



TOWN COUNCIL
Work Session
July 25, 2024
Cape Charles Civic Center
6:00 PM

1. Call to Order:
 - A. Roll Call

2. Items for Discussion:
 - A. Beachfront Master Plan

3. Adjournment



Town of Cape Charles, Virginia

Beachfront Master Plan Town Council Update

July 25, 2024 (Updated 7/30/2024)





Beachfront Master Planning Committee

Adam Charney, Mayor/Town Council

Bill Prickett, Citizens for Central Park

John Schoeneck, Wetlands Board

Bob Panek, Yacht Club and CIP Manager

Claudette Lajoie, CC Civic League

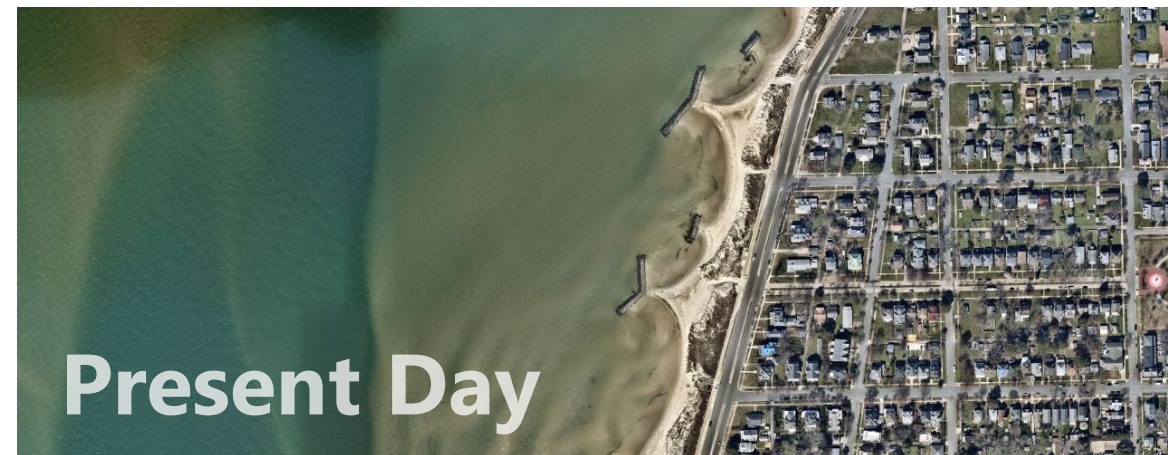
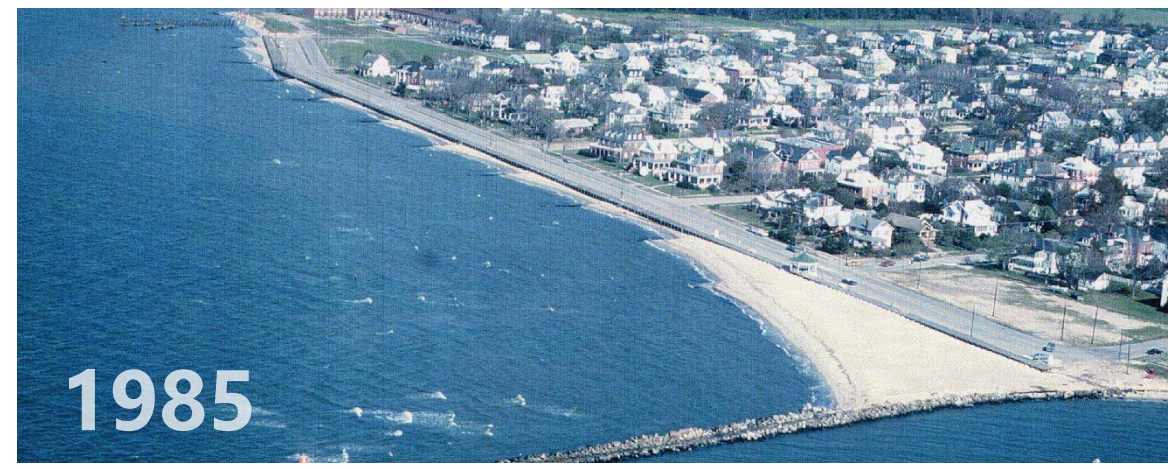
Ralph Bowen, Public Works Manager

Gerry Taylor, Main Street

John Hozey, Town Manager

Understanding of the Project

- ✓ Enhance the beach
- ✓ Promote economic development
- ✓ Improve accessibility
- ✓ Reinvigorate recreation opportunities
- ✓ Reevaluate existing infrastructure



CAPE CHARLES Beachfront Master Plan CHARTER



SCHEDULE

PHASE I Research, Outreach, & Plan Development



PHASE II. Detailed Design and Construction Plans following approval of the Master Plan

GOALS

- **Protect the Beach** – control sand migration and maximize beach area
- **Support Economic Development** – develop the beachfront into a quality destination that reflects and enhances the quaint, small-town charm enjoyed by residents and tourists
- **Improve Accessibility** – expand access to the beachfront for all users
- **Reinvigorate Recreation Opportunities** – enhance existing recreation opportunities and support growth of future attractions
- **Reevaluate Existing Infrastructure** – with sustainability in mind, utilize and leverage existing resources through capital improvements

MISSION

We research, listen, collaborate, and develop resilient plans that support local communities' economic growth while being sensitive to their environment.

VISION

Future generations will inherit a thriving beachfront community with an iconic shoreline, where continuous, ongoing enjoyment of cultural experiences and outdoor recreation on the Chesapeake Bay are protected.

COMMUNITY OUTREACH

- Oversight Committee Meetings
- Public Meetings
- Town Council Presentations



There will be multiple opportunities for community engagement! Scan QR code for more information.



Beachfront Master Plan Schedule



PHASE I

Research, Outreach, and Plan Development

9 Months

February

March

April

May

June

July

August

September

October

Project Initiation and Research

Outreach

Develop conceptual
Concepts and Draft
Planning Document

Develop Master Plan

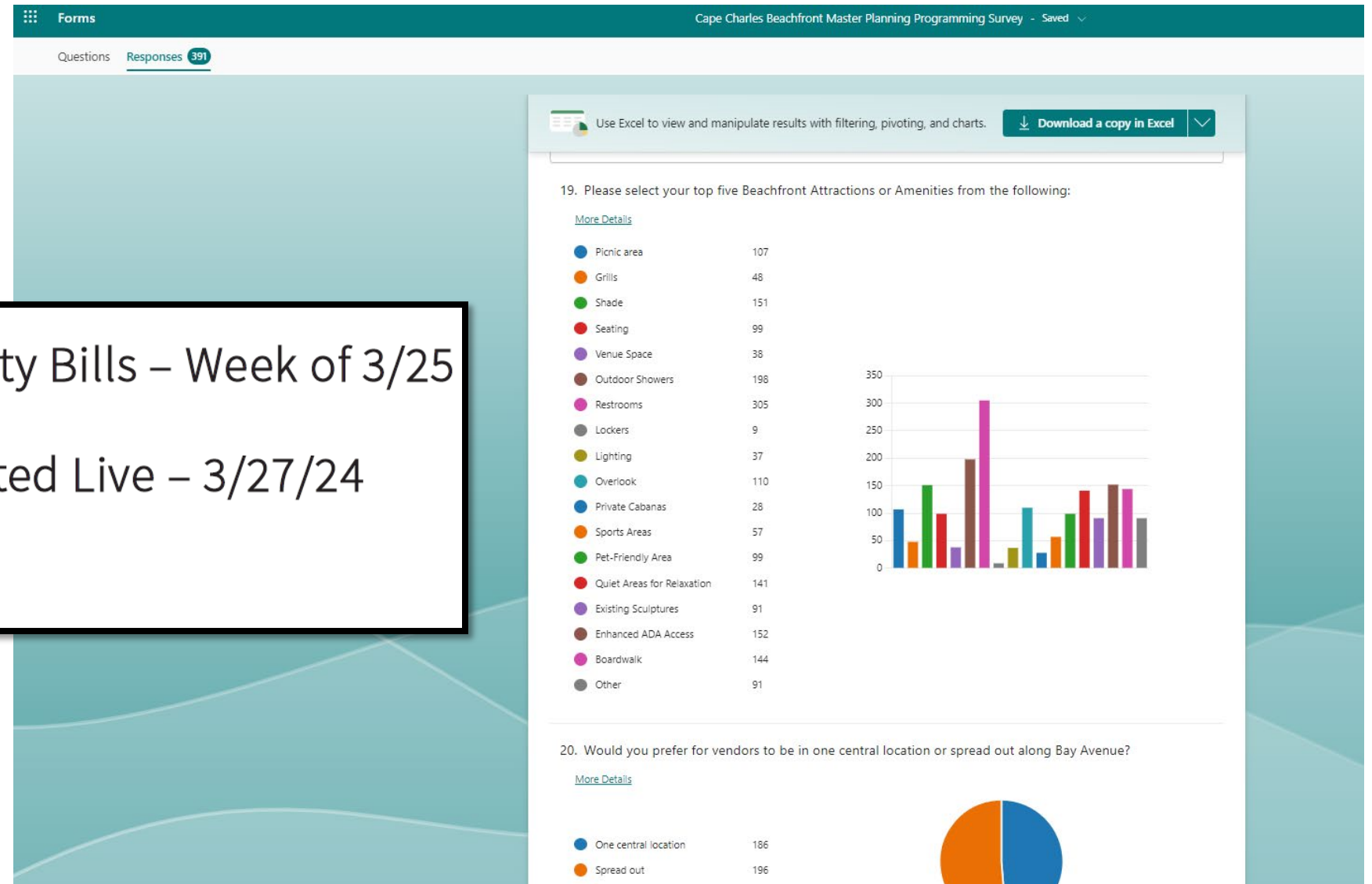
Public /
Council
Meeting

Council
Meeting

Public /
Council
Meeting

Community Survey

- Paper copy with Utility Bills – Week of 3/25
- Online Version – Posted Live – 3/27/24
- Deadline – 4/30/24



Community Survey

What is your opinion of the dune's general size?

[More Details](#)

 Insights

	Too Small	24
	Too Large	98
	Just right	261



Community Survey

Please explain why you chose your answer to the last question about your opinion of the dune's size:

- *"Dunes should be whatever size experts believe will save the beach."*
- *"I honestly don't know much about dunes, so I feel like this requires more research."*
- *"I assume the dunes are placed there for flood protection and have been properly sized for that purpose."*
- *"From a visual perspective it is too large, but I think that erosion control and protection from storm surge are more important than the visuals."*
- *"The dunes provide a vital form of protection from storms for the entire town..."*

Community Survey

Currently, there is only one overlook at the dunes. Should there be more?

[More Details](#)

 Insights



Community Survey

. What is your opinion of the beach's general size and character?

