Coastal Adaptation Efforts in Rhode Island

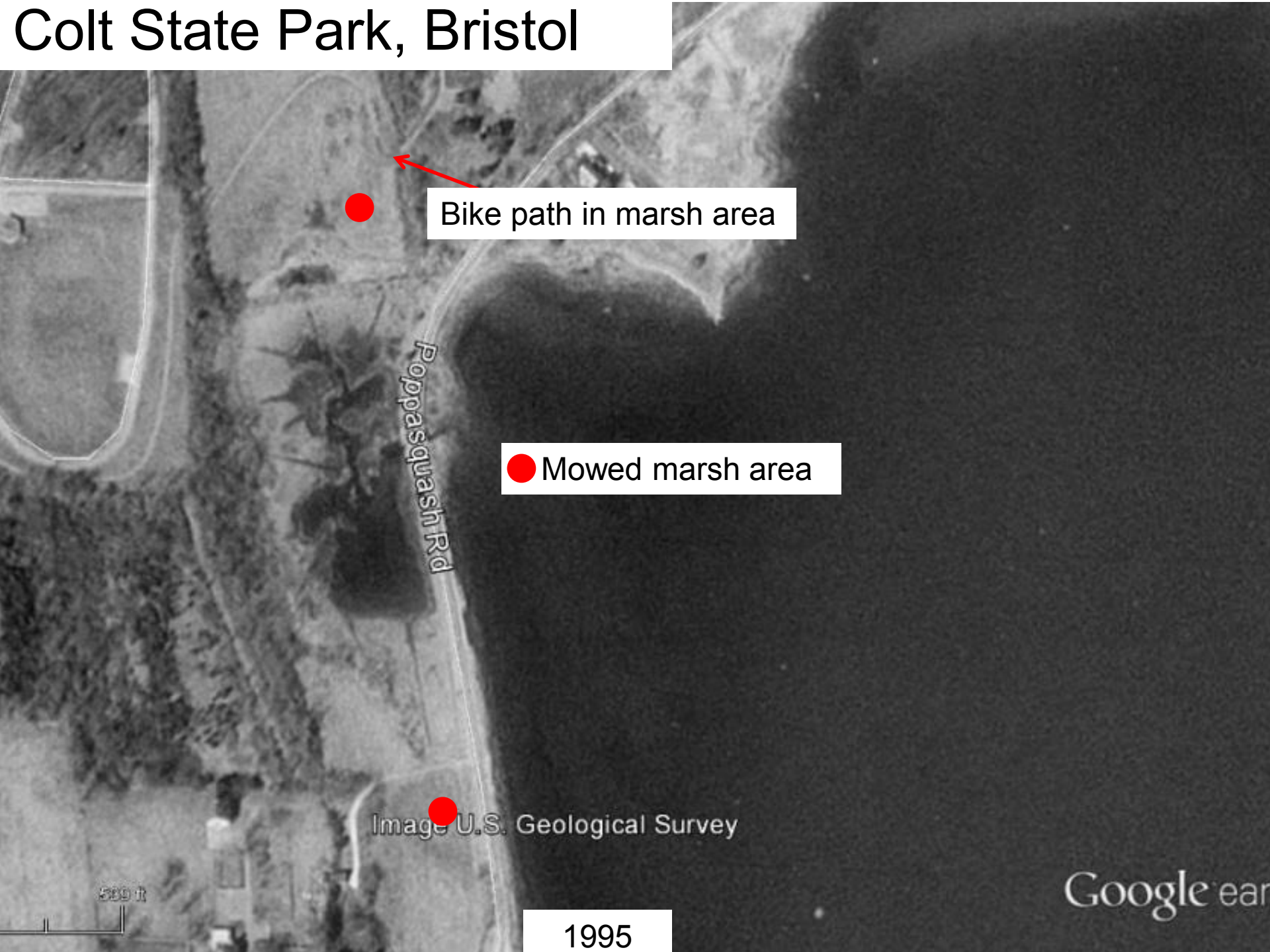
CRMC
COASTAL RESOURCES MANAGEMENT COUNCIL

SAVE THE BAY®
NARRAGANSETT BAY

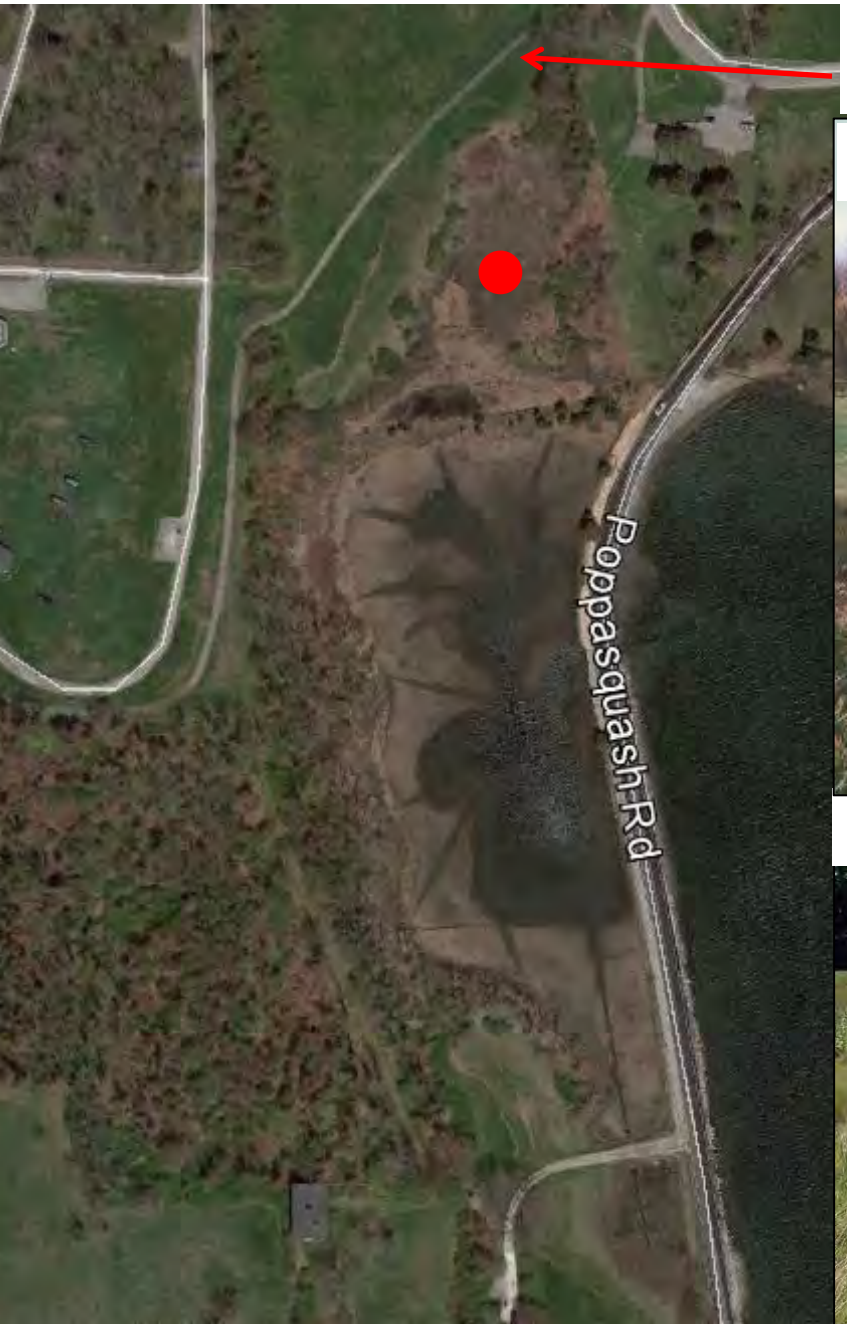
Adaptation Strategies

- Upland
  - Adopt activities that facilitate marsh migration
  - Change/move land use activities that inhibit marsh migration
  - Remove physical barriers
- In-Marsh
  - Drainage improvements (small creek excavation)
  - Elevation enhancement
  - Erosion control along marsh edge

