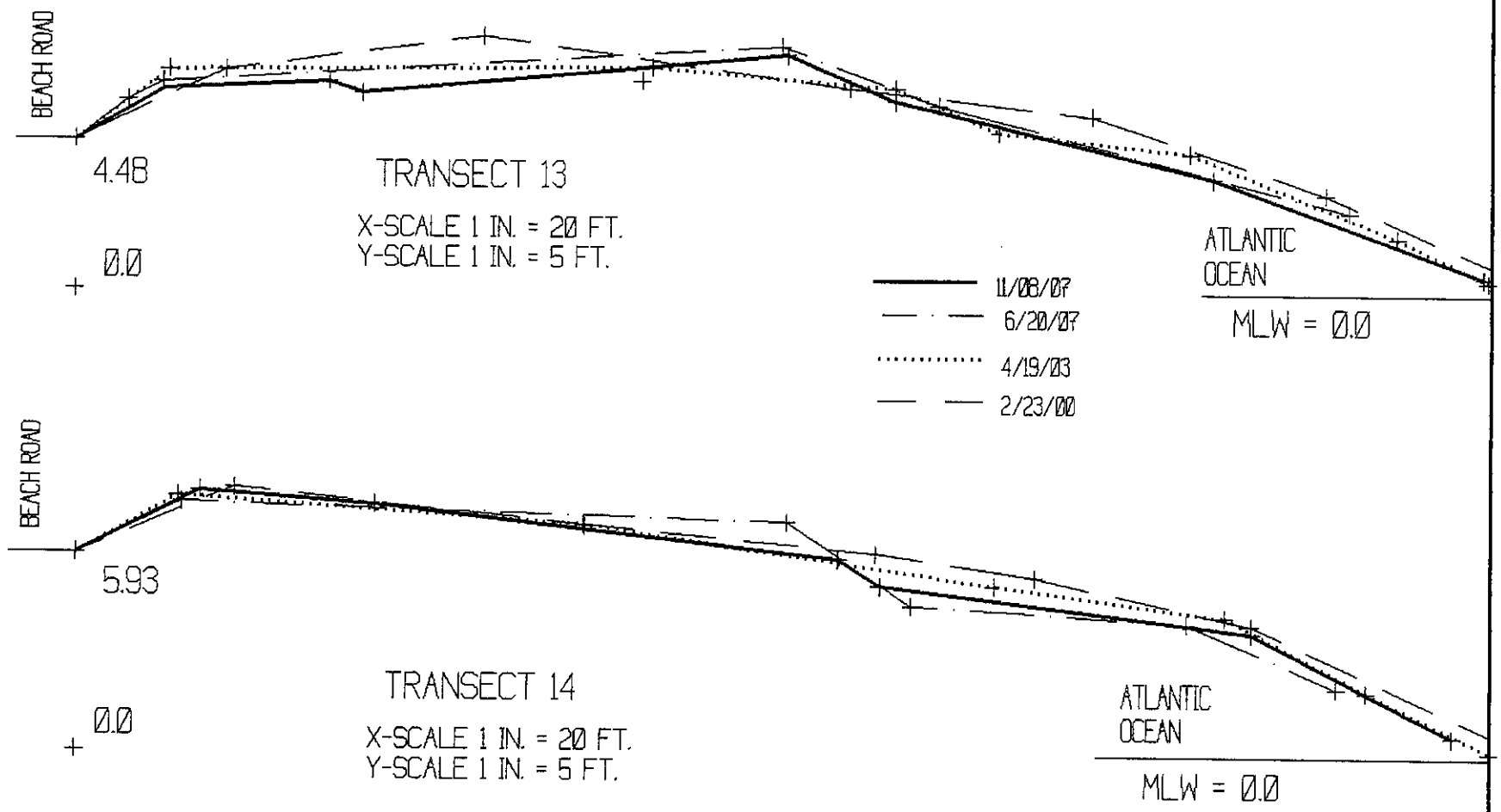
