



A VISION FOR JAMESTOWN

REIMAGINING THE MACKEREL & SHEFFIELD COVES WATERFRONT

Spring 2025 LAR445 Integrated Capstone Studio

Final Report



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Faculty Lead

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Spring2025 LAR445 Class

This report is funded by Rhode Island Sea Grant and the Dean's Fund of the URI College of the Environment and Life Sciences.

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Mackerel Cove Beach, Beavertail Rd, Sheffield Cove and beyond

Photo by Joseph E. Kolb

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Acknowledgement

Jamestown, or Conanicut Island, is the ancestral and unceded territory of the Narragansett people. We honor and respect their enduring relationship with this land, recognize their sovereignty and resilience, and express gratitude for the opportunity to learn and explore on this land. We commit to supporting Indigenous communities and their rights.

We sincerely thank all the individuals and organizations who contributed their time and insights to advance our design process and studio work. Special thanks to Lisa Bryer, Jamestown Town Planner; Mary Meagher, Jamestown Town Council Member; Dr. Anne Kuhn-Hines, Jamestown Conservation Commission Chair; Raymond DeFalco, Parks & Recreation Director; Kathleen Brown, member of the Protect Conanicut Coastline group; *The Jamestown Press*; and all the community members who helped us throughout the process.

We are deeply indebted to Rhode Island Sea Grant for sponsoring this project, especially to Kim Ohnemus and Monica Allard Cox for their tremendous support. We are very grateful to the Ocean Engineering/Civil Engineering Capstone Class at URI for their collaboration. Your contributions were instrumental to the success of our work.



Rhode Island Sea Grant

Kimberly Ohnemus, Workforce Development and Research Coordinator
Monica Allard Cox, Communications Director



The Jamestown Community

Lisa Bryer, Jamestown Town Planner
Mary Meagher, Jamestown Town Council Member
Dr. Anne Kuhn-Hines, Jamestown Conservation Commission Chair
Raymond DeFalco, Park & Recreation Director
Lisa Sheley, Director of Jamestown Philomenian Library
Kathleen Brown, member of the Protect Conanicut Coastline group



The Jamestown Press

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Thanks to Aisha Malik, Landscape Architecture Senior for her assistance in preparing this report.

Cover photo: Hongbing Tang

Executive Summary

The shoreline of Jamestown, Rhode Island, is facing increasing environmental pressures due to climate change. Mackerel Cove Beach, the adjacent Beavertail Road and Sheffield Cove waterfront are increasingly vulnerable to sea-level rise, storm surge, and dune erosion. These impacts threaten not only the ecological integrity of the area but also critical public access to the southern portion of the island, including Beavertail State Park. The narrow stretch of land between Mackerel and Sheffield Coves has become a focal point for resilience planning, calling for innovative design solutions that balance ecological rehabilitation with community needs.

Reimagining the Mackerel and Sheffield Coves Waterfront was the focus of the Spring 2025 LAR 445 Integrated Capstone Studio at the University of Rhode Island (URI). Supported by Rhode Island Sea Grant, this project was a semester-long endeavor for 19 senior landscape architecture students to develop sustainable strategies that address these environmental challenges while enhancing coastal resilience and access. Students drew from their own site analysis and incorporated research provided by the Ocean Engineering/Civil Engineering capstone class at URI.

The integrated studio course began in late January with a kickoff meeting at Jamestown Town Hall, followed by a site visit to assess the area's ecological vulnerability and dune erosion. In late February, the class hosted a community workshop in Jamestown, which drew nearly 60 residents. During the event, Ocean Engineering and Civil Engineering students presented their research studies. In addition to paper surveys distributed at the workshop, two online surveys were launched to gather more input. A total of 150 Jamestown community members participated in the online surveys, and their responses further informed and helped shape the design priorities.

Throughout the semester, students participated in multiple design studio reviews with faculty, guest critics, and town leaders. In April, students conducted a second field trip to observe dune restoration efforts at the Narragansett Town Beach and revisited the Jamestown project site to refine their concepts after the midterm review.

Nineteen students were organized into six teams, each with three or four teammates. Guided by site analysis, engineering capstone class research, and community input, the teams proposed a variety of innovative and sustainable design concepts in response to the site's environmental challenges. From conservation-focused strategies to visionary infrastructure solutions, the ideas ranged from accessible pathways and habitat restoration to engineered interventions such as artificial reef systems and elevated roadways to address the impacts of climate change. Each design reflected community input and explored a spectrum of approaches, from naturalistic to visionary grounded in feasibility and ecological sensitivity. Collectively, the students demonstrated a deep understanding of coastal dynamics, sustainable design principles, and the importance of public engagement in shaping resilient and inclusive coastal environments.

The final designs were presented at URI's Higgins Welcome Center, showcasing thoughtful strategies to improve resilience and access along Jamestown's southern shoreline. This report documents the design process and outcomes, serving as a springboard for future planning, grant applications, and policy development. It highlights the value of interdisciplinary collaboration and community engagement in addressing complex coastal challenges and offers a hopeful path forward for Jamestown's shoreline.

Hongbing Tang, ASLA, PLA, LEED AP
Studio Instructor, Assistant Teaching Professor at URI



Photo by Hongbing Tang

Studio Goals & Objectives

- To directly benefit the local community in Rhode Island in keeping with the mission of URI as a land grant institution.
- To provide an interdisciplinary approach by collaborating with Departments outside Landscape Architecture in addressing specific design problems that are broad in context and complex in nature.
- To emphasize community participation as a vital component of the capstone studio by facilitating students to engage with the local community to address real-world challenges.
- To expose students to real-world projects, fostering an appreciation for the integration of programming, planning, site engineering and landscape architecture issues as significant and meaningful components of the design process.
- To advance critical analysis, creative design and problem-solving skills to achieve professional standards, ensuring that upon graduation, students are prepared to make immediate contributions to the professional practice of landscape architecture.
- To strengthen graphic, written, and verbal presentation skills, enabling students to clearly and effectively communicate the process and final design outcome of their projects.
- To familiarize students with design methodologies that facilitate associated construction systems and technologies.

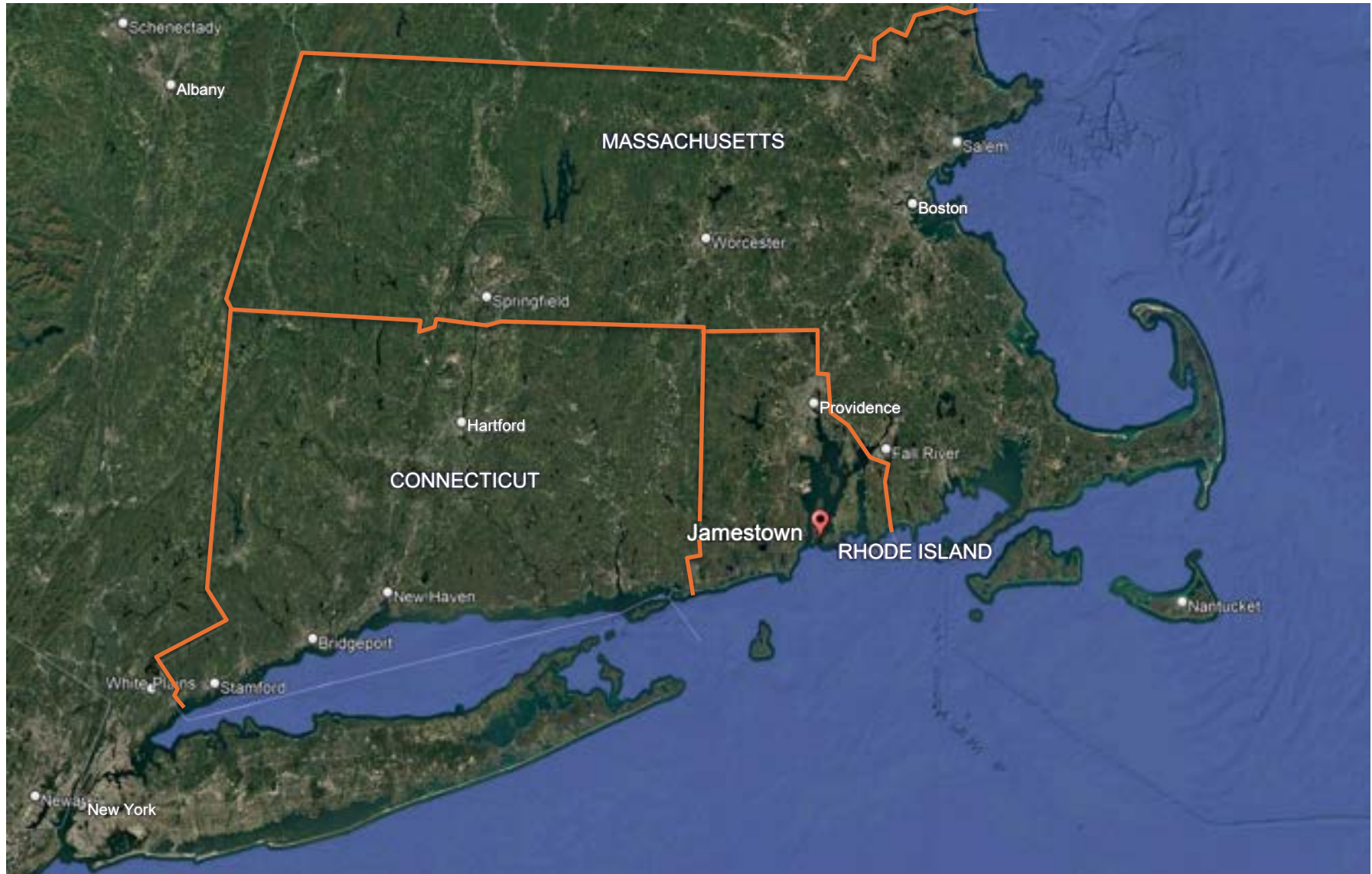


PART I - INVESTIGATION

Site investigation is a vital foundation of the LAR445 Integrated Capstone Studio, especially in designing resilient waterfront for Mackerel Cove and Sheffield Cove. Through research, meeting with local people and field trips with direct observation, students developed a deeper understanding of the challenges and opportunities unique to the site, ensuring that their design proposals are grounded in real-world context and responsive to community needs.

Context

Regional Locus Map

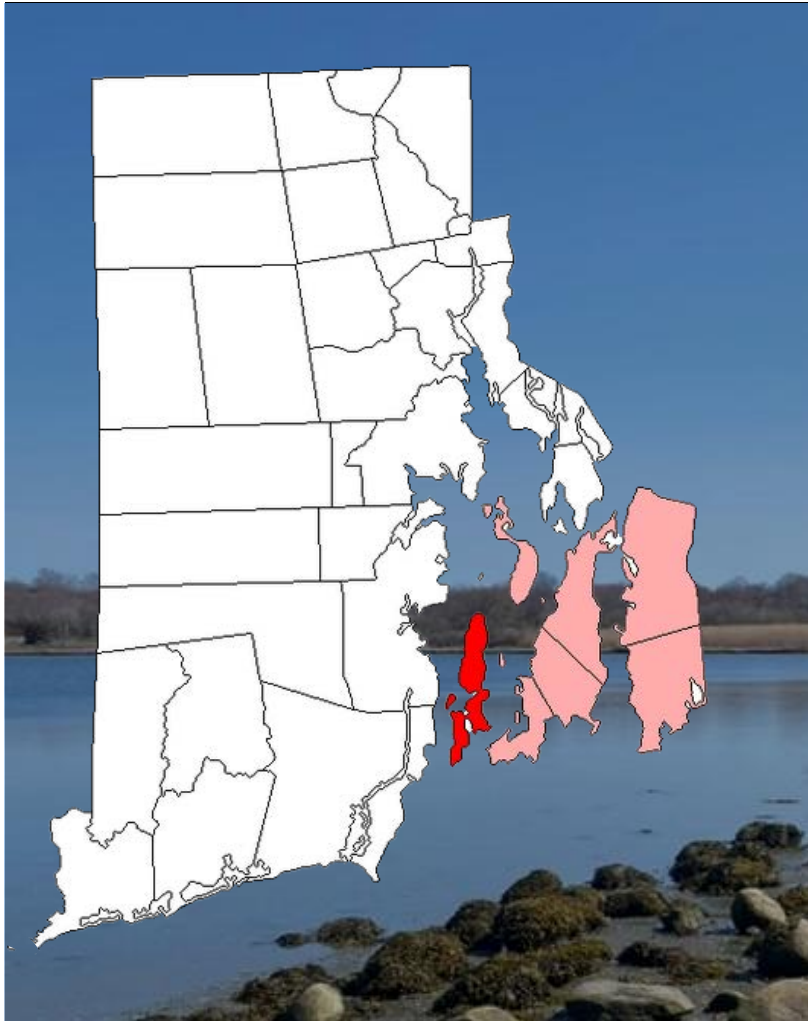


Source: Google Maps

Regional Context

Jamestown is located in Newport County, Rhode Island, in the southeastern part of New England. Newport County is unique in its geography, encompassing several islands as well as portions of the mainland. With approximately 67% of its area covered by water, the county spans a total land area of 102.4 square miles, making it the fourth largest county in Rhode Island by total area (U.S. Census Bureau n.d.). It shares borders with Bristol County in Massachusetts and three other Rhode Island counties, positioning Jamestown within a distinctive coastal and regional setting.

Jamestown lies 26 miles south of Providence and two miles west of Newport, Rhode Island. The town occupies approximately 9.4 square miles of land area (U.S. Census Bureau, n.d.) and is situated almost entirely on Conanicut Island, the second largest island in Narragansett Bay. In addition to Conanicut Island, Jamestown encompasses the uninhabited Dutch Island and Gould Island. It is bordered by the Atlantic Ocean to the south and by Narragansett Bay on the north, east, and west (Planning.ri.gov 2015). Altogether, Jamestown spans about 35.3 square miles, with nearly three-quarters of that area consisting of water, highlighting its deep connection to the surrounding bay and ocean (US Climate Data, 2025).



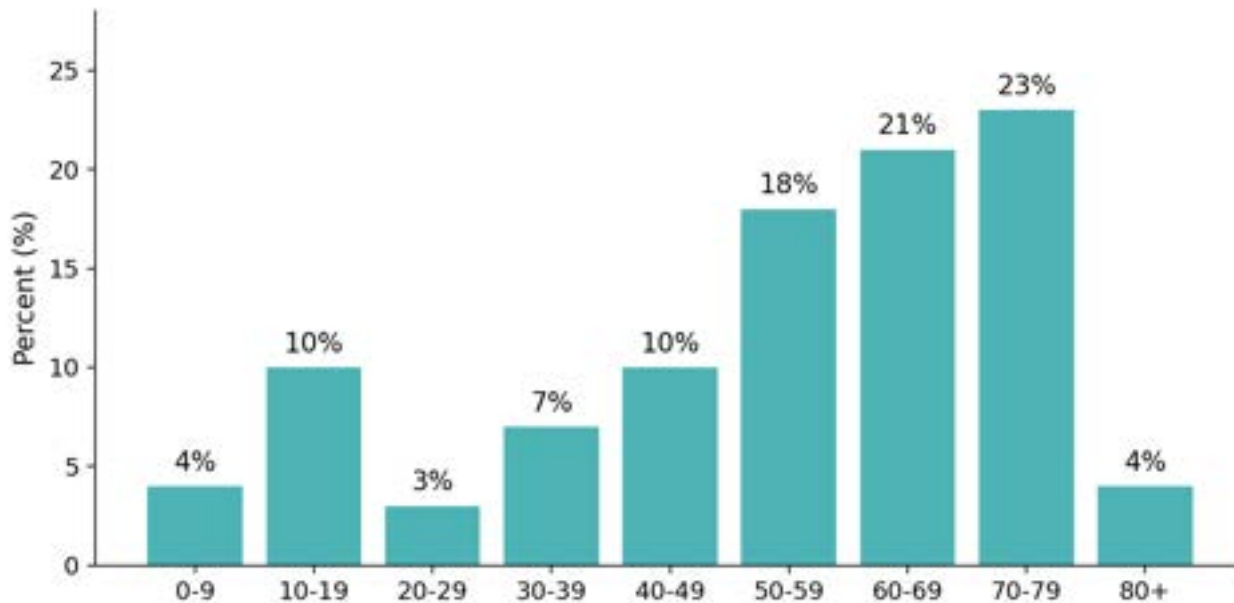
Jamestown in Newport County, Rhode Island Photo by Madeline Ashenfelter

Community Context

According to the U.S. Census, Jamestown had a population of 5,559 in 2020 and a total of 2,563 households in the town (U.S. Census Bureau n.d.). Jamestown's population dropped to 5,494 in July 2024, showing a slight decline over four years (dlt.ri.gov n.d.) Jamestown experiences a significant seasonal population increase during the summer months. Tourists, part-time residents, and vacationers flock to the town for its beaches, historic sites, and scenic views. This influx can double or even triple the town's population temporarily, especially around Mackerel Cove and Beavertail State Park.

The median age in Jamestown is 59.4 years, significantly higher than the State of Rhode Island's median age of 40.8. Additionally, 37.2% of Jamestown's population is aged 65 and older (Census Reporter, 2023).

Population by Age Range



Population by Age Category

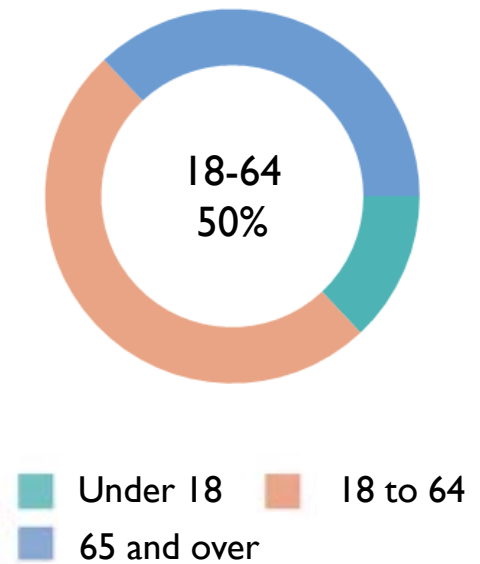


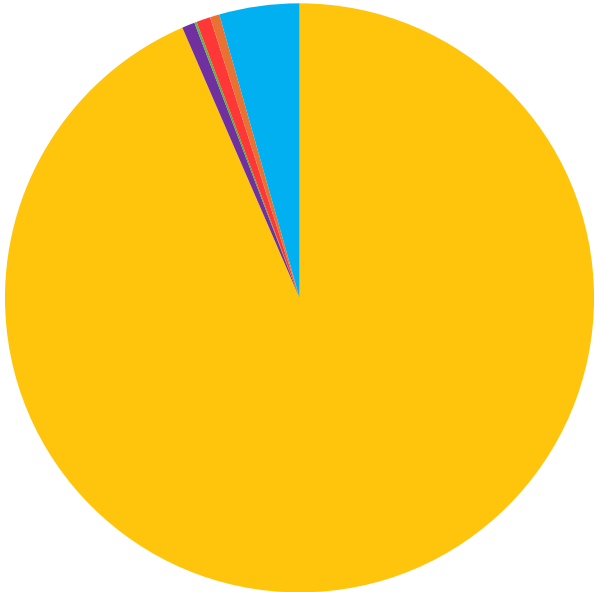
Chart I. Population by Age

Source: <https://censusreporter.org/profiles/06000US4400536820-jamestown-town-newport-county-ri/>

Community Context

Jamestown’s population is predominantly White, accounting for 93.47% of residents. Minority groups make up a small portion of the population, with African Americans at 0.70%, Asians at 0.77%, and Indigenous Americans at just 0.13%. Individuals identifying as two or more races represent 4.39%, while those from other racial backgrounds make up 0.52%. Hispanic or Latino residents of any race comprise 2.27% of the population (U.S. Census Bureau 2020).

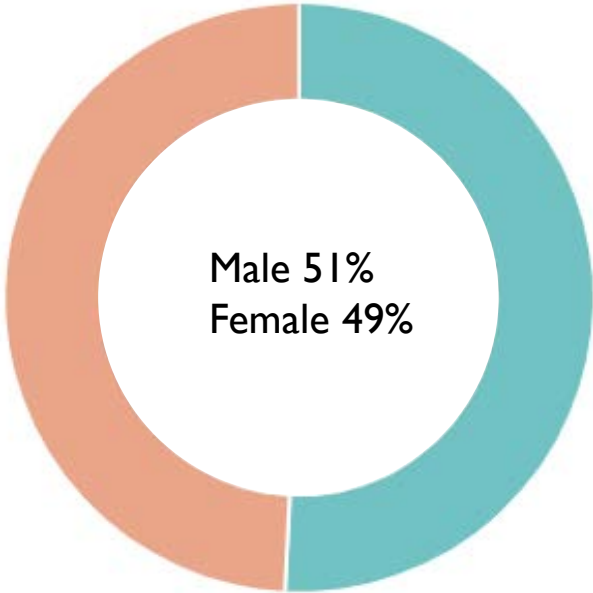
The town’s median household income is \$141,442, and its poverty rate stands at 4.3% (U.S. Census, n.d.). In comparison, 11% of Rhode Island’s overall population lives below the poverty line (Statista, 2024).



- White
- African American
- Indigenous American
- Asian
- Some Other Race
- Two or More Races

Chart 2. Race & Ethnicity

Source: U.S. Census Bureau



- Male
- Female

Chart 3. Population by Sex

Source: <https://censusreporter.org/profiles/06000US4400536820-jamestown-town-newport-county-ri/>

Jamestown, RI



Photo credits: Jamestown Historical Society & Adobe Stock

Historical Context of Jamestown

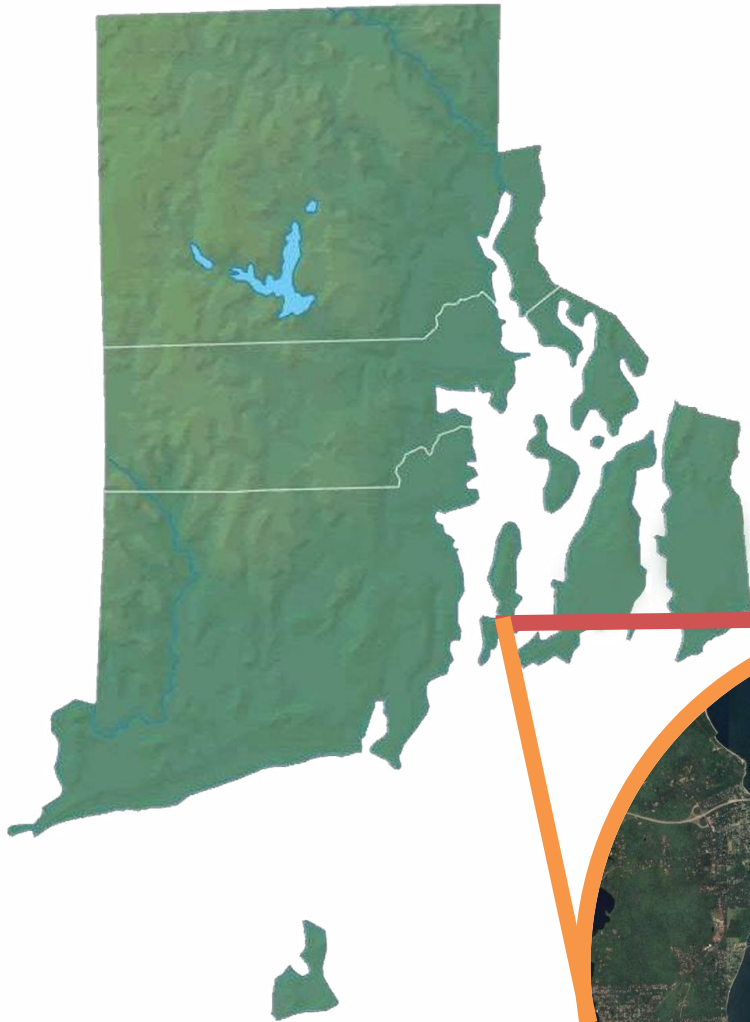
The island of Conanicut was originally inhabited by the Native Americans for thousands of years (Rhode Island Department of State n.d.). In 1657, English settlers purchased the island from the Narragansett people. Jamestown was incorporated as a town in 1678, named in honor of James, Duke of York (later King James II), while retaining the Native name “Conanicut” for the island (Town of Jamestown n.d.).

Jamestown’s rich history includes initial fur trading and early agricultural development, with land divided into plots for farming and town use (Town of Jamestown n.d.). Among the town’s earliest public buildings were the Quaker Meeting House, originally built in 1709 and the Jamestown Windmill, originally built in 1730. Both were reconstructed around 1787 after the American Revolution. These structures remain preserved and are listed on the National Register of Historic Places (Jamestown Historical Society n.d.). Beavertail Lighthouse, at Jamestown’s southern tip, was established in 1749 as the third-oldest lighthouse in the U.S. After being destroyed and rebuilt in 1754, it was burned by the British in 1779, then rebuilt and replaced by the current granite structure in 1856, guiding ships into Narragansett Bay (Lighthousefriends.com, n.d.).

Jamestown played a strategic military role during several conflicts. The British occupied the island from 1775 to 1778, establishing batteries and damaging local infrastructure. Later, Fort Dumpling (1800) and Fort Wetherill (1898) were built on the southern coast. During World War II, Jamestown hosted observation posts, torpedo testing facilities on Gould Island, and other military installations (Jamestown CCP 2015).

The town transitioned into a summer resort in the late 19th century, attracting wealthy families and developing neighborhoods like Ocean Highlands and Shoreby Hill, known for their Shingle Style and Colonial Revival architecture. Portuguese immigrants also settled in Jamestown around the turn of the century, contributing to agriculture and construction (Jamestown CCP 2015).

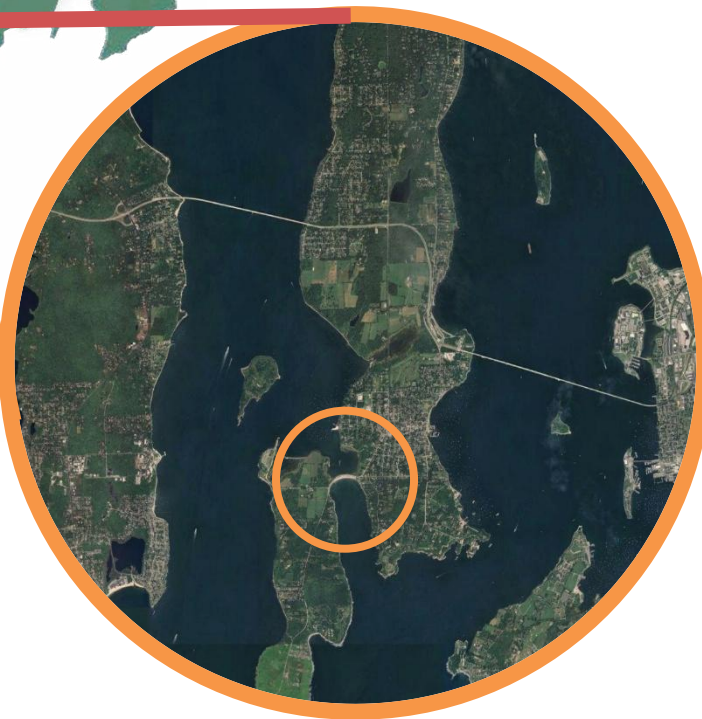
Modern infrastructure reshaped Jamestown’s connectivity. While ferry service to Newport still operates seasonally, access to the town is now primarily via highway bridges. The Jamestown Bridge (1940), the Claiborne Pell Newport Bridge, commonly known as the Newport Bridge (1969), and the Jamestown-Verrazzano Bridge (1992) integrated Jamestown into regional transportation networks (Jamestown CCP 2015).



Site Context

Our project site lies on a pivotal strip of land that connects the southern and northern ends of Jamestown. It includes Mackerel Cove Beach, the Sheffield Cove waterfront, and the stretch of Beavertail Road that links them.

Mackerel Cove Beach, also known as Jamestown Town Beach, is the town's only public beach. This crescent-shaped shoreline, sheltered from the strong currents of Narragansett Bay, is a favorite destination for both residents and visitors. Renowned for its calm waters and scenic views, the beach offers seasonal amenities during the summer months, such as lifeguards and restrooms (Ohtadmin 2020).



Just north of the beach lies Sheffield Cove. This shallow tidal inlet, near Dutch Island Harbor, features salt marshes and eelgrass beds that support a rich diversity of bird and marine life. It contributes significantly to the area's ecological value and conservation efforts. Adjacent to the cove is the Sheffield Cove Salt Marsh Wildlife Refuge, a 5-acre protected area managed by the Audubon Society of Rhode Island since 1964 (Audubon Society of Rhode Island, n.d.).

Taken together, this area is a valued natural and recreational resource for the Jamestown community, though it has been negatively affected by human-induced climate change.

Surrounding Amenities

- ① Conanicut Battery Historic Park
- ② Fort Getty Park
- ③ TPG Dutch Harbor Boat Yard
- ④ Jamestown Melrose School
- ⑤ McQuade's Marketplace
- ⑥ Jamestown Philomenian Library
- ⑦ Slice of Heaven
- ⑧ Horsehead-Marbella
- ⑨ The Wicked Whisk
- ⑩ Angels Kitchen
- ⑪ Ace's Pizza
- ⑫ Jamestown Town Hall



Jamestown Town Hall
www.jamestownri.gov/



Conanicut Battery Historic Park
[Jamestown Historical Society](http://JamestownHistoricalSociety.com)



TPG Dutch Harbor Boat Yard
Marinas.com

Mackerel & Sheffield Coves Historical Shoreline



painting by William Trost Richards, 1894

William Trost Richards' 1894 painting of Mackerel and Sheffield Coves offers a glimpse of the shoreline in the late 1800s. The land area and Banana Island in the distance appear much larger than today, illustrating the impact of sea-level rise over time.

Mackerel & Sheffield Coves Shoreline Today



Photo by Joseph E. Kolb

Field Trip I



Photo by Monica Allard Cox

First Field Study

January 30, 2025

On a frigid morning in late January, the students went on an initial site visit to visualize the site in person and begin their preliminary site investigation and analysis. The class was split into several groups, with each group assigned a specific section of the site analysis to focus on. The teams were tasked to take notes, as well as photos of the site to present their analysis to the class. In this way, a full site investigation was completed during the first field trip.



Photo by Monica Allard Cox

Before conducting their first site visit, the students went to Town Hall to meet with several community leaders. During the meeting, the town officials presented the class with a set of overlapping challenges related to a two-part charge: protecting Mackerel Cove Beach from disappearing due to sea-level rise for as long as possible and ensuring that adjacent Beavertail Road remains accessible during coastal storms.



