



Sandy Neck Beach Park Coastal Resiliency Project

*Nina Z. Coleman – Director of Natural Resources /
Sandy Neck Park Manager*





Credit: Steve Heaslip

- The Town of Barnstable owns Sandy Neck Beach Park (Sandy Neck), which serves as the Town's only public beach on Cape Cod Bay.
- Sandy Neck includes 1,438 acres of barrier beach that is approximately six miles long and, in some locations, up to half a mile wide, allowing public access to pristine dunes, maritime forests, and beaches.





January 2015



March 2021



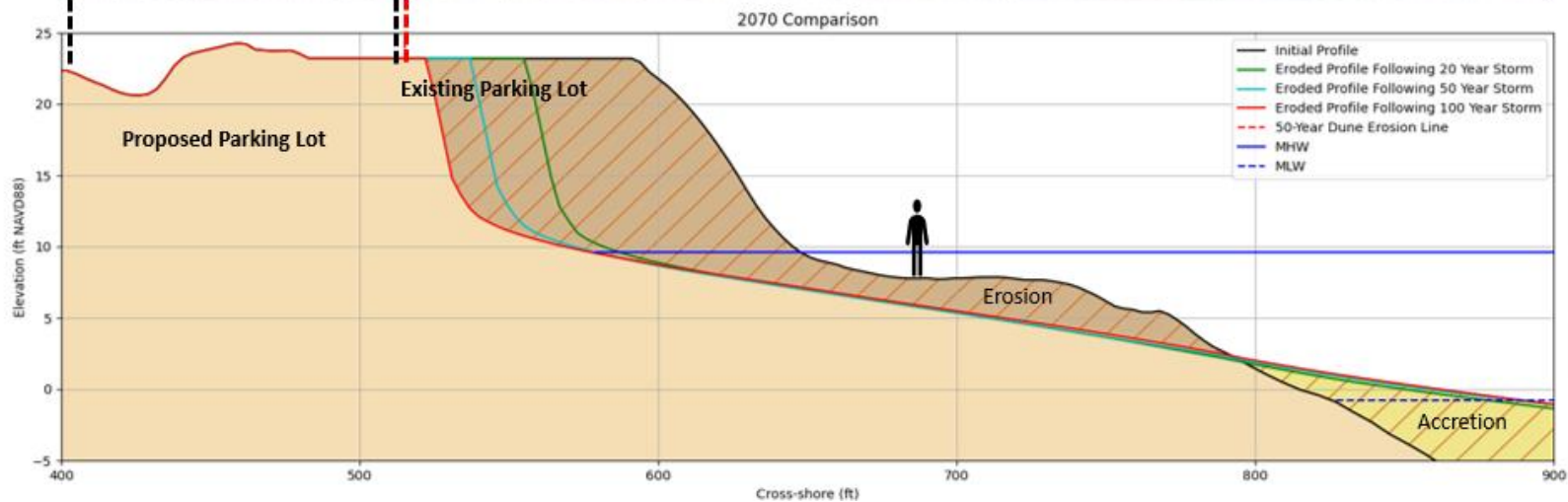
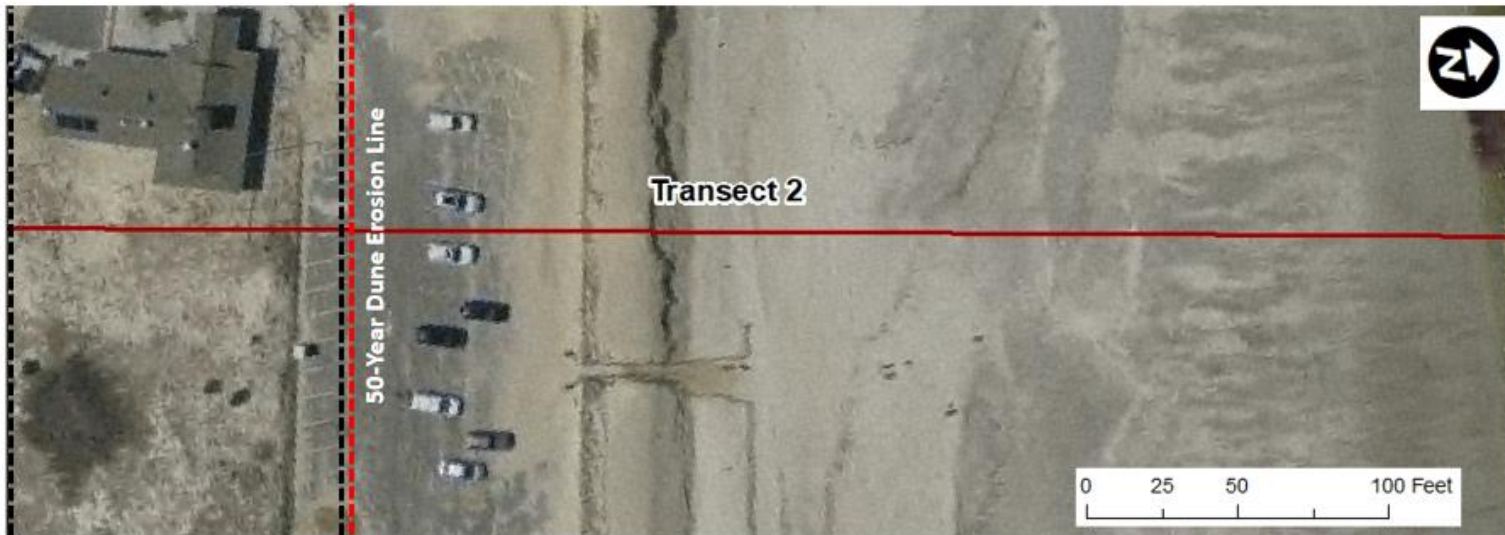
January 2024