Colt State Park, Bristol



Colt State Park, Bristol



Bike path relocated in late 1990s and “mow line” moved inland

1996: marsh mowed

Marsh after path moved

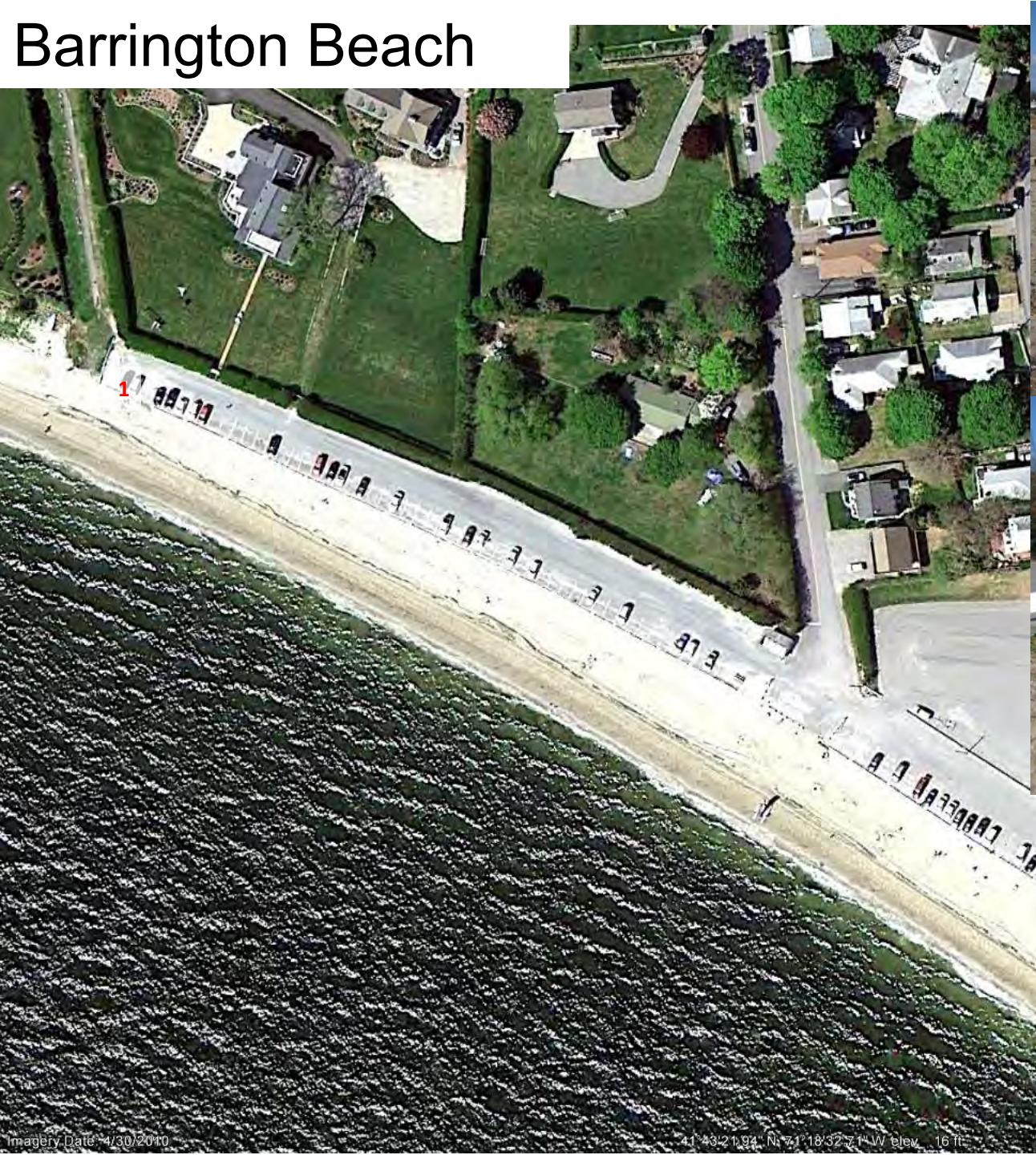
City Park Beach shoreline regrading, Warwick

Photo taken 9.12

Photo taken 6.10

Photo taken 9.11

Barrington Beach

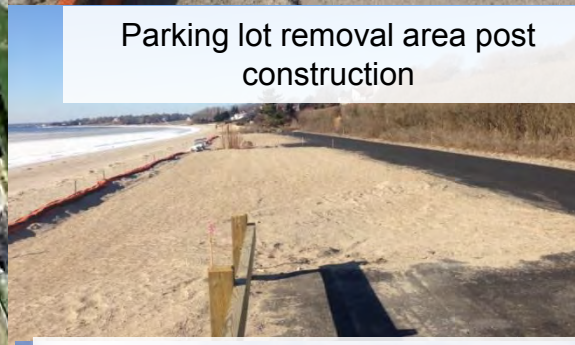


1: Erosion of western parking area

2. Erosion from parking lot runoff

Barrington Beach

Asphalt being removed



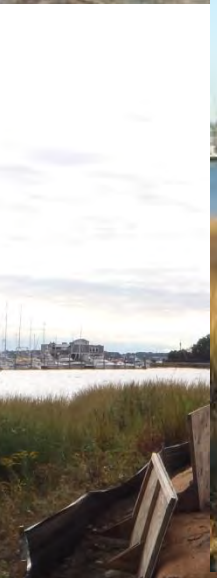
Parking lot removal area post construction

