



TOWN OF
CAPE CHARLES

BEACHFRONT MASTER PLAN

MAY 2026

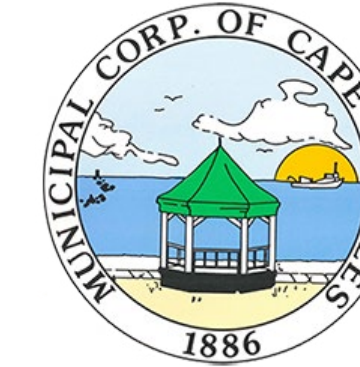




This Beachfront Master Plan reflects the time, care, and steady leadership of Town Council, along with the thoughtful participation of residents, property owners, business owners, and visitors who helped shape it along the way. From the initial survey and public comment process to the Virtual Meeting Room, public meetings, and continued plan revisions, the Town worked to create multiple opportunities for the community to be heard and to help guide the future of the beachfront.

The final plan is stronger because of that public input. Early comments showed significant concern about the scale and character of the original concept. The latest concept now removes all but three of the original plaza areas and keeps more natural beach entrances elsewhere, reflecting the Town's effort to listen, adapt, and find a better balance between needed improvements and preservation of Cape Charles's natural beauty and small-town character.

The Town is grateful to everyone who took part in this process. This master plan is not just a vision for future improvements—it is also a shared civic effort shaped by a community that cares deeply about its waterfront, its history, and its future.



ACKNOWLEDGEMENTS

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Citizens of the Town of Cape Charles and Surrounding Communities



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EXECUTIVE SUMMARY

The Bay Avenue and Beachfront Reconstruction / Beachfront Master Plan effort is a comprehensive planning initiative intended to guide the long-term improvement, protection, and management of Cape Charles’s waterfront along Bay Avenue. The effort is grounded in the understanding that Bay Avenue is not only a transportation corridor and public beach access point, but also a defining civic space, cultural asset, and highly dynamic coastal environment shaped by shoreline change, storm exposure, dune migration, and ongoing public use.

The master plan is developed to create a permissible, constructable, and sustainable vision for the beachfront that responds to both community priorities and coastal conditions. The planning process began with a comprehensive inventory and analysis of the site’s physical, environmental, and cultural conditions, including shoreline dynamics, wave climate, storm surge, floodplain conditions, beach and dune behavior, habitat considerations, access, parking, utilities, stormwater infrastructure, amenities, viewsheds, and patterns of public use. This existing conditions work was intended to identify the site’s opportunities and constraints and to provide the technical basis for resilient, feasible, and context-sensitive recommendations.

Historically, the Bay Avenue waterfront has evolved significantly. Before the current beach existed, the town’s western edge was separated from the bay by marshland, and when Bay Avenue was constructed in 1911, it added 97 plots that expanded development toward the water. The historic seawall that once served as the primary barrier between Bay Avenue and the Chesapeake Bay still exists today, buried beneath the present beach and dune system. This history is important because it shows that the waterfront has long been shaped by both natural coastal processes and human intervention.

The existing conditions research also shows that the beach along Bay Avenue is largely a managed and nourished shoreline that has changed substantially over the last several decades through dredging, sand placement, breakwater construction, dune growth, and other shoreline management actions. A riprap breakwater system installed between 1994 and 1996 helped stabilize the northern portion of the beach, improve sediment retention, and support the formation of a wider and more resilient beach berm. Subsequent aerial imagery and shoreline analysis indicate that these structures have contributed to the development of a broader dune field and improved protection for the roadway and adjacent infrastructure.

At the same time, the analysis makes clear that the site remains vulnerable to erosion, storm impacts, and wind-driven sand movement. The beach sand is predominantly fine grained and therefore more easily displaced by wave action and aeolian transport. Sand fencing installed around 1988 helped initiate dune formation and reduce sand encroachment onto Bay Avenue, and by 2021 the primary dune had reportedly grown to roughly three times its 2010 volume, increasing the level of natural protection for the roadway and nearby properties. Even so, the master plan recognizes that long-term shoreline stability will require continued sediment management and strategic improvement of the existing coastal protection system.

As a result, one of the central goals of the master plan is to evaluate shoreline and berm stabilization strategies that can preserve as much usable beach berm as possible while maintaining protection during extreme storm events. Concepts under consideration include lengthening existing breakwaters, adding new structures, or combining both approaches to better dissipate wave energy, improve sediment retention, and reduce the rate at which sand migrates onto Bay Avenue and adjacent residential properties. The intent is not only to improve coastal resilience, but also to enhance community livability and recreational use of the public beachfront.

Beyond shoreline protection, the effort is also intended to improve the public realm and functionality of the beachfront. Bay Avenue is described as a beloved part of Cape Charles and a center of events, daily recreation, and community identity, anchored by features such as the gazebo, fishing pier, beach, nearby business district, Central Park connections, and the broader small-town waterfront setting. The planning process therefore considers how future improvements can respect the town’s history, architecture, and cultural integrity while enhancing access, circulation, amenities, and overall visitor experience.

The project approach emphasizes that the master plan is not simply a design exercise, but a structured planning and decision-making process. Phase I included research, outreach, and plan development, beginning with kickoff coordination, background and regulatory review, shoreline analysis, and site inventory. It also includes a robust community engagement program consisting of oversight committee meetings, public meetings, and Town Council presentations to ensure that local priorities, stakeholder concerns, and public feedback help shape the final plan.

The master plan is intended to position the Town for future implementation, which may proceed in phases and could include design and construction work in four broad focus areas: beach/dune improvements, bathroom/restroom facilities, Bay Avenue and adjacent areas, and the fishing pier. In summary, the project is intended to rebuild Bay Avenue as a safer, more walkable, bike-friendly, accessible, and climate-resilient beachfront corridor, while positioning Cape Charles to pursue all available local, state, federal, and other eligible funding sources needed to complete design, permitting, and construction.

INTRODUCTION - BEACHFRONT MASTER PLAN PROJECT CHARTER

The Cape Charles Beachfront Master Plan Charter serves as a foundational project document that establishes the purpose, goals, vision, and process for the beachfront planning effort. It frames the project around protecting the beach, improving accessibility, supporting economic development, enhancing recreation, and making sustainable use of existing infrastructure, while emphasizing a collaborative and community-informed planning process. The charter also outlines the project’s mission and long-term vision for a thriving, resilient waterfront and provides a high-level schedule for moving from research and outreach into plan development and, ultimately, future implementation.





EXISTING CONDITIONS

This report seeks to study and analyze the existing beach site through a thorough examination of its physical, environmental, and social characteristics to inform its improvements effectively. We are assessing the beach's natural features, such as its topography, coastal dynamics, and vegetation, to understand how these elements interact and influence the site. Additionally, this report evaluates the current usage patterns, visitor demographics, and potential environmental impacts to ensure the proposals address both recreational needs and sustainability concerns. This analysis helps identify key opportunities for enhancement and design interventions that harmonize with the site's unique attributes, ultimately guiding the development of thoughtful and contextually appropriate proposals.

THE HISTORY OF BAY AVENUE

Cape Charles' historical development over the past 100 plus years has seen the town grow, most notably to the West of Pine Street, with the marsh being developed to allow for more homes adjacent to the water.

HISTORY



1887

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.



1920

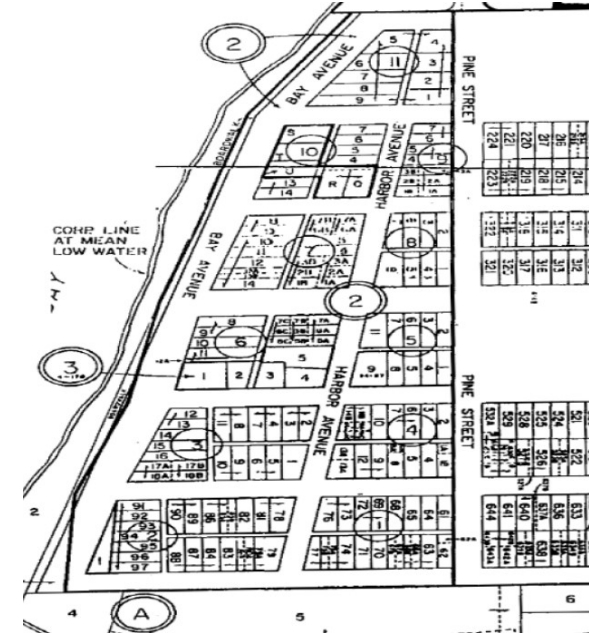
This 1920s image demonstrates what the waterfront looked like in Cape Charles before the construction of the beach. Some of these homes still exist today, demonstrating Cape Charles's lasting history.

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 onto the beach, the bigger the dunes grow and the deeper the seawall becomes.



1911

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



EXISTING AMENITIES

Cape Charles has a rich fabric of existing vendors and amenities that add to the small-town charm. Existing shops and attractions around Bay Avenue must be studied and considered when proposing new amenities in this development.

VENDORS & AMENITIES MAP



LEGEND

- Amenity
- Business
- Beach
- ➔ Roads

Cape Charles has many existing amenities that make it a charming town to live in. The beach and Central Park provide leisure activities, connected along Monroe Avenue. Mason Avenue also boasts many of the businesses in Cape Charles, featuring a gourmet food market, hotels, surf shops, dessert shops, coffee shops, and more.

These vendors enrich the urban fabric of Cape Charles, painting the perfect picture of a quaint beach town.



BUSINESS STRIP

VENDORS & AMENITIES PHOTOS



Gazebo



Fishing Pier



Mason Avenue

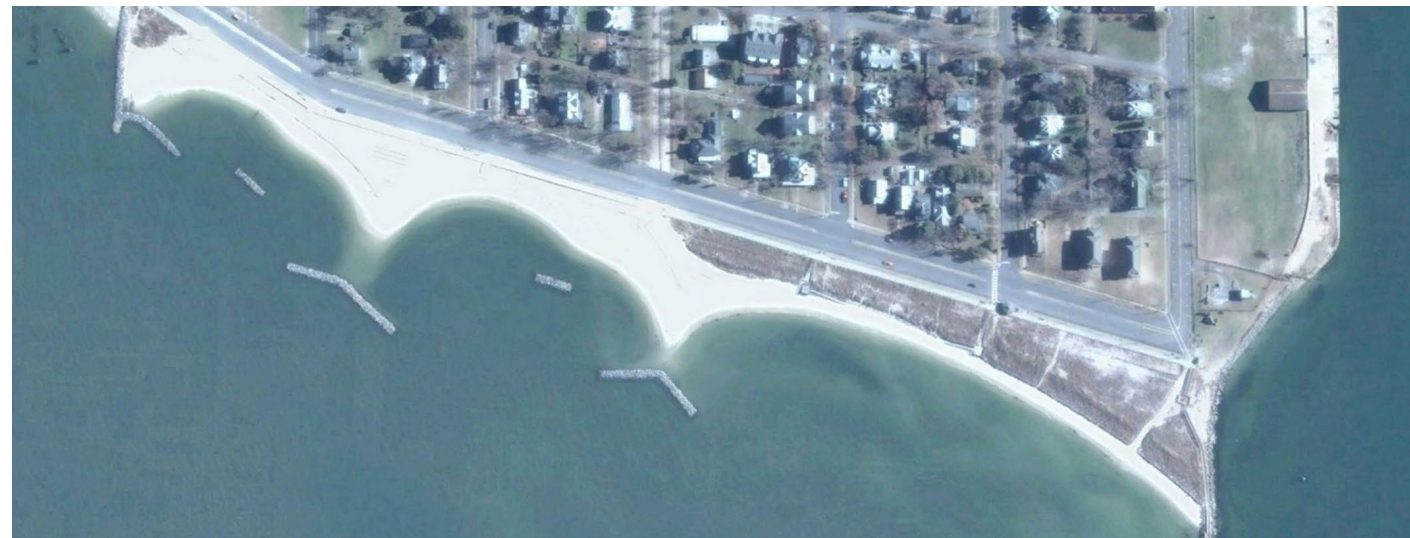
BEACH HISTORY



1994

This 1994 aerial image captures the shoreline prior to installation of any offshore breakwater systems. It is evident that the harbor jetty is effectively trapping sand, maintaining a measurable beach width between the waterline and the road. In the immediate lee of the jetty, a well-defined dune has developed, characterized by dense, established vegetation that indicates relative stability over time.

Moving progressively updrift and away from the harbor, the beach width narrows, illustrating the classic sediment distribution pattern associated with a terminal jetty structure. Eventually, the influence of the jetty diminishes, and the protective beach berm disappears entirely. The shoreline has migrated landward to the point where wave run-up reaches the bulkhead along the road, indicating a more exposed and erosion-prone condition.



2006

A riprap breakwater system was constructed between 1994 and 1996, and the beach berm is now more stable, effectively providing protection to Bay Drive along the northern section of the shoreline. The newly installed structures capitalize on the stabilization effect created by the terminal jetty, enhancing sediment retention and promoting a wider, more resilient beach profile.

As a result, there is an increased expanse of beach berm available to buffer the roadway from storm-driven waves and high-water events. In addition, the southern portion of the dune adjacent to the jetty has prograded waterward and now supports dense, well-established vegetation, indicating improved dune stability and a more robust natural defense against coastal erosion.



2018

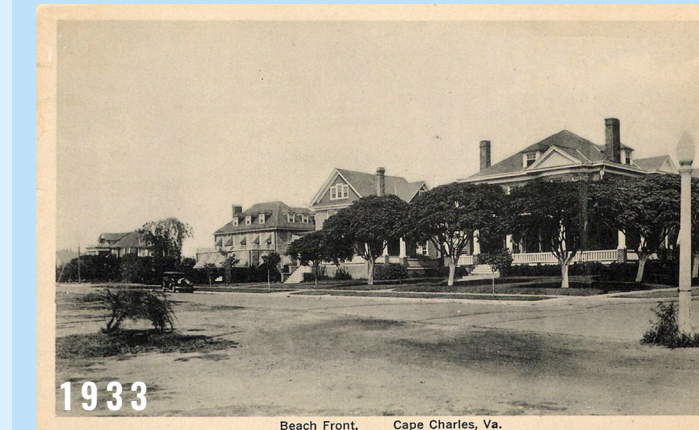
The 2018 aerial imagery indicates that the breakwater system is functioning effectively and has facilitated the development of a broad, well-established dune field along the shoreline. This expanded dune system provides significantly improved protection for Bay Road by dissipating wave energy and reducing direct wave attack on the roadway and adjacent infrastructure.

In addition to serving as a physical barrier, the dunes now act as an important sediment reservoir. During storm events, this stored sand can be mobilized to naturally replenish and rebuild the beach berm, helping to maintain beach width and preserve the overall resilience of the coastal system over time.

THEN & NOW



GAZEBO



BAY AVE

Cape Charles has a unique small town spirit that has remained consistent through much of its lifetime. It is 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. There is also the town's beloved historic gazebo, hosting events for many years.

PRESENT DAY

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.



Virginia Love Sign



Pavilion at Christmas



4th July Parade



4th July Parade

SHORELINE IMPROVEMENTS

The beach along Bay Avenue has seen significant change and growth over the past 30 years through man-made efforts, including breakwaters and dredging projects. The master plan aims to provide a method to enhance the existing breakwater stabilization system to lengthen the time between maintenance events.

WHAT'S HAPPENING



1994

The beach along Bay Avenue is man-made and historically erosive 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.



2006

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

WHY IT MATTERS



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

Cape Charles fronts Chesapeake Bay and is therefore continually exposed to dynamic coastal processes. These forces actively erode sand from the beach berm and, under prevailing conditions, transport sediment predominantly from north to south along the shoreline. While the existing breakwater structures are intended to enhance sediment retention and extend the effective life of periodic beach nourishment, the current nourishment schedule is infrequent and not guaranteed, creating inherent uncertainty in long-term beach maintenance.

The planned shoreline improvements are designed to help bridge the gap between nourishment cycles by improving sediment management and system resilience. In particular, these measures aim to reduce the rate of aeolian (wind-driven) sand transport from the beach onto the roadway and into adjacent residential properties, thereby improving both coastal protection and community livability.

BREAKWATERS

The existing breakwaters have effectively stabilized the shoreline, creating and maintaining a continuous beach berm that residents can safely access and enjoy for recreation. In addition, these structures have promoted the natural seaward progression of the dune system, supporting increased vegetation and enhancing the beach's overall capacity to buffer storm surge and wave energy.

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 and to maintain a level of protection during extreme storm events.

HOW THEY WORK

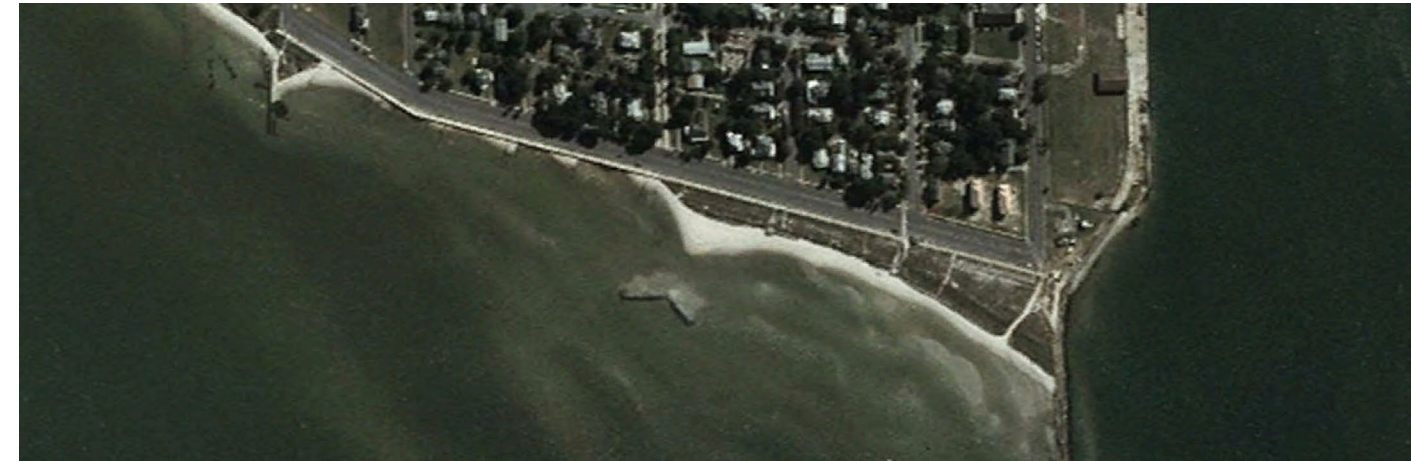


These structures function by deliberately modifying the nearshore wave field: the highest wave energy is intercepted and dissipated by the breakwaters themselves, while the remaining, waves propagate through and around the gaps between structures. As this residual energy spreads and refracts landward, it is further diminished, resulting in calmer conditions behind the breakwaters that improve shoreline stability.