Photo by Hongbing Tang



Spencer Asofsky, senior student, and Mary Meagher, town council member talking on site

Photo by Hongbing Tang

First Field Study

January 30, 2025

During the first field trip, the students met with several community leaders and residents on site. This engagement provided a valuable opportunity for them to gain firsthand local knowledge and begin forming mental models of the real-world environmental challenges facing the area. As part of their site exploration, the students examined the waterfronts of both Mackerel Cove and Sheffield Cove and walked across adjacent Beavertail Road in between to better understand the spatial relationships and vulnerabilities of the site.



Photo by Hongbing Tang

Dr. Anne Kuhn-Hines, Jamestown Conservation Commission Chair, met students on site, explaining the town's dune restoration intent and ecological processes.

Students learned from Ray DeFalco, Director of Parks and Recreation, about the beach bathhouse facility that the town moved to nearby Fort Getty Park to protect it from storms over the winter.



Photo by Monica Allard Cox



Photo by Madeline Ashenfelter

Second Field Study

April 10, 2025

In mid-April, following their mid-term review, the students took their second field trip. They visited Narragansett Town Beach, Scarborough State Beach, and returned to Mackerel Cove Beach to observe dune erosion and restoration efforts. During the visit, they examined both temporary and permanent coastal infrastructure, such as dune fencing, culvert pipes, and retaining walls to assess their effectiveness and gain inspiration for their own creative design ideas.

At the Sheffield Cove waterfront, the students were excited to discover marine wildlife. Alongside these ecological observations, they also identified accessibility challenges throughout the site.



Aisha Malik, senior student, holding a shell with a small crab found at Sheffield Cove





Members of the LAR445 landscape architecture capstone class at the Narragansett Town Beach and Scarborough State Beach to observe and evaluate rebuilt dune restoration and stormwater management strategies.



Photos by Monica Allard Cox





PART II - ANALYSIS

The site analysis process involved a detailed examination of the site's physical, ecological, and cultural characteristics. Students examined topography, hydrology, vegetation, and climate impact, while also studied land use, circulation and historical features that shape the coastal identity. This foundational assessment provided critical insights into the site's constraints and opportunities, informing design strategies that address environmental resilience and spatial functionality.

Geology & Bathymetry



- Rhode Island is considered in the middle of the northern Appalachian mountain system.
- The Narragansett Basin is a drowned river valley estuary, made up of three ancient drowned river valleys known as the East Passage, West Passage, and Sakonnet River.
- The Narragansett basin contains the only large mass of known Pennsylvanian rocks in this part of the mountain system.
- The Narragansett basin also includes sedimentary conglomerates, sandstones, and shales.
- The total sediment depth ranges between 15 to over 100 m thick.

Legend

- Major Roads
- lakes
- Outwash Deposits
- Loess over Outwash Deposits
- Ablation Till
- Loess over Ablation Till
- Lodgement Till (mixed lithology)
- Loess over Lodgement Till (mixed lithology)
- Lodgement Till (Narragansett Basin Lithology)
- Lodgement Till (Narragansett Basin Lithology, st)
- Ablation Till (Moraine Deposits)
- Alluvial Deposits
- Eolian Sand and/or Overwash Deposits
- Beach Deposits
- Coastal Bluff (mixed clay and till)
- Organic Deposits (Freshwater)
- Organic Deposits (Tidal Marsh)
- Bedrock
- Ablation Till over Bedrock
- Human Transported Materials
- Fluid Silty Marine/Estuarine Deposits
- Sandy Marine/Estuarine Deposits
- Water



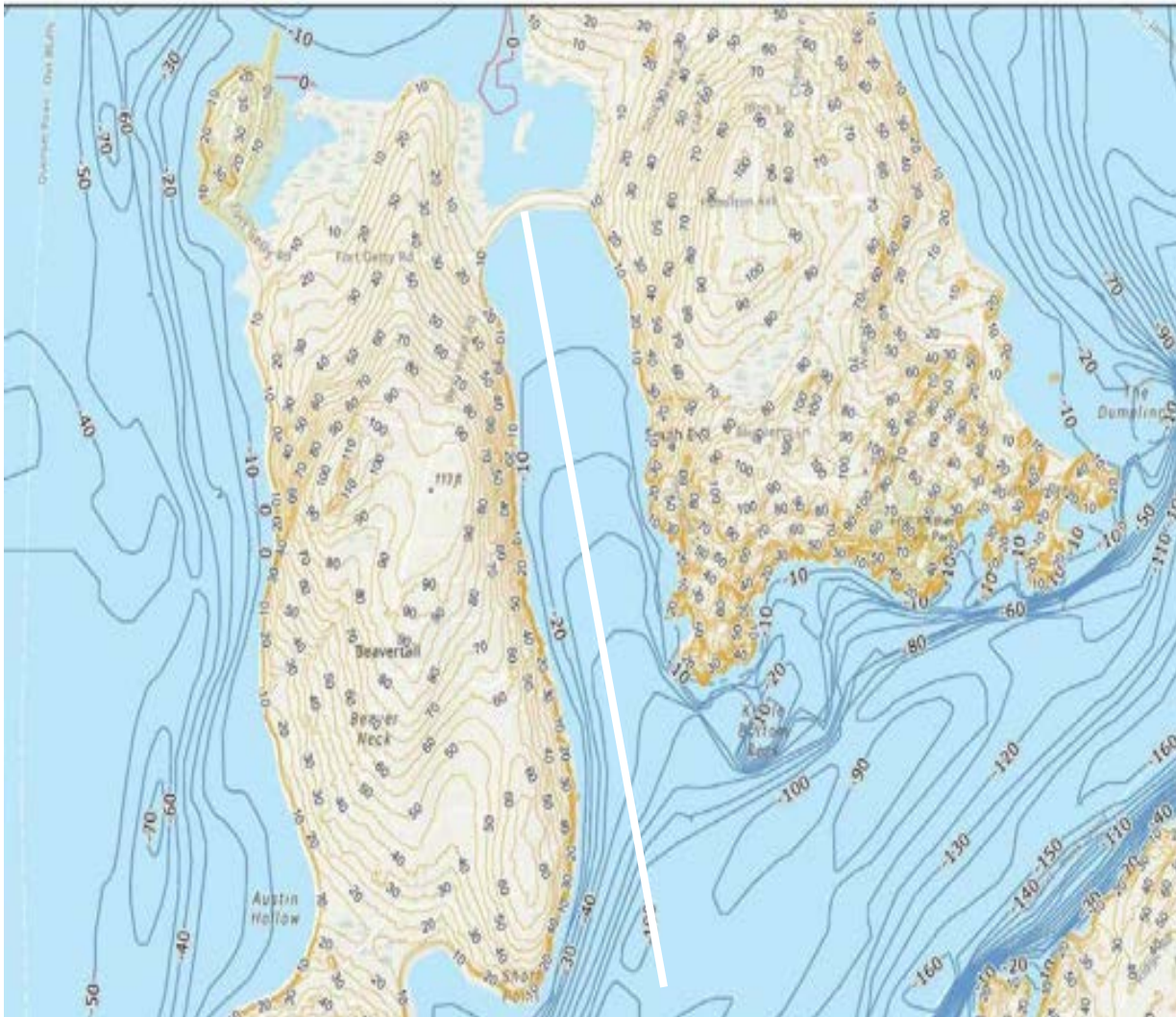
Soil Parent Materials of Jamestown, RI

www.nrcs.usda.gov/sites/default/files/2022-12/RI_SoilParentMaterialsMap_2012-web.pdf

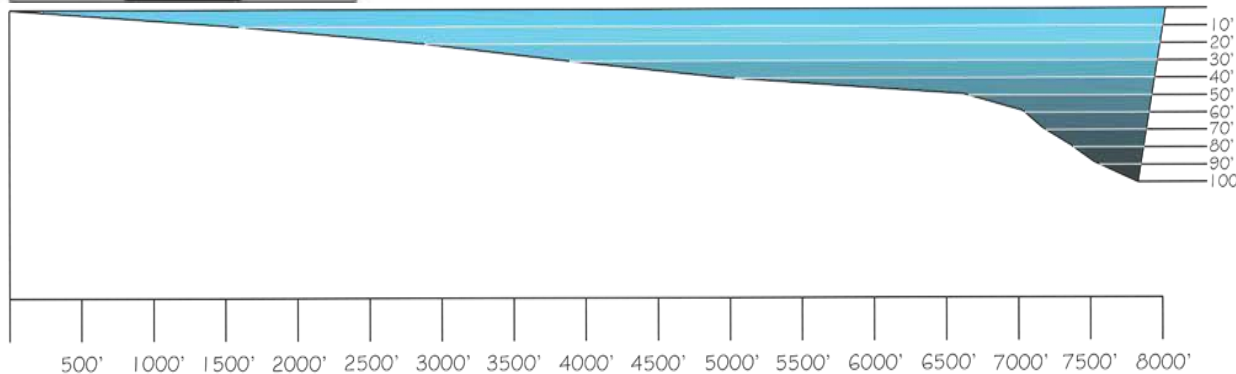
Source: <https://pubs.usgs.gov/bul/1295/report.pdf>

Bathymetry of Mackerel Cove Jamestown, Rhode Island

Mackerel Cove is a linear, natural cove with a crescent-shaped sand and gravel beach at the head of the cove. The horizontal distance from the beach to the Narragansett Bay is approximately 7,500'. The seafloor is fairly shallow for nearly half of the cove, averaging between 10' and 30'. At approximately 6,500' feet from the beach, the depth of the water drops steeply from 50' to 100' in only 1,500' of horizontal distance.



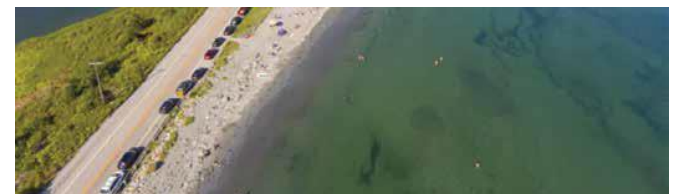
Source: <https://www.axisgis.com/jamestownri/>



Section view of the Mackerel Cove seafloor



www.discovernewport.org/blog/post/a-day-in-jamestown/



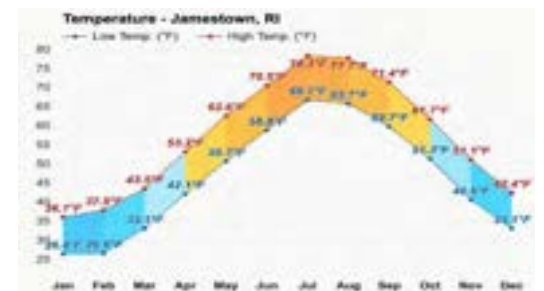
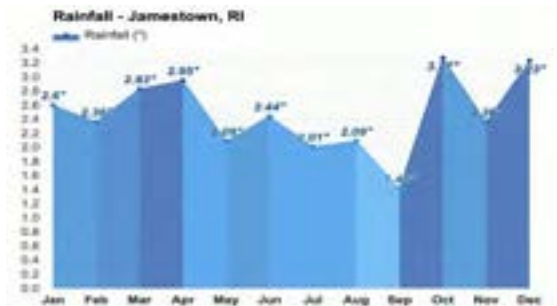
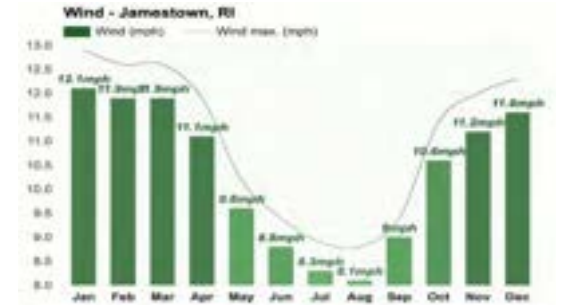
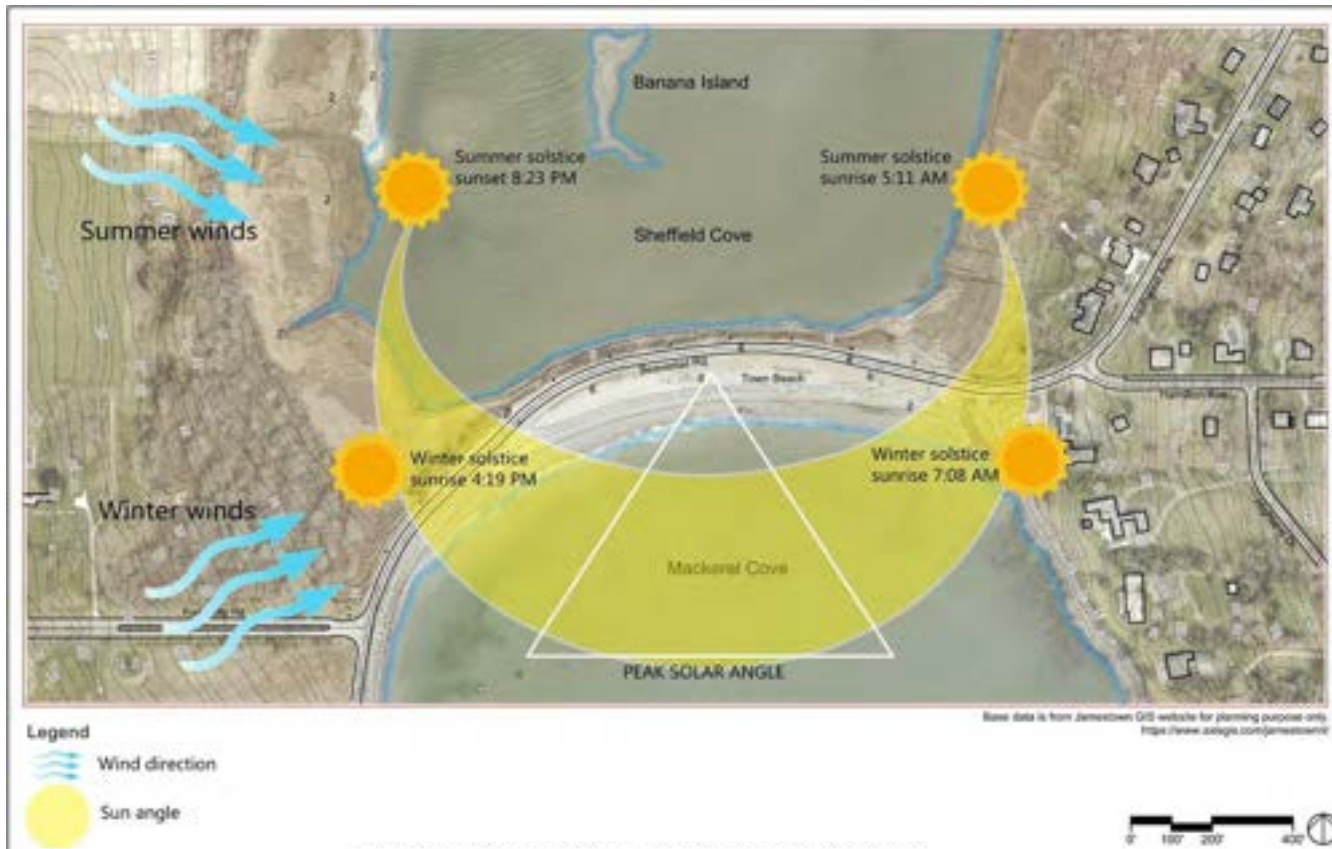
Google Maps

Mackerel & Sheffield Coves Waterfront Existing Conditions Plan



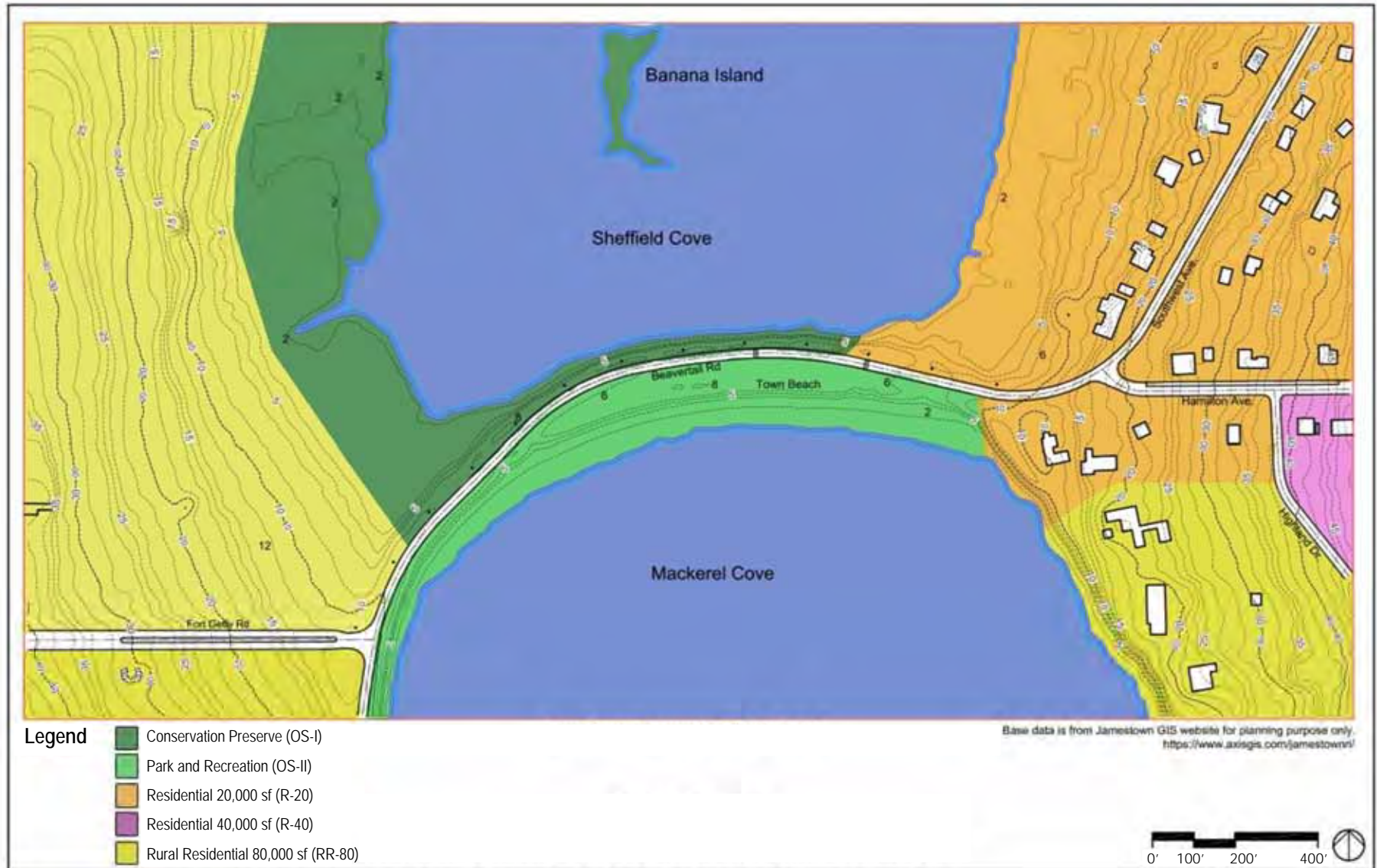
Microclimate

The microclimate of the Mackerel and Sheffield Coves waterfront is shaped by seasonal wind patterns and solar exposure. Summer winds predominantly flow from the southwest, while winter winds shift to the northwest, influencing comfort and vegetation along the shoreline. Sun angles vary significantly between solstices, with long daylight hours in summer and shorter periods in winter, affecting thermal conditions and site usage throughout the year. The cove area has winds coming from the northwest during the summer and the southwest during the winter with peak speeds reaching 12.1 mph and low speeds at 8.1 mph. Rainfall is typically between 1.4" and 3.27". Temperatures span from highs of 78 degrees in the summer, and lows of 26 degrees in the winter.



Zoning & Land Use

Jamestown has established zoning bylaws and land use regulations to guide development and maintain the community's character. These regulations are detailed in Chapter 82 of the *Jamestown Code of Ordinances*. Conservation Preserve (OS-I) and Park and Recreation (OS-II) zones dominate the site's waterfront, while surrounding zones support residential development with varying lot sizes. This land use pattern reflects a balance between environmental protection and community living.



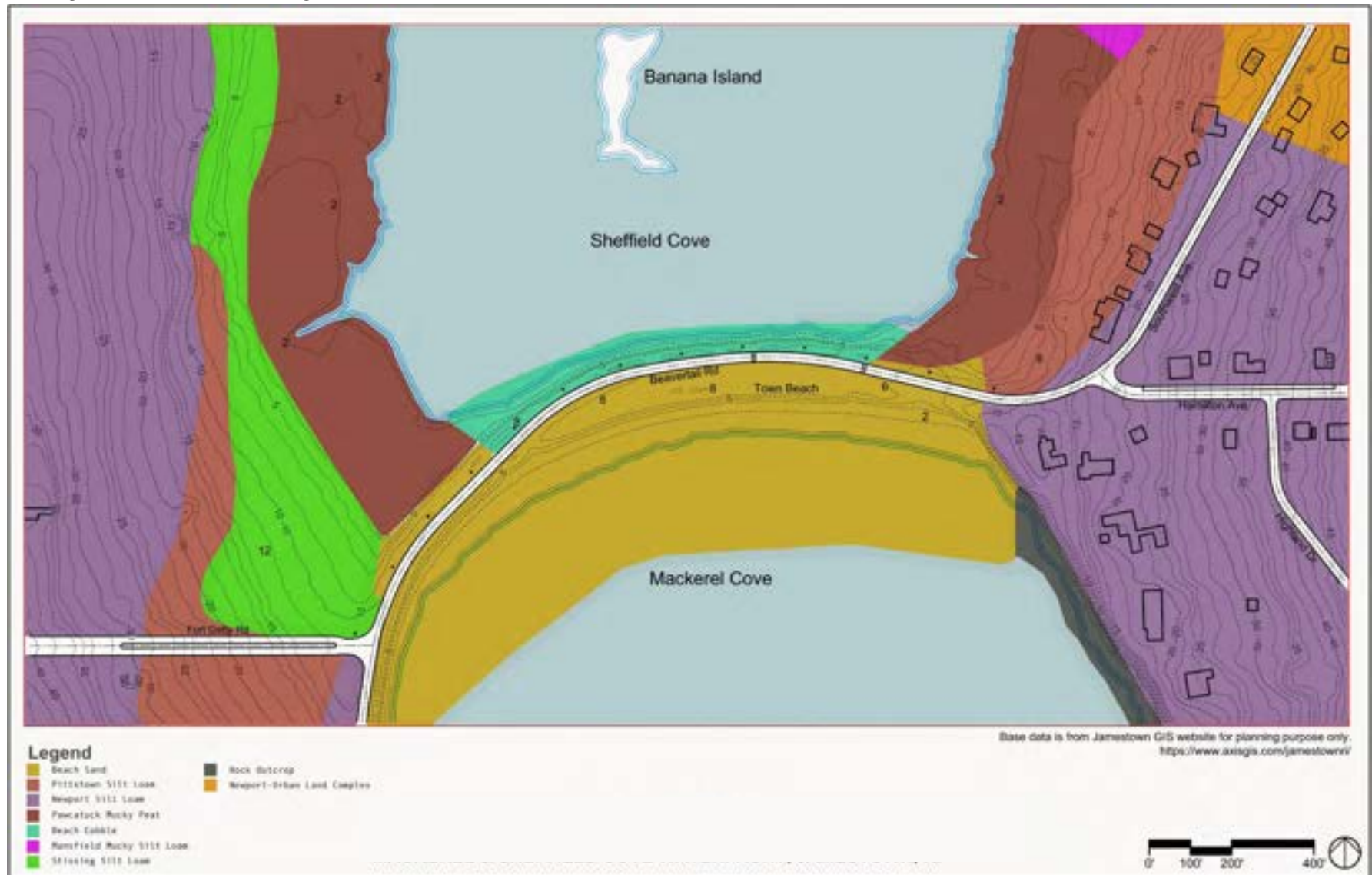
Topography

The site's topographic character features a varied coastal landscape with distinct slope conditions. The Sheffield Cove side has steeper slopes abutting the road, limiting accessibility and requiring careful design for safe public use. In contrast, areas around Mackerel Cove Town Beach are more gently sloped, offering easier access. However, the beach zones contain dune areas with moderate slopes, which are ecologically sensitive and require protection from erosion and unmanaged foot traffic.



Soils

The site's soil composition includes a mix of beach sand, beach cobble, silt loams, and sandy loams, indicating varied drainage and stability conditions. Mackerel Cove Beach areas are dominated by Beach Sand, while inland zones feature Newport and Pittstown Silt Loams, offering better support for vegetation and development. The Sheffield Cove waterfront contains wetland soils classified as Pawcatuck Mucky Peat, which are highly organic and poorly drained. These variations are critical for guiding erosion control, planting strategies, and structural design.



Land Conservation

The land conservation maps below highlight significant protected areas managed by the Rhode Island Audubon Society, along with diverse wetland types. The areas with yellow outlines are owned and maintained by the non-profit organization. These include freshwater forested/shrub wetlands, estuarine and marine wetlands, and deepwater zones, all of which contribute to the site's ecological richness. The conservation efforts help preserve critical habitats and support biodiversity along the Jamestown shoreline.

The Sheffield Cove Salt Marsh and Wildlife Refuge has been protected by the Rhode Island Audubon Society since 1964. It is approximately 5 acres and is home to many wading birds, sea ducks and other marine species. It also serves as a natural buffer, protecting the shoreline from sea level rise and coastal storms (Rhode Island Audubon Society n.d.) The strip of land directly across Beavertail Road north of Mackerel Cove Beach is owned by the town of Jamestown as conservation land.



Wildlife

Aquatic and flying birds



Marine species observed on-site

Sea snail



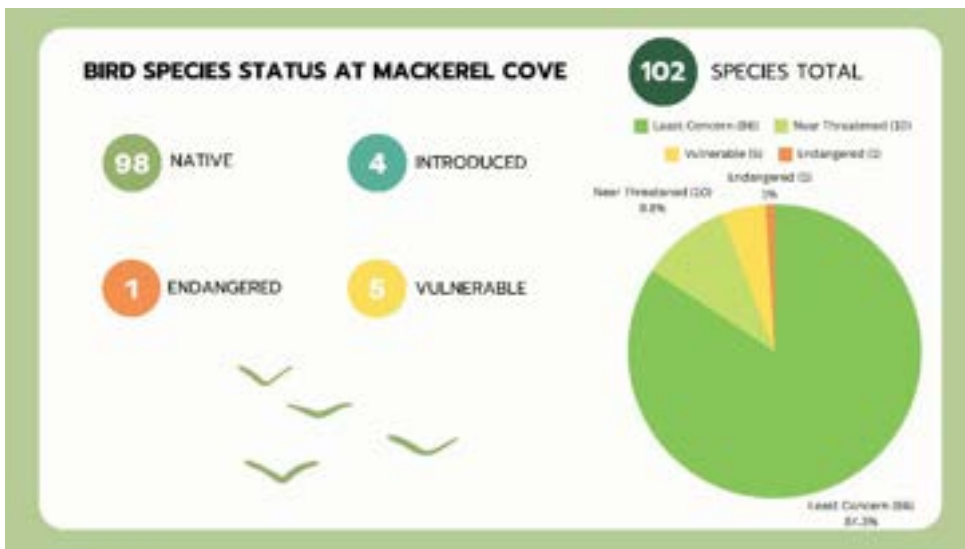
Atlantic Rock Crab



Eastern Oyster



Photos by Hongbing Tang



The Mackerel Cove area supports a diverse bird population, with 102 recorded species. Of these, 98 are native, four are introduced, five are considered vulnerable, and one (Saltmarsh Sparrow) is endangered. This diversity highlights the ecological importance of the site and the need for habitat protection.

Source: Rhode Island Audubon Society

Existing Vegetation

The vegetation zone map illustrates three primary plant communities along the site's shoreline: dunes, marshes, and tree/shrub zones. Dune areas, located near the beach, provide natural barriers against erosion. Marsh zones occupy low-lying, wetter regions, supporting biodiversity and water filtration. Tree and shrub areas are found further inland, contributing to habitat diversity and landscape stability. The area features a mix of native plants, such as Eastern Red Cedar (*Juniperus virginiana*), Seaside Goldenrod (*Solidago sempervirens*), Beach Pea (*Lathyrus japonicus*), and native grasses (e.g., *Ammophila breviligulata*), along with invasive species such as Common Reed (*Phragmites australis*) and Oriental Bittersweet (*Celastrus orbiculatus*).



Photos by Hongbing Tang



Photo by Google Maps

Annuals, Perennials & Grasses



Ammophila breviligulata
American Beachgrass
photo by addison198 from iNaturalist



Lathyrus japonicus
Beach Pea
Photo by Anita Gould



Atriplex prostrata
Creeping Saltbush
Photo by nathanlambstrom from iNaturalist



Phragmites australis
Common Reed
Photo by Hongbing Tang



Rosa rugosa
Beach Rose
Photo by Hongbing Tang



Cakile edentula
American Searocket
Photo by kris10haines from iNaturalist



Xanthium strumarium
Rough Cocklebur
Photo by Hongbing Tang



Impatiens capensis
Common Jewelweed
Photo by Mattdoodles from iNaturalist



Verbascum thapsus
Common Mullein
Photo by Hongbing Tang



Juniperus horizontalis
Eastern Red Cedar
Photo by Hongbing Tang



Carex kobomugi
Atlantic Sand Sedge
Photo by brook from iNaturalist in nearby area



Strophostyles helvola
Trailing Fuzzy-Bean
Photo by nathanlambstrom from iNaturalist



Rumex crispus
Curled Dock
Photo by nathanlambstrom from iNaturalist



Artemisia vulgaris
Common Mugwort
Photo by Hongbing Tang



Celastrus orbiculatus
Oriental Bittersweet
Photo by Google Maps



Solidago sempervirens
Seaside Goldenrod
Photo by Hongbing Tang



Xylaria polymorpha
Switchgrass
Photo by addison bergmann from iNaturalist



Raphanus raphanistrum
Wild Radish
Photo by nathanlambstrom from iNaturalist



Native species



Non-native species

Plant species observed by URI students, faculty and citizens documented at iNaturalist.

Visual Characters, Sound and Noise

The site offers scenic views in all directions, particularly toward Sheffield Cove and Mackerel Cove, which contribute to its strong visual character. In contrast, the view of Beavertail Road detracts from the natural setting. Sound across the site is shaped by both natural and human elements: while traffic noise from Beavertail Road is present, it is often softened by the ambient sounds of waves along the beaches. Traffic is minimal during the winter months, but the road serves as a key access route to Jamestown. In summer, increased use of Beavertail Road for overflow parallel parking leads to greater congestion and elevated noise levels near the beach area.