Dune grass planting in former parking area

Allins Cove, Barrington

Coir envelope installation

Stillhouse Cove, Cranston



Hazard Beach/Ocean Drive, Newport

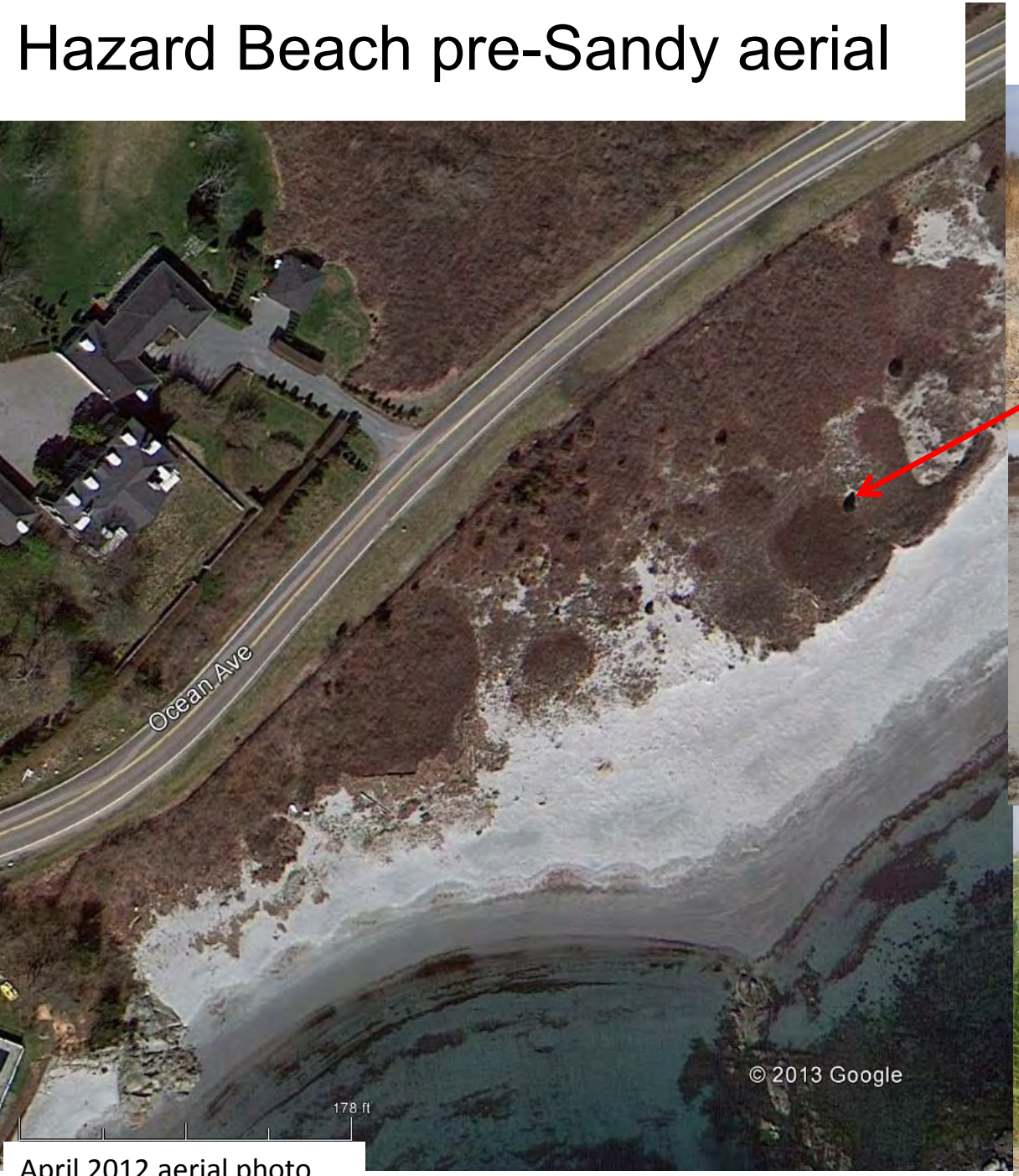
Washover area

Red Line: Approximate location of dune restoration

Ocean Ave

April 2013 aerial photo

Hazard Beach pre-Sandy aerial



April 2012 aerial photo

Dune erosion area: cedar now at front of vegetated area

King Park, Newport

Aerial image 4.2013

Coir envelope installation area

Erosion along boat ramp

Before

Shoreline looking east

After

Shoreline looking east after 1st coir envelope installed and covered with sand

End of Road Retrofits

Proposed end of road retrofit to remove pavement and infiltrate stormwater before entering marsh along 100 Acre Cove

