



Feasibility Study & Master Plan for Pleasure Beach Park

Prepared For:
City of Bridgeport, Connecticut

June 27, 2012

Prepared By:



Stantec

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March 8, 2012

Mr. Ted Grabarz, AIA, ASLA
Sustainability Director, City of Bridgeport
Deputy Director of Public Facilities
City of Bridgeport
999 Broad Street
Bridgeport, CT 06604

Re: Feasibility Study and Master Plan for Pleasure Beach Park

Dear Mr. Grabarz:

We are pleased to submit this Feasibility Study and Master Plan for Pleasure Beach Park to the City of Bridgeport. This Plan defines a direction in recapturing the once bustling regional destination as a new passive and active recreation amenity for residents and visitors to the City to enjoy.

This Master Plan demonstrates the City's desire to restore the park in the context of its evolving and sensitive environmental setting. As the planning and design consultant and on behalf of the City, we attest to the City of Bridgeport's commitment to wildlife and habitat protection and willingness to accomplish a plan that will allow visitors to the park and endangered and special plant and wildlife species to co-exist. It is this appreciation that will establish Pleasure Beach as a unique recreational, educational and wildlife resource along Connecticut's coastline.

Funding, regulatory approvals and protecting and management of threatened and endangered species greatly influence the plan. The planning team and the City of Bridgeport are certainly cognizant of these influences and have presented a strategy to re-establish access to the park by 2013. This strategy is ambitious and demonstrates the City of Bridgeport's commitment to restoring public use of Pleasure Beach Park for City residents.

Sincerely,

Gary Sorge, FASLA, AICP
Senior Principal

Acknowledgements



The Honorable Bill Finch, Mayor of Bridgeport

The Honorable Charles "Don" Clemons, Jr., Connecticut House of Representatives, 124th Assembly District, Bridgeport / East End, East Side, & Success Area Liaison

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Richard F. Kehoe, Assistant to The Honorable Richard Blumenthal, United States Senate

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Introduction

- Project Location
- Study Objectives
- Design Benefits



Introduction

In April 2011, Stantec Consulting Inc. Services was contracted by the City of Bridgeport to provide master planning services inclusive of conceptual design and a feasibility study for Pleasure Beach Park. The Scope of Work was defined including a project kick-off meeting, data collection, site assessment, stakeholder identification, preliminary park program, final program/site assessment/regulatory framework, development of alternative schematic plans, refinement of alternative schematic plans, and conceptual design/final master plan report.

Stantec along with representatives of the City of Bridgeport and project stakeholders, identified by the City, began work on the new master plan for Pleasure Beach with a project kick-off meeting on April 14, 2011. Following the kick-off meeting a community meeting/public forum was held at the Ralphola Taylor Community Center on May 9, 2011. The purpose of both meetings was to elicit feedback on park conditions, operation, and needed improvements. On December 6, 2011, a public forum was held to present the final Master Plan concepts.

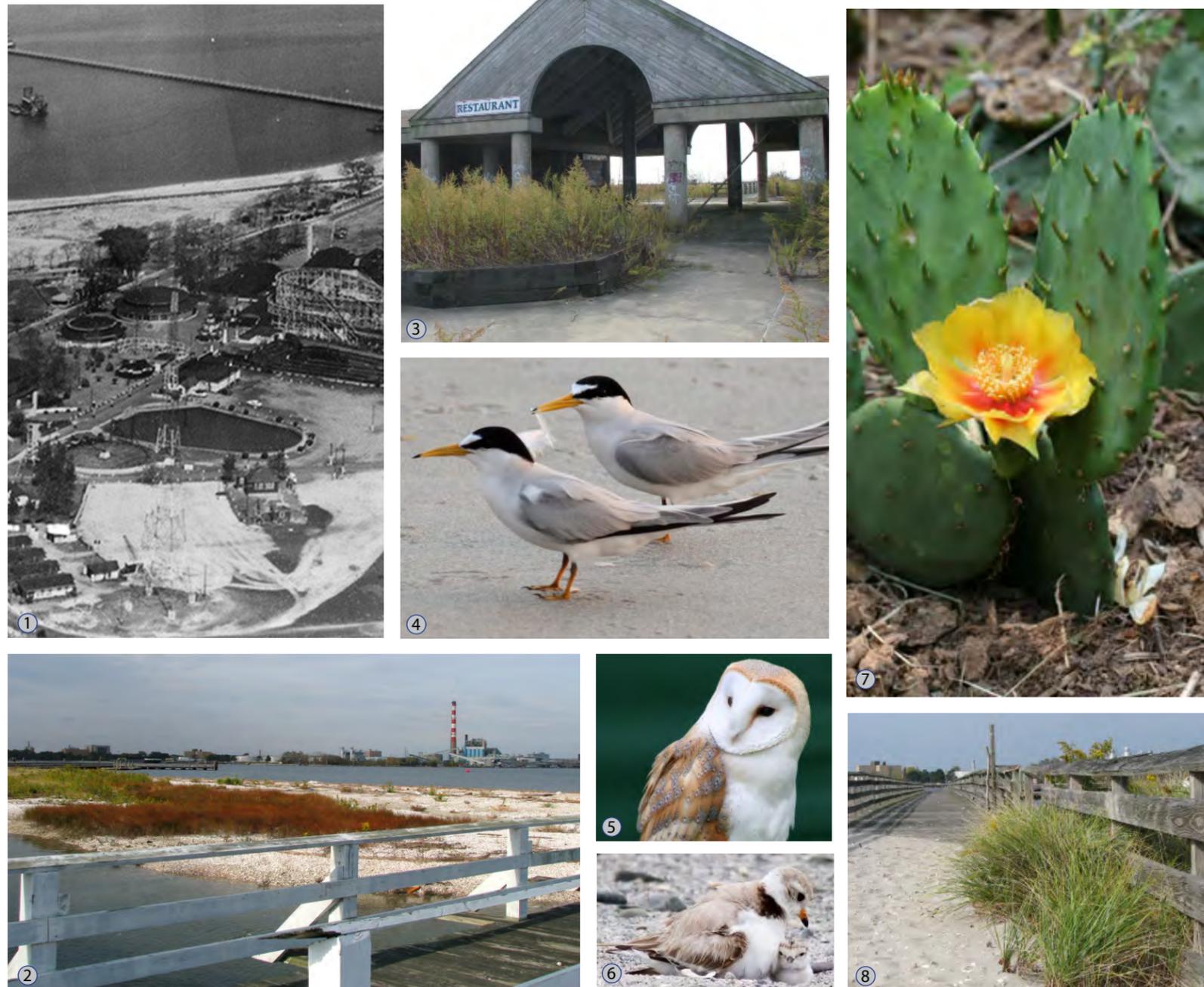
Stantec, is pleased to provide this Master Plan for Pleasure Beach Park, an approximate 71-acre public park located in the City of Bridgeport, Connecticut. Comprised of a barrier beach, sand and vegetated dunes, grassland and structures, pathways, and infrastructure that once supported one of the most popular beach destinations in Connecticut, Pleasure Beach Park is unique within the City's park inventory. This Master Plan was inspired by community leadership and elected officials who have championed for restored access and use of the vacant parkland for the benefit of City residents.

The purpose of the Master Plan is multi-faceted. Our team, in conjunction with the City of Bridgeport, prepared an inventory of park resources and identified complementary recreation and program enrichment opportunities for residents of all ages, abilities and interests as well as strategies for revenue generation to help sustain park operations. The recommendations of the Master Plan complement each other and aim to attract a multitude of park users, funding sources, public-private partnerships for capital improvements, and maintenance sustainability. First and foremost, our collective goal is to enrich park and recreation opportunities for Bridgeport residents and visitors to the City.

Countless hours by City staff, community leaders, State and Federal representatives, not-for-profit organizations, and volunteers who participated in our public forums, City sponsored park clean-ups, and regulatory reviews all helped shape the contents of this Plan. We have established a blueprint that will shape the future of the Park and achieved a balance to allow people to enjoy the park and its natural setting.

The implementation of this Plan will require capital investment, regulatory oversight and a staffing and park management plan administered by the City of Bridgeport. In these unpredictable fiscal times, we may have an optimistic view; but no one can envision a future in Bridgeport without restored access to and enjoyment of Pleasure Beach Park. The days of roller-coasters, bumper cars and dance halls are now fond memories. The future of Pleasure Beach Park lies in environmental sensitivity, passive recreation, family activities, healthy lifestyles and a diverse park experience that fosters exploration, discovery, education and fun.

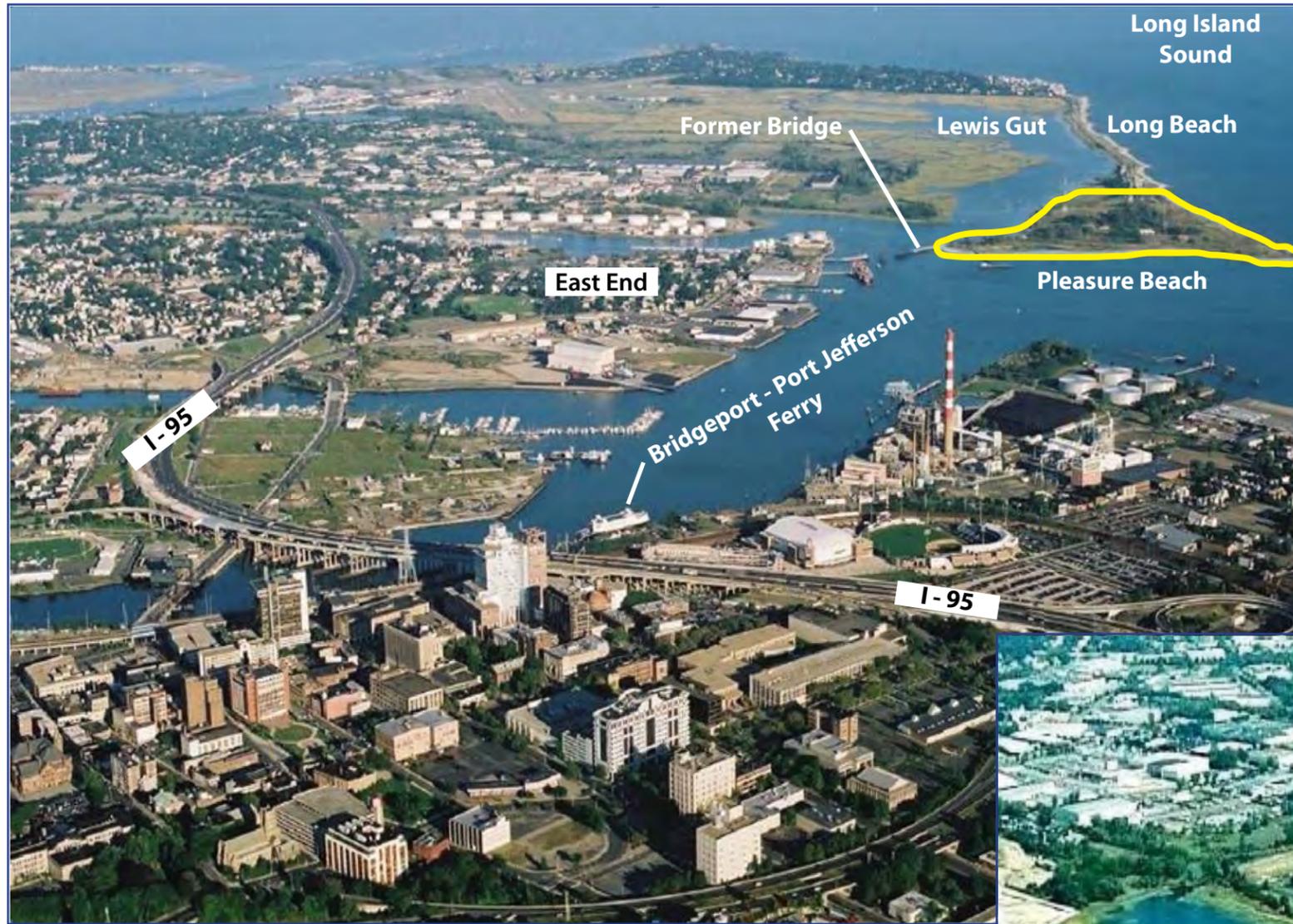
Pleasure Beach Park, through the vision of the City, must be a recreational and educational resource for City residents. Through public outreach and dedicated leadership, this vision has been formed.



1: Historic aerial photo-1955, 2: Pleasure Beach salt marsh and grassland, 3: Existing conditions of Pavilion, 4: Least Terns, 5: Barn Owl, 6: Nesting Pipeing Plover, 7: Eastern Prickly-Pear, 8: Pleasure Beach boardwalk looking east

Project Location

Originally thought of as an "island" park, Pleasure Beach Park is the largest portion of a Connecticut barrier beach that extends as a peninsula from the Lordship area of the Town of Stratford to Pleasure Beach in Bridgeport, Connecticut. Access to Pleasure Beach is by boat or a 2 ½-mile hike along Stratford's Long Beach. The park is surrounded on three sides by water: Lewis Gut to the north, Bridgeport Harbor to the west, and Long Island Sound to the south. Much of the land across Lewis Gut from Pleasure Beach and Long Beach is part of the Stewart B. McKinney National Wildlife Refuge.



Aerial Photo: Downtown Bridgeport and Pleasure Beach

Pleasure Beach is a short distance from Bridgeport's East End. Vehicular and pedestrian access from Bridgeport was abruptly terminated in 1996 when a fire destroyed portions of the only physical connection to the peninsula inland.

Pleasure Beach (View East)
Study area delineated below



Study Objectives

City and community leaders as well as residents who participated in community forums have made clear their priorities for Pleasure Beach Park—restore access to the Park and the waterfront. We may elaborate on these priorities and define more detailed goals as follows:

- Develop a feasible program of park improvements that are complementary, consistent with regulatory provisions, cost effective and responsive to the community's recreation needs.
- Prepare design alternatives and a preferred schematic design plan that is responsive to the desired park facilities program.
- Gain access to the waterfront via Pleasure Beach Park.
- Define a path to implementation understanding that funding for any improvements will need to be obtained and that multiple years of phasing will be required.
- Involve the community to inform decisions related to future recreation use of Pleasure Beach Park.
- Provide for safe public use of the park.
- Protect endangered plant and wildlife species through the implementation of a Threatened and Endangered Species Management Plan.
- Establish a regulatory framework and gain concurrence from regulatory partners to ensure that the proposed plan is feasible.
- Identify means to maintain the park and to staff and fund future capital improvements.

