Appendix H

Sandy Hook Gateway National Recreation Area and Sea Bright Mitigation Report

Date:

June 30, 2021

Monmouth County

Authored by: Stantec Consulting Services, Inc.

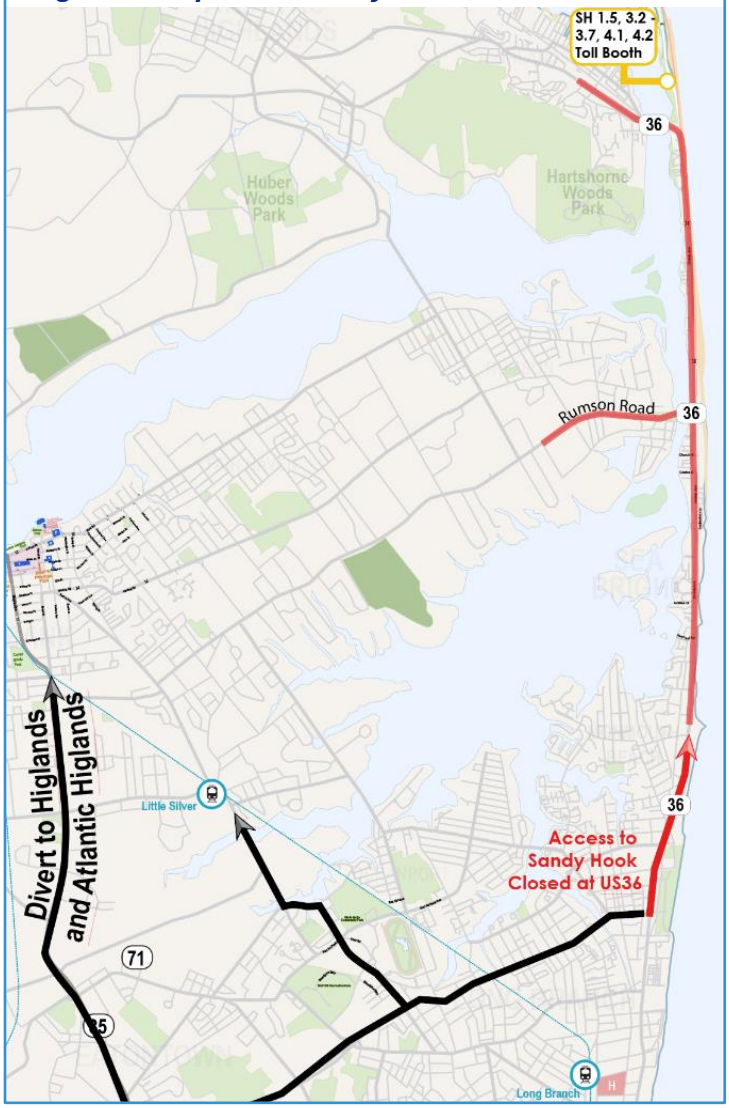
Contents

Introduction

Sandy Hook Gateway National Recreation Area (Sandy Hook) is part of the Gateway National Park system, which is comprised of parks in New York and New Jersey. Measured together, the Gateway National Park system represents one of the highest visited national parks in the US. Sandy Hook is operated and maintained by the National Park Service. The Project Team held a stakeholder meeting with Sandy Hook staff and the Middletown Administrator with a follow-up meeting with Sea Bright Police to identify their concerns with visitor operations and identify strategies in place to manage visitation and discuss other opportunities. The National Park Service has a strong foundation in place with its current operation.

The nearby Borough of Sea Bright features over three miles of beachfront, several beach clubs, and dining destinations. The Borough also experiences significant congestion largely, but not entirely, related to Sandy Hook. When parking at Sandy Hook reaches capacity it closes its entrance, sending shore travelers south to or through Sea Bright to try to find other locations to access the beach.