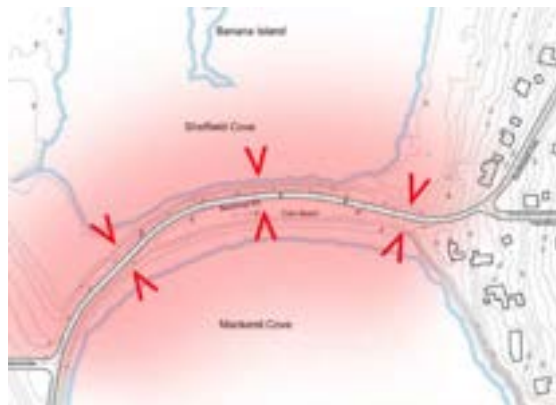
Photo by Emma Curci



Photo by Emma Curci



Photo by Spencer Asofsky



Best Views



Sound & Noise Origins



Worst Views



Sound & Noise Levels

Existing Structures & Parking

The only building structure on site is a mobile bathhouse, which the town relocates during the winter months to protect it from storm damage, which has become more frequent and severe due to climate change. Utility poles line the north side of the road, while year-round parking is provided on the south side in the form of a dirt lot. Additional summer parking is available along the west side of the beach as parallel spaces. Existing seawalls are located at both ends of the beach.

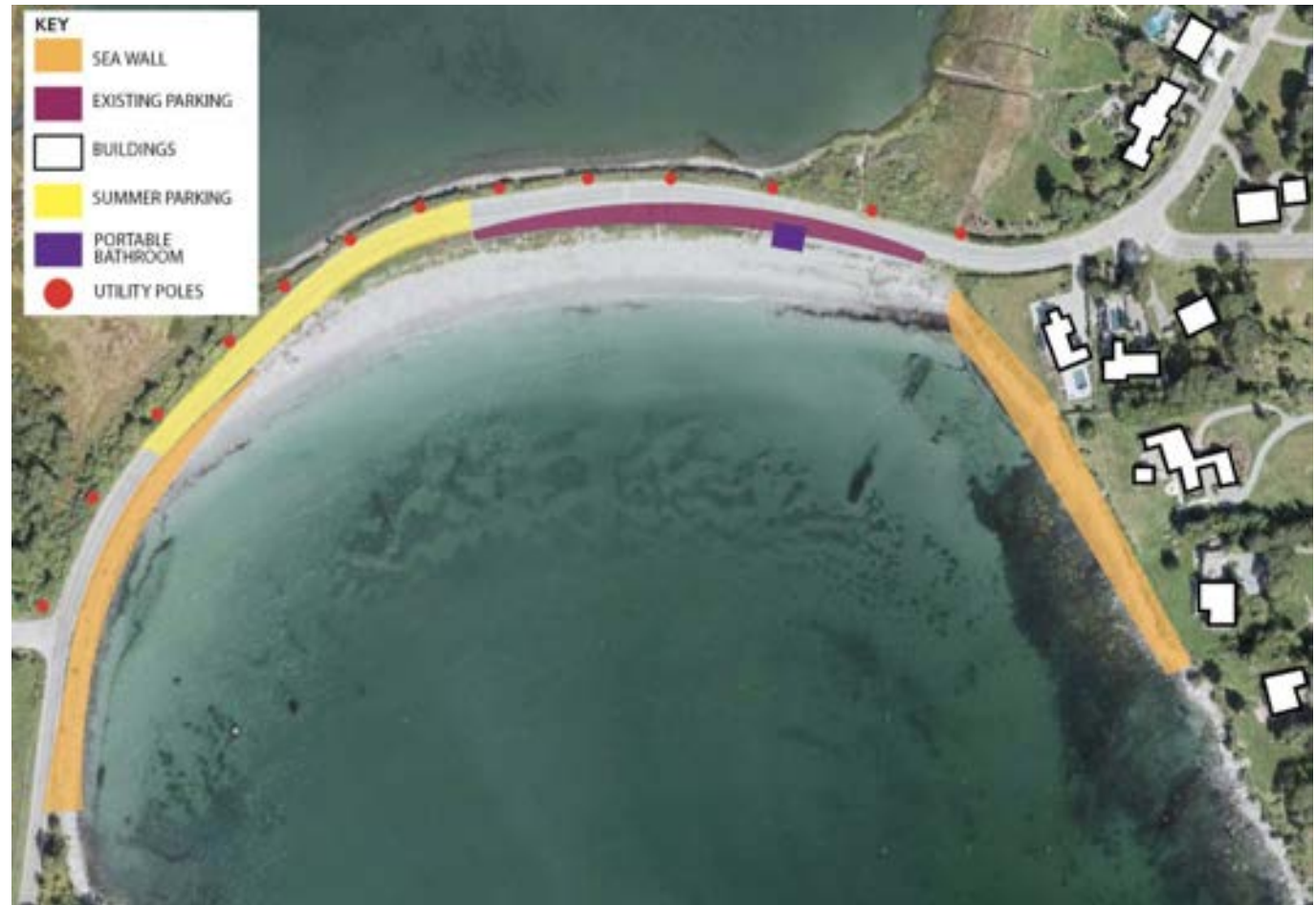
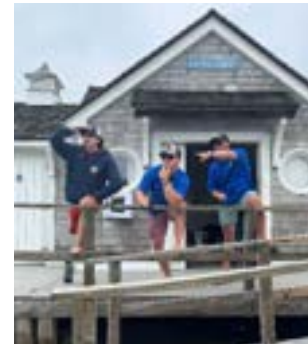


Photo by Emma Curci



Photo source: Google Maps



www.jamestownri.gov/mackerelcove

Circulation & Access

Beavertail Road is the primary access route to Mackerel Cove Beach and the Sheffield Cove waterfront, but the area lacks formal pedestrian pathways, making navigation difficult and raising safety concerns. Without designated walkways, pedestrians are forced to rely on informal routes, and the steep slopes on the Sheffield Cove side further hinder safe access. In addition, numerous unregulated beach entry points cut directly across dune areas, accelerating erosion and threatening the site's ecological integrity.



A kayak launch is located on the northeast end of the site, on the Sheffield Cove side. However, kayaking has become increasingly limited due to sand accumulation in the cove. The launch is hard to find, overgrown and not stabilized.








Photo by Emma Curciv



Photo by Emma Curci



-  PRIMARY VEHICULAR CIRCULATION
-  PRIMARY ACCESS POINTS TO SHORELINE
-  EXISTING CROSSWALKS
-  DIRECTION TO FORT GETTY
-  PEDESTRIAN WALK

Historic Hurricanes & Major Storms since 1930s

- 1938** | **The Great New England Hurricane**
Devastated Jamestown with multiple casualties
- 1944** | **The Great Atlantic Hurricane**
Category two/three with devastating damages
- 1954** | **Hurricanes Carol and Edna**
Caused widespread damage and flooding
- 1960** | **Hurricane Donna**
Destroyed seaside cottages and damaged crops
- 1961** | **Hurricane Esther**
High winds and rough seas
- 1985** | **Hurricane Gloria**
Power outages and widespread wind damage
- 1991** | **Hurricane Bob**
Severe flooding and beach erosion
- 2011** | **Hurricane Irene**
Brought heavy rain and wind damage
- 2012** | **Hurricane Sandy**
Caused major shoreline damage
- 2013** | **Winter storm**
Added to erosion caused by Sandy
- 2022** | **December storm**
Brought wind, rain, and coastal flooding
- 2023-24** | **Winter storms**
Made Beavertail Rd impassable twice in 20 days due to tidal flooding



<https://www.providencejournal.com/>



<https://www.jamestownpress.com/articles/the-great-hurricane-of-1938/>



<https://www.jamestownpress.com/articles/surges-separate-island-into-three/>

Source: RI Hurricanes and Climate Change n.d.; ChaseDay 2024 and Jamestown Press 2025

Mackerel Cove Beach Pavilion Destroyed by the 1938 Hurricane



Source: <https://jamestownhistoricalsociety.org/mackerel-cove-beach-pavilion/>

The pavilion was destroyed by the Hurricane of 1938 after just eleven years of use. Only the cement steps remained, and the roof was later found in a nearby field. Despite its short lifespan, the pavilion played a vibrant role in Jamestown's summer life, drawing hundreds of visitors to the beach and its amenities (Jamestown Historical Society 2023).

In 1927, Jamestown began construction of a beach pavilion at Mackerel Cove, designed by local builder Ralph G. P. Hull. The 272-foot-long structure opened in July 1928 and was initially located on the north side of the road near Sheffield Cove. Due to sewage issues, it was relocated to the south side later that year. The pavilion featured over 100 bathhouses and wide porches, quickly becoming a popular community hub, especially for weekly dances (Jamestown Historical Society 2023).



Source: <https://jamestownhistoricalsociety.org/mackerel-cove-beach-pavilion/>

Shoreline Evolution Timeline



Summer 2022



Spring 2024

Image source: RI GIS & Ocean Engineering/Civil Engineering Capstone Class

After the 1938 hurricane, the shoreline of Mackerel Cove remained largely undeveloped. In 1964, the Rhode Island Audubon Society acquired nearby land, initiating long-term conservation efforts. A dune first appeared in aerial photographs around 1950, and in 1995, a Scout-led restoration project helped stabilize the area. However, Hurricane Sandy in 2012, along with severe storms such as the one in 2022, caused significant damage to the dunes. In response, local community efforts have played a vital role in rebuilding and maintaining this fragile coastal feature, and restoration work continues today.

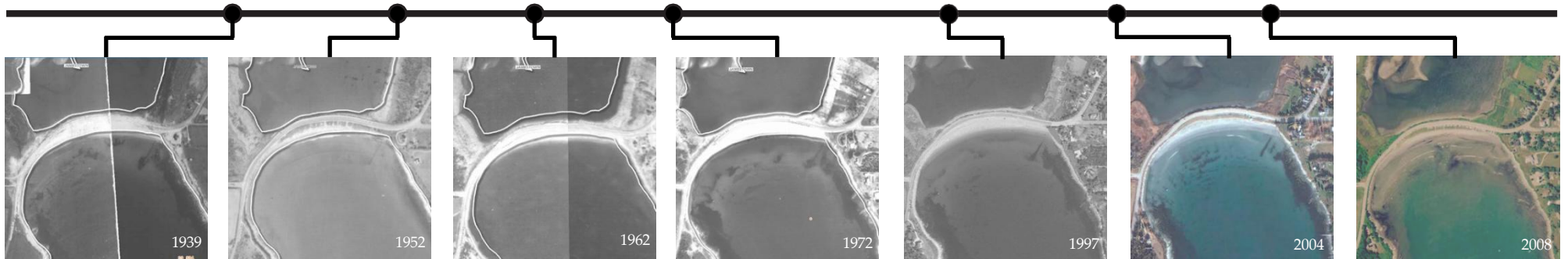
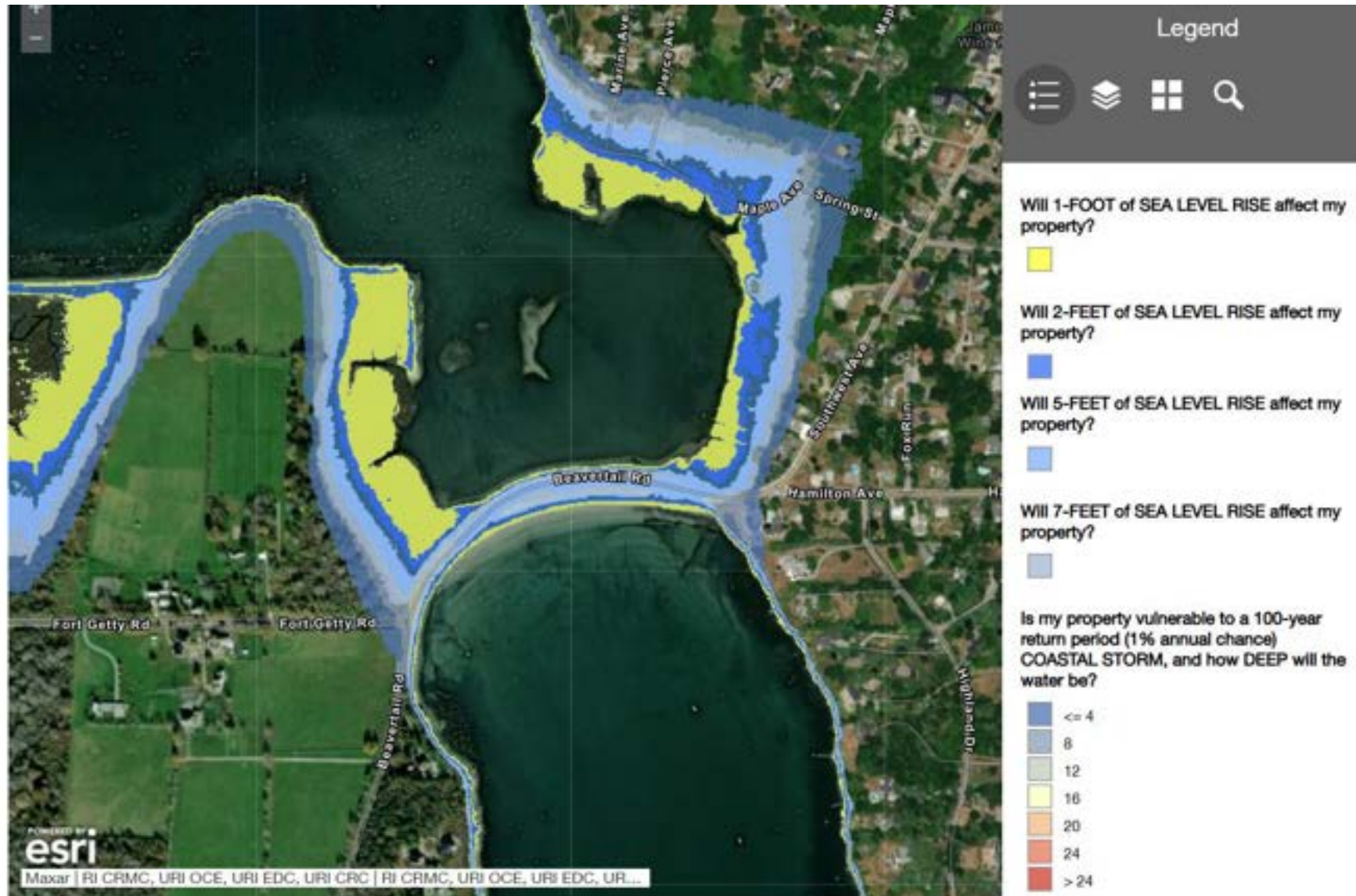


Image source: Google Earth

Sea-Level Rise & Coastal Flooding Risks

The STORMTOOLS map below illustrates projected flooding risks in Jamestown under various sea level rise scenarios (1 to 7 feet) and a 100-year coastal storm event, highlighting areas of potential inundation and water depth. The site area in Jamestown faces significant flooding risks from both sea-level rise and severe coastal storms. Areas are projected to be affected by sea-level increases ranging from 1 to 7 feet, with some properties vulnerable even at the lowest rise. Additionally, a 100-year coastal storm event could result in water depths exceeding 24 feet in certain zones, indicating high vulnerability in low-lying and shoreline areas.





PART III - ENGAGEMENT

Community engagement is a cornerstone of the LAR445 Integrated Capstone Studio. By actively involving local residents, stakeholders, and organizations, students gain invaluable insights into the ecological and social dynamics that shape the coastal areas in Jamestown. This collaborative approach ensures that design solutions are not only innovative and sustainable, but also deeply rooted in the needs and aspirations of the local community.

Each Student

18+ hours

Engaging with communities through

- Site investigations
- Community meetings
- Surveys
- Engagement data collection & assessment
- Multiple design reviews & feedback



58

Attended the Community Workshop
at the Jamestown Town Hall

150 + 137 + 42

Online
activity survey
responses

Online visual
preference survey
responses

Paper survey
responses at
workshop

|

Provided historic information &
suggestions via email

Total **209**
participants

The youngest is 18 years old

The oldest is 84 years old



LET THEM FIGHT



ABOVE: Mary Lenti, 6, from left, Owen Lenti, 8, Josh Shultz, 4, Rhea Stearns, 4, John Lenti, 16, and Colton Sheff, 16, struggle for a snowfall fight Sunday on School Street Avenue after nearly 5 inches of snow fell in Jamestown.



LEFT: John Lenti, 16, runs a snowball.

PHOTOS BY MARY STEARNSON

\$15.6M plan proposed by school admin

BY BRIAN

The school committee was presented with a proposed 2025-26 budget totaling \$17.30 million, which represents a 1.75 percent increase of \$298,248.

The amount needed from taxpayers (\$14.76 million) is \$175,077, or 24 percent, more than 2024-25.

Nearly 60 percent of the budget (\$10.45 million) is salaries and benefits. The superintendent of schools, David Rubinoff, presented the proposed plan to the school committee at its Feb. 5 meeting. "This is really the area of what drives our work," he said. "That would be our portion of an eight-grade program."

The district's mission, according to Rubinoff, is to develop a budget that has the necessary items to provide students with a safe and secure high school with learning

opportunities that are adaptive, inclusive, critical, creative, collaborative and innovative. They also should be ethical, global citizens with social-emotional wellbeing who are able to communicate effectively, he said.

Kristen Lapierre, who chairs the committee, called the budget "fair but not."

"We're not looking at new initiatives, new programs, new curriculum," she said. "We're not asking anything. We're just operating."

Business manager Jane Little-Sold questioned the statement. "Nothing's going to be cut," she said. "Nothing's going to be added."

"I just wanted that point to be made," Lapierre replied. "We're not looking to do anything that is big, new and flashy. We recognize what's happening with inflation and cost of living. We're taking

see BUDGET on page 13

Public workshop set to discuss Mackerel Cove

BY BRIAN

A group of aspiring landscape architects from the University of Rhode Island will meet with local stakeholders to discuss ways to improve the resiliency of Mackerel Cove.

The public workshop will be from 6-9 p.m. Thursday, Feb. 20, at Town Hall. The students will discuss a project that gets underway in the spring to improve landscape resiliency at Mackerel Cove, Sheffield Road and Sheffield Cove. That will include restoration of the dunes to curb the tidal flooding that impacts the area after storms.

The project is part of the capstone project that the 17 students are completing this semester. It complements a related capstone project from a group of engineering students. The Rhode Island Sea Grant is supporting both projects.

Hongying Tang, a professor of landscape architecture at URI who is overseeing the stu-

dents, said this step of the project is to hear their residents about their concerns.

"We think community engagement is extremely important," she said.

Tang said the engineering group proposed a restoration of the dune system, which was built in 1992, including an extension to its length.

"We wanted it's pretty low to the ground," student Tim Piarulli said. "While the capstone projects are related, they talk more a unique purpose. The engineering group, obviously, looks at the restoration from an engineering point of view." Tang said her group will determine the slope of a raised dune and the impact it will have on the parking lot, which is a more spatial point of view.

Tang said her group will determine the slope of a raised dune and the impact it will have on the parking lot, which is a more spatial point of view.

see BRYER on page 14

Tell us lingering effects of COVID on your life

Nearly a year will be the first anniversary of the COVID-19 pandemic, a worldwide health event that killed more than 7 million people among about 777 million cases globally.

It also drastically changed the way we all lived for almost a year, reshaping our behavior in regard to the way we treated basic hygiene to how we interacted with

others to how we shopped, dined out, attended entertainment, adopted the remote and hybrid.

Five years on, remnants of these societal modifications will exist. Whether it's people still wearing masks in public to how adjustments made to business practices continued in place or how certain practices never returned.

We'd like to hear from you about any personal changes

you've maintained or changed. Business and society you've seen that have remained since the pandemic's end.

Please e-mail your anecdotes, notes and personal changes to an editor@jamestownpress.com. Please include the word COVID in the subject line and include some background on the event. All correspondence will remain confidential.



Dept. of Landscape Architecture
 Dept. of Ocean Engineering



COMMUNITY ENGAGEMENT WORKSHOP

photo by Joseph Kull

Join the URI Dept. of Landscape Architecture & Ocean Engineering capstone classes to gather community input on sustainable design solutions for coastal storm-damaged Mackerel Cove Beach and adjacent Sheffield Cove waterfront. Explore coastal resilient interventions to confront climate change and help shape the future of the community. We look forward to your valuable input!

Date: Thursday, February 20

Location: Jamestown Town Hall

Time: 6:00 PM - 8:00 PM

Food served at 6:00-6:30 PM (door opens at 6:00)

Presentation at 6:30 PM (prompt)

RSVP: <https://forms.gle/7zrTm8EFMpj4kz4W7>

College of the Environment & Life Sciences
 College of Engineering



This event is sponsored by RI Sea Grant & Jamestown Conservation Commission



Jay Giesen and Orla Peck, LAR445 senior students, welcoming community members at the Community Workshop

Photo by Hongbing Tang

Community Workshop

February 20, 2025



URI Students and Faculty at the Community Workshop

Photo by Monica Allard Cox

The community workshop, led by the URI Landscape Architecture capstone class, was a collaborative endeavor with the Ocean Engineering/Civil Engineering capstone class. Held at the Jamestown Town Hall on the February 20 night, the event brought together students, faculty, residents, and town officials closed to 80 people, to explore resilient design strategies for the town's waterfront. The workshop was widely promoted through the *Jamestown Press* newspaper and social media, with additional outreach support from the town leaders to ensure strong, inclusive community participation.

Community Workshop

February 20, 2025

The class gathered with 58 participating members of the community of Jamestown. The class conducted and facilitated several activities to better grasp the community's interest and input for the site. Multiple activities were held, which raised multiple questions for the community to answer, such as open-ended concerns about the town beach, as well as rating design reference images. The data was gathered and considered in the students' thought processes for their final designs.



Photo by Monica Allard Cox



Workshop Activity I: General Question Boards

This activity asked two simple questions:

- What are your thoughts on Mackerel Cove Beach?
- What are your thoughts on the Sheffield Cove waterfront across street from Mackerel Cove Beach?

During the community engagement workshop, community members were given sticky notes to answer these questions and placed them on their designated boards. Furthermore, 2 digital surveys were posted online to get more responses. In total, we received 198 public comments on Mackerel Cove and 190 responses on Sheffield Cove when adding all paper notes and digital responses together.

Students later documented the information and identified common concerns across the community. These community inputs were carefully considered and used to inform the students' final designs.

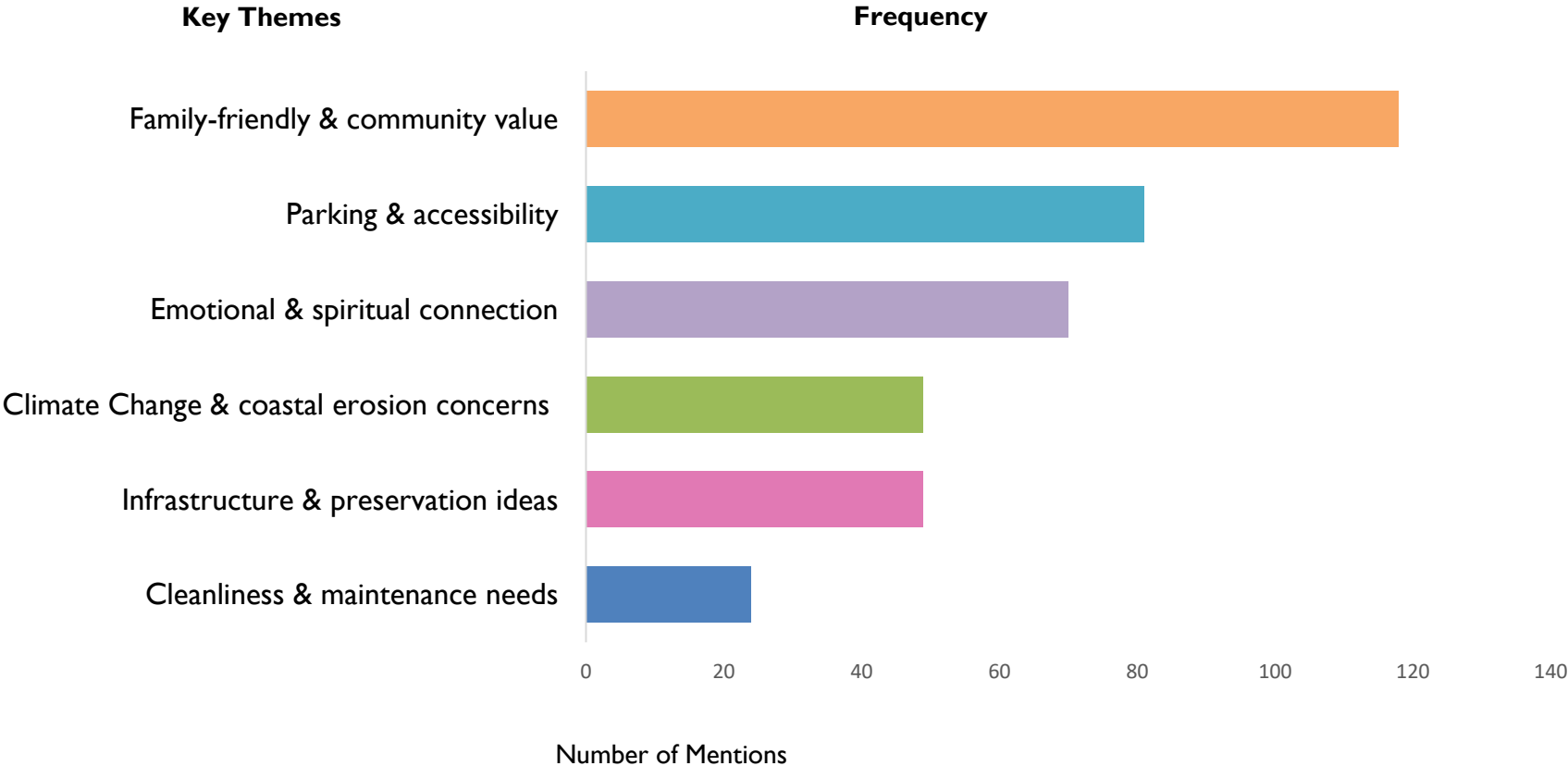


Photos by Monica Allard Cox

What are your thoughts on Mackerel Cove Beach?

Community feedback on Mackerel Cove Beach underscores its value as a family-friendly and community-oriented destination with strong appreciation for its calm waters, scenic beauty and accessibility. Comments reflect concerns about sea level rise, coastal erosion, and the need for resilient infrastructure such as dunes or sea walls. Residents also emphasize the importance of maintaining cleanliness, managing seaweed buildup, and improving parking access. Suggestions include preserving the beach’s natural character while enhancing amenities and ensuring safe, year-round access for all.

Key themes emerged from the public comments on the Mackerel Cove Beach:



Key themes of Public Comments on the Mackerel Cove Beach and Frequency they were mentioned

Source: Community workshop public comments and digital survey responses

Representative Quotes for Each Theme on Mackerel Cove

1. Family-Friendly & Community Value

“Love taking my kids there in the summer. The sand bar and shallow waters are perfect for young kids.” “Absolutely love it for our son because of the small to no waves, shoreline and shallow water/sandbar.” “It is the perfect beach for Jamestown families to enjoy without having to leave the island.” “I love it. It’s super family friendly. It’s a great place for kids to get comfortable in the water.” “Sweet beach for kids.”

2. Parking & Accessibility

“Parking is a big issue, that needs some thought for improvement.” “It’s so overcrowded in the summer I often cannot park.” “Resident parking should be a priority in the sticker season instead of day passes.” “Many will be concerned about losing parking spots. It is a scarcity in the summer.” “Pedestrian traffic crossing from Mackerel to Sheffield Cove.”

3. Emotional and Spiritual Connection

“It is a spiritual home for my family that I love and hope can be preserved.” “I absolutely love Mackerel Cove. I go there after work to read, swim and watch sunsets.” “It is a beautiful and special place.” “Love it ❤️” “It’s a treasure for Jamestown residents.”

4. Climate Change & Coastal Erosion Concerns

“It is in danger of disappearing due to climate change.” “Erosion is a serious problem.” “I love it but it’s at risk because of the rising sea levels.” “It’s beautiful and peaceful it needs protection from climate change.” “Concerned with its constant erosion and cutting off beavertail with big storms.”

5. Infrastructure & Preservation Ideas

“Add landside dune protection and stabilization. Fencing where needed with dune walkover path structures” “It needs a sea wall like Narragansett beach and first beach to prevent the sand from washing over the road.” “Eventually we need a bridge and then we should let the sea shape the beach and cove.” “Could use better bathrooms / changing area.”

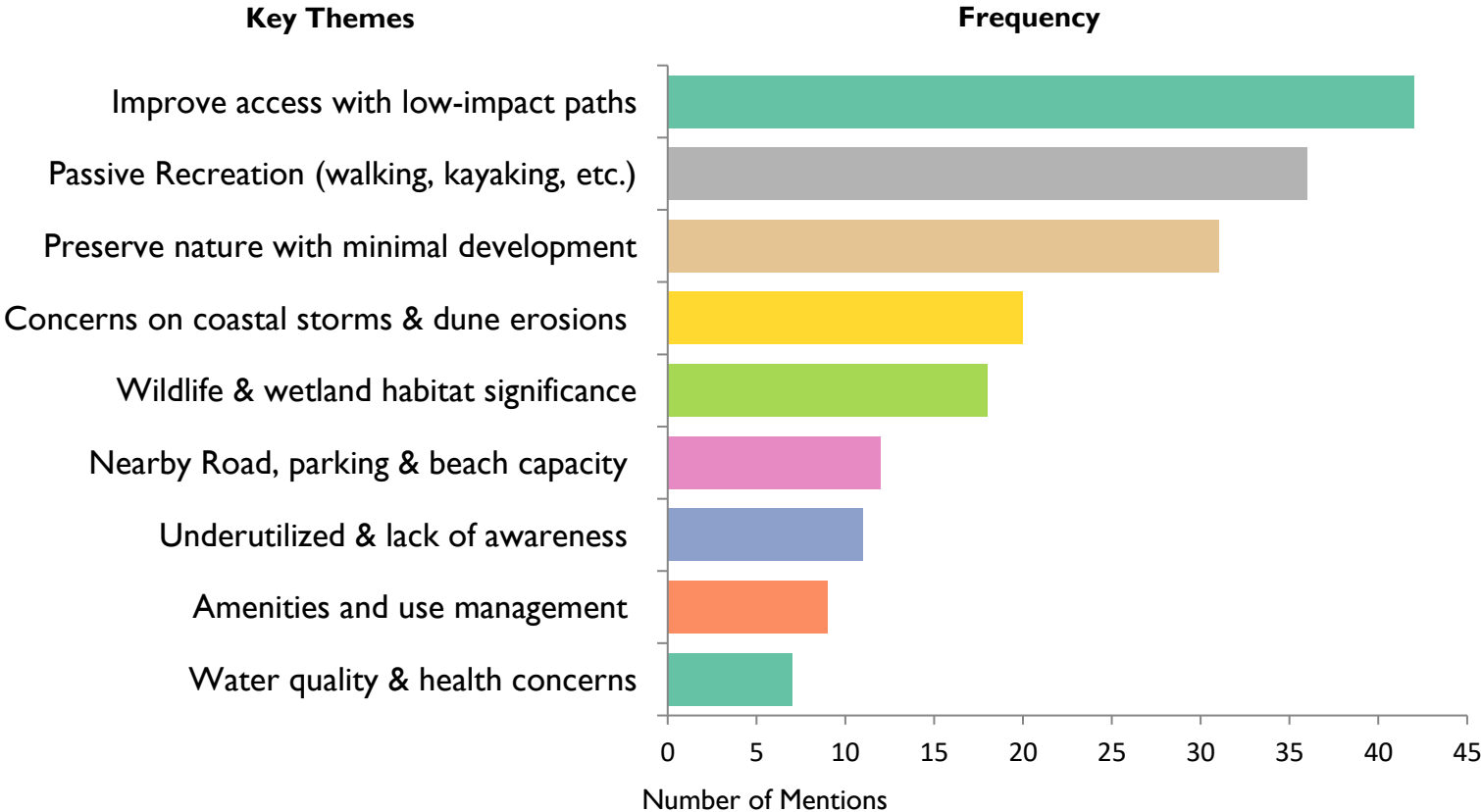
6. Cleanliness & Maintenance Needs

“It was very dirty last time I was there.” “Love it but needs seaweed cleaned up better in the summer.” “I wish it were raked more often.” “There is a seaweed problem that needs to be addressed.” “I do wish that the kids that work there during the summer pick up the trash on the beach each day.”