To achieve these goals many actions need to be taken. Critical to the implementation and success of the Plan is establishing effective strategies, staff and equipment access to the park and performing long-deferred maintenance. Key steps include but are not limited to the following:

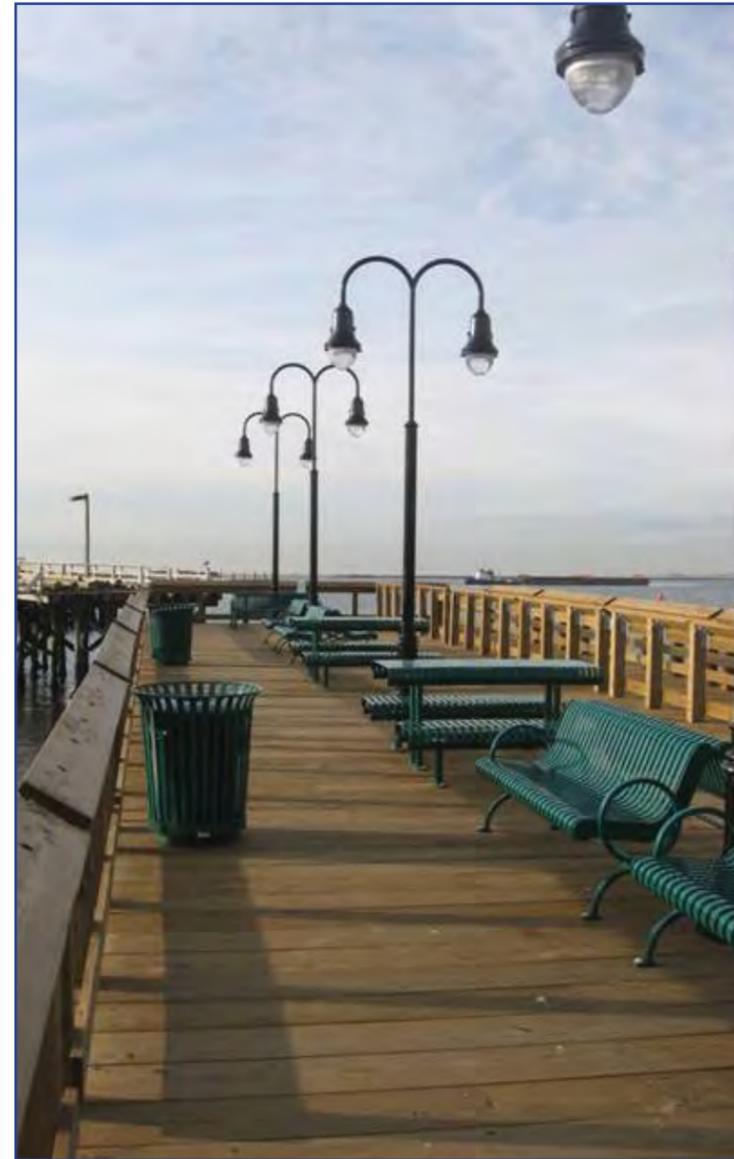
- Establish funding partners through private, public, governmental and non-profit organizations.
- Create a sustainable capital, maintenance and program plan that generates revenue to offset annual public costs.
- Train and sustain staff to administer programs, perform maintenance, ensure public safety and conduct regulatory monitoring of threatened and endangered plant and wildlife species.
- Provide reliable and convenient access to the park. A water taxi provides a unique opportunity where getting to the park is part of the fun!
- Understand public safety needs and how emergency access will be provided.
- Manage sources of trash and disposal, and educate park visitors about park rules.
- Inspect, upgrade and install required utility services such as electric, water, and sanitary sewer systems.
- Identify, implement and enforce the Threatened and Endangered Species Protection Plan.
- Provide an array of passive recreation amenities that visitors of all ages and recreational interests can enjoy.
- Inspect, design and contract for the stabilization and/or renovation of existing park buildings.



Design Benefits

Pleasure Beach Park is located just a short distance from the southern end of Central Avenue in Bridgeport. That's as close as residents have been able to get since 1996 when a fire disabled the bridge that provided the only access from Bridgeport's mainland. Restoring the bridge is a cost-prohibitive proposition; hence a water taxi option is currently being evaluated, and funding is imminent. Access to Pleasure Beach Park will yield countless benefits to Bridgeport's residents. These benefits include:

- Opportunities for unique after-school, youth and summer camp programs offering active and passive play and environmental education.
- Opportunities for youth training in environmental stewardship and potential partnership with local aquaculture education curriculum and environmental organizations.
- Park activities that will reinforce a positive image of Bridgeport's east side and encourage local business investment on the mainland.
- Park activities and settings that enhance bird-watching, environmental research and related activities that promote eco-tourism and support local businesses.
- Opportunities for recreational fishing along the beaches on Long Island Sound and Bridgeport Harbor and along the rocky coast of Lewis Gut.
- Green energy production within the park and prospects of achieving energy independence, propelling Pleasure Beach Park to the forefront and fostering recognition from the business community as a worthy cause to support and/or sponsor.
- Fostering community stewardship, further ensuring the long-term sustainability of the park by providing a unique setting that encourages and sustains frequent visitation by residents eager to enhance their own health and well-being and excited to have a place to call their own.



A photograph of a coastal site. In the foreground, there is a body of water. A sandy beach leads to a grassy area with some sparse vegetation. In the middle ground, there is a long, low building with a brown roof and a dark arched entrance. Behind the building, a tall, white lattice tower with red accents extends into the sky. The background is filled with a dense line of trees under a grey, overcast sky.

Site Analysis

- History
- Existing Conditions
- Utilities & Infrastructure
- Soil Types
- Geology
- FEMA Classification
- Environmental Cover Types

History



Pleasure Beach Roll-a-Coaster Post Card



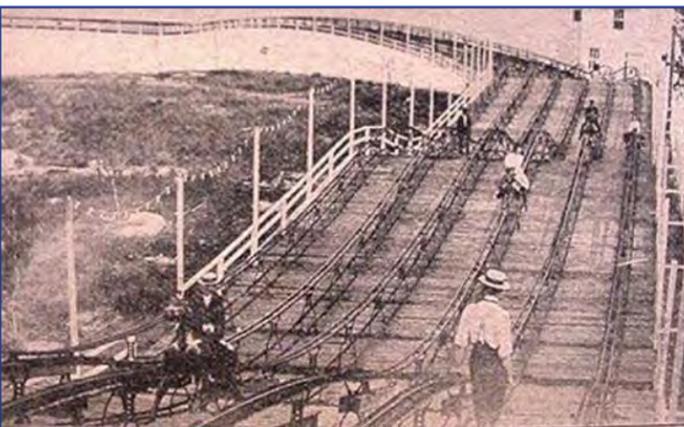
Pleasure Beach Fire of 1907



Boardwalk on 'Steeplechase Island' Post Card



Pleasure Beach Artistic Rendering



Steeplechase Amusement Ride



Pleasure Beach Swimming Pool Post Card

From 1892 until 1959, Pleasure Beach Park was home to a popular amusement park of the same name, although from 1904 to 1919, it was called "Steeplechase Island". The amusement park was accessible primarily by ferry service and a wooden swing bridge built in 1927 to carry automobiles and pedestrians. After 1959, up until 1996, the park's uses varied. The following are a few highlights by Eric D. Lehman, from the Bridgeport Historical archive.

- The growing City of Bridgeport annexes the Borough of West Stratford in 1889. The annexed land included a triangular "island" of thirty-seven acres which would become Pleasure Beach Park.
- Playing up the legend that Captain Kidd had buried treasure on this barrier island at the mouth of Bridgeport Harbor, liquor dealers J.H. McMahon and P.W. Wren turned the island into an amusement park three years later.
- In 1905, the owner of Steeplechase Park on Coney Island in Brooklyn, George C. Tilyou, bought the Bridgeport park, now named Steeplechase Island for the unique ride in which carousel-style horses raced down a metal track.
- Two years later, while the Chicago National League team and the Bridgeport team were warming up for a baseball game at the park, a dropped cigarette caused a fire that burned much of the park, including the eponymous "steeplechase" ride. This gave birth to the island's first legend: The two teams continued to play five innings as the park burned, hitting foul balls into the smoldering ruins of the bleachers.
- Tilyou sold the park in 1910 and it was renamed Sea Breeze Island. However, attendance was poor and the park closed for several years.
- Then, in 1919, the City bought the park, and expanded and improved it. Boardwalks led to a carousel, a roller skating rink, a miniature railroad, a roller coaster, and "The Old Mill" ride that became a popular tunnel of love. The Brickerhoff Ferry brought visitors directly from a dock downtown, and in 1927 a long bridge over a sandy causeway allowed foot and automobile access to what was now called "Pleasure Beach".
- The maple dancing pavilion with bell towers and glass sides became the biggest attraction, featuring the largest ballroom in New England. Stars of the Jazz Age like Gene Krupa, Glenn Miller, and Artie Shaw played here, and thousands of young people flocked to dance on the beautiful maple floor.
- In 1953 a fire damaged the roller coaster and a few other rides. Five years later, the amusement park was sold again, but a year later in 1959 it closed for good.

History



Historic aerial - 1940's - 1950's



Historic aerial - 1940's - 1950's



Carousel Building



Pleasure Beach Bridge to main land, burned in 1996

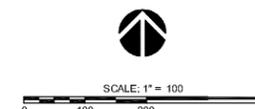
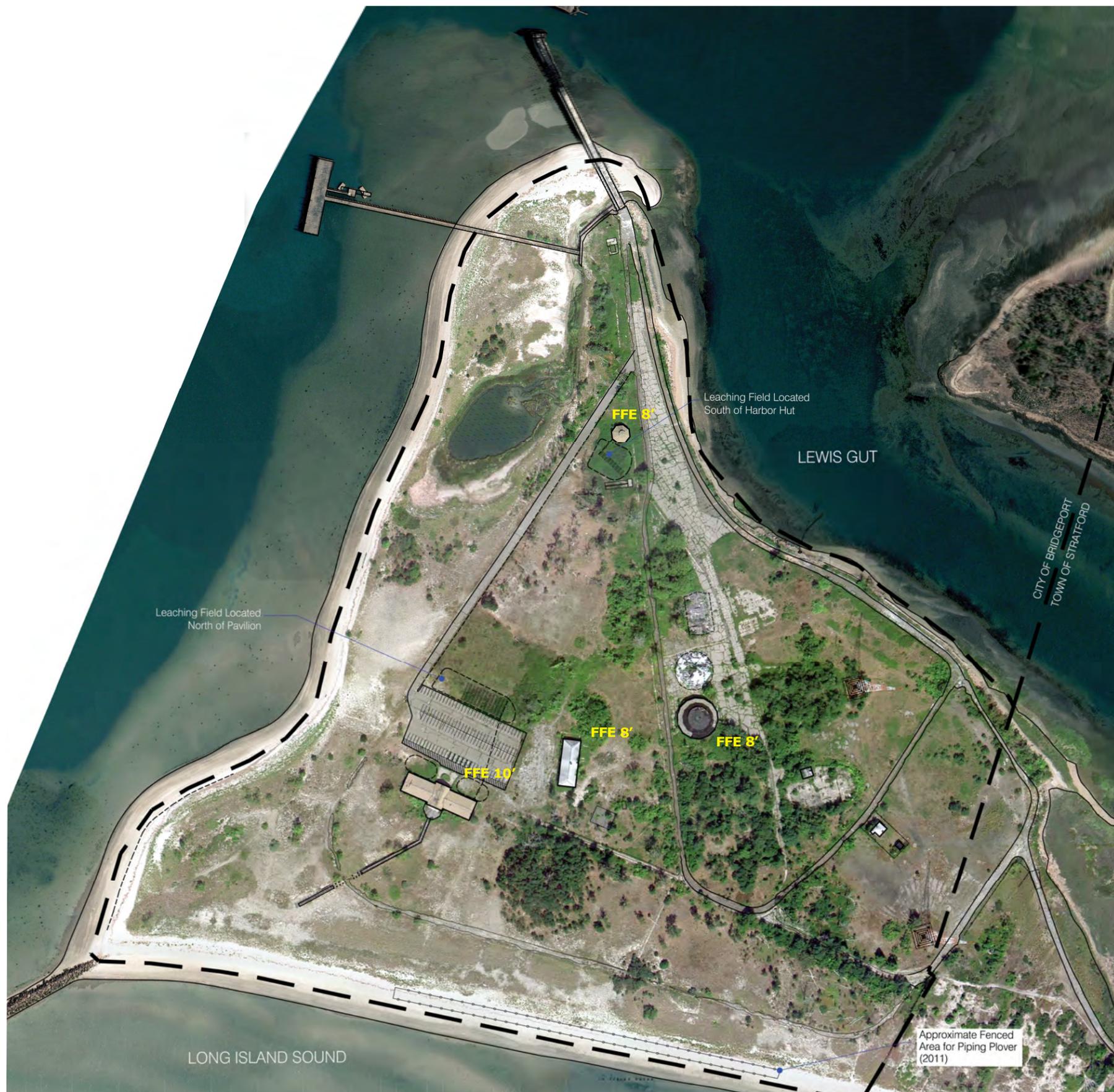
- In 1967 the abandoned beer garden later became the home of the Polka Dot Playhouse.
- The dance pavilion burned down in 1973, effectively ending the island of Pleasure Beach as a destination.
- Two buildings are built by the Bridgeport Parks Department. The "Harbor Hut" was a concession and restroom building, built and operated during the early 1990's. The second building, the "Pavilion", was built between mid 1995-spring of 1996. It never opened to the public due to the bridge fire in spring of 1996.
- In 1996 the bridge from the mainland burned, seasonal homes were abandoned, and the Polka-Dot Playhouse relocated downtown, renaming itself Playhouse on the Green.
- For a decade, beginning in 1997, the Town of Stratford considers ending the land leases of the seasonal homes on adjacent Long Beach, in part because of difficulties in protecting them. The Town owns the land under the 45 cottages on the Long Beach portion of the peninsula. The town ultimately ended the renewal of leases, and in May 2007, the remaining occupants agreed to give up their claims and moved their possessions away by barge. Subsequent to May 2007 the cottages were open to the weather and vandals, which led to the Town closing access to Long Beach and making it illegal to trespass.
- In 2009, the City of Bridgeport was awarded a \$1.9 million federal grant to establish a water taxi service to Pleasure Beach Park, which hadn't had any reasonable access since the bridge fire in 1996.
- As late as December 2008, the City of Bridgeport, the Connecticut Department of Transportation, and the Connecticut Department of Environmental Protection investigates the possibility of ferry service to re-link the Pleasure Beach Park with the City, but this was rejected due to parking considerations and the need for a Coast Guard registered captain.
- On July 25, 2008 the Governor of Connecticut, M. Jodi Rell, endorsed spending \$150,000.00 to study the feasibility of restoring access to Pleasure Beach, possibly by rebuilding the bridge. The funding for the study was allocated by the State Legislature in 2010.
- In April 2011, Stantec Consulting Inc. Services was contracted by the City of Bridgeport to provide master planning services inclusive of conceptual design and a feasibility study for Pleasure Beach Park.

Existing Conditions

The landscape of Pleasure Beach is made up of beach, sand dunes, lightly treed areas, overgrown former parkland areas, paved drives, parking areas, and buildings remaining from the "island's" days as an amusement park. Pleasure Beach Park was originally connected to the City of Bridgeport's mainland by a wooden bridge at the foot of Seaview and Central Avenues. The bridge burned on Father's Day in 1996 and was not repaired. As a result, the park became more isolated; structures deteriorated and vandalism escalated.

Portions of Pleasure Beach are now protected nesting areas for endangered birds (Piping plover, Least tern) and rare and endangered plants (Eastern prickly pear, Beach needle grass, Sickle-leaved golden aster, Bitter panicgrass, and New England blazing star). Areas of beach and sand dune are fenced off seasonally to protect the plover nesting sites. Because of its remoteness and lack of human intervention since the bridge fire, the park also has an abundance of white-tailed rabbits, deer, foxes, raccoons, and other mammals.

Structures remaining on Pleasure Beach include two transmitter towers and support facilities for radio station WICC (AM). Three buildings exist including the old carousel and bumper cars ride, which were taken down by the City in 2009 and only the debris remains. Two other buildings, built by the Bridgeport Parks Department, also exist on site today; the Harbor Hut and the Park Pavilion.





1 Dock & boardwalk looking across Bridgeport Harbor



2 Tidal Creek feeds Pleasure Beach salt panne



3 Old bridge still offers spectacular views of the tidal creek & sandy beach



4 The Harbor Hut is within easy walking distance from the docks



5 Parking lines are still visible, as asphalt pavement deteriorates





6 Pleasure Beach offers a natural habitat for Osprey



7 The Pavilion's facade has deteriorated, but its frame is structurally sound



8 Kitchen amenities have been vandalized



9 Structure needs further evaluation to determine if it can be salvaged for reuse



10 Boardwalk needs new railings & floorboards, supporting structure is in good condition





11 View from boardwalk of expansive sandplain grassland



12 Boardwalk ends inland from the sandy beach line



13 Sandplain grassland surrounds Pleasure Beach's salt panne



14 View along the western beach edge towards the Stewart B. Mckinney Refuge

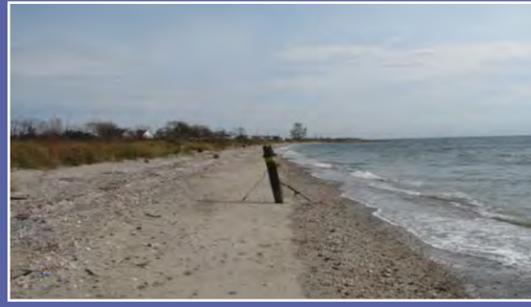


15 The break water and Long Island Sound to the left





16 Beach view shows extensive wrack line known to support breeding shore birds



17 Beach extends into the Town of Stratford; a post marks the property



18 The interior is impaired with sections of pavement, invasives & abandoned utilities



19 Pleasure Beach, north side, offers pleasing views of Lewis Gut



20 View north of the Lewis Gut shoreline





21 Pleasure Beach bridge



22 Existing area of asphalt pavement



23 Beach located on Lewis Gut



24 The former Poke-a-dot Playhouse



25 Existing stand of mature shade trees



Utilities & Infrastructure



Harbor Hut



Beach Wall along Lewis Gut



Dock damaged by Hurricane Irene - Aug. 2011



Interior of the former Dance Hall

The condition of existing utilities and recommended improvements are as follows. This information was gleaned through discussion with utility providers, on-site observations, references by Public Facilities staff and summaries contained in the City of Bridgeport's study conducted by Silver Petrucelli & Associates, Inc., titled 'Existing Condition Study for Building Refurbishment at Pleasure Beach', dated December 02, 2010.