Figure 1: Impact of Sandy Hook Closure on NJ 36



During peak days, typically on summer weekends, congestion can extend back several miles along eastbound NJ 36 (Navesink Avenue/Memorial Parkway), for drivers destined to Sandy Hook and Sea Bright (**Figure 1**). In addition, drivers accessing Sea Bright or Sandy Hook from the south encounter congestion on Rumson Road. High entering volumes begin to congest NJ 36 (Navesink Avenue/Memorial Parkway) and other access roadways starting as early as 8:00 AM and continuing to about 1:00 PM. High volumes of vehicles start to depart Sandy Hook and Sea Bright starting at about 3:00 PM and continuing to 8:00 PM. The average travel time along NJ 36 (Navesink Avenue/Memorial Parkway) to Sandy Hook and Sea Bright increases from 25 minutes to as high as 45 minutes on these peak days. Parking fills quickly on these days, and the park is often closed to new entries for several hours on peak days. This leads to visitors waiting in long queues to approach Sandy Hook, then being turned away at or near the entry gate. An analysis of the trip patterns on NJ 36 (Navesink Avenue/Memorial Parkway) westbound as it approaches Ocean Avenue show that nearly

half of the vehicles on this road are not destined for either Sandy Hook or Sea Bright. These vehicles are destined for locations further south but are experiencing (and contributing to) long queues on NJ 36 (Navesink Avenue/Memorial Parkway). A signage plan could identify alternate routes for these travelers, improving flow conditions on NJ 36 (Navesink Avenue/Memorial Parkway) for those who actually are destined for Sandy Hook or Sea Bright.

As will be noted in the subsequent sections, there are a number of TDM measures already in place that could be supported by new measures (**Figure 2**). This includes an extensive multiuse pathway system, ferry services, bike rentals and parking and some existing signage.

There are a number of transportation demand management (TDM) strategies that can be implemented to address the issues identified in the Existing Conditions Report, improve visitor experience, and enhance quality of life for nearby residents **Figure 3**. This purpose of this site-specific Mitigation Report is to identify TDM strategies that are currently in place, as well as provide recommendations for additional measures to address the existing issues identified above and improve the overall travel experience for visitors and nearby residents. The following sections outline the various strategies that can be applied at Sandy Hook, Sea Bright, and other similar areas. Each TDM measure in the following sections is described briefly along with their 'playing card' and a backlit color:

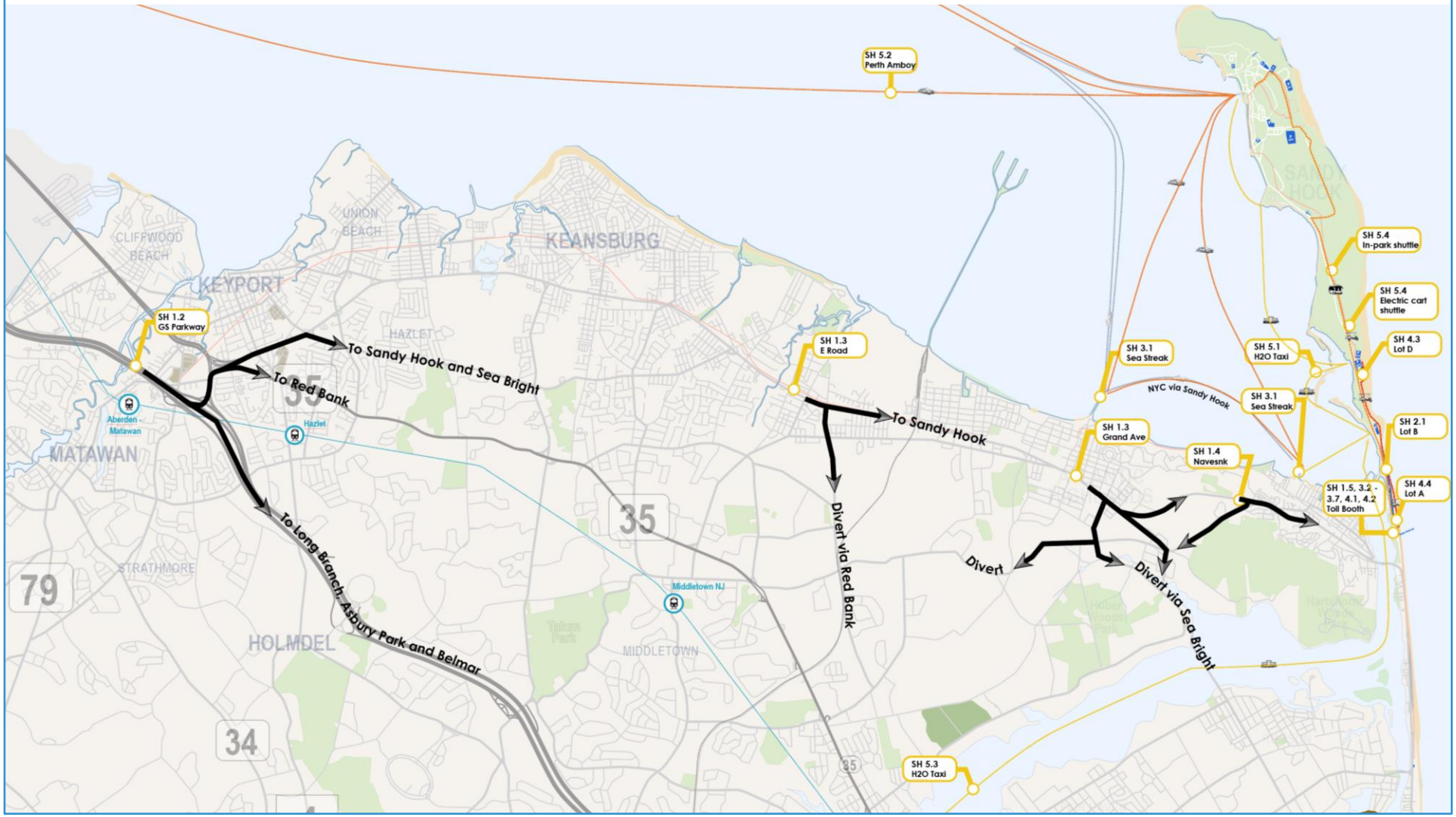
	A green backlit color indicates a TDM measure already in place		A yellow backlit color indicates a TDM measure recommended for consideration

The strategies are organized into five categories: Communications, Traveler Behavior, Improve Existing Travel Options, Parking, and New Options, and are presented as a deck of cards. There is no single strategy that can solve all the transportation issues, and just like a card game, multiple cards (strategies) are needed for a "winning hand" (reduction in event and tourism related traffic congestion). A detailed description of the strategies is contained in the following sections. The options presented here are focused on Sandy Hook and Sea Bright but they are intended to be conveyable to any location that has similar challenges of limited access routes and entry pay points that can back traffic up onto a surrounding street network.

It should be noted that National Park Service currently utilizes parking utilization as an indication of beach utilization. If a particular parking lot is filled, it is assumed that the beach area that the parking lot serves is also near capacity. Therefore, any recommendation that provides additional access to Sandy Hook, and thus potential visitors arriving by modes other than a car, need to be coordinated closely with the park staff to develop a method of controlling beach utilization so it does not exceed a safe capacity.