[More Details](#)

 Insights

	Too small	99
	Too large	5
	Just right	281



Community Survey

19. Please select your top five Beachfront Attractions or Amenities from the following:

[More Details](#)

 Picnic area 107

 Grills 48

 Shade 151

 Seating 99

 Venue Space 38

 Outdoor Showers 198

 Restrooms 305

 Lockers 9

 Lighting 37

 Overlook 110

 Private Cabanas 28

 Sports Areas 57

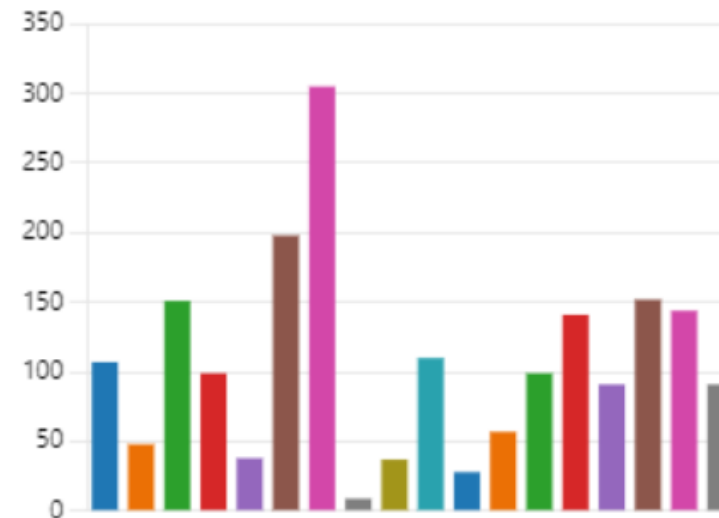
 Pet-Friendly Area 99

 Quiet Areas for Relaxation 141

 Existing Sculptures 91

 Enhanced ADA Access 152

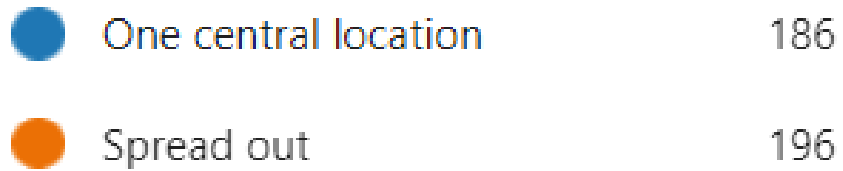
 Boardwalk 144



Community Survey

20. Would you prefer for vendors to be in one central location or spread out along Bay Avenue?

[More Details](#)



Community Survey

Please explain why you selected for vendors to be located at one central location or spread out along Bay Avenue:

- *"Vendor trucks all along Bay are unsightly and take away from parking availability."*
- *"It would limit the noise and garbage to be in a central location."*
- *"Minimize disruption to parking"*
- *"I see pros and cons of each. Maybe a vendor location at each end - Mason and Washington so people can choose which is closer to them."*

Community Survey

36. Please choose the closest that applies to you:

[More Details](#)

- Full-time resident living within t... 164
- Resides in Northampton County... 59
- Owns property within the Town ... 137
- Resides outside Northampton C... 30



Communications – Key Take Aways

- Top 5 Desired Beachfront Attractions / Amenities
 - Restrooms
 - Outdoor Showers
 - Shade
 - Enhanced ADA Access
 - Boardwalk
- Beach's General Size and Character
 - 73% said it was "Just Right"
- Dune's General Size
 - 68% said it was "Just Right"
- Vendors to be in one central location or spread out along Bay Avenue
 - One Central Location 51% / Spread Out 49%



Communications



[Welcome Screen - VHB VMR](#)



Educating the Public



CAPE CHARLES

Beachfront Master Plan

BEACH HISTORY

Exploring the history of Cape Charles Beach and it’s dunes; showing how the town and waterfront have developed and grown together.



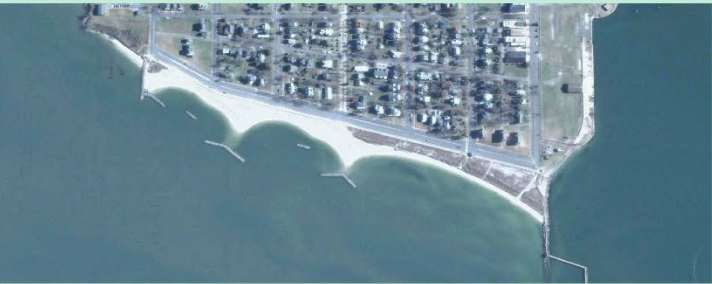
TIMELINE



1994

This 1994 aerial image shows the beach before there were breakwaters; the dunes were much smaller and the beachfront much slimmer. Toward the north side of Bay Avenue, the beach was nearly nonexistent!

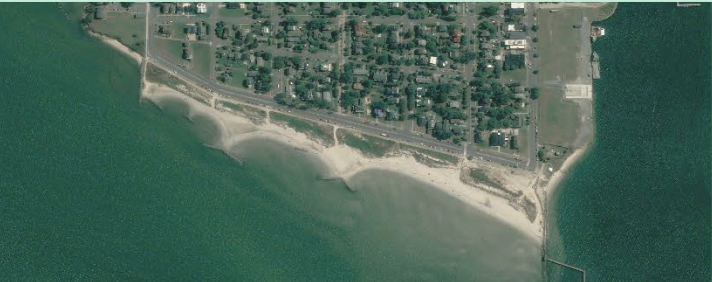
There were sand dunes existing here, although not to the scale they are today. The fishing pier also did not exist at this point.



2006

Between 1994 and 2006, breakwaters were installed, providing flood protection and expanding the usable beachfront. The fishing pier was also constructed during this time.

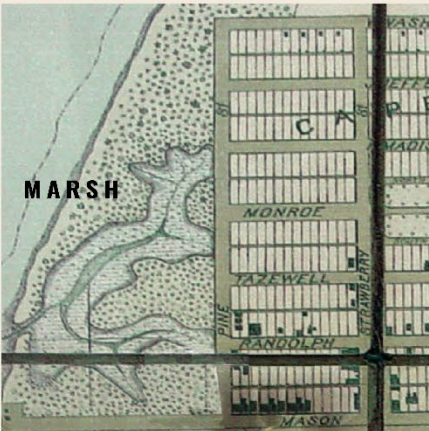
The sand dunes at this point were concentrated on the south end of the beach, closer to the fishing pier and Mason Avenue.



2018

The 2018 image shows how much the man-made dunes have grown, expanding all the way up Bay Avenue and encroaching on usable beach space. The paths between the road and beach have also gotten longer due to this growth.

HISTORY



This 1887 map of Cape Charles shows the city's original development; a grid formation that didn't quite reach the water. The westernmost road at this time was Pine Street.

Before Cape Charles had a waterfront, there was a marshy landscape between the town and the bay. This marsh predates the sand dunes, and provided the town with the natural flood protection that the dunes provide now.

This 1920s image demonstrates what the waterfront looked like in Cape Charles before the construction of the beach. Some of these homes are still existing today, demonstrating Cape Charles's lasting history.



The seawall pictured used to be the only barrier between Bay Avenue and the Chesapeake Bay. This seawall actually still exists; it is currently buried underneath the present-day beach. As more and more sand is poured into the beach, the bigger the dunes grow and the deeper the seawall becomes.



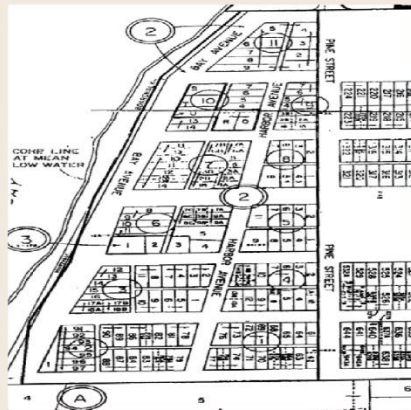
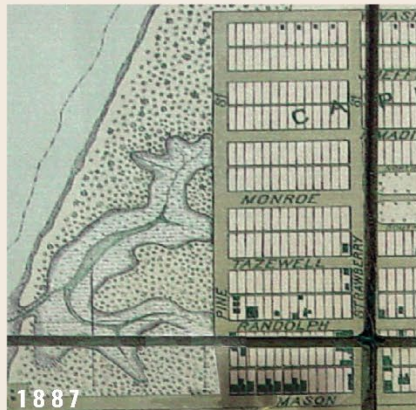
CAPE CHARLES

Beachfront Master Plan

BAY AVENUE

Cape Charles' Bay Avenue has a surprising history, as well as being quite beloved by residents of the town.

HISTORY



This 1887 map of Cape Charles depicts the original city plan; a grid formation where Pine Street is the westernmost street.

In fact, before Cape Charles had a waterfront, there was a marshy landscape between the town and the bay.

When Bay Avenue was constructed in 1911, 97 plots were added to Cape Charles, providing opportunity for more residents and businesses to make this town their home.

PRESENT

In the present, Bay Avenue is a beloved part of Cape Charles. It is the center of events and holidays, a cultural anchor with the iconic backdrop of the Chesapeake Bay.

From performances in the historic gazebo, holiday parades down Bay Avenue, and the daily beauty of Chesapeake Bay, Bay Avenue serves the residents of Cape Charles as a cornerstone of culture.

LOVE SIGN



CHRISTMAS



FOURTH OF JULY



THEN & NOW



GAZEBO



BAY AVE

Cape Charles has a unique small town spirit that has remained consistent through much of its lifetime. It's this cozy coastal atmosphere that gives the town its character.

A key part of this is the beautiful architecture on Bay Avenue. Between these postcards from the 1930's and now, many of the beautiful homes on Bay Avenue are still standing, a testament to the times they have weathered. As well as the town's beloved historic gazebo, hosting events for many years.



CAPE CHARLES

Beachfront Master Plan

SHORELINE

The master plan aims to provide a method to stabilize the beach to require less frequent maintenance.



SHORELINE IMPROVEMENTS

WHAT'S HAPPENING

The beach along Bay Avenue is man-made and historically erodes above the high water line. Over the years the beach has been nourished with dredging projects in the area. The placed sand is a fine grain sand that is more susceptible to being dislodged from the beach berm than larger grain sand during wave action and by wind. The sand is moved along the beach and into the nearshore during storms and blown into the dune and road area on dry windy days.

In the early 2000's, a system of breakwaters was installed to stabilize the north end of Bay Avenue beach. The structures remain in place today and are providing protection to the north end of the beach while still allowing some sand transport to the southern sections.

Recent Dredging Projects:

2001	45,000 CY
2015-2016	30,000 CY
2023	28,000 CY



Pictured: Many sandbars form at low tide due to sand migration. Water is shallow for much of the beach.

WHY IT MATTERS

The dredging projects that nourish the Cape Charles shoreline are infrequent which allows sand to erode away from the beach over time. The planned shoreline enhancements provide the opportunity to keep more sand above the high water line in between nourishment events.

Cape Charles beach is a beloved piece of the community, and preserving it is important. Finding innovative solutions to maintaining the shoreline will be beneficial for the Cape Charles community for generations to come.

BREAKWATERS

WHY THEY'RE HERE



Several concepts are being evaluated to improve the stabilization of the beach berm. These concepts include lengthening the existing structures, adding additional structures, and the combination of these two strategies.

The goal of the improvements are to provide the maximum amount of beach berm for residents to enjoy.

HOW THEY WORK



A system of breakwaters is constructed to stabilize the leeward beach shoreline by reducing the wave forces along the beach face. The structures accomplish this by altering the wave field. The highest wave energy is directed at the structures and the remaining energy spreads in the gaps between dissipating the wave energy.



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Beachfront Master Plan

SAND DUNES

The master plan aims to modify the dunes to provide beautiful sunset views and enhanced wind blown sand trapping for the benefit of Cape Charles residents.



RECENT DUNE HISTORY



2005



2013



2019

The beach and dunes have come and gone along Bay Avenue prior to the installation of the breakwater system along the north end of the public beach.

These breakwater structures have helped to stabilize the beach berm, but the fine grain sand is subject to wind transport.