SAND DUNES

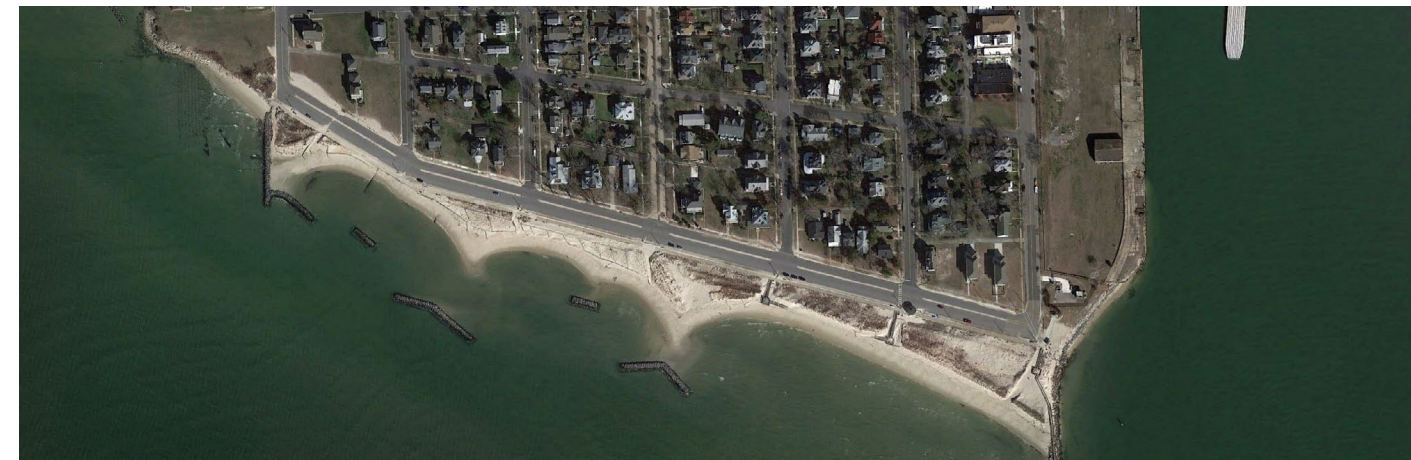
As the beach area has grown over the past years, so to have the dunes width and height. The master plan aims to modify the dunes to provide beautiful sunset views and enhanced wind blown sand trapping for the benefit of Cape Charles residents.

RECENT DUNE HISTORY



2005

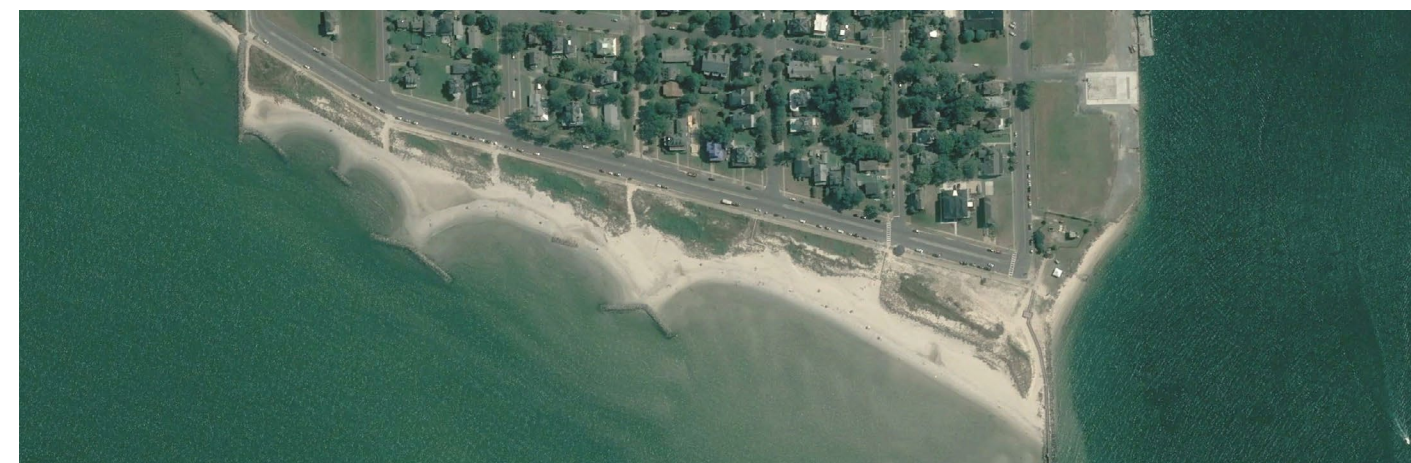
The beach and dune system along Bay Avenue experienced repeated cycles of erosion and recovery prior to installation of the breakwater system at the north end of the public beach. Although the breakwaters have been effective in stabilizing the beach berm and maintaining a more consistent shoreline, the predominately fine-grained beach sand remains highly susceptible to aeolian (wind-driven) transport.



2013

To address this, sand fencing was installed near the existing bulkhead around 1988 with the dual purpose of reducing wind-blown sand encroachment onto Bay Avenue and initiating the formation of a continuous dune line. Since that time, the dunes have progressively built upward and migrated seaward as wind-transported sand has accumulated around the fencing, supplemented by additional material placed during periodic beach nourishment efforts.

By 2021, the primary dune along Bay Avenue had increased in volume to approximately three times its 2010 size, reflecting a substantial improvement in both dune development and the overall level of natural protection afforded to the roadway and adjacent properties.



2019

ENVIRONMENT



Windblown sand; the sand from the dunes is migrating past the Gazebo and into the road.



Existing Vegetation on dunes located along Bay Avenue

Dunes typically form on the landward side of a natural beach, generally along or just inland of the vegetation line where wind-blown sand begins to accumulate. At man-made or heavily managed beaches such as Cape Charles, dunes are often created and enhanced artificially, using measures like sand fencing and deliberate dune construction as part of beach nourishment projects.

These dunes play a critical role in coastal protection by shielding upland areas from direct wave attack during periods of elevated water levels and storm events. In Cape Charles, the dune system helps protect streets, sidewalks, and adjacent infrastructure from storm-driven erosion; however, it does not fully prevent inundation associated with storm surge or coastal flooding.

During storms, dunes also function as a sacrificial sediment source, supplying sand to the active beach profile as material is eroded from the dune face and deposited across the beach berm. Over time, vegetated dunes become even more effective: grasses and other dune plants trap wind-blown sand within their foliage and root structures, promoting dune growth, increasing elevation and width, and thereby strengthening the overall resilience of the coastal system.

SAFETY



Sand Fencing on the edges of dunes stops sand from spilling onto the beach



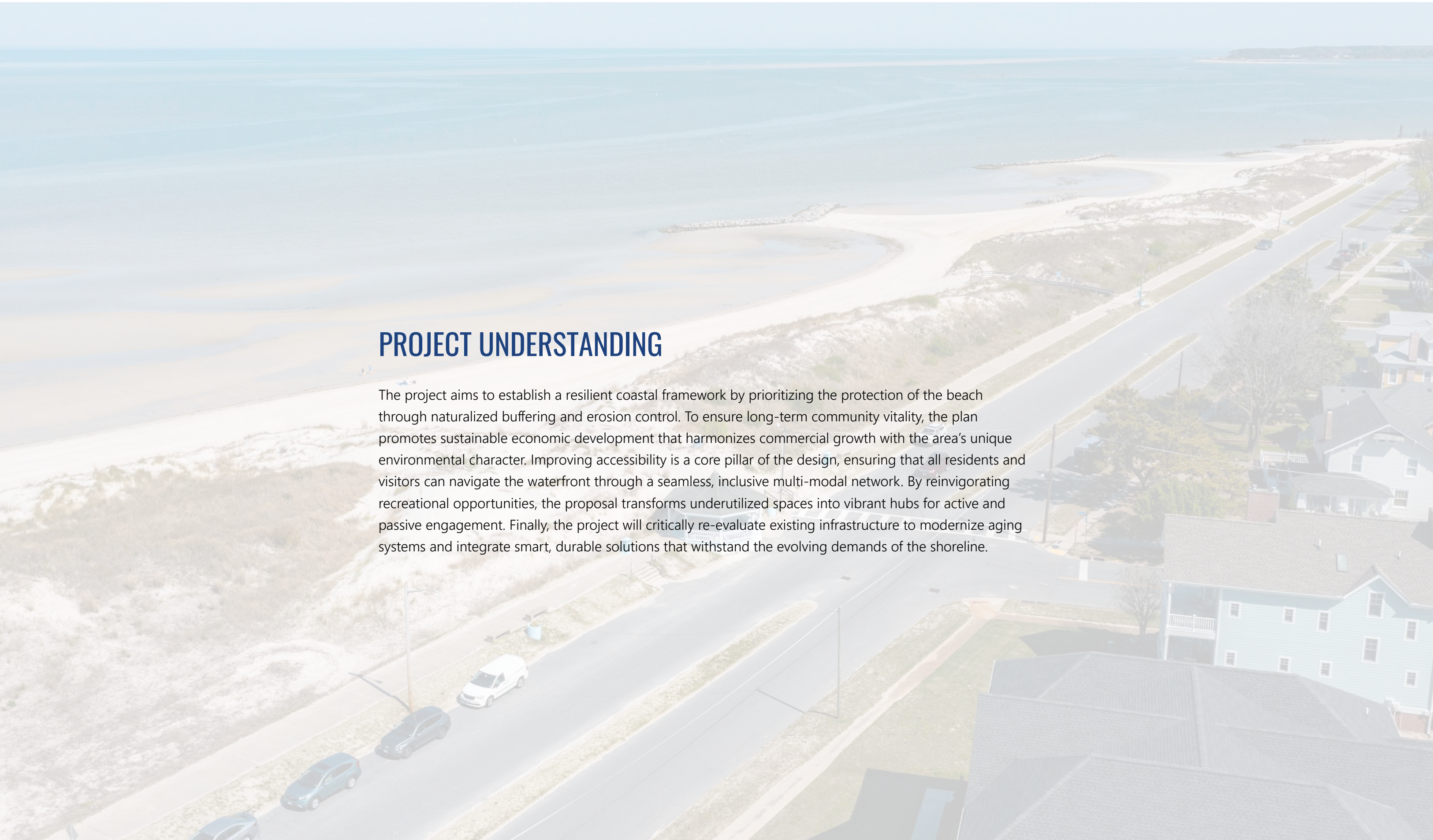
The openings between the dunes along the Bay Avenue allows pedestrians to access the beach from the road



Vegetation currently grows along the tops of the existing dunes

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.



PROJECT UNDERSTANDING

The project aims to establish a resilient coastal framework by prioritizing the protection of the beach through naturalized buffering and erosion control. To ensure long-term community vitality, the plan promotes sustainable economic development that harmonizes commercial growth with the area's unique environmental character. Improving accessibility is a core pillar of the design, ensuring that all residents and visitors can navigate the waterfront through a seamless, inclusive multi-modal network. By reinvigorating recreational opportunities, the proposal transforms underutilized spaces into vibrant hubs for active and passive engagement. Finally, the project will critically re-evaluate existing infrastructure to modernize aging systems and integrate smart, durable solutions that withstand the evolving demands of the shoreline.

PROJECT GOALS

The Cape Charles Beachfront Master Plan is guided by five interconnected goals: protecting the beach through improved shoreline management and maximized beach area; supporting economic development by enhancing the waterfront as a quality destination; improving accessibility for all users; reinvigorating recreational opportunities through expanded amenities and activities; and reevaluating existing infrastructure through sustainable, character-sensitive capital improvements. Together, these goals establish a framework for a resilient, welcoming, and economically vibrant beachfront that preserves the natural beauty and small-town identity of Cape Charles while supporting long-term public enjoyment and stewardship.

PROTECT THE BEACH

Preserve and strengthen the beachfront by controlling sand migration, stabilizing shoreline conditions, and maximizing usable beach area. This goal is intended to support both the long-term resilience of the shoreline and the continued enjoyment of the beach as one of Cape Charles's most valued public assets. Efforts under this goal should help reduce erosion-related impacts, improve the performance of the beach and dune system, and protect the waterfront's environmental, recreational, and scenic value.

PROMOTE ECONOMIC DEVELOPMENT

Develop the beachfront into a high-quality destination that reflects and strengthens Cape Charles's quaint, small-town charm for both residents and visitors. This goal includes creating a thoughtfully designed plaza for food trucks, local vendors, casual outdoor dining, and small community events that enhances the waterfront experience while supporting tourism, local entrepreneurship, and the broader waterfront economy. The intent is to encourage activity in a way that is well-scaled, visually appealing, and consistent with the town's historic character and relaxed coastal atmosphere.

IMPROVE ACCESSIBILITY

Expand and enhance access to the beachfront for all users by creating a more inclusive, connected, and user-friendly public realm. This goal is intended to improve how people of all ages and abilities reach, move through, and experience the waterfront, with attention to comfort, safety, and equitable access. Improvements should support a beachfront that is welcoming and functional for residents, visitors, families, and individuals with mobility challenges or other accessibility needs.

REINVIGORATE RECREATIONAL OPPORTUNITIES

Enhance existing recreational experiences and support new attractions that broaden the beachfront's appeal and usefulness for a wide range of users. This goal includes strengthening opportunities for activities such as kayaking and kite surfing, creating a separate dog-friendly beach area, improving kid-friendly spaces and family-oriented amenities, and preserving the beachfront's exceptional sunset views as a defining part of the visitor experience. The intent is to create a more vibrant and flexible waterfront that supports active recreation, relaxation, and multi-generational enjoyment while remaining true to the character and natural beauty of Cape Charles.

RE-EVALUATE EXISTING INFRASTRUCTURE

With sustainability in mind, utilize and leverage existing resources through strategic capital improvements that modernize essential facilities while preserving valued community assets. This goal includes development of a new bathhouse with updated restrooms and related visitor amenities, as well as renovation of the historic gazebo to maintain and enhance its role as a signature gathering place along Bay Avenue. Together, these improvements are intended to improve functionality, comfort, and long-term resilience while reinforcing the distinctive character of the Cape Charles waterfront.



COMMUNITY ENGAGEMENT AND ANALYSIS

Public engagement for the Cape Charles Beachfront Master Plan was designed as a multi-phase process integrated into the broader research and planning effort. The project charter identified outreach as a core part of Phase I and called for public meetings, Town Council presentations, and multiple opportunities for community participation. Early outreach included a community survey that established baseline priorities, showing strong support for restrooms, outdoor showers, shade, enhanced ADA access, and a boardwalk, while also indicating that most respondents felt the beach's general size, character, and dune size were already appropriate.

Later outreach in April 2025 invited public review of revised concepts through both in-person and online formats. The in-person event drew 114 attendees and 74 responses, while the online effort generated 97 responses. Written public comments added important depth to the survey results by explaining why people supported or opposed particular ideas. Many commenters expressed appreciation that the Town had revised earlier concepts and continued to seek public input. There was broad support for practical improvements such as new or improved restrooms, ADA access, better walkways, wash-off stations, improved golf cart organization, and more thoughtful vendor management. At the same time, many residents emphasized that future improvements should preserve the beachfront's natural beauty, historic identity, dark skies, views, and small-town character. Repeated concerns focused on excessive hardscape, oversized plazas, maintenance burdens, funding transparency, parking design, and changes that could make the waterfront feel overly commercial or more like a larger resort community.

Taken together, the public engagement process shows a deliberate and evolving effort to inform the master plan through community participation at several levels: early visioning, broad priority-setting, concept review, and detailed written feedback. The outreach process succeeded in identifying both areas of consensus and areas requiring further refinement. Overall, the public consistently supported targeted improvements that enhance access, comfort, and functionality, but expressed caution toward changes perceived as overbuilt, overly commercial, or out of character with Cape Charles. As a result, the engagement process not only gathered input, but also helped define the central planning challenge of the master plan: how to improve the beachfront in ways that strengthen access, amenities, and resilience while preserving the qualities that the community values most.

ENGAGEMENT APPROACH & EDUCATING THE PUBLIC

Throughout the community engagement process, VHB produced a virtual workshop that allowed members of the local community to interact with and review Cape Charles analysis boards. This workshop highlighted to us the most important feedback / desires of the local community.



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 than larger grain sand. The sand is moved along the beach and into the nearshore during storms and storm into the dune and road area on dry windy days.

1994
In the early 2000s, 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 section.

2006
Recent Dredging Projects:
2001 45,000 CY
2015-2016 30,000 CY
2023 28,000 CY

WHY IT MATTERS
The dredging projects that nourish the Cape Charles shoreline are frequent 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.

CAPE CHARLES 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
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.

2017
These breakwater structures have helped to stabilize the beach berm, but the fine grain sand is subject to wind transport.

2023
Sand trapping 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 beachfront over the years with wind blown sand transport and additional sand placed on the dunes during nourishment activities. The 2023 dune has grown to be 3 times the size of the dune in 2010.

ENVIRONMENT

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 streets and sidewalks from storm surges, but they do not prevent dune 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 trap the dune grow target.

This photo depicts the recession sand; the sand from the dunes is migrating past the gazebo and into the road.

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 accumulates on the dune face, or it is deposited along Bay Avenue or in adjacent yards. Dune height and width will vary based on regulatory input.

CAPE CHARLES Beachfront Master Plan BEACH HISTORY

Exploring the history of Cape Charles Beach and its 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 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 food protection and expanding the usable beachfront. The fishing pier was also constructed during this time.

2018
The sand dunes at this point were concentrated on the south end of the beach, close to the fishing pier and Mason Avenue.

2023
The 2023 image shows how much the sand dunes at this point were expanding all the way to Bay Avenue and expanding the usable beachfront. The paths between the road and beach have also gotten larger due to the growth.

HISTORY

This 1897 map of Cape Charles shows the city's original development a grid pattern that didn't quite reach the water. A waterfront 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 provided the natural food protection that the dunes provide now.

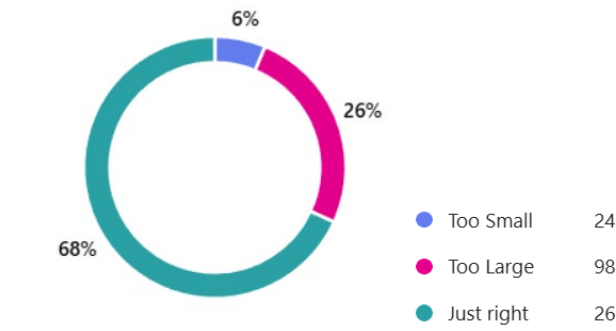
This 1930s image demonstrates what the waterfront looked like in Cape Charles before the construction of the beach. Some of these houses are still existing today, representing Cape Charles' long history.