Belvedere St. Palmer River, Barrington

100 ft to first driveway, *Phragmites* present, used as public shoreline access, some evidence of runoff impacts; tidal flooding of lower road to driveway; opportunity for pavement removal

Warren
End of Road Assessment

1. Bridge St.
2. Beach St.
3. Maple St.
4. Riverview St.
5. Libby Ln.
6. Parker Ave.
7. Patterson Ave.
8. Lincoln St.
9. Harding Ave.
10. Laurel Ln.
11. Clark Rd.
12. Harris Ave.
13. Maple Rd.
14. Palmer Ave.
15. John Street

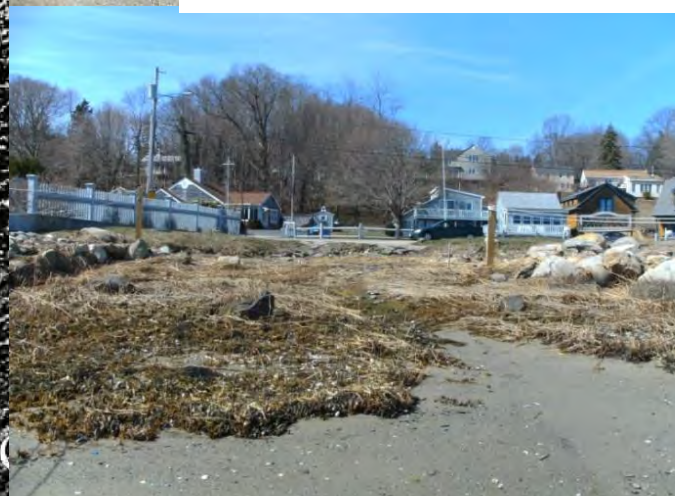
Mill Cove Road, Warwick

Mill Cove Road, Warwick

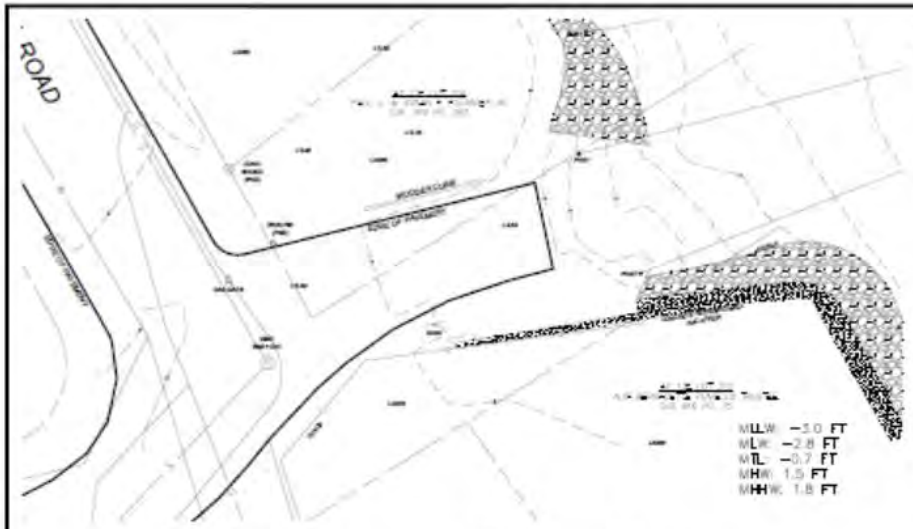
Clark Road, Kickemuit River, Warren

Road removal area

Marsh at end of road



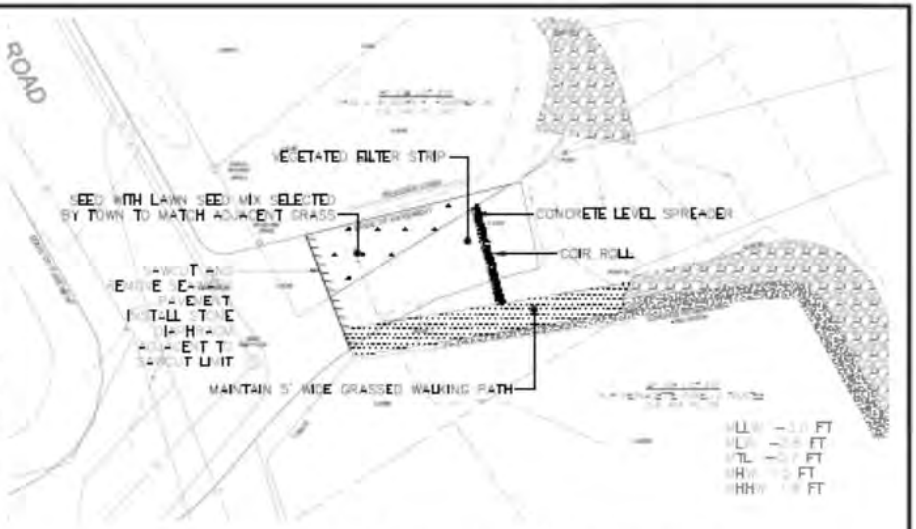
Clark Road, Warren



EXISTING CONDITIONS PLAN

SCALE 1:20