Sand fencing was installed near the existing bulkhead around 1988 to reduce wind blown sand transport into the road and begin to build a line of dunes. The dune line has grown up and beachward over the years with wind blown sand transport and additional sand placed in the dunes during nourishment activities.

The 2021 dune has grown to be 3 times the size of the dune in 2010.

ENVIRONMENT



This photo depicts the windblown sand; the sand from the dunes is migrating past the Gazebo and into the road.



Dunes form along the landward side of a natural beach along the vegetation line. Dunes at man-made beach locations such as Cape Charles are created artificially using sand fencing and construction of dunes during nourishments. Dunes protect the uplands from wave attacks during elevated sea levels and storms. In Cape Charles, the dunes protect the street and sidewalks from storm erosion, but they do not prevent storm surges or flooding due to storm events. The dunes also replenish the beach berm during the storm when sand is eroded from the dunes and deposited on the beach. Vegetated dunes trap wind blown sand in the foliage and help the dune grow larger.

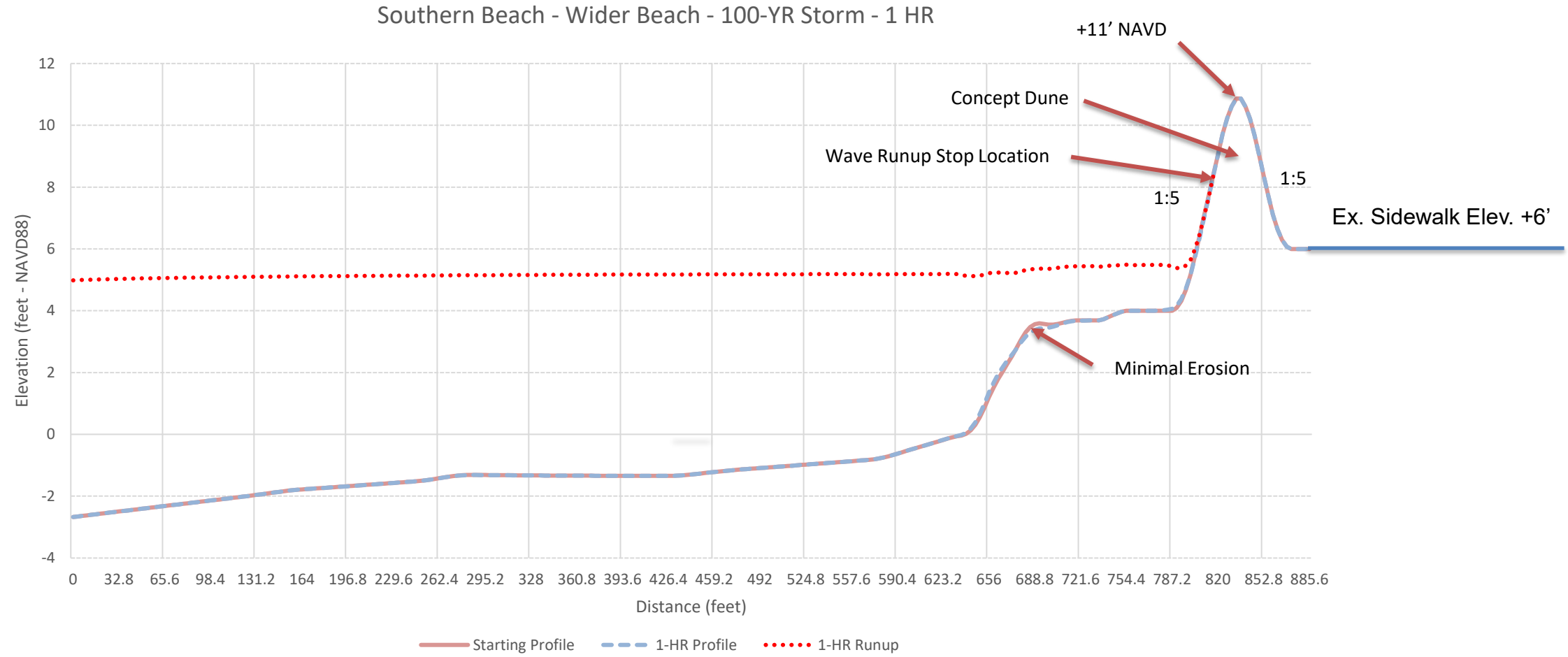
SAFETY



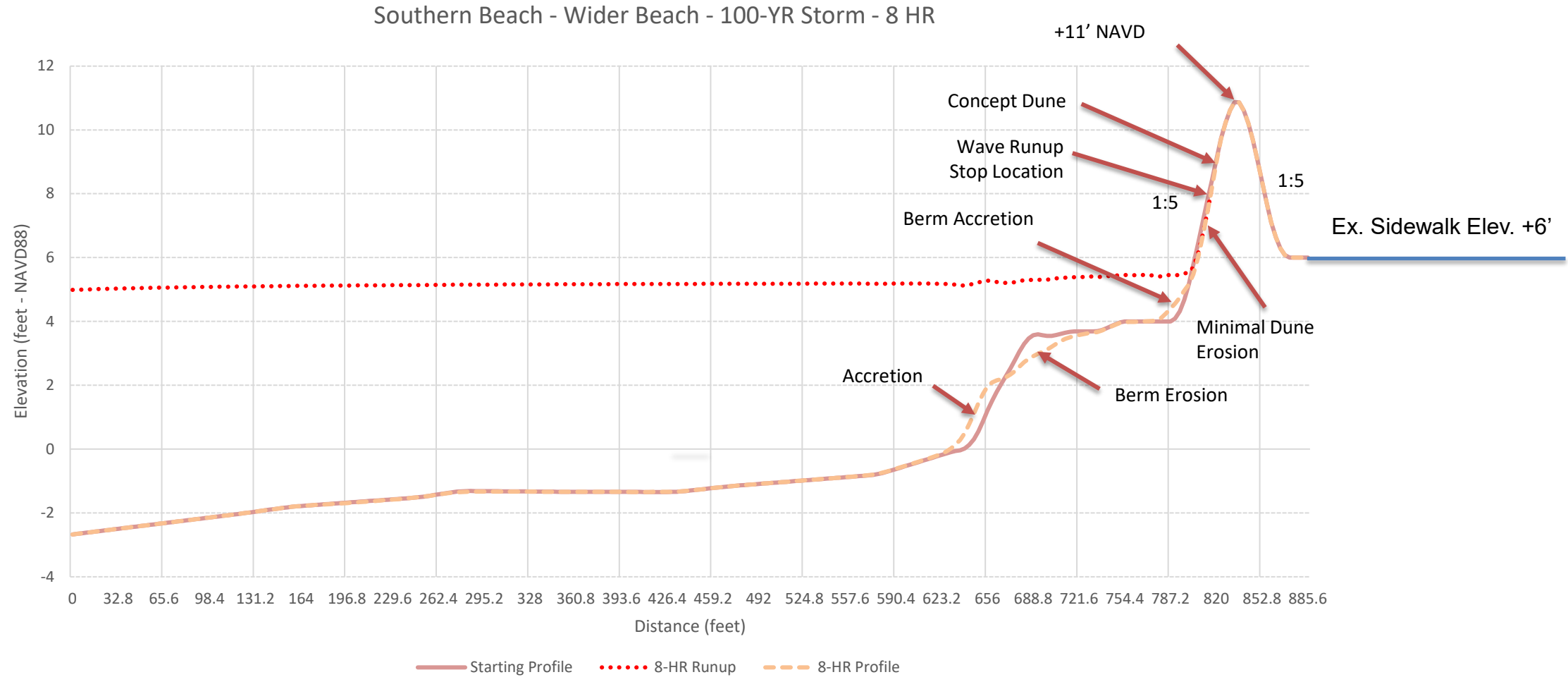
In recent years, the Cape Charles sand dunes' footprint has continually grown. The fine grain sand is blown from the beach berm, and it either accumulates on the dune face, or it is deposited along Bay Avenue or in adjacent lawns. Dune height and width will vary based on regulatory input.