What are your thoughts on the Sheffield Cove waterfront across street from Mackerel Cove Beach?

Community feedback highlights strong support for preserving Sheffield Cove’s natural character and wildlife habitats, providing clearly marked low-impact access paths, and focusing on passive, low-impact uses, e.g., walking, kayaking, bird-watching. Additional notes emphasize storm/dune resilience and practical concerns about parking capacity and views when considering roadway changes and dune footprints on Mackerel Cove Beach side.

Key themes emerged from the public comments on the Sheffield Cove waterfront:



Key themes of Public Comments on the Sheffield Cove waterfront and Frequency they were mentioned
 Source: Community workshop public comments and digital survey responses

Representative Quotes for Each Theme on Sheffield Cove

1. Improve access with low-impact paths

“Access is tricky.” “Would be nice to see some boardwalks with benches.” “The lack of paths make Sheffield Cove tough to access.” “This is a great place for exploration, but access is confusing and not well marked. - I think people don’t realize you can access that area - many think it’s off limits.”

2. Passive Recreation (walking, kayaking, etc.)

“Great place for kayaking.” “A great place to paddleboard. Too shallow for any other recreation.” “Sheffield Cove is an ideal location for kayaking and sailing instruction.”

3. Preserve nature with minimal development

“I would keep it as is - such a gem/sanctuary/special place!” “Natural oasis.” “Keep it simple.” “Leave as wild as possible.” “Quiet and beautiful, untouched, the way it should be.” “A great spot for birding particularly because the access is limited. Let’s keep it that way.”

4. Concerns on coastal storms & dune erosions

“It is also at risk from climate change and erosion from the creek running into it.” “Sea level rise concerns.” “Will a hurricane from the south wipe out the design we are evaluating today?” “Raise the road and build a wall similar to Narragansett Town Beach.”

5. Wildlife & wetland habitat significance

“Important marine habitat. Deserves protection.” “Sheffield Cove and the surrounding salt marsh is a valuable wildlife habitat, and shellfish habitat.” “Needs to be kept as a sanctuary for wildlife & birds.” “Being able to sit away from the busy crowd at Mackerel Cove and watch the horseshoe crabs is such a gift. A treasure!”

6. Nearby road, parking & beach capacity

“Beautiful area - wish parking was free/available to residents via Fort Getty.” “Concern: It seems we will not preserve any parking. That's a problem.” “Mackerel Cove parking is not effectively designed. More cars could fit if spaces had clear designation.” “We won’t be able to see the water when we drive by (considering the dune height increase proposed by engineer students).”

7. Underutilized & lack of awareness

“I was not aware that this is a public space.” “Underutilized.” “I don’t know a lot about it.” “No opinion as I’ve never used it.”

8. Amenities & use management

“Several safe environmentally sensitive designed access paths would be best.” “Maybe a bench to look at the water and a bathroom in the summer.” “We could have better access from the road and a kayak ramp.” “More rack space or parking to bring my paddle board.”

9. Water quality & health concerns

“Water is more stagnant, would not go swimming.” “I worry about bacterial count and the still water at times becomes home for snails which can lead to a mean case of Cercarial dermatitis (clam diggers itch)...” “It seems fine the way it is, it's mucky so it's hard to do anything there.”



Photo by Monica Allard Cox

Activity II: Activities & Visual Preference Surveys

To better understand Jamestown residents' perspectives on Mackerel Cove Beach and the Sheffield Cove waterfront, community members were invited to participate in two paper surveys during the community workshop. The first was an activities survey, where participants circled all the activities that they engage in at Mackerel Cove Beach. This helped students gain insight into how the community currently uses the space.

Following the in-person workshop, two digital surveys were launched online, generating 150 additional responses for beach activities and 143 for design preferences from a broader and more diverse group of participants. In total, 150 residents participated in the online surveys, alongside 42 residents who completed paper surveys during the workshop. Together, these responses provided valuable insights that helped inform and shape the students' design priorities.



Image 1 www.ica.com/projects/hamilton-beach-dune-restoration/
Mamhattan Beach Dune Restoration



Image 2 www.shutterstock.com
Hampton Beach, NH



Image 3 www.budgettravel.com
Hampton Beach, NH



Image 4 <https://www.americanroads.org>
Bridge with walkway - Clear Creek Trail in Wheat Ridge, Colorado



Image 5 www.shutterstock.com
Boardwalk through a marsh and wetlands at Sabine National Wildlife Refuge in Louisiana

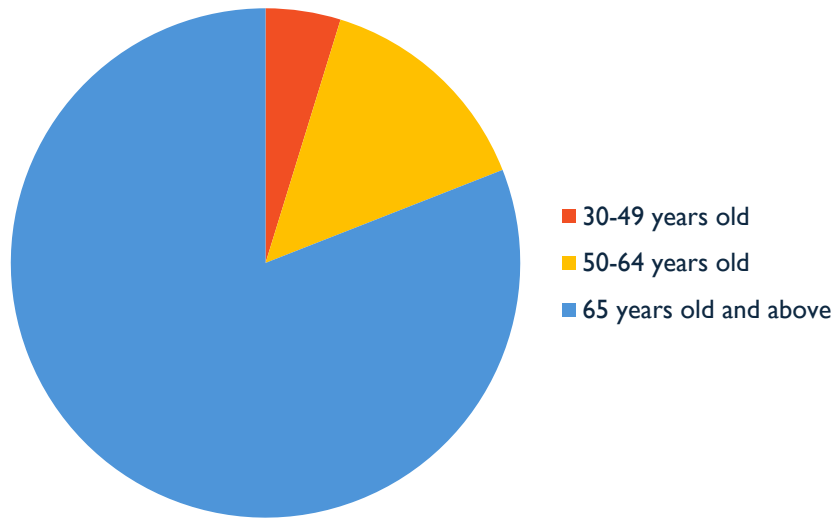


Image 6 www.betweent7.com

Sample design reference images

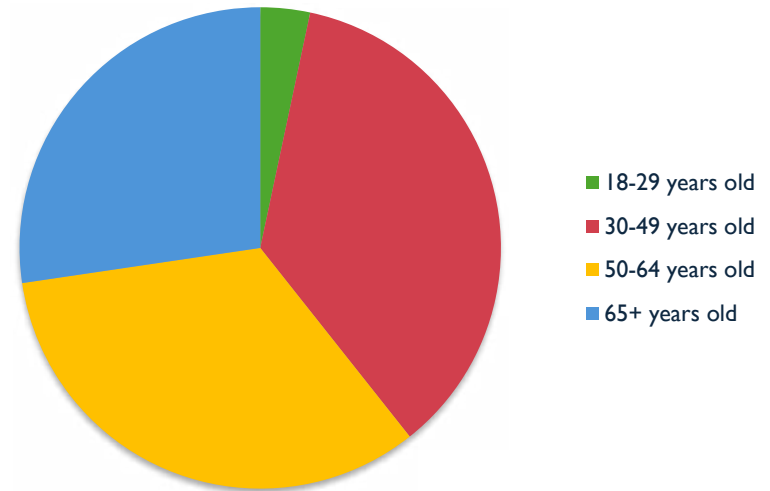
Survey Sample Demographics - Age Range

Comparing the paper and digital survey participants, the digital survey captured a more balanced age distribution, aligning more closely with Jamestown’s actual demographics. While older adults were overrepresented in the in-person workshop responses, the online survey included a broader range of age groups, offering a more representative snapshot of the community.



Age Range	Participants	Percentage
18-29 years old	0	0%
30-49 years old	2	~ 4.8%
50-64 years old	6	~14.3%
65+ years old	34	~80.9%
Total	42	100%

In-person workshop survey participants

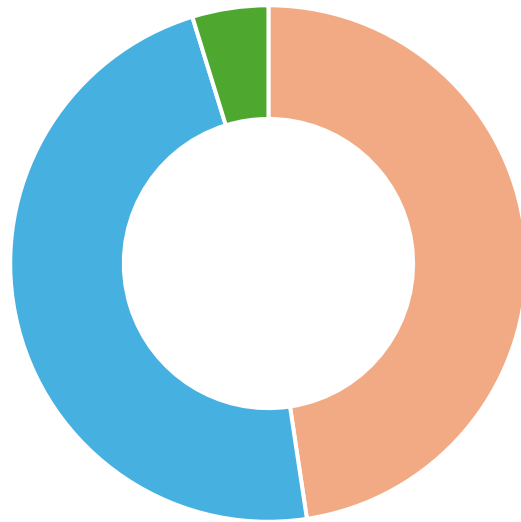


Age Range	Participants	Percentage
18-29 years old	5	~3.3%
30-49 years old	54	36%
50-64 years old	50	~33.3%
65+ years old	41	~27.3%
Total	150	100%

Digital survey participants

Survey Sample Demographics - Gender

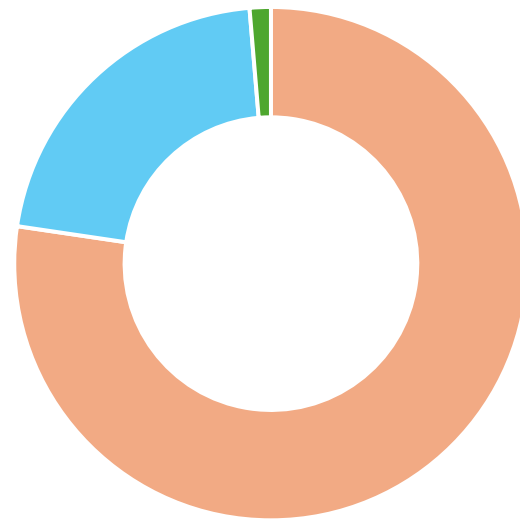
The gender distribution of survey participants varied between the in-person workshop and the digital surveys. The in-person survey showed an equal split, while the digital survey was predominantly female. Compared to Jamestown’s overall gender demographics, which are relatively balanced, the digital survey showed a higher proportion of female participants, suggesting that women were more likely to engage with the online format. While both surveys provided valuable input, the in-person responses more closely reflect Jamestown’s overall gender demographics.



Female Male N/A

Gender	Participants	Percentage
Female	20	~47.6%
Male	20	~47.6%
N/A	2	~4.8%
Total	42	100%

In-person workshop survey participants



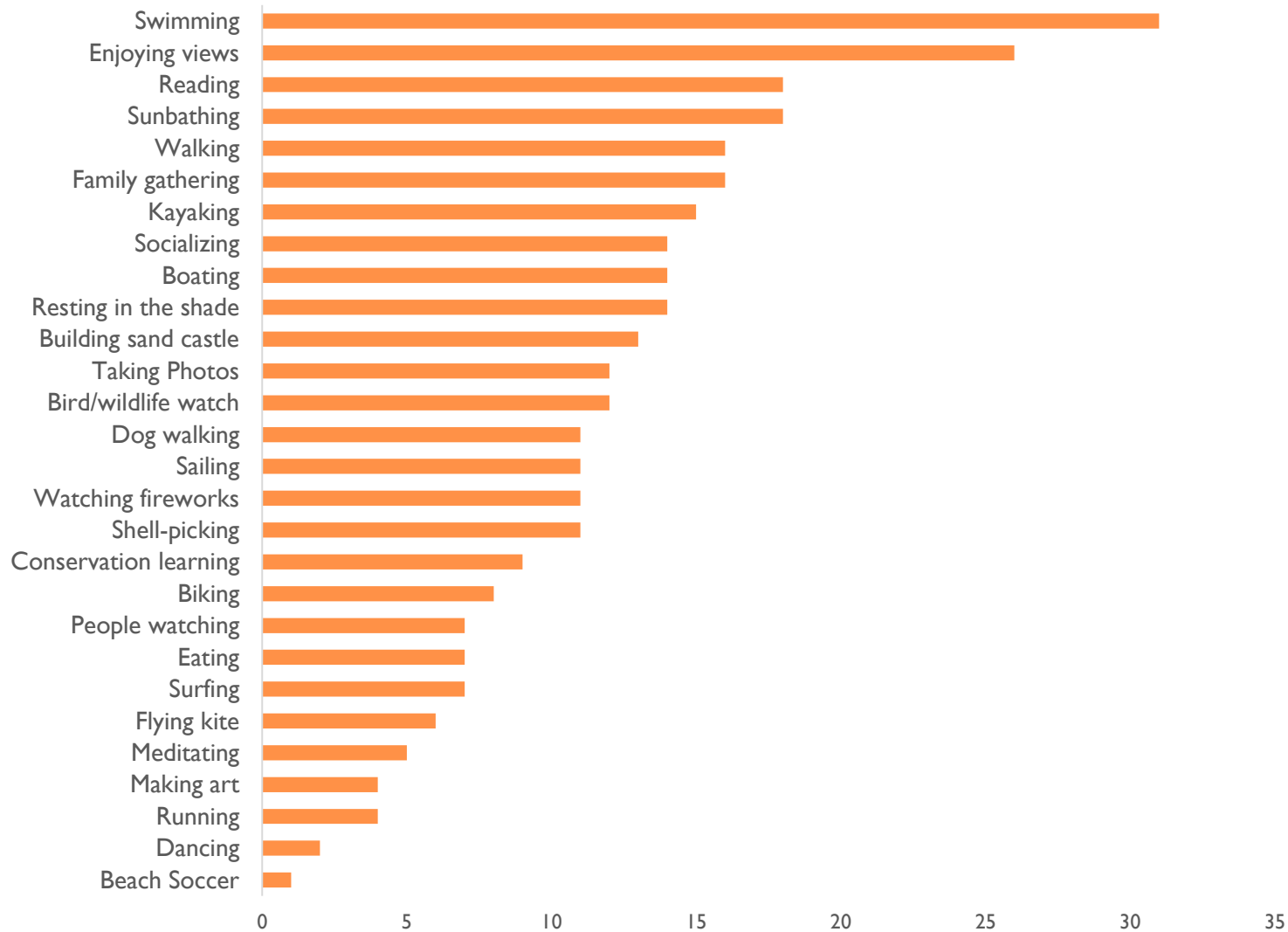
Female Male N/A

Gender	Participants	Percentage
Female	116	~77.3%
Male	32	~21.3%
N/A	2	~1.3%
Total	150	100%

Digital survey participants

Results of Paper Survey on Activity Types

In addition to the given multiple choices, residents listed more activities during the community workshop, including Romance, Paddle boarding, Clamming ,Watching sunset, Sunset picnic, Rock picking, Hunting for local coral.

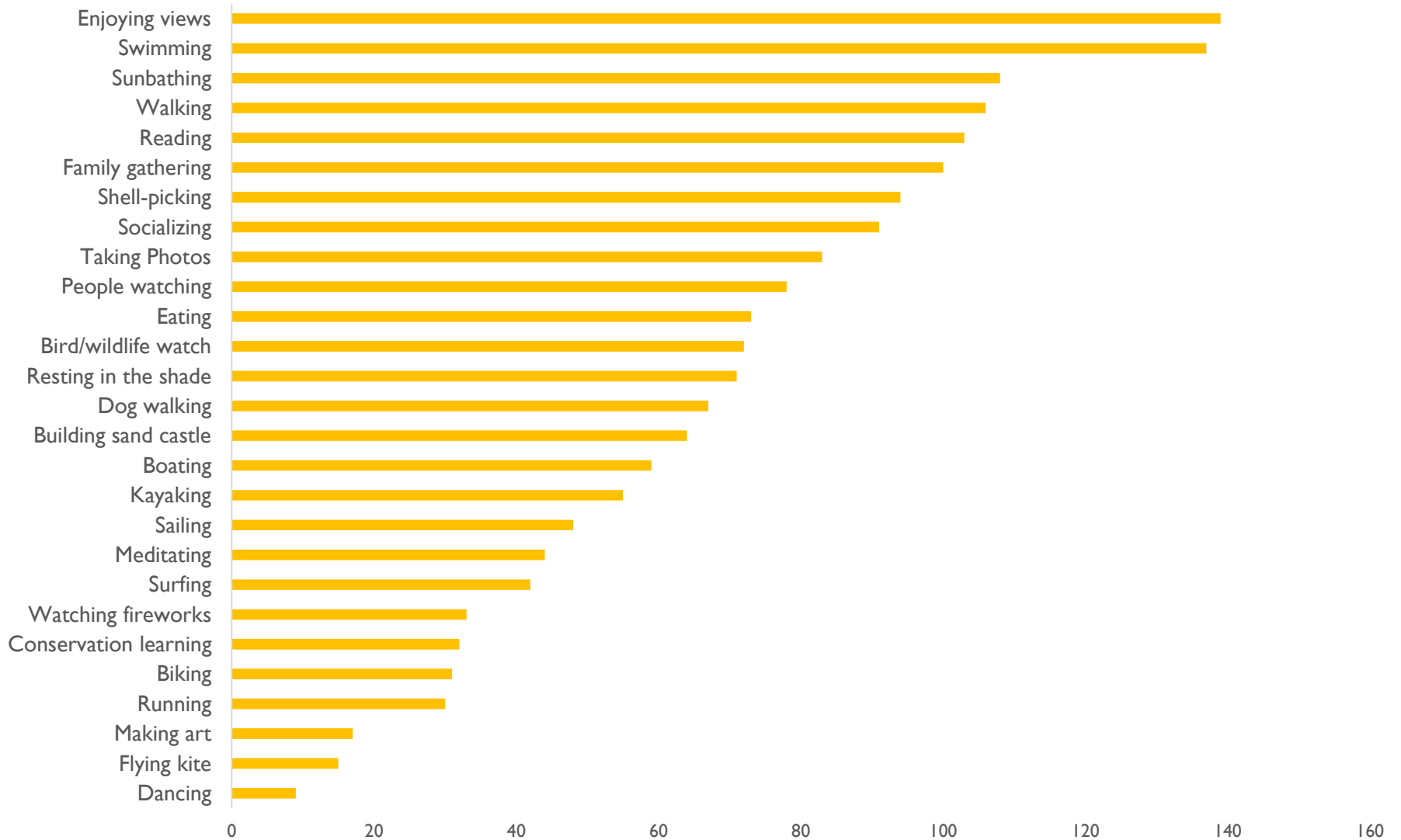


Activity types at Mackerel Cove Beach and Sheffield Cove Waterfront

Source: Community workshop paper survey and online digital survey responses

Results of Online Digital Survey on Activity Types

Additional activities listed by the participants: Paddle boarding (7), children playing, Wading, Clamming, Fishing, Nature study, Sound bath with local yogis, Saunas, Working, Dogs swimming, Del's, Body surfing, etc.



Activity types at Mackerel Cove Beach and Sheffield Cove Waterfront

Source: Community workshop paper survey and online digital survey responses

Combined Survey Result on Activity Types:

The paper and digital survey results show general alignment in the types of activities residents enjoy at Mackerel Cove and Sheffield Cove, with both highlighting popular uses such as swimming, walking, sunbathing, and enjoying views. However, the digital survey captured a broader and more diverse range of responses, likely due to its larger sample size and accessibility. It included more wellness-oriented and niche activities like sound baths, saunas, and nature study, while the paper survey offered more personal and locally rooted responses such as romance, sunset picnics, and hunting for coral. Overall, while both surveys reflect similar core recreational patterns, the digital survey provided a more comprehensive snapshot of community use.

Romance
Paddle Boarding
Clamming
Watching Sunset
Sunset Picnic
Rock Picking
Hunting for Local Coral

In-person Workshop Paper Survey Results

Nature Study
Paddle boarding
Stand up paddle boarding
Relaxing
Wading
Working
Sound Bath with Local Yogis
Body Surfing
Play with Children
Fishing
Saunas
Having Refreshment - Del's
Letting Dogs Swim at Sheffield
Clamming at Low Tide
Finding a Parking Space...

Digital Survey Results

Additional Activity types at Mackerel Cove Beach and the Sheffield Cove Waterfront

Source: Community workshop paper survey and online digital survey responses

Summary of Visual Preference Survey Results

In the Visual Preference Survey, participants were asked to rate 18 design reference images selected by the LAR Capstone class on a scale from 1 to 5. A rating of “5” indicates the strongest positive response, showing that the participant felt the image was highly appropriate, appealing, or desirable for the design of Mackerel Cove Beach, Beavertail Road, or Sheffield Cove. In contrast, a rating of “1” means the image was not liked at all or considered most unsuitable for the area.

Based on the combined results of the Visual Preference Survey, comprising 137 digital responses and 42 paper submissions from a total of 179 participants, several consistent themes emerged across the image preferences and comments. The feedback reflects a broad range of community perspectives on coastal design elements, revealing consistent views across both formats that highlight community opinions, concerns, and priorities for future planning.

I. Preference for Natural and Restorative Landscapes

Images featuring dune restoration, native vegetation, and boardwalks through wetlands received the highest ratings across both paper and digital format surveys. Respondents favored designs that felt natural, soft, and ecologically integrated. These landscapes were seen as visually appealing and appropriate for the local coastal character, with many participants supporting the use of native plantings and unobtrusive materials.



Image 5

source: Adobe Stock

Image 5: Boardwalk through a marsh and wetland at Sabine National Wildlife Refuge in Louisiana
136 responses

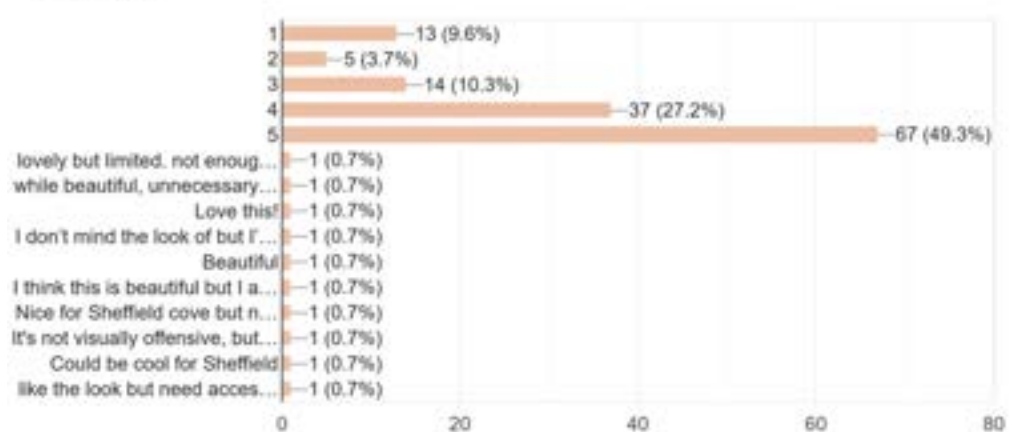


Image 5 Preference Digital Survey Result Visualization

Summary of Visual Preference Survey Results (Continued)

2. Resistance to Hard Infrastructure

Images showing seawalls, concrete bridges, and urban-style boulevards were disliked. Comments reflected concerns about visual intrusiveness, loss of beach access, and industrial aesthetics. Many respondents expressed a desire to avoid designs that felt too modern, sterile, or Southern California–like, preferring softer, more organic interventions that preserve the natural shoreline.

3. Mixed Views on Signage and Sculptures

Interpretive signage was viewed as useful for education and awareness, but opinions were divided on its visual impact. Some respondents appreciated informative elements, while others preferred minimal signage to maintain a clean and natural look. Sculptures received similarly mixed feedback. Some found them uplifting or culturally enriching, while others felt they distracted from the natural environment.



Image 7

source: Adobe Stock

Image 7: Signage "Just Dune It" – A Coastal Dune Restoration Project in San Diego
137 responses

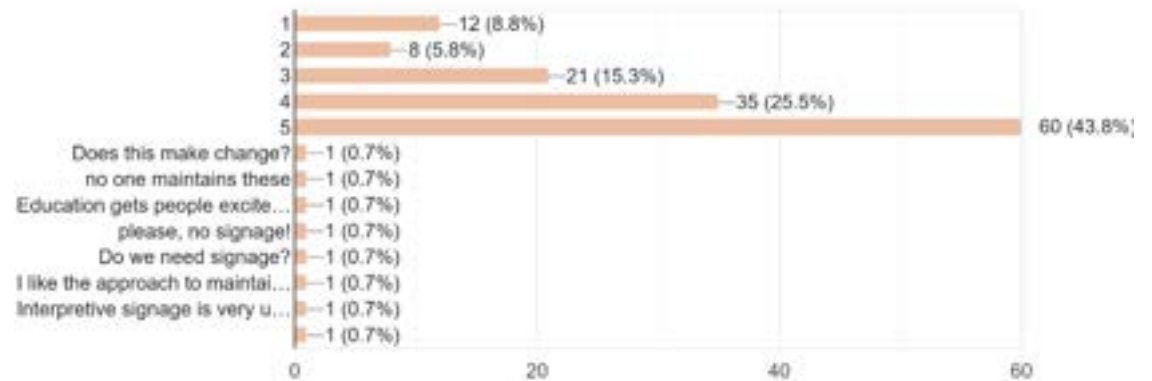


Image 7 Preference Digital Survey Result Visualization

4. Accessible design is widely supported

Accessibility elements such as ADA beach mats, handicap ramps and accessible entrances were widely supported. Respondents emphasized the importance of inclusive access for all visitors, especially in areas with uneven terrain or dune systems. While some noted concerns about visual impact, the overall sentiment favored functional and equitable design solutions.



Image 18 wheelchairmanitoba.com/listing/category/water-sports/

Image 18 ADA Beach Access Mat

135 responses

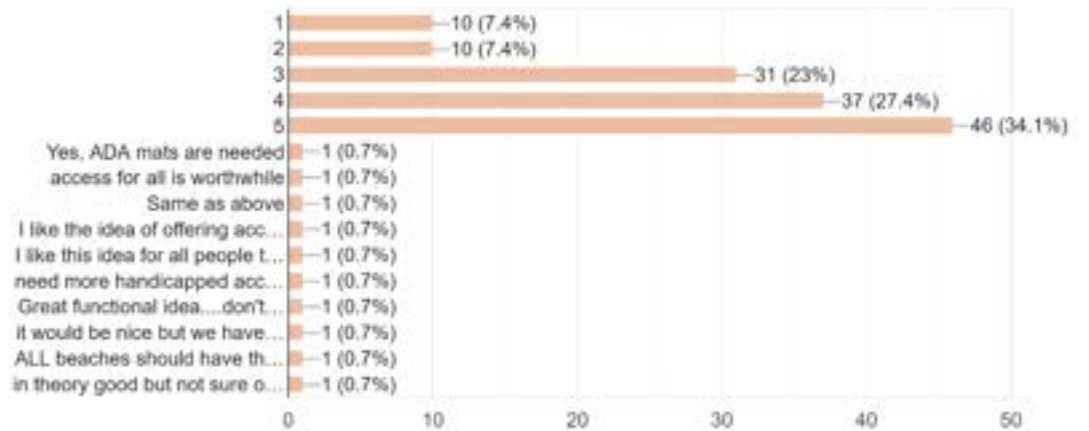


Image 18 Preference Digital Survey Result Visualization

5. Alternative Transportation and Public Amenities

Bike lanes, vendor carts, and bus stops received moderate support. These features were appreciated when they enhanced convenience and reflected local character, such as Del's Lemonade carts. However, there was caution about over-commercialization and traffic impacts, especially in areas with limited space or ecological sensitivity.