NOTE: ELEVATIONS REFERENCED IN NAVD88 AS CONVERTED FROM NOAA TIDAL ELEVATION DATA FOR FALL RIVER, MA (STATION ID 8447386).

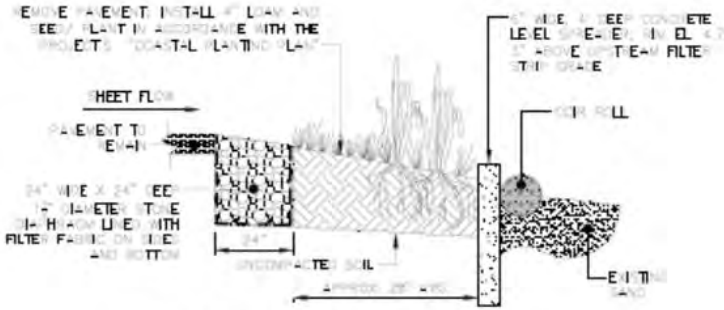


PROPOSED CONDITIONS PLAN

SCALE 1:20

EXISTING STREET VIEW

PROPOSED STREET VIEW



VEGETATED FILTER STRIP

NOT TO SCALE

FUSS & O'NEILL

WARREN DEPARTMENT OF PUBLIC WORKS

CLARK ROAD EXISTING CONDITIONS

END-OF-ROAD PAVEMENT REMOVAL AND STORMWATER BMP DESIGN

WARREN RHODE ISLAND

FIG. 1

Clark Road, Warren

Kickemuit Ave., Bristol


HITACHI


HITACHI

Elgin Ave./Lexington Ave, North Kingstown

Ash St. South Kingstown

Opportunity for pavement removal and creation of area for runoff infiltration

Atlantic Avenue, Westerly, Winnapaug Pond

Area of pavement removal to create sediment forebay and filter strip

Edgewater Drive, Apponaug Cove, Warwick

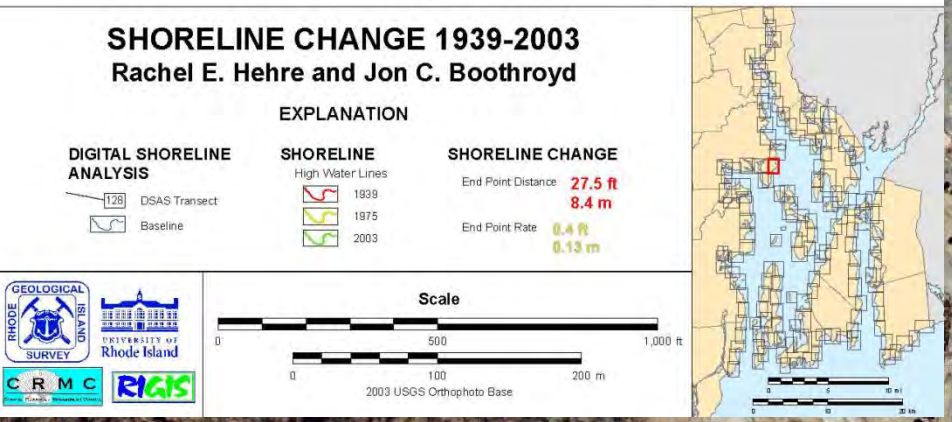
Potential area to limit vehicular access