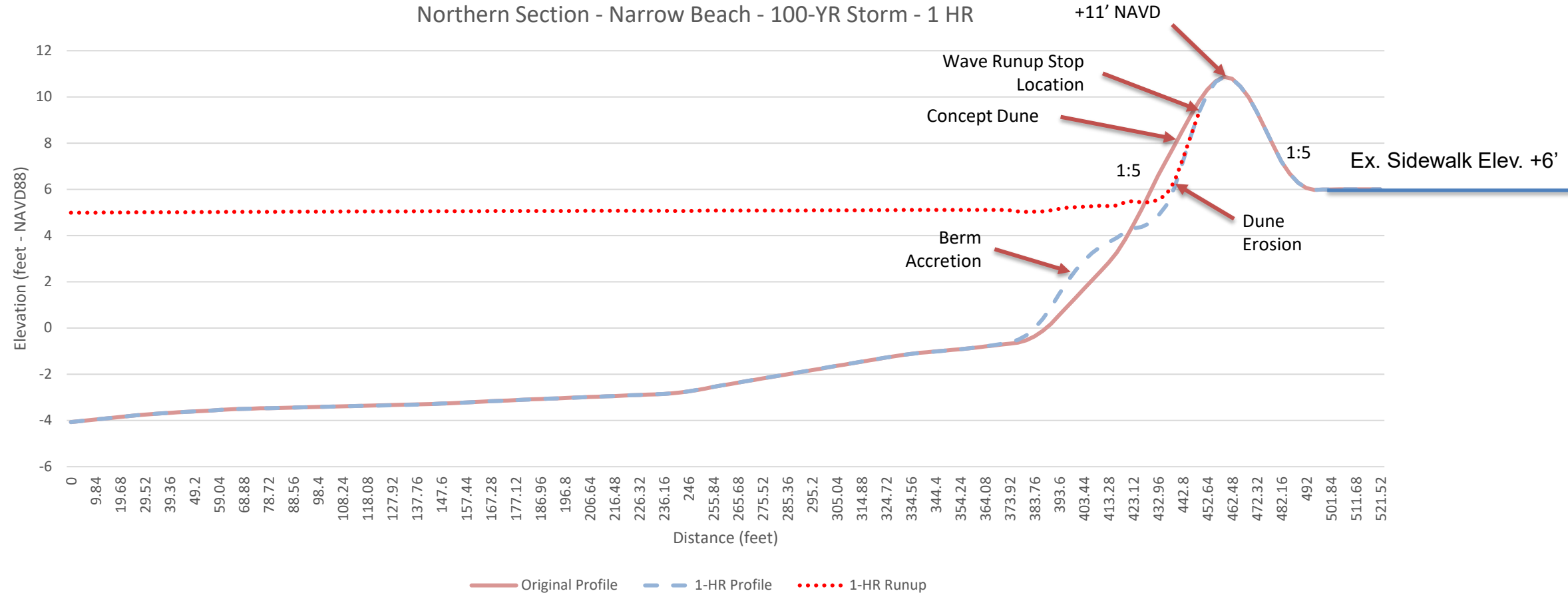
CSHORE Output – 100-YR Storm



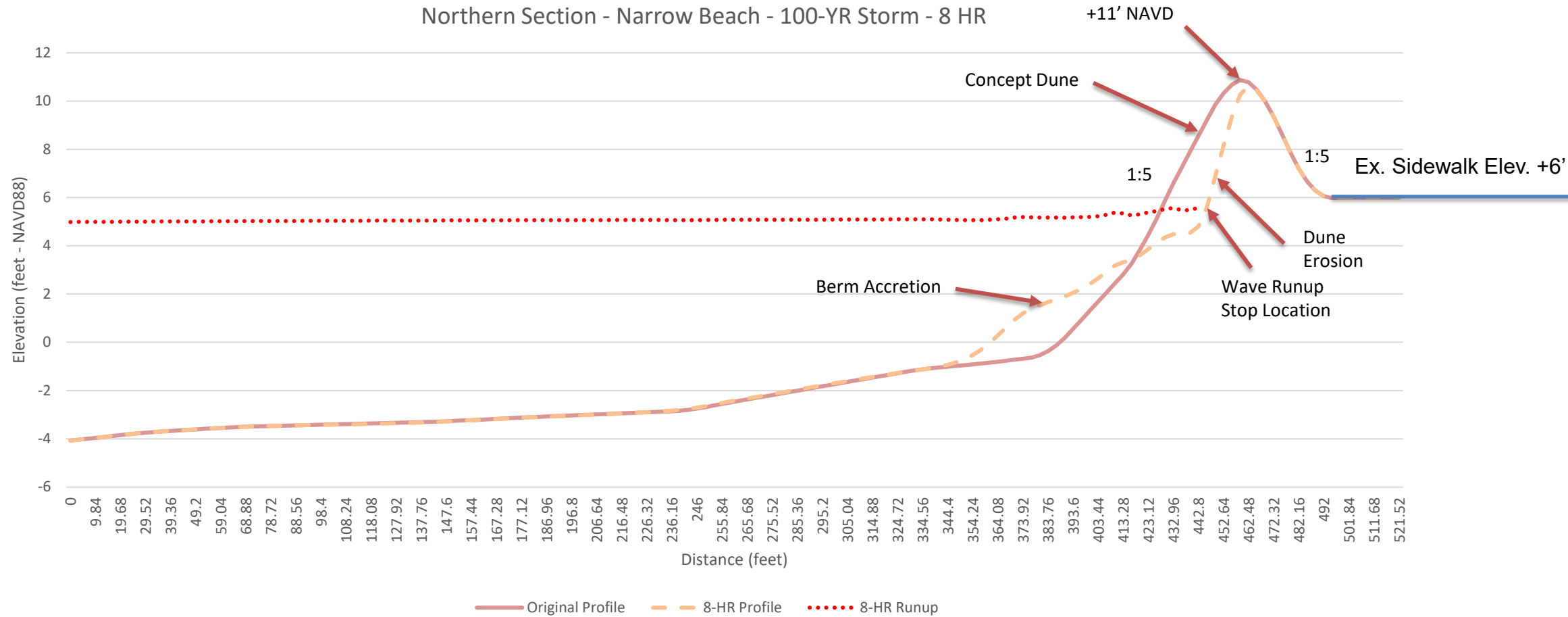
CSHORE Output – 100-YR Storm



CSHORE Output – 100-YR Storm



CSHORE Output – 100-YR Storm



Wind Blown Sediment Transport (Aeolian Transport)

- Coastal Engineering Manual (III-4-4)
 - Use D50 of grain size
 - Find wind data near project
- Compute wind speed at which D50 sand grains are moved
 - 20.1 mph
- Estimate potential aeolian transport per hour per meter of beach for different wind speeds.

wind speed	Sand Transport in 1 hr
mph	cy/ft
15	0.001648
20	0.003916
25	0.007638
30	0.013217
35	0.021008
40	0.031329



Conceptual Concepts

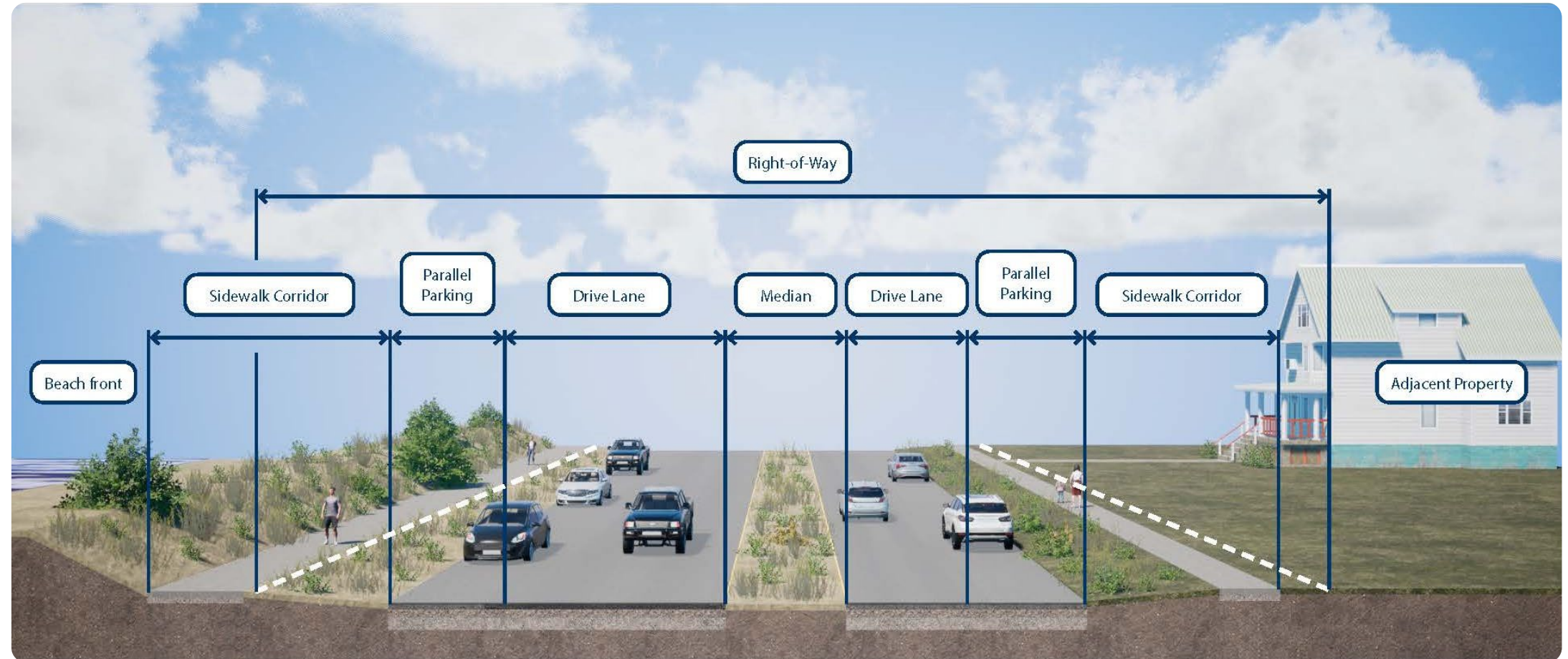




Beachfront Concept Plan

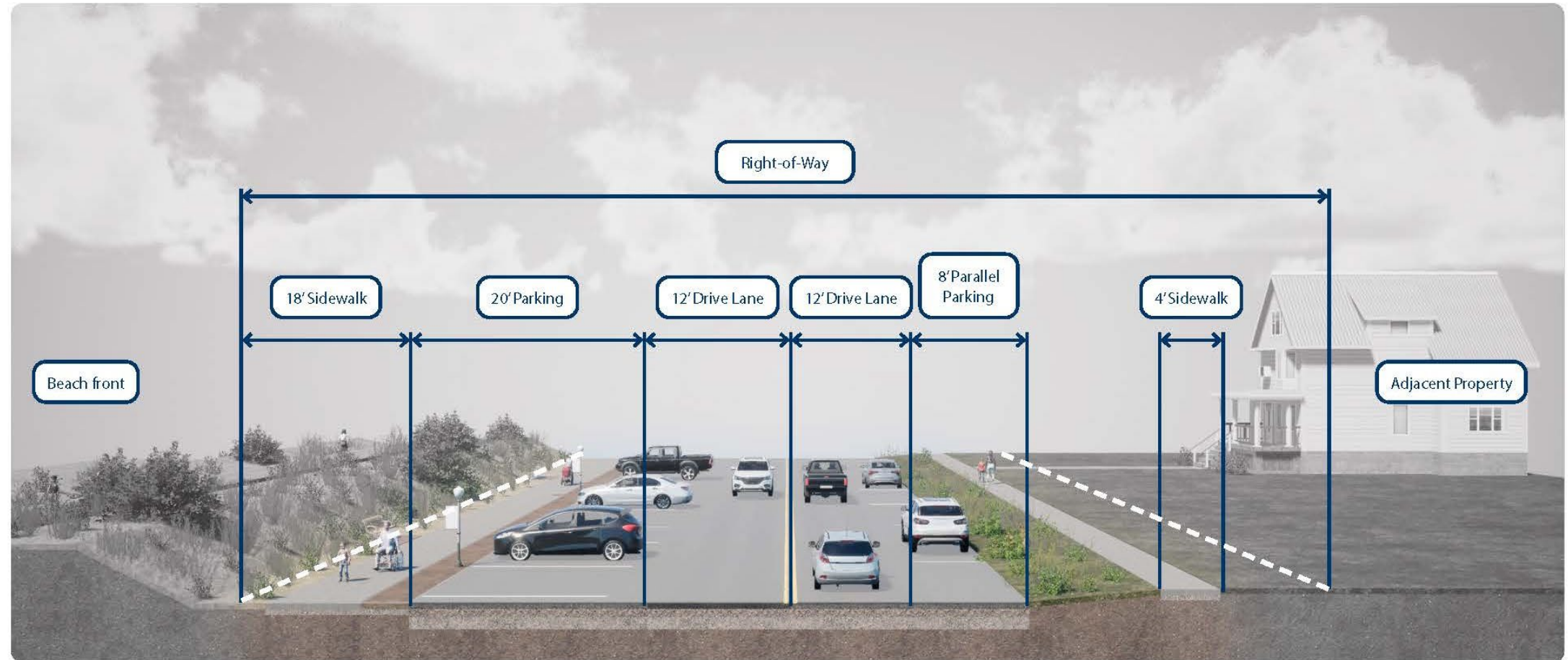
Bay Avenue Reimagined

Existing Condition 1



Bay Avenue Reimagined

Proposed Condition - Parking



Concept Refinements:

- Evaluate beach and dune management options with focus on coastal resilience
- Determine site access, circulation, and parking
- Determine new facilities and development
- Investigate site relationships and layout
- Identify pedestrian and bicycle circulation, activity areas, and recreational opportunities
- Consider maintenance of proposed designs