Water: Public water service is provided by Aquarian Water Company. Their service ends on the mainland at the corner of Seaview Avenue and Central Avenue. A "private" submarine line serves the island and feeds into a manhole on the southeast corner of the pavilion. This manhole contains a 4-inch dead ended steel main and a 2-inch copper line that services the pavilion restrooms. Verification of water pressure for building use and fire suppression (hydrants) must be performed via field testing.

The master plan suggests alternate means of fire suppression be provided. Water tanks may be a practical alternative, providing redundancy and adequate supply of water during summer peak season. An internal fire suppression system may be installed and would be fed by multiple tanks. As is common, the units shall be fed during off-peak water demand periods, hence providing a reliable source of emergency water flow should utility, submarine and on-site piped distribution systems be compromised in any way. At Pleasure Beach Park, these structures may serve multiple uses as nostalgic architectural forms that conjure images of the sites former uses and as potential locations for barn owl nesting sites. Multi-purpose structures may help to justify the cost of the units.

Sanitary Sewers: Public sanitary sewers are not available in Pleasure Beach Park. Waste water from the Harbor Hut and Bath House flows to two independent septic systems. Sewage from the Bath House flows via gravity piping to a 10,000-gallon septic tank into two (2) pump chambers where it is then discharged to 22 leaching trenches, each 115 feet long. This leaching field is located just north of the large existing parking area near the Bath House. Sewage from the Harbor Hut is gravity fed to a 1,500-gallon septic tank which feeds into four (4), 80-foot-long leaching trenches. These trenches are located to the south of the Harbor Hut. These systems have received little or no flow since loss of the access to the park in 1996. Each system must be inspected to determine useful life and their capacity to support newly renovated structures. Recommended structure use will not result in any increase in flows from pre-existing conditions.

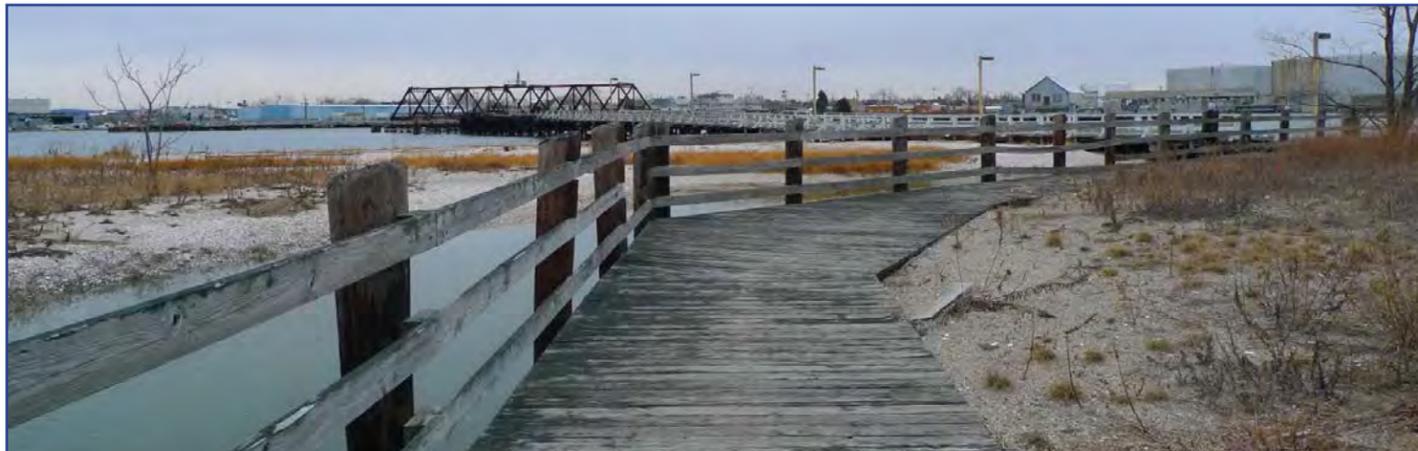
The capacity of the Bath House septic system (10,000 gallons) may warrant review by the CTDEEP prior to reactivating the system. Field inspections shall determine need for agency review beyond City of Bridgeport jurisdiction.

No municipal sewer collection and waste water treatment is proposed.

Utilities & Infrastructure



Bath House / Pavilion and Formerly Paved Parking Lot



Boardwalk looking North towards the East End



Existing Fire Hydrant



Public Phone

Storm Sewers: There are no known storm sewers located in Pleasure Beach Park though the nature of previous site uses (pools, amusement parks, structures) suggest that some abandoned underground systems remain on site. Runoff from the various parking areas, densely compacted soils and buildings is via overland surface runoff. No piped collection systems are proposed aside from minimum lengths of pipe in children's play areas.

Electric: United Illuminating is the electrical distribution utility for this area. They have a submarine electrical transmission cable under the channel, serving the island. This cable connects to a manhole on the north side of Pleasure Beach Park and then runs overhead toward WICC radio facilities on the eastern edge of the park. Utility poles appear to have been recently replaced (2010). Abandoned utility poles remain in position in some instances. There is no overhead service provided to either the Harbor Hut or the Bath House building. Re-use of either building, and the former ballroom and Play House will require new service, preferably underground.

The City of Bridgeport is currently coordinating efforts with United Illuminating to ascertain the location and condition of a submarine line that feeds the site. Many speculate that the line is compromised and fragile and that disturbance may lead to service disruption to Pleasure Beach Park and WICC Radio. Today, electric demand is very small and from the Utilities perspective does not warrant the cost of replacement of the service line. Projected service needs for Pleasure Beach Park via full implementation of facilities identified in the Master Plan is approximately 380kw, in which case new service will be required.

Pleasure Beach Park Amenities and Estimated Electric Demands

Restroom and Concession Building (building exists but requires renovation)

• Men's and women's room	12 kW
• 600-square-foot concession/kitchen area (grill, ovens, microwave, refrigeration, etc.)	32 kW
• Electric heating capacity	14 kW
• Changing rooms with lighting; 2 rooms at 400 sf each	8 kW

Site Lights

14' high poles with 150w LED luminaires; 30 fixtures total	4 kW
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Power Pedestals

Two separate 200-amp connections	90 kW
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Eleven (11) picnic pavilions with overhead light/security light capacity and two electrical outlets in each pavilion	40 kW
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Utilities & Infrastructure



Maintenance Building (former theater building)

Restrooms	12 kW
Storage 20' by 20'	2 kW
Garage with four power/charging stations	24 kW
Workshop	14 kW
Exterior lighting	2 kW
A/C	(not included in total) 14 kW
Electric Heat	18 kW
Staff Offices / First aid station	12 kW

Water pumps

Gray water capture and site distribution	10 kW
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Harbor Hut (existing building)

Office	4 kW
Reception window	2 kW
Unisex restroom	4 kW

Dock lighting (600 lf + Outlets)	8 kW
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Spray Pad Play Area - 900 sf	4 kW
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20% Contingency	64 kW
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TOTAL = 380 kW or 432 kVA

Gas: The Southern Connecticut Gas Company is the local service provider. However no gas service is provided to Pleasure Beach Park. There is evidence that propane may have been used to service the former Bath House. WICC radio redundant power supply is provided by propane as tanks are visible on site. This source is utilized should United Illuminated electrical service be compromised.

Communication: AT&T has a submarine cable that provides service to the island connecting to United Illuminated pole #8785 on the north side of the island. No service is provided to the buildings at this time.

LEGEND:

-  BEACHES - UDIPSAMMENTS COMPLEX, COASTAL
-  UDORTHENTS - URBAN LAND COMPLEX
-  WATER



Soil Types

Soils on barrier beaches are typically derived from a parent material of wind-and water-deposited sands. They are typically coarse in texture, with the overwash deposits typically coarser than the wind (eolian) deposits. These areas of naturally occurring sand deposits that have been colonized by vegetation on the site are referred to as Coastal Udipsamments in the soil survey. This soil may be found directly adjacent to beaches, which contain mineral material of the same parent material and texture, but lack the vegetative cover. Coastal Udipsamments are typically rapidly permeable and have a loose soil structure. As these soils can be quite mobile, there is typically little soil profile development. The vegetated western and southern portions of the site bordering the tidal waters are good representative areas for this soil type.

Where such soils are disturbed by human activity, the taxonomic name is changed to Udorthents. These soils have been disturbed by cutting/filling activity or are covered by pavement or buildings. A review of the soils map relative to the site aerial photograph would suggest that Udorthents are more prevalent on the site than indicated. In particular, the Pavilion area and associated paved parking lot should be included within the Udorthent limits. Close inspection of the site interior suggests extensive soil disturbance and broken pavement. The interior one-third of the site could be included in this map unit.

Soil types not shown on the map include a histosol (organic soil) within the salt marsh area in the northwest corner of the site. Approximately one acre of this soil type is associated with the mucky fringe of the salt panne and along the tidal creek. The soil contains a thick layer of highly decomposed organic material and is very poorly drained. The organic material accumulates due to the lack of oxygen resulting from the tidal washing of the area. These soils are primarily within the upper tidal zone, extending to just beyond the high tide line.

The “beach” soil type is also present on the site, along the north, south and west site boundaries. These long, narrow areas consist of sand, gravel and cobbles that are exposed at low tide; rock outcrops are often present. Vegetative cover is minimal.



Sandplain view looking south towards the breakwater

Coastal barriers may contain a complex of naturally occurring landforms including beaches, sand dunes, sand plain, intertidal flat and intertidal wetland. The coastal processes responsible for the development of these natural features include the sediment supply, longshore sediment transport, eolian (wind) forces and wave action (including overtopping). Glacial processes deposited extensive amounts of glacial outwash material in Fairfield County, providing the material necessary for the formation of beaches. Tidal movements and wave action have formed a progressive elongation of the outwash material forming the barrier beach spit that is Long Beach. Maintenance of the barrier requires a constant source of mineral material, along with the tidal and wind forces. The barrier is in a relatively constant state of flux relative to the size, shape and location of each of the landforms. Man-made boulder groins installed along Long Beach have partially interrupted the tidal movement of sands along Long Beach.

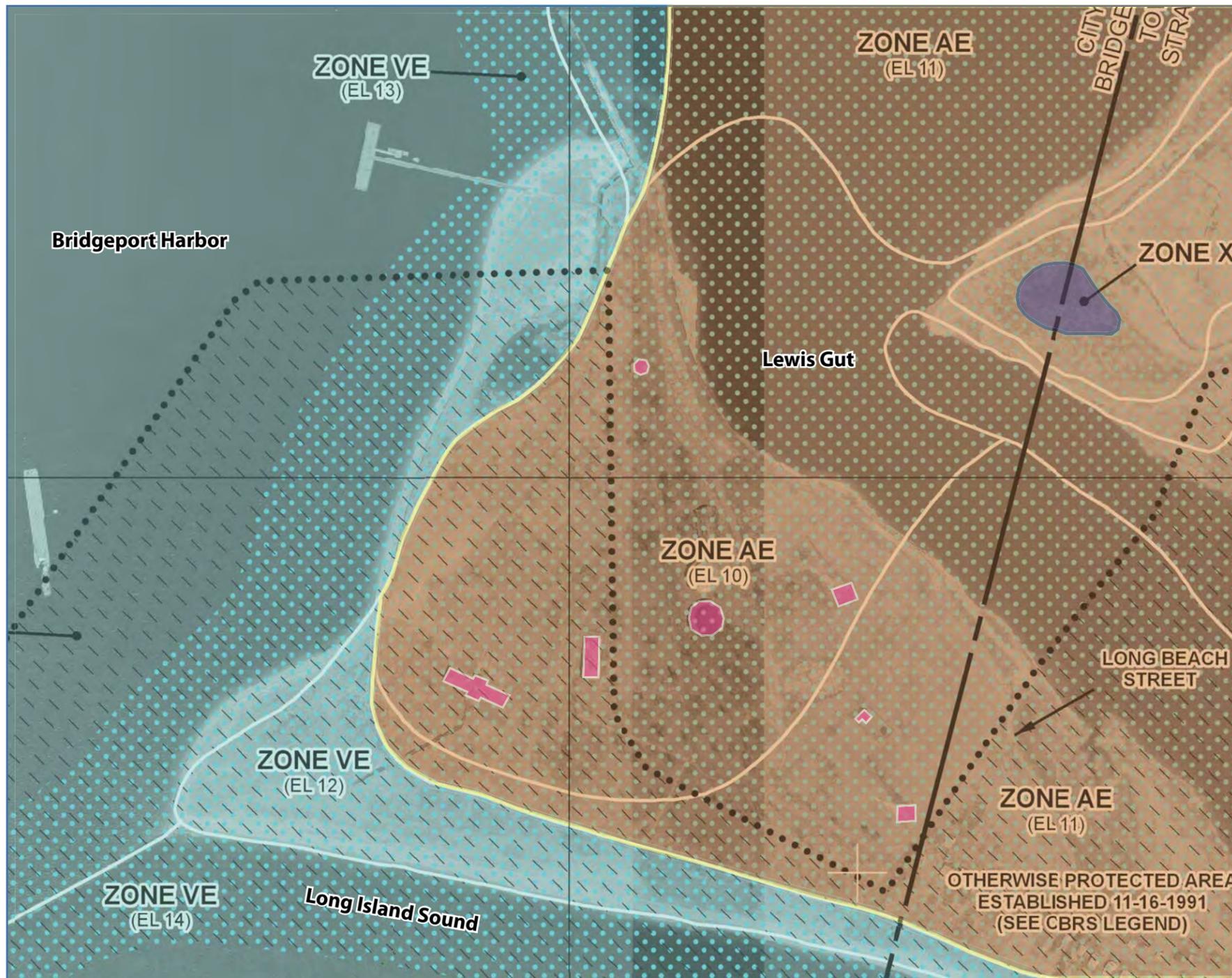
The beach is the zone that extends from the uppermost limit of normal wave action down to the low tide line. The upper part, or foreshore, borders the sand dune. The dune is formed primarily by a mineral supply from the beach aided in transport by wind and wave action. Typically, some form of debris (the wrack line) is the catalyst for dune formation causing the transported mineral material to deposit by reducing wind velocity below the necessary transport velocity. Vegetation capable of colonizing this coarse, nutrient-poor material further causes sand deposition thus increasing the height and width of the dune. Dune size is typically controlled by the width of the beach and the corresponding size of the sand supply; heights along Pleasure Beach range from about 3-5'. Dune stability is provided by the vegetation. Few species can tolerate the growing conditions of the dunes which includes the near constant burying action of the sand deposition and the effect of salt spray. American beachgrass (*Ammophila breviligulata*) is the primary species responsible for dune stabilization in the project area. Protection of this species from foot traffic is a principle measure in protecting dune habitat.

Secondary dunes occur at the extreme western end of Pleasure Beach. These dunes bend around the point from Long Island Sound to the Bridgeport Harbor inlet, slowly decreasing in form to the north. It appears that a series of secondary dunes, combined with beach nourishment, is responsible for the formation of the salt panne, tidal wetland and tidal creek in the northwest corner of the site. This western beach area of the site is a prime location to view several barrier landforms over a small area complete with their associated vegetative communities.

Landward of the dune complex are level areas of sand referred to herein as "sandplain". These are areas of decreased sand movement and/or activity and salt spray, providing for improved growing conditions for vegetation. A change in plant species and sizes is noticeable between the dune and the sandplain. The presence of some shrubs in this landform reflects the more stable growing conditions. This level plain is a result of the overwash process, where water-deposited sediment is placed in a fan-like formation. Much of the sandplain area of the site was subject to development and is currently paved or covered with buildings.

At the end of the dune and sandplain complex there is typically a leeward beach and/or salt marsh. This beach area is comprised of much finer grained materials, as the high wave and wind energy of the exposed Long Island Sound beach is absent, allowing for the deposition of finer grain sizes. This calmer environment provides for the growth of salt-tolerant emergent vegetation including both high- and low-marsh species. Salt marsh is present along the northern and a portion of the western site boundary.