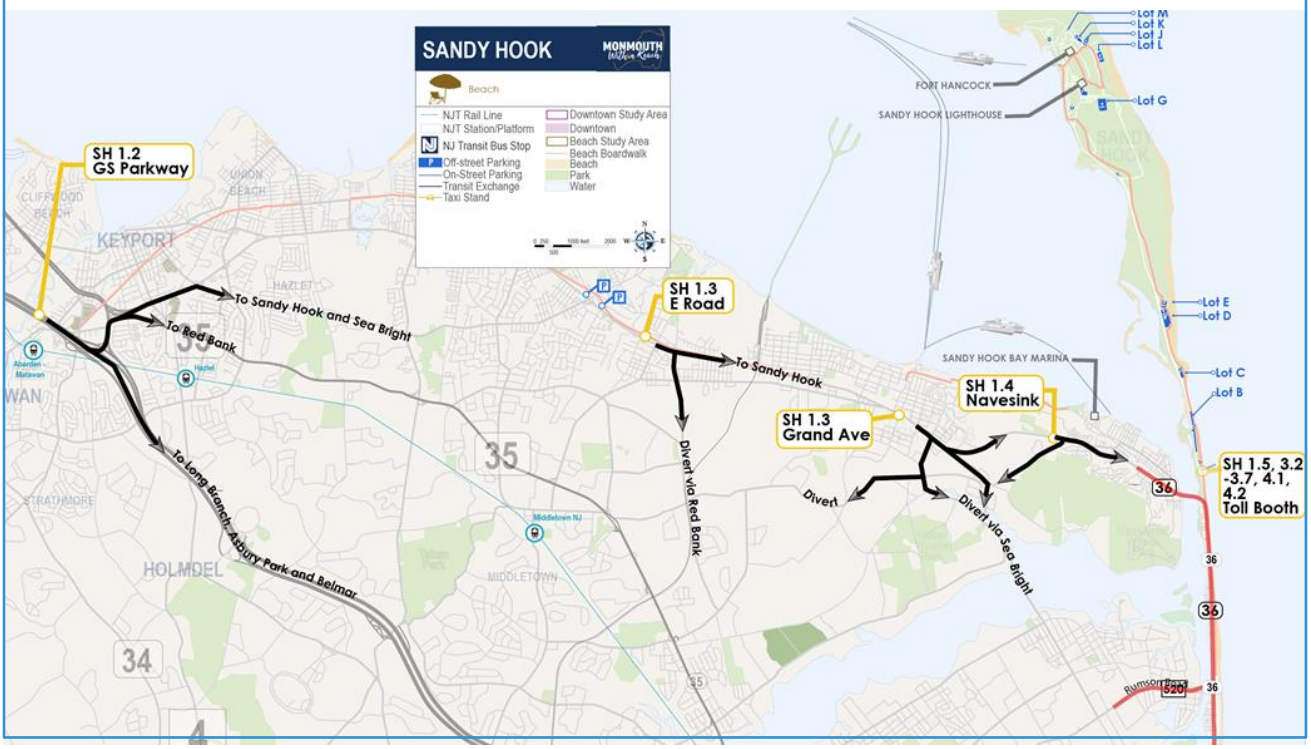
Figure 2: Existing TDM Measures at Sandy Hook

Figure 3: Summary of Proposed Measures for Sandy Hook and Sea Bright



1 – Communications

Figure 4: Communications Options



Communications and Website Travel Portal (SH 1.1)

The website for Sandy Hook (Sandy Hook - Gateway National Recreation Area (U.S. National Park Service) (nps.gov) lists options for travel to access the destination. Driving directions are provided for visitors from North Jersey, South Jersey, and from the Philadelphia-Camden area. Information on options for direct access via Academy Bus Lines and Seastreak Ferries is also available to Highlands and Atlantic Highlands. NJ TRANSIT bus and rail service are listed but travelers are advised that the closest stops on these services is several miles away from Sandy Hook, so travelers will have to consider some alternative form of connecting transportation.

However, the directions on the website are static and limited to links to a home page for alternate modes rather than linking to a specific page on the transportation agency or entity's website (for example, links to a specific route on the agency's webpage, rather than the agency home page, may be more helpful) (**Figure 5**). A dynamic page listing transportation options could also provide information on the expected travel time from different points in the region and make travelers aware of park closures. A partnership with Mobility-as-a-Service (MaaS) providers could also achieve the goal of better informing visitors of their

travel options. There are also existing suppliers such as “Moovit” that provide both a travel portal and additional services.

Figure 5: Links to a dedicated landing page on a transit provider’s website makes it easier to convey information specifically for visitors to that destination.