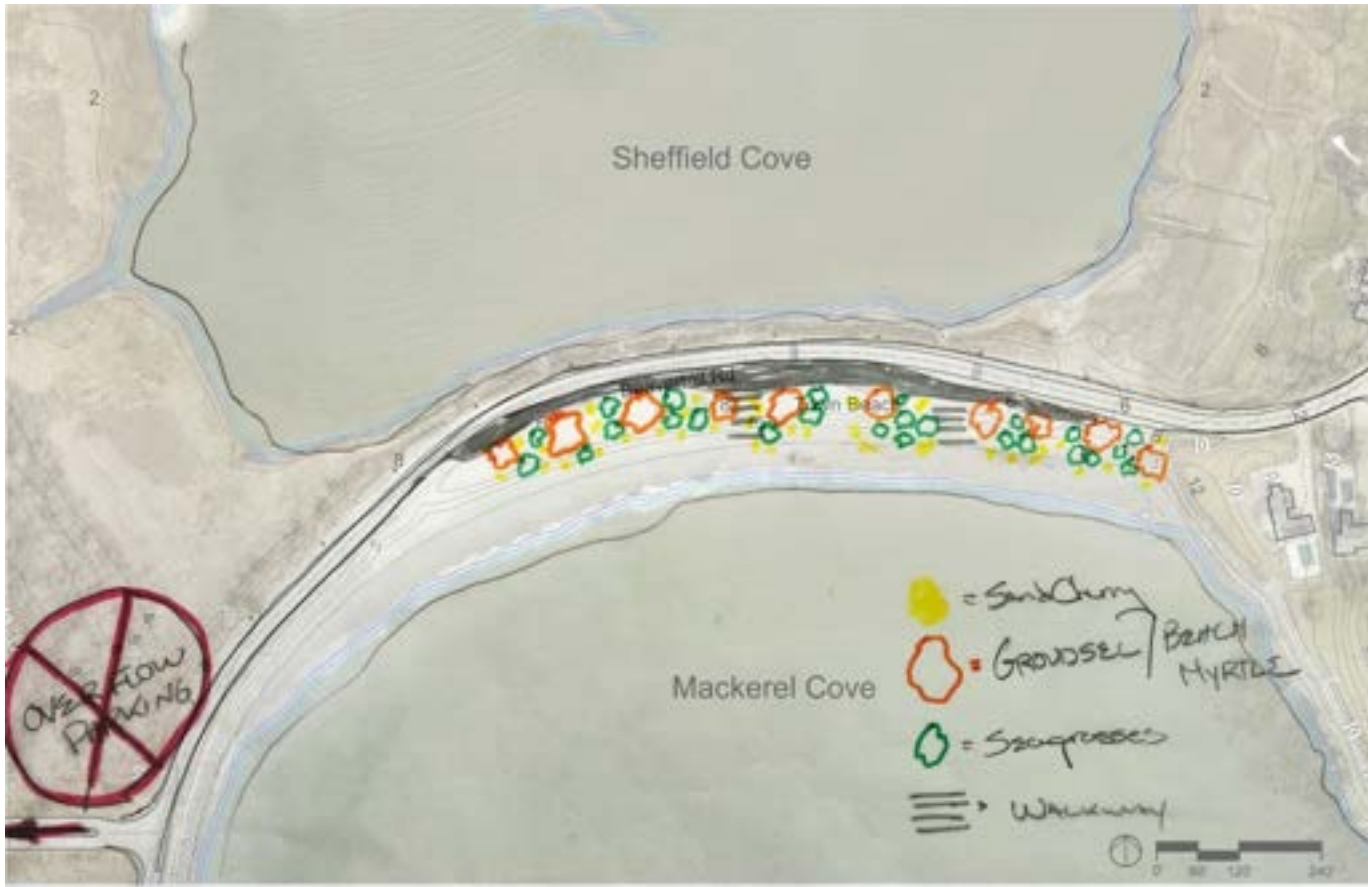
Workshop Activity III: Design Charrette

A design charrette is a commonly used activity to allow community members to collaboratively brainstorm design solutions for a project. For our design charrette, we gave the community members an aerial photograph of Mackerel and Sheffield Coves. From there, members were allowed creative freedom to annotate their ideas for what the beaches could become. The students later analyzed the community's ideas and used them to influence their final designs.



Photos by Hongbing Tang

Workshop Activity Three: Design Charrette



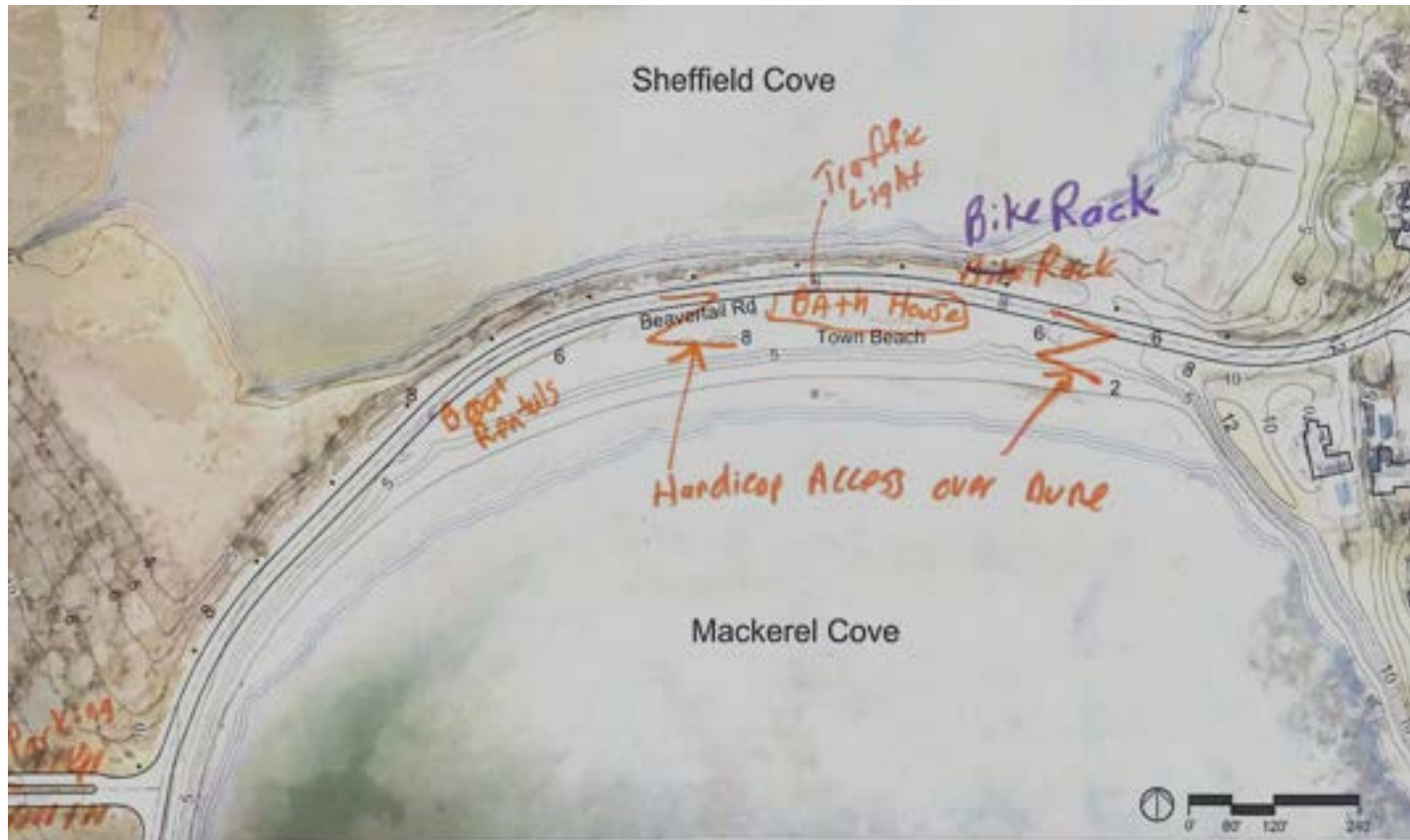
Community Sketch Example

Above is a concept sketch created by a community member during the community workshop. The design includes clusters of diverse dune vegetation, such as sand cherries, beach myrtles, and beachgrasses, planted along Beavertail Road, with walkways that allow beachgoers to navigate easily through the space. A key priority is to minimize on-site overflow parking, instead advocating for off-site parking with visitors walking to Mackerel Cove Beach.



Photo by Hongbing Tang

Workshop Activity Three: Design Charrette



Community Sketch Example

This community sketch shows thoughtful design improvement ideas for the area, integrating practical and inclusive features. It adds multiple amenities, including a centrally located bath house, a bike rack near the eastern edge, and boat rentals on the western side. Two handicap-accessible walkways over the dune area along the south side of Beavertail Road improve mobility for all visitors. A traffic light is placed at the crosswalk in the center of the road. Additional roadside parking is proposed along adjacent Fort Getty Road in the southwest area.



Photo by Monica Allard Cox

Workshop Activity Three: Design Charrette



Community Sketch Example



Photo by Hongbing Tang

This community sketch outlines a basic design for the coastal area, featuring bathrooms, parking, a fishing pier, and food vendor carts. The existing road is turned into a pedestrian boardwalk running along the beach, paralleled by a proposed elevated roadway north of it for vehicle access. Key amenities are clearly marked, offering an unconventional idea aimed at preserving critical access as coastal conditions shifted due to climate change.

What We Learned from the Community Workshop

Following the community workshop, the students began organizing the data gathered from the three activities.

The General Questions Boards allowed the students to quickly grasp how the community in Jamestown views Mackerel and Sheffield Coves. Notes like “Keep it simple” and “Concern: MC has lost a lot of beach. These dunes will take up a lot of beach” provided a baseline assessment of community priorities. These comments offered direct insight into local concerns and preferences.

The Visual Preference Surveys helped students grasp which design elements, materials, and spaces the community values. Many responses emphasized the importance of preserving natural landscapes and improving accessibility. This furthers the understanding that the public wants to keep the beach simple.

Similarly, the Activity Survey informed students how the public utilizes the beach. For example, most people spend their time doing activities such as walking, swimming, enjoying views, and family gathering. This allows students to make critical design decisions about what design elements they would like to add to the beaches, since there is limited space.

The Design Charrette was a very informative activity, as it gave the students ideas of what the public wants to see on their own beach and waterfront. Students analyzed each sketch done by the community members and incorporate ideas that reflect public interest and support a resilient future for Mackerel and Sheffield Coves.



Photos by Monica Allard Cox



PART IV - DESIGN

Studio Design Process marks the evolution from initial research, site investigation, and community engagement to the development of site-specific concepts. In this process, students translate public input, ecological data, and spatial analysis into preliminary design strategies and refine the schemes through multiple design reviews in midterm, schematic, and final design stages, featuring guest critiques from faculty, professionals and community leaders. The evolving concepts reflect a growing understanding of local priorities and environmental challenges, laying the groundwork for resilient and community-informed design solutions.

Concept Diagrams

At the design stage, nineteen students were organized into six teams, each with three or four teammates. Guided by research, site analysis and community input, the teams proposed a variety of innovative and sustainable design concepts in response to the site's environmental challenges.

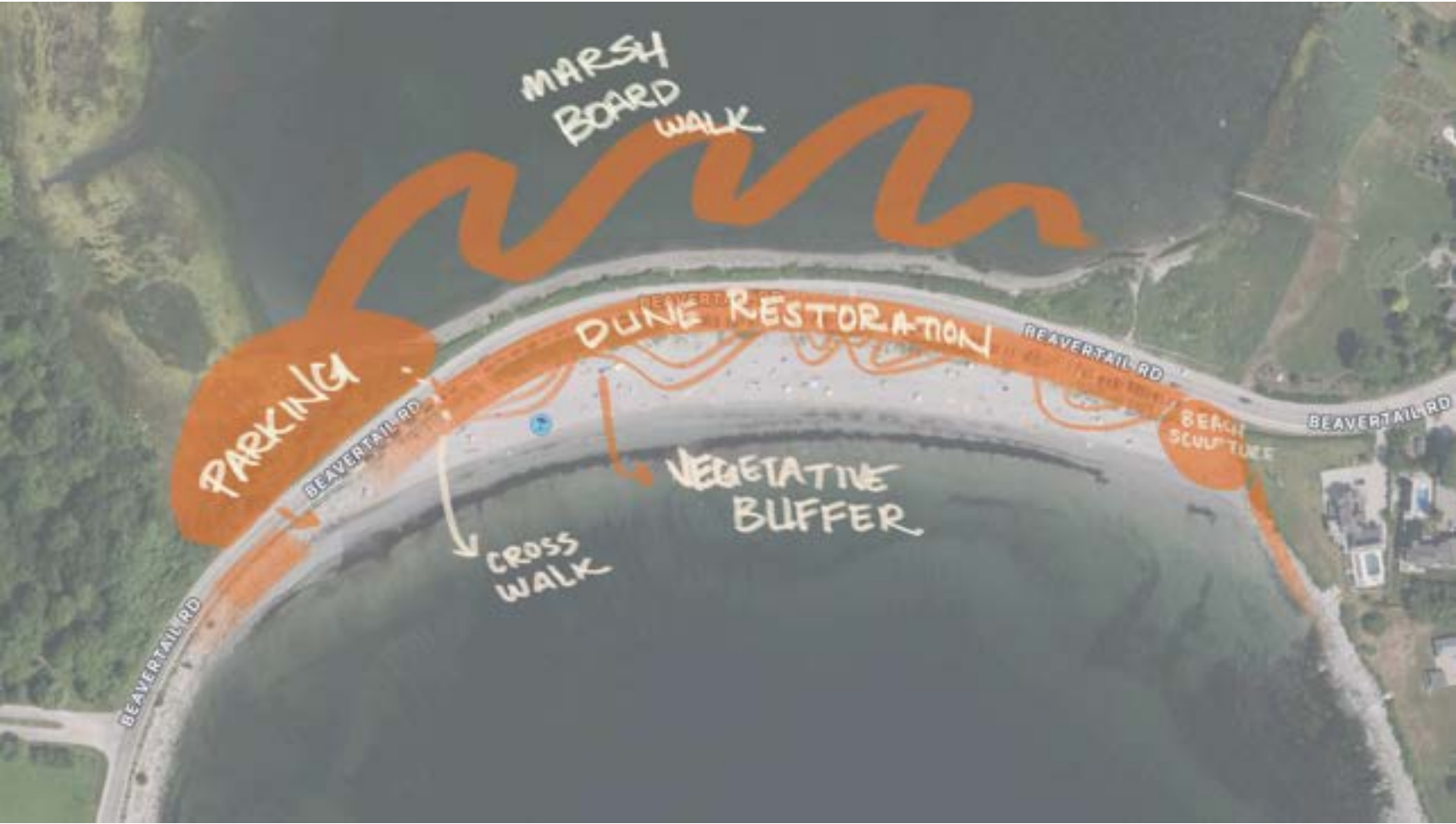
During the initial concept design phase, students frequently produced hand sketches on tracing paper or digital drawings on iPad to quickly explore and communicate their “big ideas.” This approach enabled them to respond quickly and creatively to complex site conditions, such as those found at Mackerel Cove, Beavertail Road and Sheffield Cove.



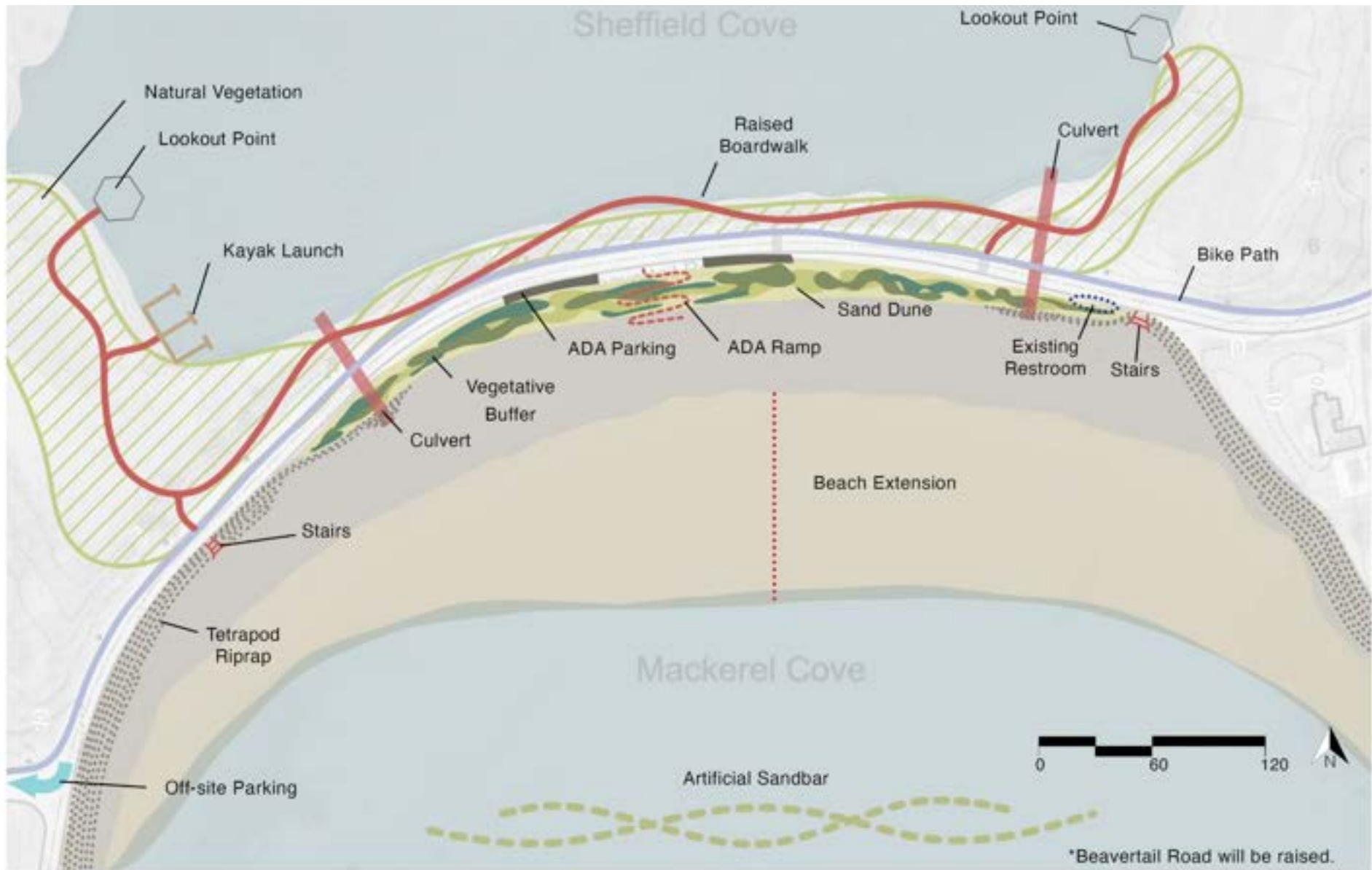
Photo by Monica Allard Cox

Students were encouraged to use bubble diagrams to outline site zones and general design concepts. A bubble diagram is a simple, conceptual sketch used in the early stages of design to organize and visualize spatial relationships. It uses circles or "bubbles" to represent different zones, functions, or areas of a site, showing how they relate to one another in terms of proximity, size and flow, without focusing on precise dimensions or details. It's a quick way to explore layout ideas and communicate design intent.

The concept diagram below proposes a series of site improvements fostering ecological restoration and public use. A marsh boardwalk guides visitors through the landscape from the parking area along Beavertail Road, while crosswalks connects to a restored dune zone that buffers the shoreline. The diagram also includes a beach sculpture area, encouraging cultural and recreational use alongside environmental stewardship.



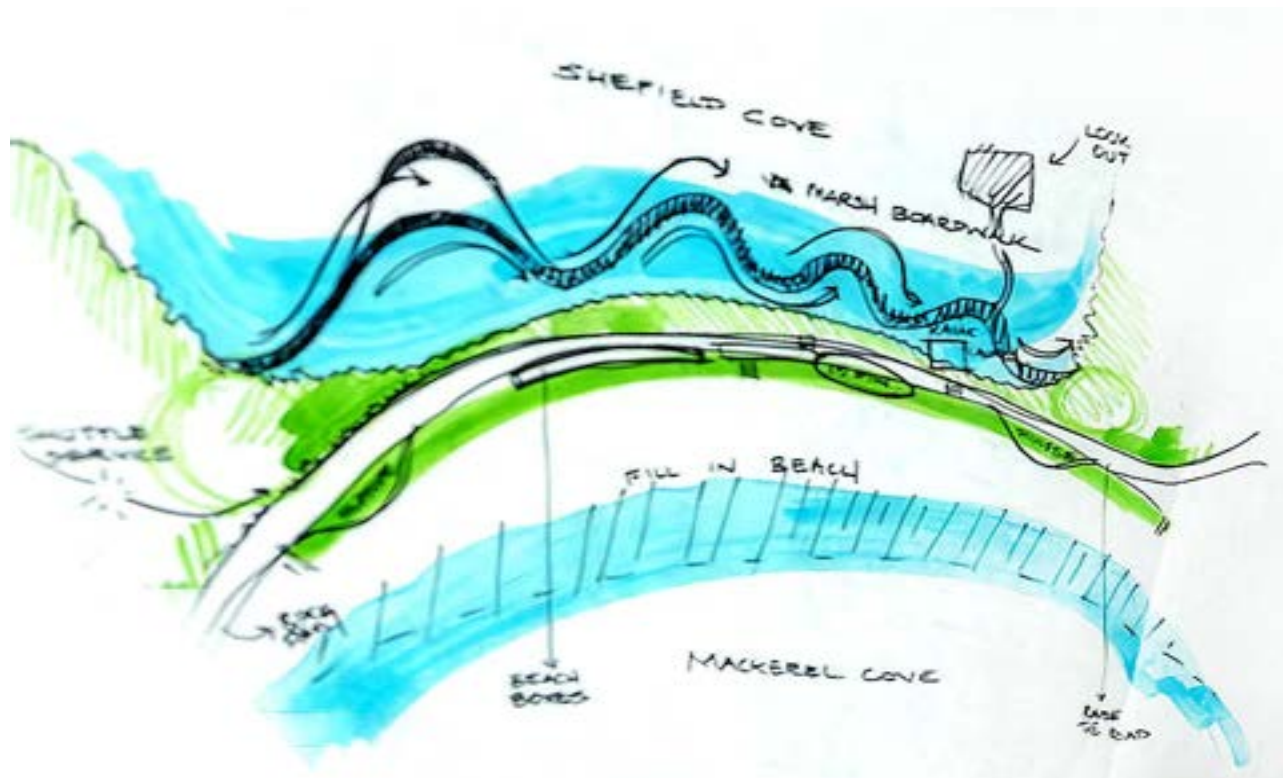
Bubble Diagram by Aisha Malik



Bubble Diagram by Student Team: Spencer Asofsky, Stephanie Nordhoff, and Tim Purcell

This concept diagram illustrates a vision for improving ecological resilience and public access at Mackerel and Sheffield Coves. Key features include a raised boardwalk to protect vegetation, sand dune restoration for shoreline stability, and amenities such as ADA ramps, lookout points, a kayak launch, culverts, and an artificial sandbar, balancing recreation, accessibility, and environmental protection.

The hand-drawn concept sketches below illustrate students' proposal for beach nourishment at Mackerel Cove, an approach that involves adding sand to eroding areas to restore and expand beach width and volume. The sketch plan on the left highlights the proposed "fill in beach" area at the Mackerel Cove waterfront, showing how the extension integrates with nearby amenities such as vegetated dunes, proposed beach boxes, the marsh boardwalk, as well as the lookout point at the Sheffield Cove side. The perspective sketch on the right depicts the winding marsh boardwalk, framed by natural vegetation and interpretive signage, reinforcing the project's ecological and educational goals.



Concept Sketches by Student Team: Aisha Malik, Katherine Ruzzo, and Orla Peck

Design Reviews

Design reviews are vital checkpoints in the design process, offering opportunities for critique and refinement. They allow students to present work, receive feedback from faculty, professionals, and community members, and make informed adjustments. Reviews at key stages - midterm, schematic design, and final, help clarify design intent, improve quality, and ensure alignment with ecological, cultural, and community goals.

Mid-term Review

On March 20, 2025, the LAR445 Capstone Class held its midterm presentation and review. Nineteen senior students presented preliminary design concepts to enhance the resilience of Mackerel Cove Beach and the Sheffield Cove waterfront. The review panel included Jamestown Town Council Member Mary Meagher, Conservation Commission Chair Dr. Anne Kuhn-Hines, and URI faculty members Gavin Zeitz and Courtney Goode. Students shared site analyses, assessment and their “big ideas” to address climate change impacts, proposing nature-based solutions such as dune restoration, elevated boardwalks, and a “complete street” concept for Beavertail Road to improve pedestrian safety. The class received valuable feedback from faculty and Jamestown community leaders, reflecting a collaborative effort to integrate ecological, engineering, and community perspectives into sustainable coastal design.



Photos by Monica Allard Cox

Schematic Design Review

On April 17, 2025, the LAR445 Capstone Class conducted a schematic design review, presenting progress work for Mackerel and Sheffield Coves. This session served as a follow-up to the midterm review, prior to the final end-of-semester critique. The review panel featured a distinguished group including Emeritus Landscape Architecture Professor Will Green, FASLA; guest reviewer Seth Berkowitz, a licensed architect and landscape architect as well as adjunct professor at Roger Williams University; Jamestown Conservation Commission Chair Dr. Anne Kuhn-Hines. Landscape Architecture Program Director Dr. Jane Buxton joined the review after her class as well. Students shared their evolving schematic designs and received constructive feedback from faculty, professionals, and community leader, helping to refine their proposals and strengthen alignment with ecological, cultural, and design objectives.



Photos by Hongbing Tang

Final Review

On April 29, 2025, the LAR445 Capstone Class presented their final designs for Mackerel and Sheffield Coves to a panel of reviewers at the Higgins Welcome Center on the University of Rhode Island's Kingston campus. This final review featured six student teams presenting innovative design solutions that addressed shoreline erosion, accessibility, and ecological restoration. The review panel included Jamestown Town Planner Lisa Bryer, Town Council Member Mary Meagher, Conservation Commission Chair Dr. Anne Kuhn-Hines, URI Emeritus Professor Will, Green, Landscape Architecture faculty members Dr. Jane Buxton, Gavin Zeitz and Courtney Goode, along with Rhode Island Sea Grant Coordinator Kimberly Ohnemus and Communications Director Monica Allard Cox. Students provided physical models for the public to visualize their design concepts. Reviewers provided constructive design critiques and praised the students' innovative and creative proposals, noting their potential to inform future planning efforts in Jamestown.



Photo by Monica Allard Cox



Photo by Hongbing Tang

Final Review



Photo by Hongbing Tang



Photo by Monica Allard Cox



Group photo after the final review at the Higgins Welcome Center at URI

Photo by Monica Allard Cox



Photo by Hongbing Tang



Final Schematic Design

The final schematic design solutions of the LAR445 Capstone Class are the culmination of a semester's hard work, grounded in multidisciplinary research, site investigation, area analysis, community input, and students' dedicated effort, guided through in-depth design reviews. Drawing from public surveys, community meetings, and ecological assessments, students translated community values into six visionary design schemes, reimagining Mackerel Cove Beach, Beavertail Road, and the Sheffield Cove waterfront. These final designs highlight creative problem-solving and environmental sensitivity, reflecting both short-term priorities and long-term coastal resilience.

Scheme One - Natural Systems

Mason Tomaino, Richard King, Hao He

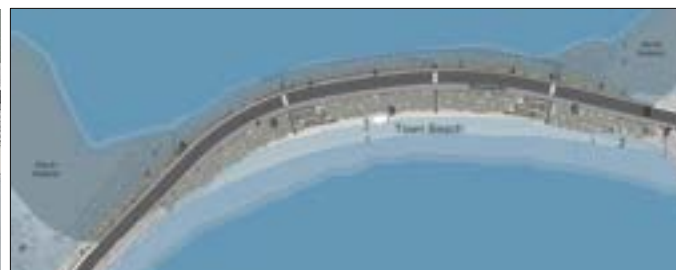


This design scheme addresses coastal flooding and sea-level rise through a system of nature-based solutions. A large, continuous dune system is proposed along the existing roadway, maintaining the current road elevation, with the dune crest reaching 12 feet above sea level (NAVD 88). Building on recommendations from Ocean Engineering / Civil Engineering Capstone Class, the existing dune would be raised by 5.5 feet to absorb storm surge and prevent washouts. The dune is stabilized with native grasses and coastal plantings to ensure long-term resilience. ADA-compliant ramps are incorporated to maintain beach access, while existing parking is preserved along the road. To promote recreation functions and connectivity, the plan includes a fishing dock at the southwest end of the beach and a boardwalk with a kayak launch along the Sheffield Cove side.

Schematic Landscape Plan



VEGETATION DIAGRAM



SEA-LEVEL RISE DIAGRAM



CIRCULATION DIAGRAM

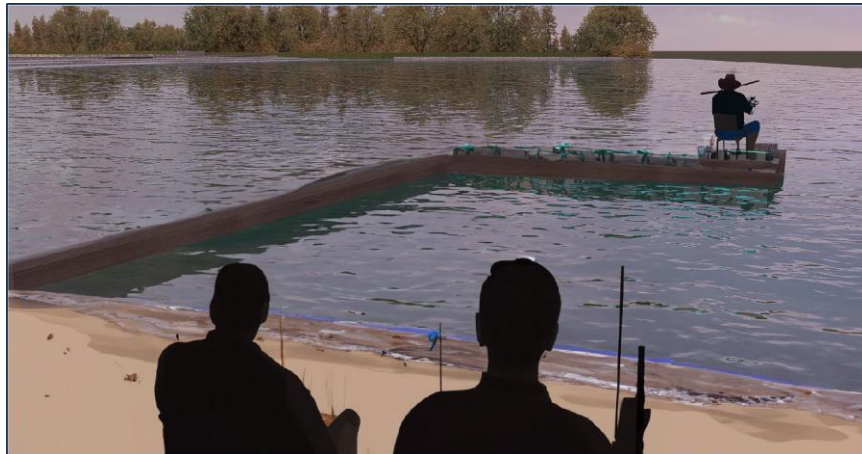
Scheme One - Natural Systems

Mason Tomaino, Richard King, Hao He

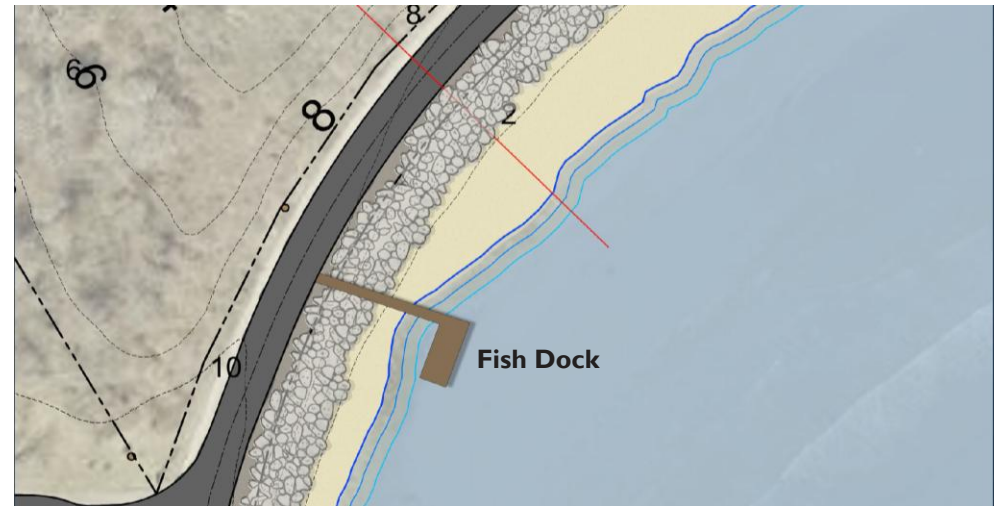


Focus Area Section Enlargement

This scheme responds directly to valuable community input. The concept has been carefully developed to reflect the community's commitment to keeping Mackerel Cove Beach and the Sheffield Cove waterfront as natural and untouched as possible.