Problem Statement – Erosion & Flooding Threats

- Dune erosion and flooding of the parking lot and Gatehouse areas during winter storms Nemo (February 2013), Juno (2015), Grayson (January 2018), Riley (March 2018), Gail (December 2020), and Kenan (January 2022) and other “No Name” storms.
- Seven (7) dune nourishment projects since 2013, using 32,920 cubic yards of sand.
- During winter storm Grayson (2018) storm surge flooded the Sandy Neck Gatehouse for the first time in its history. Flood waters from the Barnstable Harbor Great Marsh system rose to over 3 feet around the Gatehouse and caused damage within the structure.

March 2018

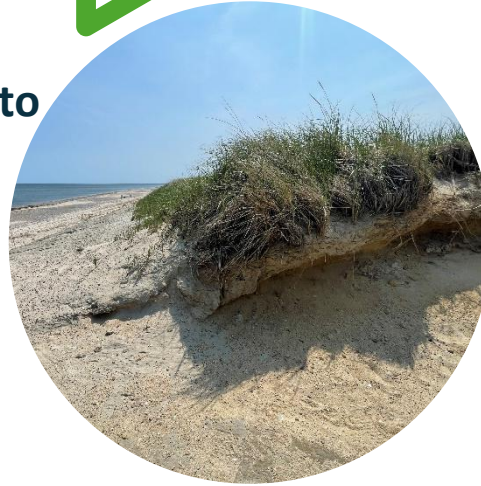




Project Goals

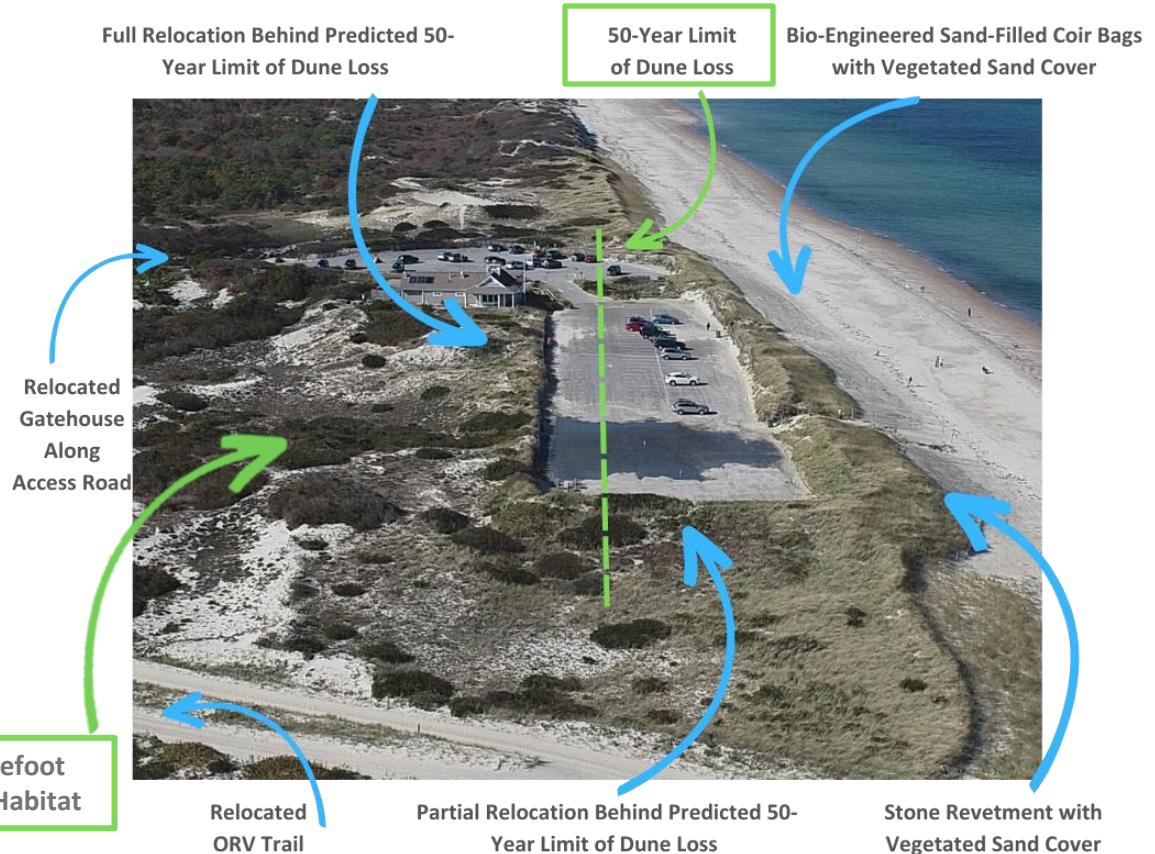
The Town's primary goals for this Project were to develop a long-term coastal resiliency project that:

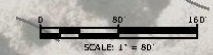
1. Addressed coastal vulnerability to erosion, dune loss, and flooding;
2. Was sustainable for at least 50 years;
3. Supported current uses of the site that are safe for the public;
4. Enhanced and protected coastal resources;
5. Was economically viable, and
6. Was permissible under current environmental regulations.