Meadowlands

Travel to games and major events at MetLife Stadium and the Meadowlands Racetrack on NJ TRANSIT. From Secaucus Junction, you're only minutes away from enjoying your favorite team, band or event, and accessing all the entertainment, retail, and dining options at American Dream. No parking, no driving, no hassle! TEST

Event Schedule

No Events Currently Scheduled

Train

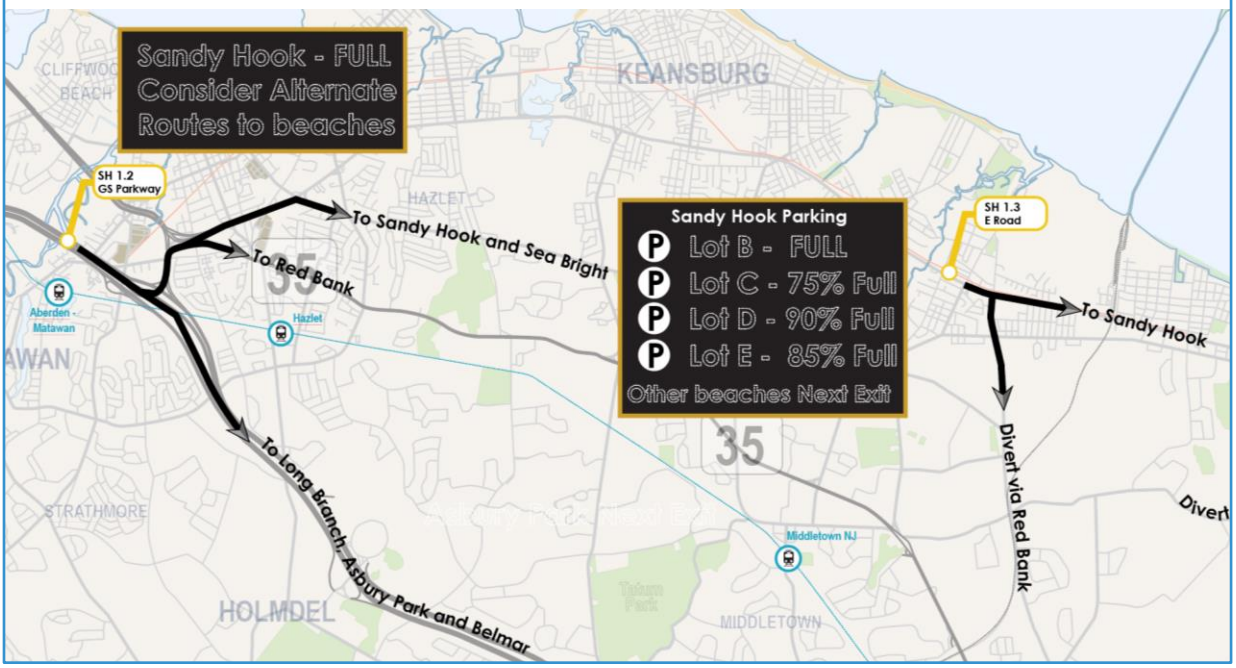
Take a train to Secaucus Junction via the Main-Bergen County Line, Montclair-Boonton Line, Morris & Essex Line, Northeast Corridor, North Jersey Coast Line, Pascack Valley Line, and Port Jervis Line. When you arrive, transfer to a direct shuttle train to the Meadowlands Rail Station, steps away from MetLife Stadium.

Since popular events will inevitably attract more people, check DepartureVision on your NJ TRANSIT app to plan for varying wait times on your return journey. Check the MetLife Stadium website for event-specific information where you can find timetables posted 7 to 10 days in advance of the event.

Signage on the Garden State Parkway (SH 1.2)

Signage is most effective when it is placed at key decision points where travelers have time to read the signs, interpret them, and plan their strategies. One solution to congestion on NJ 36 (Navesink Avenue/Memorial Parkway) is to coordinate with the New Jersey Turnpike Authority to utilize dynamic message signs on the Garden State Parkway (GSP), north of Interchange 117, that identify the level of congestion on NJ 36 (Navesink Avenue/Memorial Parkway), other connecting roads, and availability of parking at Sandy Hook (**Figure 6**). This could be coordinated as part of a series of signs along the GSP advising motorists of the shortest travel times to specific exits / shore areas. Sample signage may include “BEST ROUTE TO BEACHES-EXIT 109” or “20 MINS TO SANDY HOOK”. This would avoid the effect of having all travelers exit at the same route and using the same roadway, which leads to congestion on those roadways, while other options are underutilized.