Focus Area Perspective



Focus Area Plan Enlargement



Scheme One - Natural Systems

Mason Tomaino, Richard King, Hao He



Dune Restoration Enlargement Plan



Dune Restoration and Plant Material Section



Dune Restoration Perspective

		
Seaside Goldenrod <i>Solidago sempervirens</i>	Coastal Little Bluestem <i>Schizachyrium littorale</i>	Northern Bayberry <i>Morella pensylvanica</i>
☀️ Low	☀️ Low	☀️ + Lapt shade
5-15 Late summer	2-3,3 ft	5-12t Rediah berries
		
American Beach Grass <i>Amnophila brevifluta</i>	Bitter Panicum <i>Panicum amarum</i>	American Dune Grass <i>Leymus mollis</i>
☀️ Low	☀️ Low	☀️ Low
1-2 fet	3-6 ft	2-4 ft

Scheme Two - Elevated Bridge Design for Long-Term Coastal Resilience

Sam Bowen, Jay Giesen, Adam Giroux

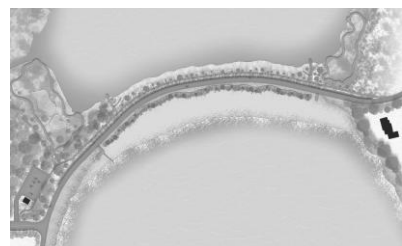


This design scheme envisions a transformative approach to addressing sea-level rise and coastal flooding in the long run by replacing the vulnerable low-lying section of Beavertail Road with an elevated bridge structure. The bridge is engineered to withstand a 50-year storm event, with the finish grade elevation significantly above the mean higher high water (MHHW) level and storm surge projections of up to 12 feet. The elevated roadway preserves critical access for residents and emergency services while allowing natural coastal processes to continue underneath.

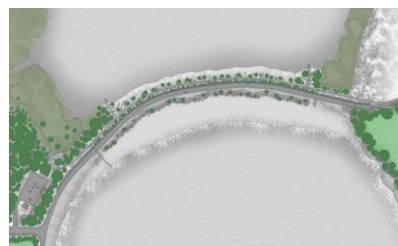


AXONOMETRIC

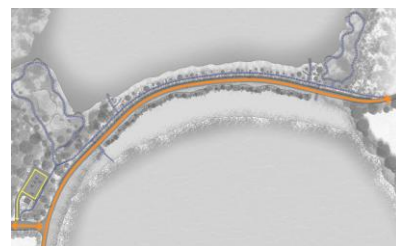
Schematic Landscape Plan



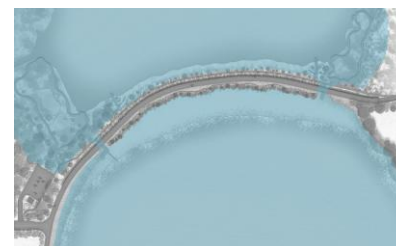
CONCEPT DIAGRAM: ARCHITECTURE



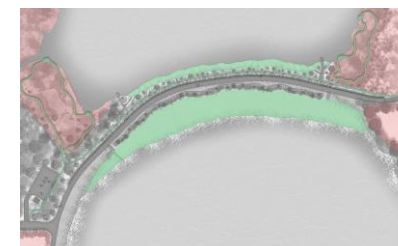
CONCEPT DIAGRAM: VEGETATION



CONCEPT DIAGRAM: CIRCULATION



CONCEPT DIAGRAM: 6' FLOOD MAP



CONCEPT DIAGRAM: PRIVATE VS PUBLIC

Scheme Two - Elevated Bridge Design for Long-Term Coastal Resilience

Sam Bowen, Jay Giesen, Adam Giroux



Bird's-eye View Perspective



Focus Area Perspective



Focus Area Plan Enlargement



Focus Area Section Enlargement

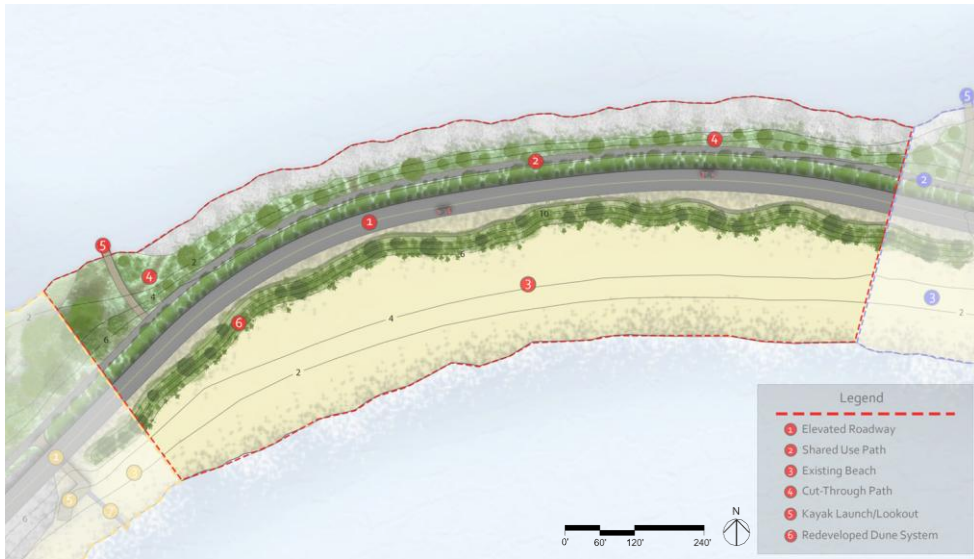


Section

Scheme Two is integrated with a shared-use path, ADA beach access, and boardwalk trails that connect to recreational features such as a kayak launch, lookout points, and rest areas. This scheme reflects a forward-thinking, infrastructure-based solution that complements ecological restoration efforts and ensures long-term adaptability to climate change impact.

Scheme Two - Elevated Bridge Design for Long-Term Coastal Resilience

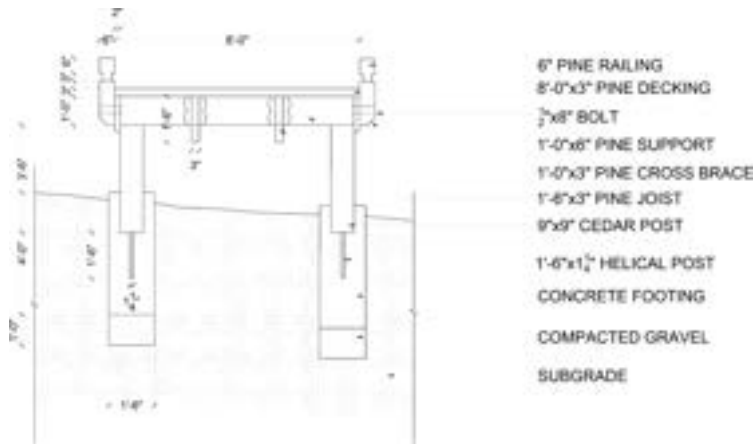
Sam Bowen, Jay Giesen, Adam Giroux



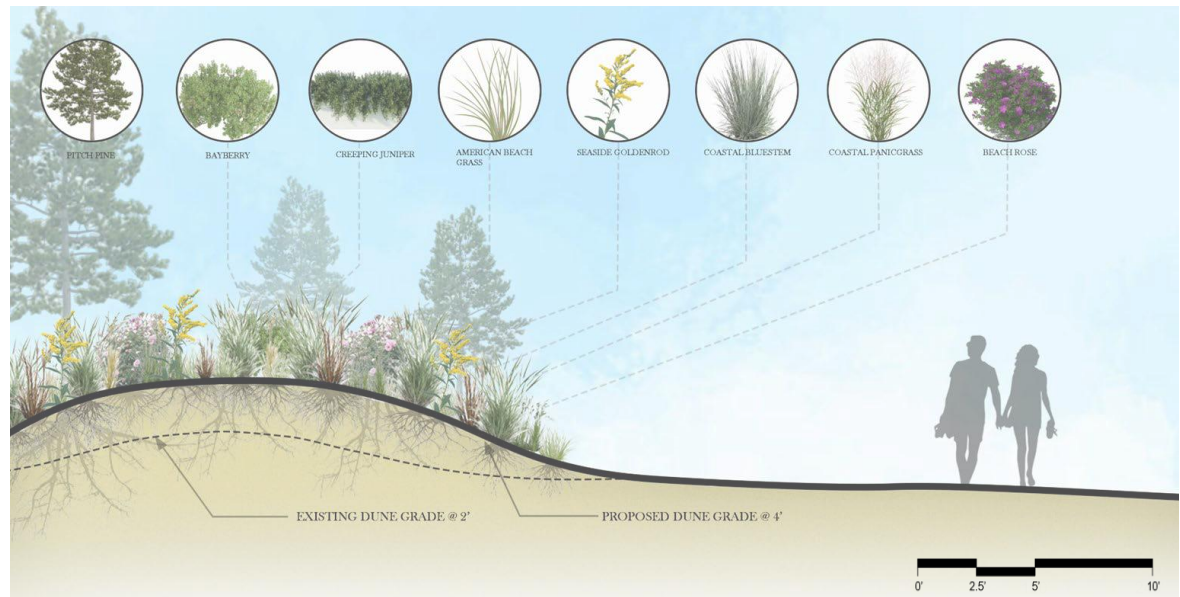
Dune Restoration Enlargement Plan



Dune Restoration Perspective



BOARDWALK DESIGN DETAIL



DUNE RESTORATION SECTION

Scheme Three - Community-Focused, Nature-Based Solution

Orla Peck, Katherine Ruzzo, Aisha Malik



Scheme Three proposes raising the road to 10 feet above sea level and constructing a continuous dune system with a crest 2 feet higher than the elevated road for flood protection. This nature-based approach preserves open views to the beach and ocean while incorporating dune restoration with native plantings, beach nourishment, and ADA-accessible paths and walkovers to improve accessibility and circulation. Durable beach boxes are integrated into the boardwalk and pedestrian paths for community beach storage rentals, enhancing both accessibility and public use. Additional amenities for the community include kayak launch, bathhouse, and bike paths to support recreation and coastal resilience.

Schematic Landscape Plan



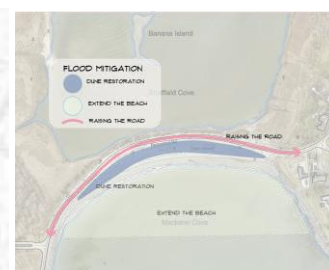
CONCEPT DIAGRAM



FRAMEWORK PLAN



PEDESTRIAN CIRCULATION



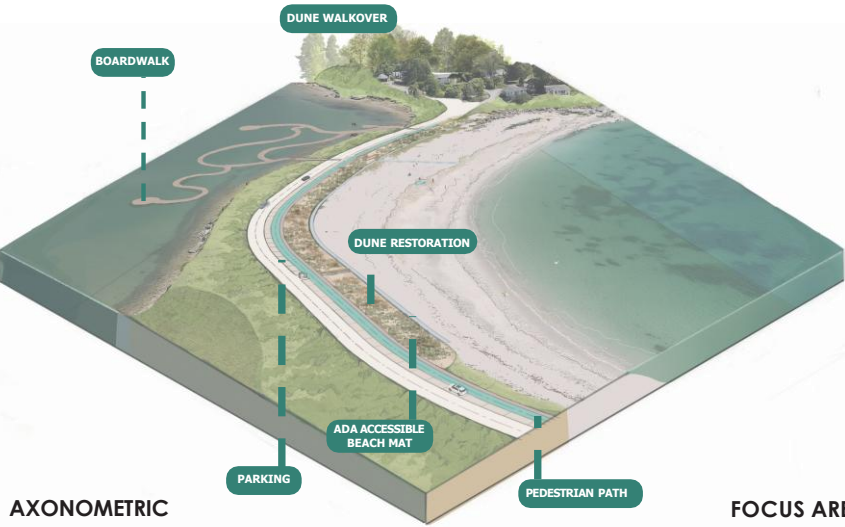
FLOOD MITIGATION DIAGRAM



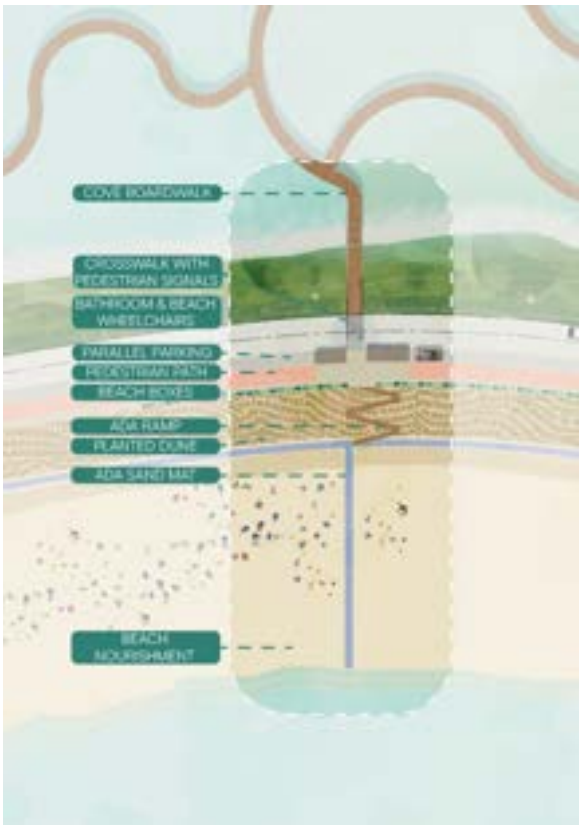
LANDSCAPE STRUCTURES

Scheme Three - Community-Oriented Nature-Based Solution

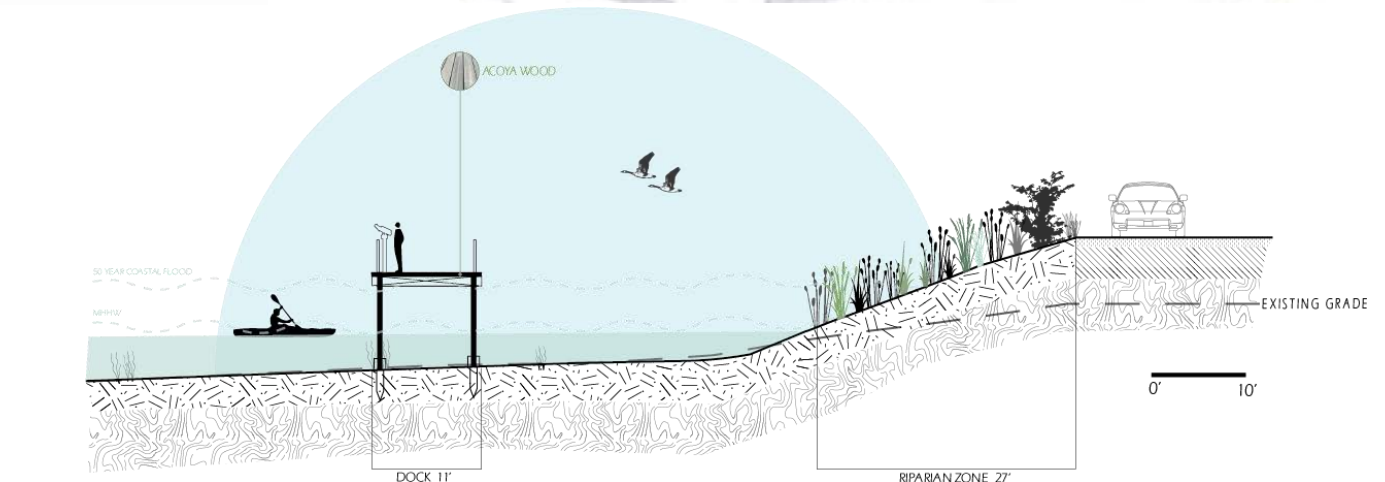
Orla Peck, Katherine Ruzzo, Aisha Malik



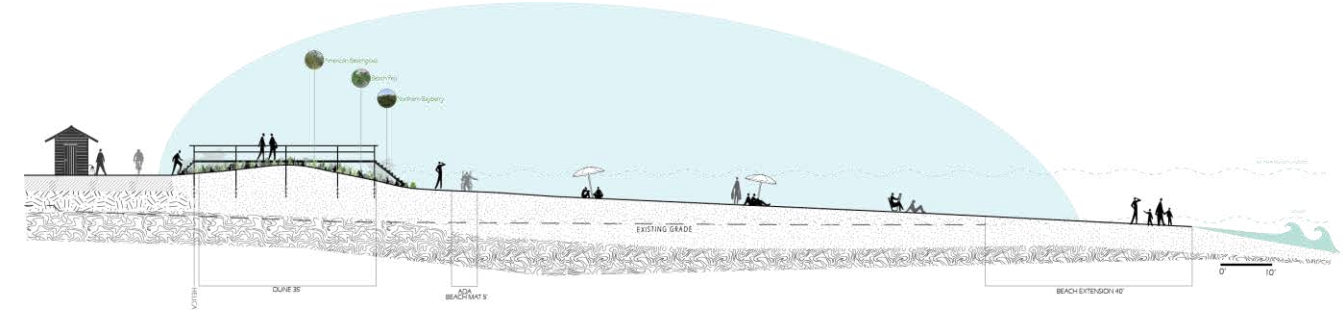
FOCUS AREA PERSPECTIVE



FOCUS AREA PLAN ENLARGEMENT



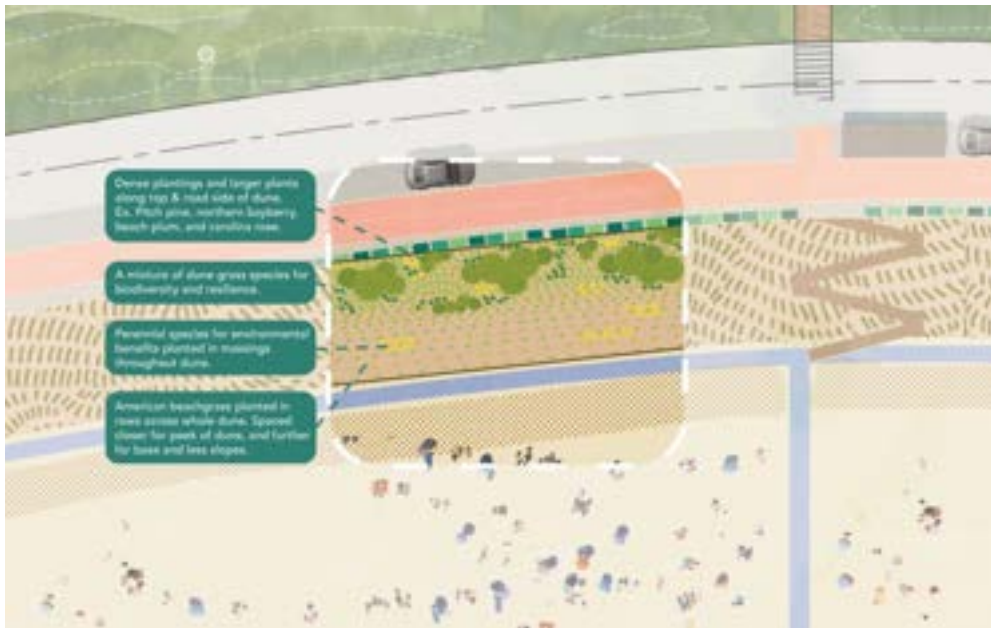
FOCUS AREA SECTION LINE - SECTION B



TRANSECT - SECTION A

Scheme Three - Community-Focused, Nature-Based Solution

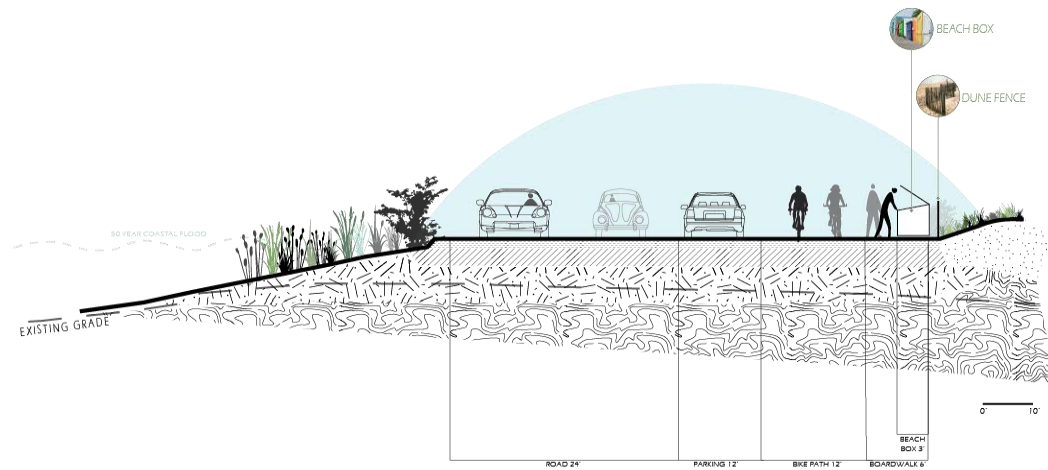
Orla Peck, Katherine Ruzzo, Aisha Malik



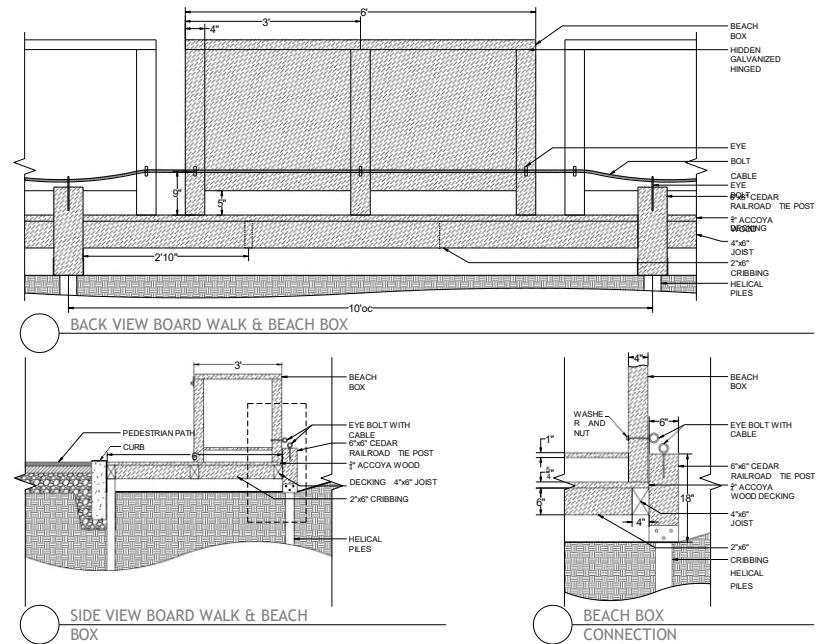
Dune Restoration Enlargement Plan



Dune Restoration Perspective



Dune Restoration - Section C



Beach Box Design Details

Scheme Four - Preserve | Protect | Access

Spencer Asofsky, Stephanie Nordhoff, Tim Purcell



Schematic Landscape Plan

In Scheme Four, the road and dunes are raised above 50-year design storm surge risk levels. Additional vegetated dunes are added to form a natural system. The beach is extended through dredging, making it higher and wider. Offshore reef balls filled with bagged oyster shells are placed to break waves early, while tetrapod blocks and dune fencing are used to reduce erosion. Storm surge is directed to Sheffield Cove via culverts on both ends of the beach. Main parking is relocated to the west, with a smaller accessible lot near the beach. A raised boardwalk with lookout points and a kayak launch is added around Sheffield Cove, along with a multi-use path, improved crosswalks, signage, and bike racks.

Scheme Four aims to **preserve** the natural beauty of Mackerel and Sheffield Coves, **protect** the shoreline from climate impacts through resilient, nature-based design, and improve public **access** with enhanced circulation, amenities, and inclusive infrastructure.



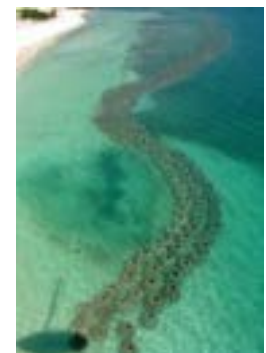
reefballfoundation.org/impact/



semenmerahputih.com/



André Audet Photography



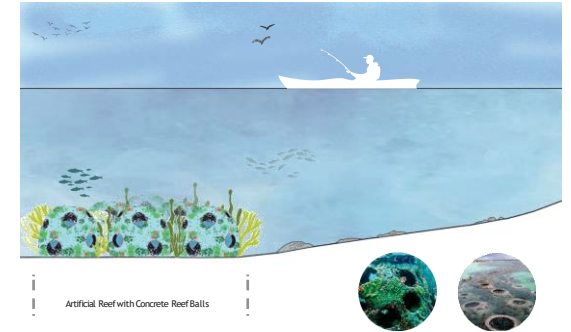
<https://old.ser-rrc.org/project/antigua-maiden-island-total-reef-restoration/>

Scheme Four - Preserve | Protect | Access

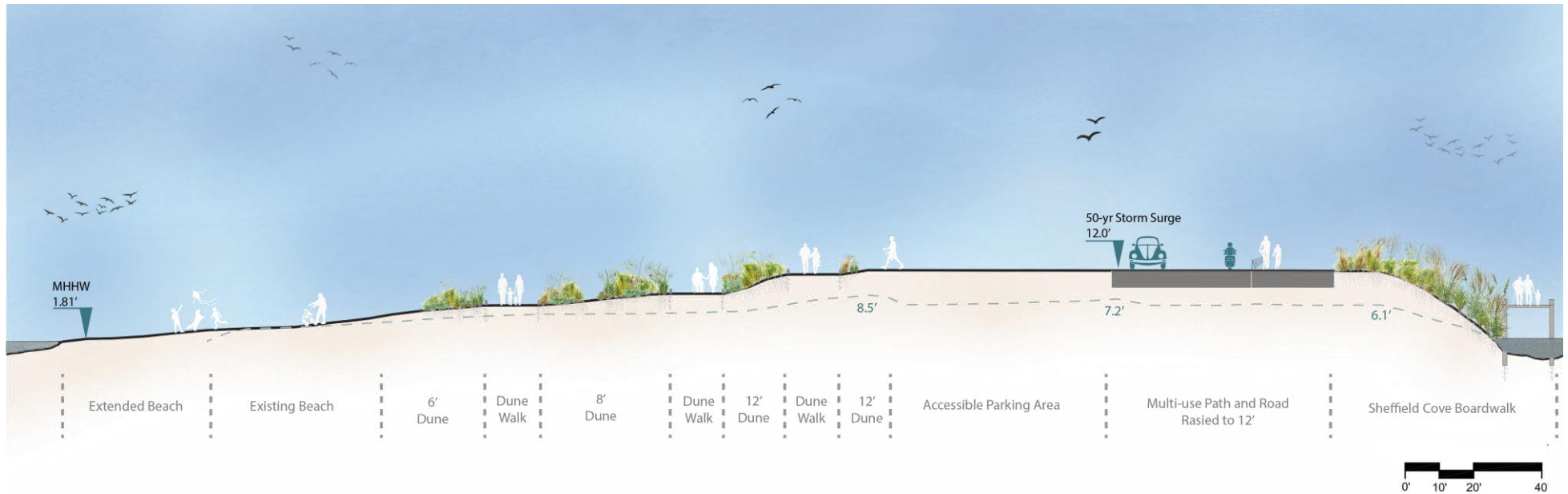
Spencer Asofsky, Stephanie Nordhoff, Tim Purcell



Sheffield Cove Boardwalk



Artificial Reef with Concrete Reef Balls



Transect B

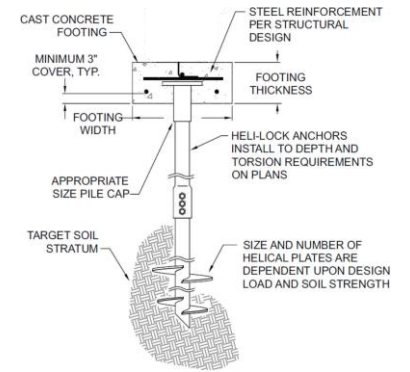
Scheme Four - Preserve | Protect | Access

Spencer Asofsky, Stephanie Nordhoff, Tim Purcell



Dune Restoration Enlargement Plan

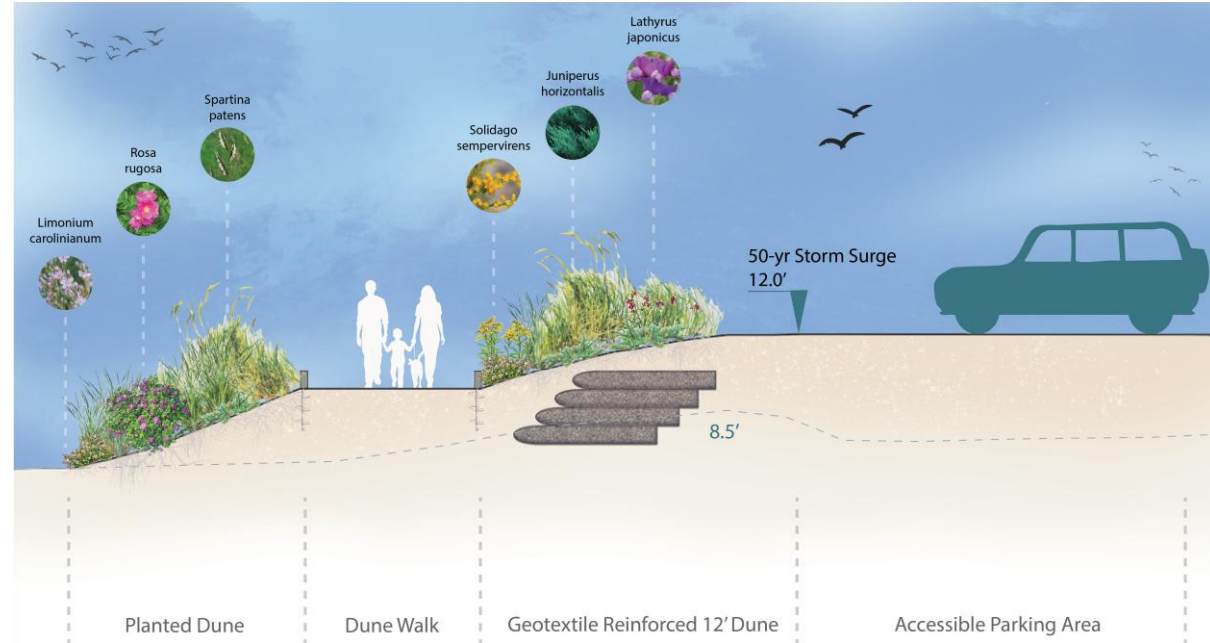
Scheme Four uses native plants to protect the coastline and dunes by reducing erosion and improving storm resilience.