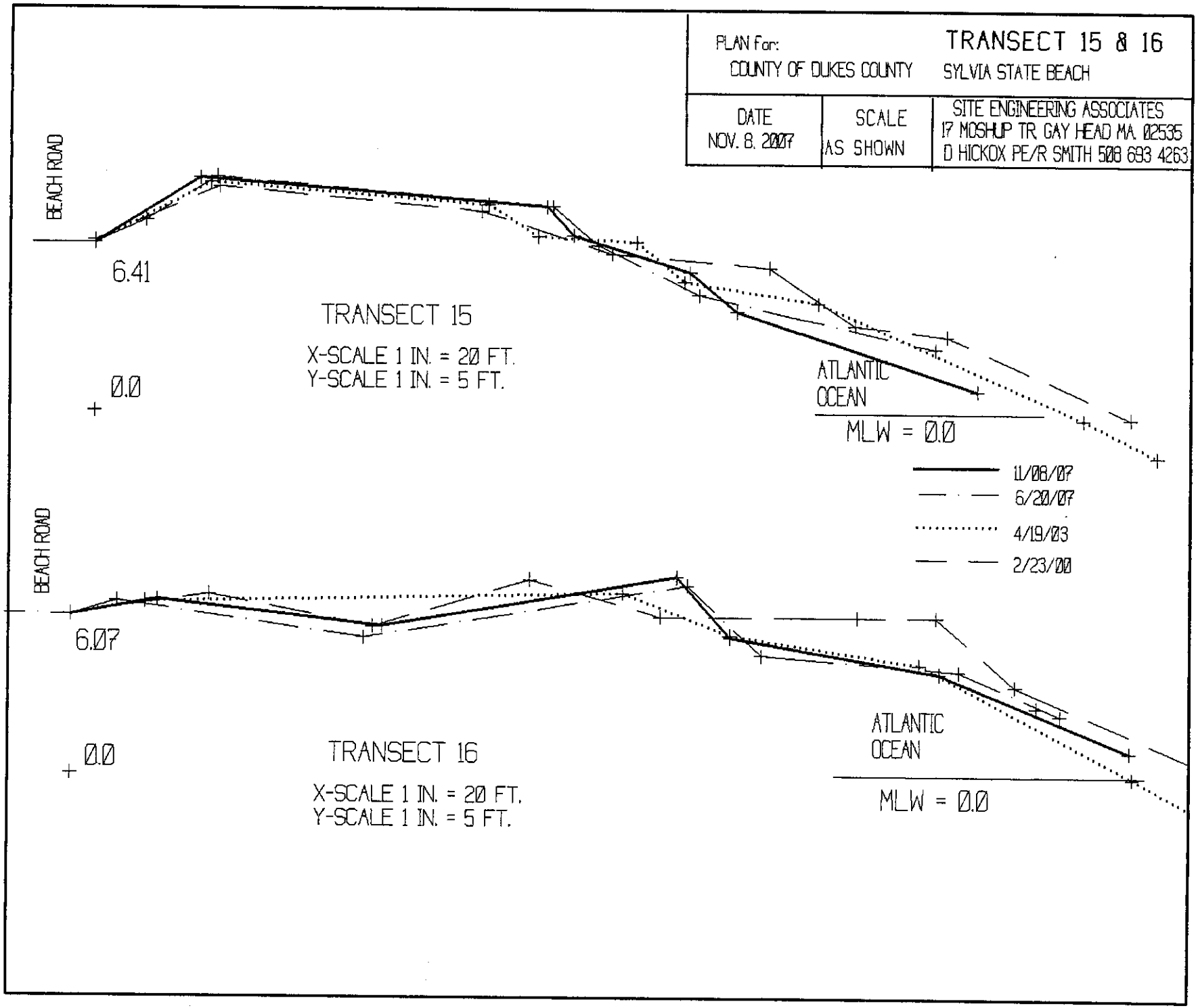