Figure 6: Potential VMS/DMS Sign Locations with Example Alternate Routes



Signage on NJ 36 (Navesink Avenue/Memorial Parkway) – Atlantic Highlands (SH 1.3)

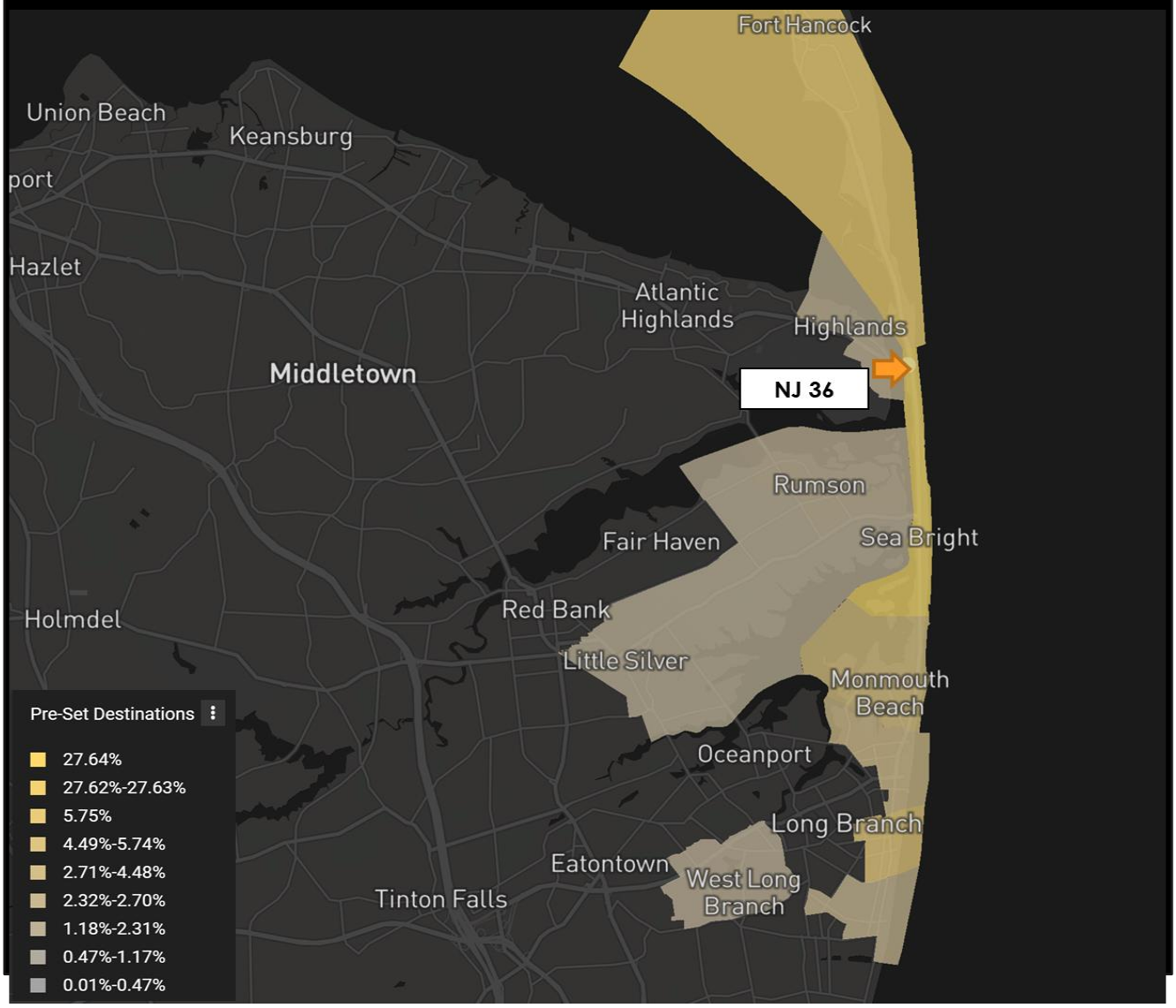
Currently, visitors have limited means to get information about congestion or closures at Sandy Hook until they arrive on NJ 36 (Navesink Avenue/Memorial Parkway). There is a VMS on the GSP north of Monmouth County and variable message signs on the NJ 36 (Navesink Avenue/Memorial Parkway) bridge as it approaches Ocean Avenue, but there are limited sequential signage opportunities between these points. This could lead to frustration, especially if visitors have waited in a queue for long periods of time, only to be turned away at the last minute. Additionally, travelers destined for other locations are subject to congestion on NJ 36 (Navesink Avenue/Memorial Parkway), and contribute to queues for visitors going to the park. A review of StreetLight data for the summer of 2019 shows that roughly 30% of all visitors on NJ 36 (Navesink Avenue/Memorial Parkway) as it approaches Ocean Avenue are destined for Sandy Hook or Sea Bright ( ). Conversely, 70% of all traffic on this road is going to other locations that could be accessed via other, less congested roadways. Even on weekend afternoons during the summer, nearly 60% of the traffic on NJ 36 (Navesink Avenue/Memorial Parkway) is not going to Sandy Hook.