Boardwalk Helical Piling Detail



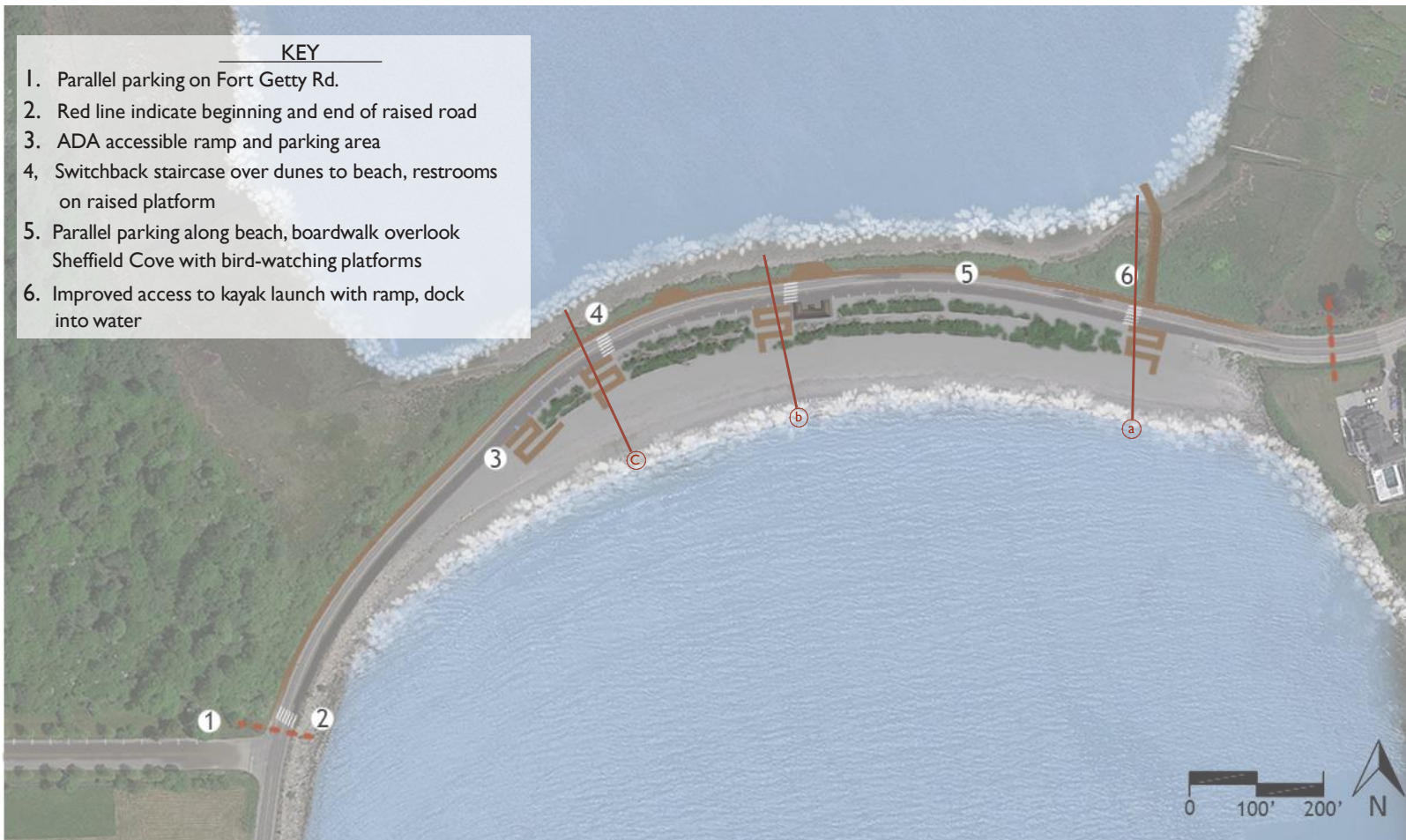
Focus Area Perspective



Dune Restoration Section

Scheme Five - A Naturalist's Approach to Climate Resilience

Madeline Ashenfelter, Lauren Vargas, Evan Carlson, Emma Curci



Scheme Five prioritizes community feedback by preserving the beach's natural aesthetics while improving long-term resilience. Both the road and dune are elevated to 12 feet above sea level to reduce flood risk, with a culvert pipe proposed within the dune to allow floodwater to pass beneath the road. Dune walkover ramps are included to protect vegetation and ensure accessible beach entry, while native plantings are selected to stabilize the dune system.

Final Design



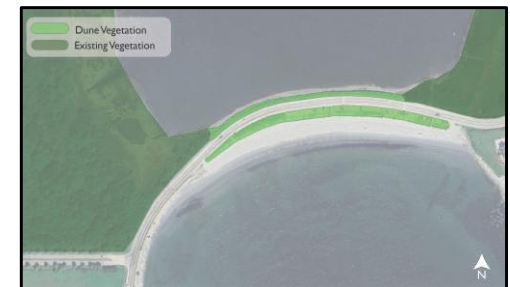
Circulation Diagram



Flood Protection Diagram



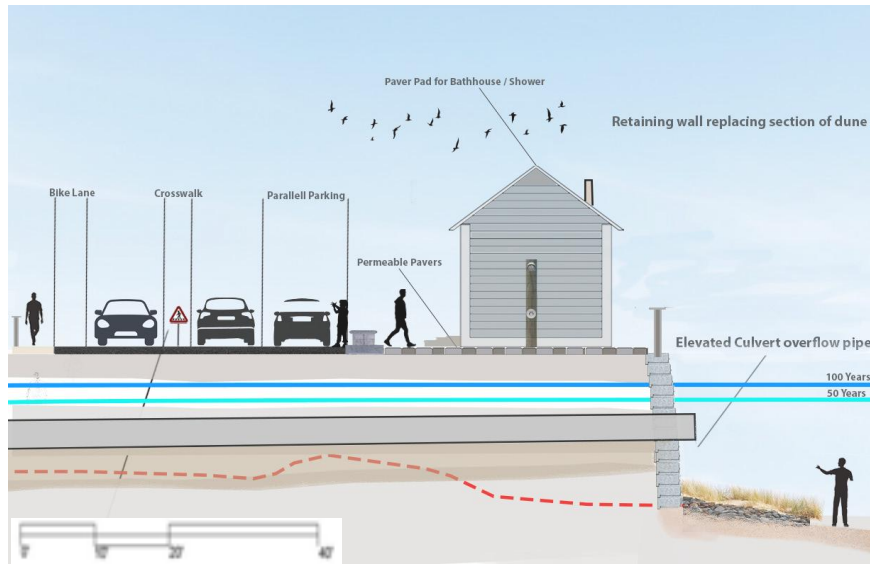
Amenities Diagram



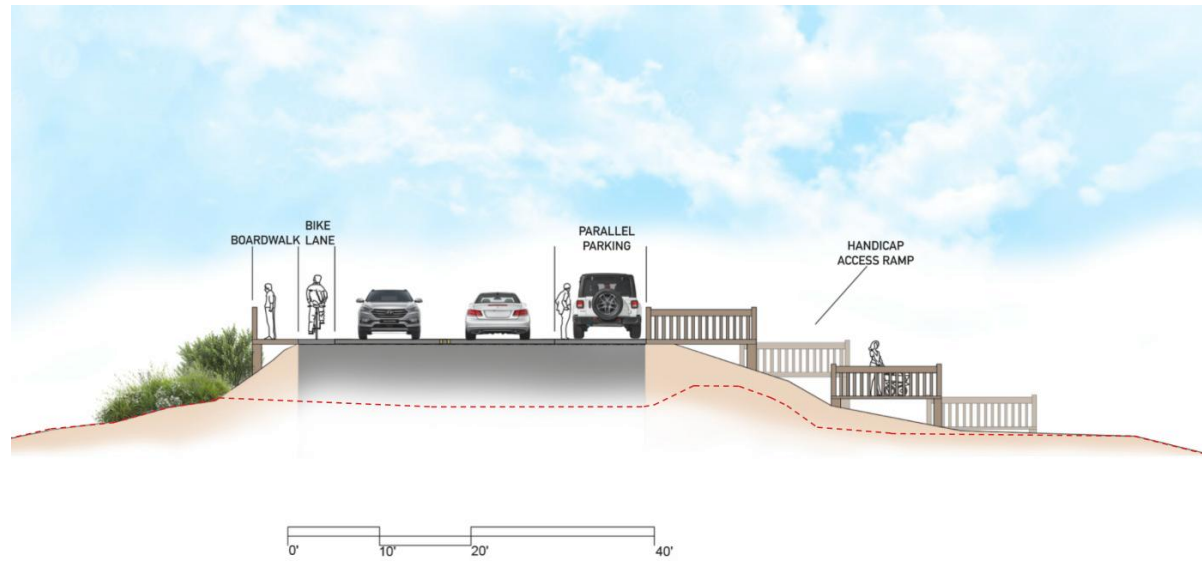
Vegetation Diagram

Scheme Five - A Naturalist's Approach to Climate Resilience

Madeline Ashenfelter, Lauren Vargas, Evan Carlson, Emma Curci

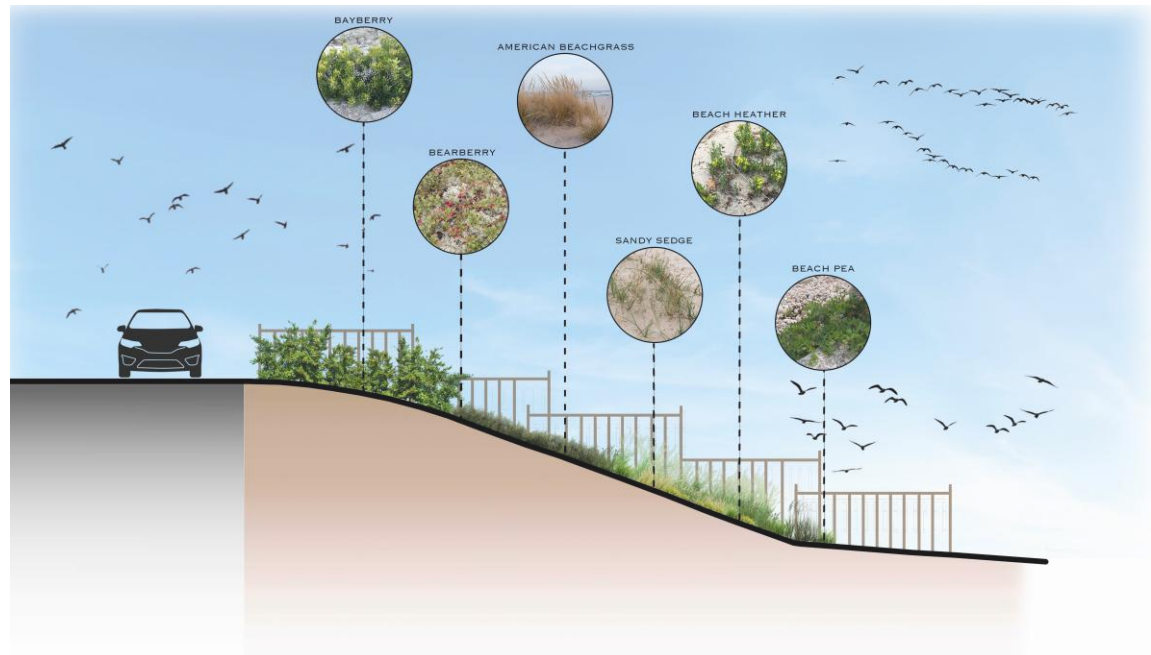


Bathhouse and Retaining Wall Section



Access Ramp Section

Beavertail Road is prone to flooding during extreme weather events. When surveyed, the town's residents expressed concerns about mitigating flooding while keeping their beach as natural as possible. To address these issues, Scheme Five goes with the approach of raising the road elevation, increasing dune height, adding native dune-stabilizing plants, relocating temporary structures, enhancing the visual quality of the area, and improving access to both the beaches and bird-watching lookouts. The team also proposed to upgrade Sheffield Cove's kayak launch area.

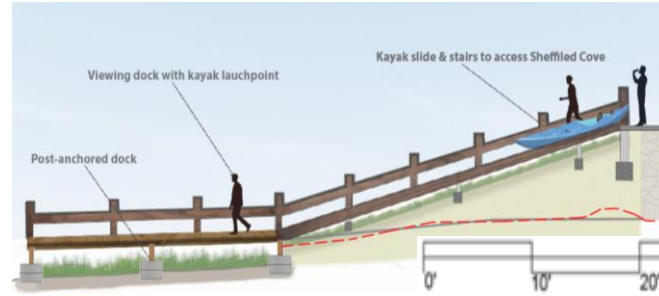


Dune Restoration Section

Scheme Five - A Naturalist's Approach to Climate Resilience

Madeline Ashenfelter, Lauren Vargas, Evan Carlson, Emma Curci

On the Sheffield Cove side, a bike path and pedestrian walkway are proposed, along with scenic lookout areas for birdwatching. Parking is enhanced with parallel spaces along Beavertail Road and a third lane for overflow at Fort Getty Road.



Kayak Launch Perspective

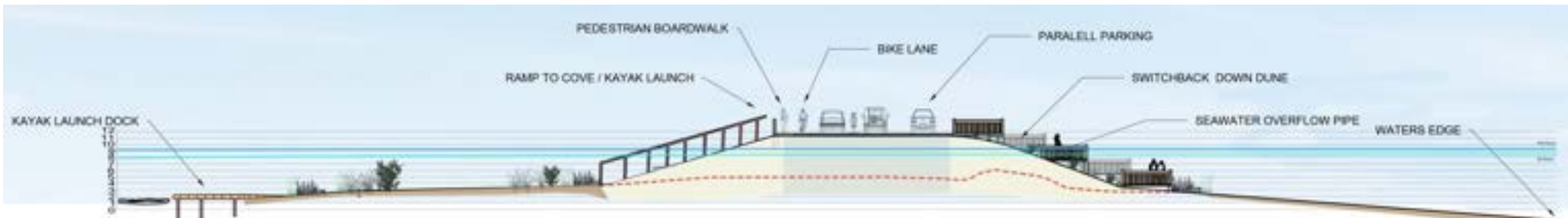
The kayak launch at the Sheffield Cove side is improved for safer water access.



Bird's-Eye View Perspective



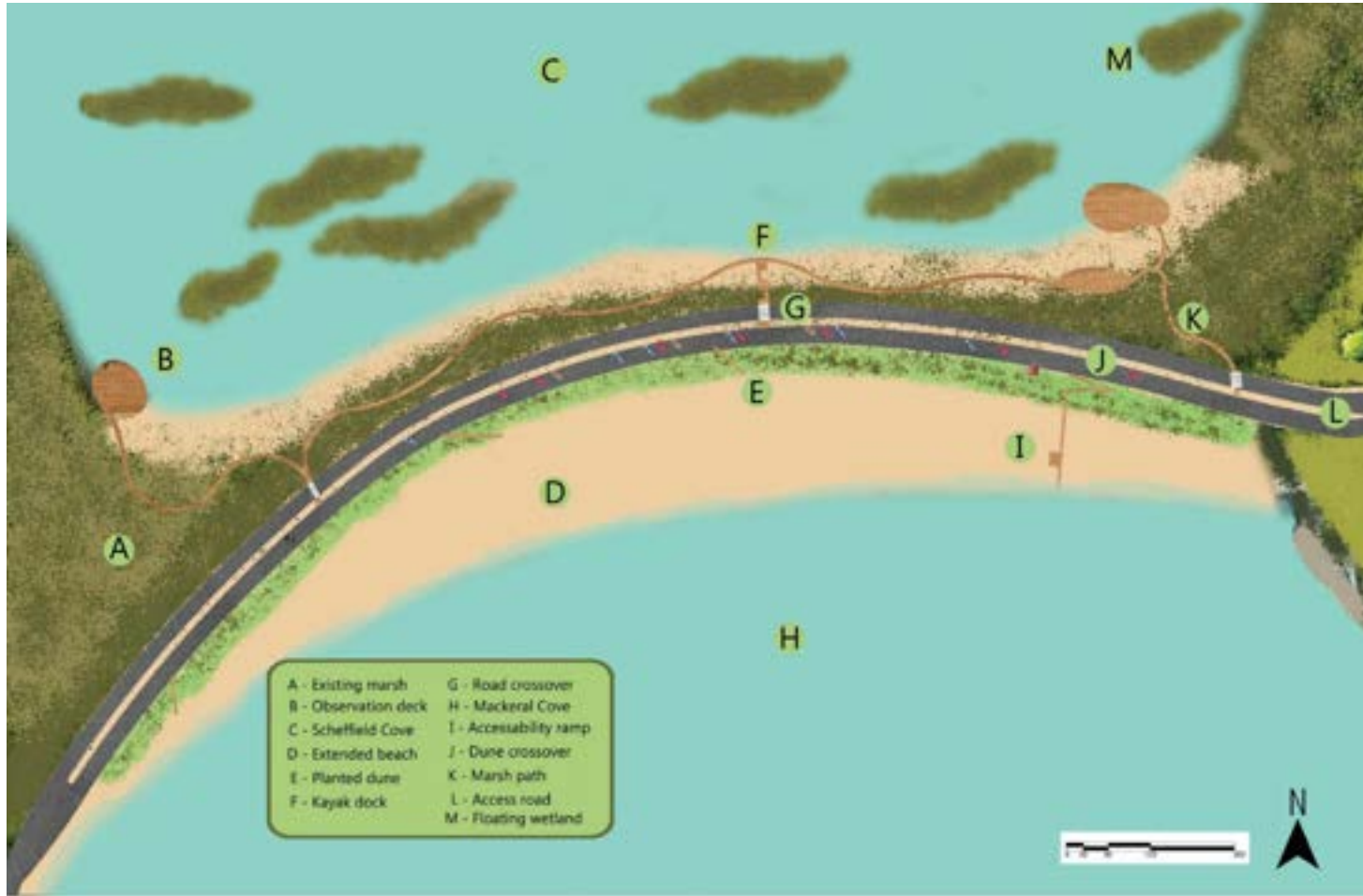
Fort Getty Rd. Perspective



Transect

Scheme Six - Up, Down and Floating

Will Randall, Will Silveria, Lexi Trull



SCHEMATIC LANDSCAPE PLAN

Scheme Six is a community-informed coastal resilience plan that integrates ecological restoration with improved public access and safety. Rooted in feedback from Jamestown residents, it raises dunes to 10 feet above sea-level and restores the beach to historic dimensions. The design enhances accessibility with ADA-compliant ramps, dune walkovers, and a kayak dock. Infrastructure upgrades include elevating the road with lower parking lot to reduce flood risk, while a new boardwalk and bike lanes improve connectivity. Floating wetlands are introduced to mitigate wave energy, support wildlife, and enhance water quality. The concept reflects a strong commitment to environmental stewardship and community priorities.



<https://www.floatingislandinternational.com/>

<https://www.pinterest.com/pin/324962929362479047/>



ENLARGED WESTERN PLAN VIEW



ENLARGED WESTERN SECTION



ENLARGED CENTER CROSSWALK



ENLARGED EASTERN SECTION



EASTERN ENLARGED PLAN VIEW

Scheme Six - Up, Down and Floating

Will Randall, Will Silveria, Lexi Trull



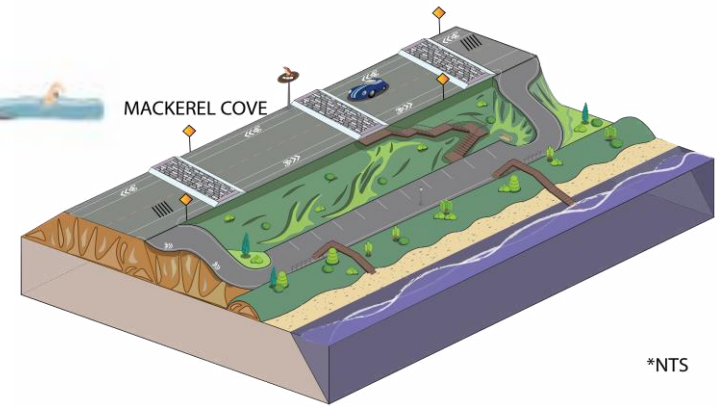
SECTION A-A
OBSERVATION DOCK SECTION



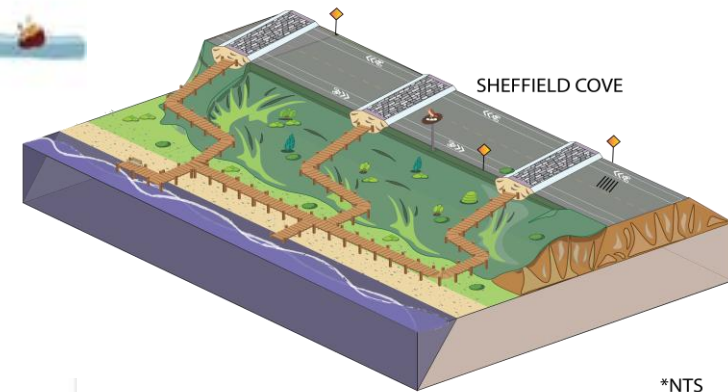
SECTION B-B
KAYAK LAUNCH SECTION



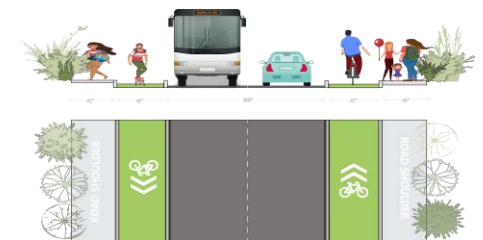
SECTION C-C
BOARDWALK SECTION



*NTS
AERIAL AXONOMETRIC VIEW - MACKEREL COVE



*NTS
AERIAL AXONOMETRIC VIEW - SHEFFIELD COVE



TRAFFIC LANE DIAGRAM

Scheme Six - Up, Down and Floating

Will Randall, Will Silveria, Lexi Trull

PERENNIALS / BULBS / ANNUALS / TREES

<p>Blue Yucca <i>Yucca glauca</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Silver cholla <i>Cylindropuntia echinocarpa</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Silver cholla <i>Cylindropuntia echinocarpa</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Sea purslane <i>Sesuvium portulacastrum</i></p> <p>Height: 1' - 2' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>
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DUNE RESTORATION STRATEGIES

- Raise the dune height to 10' above sea-level
- Extend the beach 40' to historical dimensions
- Implement coconut coir fiber rolls
- Use native, salt-tolerant plants to stabilize foundations
- Floating habitats for mitigating wave energy



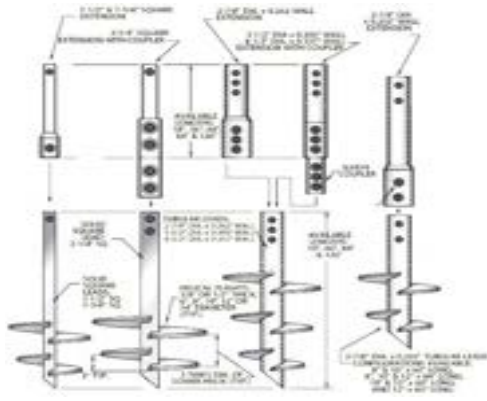
SHEFFIELD COVE BOARDWALK PERSPECTIVE

PERENNIALS / BULBS / ANNUALS / TREES

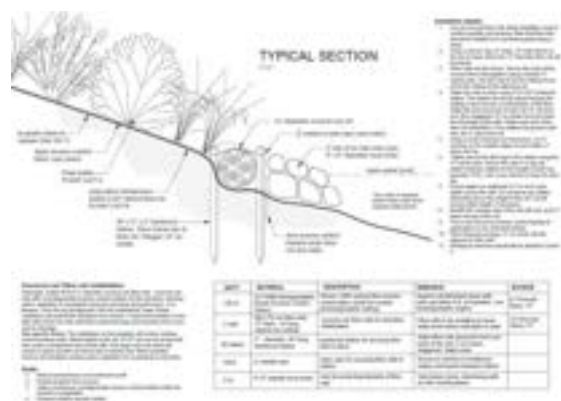
<p>Beach sandspike <i>Amphispiza bilineata</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Beach sandspike <i>Amphispiza bilineata</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Beach sandspike <i>Amphispiza bilineata</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Beach sandspike <i>Amphispiza bilineata</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>
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PERENNIALS / BULBS / ANNUALS / TREES

<p>Beach sandspike <i>Amphispiza bilineata</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Beach sandspike <i>Amphispiza bilineata</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Beach sandspike <i>Amphispiza bilineata</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>	<p>Beach sandspike <i>Amphispiza bilineata</i></p> <p>Height: 2' - 4' Sun: Full Sun Soil: Well-drained, sandy Water: Drought tolerant Notes: Excellent for coastal dunes.</p>
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HELICAL PIER DETAIL