The seawall pictured used to be the only barrier between Bay Avenue and the Chesapeake Bay. This seawall actually still exists. It currently does not actually touch the present-day beach. As more and more sand is placed on the beach, the higher the dunes grow and the deeper the seawall becomes.

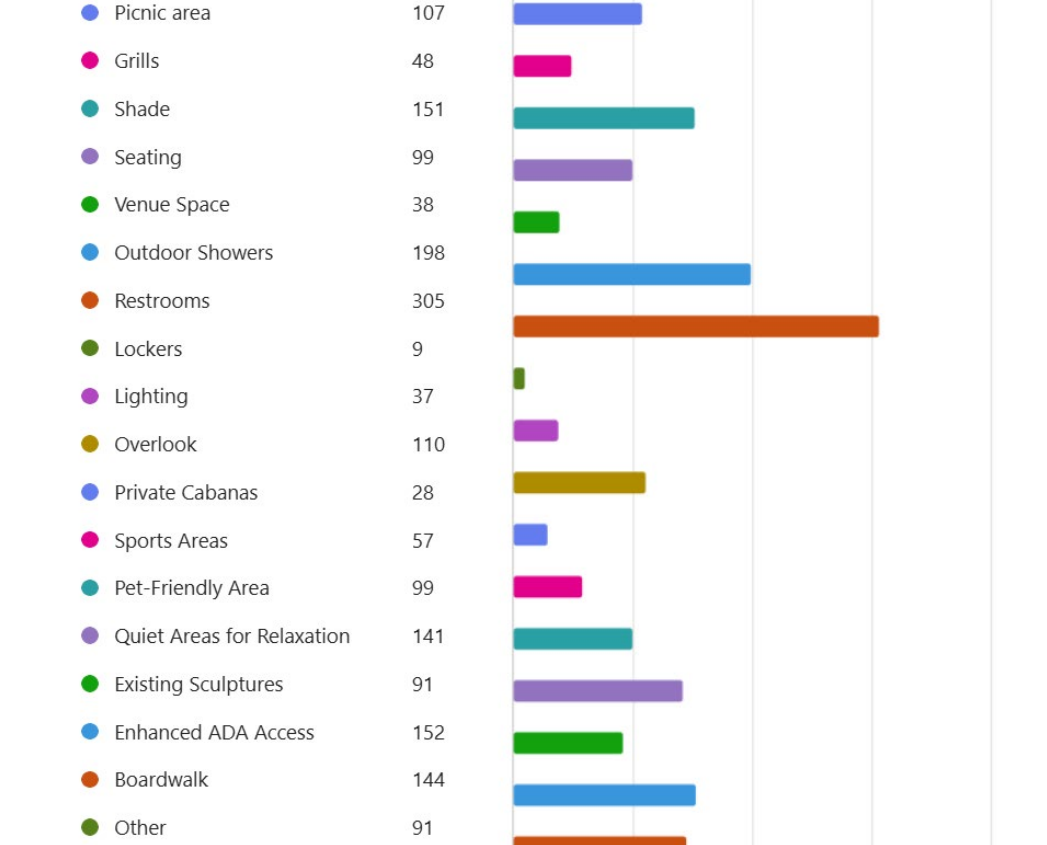
COMMUNITY SURVEY

The following pages highlight the key questions provided to the community in their survey, including their analysis of existing and desires for future amenities. A breakdown of their feedback has been provided also.

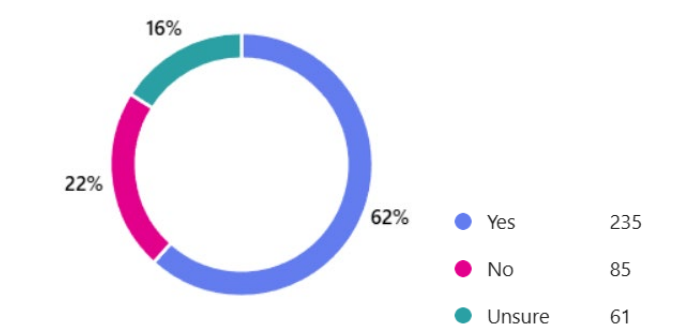
What is your opinion of the dune's general size?



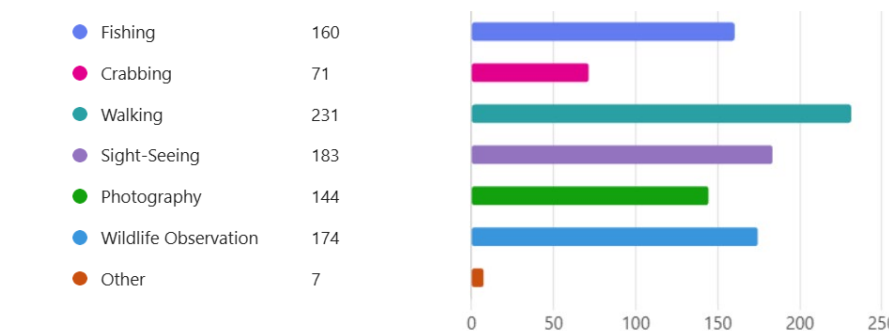
Please select your top five Beachfront Attractions or Amenities



Do you feel like the beachfront needs anything?



What type of activities do you do at the pier?



What do you like to have at the beach for a perfect day?

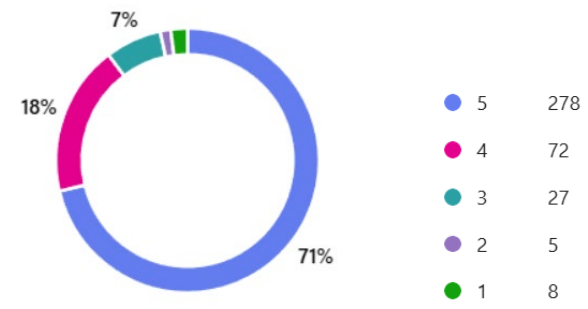


What do you like to have at the beach for a perfect day?

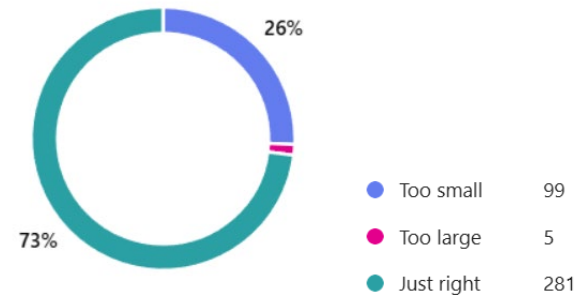


COMMUNITY SURVEY

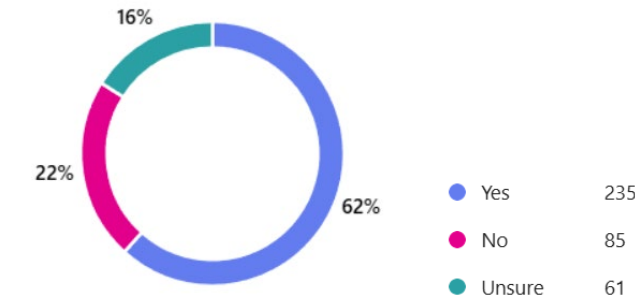
How safe do you feel walking along or crossing Bay Avenue?



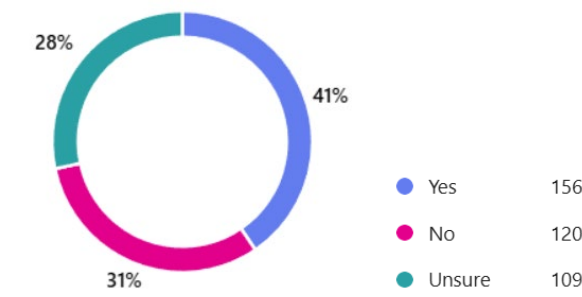
What is your opinion of the beach's general size and character?



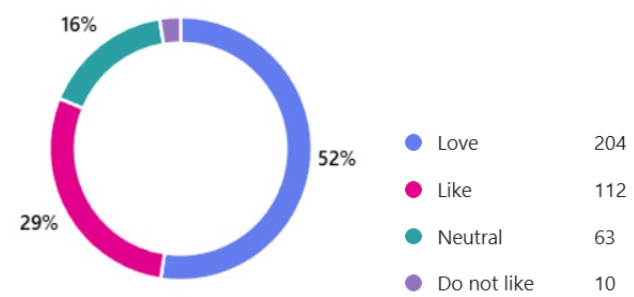
Do you feel the beachfront needs anything?



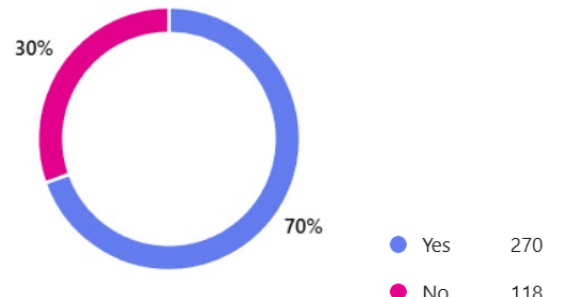
Currently there is only one overlook on the dunes. Should there be more?



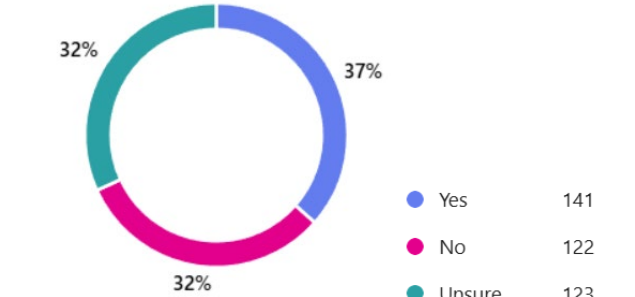
How do you feel about the existing sculptures located along the beach front?



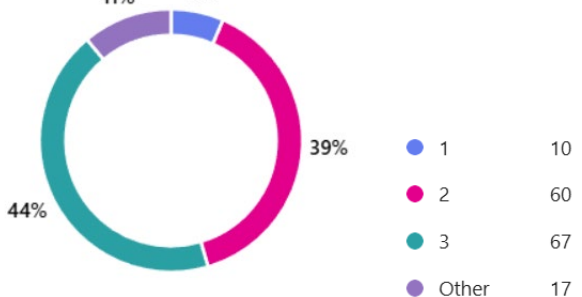
Do you or your family use the fishing pier?



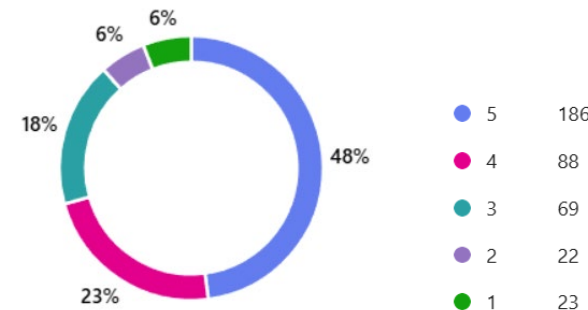
Would you find it acceptable to see additional coastal structures?



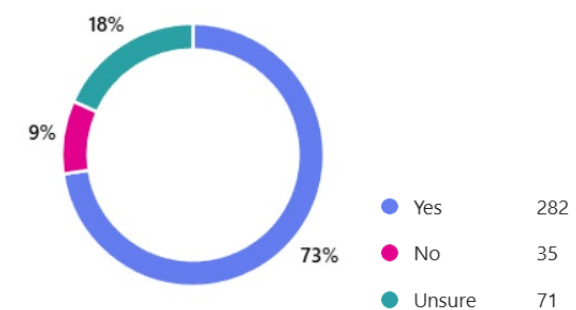
How many overlooks should there be?



How easy is it to access the beach? (1 = not easy, 5 = very easy)



Is the existing lighting on Bay Avenue adequate as it relates to how safe you feel?



Please rank the following types of parking spaces, where the selection at the top is the most preferred?



WIND ANALYSIS

Prior to the development of any concepts, existing wind patterns and impacts must be studied to fully understand the appropriate counter measures and steps to be implemented.

EXISTING SITE PHOTOS



Windblown sand; the sand from the dunes is migrating past the Gazebo and into the road.



Existing Vegetation on dunes located along Bay Avenue



Sand Fencing on the edges of dunes reduces sand from spilling onto the beach



The openings between the dunes along the Bay Avenue allows pedestrians to access the beach from the road

COMMENTARY

For the 2020 assessment, six months of wind data from an offshore buoy were analyzed to estimate potential wind-driven (aeolian) sand transport from the beach system.

METHODS

Wind data source and period
The analysis used a continuous six-month record of offshore buoy data from 2020, including wind direction and wind speed at standard measurement height.

DATA SCREENING

Only conditions capable of moving sand were evaluated. The dataset was filtered to:

- Include winds blowing onshore or alongshore in directions that can transport sand off the active beach and toward Bay Avenue.
- Exclude low-energy conditions by applying a threshold shear velocity, below which sand grains remain at rest.

CONVERSION TO SHEAR STRESS AND TRANSPORT RATE

For each time step:

- Buoy wind speeds were converted to near-surface winds and then to shear velocity at the bed.
- A standard aeolian transport relationship was applied using:
- Representative grain size ($D \approx 0.16$ mm),
- Air and sediment densities,
- Gravity and an empirical transport coefficient.
- This yielded an instantaneous sand transport rate (q) expressed first in mass units (gm/cm-s) and then converted to volumetric transport ($\text{cm}^3/\text{cm-s}$ and $\text{m}^3/\text{m-s}$).

TIME INTEGRATION AND VOLUME ESTIMATE

The instantaneous rates were integrated over the six-month record to produce a cumulative potential transport volume per unit shoreline length in m^3/m . This represents the total volume of sand that could be mobilized and moved landward or alongshore by wind over that period, assuming a sufficient sand supply on the beach surface.

RESULTS AND INTERPRETATION

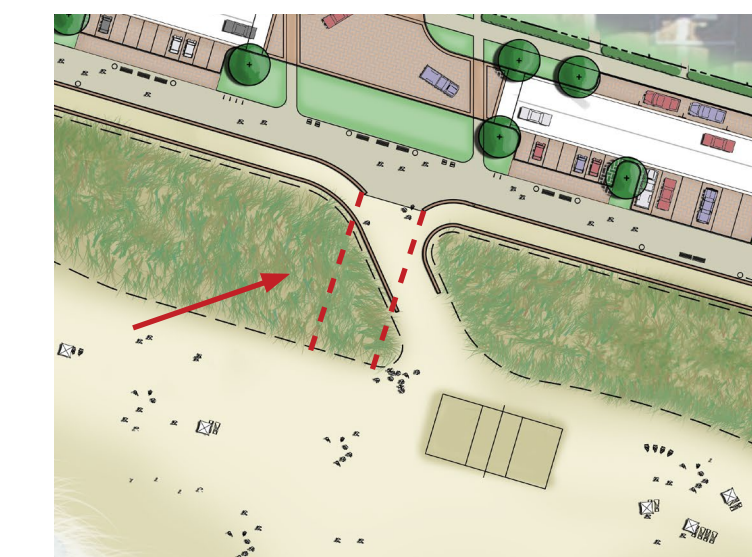
The 2020 wind record produced a cumulative potential aeolian transport of approximately 3 m^3 of sand per meter of shoreline over the six-month analysis period.

This magnitude of transport is consistent with:

- A mobile, fine-grained beach surface that can readily supply sand to dunes and upland areas, and
- Ongoing wind-driven movement of sand toward Bay Avenue, contributing both to dune growth and to nuisance sand on roads and in adjacent properties if not managed.

In practical terms, the 2020 analysis confirms that:

Even with the existing breakwater and dune system in place, wind remains an active and significant mechanism for redistributing beach sand, and Continued management measures (such as sand fencing, dune enhancement, and strategic nourishment) are warranted to both harness this transport for dune building and reduce unwanted sand encroachment onto the roadway and nearby residences.



PREVAILING WINDS

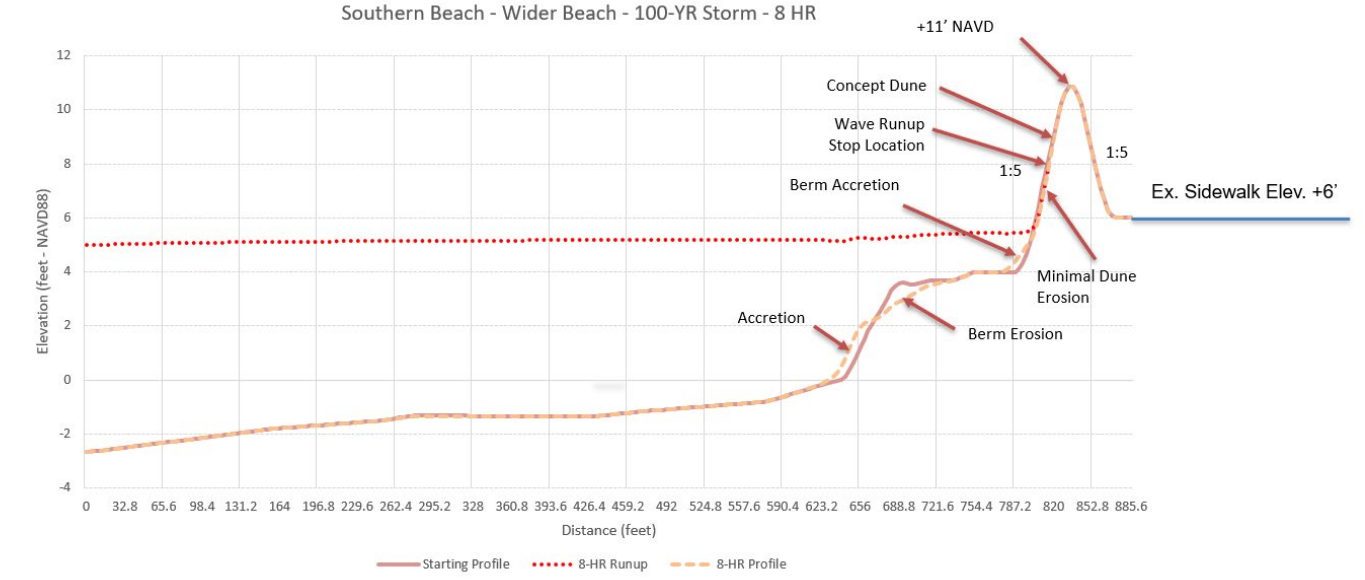
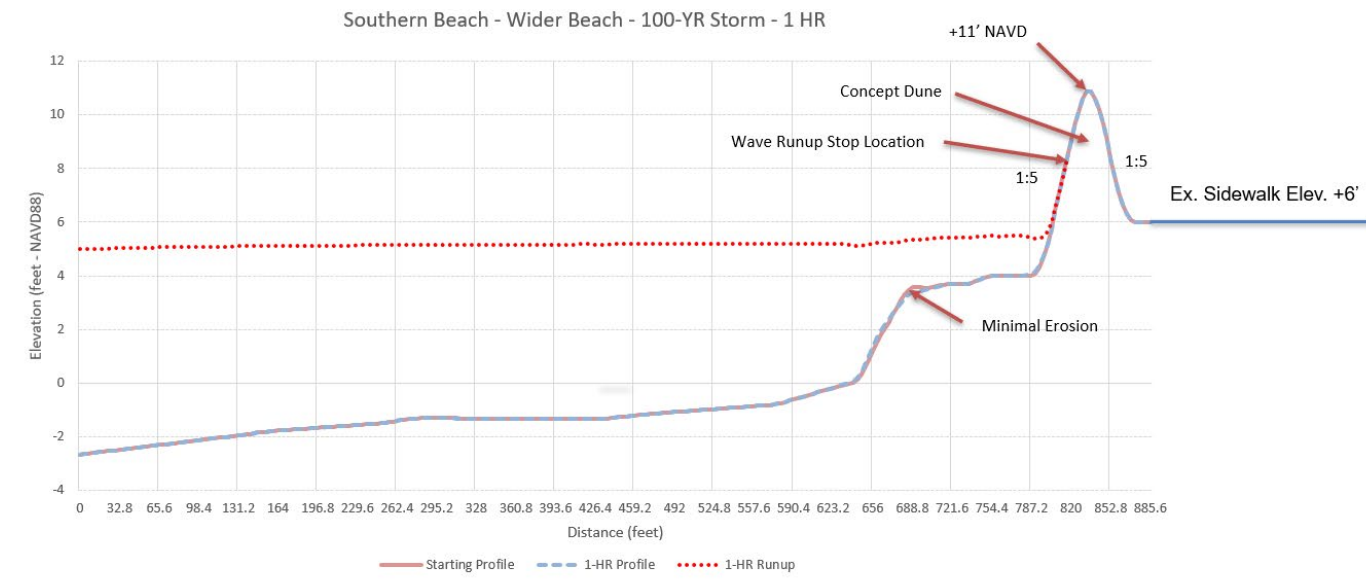
The existing dunes create wind tunnel effects due to their alignment with prevailing winds, causing dune erosion. The proposed dunes have been realigned to mitigate the prevailing winds, providing a shield for beach visitors and reducing the risk of wind erosion.