CAPE CHARLES

Beachfront Master Plan

MASTERPLAN



Illustrative Master Plan

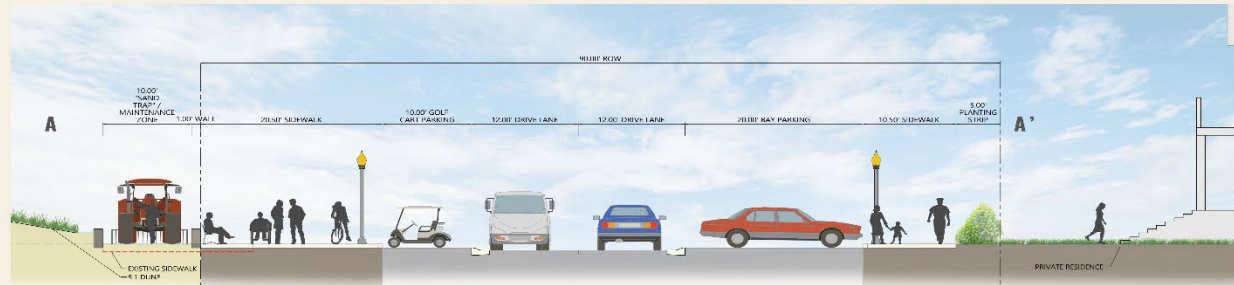
- 1 Adjusted dune layouts
- 2 Monroe Avenue Intersection
- 3 Washington Avenue Entrance Plaza with Restrooms
- 4 Monroe Avenue Plaza with Pergolas, Restrooms and Volleyball Courts
- 5 Small Raised Plaza for Food Trucks
- 6 Expanded Breakwaters to Increase the Beach Size for the Public
- 7 Dune Opening with ADA Beach Access Mat
- 8 Randolph Avenue Plaza with the Preserved Pavilion, Pergola, and Outdoor Seating
- 9 Bay Parking on East Side of Bay Avenue
- 10 Node Plaza with Pergolas
- 11 Restrooms / Showers / Storage
- 12 New Boardwalk to tie into Existing, Access via New Plaza
- 13 Mason Avenue Plaza with Flexible Gathering Spaces
- 14 Food Truck Port
- 15 Dog Beach and Access to the East
- 16 Covered Pavilion with Seating
- 17 Enlarged Beach for the Public

CAPE CHARLES

Beachfront Master Plan

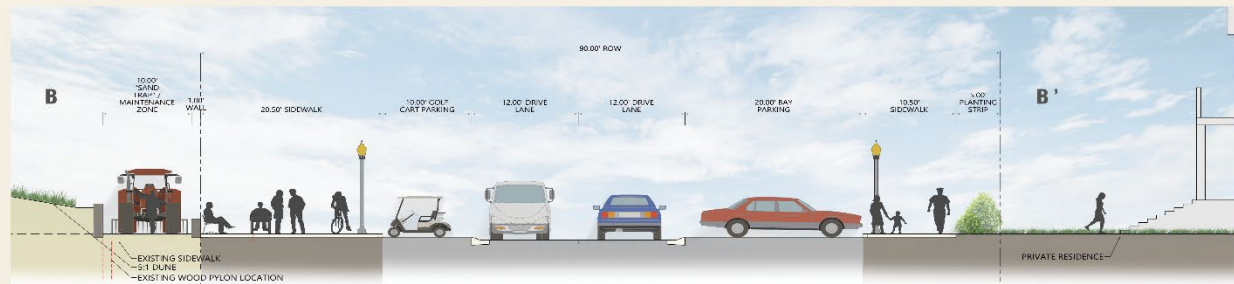
MASTERPLAN

CAPE CHARLES MASTERPLAN EXHIBITS



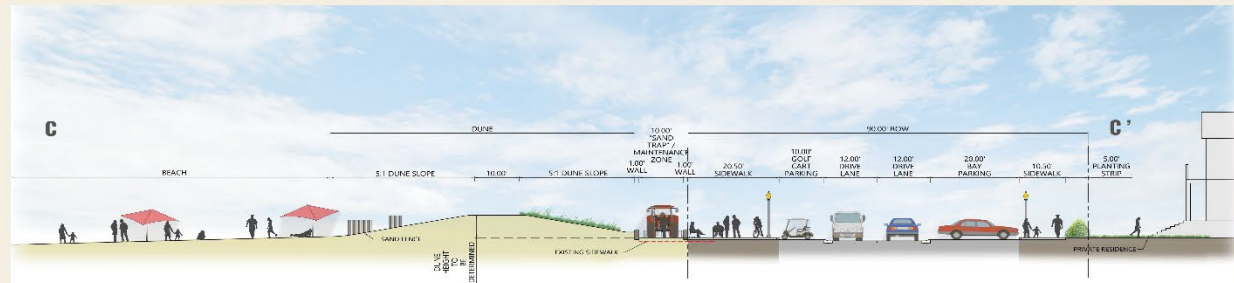
BAY AVENUE NORTH ILLUSTRATIVE SECTION (AT GRADE)

----- Existing Road / Sidewalk



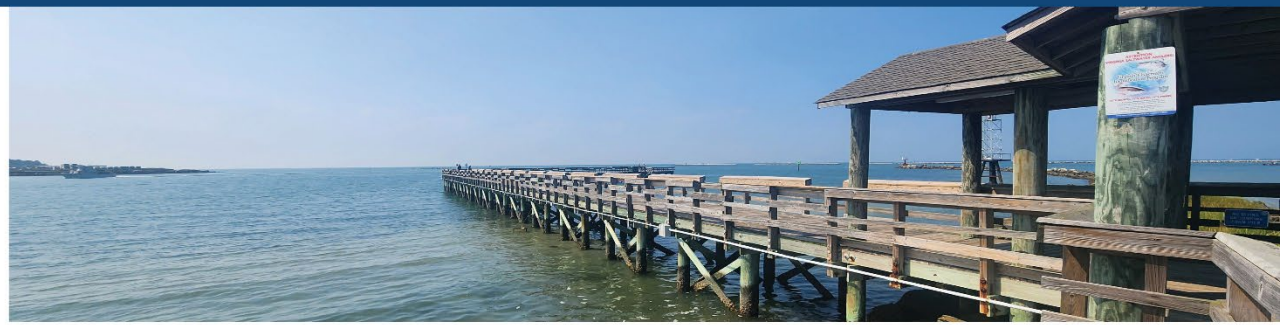
BAY AVENUE SOUTH ILLUSTRATIVE SECTION (CUT SLOPE)

----- Existing Road / Sidewalk



BAY AVENUE EXTENDED ILLUSTRATIVE SECTION

----- Existing Road / Sidewalk



Beachfront Plaza.



Landmarks provided along nodes.



Intersection paving pattern.



Beachfront sidewalk.



Curbside intersection with protective bollards.

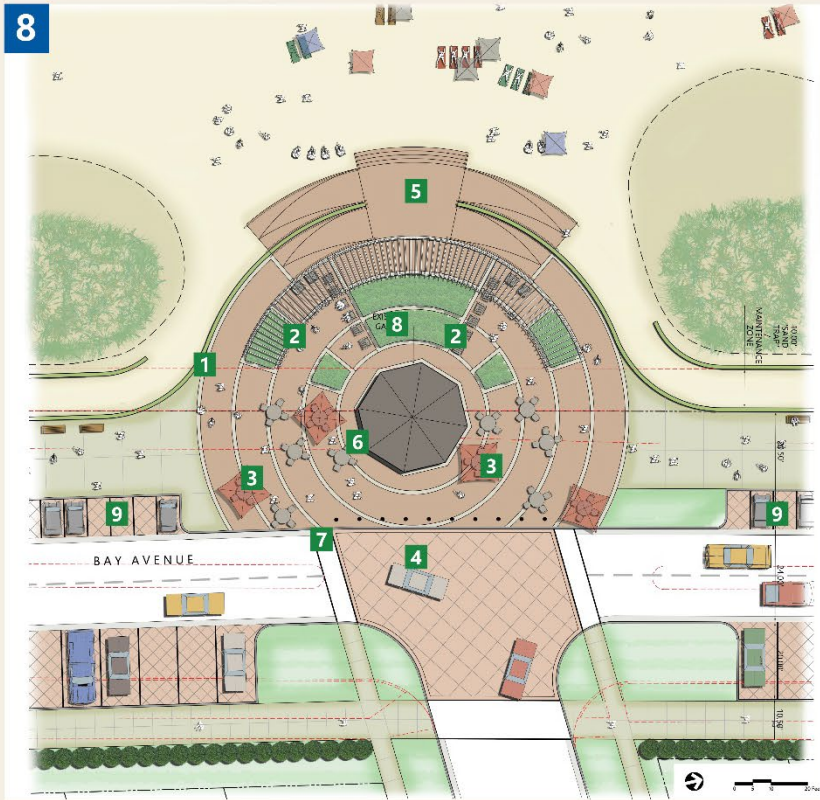


Shower stations along the sidewalk.



Waving sand walls.

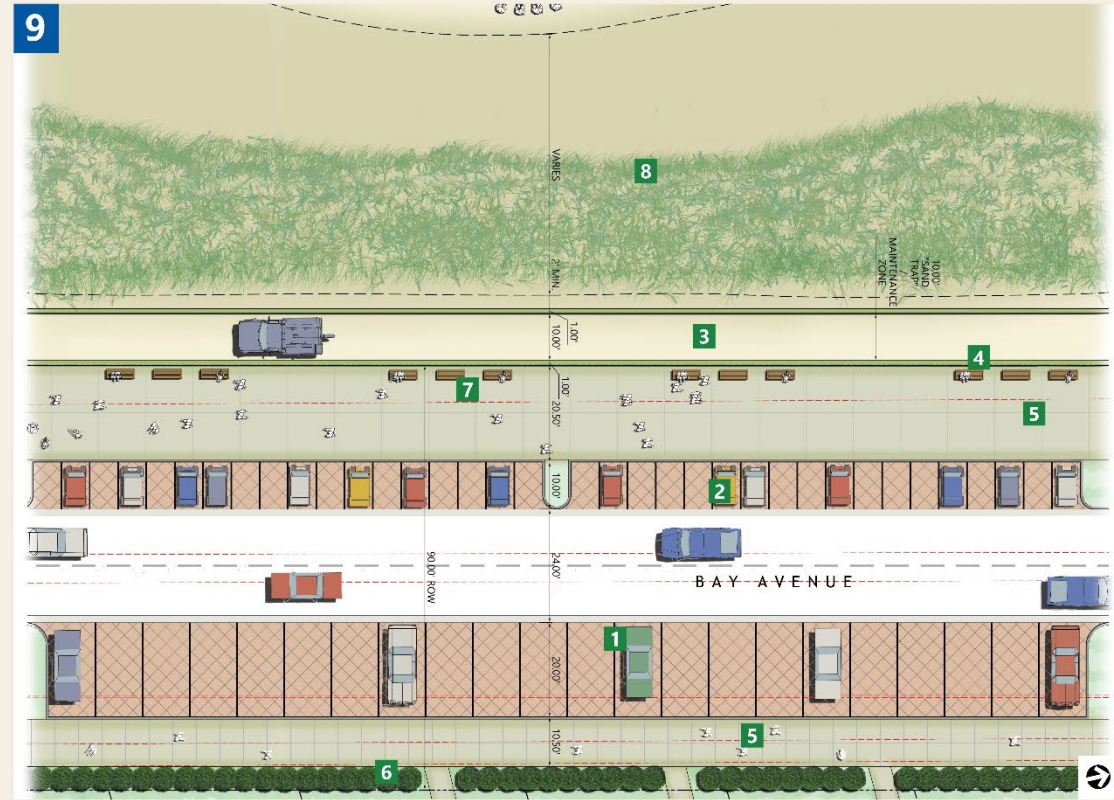




RANDOLPH AVE PLAZA

The historical Gazebo on Bay Avenue is a beloved place of gathering for Cape Charles residents. This new plaza expands this gathering space, allowing the Gazebo to be at the heart of it all.