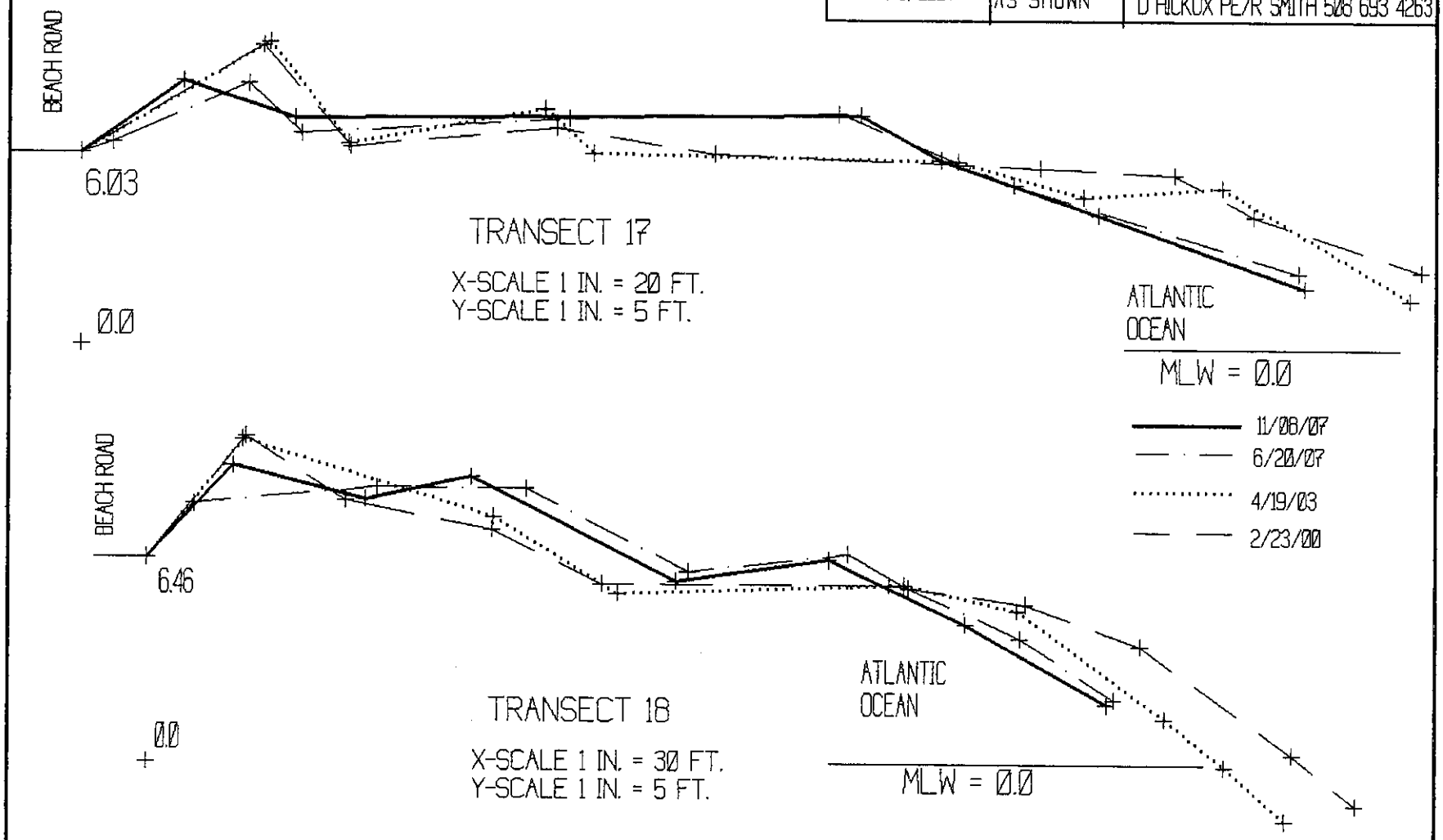

PLAN For:
COUNTY OF DUKES COUNTY
TRANSECT 15 & 16
SYLVIA STATE BEACH
DATE
NOV. 8, 2007
SCALE
AS SHOWN
SITE ENGINEERING ASSOCIATES
17 MOSHUP TR, GAY HEAD MA. 02535
D HICKOX PE/R SMITH 508 693 4263
BEACH ROAD
6.41
TRANSECT 15
X-SCALE 1 IN. = 20 FT.
Y-SCALE 1 IN. = 5 FT.
0.0
ATLANTIC
OCEAN
MLW = 0.0
11/08/07
6/20/07
4/19/03
2/23/00
BEACH ROAD
6.07
0.0
TRANSECT 16
X-SCALE 1 IN. = 20 FT.
Y-SCALE 1 IN. = 5 FT.
ATLANTIC
OCEAN
MLW = 0.0

PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 17 & 18

SYLVIA STATE BEACH

DATE	SCALE	SITE ENGINEERING ASSOCIATES
NOV. 8, 2007	AS SHOWN	17 MOSHUP TR. GAY HEAD MA. 02535 D HICKOX PE/R SMITH 508 693 4263



PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 19 & 20

SYLVIA STATE BEACH

DATE	SCALE	SITE ENGINEERING ASSOCIATES
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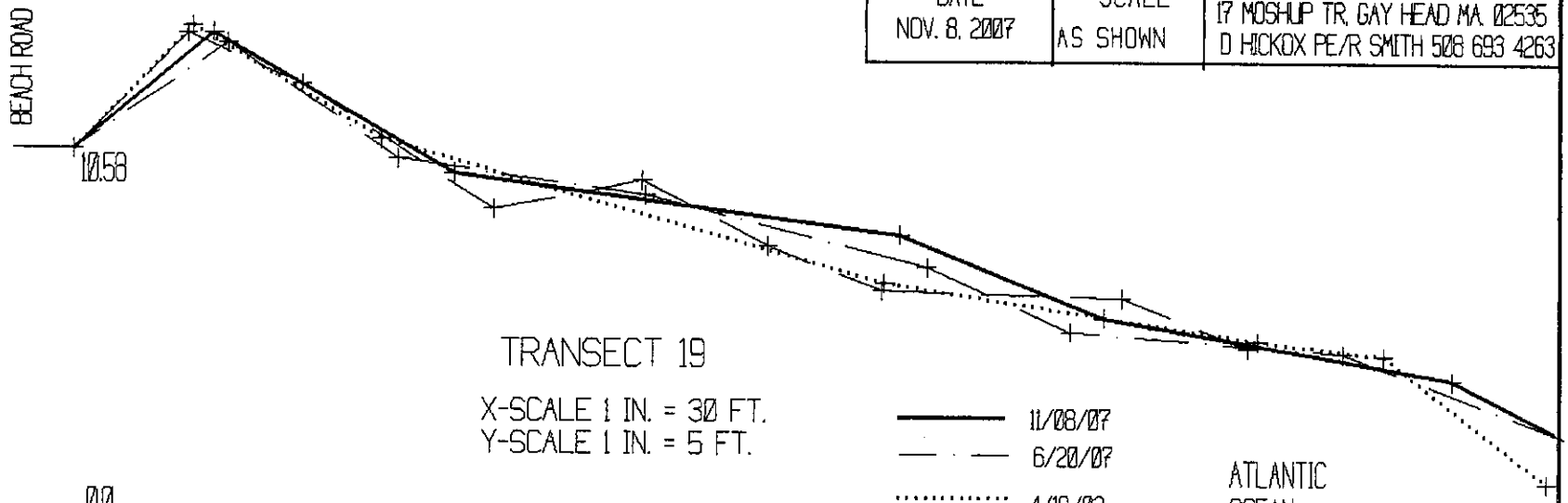