- Prevailing Wind Direction
- - - Existing Sand Dunes Alignment

FLOODING ANALYSIS

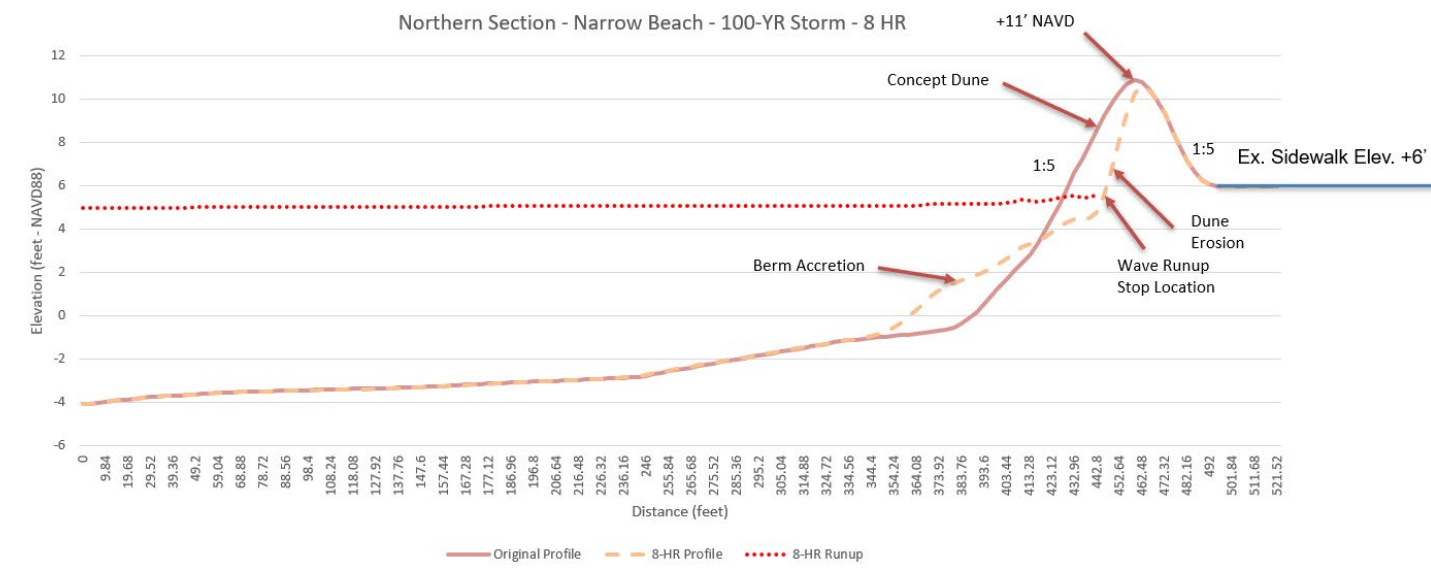
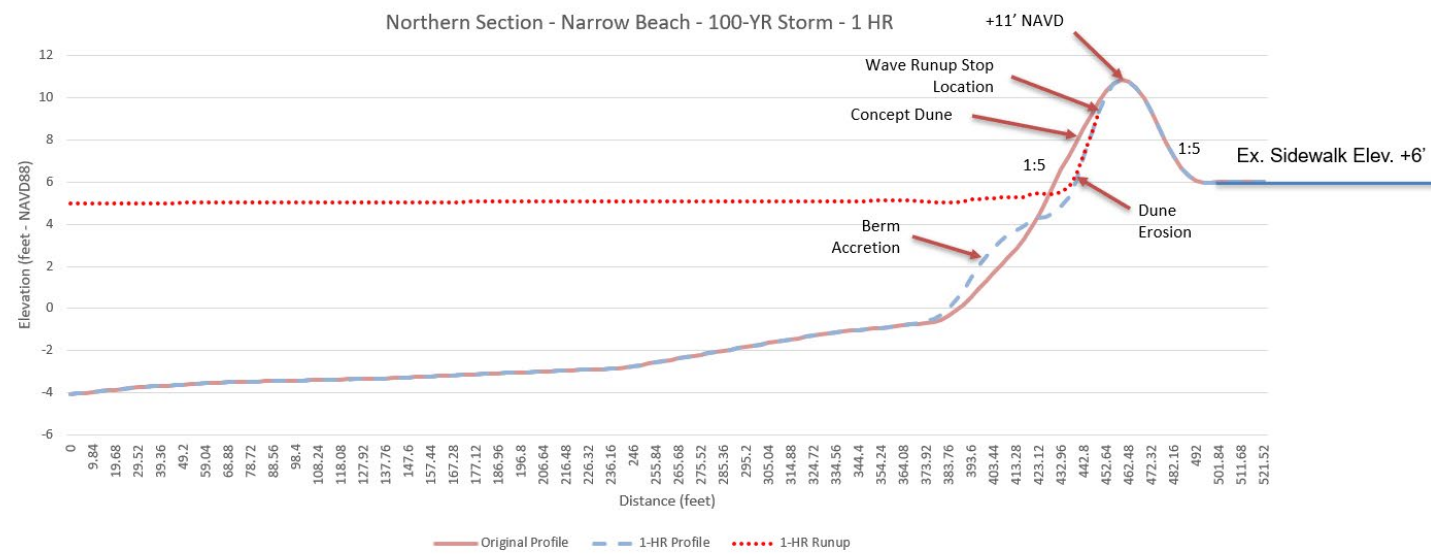
Flooding poses as a significant consideration in any proposed designs for Cape Charles, with various design approaches to the beach width having consequential impacts to the local community.

SOUTHERN BEACH



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NORTHERN BEACH





MASTER PLAN

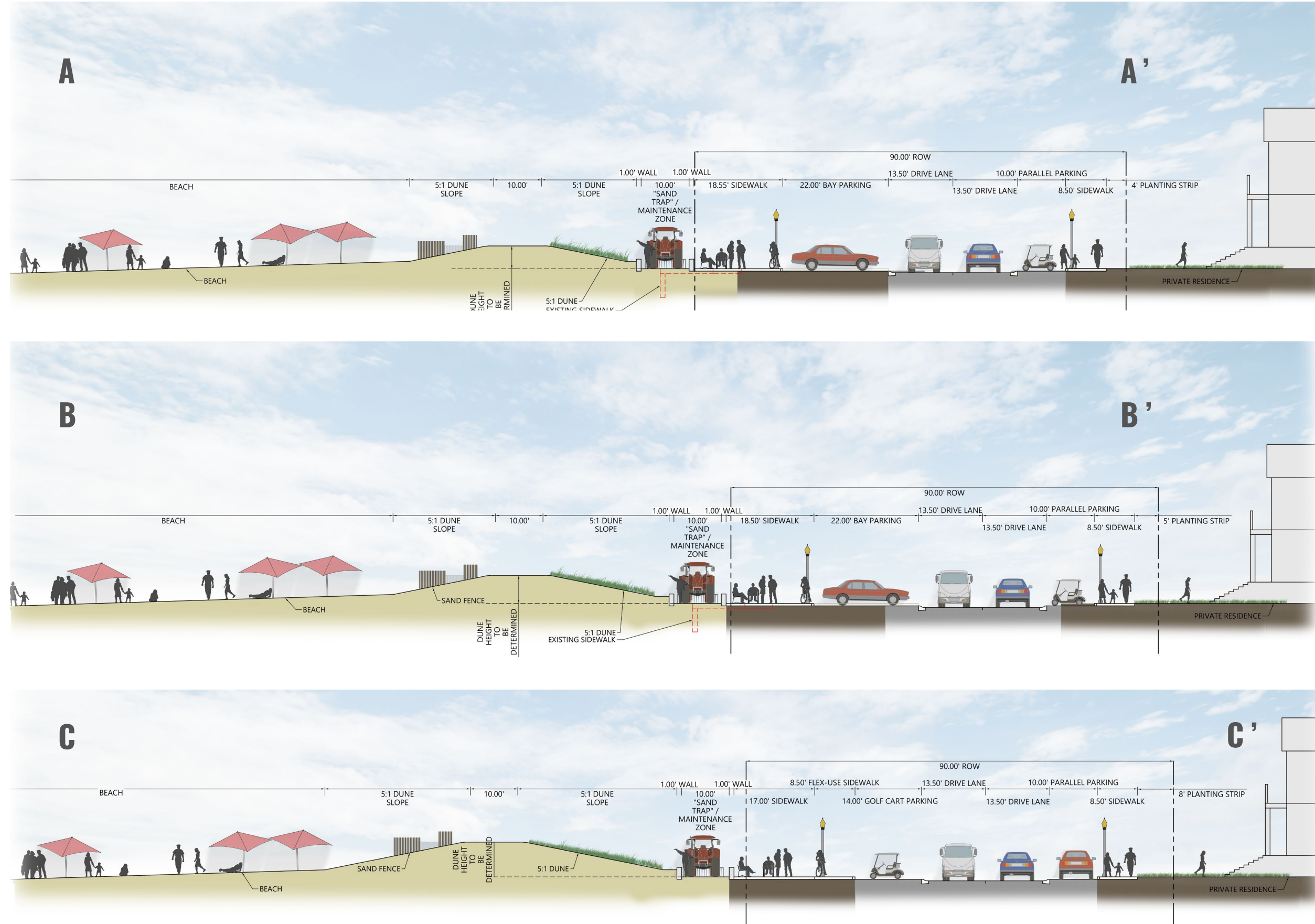
Community engagement, a study of local site history and a comprehensive site analysis of the immediate and surrounding neighborhoods allowed VHB to design and compile unique proposed designs along Bay Avenue. The resulting master plan stands as a cohesive design that balances community-driven vision with a data-backed approach to long-term resilience. By synthesizing these diverse datasets, we were able to bridge the gap between historical identity and modern functional requirements.



Illustrative Master Plan

- 1** Adjusted dune layouts
- 2** Monroe Avenue Intersection
- 3** Dune Opening with ADA Beach Access Mat
- 4** Randolph Avenue Plaza with the Preserved Gazebo and Outdoor Seating
- 5** Parallel Parking on East Side of Bay Avenue
- 6** Outdoor Shaded Seating Area
- 7** ADA Access to Beach from Existing Fishing Pier
- 8** Mason Avenue Plaza with Flexible Gathering Spaces
- 9** Food Truck Plaza
- 10** Dog Beach and Access to the East
- 11** Southern Plaza with Vehicle Drop-Off
- 12** Virginia LOVE Sign
- 13** Bay Parking on West Side of Bay Avenue with Golf Cart Parking
- 14** Future Connection to Harbor

ROAD SECTIONS



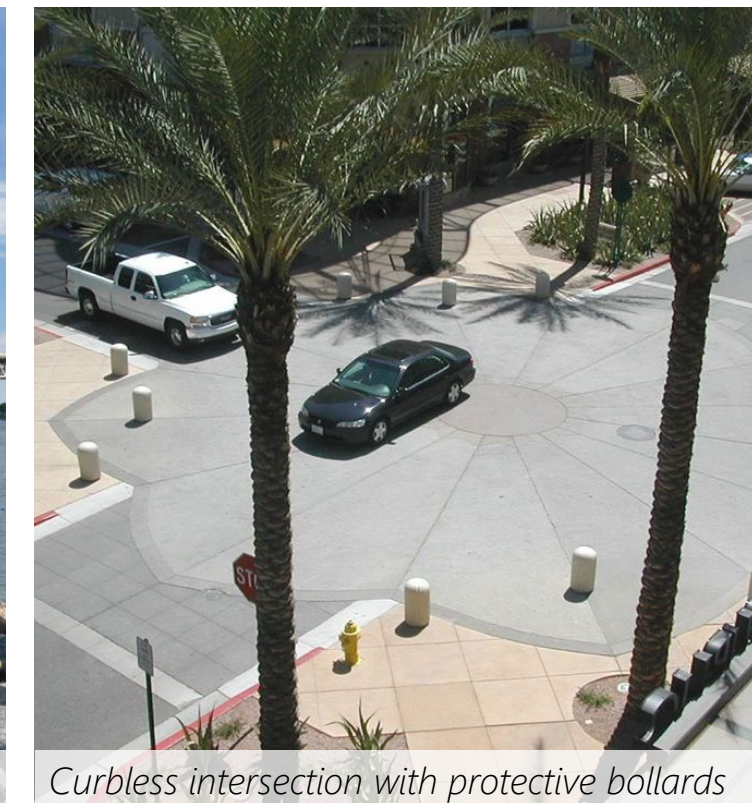
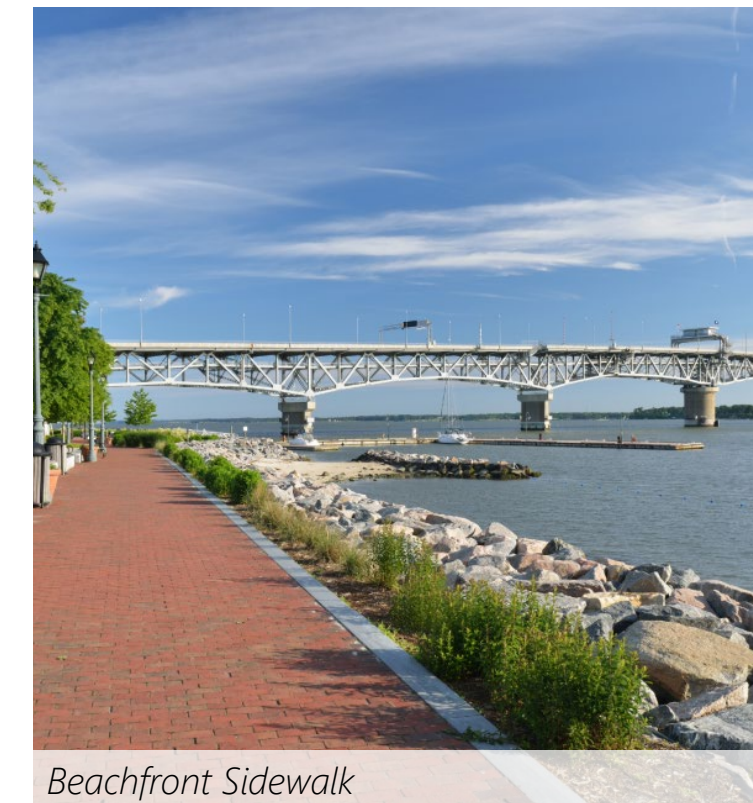
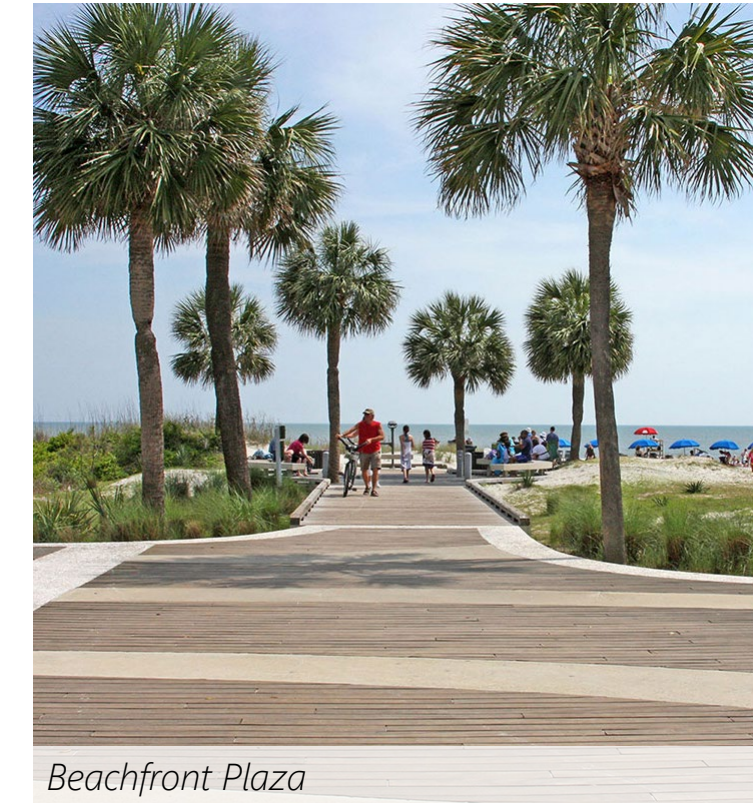
Bay Avenue North Illustrative Section (At Grade)

Bay Avenue South Illustrative Section (Cut Slope)