An alternative is to provide signage on NJ 36 (Navesink Avenue/Memorial Parkway) on the approach to Sandy Hook in advance of the most congested segment (**Figure 6**). This would allow visitors to re-route to another beach destination using Grand Avenue, Valley Drive, or E Road as alternatives to staying on NJ 36 (Navesink Avenue/Memorial Parkway). It could also be used to divert background traffic off NJ 36 (Navesink Avenue/Memorial Parkway), which could relieve congestion for visitors that are destined for Sandy Hook. Signs at this location could also be helpful to direct visitors to potential park and ride solutions in Atlantic Highlands or Middletown. Suggested signage may include “SANDY

HOOK CLOSED / USE OTHER BEACHES", "PARK AND RIDE NEXT LEFT", or "DELAYS AHEAD, AVOID 36".

If parking monitoring is implemented (see Section 4 – Parking), it may also be possible to provide advanced predictive information to drivers on NJ 36 (Navesink Avenue/Memorial Parkway) as they approach Sandy Hook regarding the availability of parking, either for the entire park or for specific lots. This could let drivers know that Sandy Hook may be about to close if parking is reaching capacity.

Figure 7: Nearly 30% of all travelers on NJ 36 (Navesink Avenue/Memorial Parkway) near Ocean Avenue are destined for Sandy Hook. The other 70% are destined for locations for which alternate routes are available.



Travel Time Signage (General) (SH 1.4)

Signage is one of the most cost-effective strategies to improve the visitor travel experience. This could be accomplished by making drivers aware of alternate routes, diverting background traffic, or by helping drivers make more informed decisions by providing them quantitative information on travel time via alternate routes. This could be more effective than detour signage because it provides the rationale for the detour.

Signage on Ocean Avenue – Sea Bright (SH 1.5)

Similarly, more than half of all vehicles on northbound Ocean Avenue passing through Sea Bright are destined for locations other than Sea Bright or Sandy Hook. These travelers are subject to congestion on Ocean Avenue and also contribute to congestion for those who are destined to these two locations. Signage could be used to identify alternate travel routes, for example the GSP, Maple Avenue, or Bingham Avenue (

Figure 8).

Figure 8: Example Diversion Routes for Ocean Avenue Northbound

2 – Travel Behavior

Pedestrian Management (SH 1.2 and SH 1.2)

Within Sandy Hook, there are large volumes of pedestrians crossing the main north-south Road, Hartshorne Drive, near Lots C, D, and E, to access destinations on either side. These crossings are not currently managed and can disrupt the flow of traffic into and around the park. The creation of dedicated managed crossing locations (SH 2.1) at parking lots B, C, and the horseshoe could help define crossing points during the busy summer months and reduce the incidence of random crossings that can create challenges for motorists trying to anticipate pedestrian behaviors while also trying to navigate to parking places (**Figure 10**), in addition to the safety concerns for pedestrians. There are existing crosswalks for both Lot B and C; however, visitors may choose to cross at an unmarked location rather than walk nearly 1,000 feet to access the crosswalk.

