Oakland Beach Resilience

Warwick, Rhode Island
URI Landscape Architecture Junior Class
Professor Richard Sheridan
Fall 2015
Historical Analysis

Oakland Beach: Warwick, Rhode Island

Oakland Beach hotel Built 1870

Oakland Beach View From The Water

Oakland Beach Aerial Photo, 1962

Oakland Beach Aerial Photo, 1981

Artificial Pond, 1880

Oakland Beach Aerial Photo, 1939

Oakland Beach Re-Design (model)

Oakland Beach Aerial Photo, 2015


Known as a "little Newport"
Known for its speakeasies and bootleggers
Known for inexpensive housing
Hurricane of 1938
WWII begins
WWII ends
Hurricane Carol
Carousel sold
Beach and Parking fee discontinued
EXISTING CONDITIONS

OAKLAND BEACH, WARWICK, RI
WEATHER ANALYSIS

OAKLAND BEACH WARWICK, RI

Wind/Swell
- The most frequent winds come out of the west throughout the year. While the most prevailing winds come from the south/southwest. Normally from storms including tropical storms and hurricanes.
- Hurricane season lasts from June 1st to November 30th. Expect high damage to the site during this time of year, which may mean rebuilding all year around.

SUN/SHADOW
- Sun/Sunsets are shown as a sun with low opacity.
- MID day is shown with the highest opacity and is located generally in the middle of the map.

AVERAGE TEMPERATURES
- Highest temperatures occur in July and August (AVG: 80°F).
- Lowest temperatures occur in January and February (AVG: 21°F).

AVERAGE PRECIPITATION
- The most precipitation occurs during Fall, Winter, and Spring.
- These factors tell us that the summer will be the most active time of year showing the most suitable conditions for leisure.
RESULTS OF TIDES IN GREENWICH BAY. THE DARKER BLUE REPRESENTS THE RISE IN SEA LEVEL WHILE THE LIGHT BLUE REPRESENTS THE EXISTING LOW MID HIGH

AFFECTS OF THE 5 FOOT SEA LEVEL RISE. THE AREA THAT IS LIGHTER BLUE IS THE AREA OF LAND WHERE WATER WILL BE WHEN THE SEA LEVEL RISES BY 5 FEET.

NOAA BATHYMETRIC LAYOUT OF THE BAY
HOW USING CONTOUR LINES WILL HELP MAKE FURTHER DECISIONS:
- HELP GAUGE WHERE PROBLEM RUNOFF AREAS WILL EXIST
- ASSIST WITH PLACEMENTS OF BIOSWALE OR OTHER FILTRATION SYSTEMS FOR RUNOFF
- UNDERSTAND HOW THE WATER LEVELS WILL AFFECT THE SIZE OF POTENTIAL WAVES

BATHYMETRIC, TOPOGRAPHIC AND WATER RUNOFF FLOW
- THE BLUE ARROWS SHOW HOW THE WATER FLOWS ON THE MAIN AREA OF THE SITE.

Contour Lines in Increments of 2'
Depth of Ocean: Approximately 10'
Depth of Ocean: Approximately 15'-20'

OAKLAND BEACH, WARWICK, RI.
**COMMUNITY’S OBJECTIVES**

**OAKLAND BEACH, WARWICK RI**

- Ensure plant materials do not require more maintenance than mowing.
- Design rain gardens that look good through good design techniques.
- Coordinate planting materials into landscape plan proposed for Suburban Parkway, consider coastal flooding in future.
- Consider Snow removal and storage.
- Catch basins discharge into bay – untreated.
- Minimize beach closures.
- Minimize first flush, reduce volume and rate of runoff.
- Determine impact of long term sea level rise.
- Maintain view at beach and from within neighborhood.
- Address standing water on beach parking lot—asphalt meets seawall—no infiltration causes pooling during rain and flood events.
- Optimize parking.
- Manage solid waste.
- Reduce standing water.
- Engage public through outreach campaign.
- Reclaim buffer between parking lot and seawall, planted area vs. parking lot with treatment below.

- Discharges east/west of peninsula - reduced after Suburban Pkwy upgrades.
- Flooding on street that dead ends at swale (eastern part boat ramp).
- Reduce invasive species.
- Ensure maintenance planning is part of design process.
- Plan for invasive species coming in—address how to design in a way that facilitates management of invasive species.
Oakland Beach Site Designs

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LAR 343
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Elevated wooden PED walkway/bike path that borders beach area with large shade trees.