Bay Avenue Extended Illustrative Section

--- Existing Road / Sidewalk

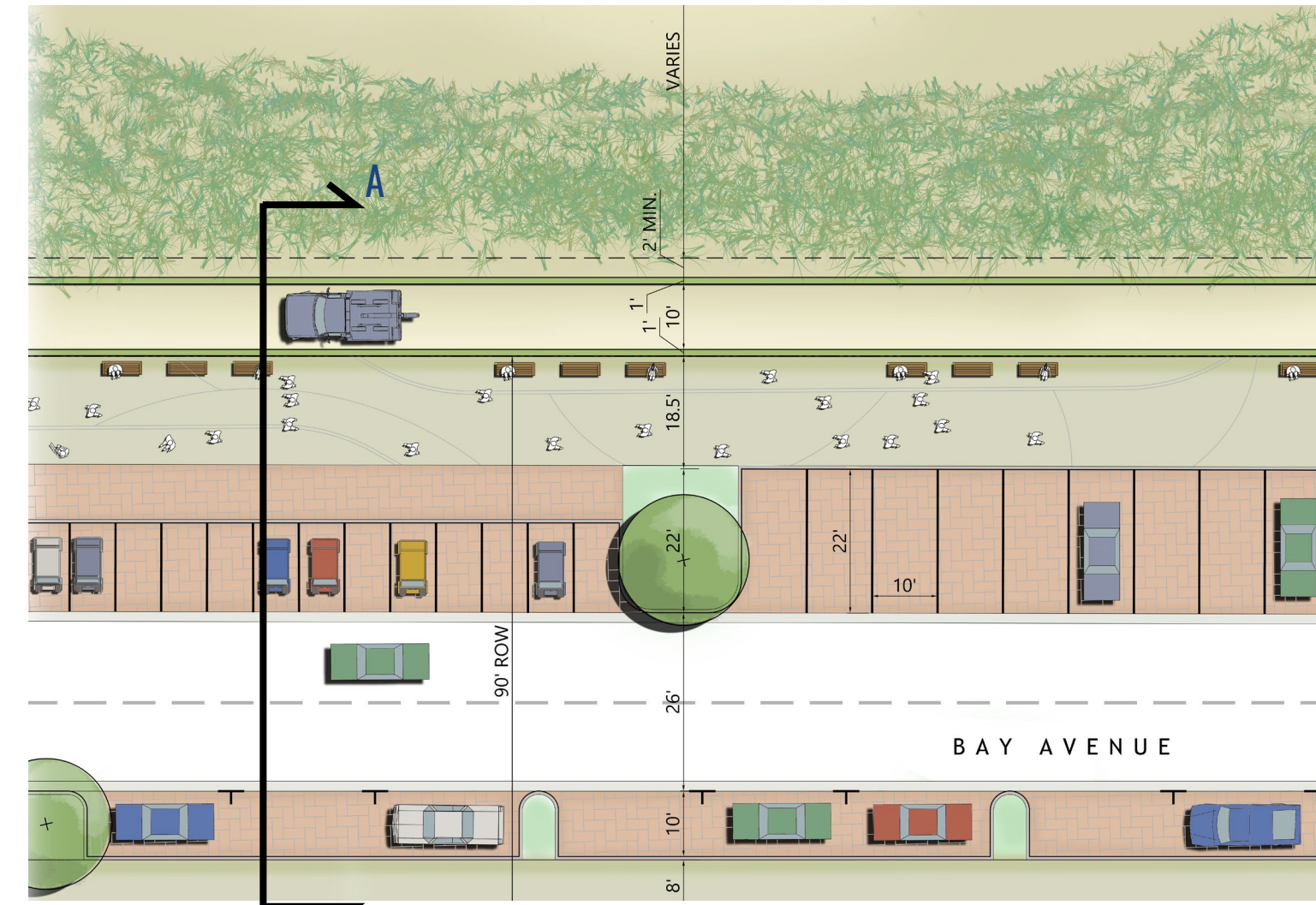
PRECEDENT IMAGES



PARKING

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

PARKING EXHIBIT



EXISTING

Car Parallel Spaces: 160 Approx.

PROPOSED SPACES

Golf Cart Space:	94
Car Bay Spaces:	59
Car Parallel Spaces:	51
204 Proposed Spaces	204

+ 44 Additional Total Spaces

PARKING SECTION

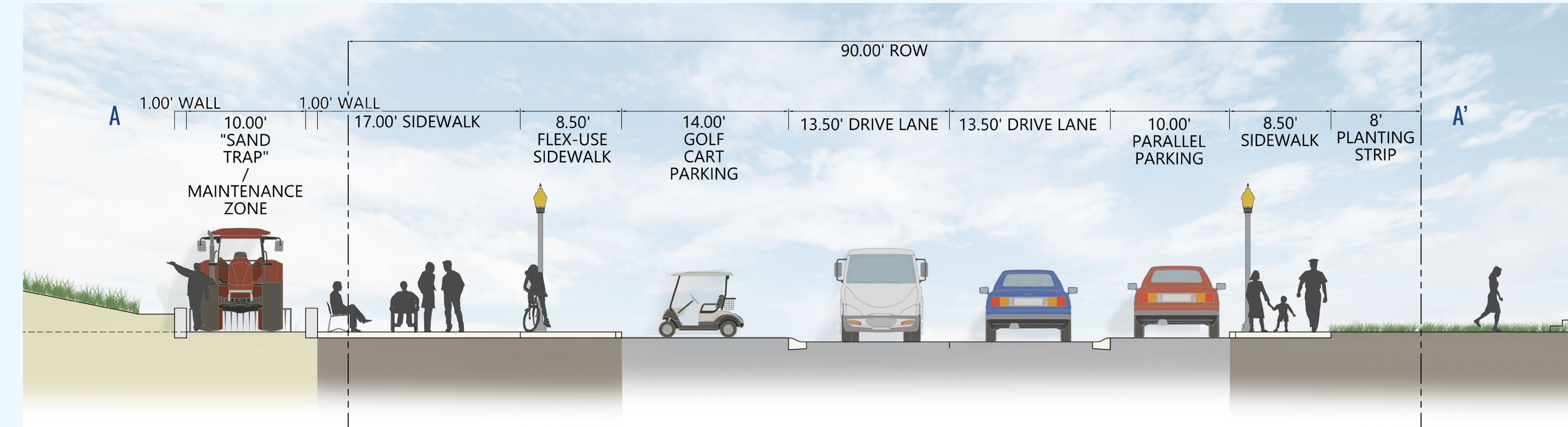
This section depicts the proposed parking concept for Bay Avenue, featuring widened sidewalks, golf cart parking, and improved accessibility.

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. 90 degree parking spaces will maximize the available space for parking adjacent to the golf cart spaces, making the experience convenient and efficient. The east side of Bay Avenue is dedicated to parallel parking for all other vehicles.

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.

BAY AVENUE IMPROVEMENTS



Beach boardwalk



Widened Pedestrian Zone

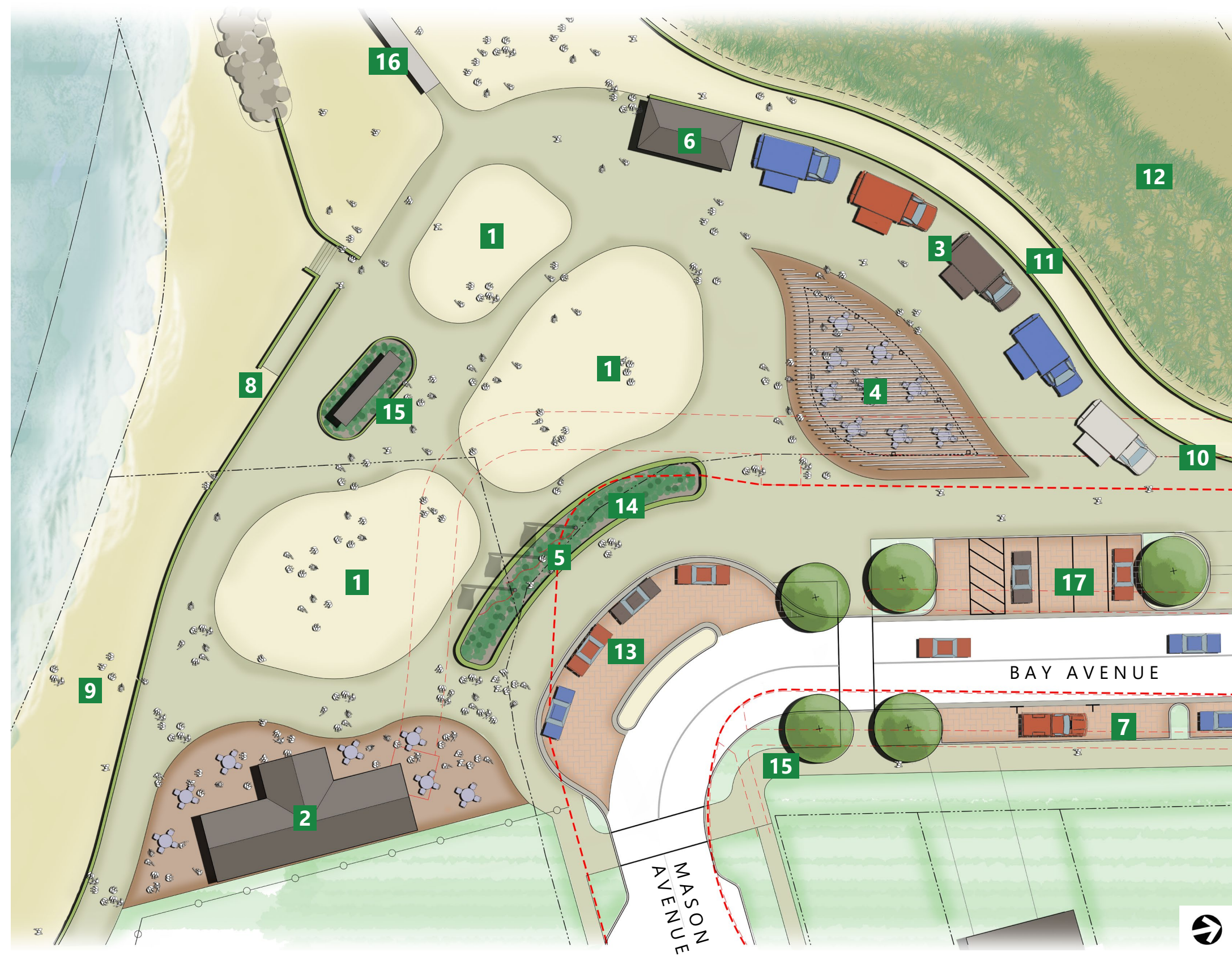


Golf Cart Parking



Residential Streetscape

SOUTHERN 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** Flexible Natural Sand Gathering Spaces
- 2** Restroom / Bathhouse
- 3** Food Trucks Lane with Controlled Access
- 4** Shade Pergolas / Dining Area
- 5** American Flag Pole
- 6** Storage Area
- 7** Parallel Parking
- 8** Beach / Plaza Access to the East
- 9** Dog Beach
- 10** Continuous Wall
- 11** Maintenance Strip
- 12** Reshaped Dune
- 13** Short-term Parking / Drop-Off / Pick-up Area
- 14** Planting Bed
- 15** Virginia LOVE Sign
- 16** Fishing Pier
- 17** ADA Parking

--- Existing Road / Sidewalk



Shade pergola over pavilion.



Shade pergola over pavilion.



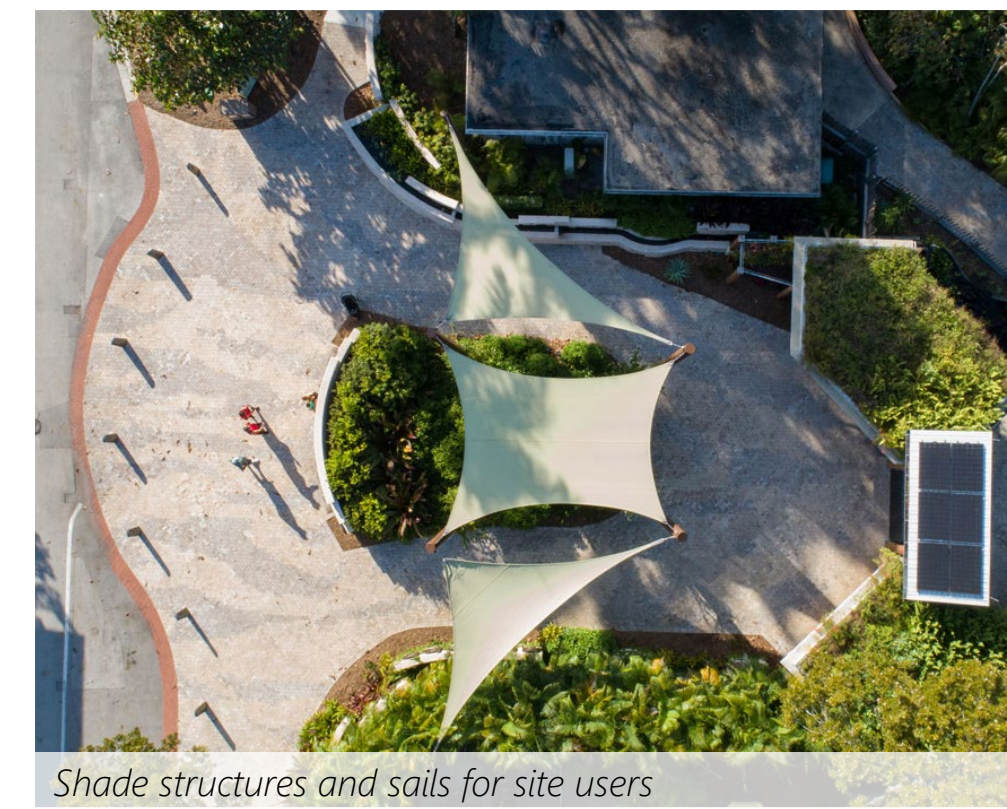
Food Trucks.



Food truck courtyard.

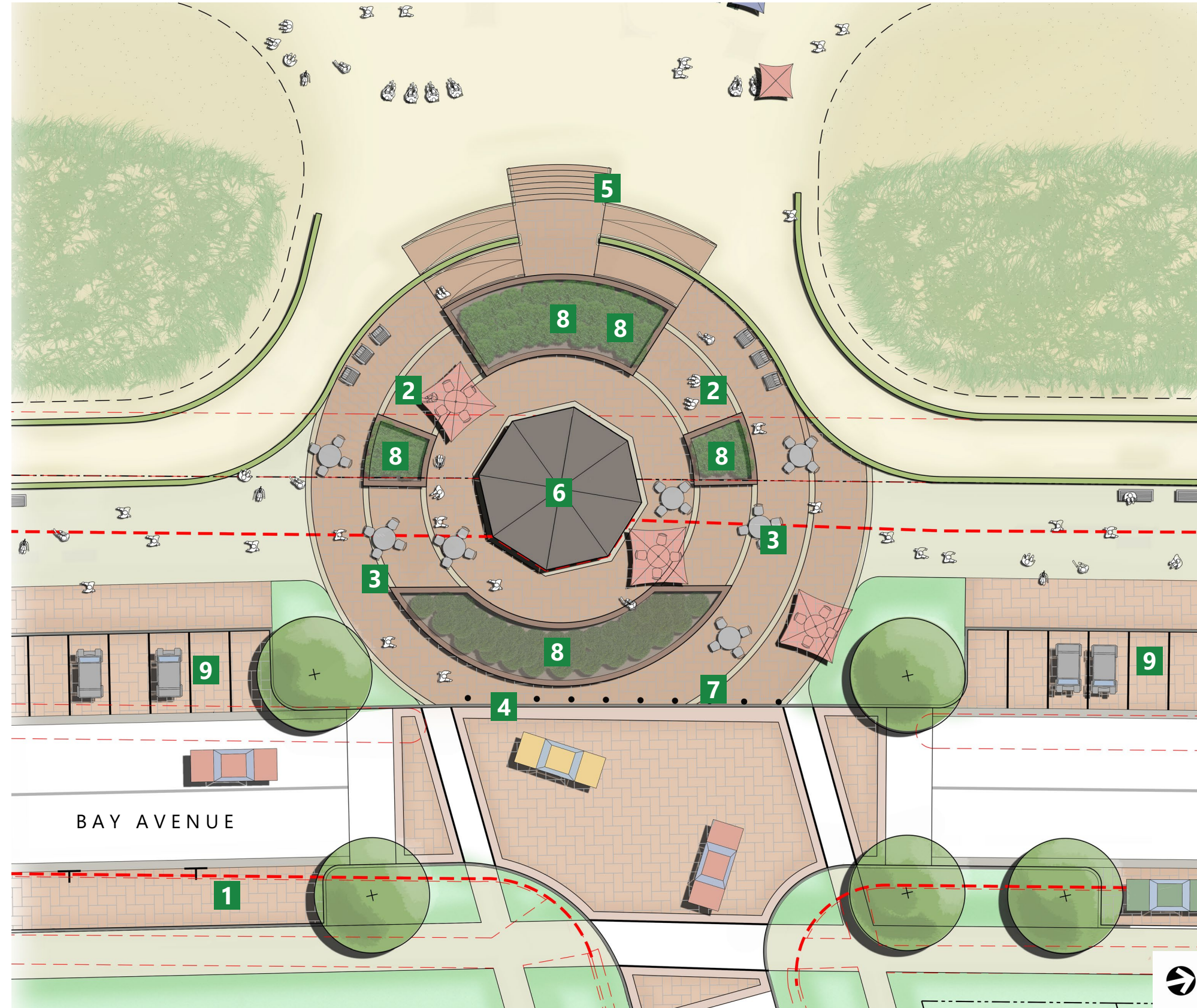


Shade structure, flex spaces and outdoor dining.



Shade structures and sails for site users

RANDPOLH AVENUE 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 Parallel Parking
- 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 Golf Cart Parking

--- Existing Road / Sidewalk

PRECEDENT IMAGES



Plaza and shade in adjacent to beach



Managed sand dunes adjacent to a beach.