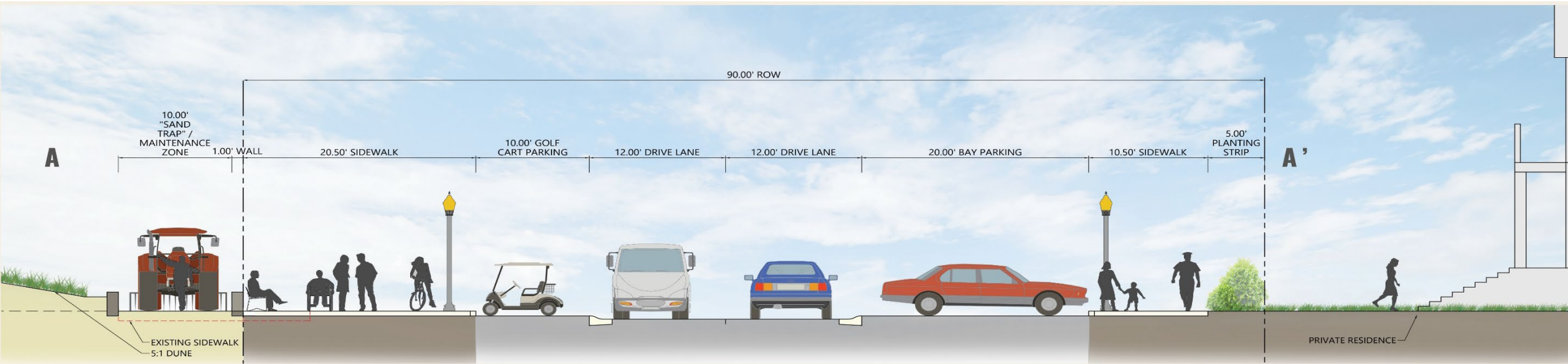
- 1 » Shade pergolas
- 2 » Abundant seating
- 3 » Outdoor eating tables
- 4 » Flush Curb Intersection
- 5 » Beach access ramp / stairs
- 6 » Preserved Gazebo
- 7 » Bollards
- 8 » Planting bed
- 9 » Parallel automobile parking or 90 degrees golf cart parking



BAY AVENUE EXHIBIT

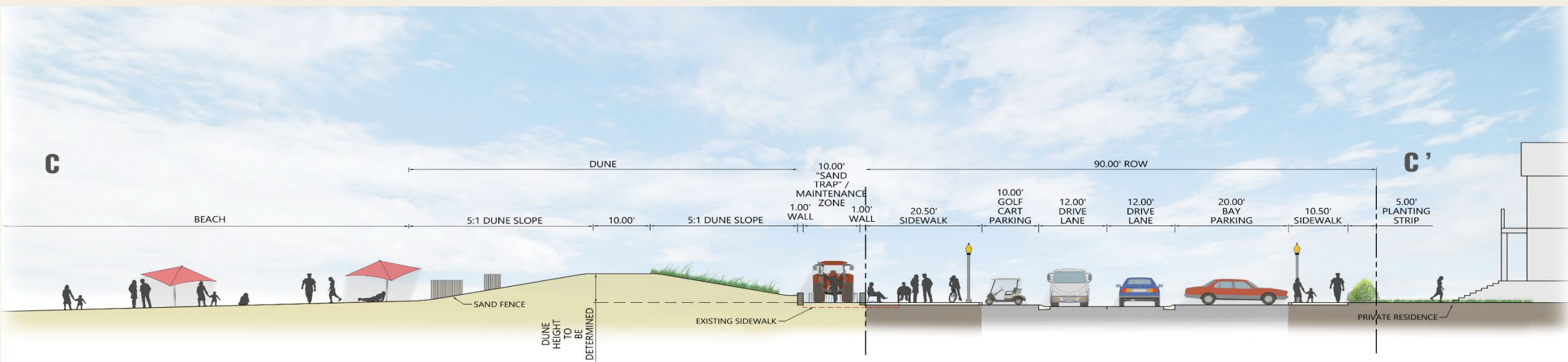
The straight walls with the wide, comfortable sidewalks make it an enjoyable space, with more space provided for the dunes and beach.

- 1 » Bay Parking
- 2 » Parallel Parking
- 3 » 10' Maintenance Strip
- 4 » Continuous wall to block sand
- 5 » Sidewalk
- 6 » Evergreen Screening
- 7 » Bench Seating
- 8 » Dune



BAY AVENUE NORTH ILLUSTRATIVE SECTION (AT GRADE)

----- Existing Road / Sidewalk



BAY AVENUE EXTENDED ILLUSTRATIVE SECTION

----- Existing Road / Sidewalk

CAPE CHARLES

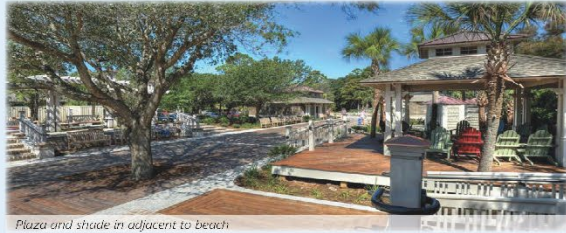
Beachfront Master Plan

MASTERPLAN

PRECEDENT IMAGES



Waving wall along beachfront



Plaza and shade in adjacent to beach



Different options to provide shade for visitors



Various seating options available



Relocated Love Sign in Plaza



Managed sand dunes adjacent to a beach.



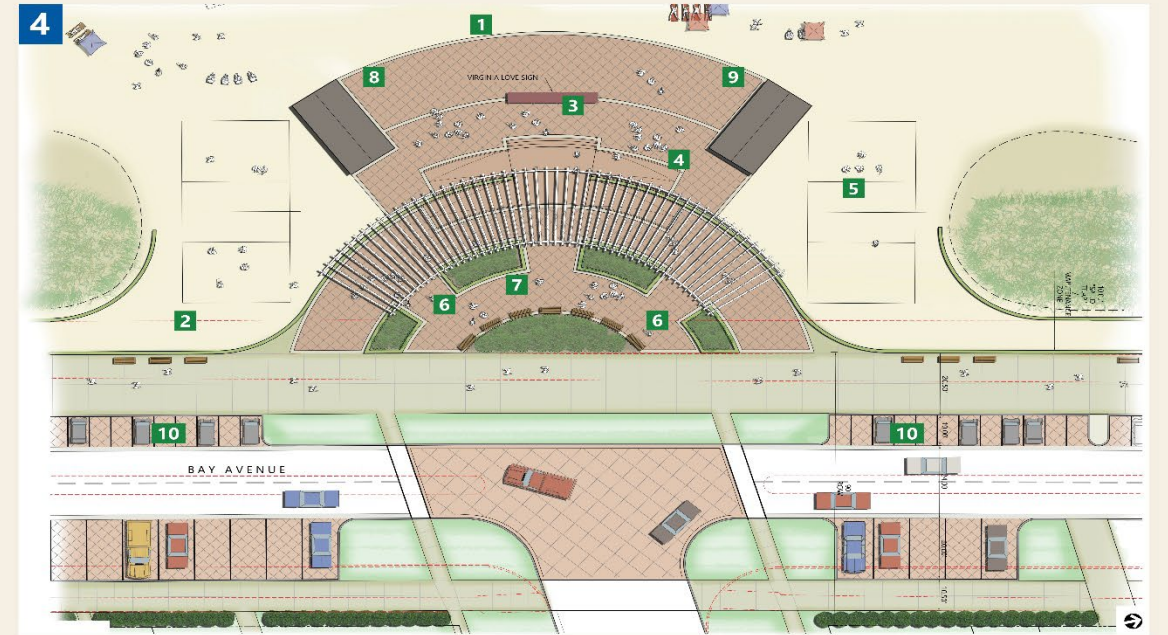
Accessible beach mat.



Beachfront plaza space; Caligny Beach



MONROE AVENUE PLAZA



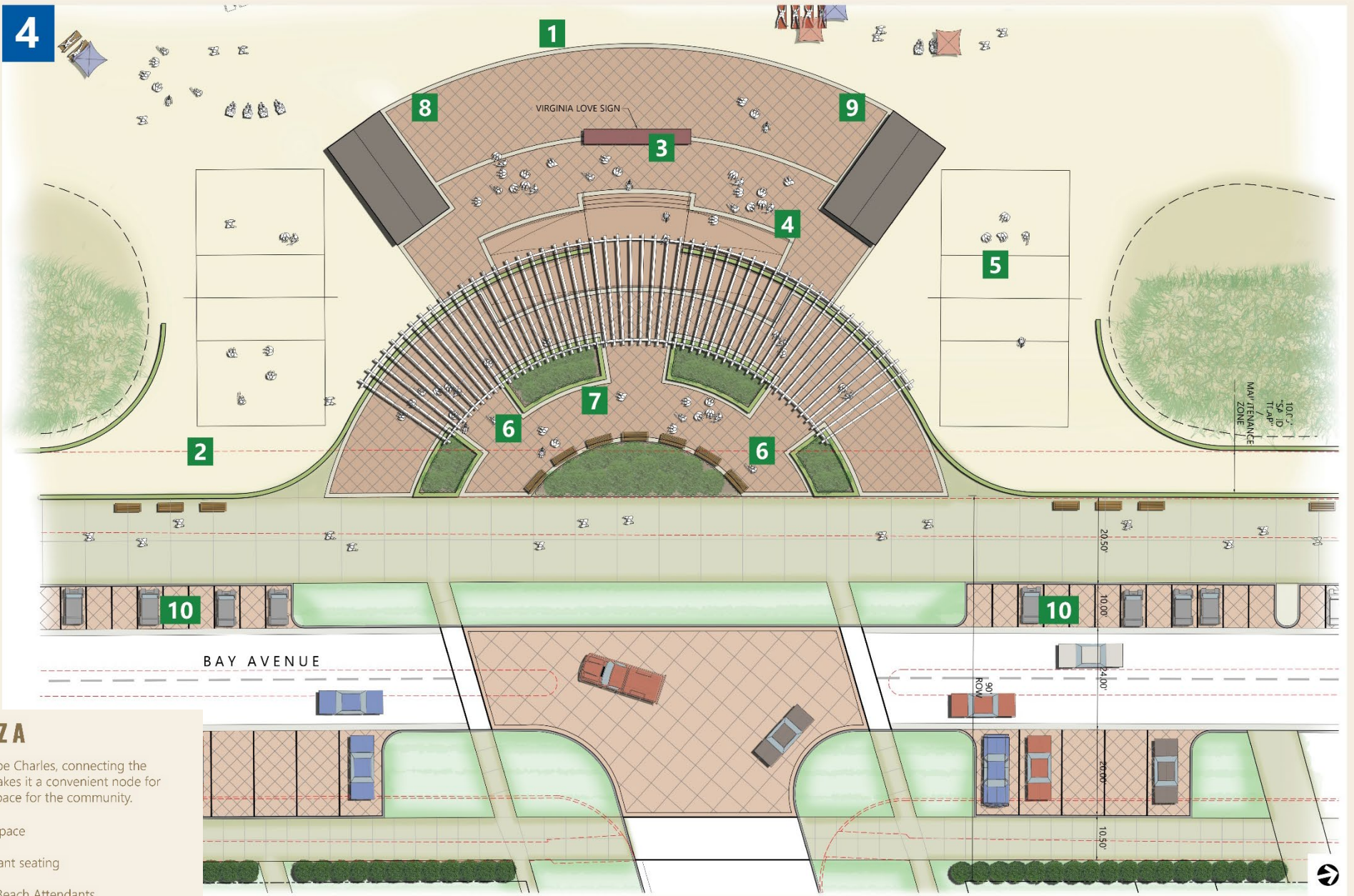
--- Existing Road / Sidewalk

MONROE AVENUE PLAZA

Monroe Avenue is an important artery through Cape Charles, connecting the beachfront with Central Park. Its central location makes it a convenient node for residents of Cape Charles, serving as a gathering space for the community.