FEMA Classification



The entire site is shown to be within the limits of the 100-year floodplain as determined by the Federal Emergency Management Agency (FEMA) through their National Flood Insurance Program and the associated Flood Insurance Rate Map (FIRM). Two different flood-related zones are known to occur on the site. Zone AE includes areas within the 100-year floodplain with a known base flood elevation (elevation 10 MSL for the Pleasure Beach site). Zone VE includes areas within the 100-year floodplain that are subject to flow velocity hazards (wave action) and thus pose an increased threat to structures. The figure also indicates that portions of the site and adjacent areas are within the limits of the Coastal Barrier Resources System (CRBS) and thus are protected resources under the National Coastal Barrier Resources Act (Public Law 97-348) and the associated Coastal Barrier Resources Reauthorization Act (Public Law 106-514). Development in such areas is subject to additional limitations, particularly where such development is to be funded or otherwise supported by a Federal action.

According to the Existing Conditions Plan, the former Ballroom building and the Play House are at approximate elevation 8'. Because these buildings fall below the recommended 10' elevation line for buildings constructed within a flood zone, certain precautions, requirements and building updates should be expected when the buildings are being restored.

According to FEMA, if "substantial improvements" are planned for the existing buildings within the flood zone, they would need to be compliant with current design criteria for buildings in the respective flood zone. This would include elevating the finish floor above the flood elevation. According to FEMA, substantial improvement is a construction value greater than 50% of the market value of the building. There is some discretion with the local building official in the administration of this regulation. At a minimum, it can be anticipated that any portion of the building below the base flood elevation will have to be constructed with flood resistant materials (i.e. concrete, masonry, pressure treated lumber, etc.). Furthermore, any mechanical or electrical systems or service panels will need to be elevated above the flood elevation.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE Q Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet

* Referenced to the North American Vertical Datum of 1988

△ Cross section line
②-② Transsect line
87°07'45", 32°22'30"
76°00'N
600000 FT
DX5510 x
M1.5

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1000-meter Universal Transverse Mercator grid values, zone 18
5000-foot grid values: Connecticut State Plane coordinate system (FIPSZONE 0600), Lambert Conformal Conic projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
River Mile

LEGEND

	(SB) SANDY BEACH
	(SG) SANDPLAIN GRASSLAND
	(VD) VEGETATED DUNE
	(ES) EARLY SUCCESSIONAL UPLANDS
	(P) PAVED / FORMERLY PAVED
	(SP) SALT PANNE
	(TC) TIDAL CREEK
	(SM) SALT MARSH



Environmental Cover Types

The Pleasure Beach site has been categorized and delineated according to the vegetative cover types that occur within its limits. The cover type delineations are closely associated with the different barrier beach landforms and the limits of human disturbance from past uses of the site.

Sandy Beach

A narrow strip of unconsolidated mineral material occurs within the intertidal zone along the north, south and western site boundaries. These are areas of wave and water current energy and long-term contact with full salinity marine waters. The substrate is typically coarse, ranging from coarse sands to large cobbles. A high frequency of marine invertebrate shell fragments is present within this cover type. The upper limit of this zone extends just beyond the high tide line, bordering the vegetated dune or sandplain grassland.

Vegetation is sparse to absent within this cover type, provided mainly by some macroalgae including rockweed (*Fucus* sp.) and sea lettuce (*Ulva* sp.) at the lower end of the intertidal zone. Near the upper limits, a sparse cover of smooth chordgrass (*Spartina alterniflora*) and saltmeadow chordgrass (*Spartina patens*) can be found in the quieter environment and finer textured soils of the beach along Lewis Gut.

Sandplain Grassland

The combination of the sandplain grassland and vegetated dune cover types on this site are listed as a Significant Natural Community in the Connecticut Natural Diversity Data Base. Landward of the active dunes occur level, sandy areas that continue to exclude woody growth but have a greater diversity of herbaceous species in comparison to the dune habitat. This cover type is somewhat limited on the site and appears to be subject to encroachment by woody growth for short periods.

Environmental Cover Types



Vegetated Dune



Early Successional Uplands

Major storm events appear to erase the woody species from the grassland on an infrequent basis, thus re-setting the grassland for a continuation of the dominant herbaceous cover. It differs from the dune plant community in that American beachgrass (*Ammophila breviligulata*) is not dominant, replaced by a diversity of species including switchgrass (*Panicum virgatum*), lovegrass (*Eragrostis* sp.), wormwood (*Artemisia caudata*), milkweed (*Asclepias syriaca*), ragweed (*Ambrosia artemisiifolia*), butter-and-eggs (*Linaria vulgaris*), poison ivy (*Toxicodendron radicans*) and common reed (*Phragmites australis*). Shrub encroachment is primarily by beach plum (*Prunus maritima*), seaside rose (*Rosa* sp.) with some European honeysuckle (*Lonicera xylosteum*) and trembling aspen (*Populus tremuloides*) as well. Some shadbush (*Amelanchier* sp.) growth was noted as well. It is these level sandplain areas where the predominance of the protected plant species on the site were observed to occur, including prickly pear (*Opuntia humifusa*) and New England blazing star (*Liatris scariosa* var. *nove-angliae*).

Vegetated Dune

The vegetated dune habitat is listed as a Significant Natural Community in the Connecticut Natural Diversity Data Base. The dune/beach interface is typified by a debris or wrack line of various size and composition. This water-deposited debris is concentrated by the upper reaches of wave action and can be in a constant state of flux. The wrack can smother vegetation growth, but older wrack lines (from storm events or moon tides) can be the location of a sparse yet diverse set of plant growth at the dune/beach interface. Typical vegetation observed at the site around the wrack line includes lambs quarters (*Chenopodium album*), saltwort (*Salicornia* sp.), orache (*Atriplex* sp.), common reed (*Phragmites australis*) and cocklebur (*Xanthium* sp.).

Above the wrack line and extending over the primary dune there is a moderate to dense cover of American beachgrass (*Ammophila breviligulata*). This species forms monocultures on the site in the more active dune habitat (that which is closest to the beach along Long Island Sound) but tends to mix with other species in the less active environments on the leeward side of the dune. The lack of significant sand deposition and increased protection from salt spray allows for other species to colonize these areas including evening primrose (*Oenothera biennis*), seaside goldenrod (*Solidago sempervirens*), switchgrass (*Panicum virgatum*), lovegrass (*Eragrostis* sp.), spurge (*Euphorbia* spp.) and beach pea (*Lathyrus* sp.). This zone continues to exclude woody shrub and sapling growth due to the aforementioned sand movement and salt spray.

Early Successional Uplands

Past site disturbance included vegetation clearing, soil compaction, soil grading/filling and the introduction of invasive plant species. The soil surface in these areas remained exposed, providing for dense vegetative growth following the abandonment of the site. The early successional areas occur beyond the active dune areas and significant salt spray influence, allowing non salt-tolerant species to occur with a predominance of woody growth. The fringes of this habitat include some standing dead timber, a testament to the infrequent storm events capable of carrying salt spray to the site interior.

Environmental Cover Types



Paved / Formerly Paved

Dominant vegetation in these areas includes a low canopy of poplar (*Populus* spp.), tree-of-heaven (*Ailanthus altissima*), cherry (*Prunus* sp.) and some planted species including sycamore (*Platanus* sp.) and various oak (*Quercus* spp.). The dense shrub layer includes a mix of native and invasive species including bayberry (*Morella pensylvanica*), European honeysuckle (*Lonicera xylosteum*), red cedar (*Juniperus virginiana*), staghorn sumac (*Rhus typhina*) and rose (*Rosa* sp.). Vine cover includes oriental bittersweet (*Celastrus orbiculatus*), grape (*Vitis* sp.), greenbrier (*Smilax* sp.) and poison ivy (*Toxicodendron radicans*). The groundcover is quite variable in this cover type, with American beachgrass (*Ammophila breviligulata*), ragweed (*Ambrosia artemisiifolia*), milkweed (*Asclepias syriaca*), pea (*Lathyrus* sp.), everlasting (*Anaphalis* sp.), and various other grasses common.

Paved / Formerly Paved

This cover type includes the pavement and building footprints associated with the previous site uses. Vegetation growth along the edges of the impermeable surfaces is evident, but they are primarily devoid of a consistent vegetative cover.



Salt Panne

Salt Panne

A tidally inundated basin occurs in the northwest corner of the site. The approximate 1/2-acre permanent basin is connected to Lewis Gut via a tidal creek. The basin bottom is deeper than the creek channel, resulting in a permanent pool of full salinity water within the basin; the water surface area expands to twice the size at high tide. Vegetation is absent from the limits of the permanent pool. The pool bottom consists of a mix of coarse sand and highly decomposed organic material (muck). The panne feature is a concentration of wildlife activity on the site.

Tidal Creek

A narrow (5-8') channel connects Lewis Gut with the salt panne. The channel extends along an existing boardwalk. The substrate includes a mix of placed rip-rap and coarse gravel fringed by finer sand beyond the main flow channel. The channel is fringed by salt marsh vegetation (see following cover type description). A colony of sea lavender (*Limonium* sp.) occurs along this channel.



Tidal Creek



Salt Marsh

Salt Marsh

This cover type is of minimal area on the site, primarily contained to the fringes of the salt panne and tidal creek in the northwest corner of the site, and along the seawall that borders Lewis Gut along the northern site boundary. The salt marsh areas are dominated by low marsh vegetation (*Spartina alterniflora*) with some limited high marsh fringing the salt panne. Mixed with the *S. alterniflora* and *S. patens* are sea lavender (*Limonium* sp.), seaside goldenrod (*Solidago sempervirens*), aster (*Aster* sp.) and glasswort (*Salicornia* sp.). The marsh areas are in good condition, with no threat of common reed (*Phragmites australis*) cover.



Threatened and Endangered Species

The following section provides a summary of threatened and endangered species that exist at Pleasure Beach Park. In addition to identifying individual species, this section identifies typical habitats and references the Threatened and Endangered Species Management Plan that is established to protect and encourage future recovery of noted species. Subsections include:

- Endangered Species Act
- Plant Species
- Rare Plant Survey Plan
- Wildlife Species
- Endangered Species & Wildlife Habitats
- Natural Diversity Data Base Review

Endangered Species Act

Pleasure Beach Park is located along the Atlantic flyway for migratory birds, providing a stopover and foraging habitat for migrating songbirds and raptors as well as nesting and foraging habitat for threatened and endangered shorebird species. It is also a public park, though access has been significantly hampered by loss of a connecting bridge from the mainland in 1996.

We cannot plan for the future of Pleasure Beach Park without reference to the United States Endangered Species Act. Pleasure Beach Park contains habitat and known existence of threatened and endangered plant and wildlife species. Protection of these species is paramount and warrants preparation of a formal Threatened and Endangered Species Management Plan (TESMP). The TESMP outlines a management framework for the City of Bridgeport to balance the needs of shore-side threatened and endangered wildlife and plant species with recreational use of their habitats. The TESMP and enforcement of its provisions is the responsibility of the City of Bridgeport with oversight by the State of Connecticut Department of Energy and Environmental Protection (CTDEEP) and the United States Fish and Wildlife Service (USFWS). Specific species are identified herein, and a comprehensive TESMP is hereby referenced. The following contains a general description of provisions that govern the use of Pleasure Beach Park.

[Endangered Species Act of 1973, as amended \(ESA\) \(16 USC 1531-1544\).](#)

The purposes of the ESA include providing "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved". According to the ESA, "all Federal departments and agencies shall seek to conserve endangered species and threatened species" and "[e]ach Federal agency shall...insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species."

[Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act \(Northeast Region, U.S. Fish and Wildlife Service, April 15, 1994\).](#)

These measures provide guidance to beach managers and property owners seeking to avoid potential violations. The guidelines are advisory, and failure to implement them does not, of itself, constitute a violation of the law. Rather, they represent the Service's best professional advice to beach managers and landowners regarding the management options that will prevent direct mortality, harm, or harassment of piping plovers and their eggs due to recreational activities.



Endangered Species Act

The following table outlines threatened and endangered species known to exist or potentially occur at Pleasure Beach Park along with the species group and conservation status of each.

Species	Species Group	Federal Status	State Status
Piping plover <i>Charadrius melodus</i>	Bird (shorebird)	Threatened (Atlantic Coast)	Threatened
Least tern <i>Sterna antillarum</i>	Bird (waterbird)		Threatened
Barn Owl <i>Tyto alba pratincola</i>	Bird of Prey		Endangered
Sickle-leaved golden aster <i>Pityopsis falcata</i>	Flowering Perennial		Endangered
Beach needle grass <i>Aristida tuberculosa</i>	Grasses		Endangered
Bitter panic grass <i>Panicum amarum</i>	Grasses		Threatened
Eastern prickly-pear <i>Opuntia humifusa</i>	Cactus		Special Concern
New England Blazing Star <i>Liatris scariosa var. novae-angliae</i>	Flowering Perennial		Special Concern



Purple Martin



Spurge



Beach Needle Grass

Recovery Goals

Recovery Goals are cited in the TESMP as a means to further populations of endangered and threatened species; preserve, enhance and expand their habitats; and avoid any disturbance to existing populations. The following actions are intended to further the recovery of threatened and endangered species.

Avoiding Human Disturbance: With visitation and use by people, disturbance must be avoided to avert any violations and consequences enforceable by the Endangered Species Act. To avoid human disturbance, the following actions will be taken. A detailed listing of provisions is contained in the TESMP.

- Erect approved fencing and signs to manage and enforce beach closures in areas designated as protection zones for threatened and endangered species.
- Prepare proper buffer areas for piping plover nesting sites.
- Prohibit all vehicle use on protected beaches except in emergency situations.
- Prohibit dogs and other pets, leashed and unleashed.
- Prohibit kite flying.
- Assess beach access routes each year, and redirect pedestrian passage to avoid any disturbance to nesting sites.

Endangered Species Act



Piping Plover and chick



Endangered species habitat signage



Example of access to beach guided by fencing

- Restricted bicycle use to paths and trails.
- Restrict fishing to designated areas in accordance with City of Bridgeport Park Rules and Regulations.
- Prohibit hunting on Pleasure Beach Park with the exception of authorized activities (hunting as a management tool) directly supervised by the City of Bridgeport, CTDEEP and the USFWS.
- Avoid Activities that have any environmental impact that cannot be adequately mitigated.

Predator Management: Predators such as feral cats, rodents, fox and other animals that may be potential threats to nesting threatened and endangered species may be controlled. Actions may include:

- Implementing an intensive predator monitoring and management program to reduce impacts to threatened and endangered species.
- Enforcing a “carry in – carry out” trash policy that requires visitors to remove any trash from items brought into the park.
- Identifying and removing any supplemental food sources that will attract predators of threatened and endangered species.

Habitat Restoration and Enhancement: To the extent such measures are in conformance with State and Federal law, the park may implement the following actions to restore and/or enhance habitat for noted species to aid in their recovery:

- Investigate measures to control vegetative encroachment.
- Continue efforts to remove invasive species of vegetation that would diminish or degrade piping plover habitat or other plant and wildlife species identified herein.
- Retain tidal pools and buffer areas.
- Maintain the option of conducting beach nourishment projects when needed in conjunction with Federal and State authorities to further, maintain or replace habitat for foraging shorebirds and waterbirds.
- Protect identified piping plover habitats and migratory staging, roosting and foraging areas as appropriate and as threats are identified.

Monitoring of Species: Monitoring of the park is critical to understanding fluctuations in the population, productivity and health of threatened and endangered species. A monitoring program must be implemented by the City of Bridgeport.

Beach Management and Maintenance: Beach maintenance includes activities conducted by the park to maintain beaches and dunes including: mechanical beach raking; refuse and large debris removal; dune maintenance; beach nourishment; sand scraping; and placement and removal of seasonal beach structures. These activities, if not conducted carefully, can impact habitat quality, disturb nesting birds and destroy nests, chicks, and plants.