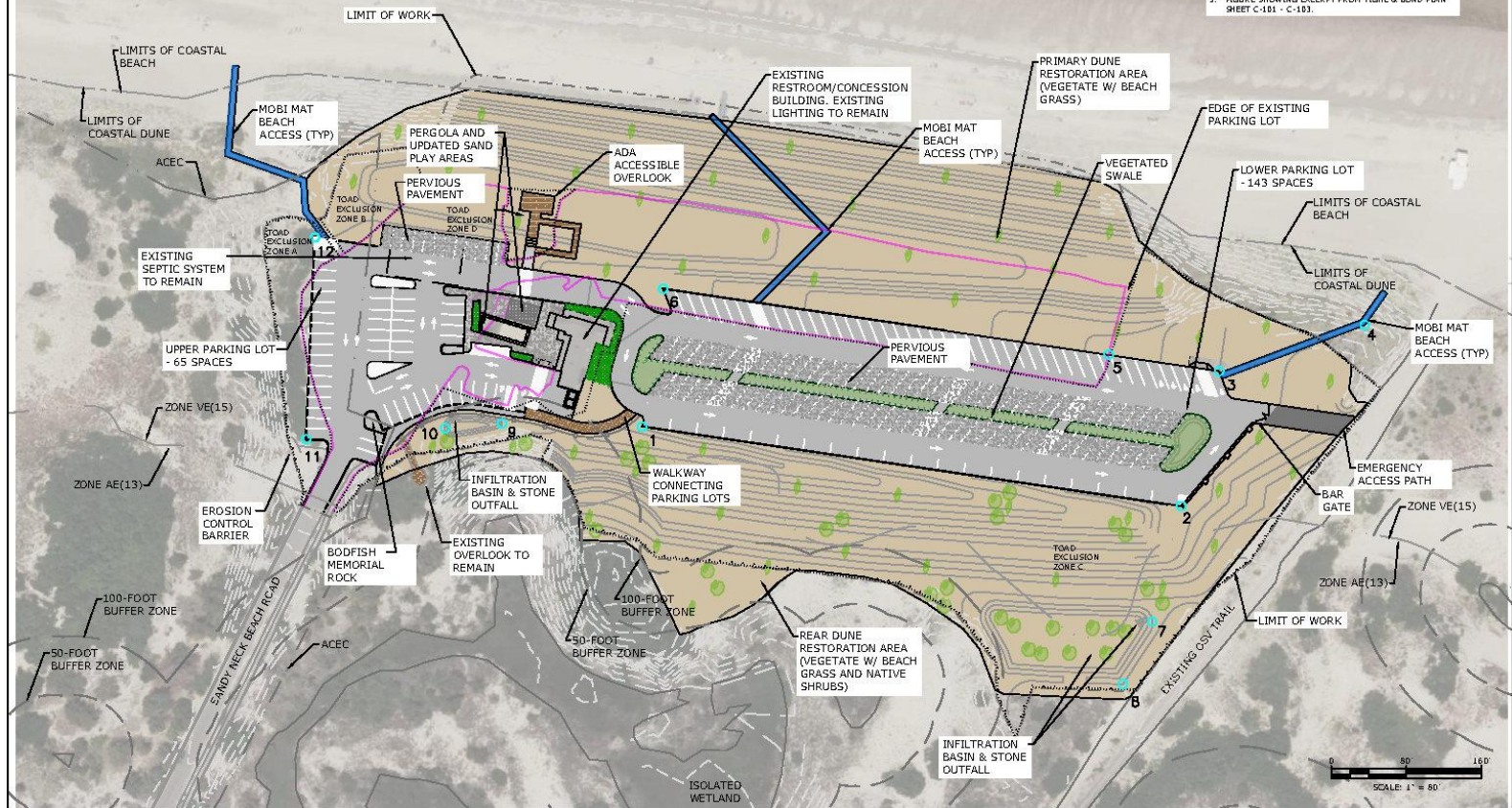
Selection of Preferred Alternative

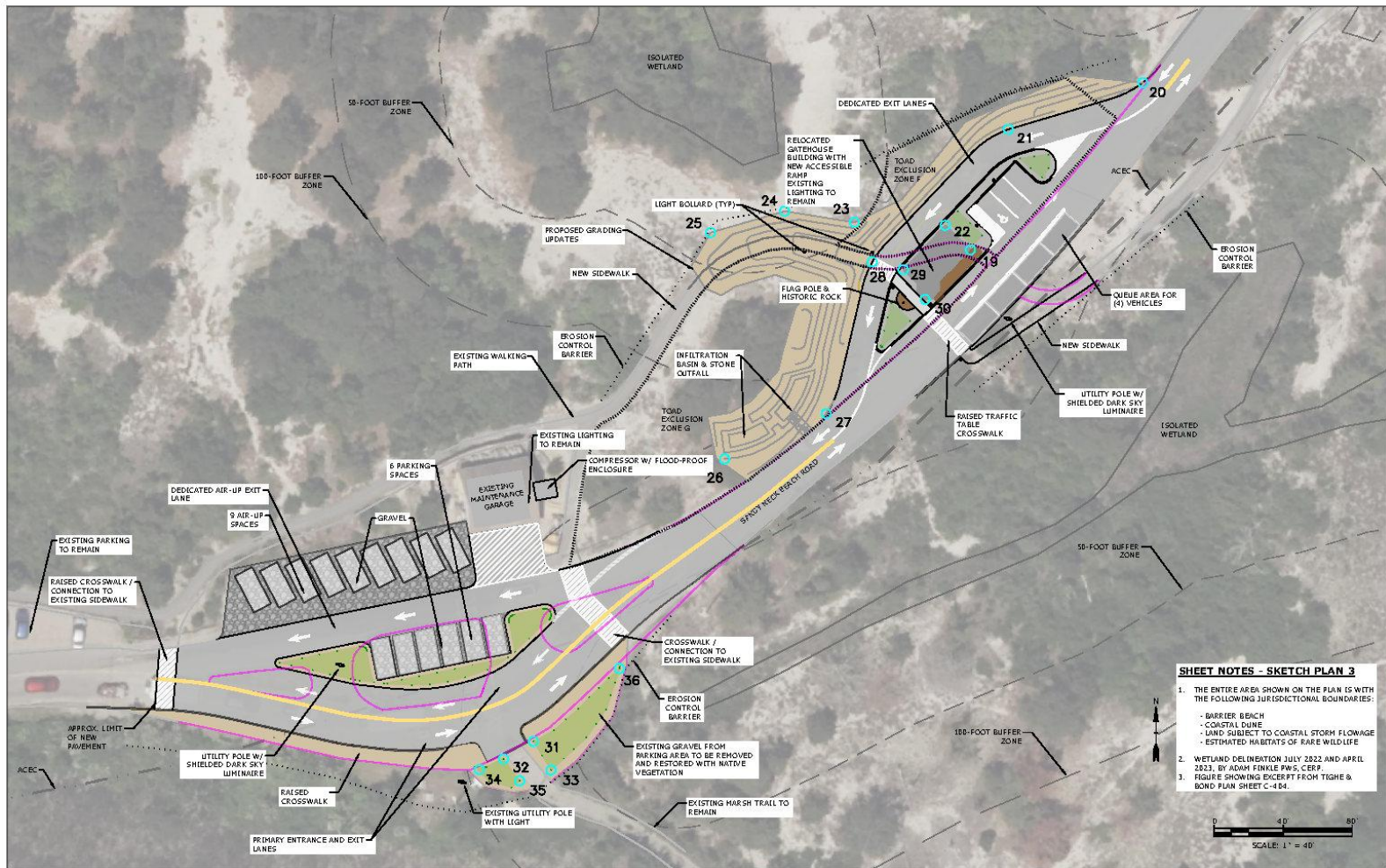
- The Town developed and evaluated various conceptual alternatives.
- One relocation was selected we begin discussions with regulatory agencies regarding resource area constraints (1:1 ratio / Spadefoot Toad habitat).
- Engaged the public to vet the project designs, and incorporate feedback.
- Funding for project has included CZM Coastal Resiliency Funding for Design and Permitting / MVP Action Grant for Construction (Still securing funding for Construction)
- Construction Fall 2025