- 1 » Relocated Virginia LOVE Sign
- 2 » Continuous wall to block sand
- 3 » Flexible Gathering Spaces
- 4 » Improved beach accessibility
- 5 » Volleyball Courts
- 6 » Greenspace
- 7 » Abundant seating
- 8 » Staff / Beach Attendants
- 9 » Storage
- 10 » Parallel automobile parking or 90 degrees golf cart parking





4

1

8

9

3

4

5

7

6

6

2

10

10

BAY AVENUE

MONROE AVENUE PLAZA

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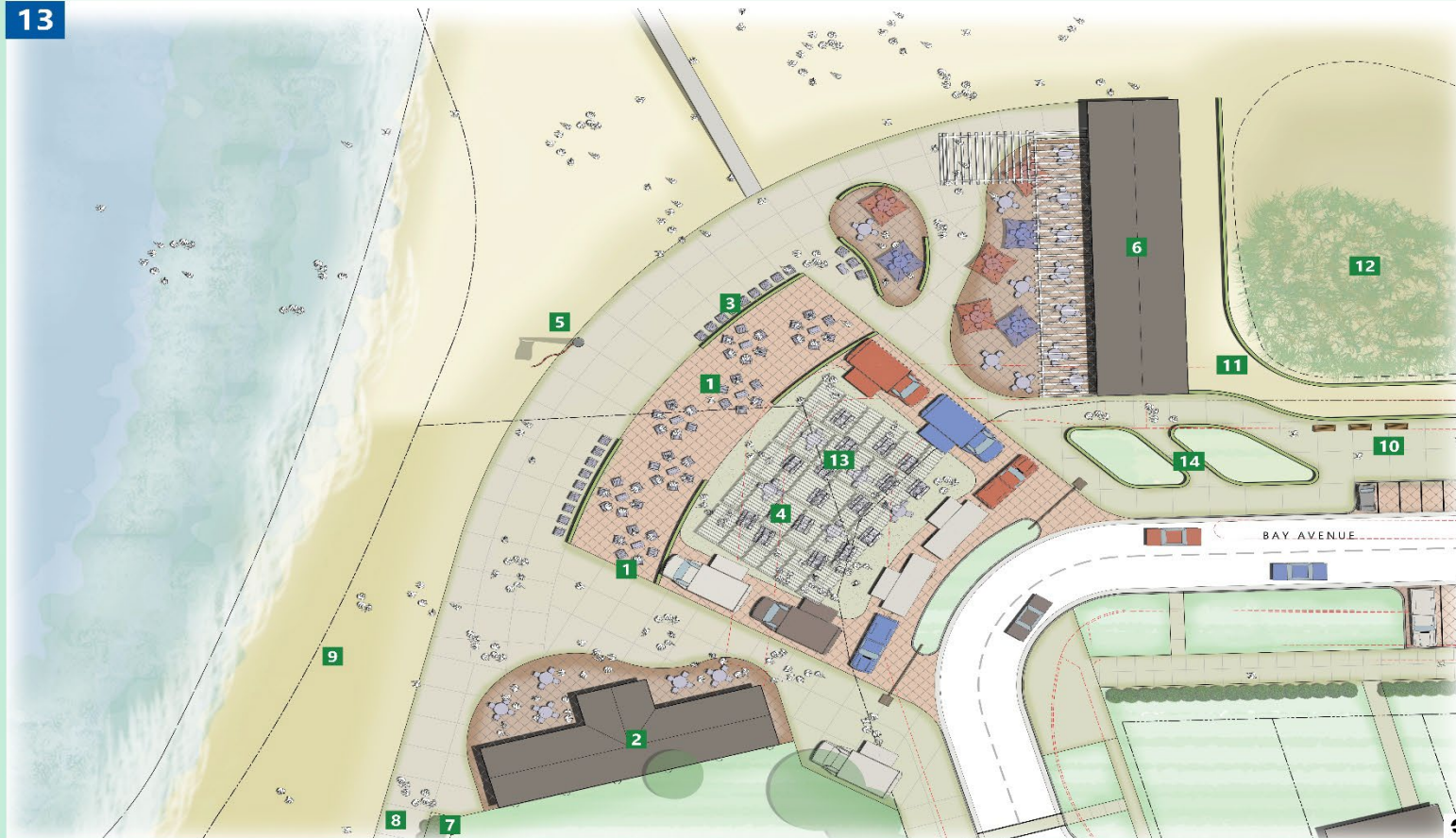
1 » Relocated Virginia LOVE Sign	6 » Greenspace
2 » Continuous wall to block sand	7 » Abundant seating
3 » Flexible Gathering Spaces	8 » Staff / Beach Attendants
4 » Improved beach accessibility	9 » Storage
5 » Volleyball Courts	10 » Parallel automobile parking or 90 degrees golf cart parking

--- Existing Road / Sidewalk

CAPE CHARLES Beachfront Master Plan MASTERPLAN

CAPE CHARLES MASTERPLAN EXHIBITS

13



--- Existing Road / Sidewalk



1 » Flexible Gathering Space

2 » Covered Pavilion with Seating

3 » Food Trucks Lane with Controlled Access

4 » Shade Pergolas

5 » American Flag Pole

6 » Restrooms / Showers / Storage Area

7 » Evergreen screening

8 » Beach / Plaza Access to the East

9 » Dog Beach

10 » Continuous Wall

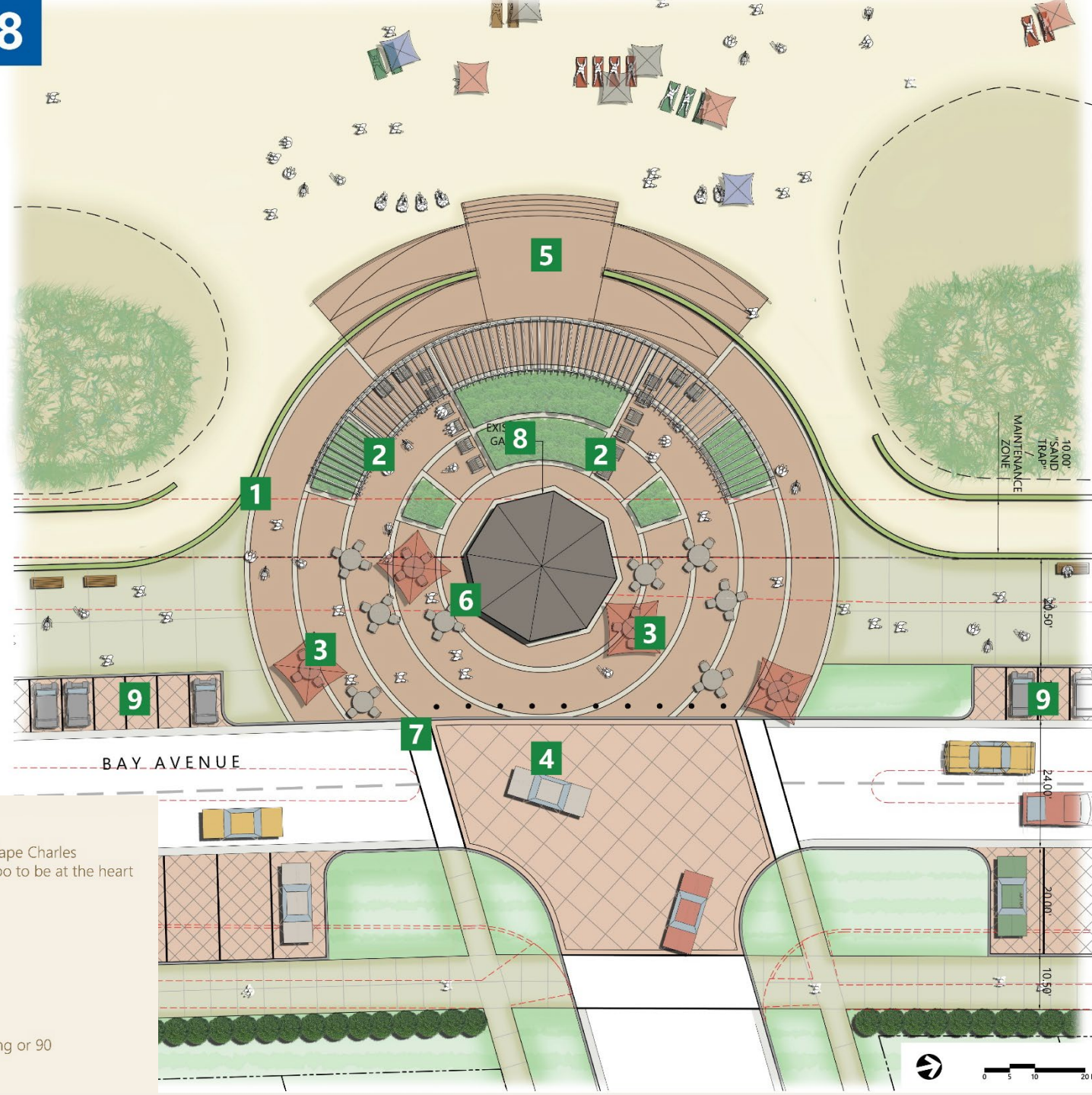
11 » Maintenance Strip

12 » Dune

13 » Food Courtyard

14 » Planting bed





RANDOLPH AVE PLAZA

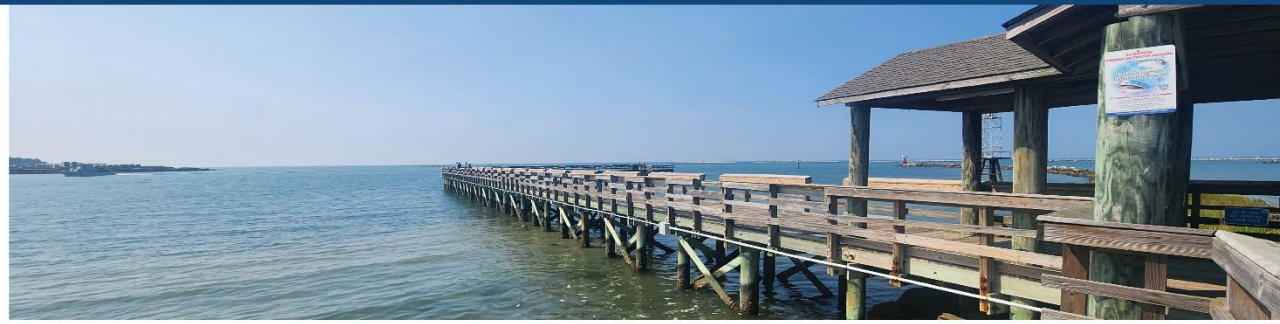
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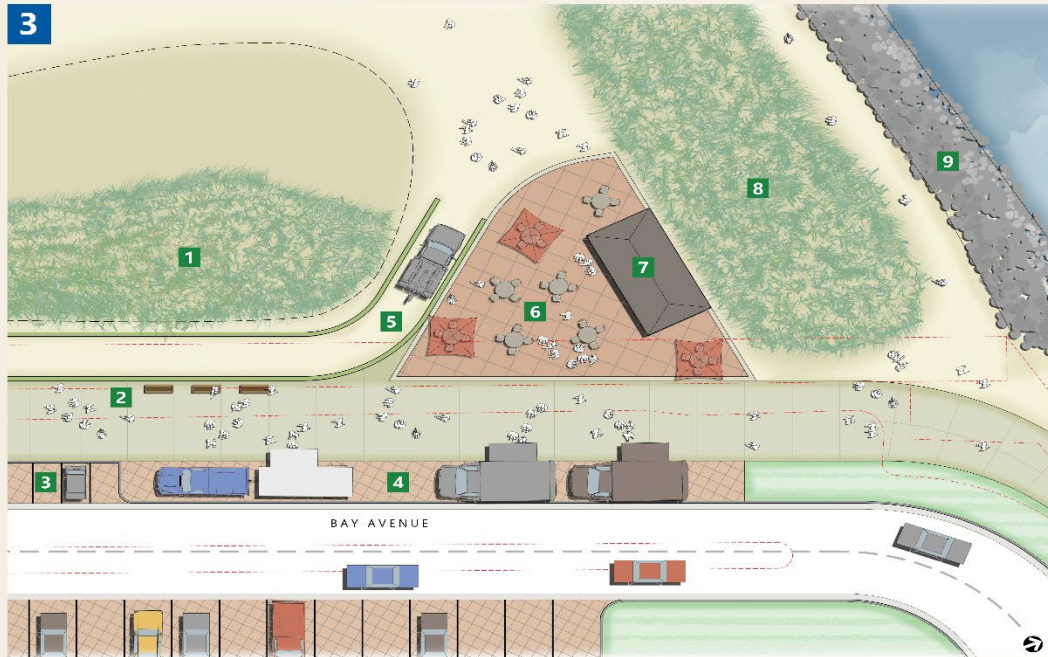
CAPE CHARLES