Different options to provide shade for visitors



Accessible beach mat



Various seating options available



Beachfront plaza space; Coligny Beach

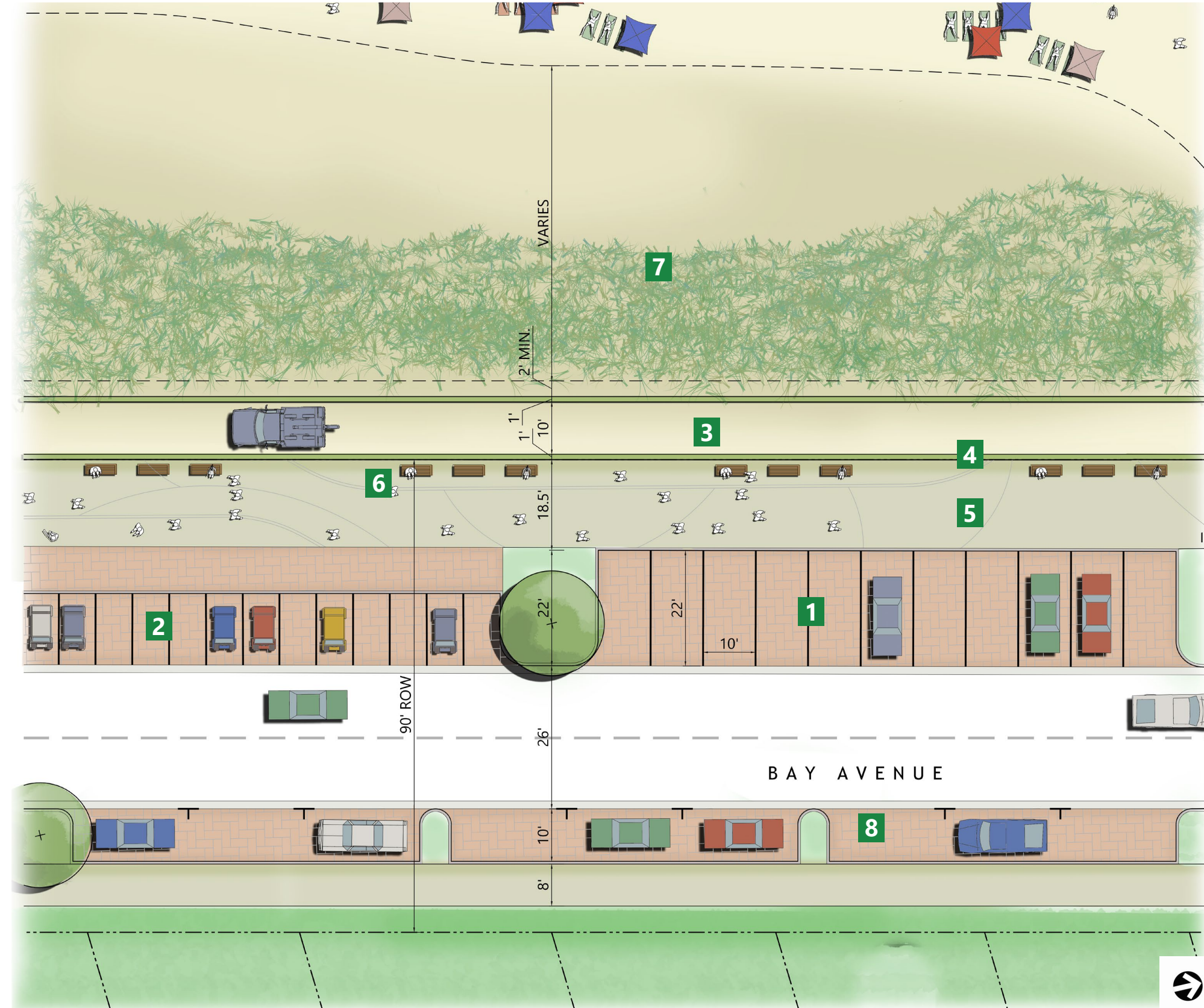


Waving seat wall along beachfront



Relocated Love Sign in Plaza

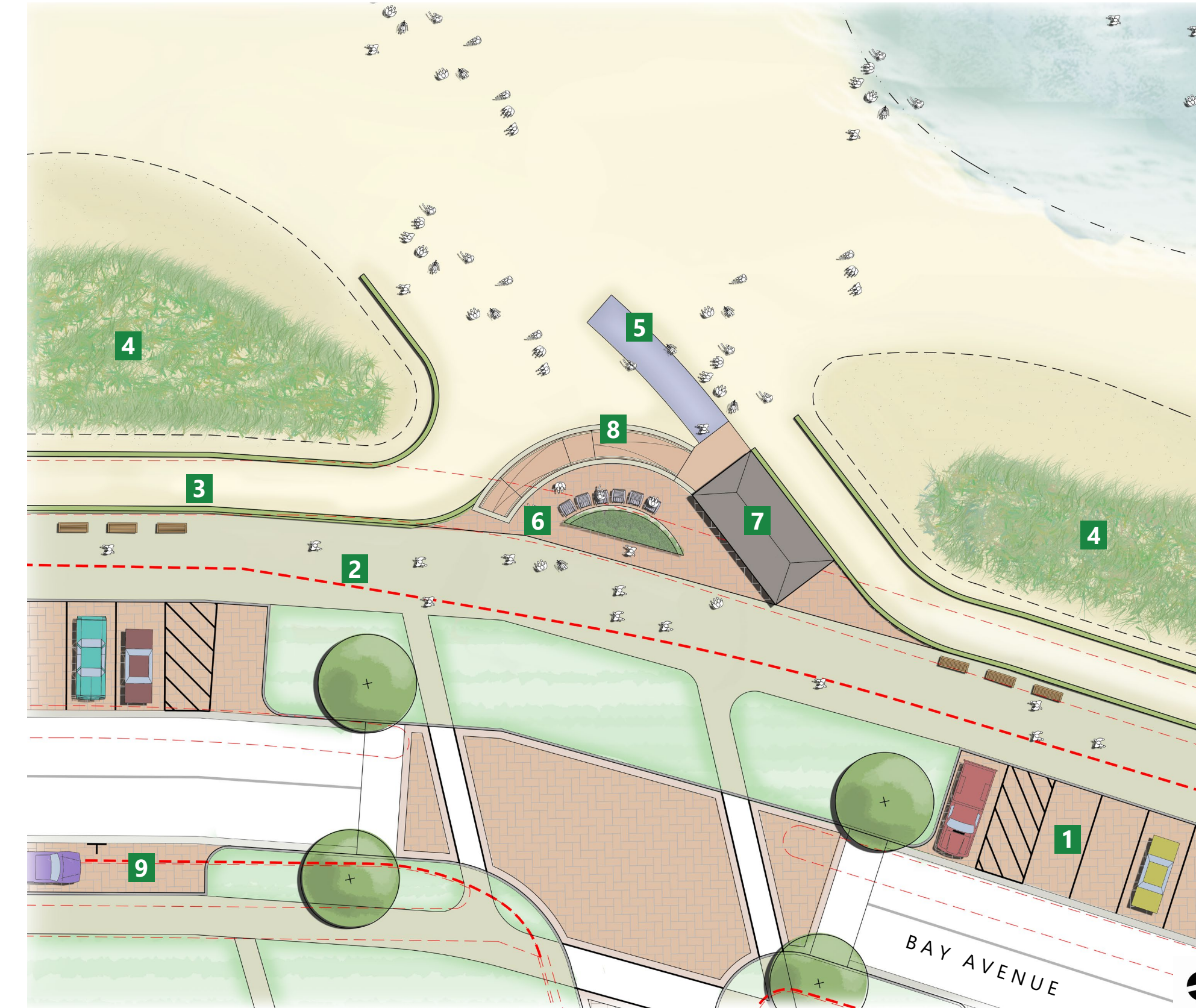
BAY AVENUE EXHIBIT



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 Golf Cart Parking
- 3 10' Maintenance Strip
- 4 Continuous Wall to Block Sand
- 5 Sidewalk
- 6 Bench Seating
- 7 Dune
- 8 Parallel Parking

JEFFERSON AVENUE 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 Bay Parking
- 2 Sidewalk
- 3 10' Maintenance Strip
- 4 Dune
- 5 ADA Accessibility Mats
- 6 Adirondack Chairs
- 7 Restroom
- 8 ADA Ramps
- 9 Parallel Parking

--- Existing Road / Sidewalk

3D PERSPECTIVE - SOUTH PLAZA



3D PERSPECTIVE - RANDOLPH AVENUE PLAZA





SITE AMENITY OPTIONS

This chapter outlines the diverse range of choices available for the project's key streetscape components. By evaluating various profiles for essential elements—from ergonomic seating to high-security bicycle storage—the following options aim to highlight a suite of furniture that balances durability with a cohesive visual identity.

BIKE RACK



Modern, rectangular bike rack



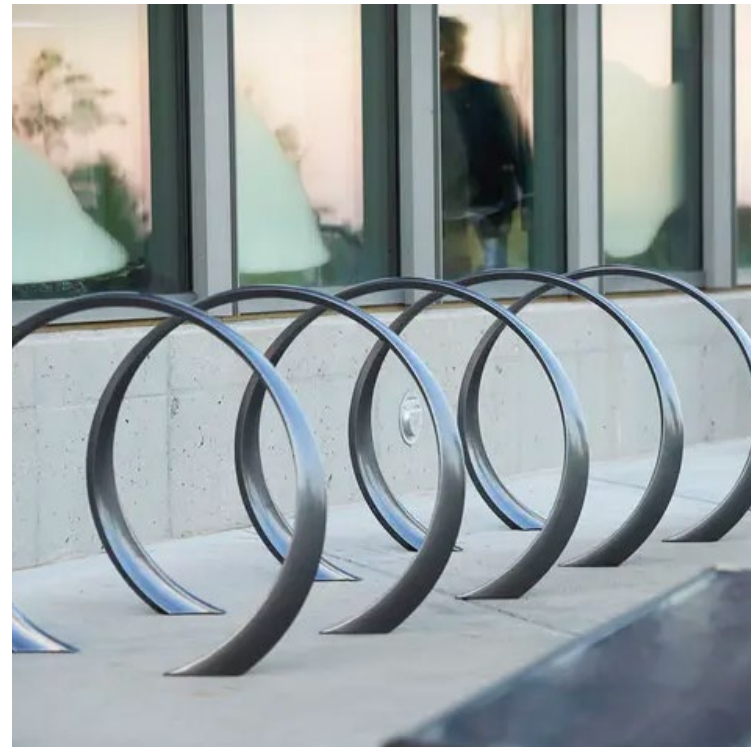
Angular bike rack, front wheel lock



Various colors for streetscape variety



Unique geometric shape



Sleek, modern bike rack options



Traditional design bike rack



Abstract, low profile concepts



Clean and traditional bike racks

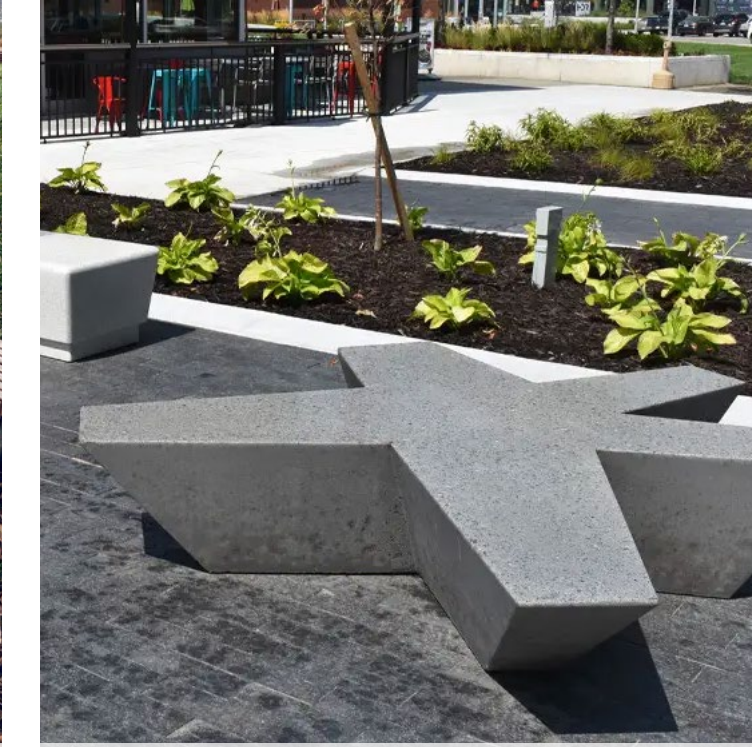
BENCHES



A mix of metal and wood benches



Wooden slat bench, various geometries



Unique, abstract designs for plaza spaces



Wood slat benches integrated into seat wall



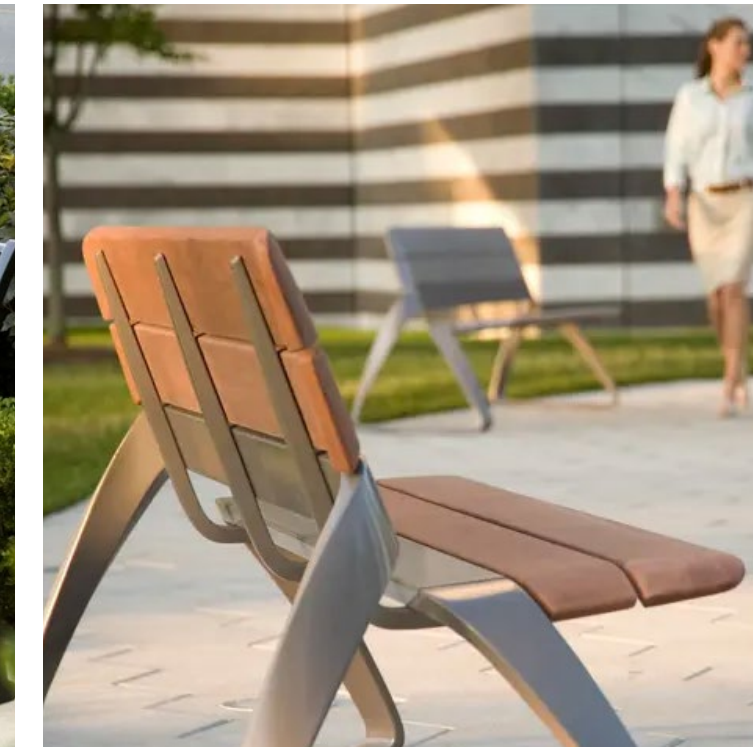
Engraved benches with customizable designs



Varied geometry benches



Traditional, metal benches

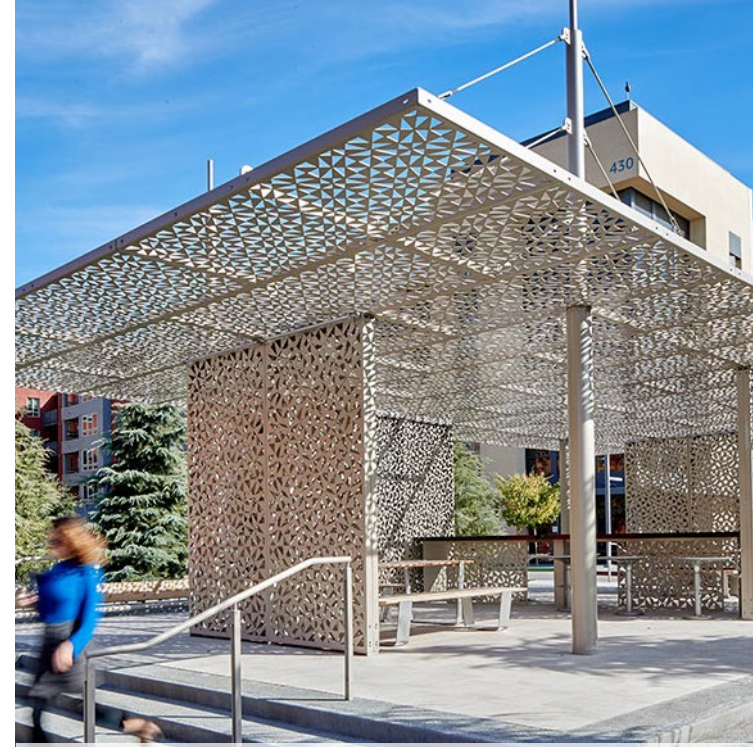


Modern, sleek benches

SHADE STRUCTURES



Plaza and shade in adjacent to beach



Engraved, customizable shade structure



Different options to provide shade for visitors

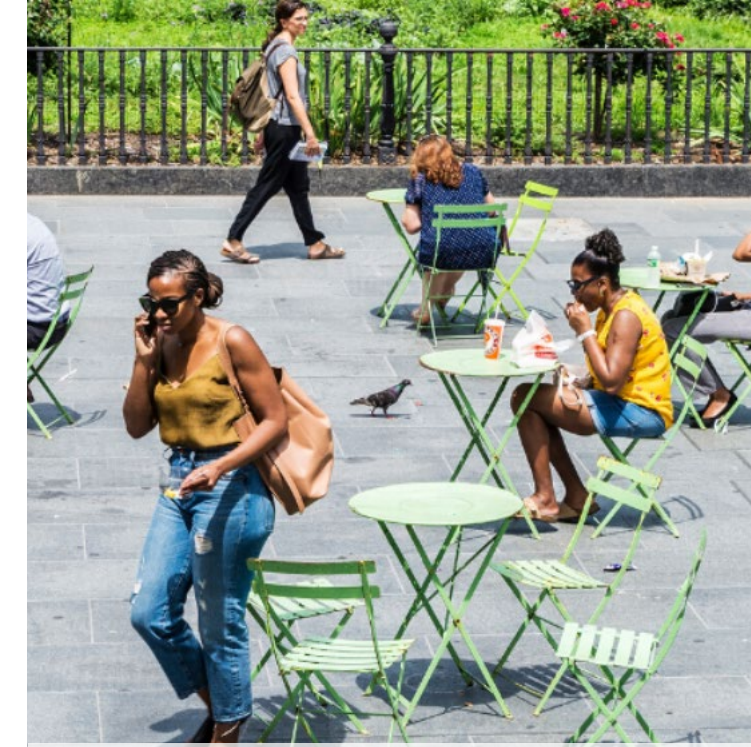


Laser engraved panel structure

TABLE AND CHAIRS



Metal picnic tables, various colors



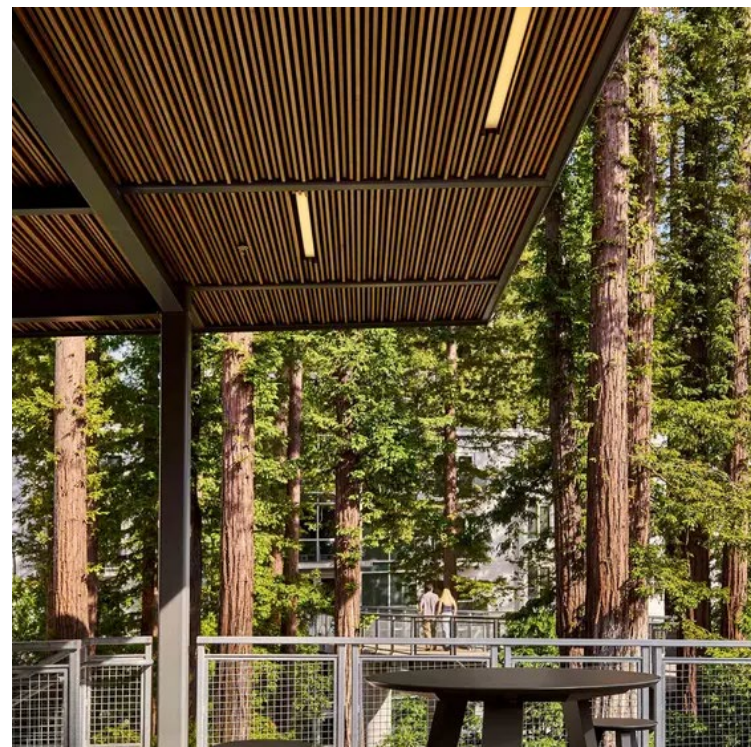
Cafe style metal dining tables and chairs