New dock for public use.

Alien of existing bike pathed walkway. Provides shade and is aesthetically pleasing.

Existing green spaces in parkways being redeveloped by another party.

Both parking lots are now connected to enhance traffic flow. One-way entrance and exit on both sides.

New RIPTA stop Beach info sign

Existing sea wall and stone grading.

The addition of bioswales along both parking lots and existing roads will significantly reduce water runoff, pollutant into the surrounding areas.

Beach

Public bath house for beach visitors. Small gazebo with some amongst large shade trees.

New grassed and raised wooden patios. Seating, trash receptacles, and lighting. There is no structure less than 150 ft away from the shore to reduce debris in case of storm surges and rising sea levels.

Areas of beach grasses and other assorted salt tolerant vegetation.

Large grass area with scattered shade trees.

Existing baseball field

2 new rotaries further away from shoreline to reduce water runoff. Green area in middle of chickens this idea improves traffic flow for automobile.

New dock for public use.
MASTER PLAN

OAKLAND BEACH, WARWICK RI

PREPARED BY: BRIAN MALES
PREPARED FOR: RICHARD SHERIDAN

- REMOVED ONE WAY ROAD AND CREATED "U"-TURN TO IMPROVE TRAFFIC MOVEMENT
- CONNECTED PATHWAY
- DEVITALIZED PARKING ADDING MORE GREEN SPACE
- INCREASED SHADE VEGETATION THROUGHOUT SITE
- IMPROVED BIKE AND PEDESTRIAN MOVEMENT
- REMOVED VEGETATION BERM
- RECONFIGURED PARKING FOR BOAT TRAILERS
- ADDING PARKING FOR BEACH GOERS
- ADDING SIGNAGE, TRASH, AND RECYCLABLE RECEPTACLES

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MASTER PLAN
OAKLAND BEACH, WARWICK RI
PREPARED FOR: PROF. RICHARD SHERIDAN
BY: KYLE SAVASTANO

PROJECT OVERVIEW
1. Establish a pedestrian boardwalk that connects the entire site.
2. Use bioswales (dark green) to filter pollution from nearby restaurants and residential areas. Redirect stormwater outfalls into bioswales.
3. Use angled parking to reduce parking lot size and implement plant buffers in space saved.
4. Use signs, pamphlets, and info booths at heavily trafficked areas to inform visitors about proper treatment of the site.
5. Create farmers market focused around reintroduced carousel - use structures that can be removed during storms and winter months.
6. Build viewing towers on grassy knoll to give a bird's eye view of the area. Interactive displays at the top of each tower educate visitors about the surrounding plants and wildlife.

ADDITIONAL FEATURES
- Energy efficient solar light strips along boardwalk
- Boardwalk design limits pedestrian and vehicular crossing
- Central gazebo park improves upon existing design but maintains the same functions.
- Bioswales on the west side also help to protect residents from storm surges
- Option to control entry into east side park and beach (entry fee/beach pass/local residents only) as a compromise between unrestricted free public access and a mandatory entry fee
- Frequent and easy access trash receptacles

PARKING
- Increased parking spaces in main lot from 102 to 148
- Decreased square footage of main parking lot from approximately 58,000 to 51,000
- 8 spots added at Strand Ave. turnaround
- 20 spots added across the street from the baseball field
- TOTAL: 72 more parking spaces (44 added to main lot) and roughly 13.5% less pavement

PLANT LIST Preferred native plants that are tolerant of water, salt and high winds
- Shadbush (Amelanchier canadensis)
- Sweet pepperbush (Clethra alnifolia)
- Highbush blueberry (Vaccinium corymbosum)
- Switchgrass ( Panicum virgatum)
- Indiangrass (Sorghastrum nutans)
- Arrowwood (Viburnum dentatum)
- Black Oak (Quercus velutina)
- Sassafras (Sassafras albidum)
- Gray dogwood (Cornus racemosa)
- Salt marsh hay (Spartina patens)
PLANT CHARACTERISTICS
- NATIVE TO THE NEW ENGLAND REGION
- SALT TOLERANT
- LOW MAINTENANCE
POSSIBLE TREES BUT NOT LIMITED TO:
- OAKS
- MAPLES
- JUNIPERS
POSSIBLE SHRUBS BUT NOT LIMITED TO:
- RHODODENDRON'S
- HOLLY'S
- BOXWOOD'S