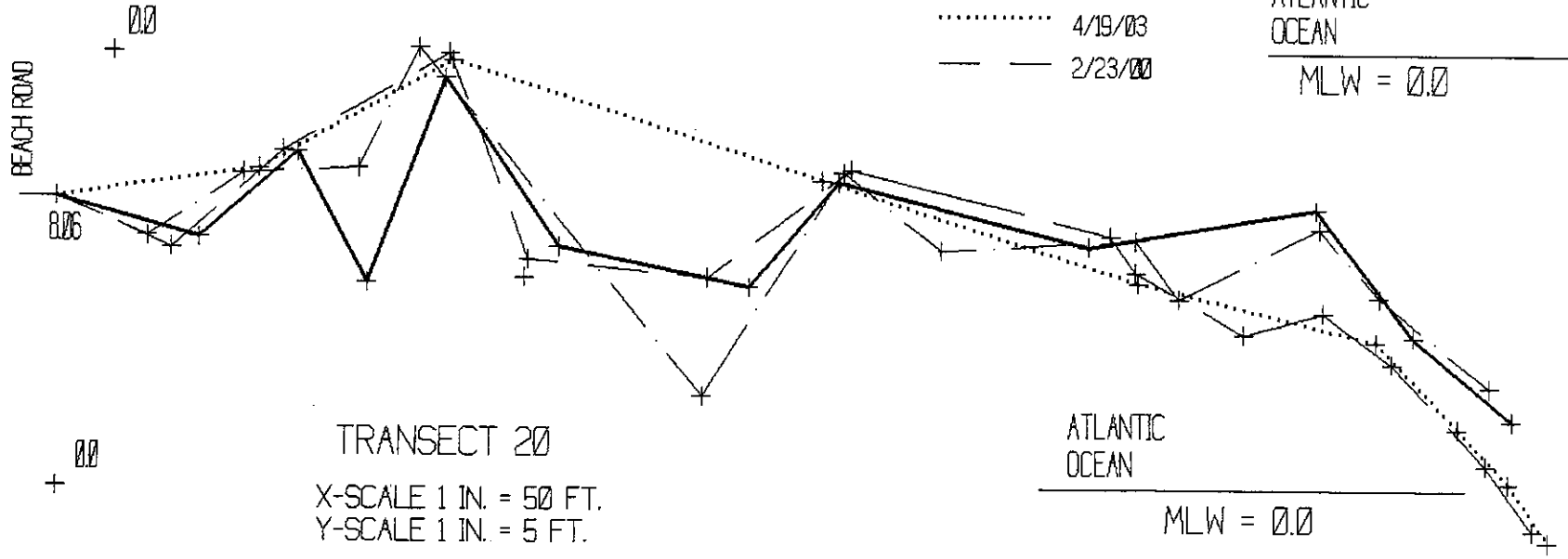
TRANSECT 19

X-SCALE 1 IN. = 30 FT.
Y-SCALE 1 IN. = 5 FT.

11/08/07
6/20/07
4/19/03
2/23/00

ATLANTIC OCEAN

MLW = 0.0



TRANSECT 20

X-SCALE 1 IN. = 50 FT.
Y-SCALE 1 IN. = 5 FT.

ATLANTIC OCEAN

MLW = 0.0

PLAN for:
COUNTY OF DUKES COUNTY

TRANSECT 21

SYLVIA STATE BEACH

DATE	SCALE	SITE ENGINEERING ASSOCIATES
NOV. 8, 2007	AS SHOWN	17 MOSHUP TR. GAY HEAD MA. 02535 D HICKOX PE/R SMITH 508 693 4263