Plant Species



Beach Needle Grass



Eastern Prickly-Pear



Sickle-leaved Golden Aster



Blazing Star

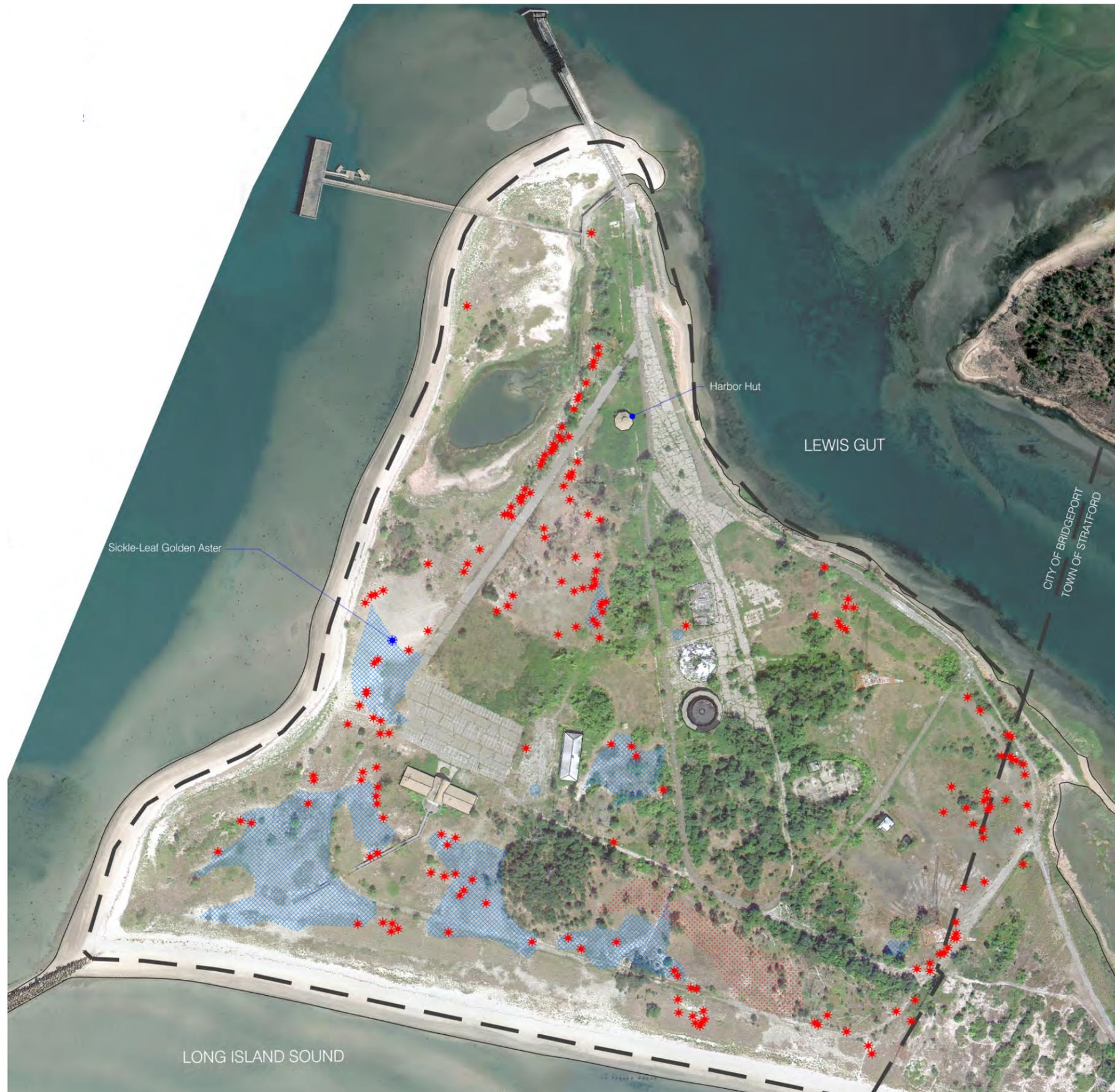
Staff of the Connecticut Department of Environmental Protection (CTDEEP) Natural History Survey – Natural Diversity Data Base were contacted for information regarding federal and state listed protected plant species on the project site. An updated response was received from the CTDEEP on June 7, 2011 indicating that the site is known to contain several state-listed protected plant species. These include the following:

- Sick-leaved golden aster: *Pityopsis falcata* – State Endangered
- Beach needle grass: *Aristida tuberculosa* – State Endangered
- Bitter panic grass: *Panicum amarum* - State Threatened
- New England Blazing Star: *Liatris scariosa* var. *novae-angliae* – State Special Concern
- Eastern prickly-pear: *Opuntia humifusa* – State Special Concern

A cursory review of the site found eastern prickly pear within the sandplain grassland cover type. Furthermore, a few prickly pear individuals were found growing through cracks in some old pavement on the site, suggesting a potential for colonizing many areas of the site and a high resiliency to disturbance as well. Grasses of the genus *Panicum* were found during a field visit in May 2011 but were not identified to the species level. Given the habitat preferences of the species on the list and the past records from both the site and from Long Beach, it is probable that all of these listed species could exist on the site.

Rare Plant Survey Plan

September 2011 and June 2012



A rare plant survey was conducted in September 2011 and in June 2012 in order to document the location of State listed plant species growing in Pleasure Beach Park. This map shows the results of these surveys, noting that a large majority of Eastern Prickly-Pear and Beach Needle Grass were found along the western, southern and eastern edges of the site. One Sickle-Leaf Golden Aster specimen was found along the western dune area. Both surveys resulted in no sighting of New England Blazingstar or Bitter Panic Grass, although the habitat for these plant species does exist on Pleasure Beach.

LEGEND

-  Eastern Prickly-Pear - Community (*Opuntia humifusa*)
-  Eastern Prickly-Pear (*Opuntia humifusa*)
-  Beach Needle Grass - Community (*Aristida tuberculosa*)
-  Sickle-Leaf Golden Aster (*Pityopsis falcata*)



SCALE: 1" = 100'
0 100 200 400

Wildlife Species



Least Tern



Piping Plover



Least Tern

Staff of the Connecticut Department of Environmental Protection (CTDEEP) Natural History Survey – Natural Diversity Data Base were contacted for information regarding federal and state listed protected wildlife species on the project site. An updated response was received from the CTDEEP on June 7, 2011 indicating that the site is known to contain several state-listed protected species. These include the following:

- Piping Plover – state and federally threatened species
- Least Tern – state threatened
- Barn Owl – state endangered

The plover and tern are closely associated with the sandy beach environment for nesting, with a preference for the beach/dune interface just above the wrack line but short of the dense dune vegetation. Secondary nesting habitat would include areas of sparse-to-absent vegetation within both the dune and sandplain grassland cover types on the site, particularly those fronting on Long Island Sound.

Plover feeding habitat includes the intertidal zone, particularly those areas that are rich in small invertebrates. Intertidal feeding habitat occurs along the southern site boundary fronting on Long Island Sound, and an additional area along the western site boundary along Bridgeport Harbor and the northern side along Lewis Gut. The salt panne and tidal creek within the site interior also provide plover feeding habitat. The panne in particular contains a rich invertebrate assemblage and was frequented by shorebirds during the lower tidal cycle. A dense fiddler crab (likely *Uca pugnax*) population is present within the low marsh area of the salt panne.

Barn owl were observed on the site in 2011, utilizing some of the dilapidated structures for roosting. The open grasslands and dunes of the site and adjacent wildlife refuge provide hunting opportunities for this species, and the continued presence of the open cover types combined with suitable roosting/nesting structures should afford the continued presence of this species in the area.

Osprey (*Pandion haliaetus*) are prevalent at the site and along Long Beach. Numerous nesting platforms have been installed to the east of the site, primarily along the Long Island Sound side of the barrier beach. Most of the nesting platforms were active in early 2011. Osprey perch on the site in the standing dead timber of the early successional cover type and on the radio towers. Feeding occurs in the Sound and in Lewis Gut. Active restoration efforts are on-going for this species, as the population rebounds from the effects of pesticide contamination and habitat loss.



Wildlife Species



Other Species

The diversity of cover types and the extensive intertidal area on the site provide habitat for a variety of wildlife from finfish to large mammals. Geographically, the site is a part of the wildlife refuge ecosystem (Great Meadows Unit of the Stewart B. McKinney National Wildlife Refuge), and it benefits from the resources of the refuge. In particular, the refuge is a provider of a freshwater source which is in short supply on the site and Long Beach. The wildlife component of the refuge is well documented, and species that utilize the refuge would be expected to have some presence on the Pleasure Beach site as well. In particular, the section of the site along Lewis Gut and Bridgeport Harbor would see many of the avian and invertebrate species common to the refuge. An exhaustive study of wildlife populations on the site is beyond the scope of the Master Plan.

The Long Island Sound side of the site provides a slightly different set of habitat characteristics from the refuge and the other site water frontage. The more active and higher energy wave and wind action provides for coarser sediment within the intertidal zone, modifying the invertebrate component. In contrast is the lower energy environment of the salt panne, which contains organic soils and diverse invertebrate populations including fiddler crab, periwinkle and ribbed mussel. Small fish are abundant in the panne, and include killifish (*Fundulus* spp.), silversides (*Menidia* sp.) and juveniles of many of the sportfish known to occur in the Sound. These quieter environments are prime locations for wading and dabbling birds, whereas the open water of Long Island Sound are preferred by diving birds. Shellfish populations around the site that support several shorebirds and waterfowl include ribbed mussel, blue mussel, oyster, razor clam and hard clam.

Mammals observed on the site during a cursory inspection include white-tailed deer, fox, coyote (track), raccoon, Norway rat, feral cat and mole. The presence of the fox, coyote and feral cat pose some threat to the nesting populations of shorebirds in the vicinity. Control or eradication of some of these species would be beneficial to the nesting plover and tern colonies, but may be infeasible due to the continued replacement of individuals from the adjacent refuge and residential areas.



Barn Owl

Endangered Species & Wildlife Habitats

-  Least Tern Nesting Habitat
-  Piping Plover Nesting Habitat
-  Barn Owl Nesting Site
-  Known Location of Noted Plant Species (see Rare Plant Survey Plan)



This graphic of Pleasure Beach outlines the locations where State listed plant species can be found as well as the desired habitat of endangered wildlife. The red and blue areas highlight the desirable nesting sites for Piping Plover and Least Terns. The beach along Long Island Sound is considered primary nesting habitat for these birds while the beach area along Bridgeport Harbor is considered their secondary habitat. The Barn Owl's current nesting site, delineated in yellow, is, as of spring and summer 2011, located in the rafters of the Pavilion. The green color outlines the approximate location of all State listed plant species based on the Rare Plant Surveys conducted in September 2011 and June 2012.



Natural Diversity Data Base Review



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
 Inland Fisheries Division
 Habitat Conservation and Enhancement
 Natural History Survey-Natural Diversity Data Base
 79 Elm Street, 6th Floor
 Hartford, CT 06106-5127



June 7, 2011

Gary Sorge
 Stantec Consulting Services Inc.
 2321 Whitney Avenue
 Hamden, CT 06518
 (203) 281-1250

Subject: NDDDB Request #201103459
 Feasibility Study, Pleasure Beach Park
 Bridgeport, CT

Dear Gary Sorge,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided. According to our records, multiple State-listed species (RCSA Sec. 26-306) have been documented within or near your proposed project area.

The following plant species have been documented at Pleasure Beach Park or in close proximity to the site:

Common Name	Scientific Name	Protection Status	Blooming Period
Beach needle grass	<i>Aristida tuberculosa</i>	State Endangered	Aug - Sept
Sickle-leaved golden aster	<i>Pityopsis falcata</i>	State Endangered	mid July - Sept
Bitter panicgrass	<i>Panicum amarum</i>	State Threatened	September
New England blazingstar	<i>Liatris scariosa</i> var. <i>novae-angliae</i>	State Special Concern	August - Sept
Eastern prickly pear	<i>Opuntia humifusa</i>	State Special Concern	July

Botanical field surveys of the Pleasure Beach site should be performed by a qualified botanist when each of the target plant species listed above is identifiable. A report summarizing the results of such surveys should include (1) the survey date(s), (2) descriptions of the habitat and component vascular plant species, (3) notes on the presence/absence of State-listed plant species, (4) detailed maps of the area surveyed including the location and extent of State-listed plant species, and (5) a statement/résumé indicating the botanist's qualifications. The report should be

Records also indicate that two sandy beach nesting species: the state and federally threatened piping plover (*Charadrius melodus*) and the state threatened Least Tern (*Sterna antillarum*) are in the vicinity of this project. Additionally, the state endangered Barn owl (*Tyto alba*) has nested in the eaves of the Concession stand. Piping plovers and least terns nest on sandy beach habitat. Additionally, the piping plovers feed in the tidal flats.

Barn owls occur in low numbers in Connecticut because grasslands and farmlands are declining. Their main food source, meadow voles, mice and shrews, occur in open areas such as grassy fields, old fields and wet meadows. Any activities that decrease the open areas or destroy natural nesting sites in hollow trees will eliminate barn owls from an area. However, many habitat enhancements can be made to keep or encourage barn owls to nest in the vicinity. These activities range from erecting artificial nest structures, improving natural nests or increasing natural nest site availability. Barn owls nest from March through July.

To protect the beach nesting and bird feeding areas the Wildlife Division recommends that work not be done during the nesting season (April 1 – August 15). Additionally, since the piping plover is a federally listed species, we recommend that you consult Ms. Susi vonOettingen of the U. S. Fish and Wildlife Service (70 Commercial Street, Suite 300, Concord, NH 03301-5087, 603-223-2541) for her input. Increased human disturbance to federally nesting shorebirds could be a violation of Section 9 of the Endangered Species Act. If it presents “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which includes, but are not limited to, breeding, feeding or sheltering.”

Consultation with the Wildlife Division should not be substituted for site-specific surveys that may be required for environmental assessments. Please be advised that should state permits be required or should state involvement occur in some other fashion, specific restrictions or conditions relating to the species discussed above may apply. In this situation, additional evaluation of the proposal by the DEP Wildlife Division should be requested. If you have any questions regarding the aforementioned wildlife species, please contact Julie Victoria (julie.victoria@ct.gov). Please reference the NDDDB # at the top of this letter when you e-mail or write. After June 30, 2011, correspondence regarding wildlife species should be forwarded to Jenny Dickson (jenny.dickson@ct.gov).

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the CT Department of Environmental Protection Bureau of Natural Resources and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the proposed work has not been initiated within 12 months of this review, contact the NDDDB for an updated review.

available. If the proposed work has not been initiated within 12 months of this review, contact the NDDDB for an updated review.

Please contact me if you have any questions (nancy.murray@ct.gov; 860-424-3589). Thank you for consulting the Natural Diversity Data Base and continuing to work with us to protect State listed species.

Sincerely

 Nancy M. Murray
 Biologist,
 NDDDB Program Coordinator



Vision Plan

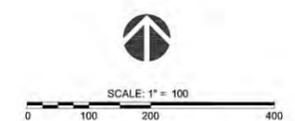
- Proposed Active & Passive Recreation Enhancement Area
- Park Enhancement Program
- Concept Diagram
- Site Plan
- Design Process Overlay
- Schematic Design Aerial Perspective
- Precedent Images
- Access to Pleasure Beach Park

Proposed Active & Passive Recreation Enhancement Area

Based on site reconnaissance and review of State of Connecticut Department of Energy and Environmental Protection data, the planning team delineated the most suitable park areas for future enhancement and significance and contiguous landscape for protection of plant and wildlife habitat.

The green highlighted area shown here depicts sensitive areas consisting of sand dunes, grasslands, and beach. The purple highlighted area outlines the portion of the site containing disturbed soils and areas of pavement. The purple area also consists of former building foot prints and foundations, utilities, structures and debris.

The vast majority of the proposed improvements contained in this Master Plan are enclosed within the disturbed soils outlined in purple. The improvements are not intended to encroach on sensitive and protected portions of Pleasure Beach. Narrow pathways will allow access through the sand dunes to the beach, subject to seasonal site observations and monitoring of endangered species nesting sites.