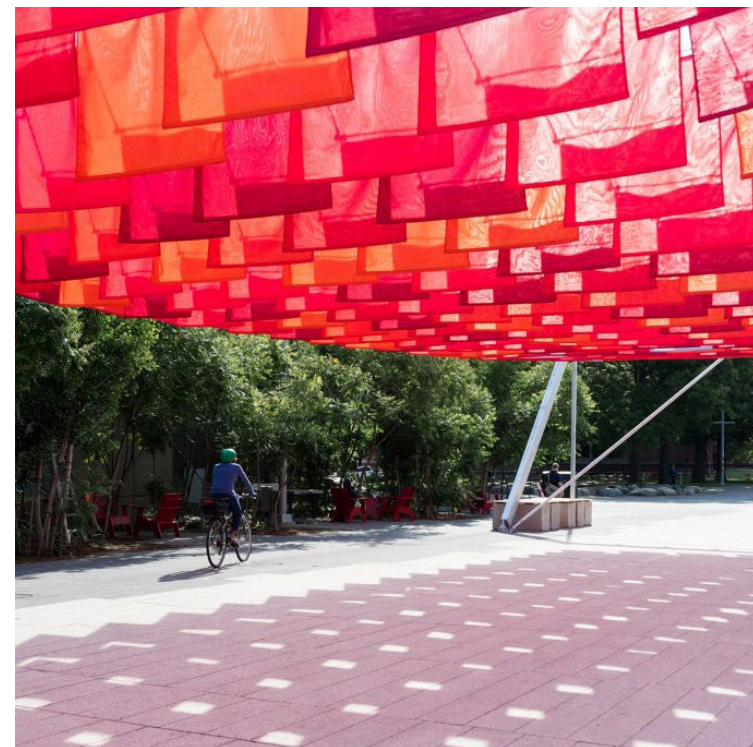
Bolted metal picnic tables



Metal and plastic picnic bench, various colors



Various seating options available



Beachfront plaza space; Coligny Beach



Waving seat wall along beachfront



Relocated Love Sign in Plaza



Adirondack Chairs



Unique design picnic table



Designer dining tables and chairs

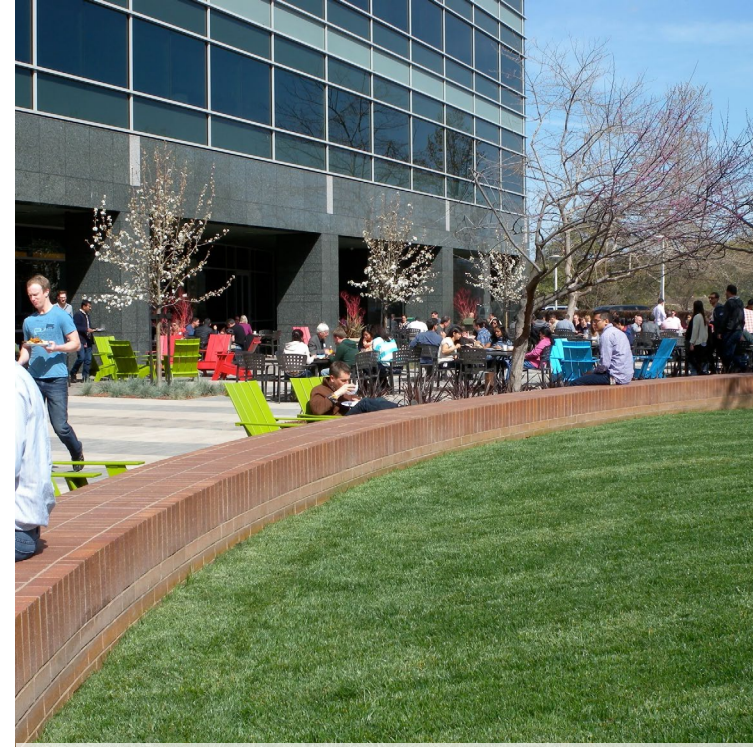


Traditional picnic tables with shade

WALLS AND PLANTERS



Seat walls with wooden slats



Brick seat wall frames plazas



Wooden, elegant planters



Metal raised planters



Wavy seat wall with landscaping



Cast in place concrete seat walls



Waving seat wall along beachfront

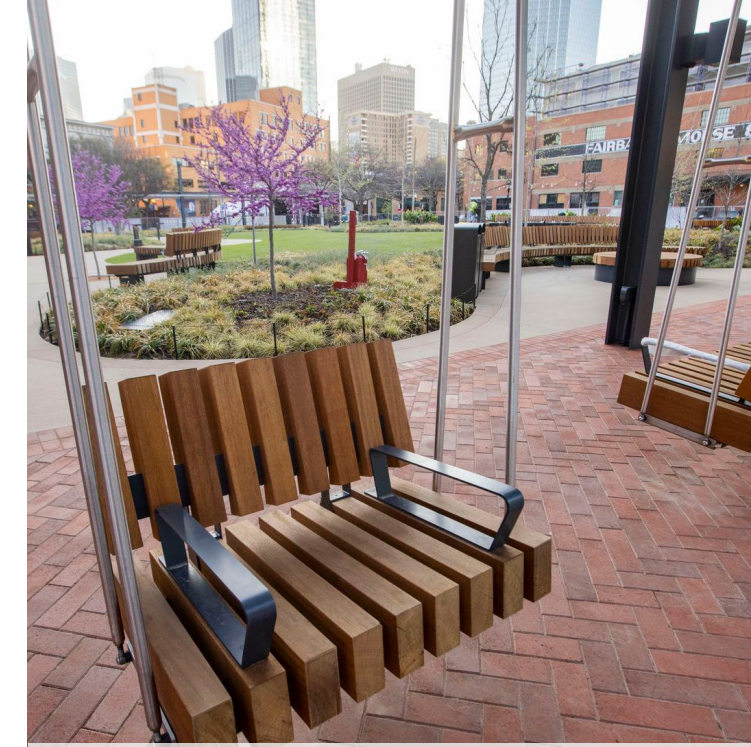


Unique design seat walls for plazas

MISCELLANEOUS



Unique shade and seating design options



Swings and interactive amenities



Accessible beach mat



Metallic bollards, chrome finish



Metallic bollards, matte black finish



Concrete bollards at plaza



Cape Charles existing LOVE sign

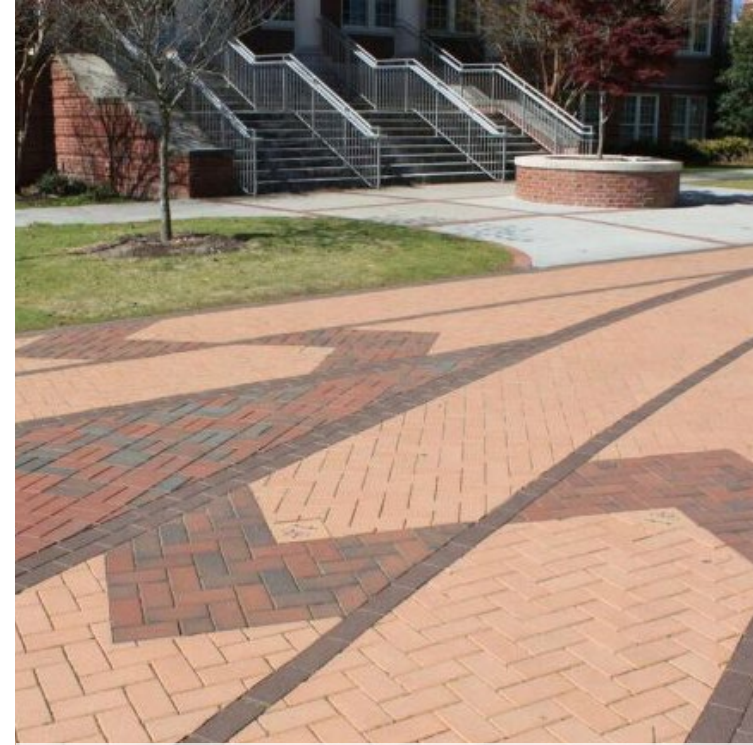


Beach Volleyball

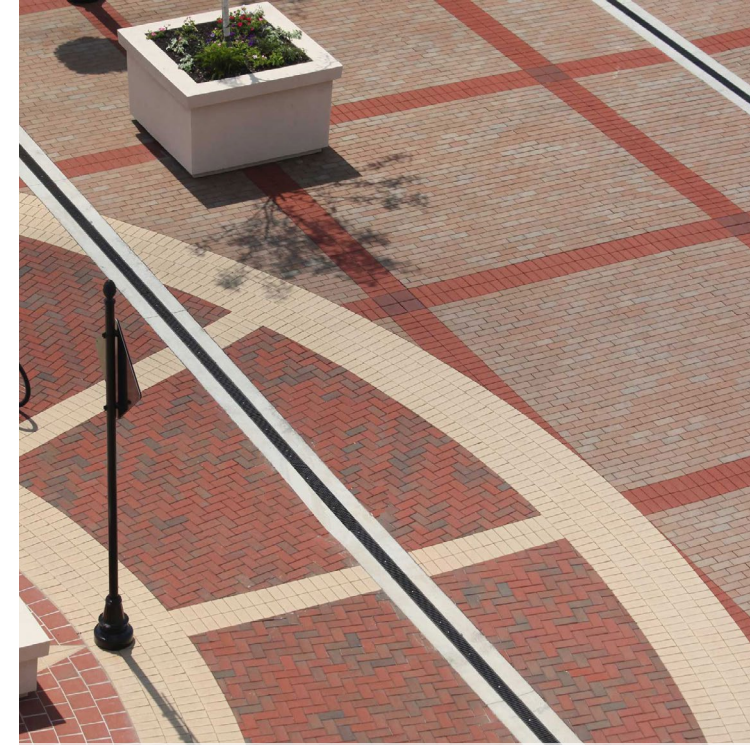
PAVING



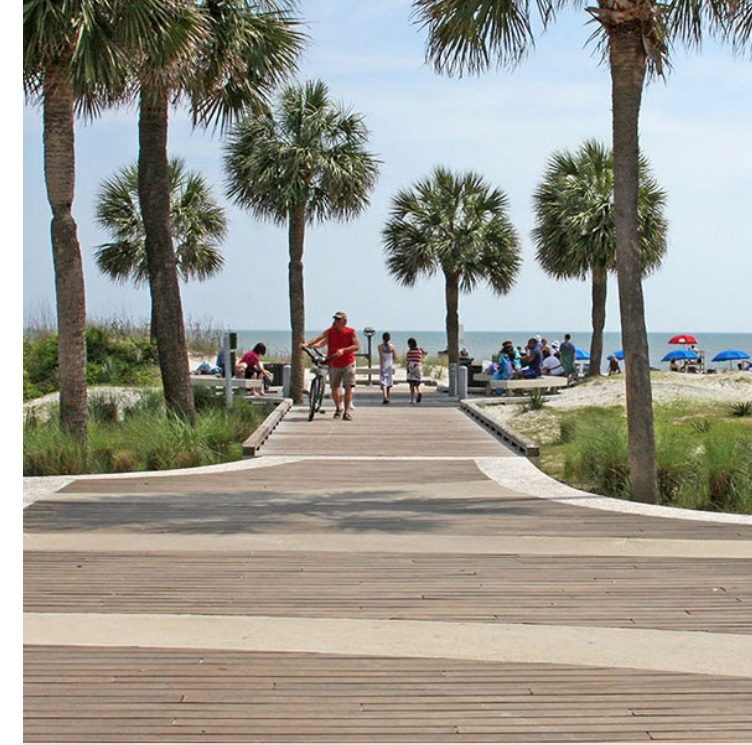
Cross Pattern Brick Paving



Directional flow with paving pattern



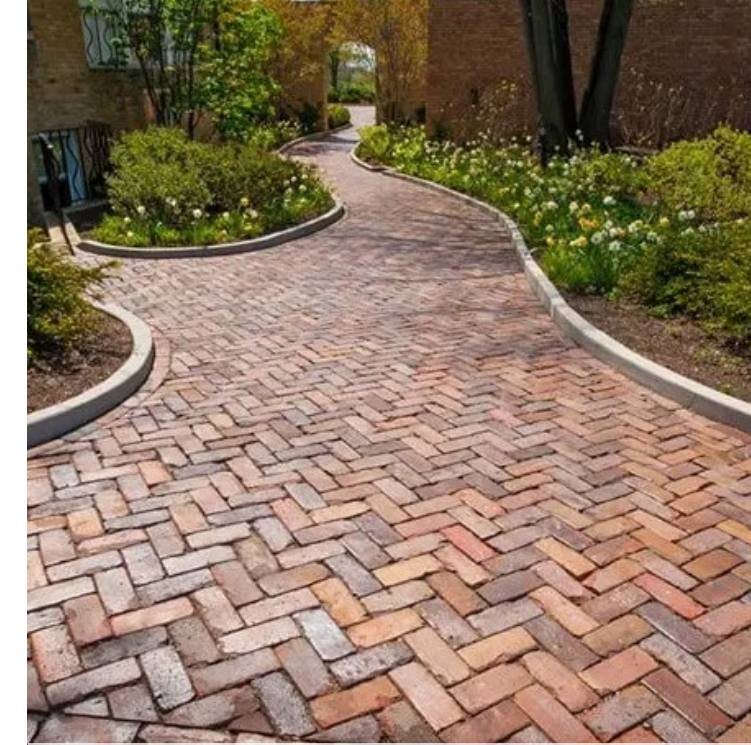
Mix of paving patterns with brick colors