DUNE RESTORATION DETAIL



MACKEREL COVE BEACH PERSPECTIVE

Proposed Dune Plantings

Perennial Grasses



Ammophila breviligulata
American Beach Grass



Panicum amarum
Bitter Panicum



Typha latifolia
Broadleaf Cattail



Lathyrus japonicus
Beach Pea



Carex pansa
Sand Dune Sedge



Schizachyrium littorale
Coastal Little Bluestem



Spartina patens
Saltmeadow Cordgrass



Solidago sempervirens
Seaside Goldenrod



Distichlis spicata
Saltgrass



Panicum virgatum
Switchgrass



Spartina alterniflora
Smooth Cordgrass



Symphyotrichum tenuifolium
Saltmarsh Aster



Equisetum hyemale
Snake Grass



Panicum amarum Elliot var. *Amarulum*
Coastal Panicum



Zostera marina
Eelgrass

Perennials

Seagrass

Proposed Dune Plantings

Deciduous Trees and Shrubs



Amelanchier canadensis
Service Berry



Prunus maritima
Beach Plum



Magnolia virginiana
Sweetbay Magnolia



Myrica pensylvanica
Northern Bayberry



Iva frutescens
Marsh Elder



Prunus pumila var. *cuneata*
Appalachian Sand Plum



Rosa rugosa
Beach Rose



Vaccinium corymbosum
Highbush Blueberry

Evergreen Trees and Shrubs



Juniperus virginiana
Eastern Red Cedar



Pinus rigida
Pitch Pine



Juniperus squamata 'Blue Star'
Singleseed juniper



Ilex glabra
Inkberry Holly



Pinus mugo 'Gnom'
Mugo Pine

Evergreen Groundcovers



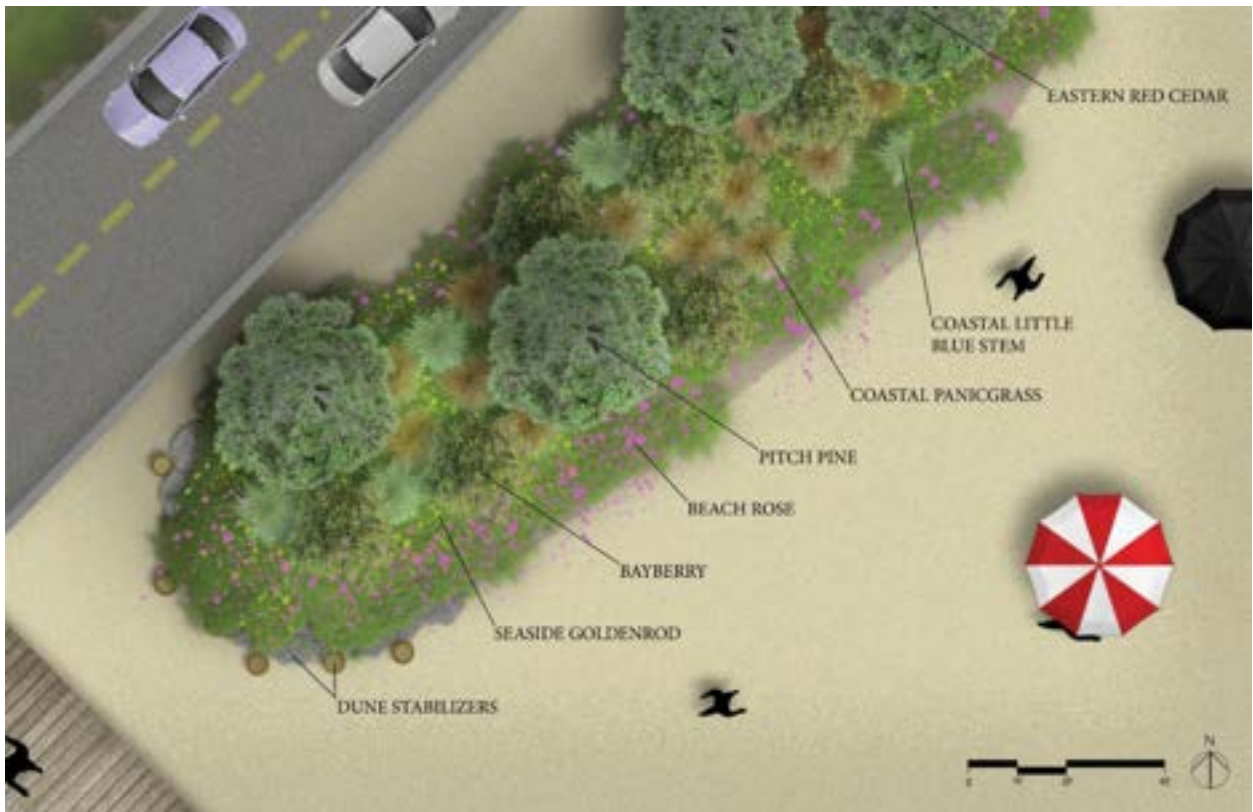
Juniperus horizontalis
Creeping Juniper



Arctostaphylos uva-ursi
Common Bearberry

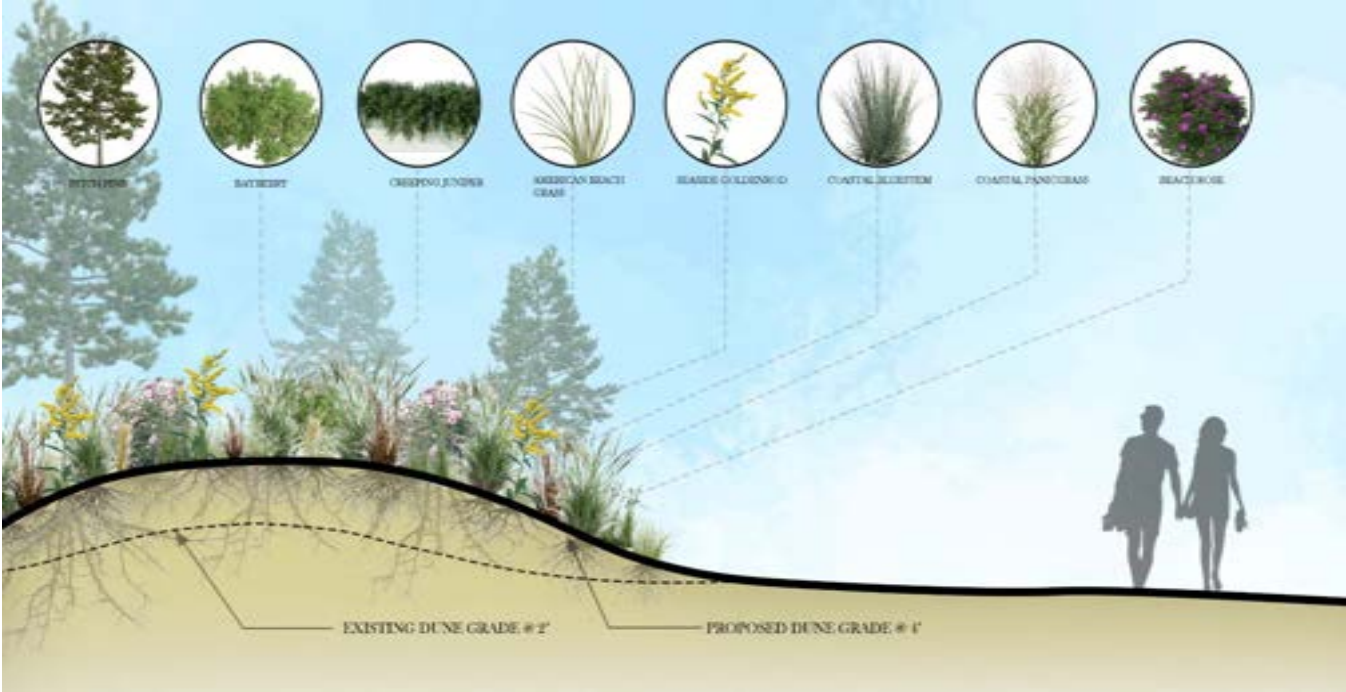


Hudsonia tomentosa
Beach Heather



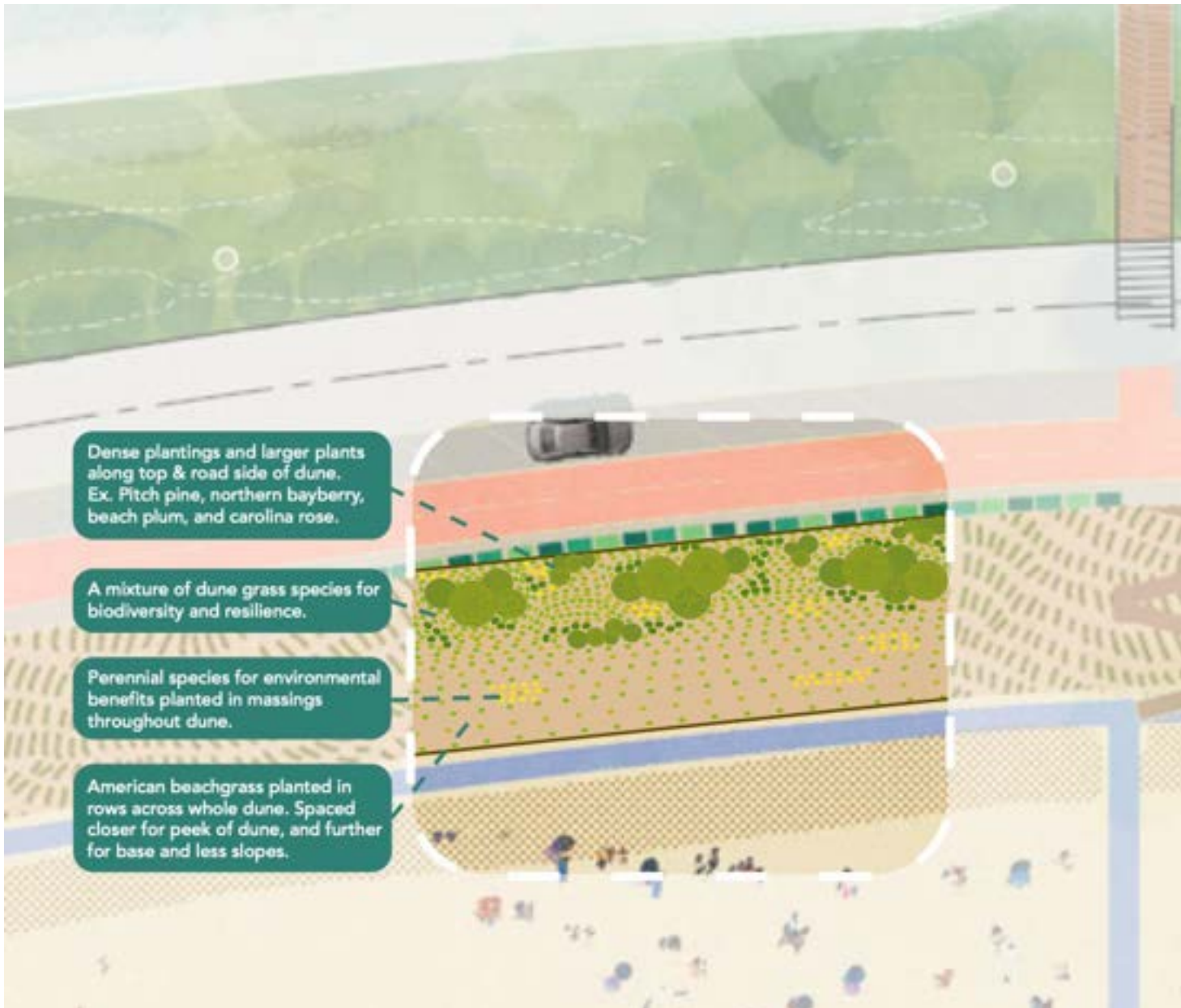
Dune Restoration Planting Scheme I

A typical dune restoration planting plan and corresponding section are proposed, illustrating the retention of Seaside Goldenrod (*Solidago sempervirens*) and Beach Rose (*Rosa rugosa*), along with the addition of Northern Bayberry (*Morella pensylvanica*), a deciduous shrub; Coastal Panicgrass (*Panicum amarum*); and two evergreen trees - Eastern Red Cedar (*Juniperus virginiana*) and Pitch Pine (*Pinus rigida*).



Dune Restoration Planting Scheme 2

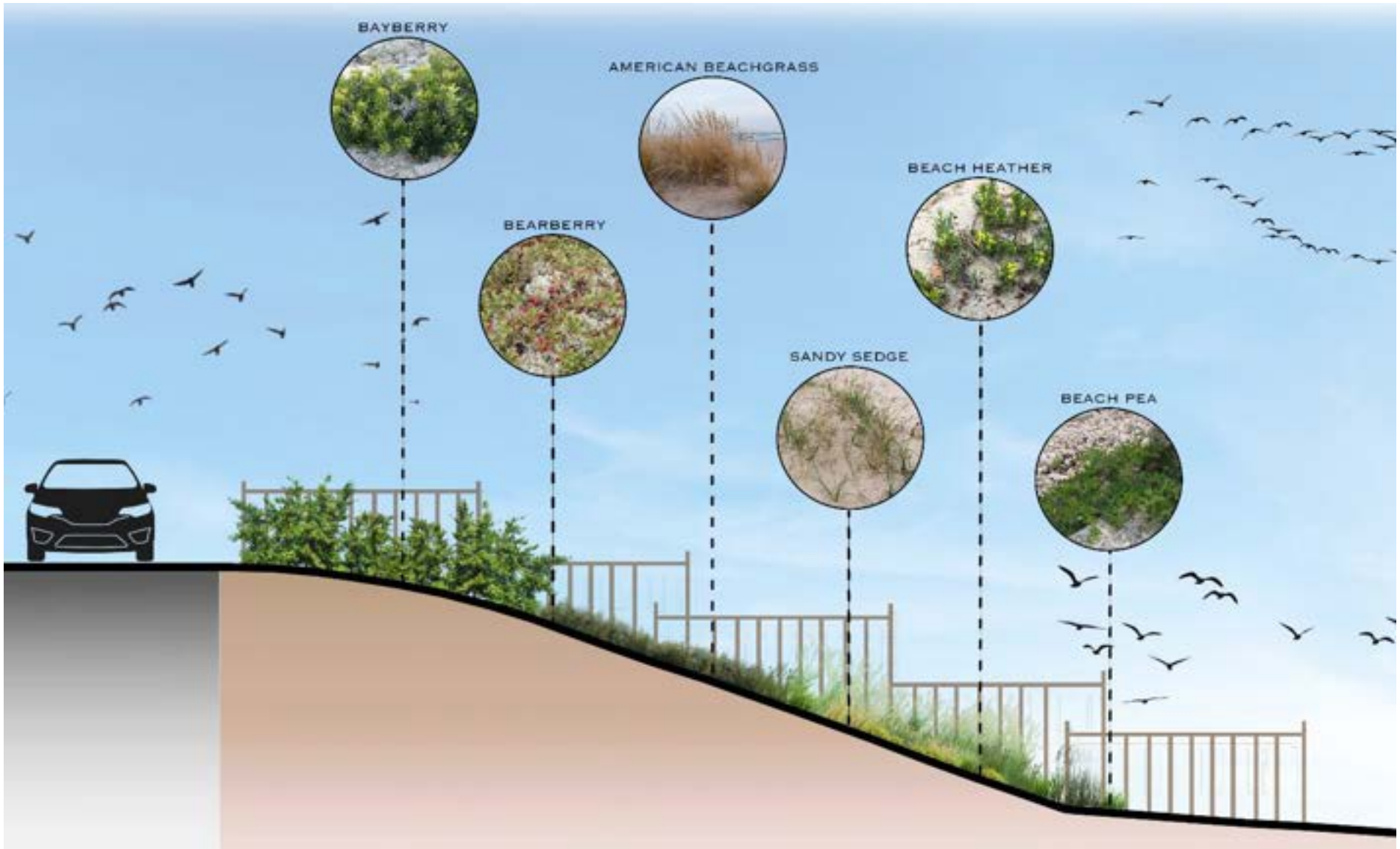
In this planting scheme, dense plantings and larger plants are placed along the top and roadside of the dune, including Pitch Pine (*Pinus rigida*), Northern Bayberry (*Morella pensylvanica*), Beach Plum (*Prunus maritima*), and Carolina Rose (*Rosa carolina*). A diverse mix of dune grass species is incorporated to promote biodiversity and resilience. Perennial species are mass-planted throughout the entire dune. American Beachgrass (*Ammophila breviligulata*) is arranged in rows across the entire dune, with closer spacing at the peak of dune and wider spacing at the base and gentler slopes.



Aisha Malik, Orla Peck, Katherine Ruzzo

Dune Restoration Planting Scheme 3

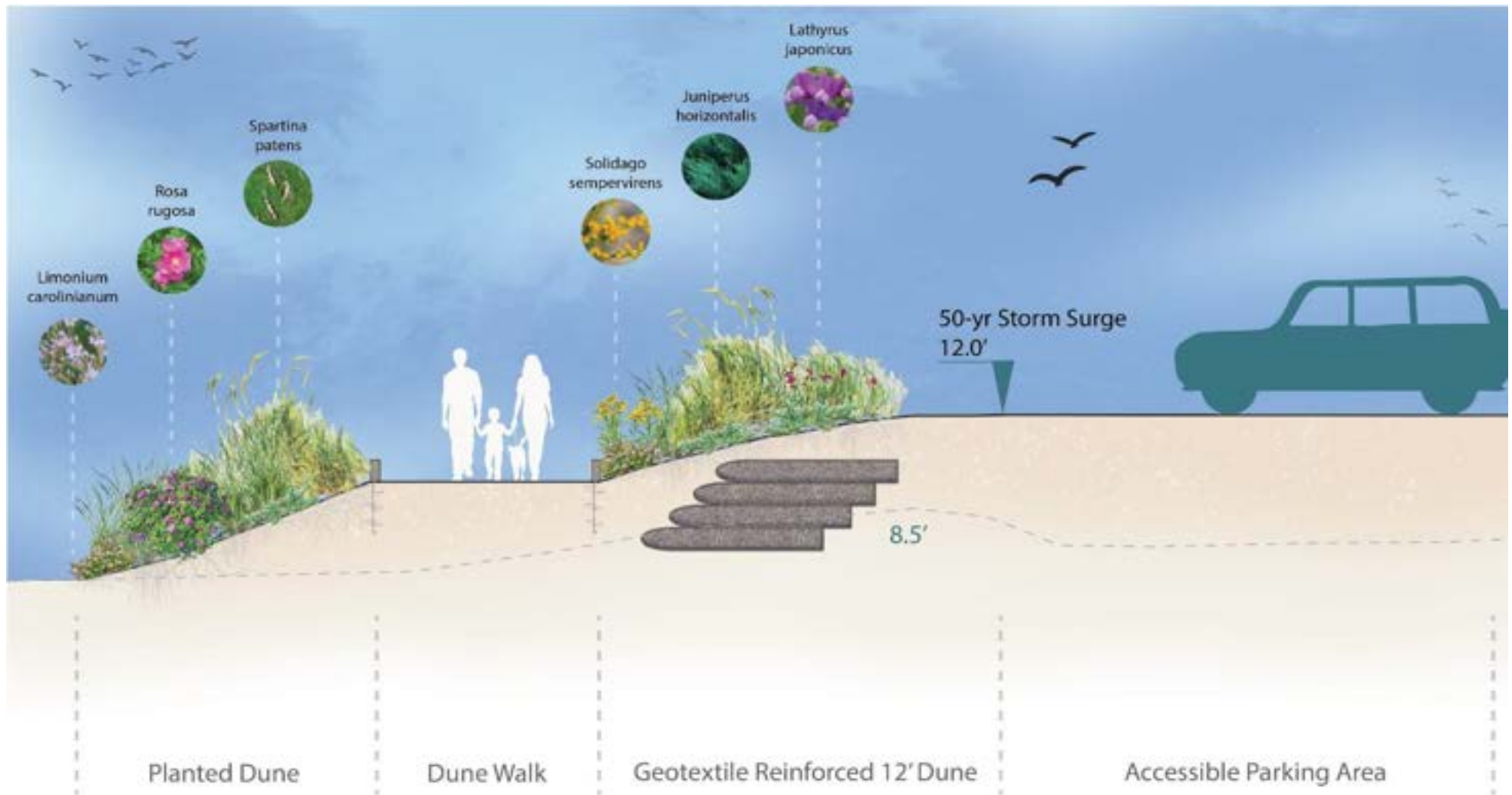
Maddie Ashenfelter, Lauren Vargas, Evan Carlson, Emma Curci



In this planting scheme, a combination of existing site vegetation and new species is incorporated to enhance the dune structure. American Beachgrass (*Ammophila breviligulata*) from the site is retained, while Northern Bayberry (*Morella pensylvanica*) is added to the top of the dune. Low-growing evergreen shrubs, including Common Bearberry (*Arctostaphylos uva-ursi*) and Beach Heather (*Hudsonia tomentosa*), are used to stabilize the dune. Sandy Sedge (*Carex pansa*) is introduced as a perennial grass, and Beach Pea (*Lathyrus japonicus*) is included as a flowering perennial to provide additional ecological benefits.

Dune Restoration Planting Scheme 4

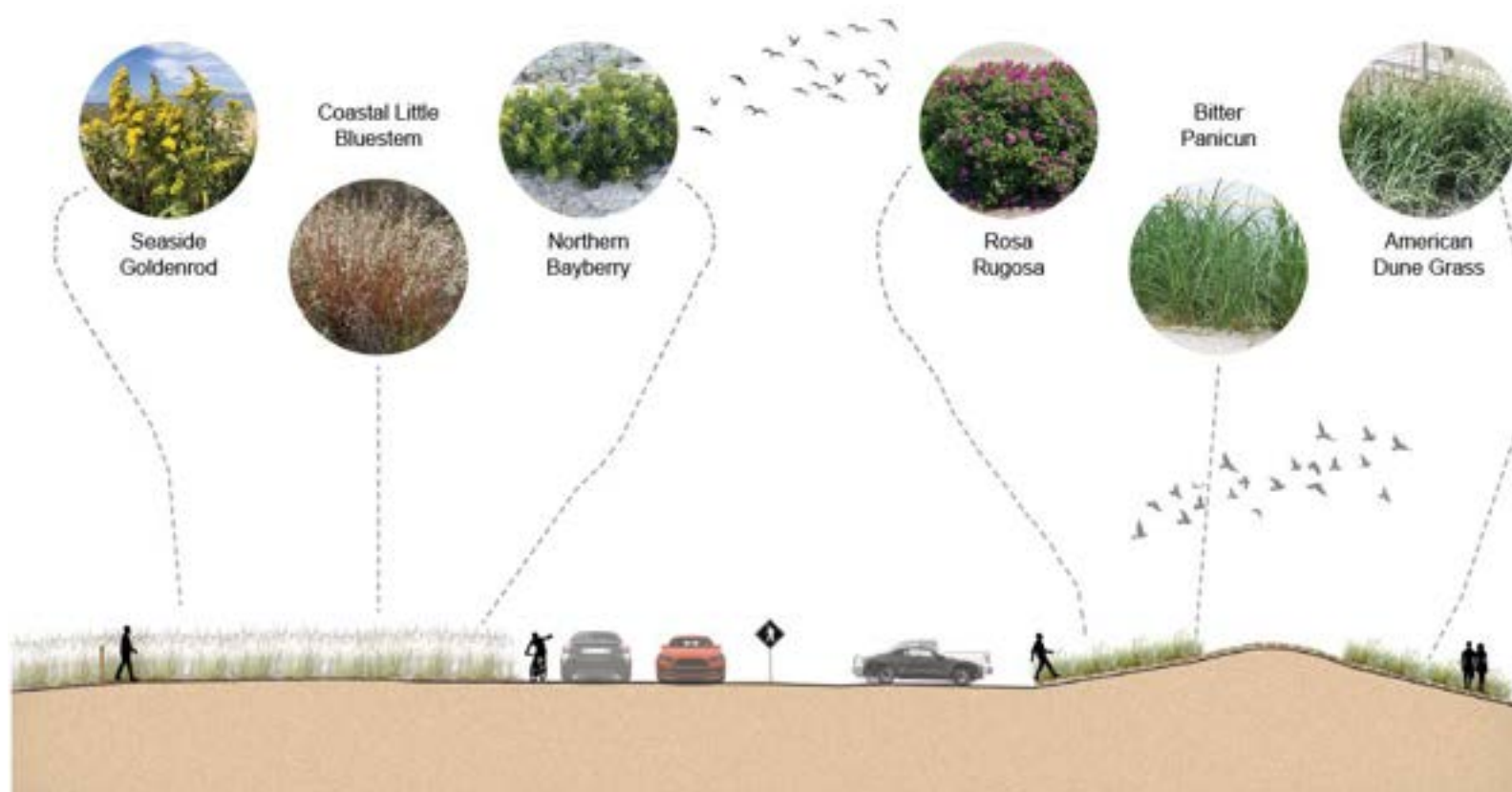
Stephanie Nordhoff, Spencer Asofsky, Tim Purcell



In this planting scheme, only one existing plant - Beach Rose (*Rosa rugosa*) is retained. Flowering species such as Sea Lavender (*Limonium carolinianum*), Seaside Goldenrod (*Solidago sempervirens*), and Beach Pea (*Lathyrus japonicus*) are introduced to enhance biodiversity and visual interest. Creeping Juniper (*Juniperus horizontalis*) is used to fill in gaps and provide dune stabilization through its low-growing, spreading habit.

Dune Restoration Planting Scheme 5

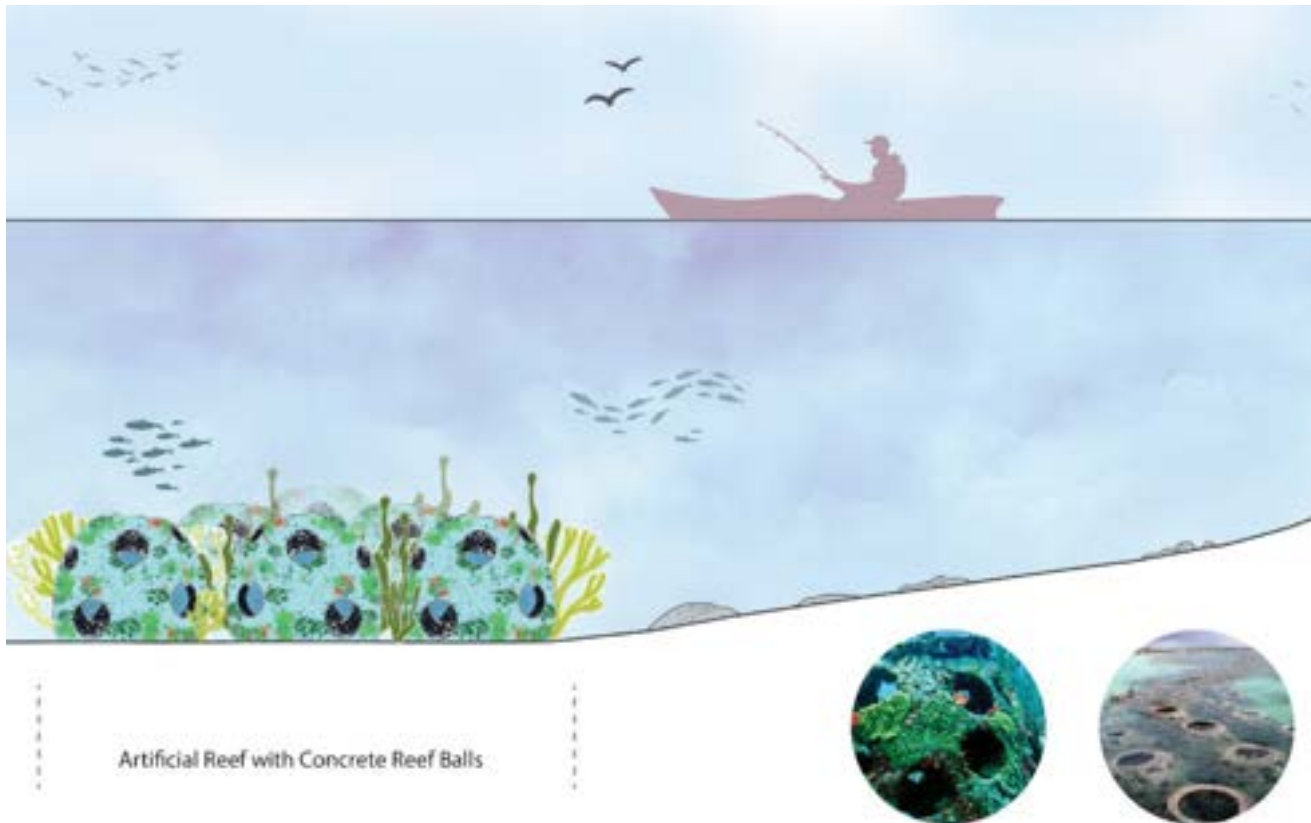
Richard King, Mason Tomaino, Hao He



In this planting scheme, a mix of existing and newly introduced species is incorporated to support and enhance the dune structure. Seaside Goldenrod (*Solidago sempervirens*) and Beach Rose (*Rosa rugosa*) are retained from the existing site vegetation. Perennial grasses such as Coastal Little Bluestem (*Schizachyrium littorale*), Bitter Panicum (*Panicum amarum*), and American Dune Grass (*Leymus mollis*) are added to improve resilience and stability. Additionally, Northern Bayberry (*Morella pensylvanica*), a deciduous shrub, is included to further reinforce the dune system.

Wave Attenuation Strategies

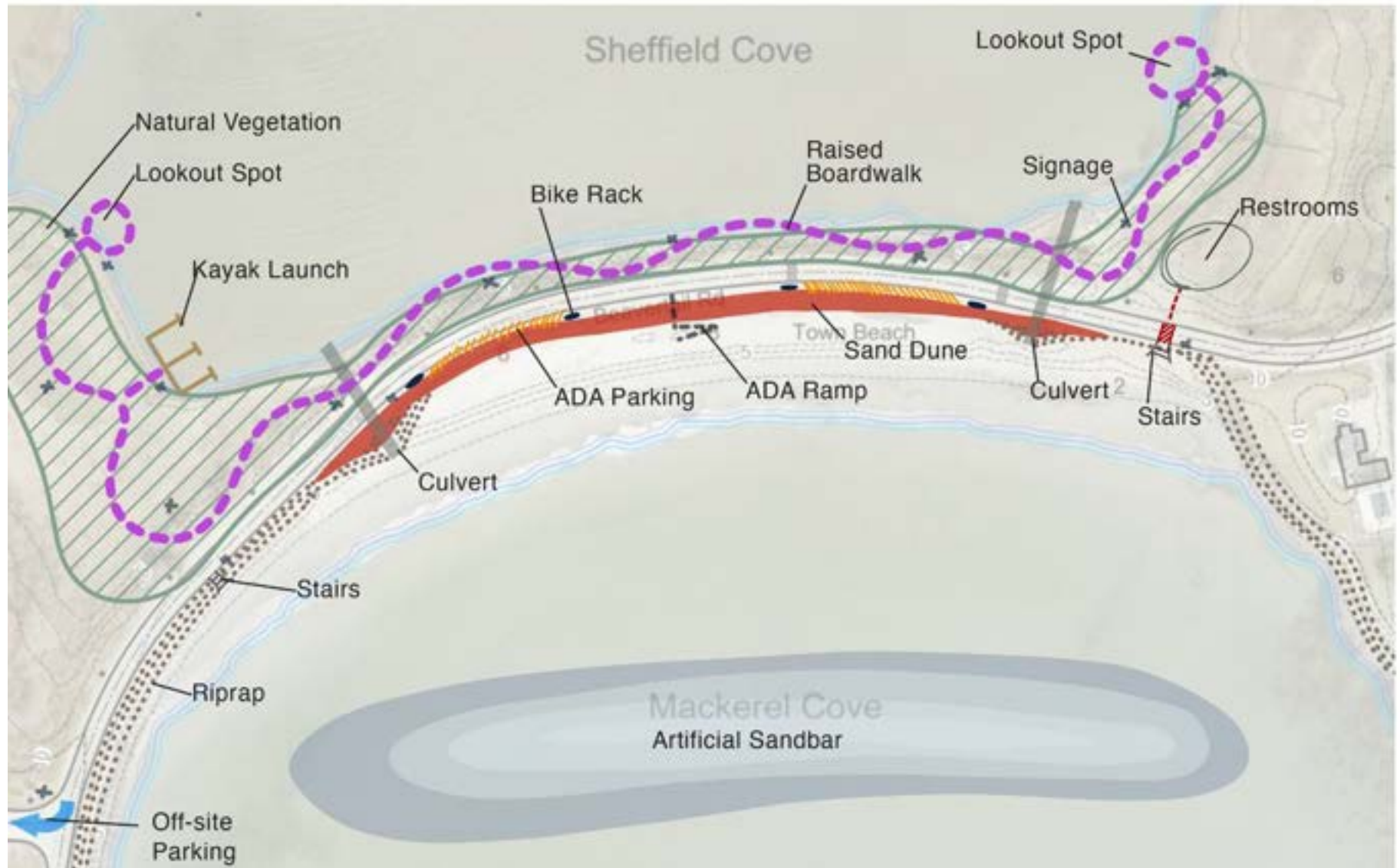
Students proposed innovative wave attenuation strategies, including artificial sandbars and reef balls to reduce wave energy and protect coastal areas. These living shoreline concepts aim to minimize erosion, safeguard beaches and dunes, and enhance marine habitats, contributing to long-term coastal resilience.



Offshore Reef Balls

In order to improve marine habitat and coastal resilience, offshore reef balls made of marine-safe concrete are proposed to disperse wave energy, prevent erosion and safeguard the beach and dunes. These hollow, dome-like structures are deployed offshore to act as a buffer against wave action while help restore coral reefs and create fishing sites.

Wave Attenuation Strategies - Artificial Sandbars



Artificial sandbars, proposed by the students, are engineered underwater sand mounds that help protect coastlines and support ecological resilience. Placed offshore, they absorb wave energy to reduce erosion and act as buffers during storms by supplying sediment to beaches. In addition to stabilizing shorelines, these structures create aquatic habitats for diverse species and can complement other nature-based solutions like living shorelines, offering a sustainable approach to coastal restoration.

Selected Student Working Models



To support concept development and enhance design communications, students constructed working models of a typical site section. These models, along with clear presentations and dialogue, helped convey their design concepts and spatial arrangements to faculty, professionals and community leaders during the design reviews.



Photo by Hongbing Tang

Selected Student Working Models



Photo by Hongbing Tang





PART V - NEXT STEP

Looking ahead, the students' group work offers a valuable foundation for future planning and may serve as a reference for upcoming infrastructure and environmental initiatives. These proposals reflect community values and present adaptable, resilient solutions that can be integrated into the Town's present needs and long-term vision for Mackerel Cove Beach, Beavertail Road, and the Sheffield Cove waterfront.

Following the final presentation, the student design proposals will serve as a valuable resource for the Town of Jamestown as it moves forward with the restoration of the dunes at Mackerel Cove. The town has secured \$199,400 in funding from the Rhode Island Infrastructure Bank to support a cost-benefit analysis aimed at mitigating the impacts of sea level rise and increasingly severe storm events (Jamestown Press 2025). This funding will also support a series of topographic and bathymetric surveys to inform an engineering study that will guide future restoration efforts. In addition, the funds will help strengthen the partnership between the Jamestown Conservation Commission and the Jamestown Community Farm, where juvenile dune grass is currently being cultivated. Once mature, these plants will be transplanted to Mackerel Cove to aid in dune stabilization.

It is important to note that while the Town of Jamestown owns both Mackerel Cove Beach and the public waterfront at Sheffield Cove, a significant portion of the Sheffield Cove area is owned and managed by the Rhode Island Audubon Society. Beavertail Road, which connects these coastal areas, falls under the jurisdiction of the Rhode Island Department of Transportation (RIDOT). As such, any future design or construction work on the road will be led by RIDOT in collaboration with the Town. Continued engagement from the Jamestown community and all stakeholders will be essential to ensure that local priorities, particularly those related to coastal resilience and sea level rise, are addressed throughout the planning and implementation process.

Many of the proposed design strategies are complementary with each other and can be seamlessly integrated into one design or another for future planning efforts. As the Mackerel Cove project advances, the next step will involve continued observation of site developments and collaboration between future design studios and the Town of Jamestown. These efforts will help refine planting strategies and contribute to a coastal landscape that is resilient, sustainable, and thoughtfully designed to be both beautiful and functional.

For more information about any of the designs featured in this publication, please contact Department of Landscape Architecture at the University of Rhode Island.



Photo by Monica Allard Cox

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Photo by Hongbing Tang