Flooding during a moon tide

Ponded water at low tide

Rocky Point: Warwick

NARRAGANSETT BAY, RHODE ISLAND:
Warwick, Rocky Point



Erosion rate between 20-29’ between 1930 and 2003

India Point Park Shoreline Adaptation

1

2

3

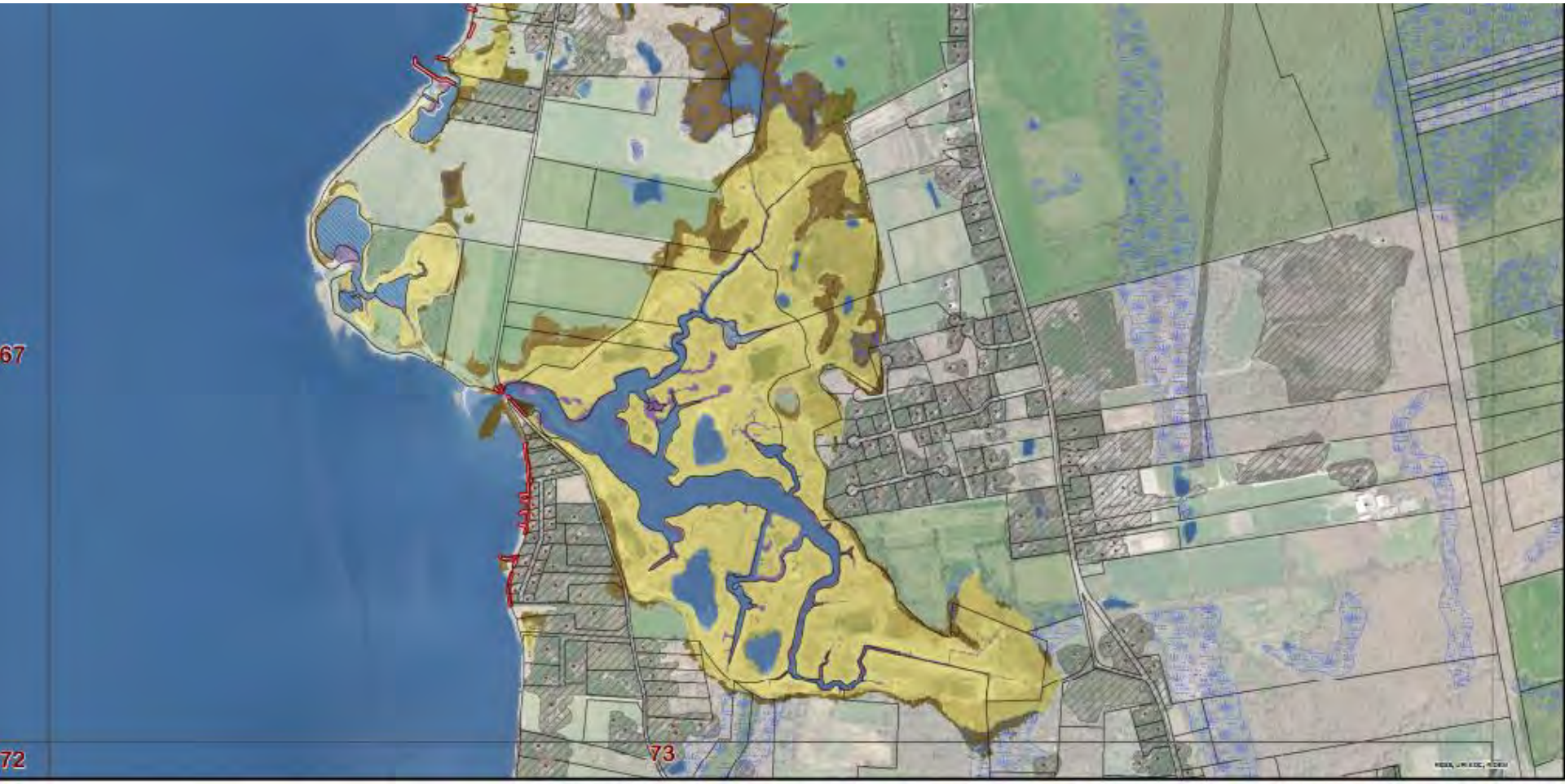
3

2

nent area Spring 2011 N

Seapowet Point, Tiverton

Opportunity to move mow line inland to allow wetland forming behind beach to migrate inland