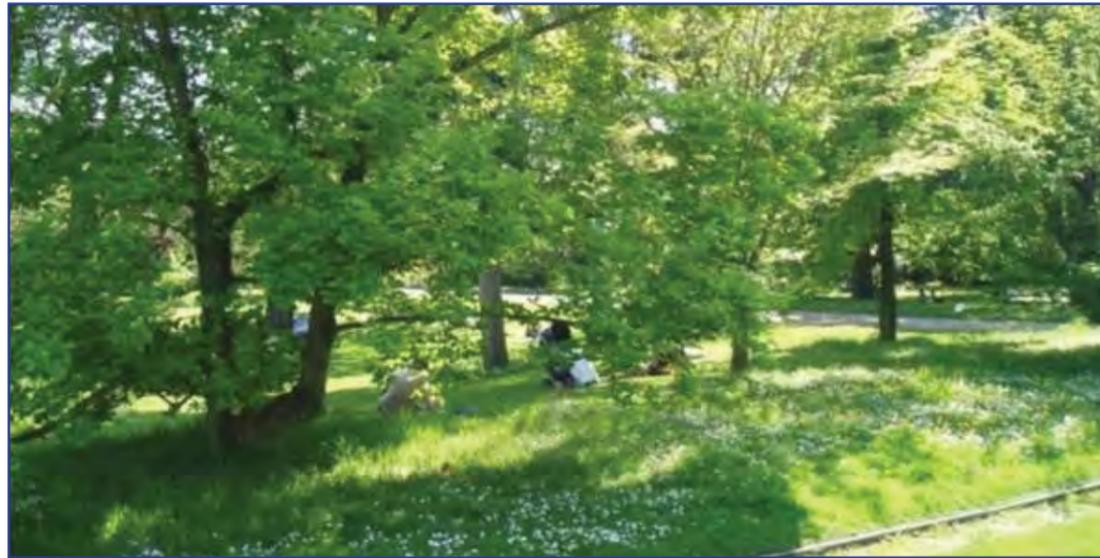
Park Enhancement Program

Stantec conducted two outreach meetings in the Spring of 2011. Our first session involved community leaders and elected City officials to identify opportunities, constraints and desired facilities to be considered for inclusion in the Plan. Our second session engaged many of the same stakeholders in addition to community residents. Site conditions were presented and community needs were discussed in great detail.

As a result of our outreach, a preliminary facilities program was developed. Desired facilities include the following:

- Nature / Learning Center
- Fishing Pier (on mainland and Pleasure Beach)
- Concessions / Refreshment Area
- Restrooms
- Beach Access (swimming and surf fishing)
- Passive and Multi-Use Open Space and Gathering Areas
- Wildlife Preserve
- Paths and Trails (non-motorized)
- Coastline and Wildlife Observation Areas
- Senior Park - Exercise Areas / Equipment, Walking Track (Handicap Accessible)
- Water Play Area
- Adventure Playground
- Multi-use Soccer / Baseball Field
- Basketball / Tennis Courts
- Community Garden
- Staff Facilities / First Aid

This facilities program was used to develop conceptual plan alternatives and, ultimately, the recommendation plan contained herein.



Park Enhancement Program



Kayak Beach

The City of Bridgeport's vision for Pleasure Beach Park emphasizes preservation of the peninsula island's natural environment and a facilities program that utilizes existing structures and provides active and passive recreation opportunities for City residents and visitors of all ages and recreation interests. Of importance, and in response to years of pent-up recreation demand, Pleasure Beach Park will serve the City's East End community and the City of Bridgeport at large. Through community outreach and communication with City leadership, we have developed a program of physical amenities that we believe respects the unique coastal environment of Pleasure Beach, including endangered and threatened wildlife as well as plant life species that populate the island. Our program focuses on quality recreation, education, family activities, healthy lifestyles, stewardship and sustainability. Our inventory of the site's natural features allowed our team to make informed decisions regarding the placement and orientation of the desired plan components. Operationally, we believe that people and species of concern may coexist on Pleasure Beach. In fact, we believe the natural environment and preservation thereof will enrich the educational and recreational value of the park and that pedestrian access may inspire a greater level of stewardship and habitat enhancement.

A summary of our park facility and program elements is as follows:

Kayak Beach

An existing sand beach on the north shore of Pleasure Beach provides an ideal location for kayak launching and landing. Guided tours from this vantage point within Lewis Gut will provide a unique recreation and educational opportunity for visitors to Pleasure Beach. The Harbor Hut may serve as the future depot for tours, rentals and instruction.

Harbor Hut Revitalization

The Harbor Hut is located in close proximity to the former mainland bridge and the boat dock. We envision the Hut providing restroom facilities, information and park staff as well as the home base for guided kayak tours. The main access to Pleasure Beach shall clearly demonstrate the City's commitment to preserving the park's unique natural environment and emphasize the importance of environmental preservation.

Sports Fields: Soccer and Softball

We envision sports fields at Pleasure Beach to accompany passive play, family and group outings, permitted games and multi-use activities. With access to the island reliant on water taxi service, the fields will be more conducive to day-long family and group outings and less on regularly-scheduled league games of more intense use. The fields are located where athletic fields once existed at Pleasure Beach. Less effort, compared to other locations on site, will be required to convert successional landscape and former parking areas to two suitable field layouts.



Harbor Hut
Revitalization



Sports Fields

Park Enhancement Program



Main Pavilion (existing)

The Main Pavilion once housed restrooms, concessions, staff space and shelter during inclement weather. The loss of the Pleasure Beach Bridge in 1996 marked the beginning of the building's demise. Vandalism and a lack of security and maintenance have taken their toll on the structure, however, the structural integrity of the building has not been compromised. Use of the former building is proposed, providing the amenities that formerly existed.

Nature Center

Near the Main Pavilion stands a sizeable structure on a concrete slab. Though the walls have been compromised, the support posts and roof truss structures appear salvageable. The building size and location will provide a centralized location for gatherings, shelter during inclement weather, a nature and interpretive center, and home base for community gardening.



Adventure Playground

The playground will provide a unique play environment of natural materials, exploration and education. Use of customized and vendor-provided play amenities will be composed to create an exciting and interactive experience complementary of the park's overall natural context. In concept, we aim to provide a playful experience that will raise awareness of Pleasure Beach Park's endangered and special species of concern.

Water Play

The introduction of water is a challenge as well as an opportunity. First, we aim to establish a water play environment of intermittent and user-activated sprays with sensitivity to water conservation. A water play environment will provide a water experience on days when the Long Island Sound conditions are less than suitable for swimming, thus providing a complementary recreation element for beach visitors.

Staff Offices

The former Playhouse will provide a centralized location for park staff and warden, additional restrooms, first aid, and park maintenance and security equipment. The structure will require roof, window and door repair and complete interior restoration.



Open Space Gathering Areas

Edges of existing woodlands, successional landscapes and open spaces will provide multiple locations for gathering and locating pavilions. We envision providing an array of assorted size pavilions throughout formerly disturbed areas of the site. Each pavilion will be available for rental with the cost determined by the capacity of the pavilion. Revenue from pavilion use may be beneficial to perpetual staffing and maintenance of the park.

Multi-Use Lawn

Multi-use lawn areas provide flexibility in park programming. At Pleasure Beach, we aim to convert areas of former bituminous pavement to low maintenance lawn area, grassland and meadow.

Park Enhancement Program



Trails and Pathways

Pathways will traverse the formerly paved areas and roadways that once existed on Pleasure Beach with only minor deviation. Pathways will be multifunctional, providing universal accessibility; access for security, maintenance and emergency personnel; and for recreation purposes including walking and cycling. Park trails and pathways will provide loop systems that offer variation in trail length and visual experiences. Pathways also provide opportunities for fitness tracks with workout stations strategically located around the site. Off-trail uses will be prohibited to prevent rampant use and degradation of sensitive plant and wildlife habitat. Use of materials may vary as we envision minimal use of bituminous and concrete surfaces and primary use of pervious surfaces such as crushed stone, crushed shells and the like.

Community Garden

Beyond local community gardens plots, we envision the experience at Pleasure Beach to be far more enriching and educational. Since the island grounds are far less accessible than your traditional neighborhood park, the experience needs to be more engaging and comprehensive. We envision a community cooperative farming experience, where the produce grown is sold to or produced in unison with local restaurants and institutions. The gardens will provide opportunities for K-12 school age children, high school and college students, adults and senior citizens to interact, engage in hobbies, support local business and hone a new skill in a unique urban environment.



Tennis and Basketball Courts

Sport courts shall occupy only a small portion of formerly paved or otherwise disturbed areas of Pleasure Beach and shall be limited in area. The courts are envisioned to support family and group outings and pick-up games. Perhaps a venue for future community competition, the courts are intended to serve Bridgeport residents in need of facilities in a park-like setting and to complement other passive recreation opportunities.

Habitat Structures

Preservation and enhancement of wildlife habitat are unique aspects of Pleasure Beach Park and remain our highest priority. Within the areas of sandplain grassland and early successional uplands, we aim to install a variety of wildlife amenities to support a population of unique, special and endangered species. From osprey perches, bat boxes, and purple martin houses, to protected shoreline and dunes for plover and least turn, habitat is a vital component of our park facilities program. Plant life and the unique habitats that support species of concern are to be protected and expanded as opportunities to convert former paved areas to contiguous areas of habitat come about. We envision Long Beach in Stratford and Pleasure Beach in Bridgeport continuing to function as one ecologically connected system, uninterrupted, through enhancement of the perimeter of our designated passive and active recreation core within the park as well as through the veins of grassland and tree canopy that define spaces within the core of the newly envisioned park.



Park Enhancement Program



Interpretive/Educational Displays

Through graphic design, art and participation by environmental experts, an interpretive program should be developed that is both educational and inspirational. The program should educate park visitors, establish stewardship and promote public awareness of the ecological diversity and value of Pleasure Beach Park.

Water, Water, Water!

For many Bridgeport and East End residents, it's all about access to the water. Though bordered by miles of shoreline, East End residents have limited if no access to the water's edge. Pleasure Beach once provided immense opportunities for shoreline access, lost since 1996 when the Pleasure Beach bridge became inoperable. Our vision plan provides opportunity to enjoy water. Beach access in designated areas (subject to monitoring and designation of plover nesting sites) water play in the playground area, and pier and shoreline access for fishing are key elements of the plan.

Beach access will require management and operational oversight. Nesting sites will preclude any area from being designated as a public beach site and must be monitored seasonally. Preparation of the public beach sites (raking, etc.) will be coordinated with regulatory officials to ensure that seasonal nesting sites are not disturbed and that suitable habitat remains for returning and growing populations of rare, special and endangered wildlife species.

BGreen in Play

The City of Bridgeport leads Connecticut municipalities in its commitment to sustainability through its BGreen policy. The plan for Pleasure Beach Park shall be consistent with and fortify this commitment. We envision the park being partially energy sufficient, generating power through photovoltaic resources and perhaps wind capture. Redundant services shall be provided likely via propane as it is our intent to eliminate the need for other fuel uses. On-site official vehicles and buildings shall be powered in some capacity by energy produced on site or propane.

Water conservation is also a priority. Recognizing Bridgeport's rich industrial history, we envision capture of rainwater in raised cisterns and water tanks reminiscent of the roof lines of our older inner cities. The structures shall provide water for irrigation purposes or fire suppression. We are keen on developing these concepts as we envision the raised structures as providing perch and nesting sites for shoreline birds and barn owls known to thrive at Pleasure Beach Park. These efforts shall be coordinated with regulatory officials and the Connecticut Audubon Society as to the details of their design and siting within Pleasure Beach Park.



Concept Diagram



This Concept Diagram is used to outline in general terms different use areas, their location within the park, and how they are connected. The diagram factors in key areas of species protection, location of previously disturbed soils, public access needs, activity nodes and all park program elements. Different colors in the diagram depict different use areas. These areas range from active to passive recreation and are accessible by pedestrian paths both major and minor. The graphic outlines areas of recreational use set within the core of Pleasure Beach, away from the sensitive sand dunes and protected bird nesting habitat. Access to the beach in multiple locations will allow for flexibility in avoiding active bird nesting sites.

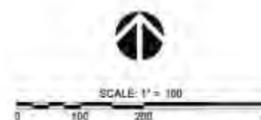


Site Plan



The Pleasure Beach Park Site Plan further refines the Concept Diagram and provides a detailed graphic layout of all site amenities, pathways, recreational courts, picnic areas and active and passive use spaces. The Site Plan accommodates all park program elements previously identified herein. Working from the assessment of both the Proposed Active & Passive Recreational Enhancement Area Plan and the Concept Plan, the Site Plan includes areas of development as well as protected areas of sand dune and beach to encourage a flourishing plant and wildlife environment for endangered plants and wildlife. The following contains a legend of Pleasure Beach Park amenities keyed to the Site Plan shown.

- (A) KAYAK BEACH
- (B) PLEASURE BEACH PARK DEPOT
- (C) SOCCER FIELD
- (D) SOFTBALL FIELD
- (E) RENOVATED PAVILION W/ CONCESSIONS & RESTROOMS
- (F) NATURE CENTER
- (G) PLAYGROUND
- (H) WATER PLAY
- (I) FIRST AID / MAINTENANCE EQUIPMENT / STAFF OFFICE
- (J) PICNIC & MULTI-USE AREA
- (K) AMUSEMENT (PRIVATE / PUBLIC OPERATIONS)
- (L) ADULT FITNESS
- (M) COOPERATIVE GARDEN SITE
- (N) TENNIS COURTS
- (O) BASKETBALL COURTS
- (P) NEW VEGETATED DUNE
- (Q) PHOTO VOLTAIC PANELS
- (R) STONE & NATURALIZED SLOPE EDGE
- (S) BOARDWALK
- RESTROOM
- PICNIC PAVILION
- WILDLIFE BOX
- PICNIC BENCHES



Design Process Overlay

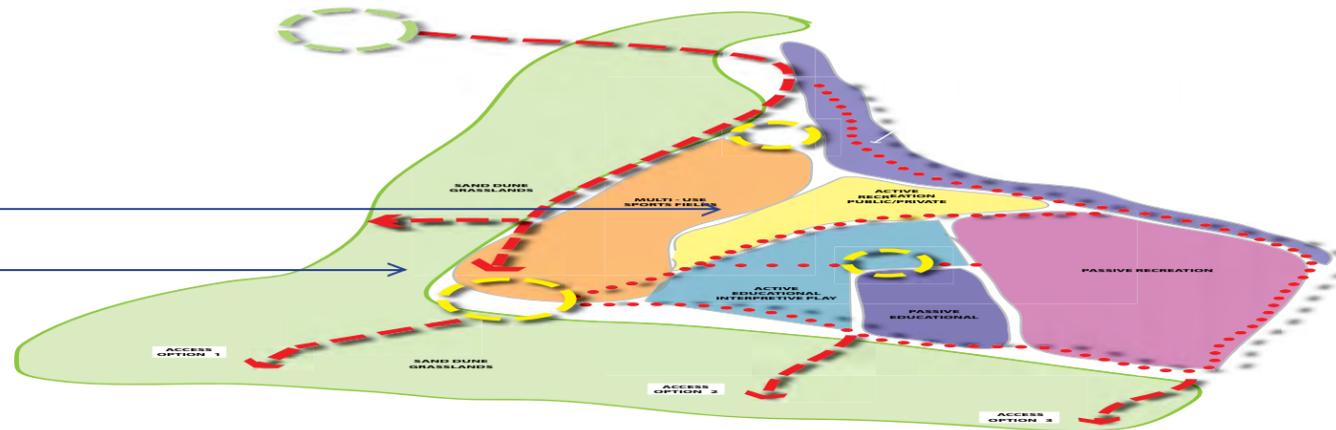
Primary Program Area
Beach/Protected Area



Site Plan

Proposed improvements concentrated on formerly disturbed lands.