1. THE ENTIRE AREA SHOWN ON THE PLAN IS WITH THE FOLLOWING JURISDICTIONAL BOUNDARIES:
 - BARRIER BEACH
 - LAND SUBJECT TO COASTAL STORM FLOWAGE
 - ESTIMATED HABITATS OF RARE WILDLIFE
2. WETLAND DELINEATION JULY 2022 AND APRIL 2023, ADAM FINKLE PWS, CERF.
3. FIGURE SHOWING EXCERPT FROM TIGHE & BOND PLAN SHEET C-101 - C-103.

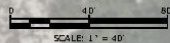




- BARRIER BEACH
- COASTAL DUNE
- LAND SUBJECT TO COASTAL STORM FLOWAGE
- ESTIMATED HABITATS OF RARE WILDLIFE

2. WETLAND DELINEATION JULY 2022 AND APRIL 2023, BY ADAM FINKLE PWS, CERP.

3. FIGURE SHOWING EXCERPT FROM TIGHE & BOND PLAN SHEET C-484.



Community Engagement

1. Working to identify barriers to beach access to Barnstable's beaches for EJ and Priority Populations
2. Engagement with Hyannis West Elementary School (Area recognized as an Environmental Justice (EJ) community)
 - a. Third Grader Field Trips to Sandy Neck
 - b. Dimondback Terrapin Headstart
 - c. Development of Coastal Ecology Curriculum
3. Community Beach Grass Planting at Sandy Neck (Students and Boy Scouts)
4. Coastal resiliency presentation to schools, civic groups and conferences
5. Development of Beach Educational Signage



Lessons Learned (2015-2025)

1. Timing is Everything

- a. The window of opportunity opened when major storm events (2018) raised awareness and urgency.
- b. Those storms not only secured political and public support but also made funding more accessible.

2. Understanding Risk is Key to Planning

- a. Shoreline change analysis and MC-FRM modeling were used to identify vulnerable assets and assess future flood pathways, which guided our design priorities.
- b. Used a numerical model (Xbeach) to evaluate how different adaptation strategies would respond to different storm events.

3. Design in Phases, Permit in Stages

- a. Break complex project components into smaller, achievable phases, allow feedback on various design elements (location of the ORV trail, lighting, traffic flow, pedestrian safety)

4. Consensus Building with User Groups is Essential

- a. Involve key stakeholder groups (e.g., abutters, beach users, Sandy Neck Board, cottage owners, Town Manager/Town Councilors) from the start to identify concerns and to manage fears with clear communication.
- b. *Don't just check the outreach box*— Get creative, like we did by partnering with Hyannis West third graders to bring local kids to the beach.

5. Early Engagement with Regulatory Agencies is Critical

- a. Set up pre-application meetings to clarify requirements.
- b. Seek regulatory feedback early and often in the process avoids costly redesigns.



Questions



www.sandyneckbeachpark.com

<https://arcg.is/OKfPPb>