Map 68

N

1:10,000

0 500 1,000 1,500 2,000 Feet

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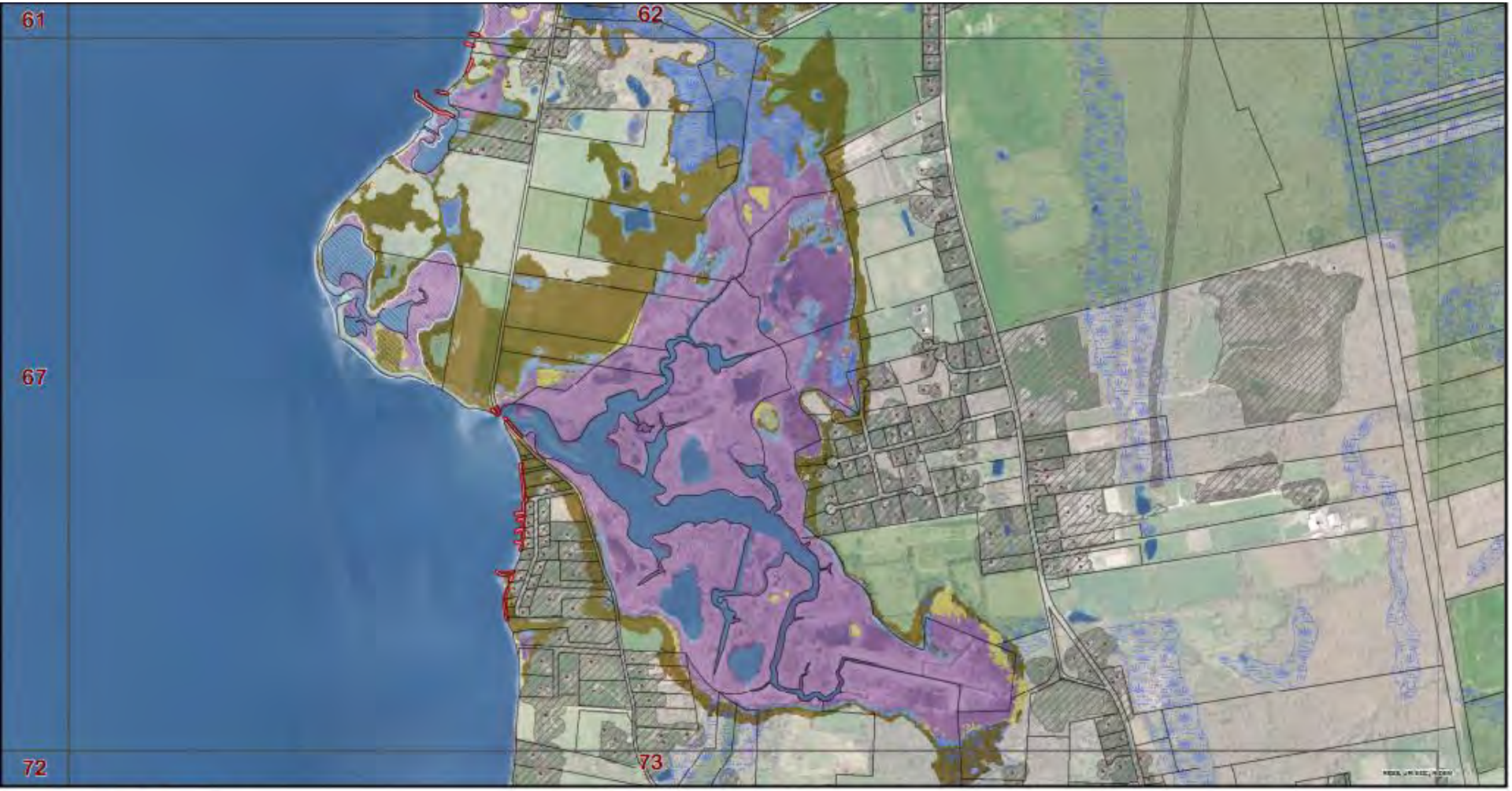
- Potential Marsh Zone
- Persistent Marsh Zone
- Potential Marsh Loss
- Open Water and Tidal Flat
- Current Fresh Wetlands
- Protected Open Space
- Hardened Shores
- Buildings
- Parcel Boundaries
- Developed Land
- CRMC Coastal Barriers

Tidal Marsh Vulnerability Analysis: One Foot Sea Level Rise Model

CRMC

Map produced by Kevin Ruddock. 4/1/2014



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Tidal Marsh Vulnerability Analysis: Five Foot Sea Level Rise Model

CRMC

Thank You

NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

CRMC Coastal Resources Management Council

NRCS Natural Resources Conservation Service