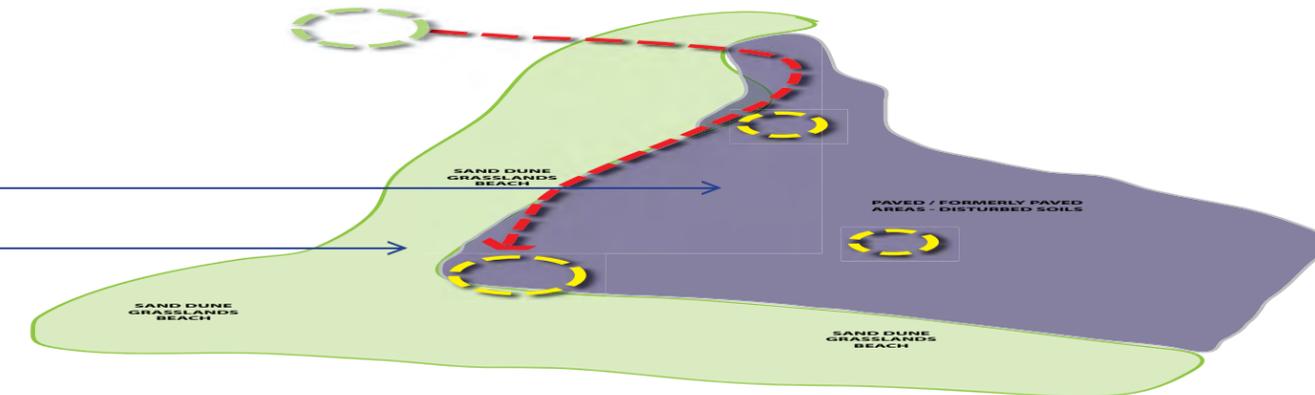
Primary Program Area
Beach/Protected Area



Concept Diagram

Plan illustrates the proposed primary circulation patterns through the designated use areas

Primary Program Area
Beach/Protected Area



Proposed Active & Passive Recreation Enhancement Area

(Former development concentrated in purple-shaded area)

Primary Program Area
Beach/Protected Area



Existing Conditions Plan

Plan illustrates existing site facilities (structures, pavement, roadways and docks)

Schematic Design Aerial Perspective

This birds-eye graphic sketch of Pleasure Beach Park (view northeast) offers a view of the park's layout. The active use zones and pathways at the park's center blend into the naturalized sand dunes and protected areas along the outer edge of the park.



Precedent Images

The following are example images of the park program elements referenced to their proposed locations within Pleasure Beach Park. These images serve as precedents to depict the desired character, proposed uses and recreational diversity of the new park. Elements include:

- Multi-Use Fields
- Play Courts
- Adventure Play
- Water Play
- Passive Recreation
- Wildlife Amenities
- Outdoor Gathering Spaces
- Nature, Exploration & Learning Center
- Pier, Shoreline & Surfside Fishing
- Concessions, Refreshments & Restrooms
- Beach Access
- BGreen in Play (Sustainable Design, Management and Operations)



Multi-Use Fields



Soccer Field



Soccer Field



Softball Field

Play Courts



Basketball Courts



Tennis Courts

Adventure Play



*Outdoor Classrooms/
Day Camps*



Adventure Playground



*Adventure Playground/
Learning Landscape*

Water Play



In-Ground Spray Features



Spray Amenity



Vertical Amenity



LEWIS GUT

Passive Recreation



Walking Paths



Outdoor Gym



Community Gardens / Landscape,
Nursery and Plant Propagation Area



Beach Access Path (4 total)

Wildlife Amenities



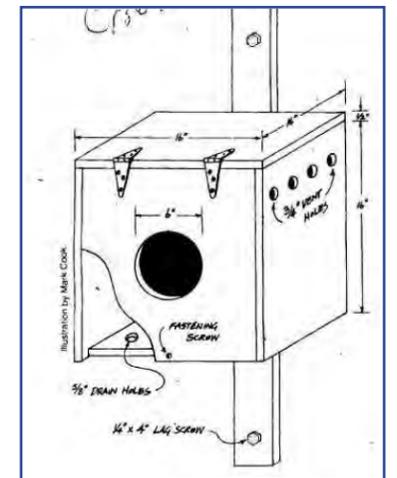
Habitat Enhancement



Osprey Nesting



Bat Boxes



Owl Boxes



Boardwalks and Observation Areas

Outdoor Gathering Spaces



Pavilion / Open Lawn



Park and Shade Pavilions (11 total)



Play & Picnic Area



Beach

Nature, Exploration & Learning Center



Observation Platforms /
Educational Workshops



Adventure Play Spaces



Environmental Awareness /
Informational Signage

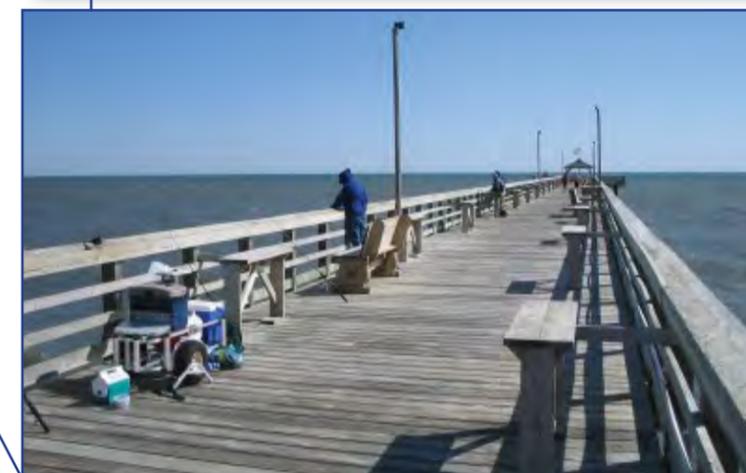
Pier, Shoreline & Surfside Fishing



Coastal Views & Access



Fishing Pier



Fishing Pier

Concessions, Refreshments & Restrooms



Accessible Concession Areas

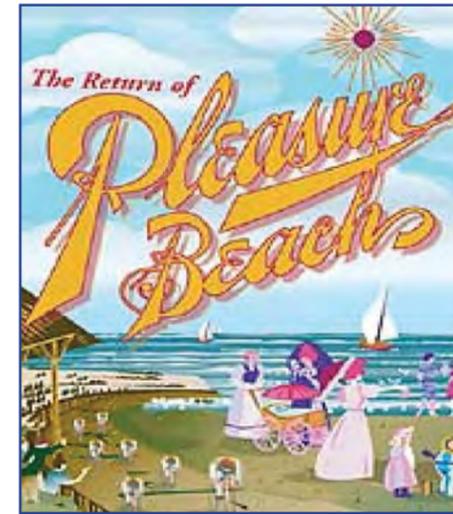


Portable / Seasonal Concession Stands



Distinctive design features for building renovations

Beach Access



Historic Post Card



Kayaking



Canoeing



Beach Enjoyment



BGreen in Play



Propane-Powered Park Maintenance Vehicle



Solar Power



Rain Water Collection

Access to Pleasure Beach Park



Staff vehicle transported on water taxi



Water Taxi



Gangway and Dock Systems



Water taxi used to transport park equipment

An aerial architectural rendering of a coastal sports and recreation facility. The site is situated on a peninsula with a sandy beach and blue water on three sides. The rendering shows a central area with a large circular stadium, several rectangular buildings, and a network of roads. To the left, there are two large rectangular sports fields, possibly soccer or football fields, and a smaller circular field. A winding path or road runs along the coastline. The overall style is a detailed, colorful illustration of a planned development.

Implementation Strategy

- Use Projections
- Revenue Generation
- Public Safety
- Staffing
- Sustainability Measures
- Education & Outreach
- Phasing Plan
- Schedule of Approvals
- Conclusion

Use Projections



Visitation to Pleasure Beach Park will be predicated primarily on the capacity of an operating water taxi. The City of Bridgeport is investigating means to activate a water taxi service from the Central Avenue pier to the existing docks at Pleasure Beach Park. Implementation of the water taxi plan is dependent upon receipt of federal funding, completion of environmental documentation and repair to existing piers on Pleasure Beach that sustained heavy damage in Tropical Storm Irene in late 2011. The prospect of attaining this service is probable. Water taxis are expected to have a 20- to 30-person seating capacity. Peak hour use of Pleasure Beach Park during the summer season is expected to be approximately 600 persons.

Water Taxi



Youth Camp



Park Pavilions

Revenue Generation

A goal of this Master Plan is to establish a blueprint for physical improvements to Pleasure Beach Park that may yield opportunities for revenue-generating programming to sustain maintenance and future capital improvements. A key consideration is that fee-based program participation be voluntarily and that basic park facilities are available to all visitors who arrive by taxi or other means. No additional costs beyond purchase of annual park passes are anticipated exclusive of concession purchases, pavilion rentals by groups and select pre-registered program participation. Revenue generating activities may include:

Youth Day Camps

Youth Day Camps provide a summer outlet for City residents and are much needed on the East Side. Pleasure Beach Park will provide a host of facilities and a variety of programming options to sustain an educational, hands-on and fun camp environment. Beach activities, use of a nature center and play fields, facilities and activities, playgrounds, water play, trail use, water sports, fishing and indoor assembly (arts, theater) are recommended just to name a few. Camp program revenue may be calculated as follows:

Picnic Pavilions

Group use of picnic pavilions may require rental fees for partial or full-day use. Fees may also include a deposit to ensure that users maintain cleanliness and leave facilities as they found them. Pavilions may vary in size, serve groups of various sizes, and warrant a range of user fees. Revenue generated by pavilion use may be projected as follows:

This Master Plan aims to implement recommended improvements strategically so that revenue may be realized in the short term. The ultimate goal after all phased improvements are in place is to achieve financial self-sufficiency or to significantly offset annual public costs with park-generated revenue while maintaining a high level of service, maintenance and operations of Pleasure Beach Park. To achieve the recreation potential of the Park, enhance public safety and better serve City residents, all newly generated revenue should be reinvested back into capital improvements and operations of Pleasure Beach Park.



Community Gardening



Youth Camps



Community Garden

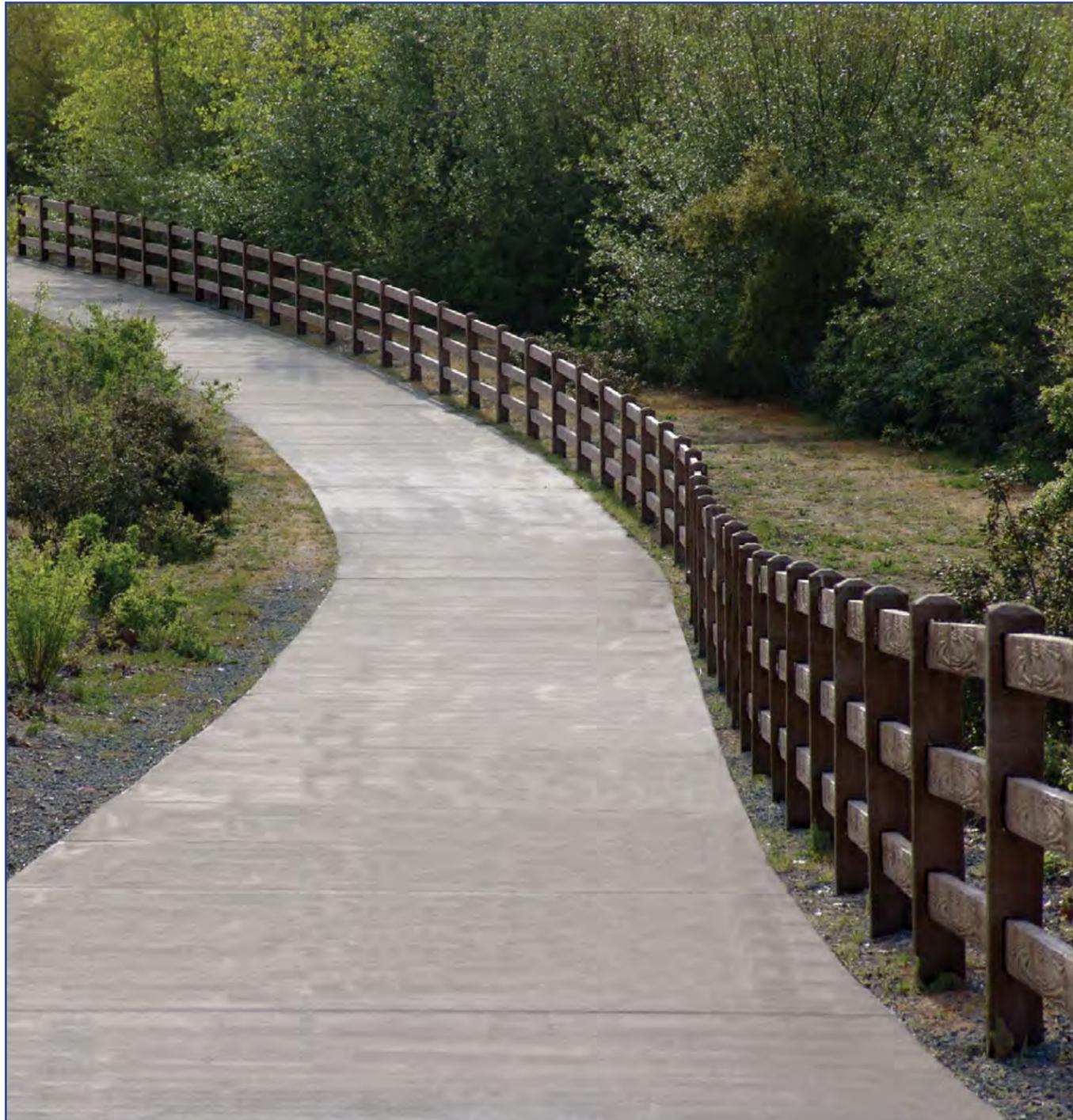


Equipment Rentals



Food Concession

Public Safety



Concrete Simulated Split-Rail Fence

Pleasure Beach Park is a barrier beach, and access is limited to water taxi service from the mainland, boat access via Bridgeport Harbor and/or foot access via Long Beach West. If needed, emergency helicopter landing may be accommodated on an upland open field provided that on-site security is on hand to clear an appropriate landing area.

The following emergency and security programs shall be in place to provide for safe public use of Pleasure Beach Park.

Fire Service: Water service via both pressurized and dry hydrants shall be provided on Pleasure Beach Park. Fire boat access may be obtained at the existing and restored pier on the north end of the park. Currently there are three (3) hydrants on site (1 dry and 2 wet). Operation of each service must be verified.

Recreation Lifeguards: The City of Bridgeport shall provide seasonal lifeguards as they currently do at Seaside Park. Lifeguards shall be on duty on designated open beaches. Lifeguards shall be responsible for storm notification to park users within designated beach swimming areas.

Harbor Patrol: The Harbor Patrol shall continue to have access to Pleasure Beach Park and shall continue to patrol open waters to enforce boating rules and regulations.

Police: The Bridgeport Police Department shall have a satellite office at Pleasure Beach Park and bicycle patrol with radio dispatch to harbor patrols. Police presence will be provided from park opening to one hour past closing.

Emergency Medical Service: First aid and an Emergency Medical Technician shall be on site during beach swimming season. On-site patrols shall have capacity to administer CPR and a defibrillator and must have immediate radio dispatch to all mainland emergency services and the harbor patrol.

Emergency Assistance/Communications: Emergency call boxes or "blue boxes" shall be provided in a minimum of three (3) locations throughout the park. Phones shall be powered by photovoltaic units. Direct access to emergency personnel shall be provided via use of the phones.

Equipment: On-site buildings shall contain space for park emergency equipment, vehicles and staff.

Primary Pathways: Park paths shall be wide enough to accommodate emergency vehicles.

Staffing



Staff, volunteers and other partners are key to long-term maintenance and operations.

Park safety, maintenance and operations begin with adequate staffing. Public and private partnerships are often advantageous to sustaining optimal park conditions and administering programs. The following staff allocations may be warranted as phases of the Pleasure Beach Park Master Plan are implemented:

Lifeguards: Ten (10) lifeguards available for guard shifts during swimming season and within designated swimming areas and hours.

Park Superintendent: One (1) park superintendent in charge of annual budgeting, staffing, operations, programming, maintenance, capital improvements and species monitoring.

Assistant Park Superintendent (full-time/seasonal): One (1) assistant to the Park Superintendent, employed from May 1 to September 15 each year.

Program Staff (seasonal): Three (3) trained part-time and seasonal staff members to assist the park supervisor in administering park programs.

Full-time Maintenance Staff: One (1) dedicated employee for annual maintenance of Pleasure Beach Park.

Seasonal Maintenance Staff: Three (3) full-time seasonal staff to assist full-time maintenance staff.

Monitors: Two (2) part-time monitors to inspect the site, install and maintain species protection measures and signage, and to guide other park full-time and seasonal staff.

Security: Two (2) seasonal full-time security personnel (Bridgeport Police).

Volunteers

Over the years, volunteers have played a pivotal role in the maintenance and programming of public parks throughout the region. The efforts of dedicated volunteers are invaluable and will remain a critical ingredient in the monitoring, upkeep and stewardship of Pleasure Beach Park.