Wooden boardwalk



Brick patterns along sidewalks



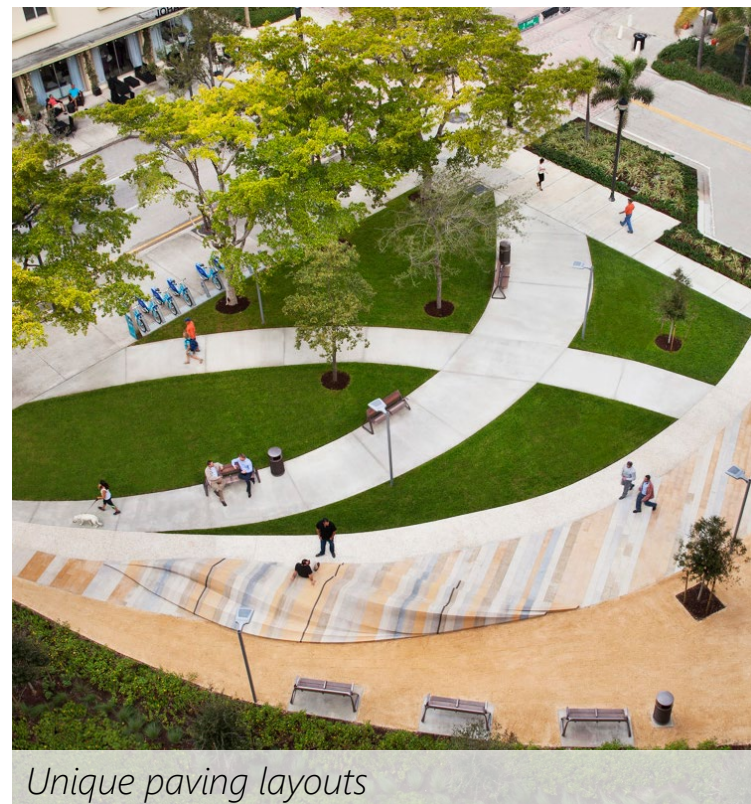
Various brick textures



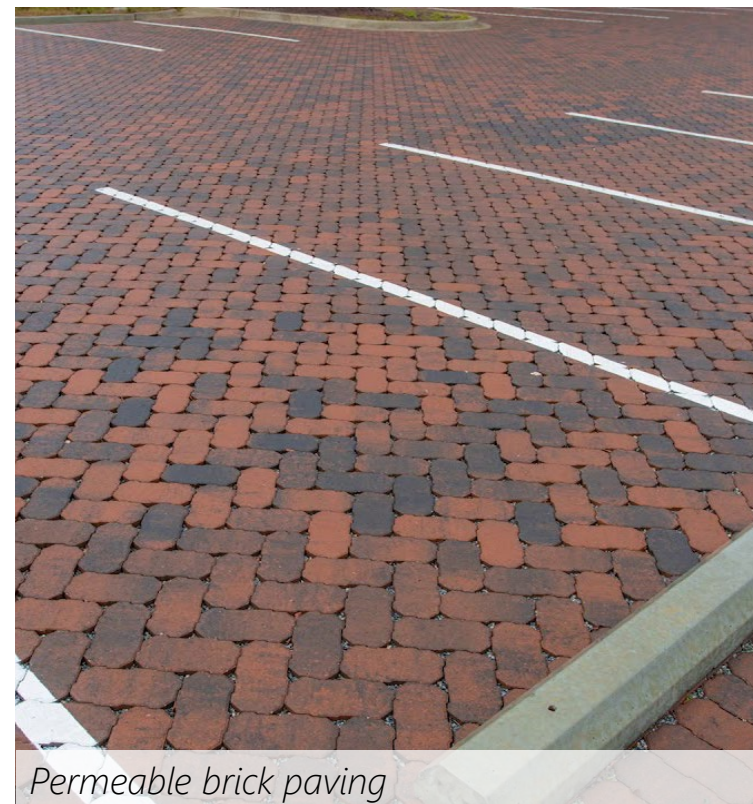
Soldier course border



Pavers used for parking bays



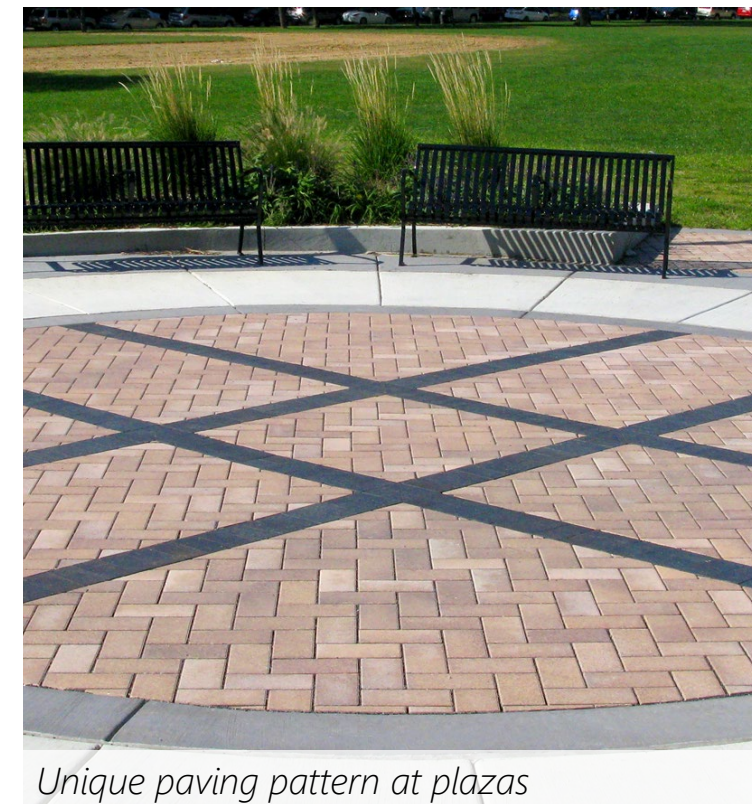
Unique paving layouts



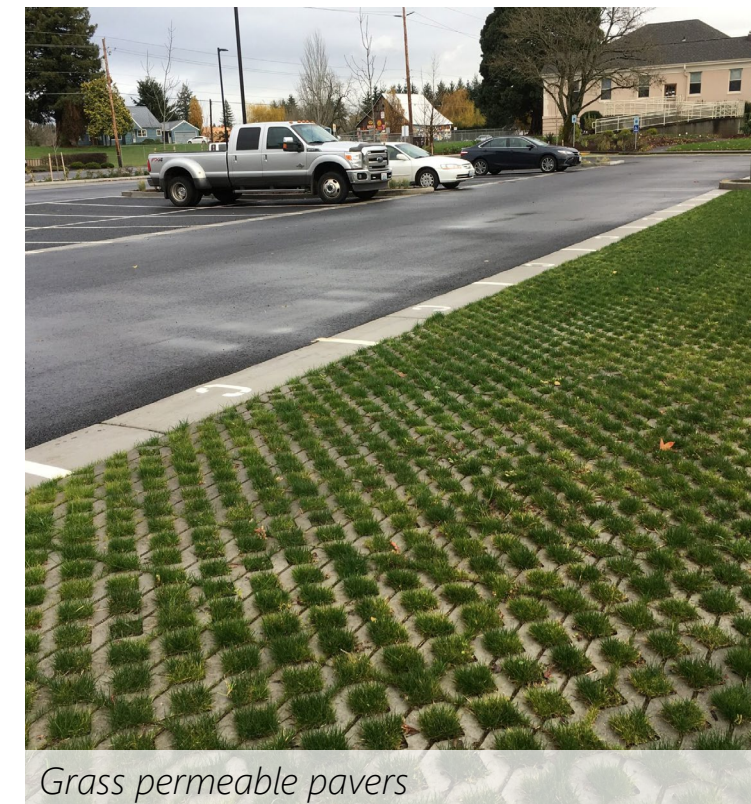
Permeable brick paving



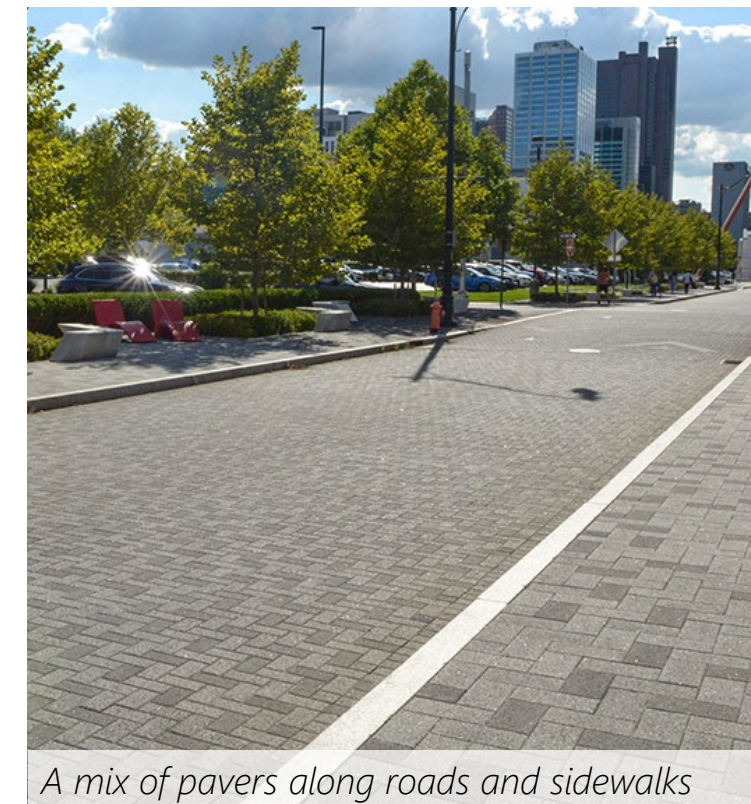
Permeable parking in parking lot



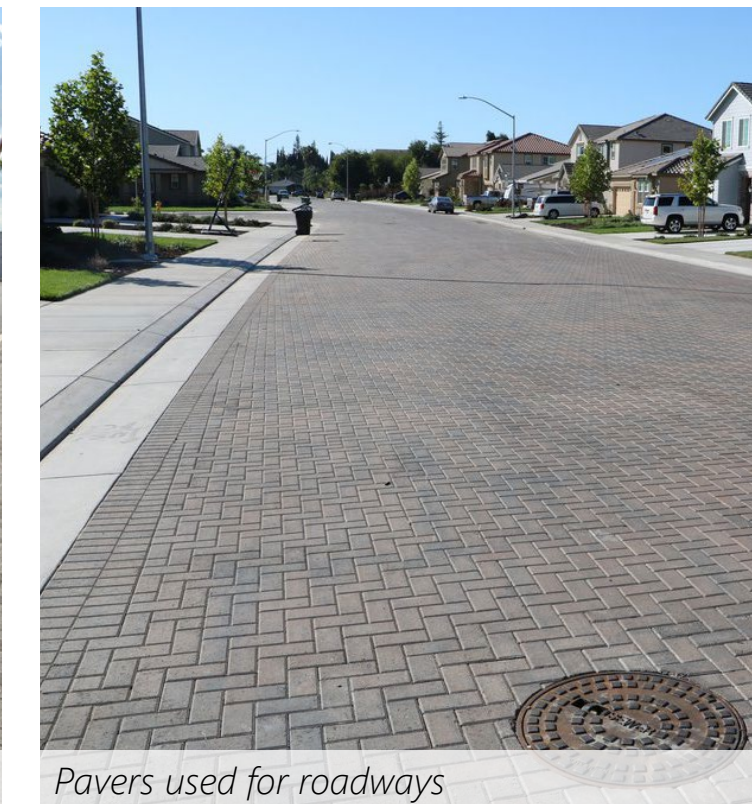
Unique paving pattern at plazas



Grass permeable pavers



A mix of pavers along roads and sidewalks



Pavers used for roadways



Color used at plaza and intersections



FUNDING AND GRANT OPPORTUNITIES

Implementation of the Cape Charles Beachfront Master Plan will likely require a phased and diversified funding strategy that combines local investment with multiple state and federal grant opportunities. Based on the project's mix of shoreline protection, flood resilience, accessibility, transportation, recreation, and public facility improvements, no single funding source is likely to support the full program. Instead, the Town should position individual project components to compete for the most appropriate funding sources, including transportation grants for Bay Avenue safety and access improvements, resilience funding for dune, drainage, and shoreline protection measures, and parks and recreation funding for public amenities such as a bathhouse, restrooms, showers, and ADA-accessible features. Several of the identified programs generally require local matching funds, often in the range of 20 percent for federal transportation grants and approximately 10 to 25 percent for certain resilience programs, reinforcing the importance of a phased approach and clear capital planning. Public comments also indicate that residents want greater clarity on what elements may be grant-funded, what local costs may be required, and how future maintenance obligations will be addressed. Together, these considerations support a funding strategy that seeks all available grant sources while aligning each project element with the program for which it is best suited.

Recommended Funding Approach

Taken together, the grant materials suggest that the Town should pursue a phased and coordinated funding strategy:

- Use the master plan as the foundation for grant readiness and project definition.
- Package safety and access improvements for SS4A and/or BUILD.
- Package flood resilience and shoreline protection work for CFPF.
- Package bathhouse and recreation-support amenities for LWCF.
- Plan for local match requirements and phasing, since several programs require Town participation or are more competitive when the project is already conceptually advanced

POTENTIAL FUNDING SOURCES

SAFE STREETS AND ROADS FOR ALL (SS4A) GRANT PROGRAM

The Town can frame Bay Avenue as a two phase Safe Streets and Roads for All (SS4A) strategy: first securing a Planning & Demonstration Grant to create a qualifying roadway safety Action Plan, then pursuing a subsequent Implementation Grant to build the Bay Avenue Safety and Access Improvements project (sidewalks, crosswalks, raised intersections, lighting, and bike accommodations). In Phase 1, the Town would apply for an SS4A Planning Grant in the next available funding round (typically announced annually by USDOT), with a scope that includes townwide crash analysis, identification of high injury locations, and development of a Comprehensive Safety Action Plan that explicitly prioritizes Bay Avenue as a key beachfront corridor. This planning effort would likely require 12–18 months from award to adoption, including data collection, public engagement, and Council adoption of the Action Plan and associated policies. In Phase 1, the Town will seek an SS4A Planning & Demonstration Grant sized to cover development of a Comprehensive Safety Action Plan, with the federal grant typically covering up to 80% of planning costs and the Town providing the required 20% local match.

Once the Action Plan is adopted and Bay Avenue is identified as a priority implementation project, Phase 2 would consist of an SS4A Implementation Grant application in the following eligible funding round. During the interim between phases, the Town can advance Bay Avenue concept design to at least a preliminary (10–30%) level, refine cost estimates, secure local match commitments, and coordinate with VDOT and the regional MPO on data and support. On a realistic schedule, if the Town submits a Planning Grant application in a 2026 SS4A round and receives an award in 2027, the Action Plan could be completed and adopted by late 2028, positioning Cape Charles to apply for an Implementation Grant in a 2029 or 2030 SS4A round. Construction of Bay Avenue would then follow design, environmental review, and right of way (if needed), placing physical implementation in the early 2030s. In Phase 2, once the Action Plan is adopted and Bay Avenue is identified as a priority corridor, the Town will pursue an SS4A Implementation Grant sized to cover the majority of design and construction for the Bay Avenue Safety and Access Improvements project, again with SS4A funding up to 80% of eligible costs and a 20% local match provided through the Town's capital program and/or complementary state and regional funding. This two stage approach aligns with SS4A's structure, builds a strong, data driven case for Bay Avenue, and integrates the corridor into a broader townwide "toward zero deaths" strategy rather than treating it as a stand alone project.

This Notice makes available up to \$993,488,194 for FY 2026 grants:

- \$687,809,874 is available for Implementation Grants
 - Expected number of awards: 40 to 70
 - Expected funding range: \$2,500,000 to \$25,000,000
- \$305,678,320 is available for Planning and Demonstration Grants
 - Expected number of awards: 400 to 700
 - Expected funding range: \$100,000 to \$5,000,000

Expected Award Size and Requirements

NOFO
PP-2-3

Grant Type	Expected Grant Range*
Planning and Demonstration Grant	\$100K - \$5M
Implementation Grant	\$2.5M - \$25M

Requirements

- **80% Federal | 20% local match**
 - In-kind contributions can be used as match
- **Set aside for planning and demonstration activities (\$305 million)**
 - Developing new Action Plans, as well as supplemental planning and demonstration activities
 - **Supplemental planning and demonstration activities included in an Implementation Grant count toward set aside**
- No more than 15% of funds can be awarded to projects in a single State in a given fiscal year
 - Tribal applications are not counted toward the State cap

*Note: These are expected award sizes, and applicants may request more or less funding.

U.S. Department of Transportation
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BETTER UTILIZING INVESTMENTS TO LEVERAGE DEVELOPMENT (BUILD) GRANT

The Town can advance Bay Avenue as a USDOT discretionary Capital Grant candidate (e.g., through the BUILD program), with a scope that includes final design, permitting, and construction of complete-streets improvements such as sidewalks, crosswalks, raised intersections, lighting, and bicycle accommodations. Key steps will include: (1) confirming project limits, cross-sections, and concept design at a preliminary (10–30%) level, including cost estimates and a clear right-of-way and utility strategy; (2) securing Council authorization, local match commitments, and coordination agreements with VDOT, the MPO, and regional partners; (3) preparing a competitive Capital Grant application that documents the corridor's safety needs, multimodal access benefits, economic and quality-of-life impacts, and project readiness, including a detailed budget that separates final design, environmental review, and construction costs; (4) upon award, using grant funds to complete final engineering design, environmental and permitting approvals, and any necessary right-of-way actions; and (5) bidding and delivering construction in phases, with ongoing grant compliance, reporting, and post-construction performance monitoring. This sequence positions Bay Avenue as a fully scoped, shovel-ready capital project that can move efficiently from federal award through final design into on-the-ground implementation.

For a BUILD type capital grant that covers final design and construction, a realistic general timeline looks like this:

0–6 months – Concept refinement and pre grant positioning

- Refine the existing 10% concept into a clear, grant ready concept package: defined limits, cross sections, typical sections, preliminary layouts for sidewalks, crosswalks, raised intersections, lighting, and bike accommodations.
- Develop a more robust planning level cost estimate (separate line items for final design, environmental/permitting, right of way if any, and construction).
- Coordinate early with VDOT and your MPO to confirm support, data, and roles.
- Take a Council action to: (a) endorse the Bay Avenue concept, (b) authorize pursuit of a capital grant, and (c) identify/earmark a 20% local match in the capital plan.

6–12 months – First capital grant application cycle

- Track USDOT's annual BUILD NOFO and align your internal schedule with the application deadline.
- Use the refined concept and cost estimate to prepare the application package (narrative, benefit–cost discussion, maps, drawings, budget, schedule, letters of support).
- Submit in the first viable NOFO cycle; allow several months after submission for USDOT evaluation and award decisions.

Year 2 – Award and launch of final design (if successful)

- If awarded in that first cycle, spend 3–6 months executing the grant agreement and setting up project management and reporting systems.
- Begin final design (detailed engineering) based on the 10% concept, now moving toward 60–100% plans.
- Run environmental review and permitting in parallel (NEPA plus any state/local permits), plus utility coordination and any minor right of way actions.

Years 2–3 – Complete final design and approvals

- Allocate roughly 12–18 months for full design, public outreach, value engineering, and permit approvals, depending on complexity and agency review time.
- Update the cost estimate and refine construction phasing to reflect final plans.
- Prepare bid documents.

Years 3–5 – Construction and close out

- Bid and award construction; typical Bay Avenue scale work could take 1–2 construction seasons, especially if phased to manage beach season traffic.
- Complete construction, punch list, and project close out, including required reporting and performance monitoring to USDOT.

Overall duration from your current concept:

- Approximately 5–7 years from today to full completion of construction, assuming:
- One successful capital grant award cycle,
- Standard federal design/environmental timelines, and
- Typical seasonal and coordination constraints for a waterfront/main street corridor.

The Federal share for BUILD grant projects shall not exceed 80 percent unless the project receives one of the following location designations (see Location Designations for definitions):

- Rural
- Area of Persistent Poverty (APP) / Historically Disadvantaged Community (HDC)

Applicants with projects located in one of the designated areas above are eligible to fund the project up to 100 percent with Federal funding.



VIRGINIA COMMUNITY FLOOD PREPAREDNESS FUND GRANT

The Town could pursue Virginia Community Flood Preparedness Fund (CFPF) assistance to integrate elevated roadway, coastal protection, and stormwater resilience into the Cape Charles Beachfront/Bay Avenue project. Under this approach, Bay Avenue would be raised in elevation and reconstructed with improved drainage to reduce recurrent tidal and stormwater flooding, while a reconstructed sand dune system, a low sea wall or revetment, and a defined beachfront maintenance zone are created between the beach and Bay Avenue to provide a layered line of defense. CFPF-eligible work would include elevating the roadway, upgrading stormwater conveyance and outfalls, incorporating green-infrastructure features (such as bioswales and permeable areas), and designing the dune, sea wall, and maintenance area as integrated flood-protection and wave-energy-dissipation elements that protect beachfront parking, public facilities, and nearby neighborhoods. These measures would be coordinated with the planned sidewalks, crosswalks, lighting, and bicycle accommodations on Bay Avenue so that flood-resilient infrastructure and complete-streets improvements are delivered as a single, cohesive project. To position the project, the Town should ensure Bay Avenue, the beachfront, and the proposed dune/sea wall corridor are identified as priority flood-risk areas in a local or regional resilience plan and then apply to CFPF as a flood-prevention and protection project that delivers transportation, public-space, and maintenance-access co-benefits while enhancing the Town's long-term coastal resilience. Under current CFPF guidance, the program can support multi-million-dollar implementation projects that deliver community-scale flood-risk reduction, with the Commonwealth typically providing the majority of project funding and the Town contributing a local match generally in the 10–25 percent range of eligible costs (to be confirmed for each funding round).

The most recent Notice of Funding Opportunity (NOFO) for the Virginia Community Flood Preparedness Fund (CFPF) was issued for Round 6 on October 15, 2025, with applications due December 1, 2025 and awards announced in early 2026. This recent schedule suggests that CFPF rounds are generally issued on roughly an annual basis, so the Town should monitor Virginia Department of Conservation and Recreation (DCR) announcements beginning in mid- to late-2026 for the next NOFO and be prepared to have a Bay Avenue/Beachfront resilience concept, preliminary costs, and matching funds identified in advance of a similar 6–8 week application window.

NEXT STEPS

VIRGINIA LAND AND WATER CONSERVATION FUND STATE AND LOCAL ASSISTANCE PROGRAM

The proposed Cape Charles Beachfront Bathhouse is a grant-ready public recreation infrastructure project that directly advances the master plan efforts and responds to a documented need for improved beach-user services. For grant positioning, the most competitive framing is that the project will deliver basic public outdoor recreation support infrastructure at a heavily used public beach: restrooms, showers, changing areas, ADA-accessible features, and related circulation or utility improvements. That framing aligns well with LWCF guidance, which supports the development of public outdoor recreation areas and facilities, provides assistance on a matching basis up to 50 percent for most state and local projects, and emphasizes that LWCF-funded sites must remain in public outdoor recreation use in perpetuity. The grant cycle typically begins in the July/August timeframe with an initial submission to DCR. If selected, the Town would work with DCR to prepare final documents for NPS during the Fall months, and the official award of the grant occurs in the Spring of the following year.

LWCF-SLA Grant Award Request Amount (up to 50% of total project cost, requests can range between \$125,000-\$2,000,000)