Beachfront Master Plan

MASTERPLAN



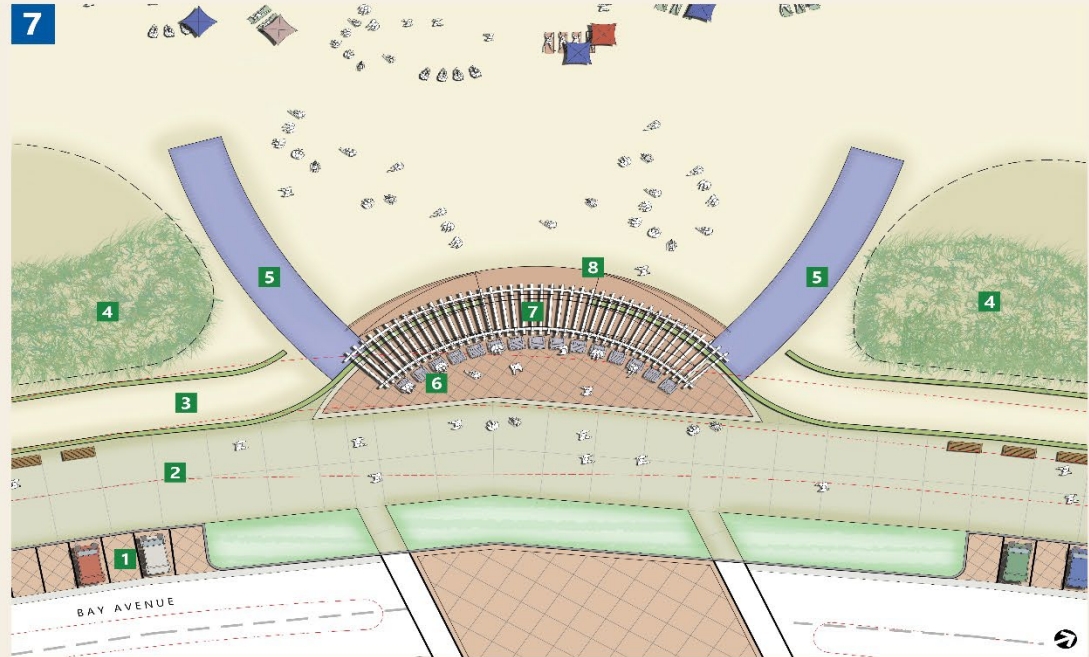
CAPE CHARLES MASTERPLAN EXHIBITS



WASHINGTON AVE PLAZA

The northern plaza adjacent to Washington Avenue should provide shade, outdoor seating and the opportunity for food trucks for visitors to the beach.

- 1 » Dune
- 2 » Bench Seating
- 3 » Golf Cart Parking
- 4 » Food Truck Plaza
- 5 » 10' Maintenance Strip
- 6 » Abundant Seating
- 7 » Restroom / Storage
- 8 » Existing Dune
- 9 » Existing Breakwater



JEFFERSON AVE PLAZA

The plaza at Jefferson Avenue will feature ADA ramps to get over the continuous sand wall, as well as ADA accessibility mats to allow everyone to visit and enjoy the beach.

- 1 » Golf Cart Parking
- 2 » Sidewalk
- 3 » 10' Maintenance Strip
- 4 » Dune
- 5 » ADA Accessibility Mats
- 6 » Adirondack Chairs
- 7 » Shade Pergola
- 8 » ADA Ramps



CAPE CHARLES

Beachfront Master Plan

MASTERPLAN



Illustrative Master Plan

- 1 Adjusted dune layouts
- 2 Monroe Avenue Intersection
- 3 Washington Avenue Entrance Plaza with Restrooms
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- 10 Node Plaza with Pergolas
- 11 Restrooms / Showers / Storage
- 12 New Boardwalk to tie into Existing, Access via New Plaza
- 13 Mason Avenue Plaza with Flexible Gathering Spaces
- 14 Food Truck Port
- 15 Dog Beach and Access to the East
- 16 Covered Pavilion with Seating
- 17 Enlarged Beach for the Public

CAPE CHARLES

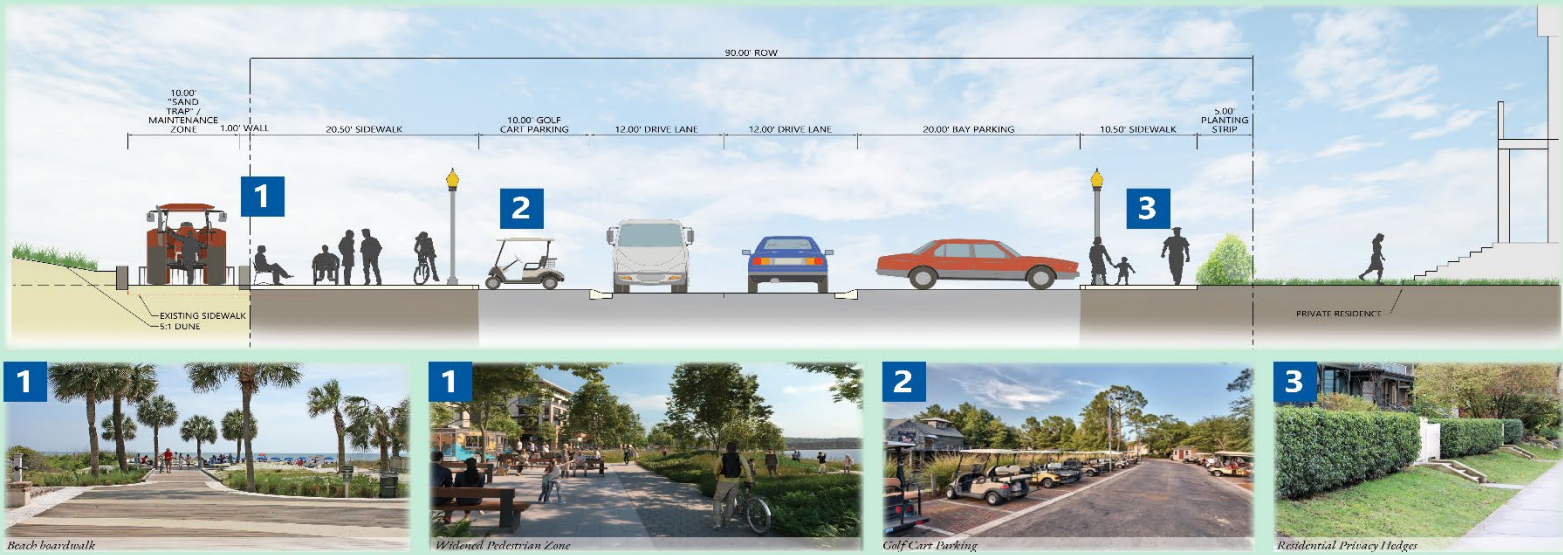
Beachfront Master Plan

PARKING

The new Bay Avenue parking configuration prioritizes safety, efficiency, and beauty for visitors and citizens.



BAY AVENUE IMPROVEMENTS



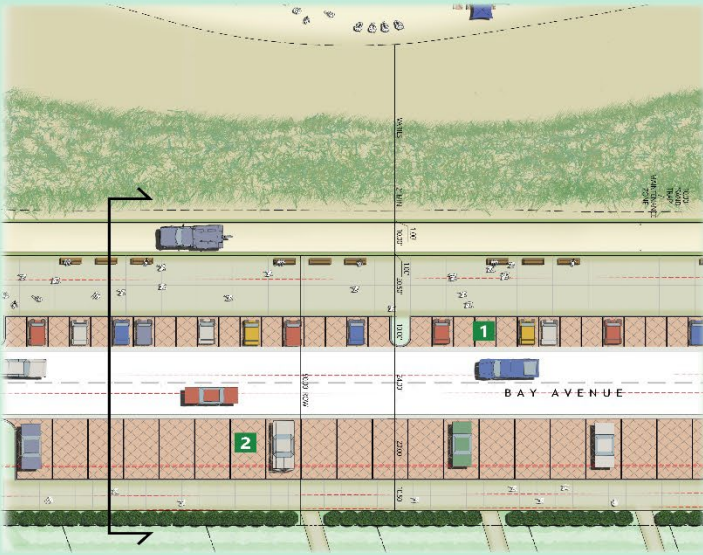
PARKING SECTION

This section depicts the proposed parking concept for Bay Avenue, featuring widened sidewalks, golf cart parking, and improved accessibility.

Historically, 75% of all vehicle parking at Cape Charles beach has been golf carts. Due to the high volume of golf carts in the area, the west side of Bay Avenue has been completely dedicated to head-in golf cart parking. By providing dedicated golf cart spaces, golf carts will be less likely to take up car parking in the area; making parking on Bay Avenue much more efficient for all vehicle types.

Dedicated golf cart parking also minimizes the number of children needing to cross Bay Avenue to the beach; since they are parked on the west side, they will not have to cross the road, which increases pedestrian safety. The east side of Bay Avenue is dedicated to 90 degree pull-in parking for all other vehicles. 90 degree parking spaces will maximize the available space for parking, making the experience convenient and efficient.

For the residents on Bay Avenue, this proposal includes a hedge wall along Bay Avenue to increase privacy, shield residents from headlights, and to provide more protection from windblown sand. The development occurs completely within the Right-Of-Way, so there is no encroachment along property lines along Bay Avenue. Driveways and sidewalks that connect to Bay Avenue are also honored, to make sure that access is guaranteed for all residents.



PARKING EXHIBIT

EXISTING	
Car Parallel Spaces:	160 Approx.
PROPOSED:	
1 Golf Cart Spaces (West):	203
2 Car Bay Spaces (East):	122
	325

325 PROPOSED SPACES
+ 165 Additional Total Spaces





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Q&A