Short-term Strategy (1-2 Year Plan)

The short-term staffing plan for Pleasure Beach Park should include a park ranger trained to provide species monitoring, conduct educational programs, and supervise park programs. In the short term, it may be most feasible to adopt a City-wide program until additional revenue is generated by new facilities or programs in Pleasure Beach Park to fully support a dedicated ranger for the park.

Sustainability Measures

Sustainability has influenced nearly every decision made in the preparation of the Master Plan for Pleasure Beach Park. Sustainability touches every aspect of our lives: the resources we consume, the energy we expend, the traces we leave behind and the health that we rely on. The following components are inherent within this Plan and emphasize our support of the City of Bridgeport's BGreen initiatives. Our recommendations and brief, general definitions are as follows:

Reduce impervious surfaces: Many drives and parking areas exist in the park, some more obvious than others. The plan will result in a reduction of more than 3-acres of impervious surface.

Re-use existing pervious surfaces: Where new paths are proposed, the alignment of former paved areas will be utilized.

Protect and further enhance plant and wildlife species habitat: Measures are provided at this level of planning to protect threatened and endangered species and their habitats.

Support surface conveyance, infiltration and natural treatment of stormwater: No piped systems for stormwater are recommended.

Conserve water: The water play area shall contain user-activated and intermittent sprays of water to conserve water and maintain play value.

Integrate use of solar power: Solar panels will be utilized to supplement power needed from the grid to service park buildings and to reduce the carbon footprint of park operations.

Adapt existing buildings for re-use: No new building construction is proposed. Renovation and adaptive re-use of existing buildings is a priority.

Remove invasive plant material and plant native and non-invasive species: Shade, natural cooling, species diversity, wildlife habitat and air quality improvements are benefits of proper landscape design.

Provide walking and cycling trails with a variety of experiences: Appealing trails encourage greater use, greater activity and more active residents, resulting in a healthier community.

Prohibit vehicle use: Use of vehicles shall be by City employees only and on a limited basis. All vehicles shall utilize alternative fuel sources.

Construct an outdoor fitness area and play courts: These facilities encourage healthy outdoor activities, resulting in healthier communities and reduced public health costs.

Promote positive community socialization: Outdoor activities encourage positive social interaction.

Foster healthy food choices for park concessionaires: The City may define what concessionaires are permitted to sell as a condition of any lease agreement.

Carry-in/carry-out trash policy: These programs reduce staffing needs and rodent populations, and foster responsible park use.



Outdoor Environmental Learning



Water retention / Bio-swales



Renewable Energy (Solar)

Education & Outreach

Education and outreach include on-site and off-site distribution of educational materials and displays, lectures, beach walks, interpretive signs, and other elements that provide information on the biology of listed species, the impact of various human activities and predators, and recommended actions to help further populations of listed species. The City of Bridgeport will consider the following actions to facilitate public outreach and education:

- Post regulatory and/or informational signs at beach access points to inform visitors of pet and trash policies.
- Distribute rules and regulations regarding beach-nesting birds when visitors enter the park.
- Continue to utilize approved wildlife monitors and provide continuing education for these monitors and other staff, volunteers, lifeguards and enforcement personnel.
- Provide annual reports of threatened and endangered species monitoring programs on the City of Bridgeport's website.
- Continue to promote education about endangered species through interpretive programs.
- Meet with contractors or others conducting construction activities that may affect threatened and endangered species to explain what actions may be necessary to protect species that exist on Pleasure Beach Park.
- Install regulatory and educational signs at access points that identify specific special status species that are on site and explain ways to voluntarily reduce recreational impacts.
- Encourage continued and additional research to evaluate potential threats to threatened and endangered species utilizing the park. Encourage participation by other organizations to lead and support research.



Program Staffing



Educational-based Programs



Interpretive Signage

Phasing Plan

Funding constraints and the overwhelming demand and desire to provide access and recreational amenities at Pleasure Beach Park require a phased approach. The following outline contains a generalized phased approach to implementing the improvements defined herein. Plan exhibits that follow illustrate the recommended phases (Phases I-IV).



Phase	Improvements	Timeframe
I	<ul style="list-style-type: none"> - Restore access from Pleasure Beach Park pier to the restored bath house, restored boardwalk and beach on Long Island Sound - Erect simulated wood-rail concrete fence (50% of total length) - Establish beach access to harbor side of breakwater - Site clean-up (fill depressions, remove debris) - Stabilization of Harbor Hut, former Ball Room and Play House - Provide species protection and mitigation work 	1-2 years
II	<ul style="list-style-type: none"> - Renovate and prepare open fields as multi-use lawn areas - Install park pavilions (4) - Restore edge of Lewis Gut (demolish wall and create naturalize shoreline) - Construct Lewis Gut waterfront walk - Plant deciduous trees - Create beach access point at east end of site - Renovate former Play House interior for park staff use, storage, first aid, ranger station, etc - Erect simulated wood-rail concrete fence (remaining 50% of length) 	3-4 years
III	<ul style="list-style-type: none"> - Construct trails to create multiple trail loops - Construct additional beach access trail - Construct adventure playground and water play area - Renovate interior of former ball room - Install park pavilions (3) 	4-5 years
IV	<ul style="list-style-type: none"> - Construct park center including nature center (plant nursery, garden plots); outdoor fitness area; tennis courts; basketball courts; interior trails - Install park pavilions (4) 	6-8 years

Phase - I

The construction of Phase I in Pleasure Beach Park will establish a new, easily accessible connection from Pleasure Beach pier to the beaches along Long Island Sound and Bridgeport Harbor. The plan will offer two (2) access points to the beach as well as a fully functional restroom facility and concession area.

Park Buildings:

In Phase I all park buildings (Harbor Hut, Pavilion, former Ball Room, and the Playhouse) shall be stabilized with the intent to preserve the existing structures from further deterioration. The stabilization process will prepare them for future revitalization. In addition to this initial building stabilization, the Harbor Hut is to be completely renovated and updated with fully operating restrooms and staff office. The Pavilion will undergo complete exterior renovation, including roof, façade, and concrete floor refurbishment. Kitchen and locker areas are expected to be updated in Phase II.

Park Grounds:

The existing road is to be removed and a 10-foot wide pathway will serve as the connection between the Harbor Hut and the Pavilion. All water utility systems, including restrooms, fire hydrants, and two (2) leach fields are to be inspected and prepared for future use. The site shall be cleaned of all debris and species protection and mitigation work shall commence.

Park Amenities:

The park will offer visitors access to the beach and allow fishing on the newly repaired, previously burned Pleasure Beach bridge. A simulated wood-rail concrete fence will be installed along the pathways in order to guide park users from the fishing pier to the beach access points. This naturalized style fence will serve to protect sensitive habitat areas.



- Phase I
- Phase II
- Phase III
- Phase VI

Phase - II

The construction of Phase II will establish areas of active and passive use zones as well as an additional beach access point in the south-east end of the site.

Park Buildings:

Additional park supplies and maintenance equipment will be needed as Phase II further enhances the Pleasure Beach Park grounds. The former Play House will be renovated to accommodate needed space for storage, first aid and a staff/ranger station. Also included in this phase is the completion of the Pavilion's interior renovation. Its restrooms, showers, and kitchen areas are to be completed and prepared to service Pleasure Beach Park visitors.

Park Grounds:

Phase II will focus repairs to the small beach along Lewis Gut in preparation for kayak/water access. Phase II will also restore the edge of Lewis Gut by removing the existing wall and creating in its place a naturalized rocky shoreline. Along the Lewis Gut waterfront a pedestrian walkway will be constructed allowing for expansive views and giving access to the various multi-use spaces within the park.

The remaining simulated wood-rail concrete fence will be installed throughout the eastern and western portion of the site. It will serve to guide visitors around protected and sensitive park areas.

Park Amenities:

Phase II will establish new multi-use fields, open space, pavilions, a walkway along Lewis Gut and an informal outdoor performance area. These amenities will allow the park to accommodate more visitors and multiple activities. The City of Bridgeport will have the means to begin organized summer camps and consequently generate additional income from the park.



- Phase I
- Phase II
- Phase III
- Phase VI

Phase - III

Design of Phase III will establish additional park elements such as a nature center, accessible playground, a learning landscape and a spray pad area. Also constructed will be the completion of the outer loop path.

Park Buildings:

The former Ball Room interior will be renovated to serve as a Learning/Nature Center building to educate the public about the unique habitats of Pleasure Beach Park, to conduct other educational activities, and to function as activity space and shelter for not-for-profit organizations, school groups and everyday park visitors.

Park Grounds:

The construction of multiple trail loops will offer a tranquil, scenic experience for users. Phase III will also focus on the enhancement of the eastern border of the site to encourage native and endangered plant growth. Learning landscape plaques and activity stations pertaining to site mitigation, native plants and wildlife within the park will enrich the educational value of the park.

Park Amenities:

The fourth and final access path to the beach along Long Island Sound will be constructed in this Phase. Outdoor play and environmental learning will be supported with the construction of an adventure playground, spray pad and learning landscape. The play area and the spray pads are located close to the beach access paths and will allow children to traverse easily between beach and playground play.



- Phase I
- Phase II
- Phase III
- Phase VI

Phase - IV

Phase IV is the final phase for Pleasure Beach Park and consists of the construction of the activity areas within the center of the park and the completion of all pathways and landscape restoration work.

Park Buildings:

No renovations to park building are included in Phase IV. Although, it is possible that additional amenities could be added to the former Ball Room/Learning Center and main Bath House Pavilion as needed.

Park Grounds:

Invasive plant species removal will continue on an as-needed basis through the center of Pleasure Beach Park. Larger trees shall remain with overgrown shrubs pruned or removed. Shade and evergreen trees shall be planted as detailed in design documents.

Park Amenities:

In this final phase, two (2) new tennis courts and two (2) new basketball courts will be installed. As an extension to the renovation to the former ball room, a nature center landscape will expand to include the community garden area complete with a plant nursery and garden plots. An outdoor fitness activity space will also be constructed. The final park pavilions will be installed and all interior pathways will be completed ensuring pedestrian access throughout the park.



- Phase I
- Phase II
- Phase III
- Phase VI

All Phases



Each phase of the park restoration strategy will offer a new feature and keep the excitement of the new park alive. Following Phase I completion, users and visitors will utilize new and easily accessible access points to the beach as well as a fully functional restroom. The newly-restored Pleasure Beach pier is sure to draw area fishermen in search of new scenery and their next big catch! Watching the stabilization of existing structures will leave users and visitors with a sense of anticipation for those improvements yet to come.

Phase II completion will welcome visitors to a restored pavilion, complete with restrooms, lockers and concession area to serve their needs. A walkway along the Lewis Gut will offer expansive views and access to new multi-use fields, open space and pavilions. Areas to accommodate storage, first aid and park staff will also begin to take shape. These amenities are sure to leave users awaiting the development of the next phase.

Completion of Phase III will delight the under-12 crowd with the establishment of a nature/ learning center in the former Ballroom, an accessible playground, a learning landscape, and a spray pad area. Both the play area and the spray pads will be conveniently located close to the beach. The construction of multiple trail loops will improve access around Pleasure Beach Park and provide a tranquil and scenic experience and the opportunity to explore areas that have been out of reach for many years.

At Phase IV completion, visitors will enjoy new tennis and basketball courts and a community garden area as well as an outdoor fitness activity space.

Each phase may include additional improvements that tie in loose ends, enhance programming and further wildlife and plant species habitat. Parks are organic and are in a constant flux. The phases outlined herein are intended to provide a means to organize vital physical improvements. Through human stewardship, the natural environment will further the Pleasure Beach Park experience and offer an enriched experience to all who visit.

- Phase I
- Phase II
- Phase III
- Phase VI



Schedule of Approvals

The following table outlines potential regulatory reviews and permits associated with recommended improvements to Pleasure Beach Park. In instances where key improvements are beyond the scope of this Master Plan, reference is made to the status of these improvements. Timeline noted depicts by which phase each permit must be obtained.

Review	Jurisdiction	Remarks	Timeline
Endangered Species Protection Plan (Monitoring ongoing by CTDEEP/USFWS)	CTDEEP/ USFWS	Monitoring to be performed by City of Bridgeport (coord. with CTDEEP and USFWS). Commence in March 2012.	Prior to Phase I
CTDEEP Structures, Dredging and Fill Permit/ General Permit* *Reference will be made to Endangered Species Protection Plan	CTDEEP/ USACE	Ongoing for Pleasure Beach pier modifications (to be submitted by City of Bridgeport)	2012
General Permit – For Central Avenue Floating Dock	CTDEEP/ USACE	Obtained	2011
Pleasure Beach Master Plan	CTDEEP	Submit January 2012 to David Stygar (CTDEEP). City will request CTDEEP letter of concurrence (no adverse impacts). CTDEEP will require letter of concurrence from USFWS (Susi von Oettingen) pertaining to the Endangered Species Protection Plan before responding to City.	Prior to Phase I
Botanical Survey	CTDEEP/USFWS	Part 1 complete; Part 2 in late Spring 2012. Supplemental information shall be submitted to CTDEEP and USFWS.	2012
CTDEEP Flood Management Certification	CTDEEP/CTDOT	Single submission at beginning of Phase 1. Submit to Jeff C at CTDEEP (liaison to CTDOT).	Prior to Phase I
CTDEEP Tidal Wetlands Permit	CTDEEP/USACE	Not applicable	Not applicable
CTDEEP Coastal Consistency Review (work within coastal boundary)	City of Bridgeport (CTDEEP noticed)	Each phase of implementation initiated by City of Bridgeport	Each Phase
CTDEEP 401 Water Quality Certification necessitated by any USACE permit	Not applicable	Not applicable	Not applicable
CTDEEP General Permit for Stormwater and Dewatering Wastewaters from Construction Activities	City of Bridgeport (CTDEEP noticed)	Prior to construction at each phase of implementation (by Contractor)	Prior to each phase
Endangered Species Act (if federal funds applied)	USFWS	City of Bridgeport to prepare an Endangered Species Protection Plan for individual review by CTDEEP and USFWS.	Prior to Phase I (2012)
Coastal Boundary/CBRM	USFWS	City of Bridgeport to submit letter citing exclusions for federally-funded projects within Coastal Boundary. Cite educational, research, partnerships, and protection measures to further population of noted species. Submit as-soon-as-possible to Susi von Oettingen at USFWS.	Prior to Phase I
NEPA/CEPA Review	CTDOT lead	CTDOT is pursuing as category exclusion. City to provide copy of Master Plan upon completion. City will provide FHWA/CTDOT contact.	Prior to Phase I
CTDEEP Certificate of Permission	CTDEEP	Required for wall removal along Lewis Gut	Prior to Phase II

Conclusion



The Master Plan for Pleasure Beach Park accomplishes many goals.

- It incorporates needed facilities.
- It establishes a regulatory framework and high probability of regulatory approval.
- It emphasizes the co-existence of people and sensitive wildlife and plant species and aims to allow each to benefit and thrive.

The Plan aims to restore safe and responsible access to Pleasure Beach Park and to create a unique recreation environment for people to enjoy. True, Pleasure Beach Park has taken on new characteristics since the loss of access in 1996; but it's exactly these characteristics that lend to its uniqueness and exceptional recreation and educational value.

Municipal park capital and maintenance budgets are strained even in the best economic times. However, parks do not need to be a public tax burden and victims of budget cuts year after year. Through implementation of this Plan, Pleasure Beach Park can produce a reliable source of revenue -- perhaps not all the funding required, but meaningful contributions that will encourage leaders to prioritize supplemental funding for future improvements, maintenance and staff.

The City of Bridgeport's network of public parks and open spaces is one of its greatest assets. Parks are an essential part of the community and are the single most important physical amenity that curb sprawl, reduce crime, enhance property values, keep residents active and healthy, foster community spirit, recharge groundwater and purify air. Pleasure Beach Park offers opportunity for youth to participate in more productive activities, to learn a skill, to gain confidence and a sense of accomplishment, and to foresee a more promising future. These are all much needed ingredients in the ongoing transformation of Bridgeport's East End and the City as a whole.

Left untouched, conditions at Pleasure Beach Park will continue to deteriorate. Undesirable and uncontrolled human activity will negatively influence the park's natural environment, its structures and its landscape. This direction can be reversed in rapid fashion, and much has been accomplished to date to set the momentum. Pleasure Beach Park is an asset to the City of Bridgeport -- one that should be preserved, enhanced and better utilized by and for this and future generations.

~ *END* ~