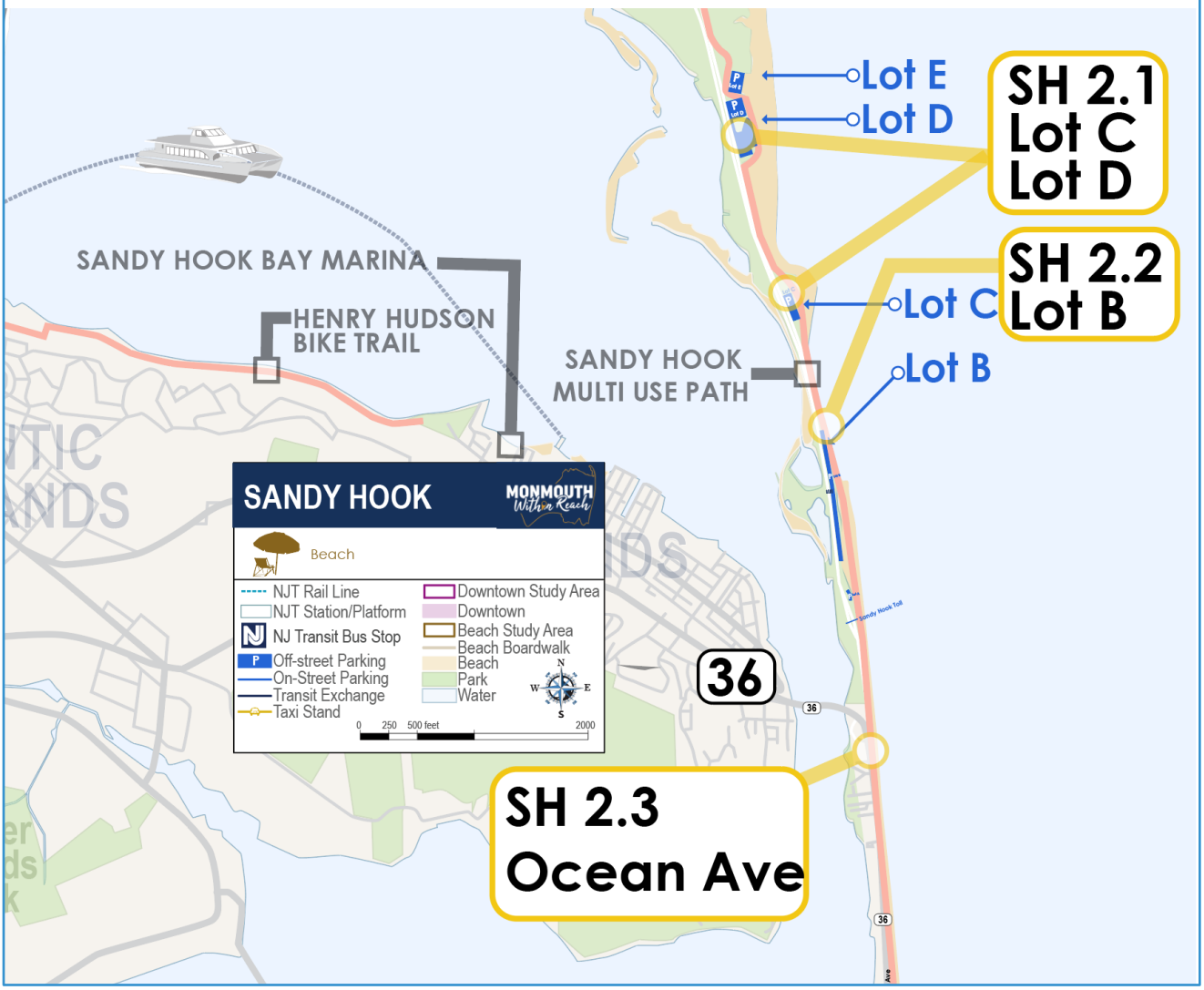
New designated crossing locations (SH 2.2) could overcome this issue. New crosswalks could be painted at high-volume crossing locations and could include other measures such as signs and rectangular rapid flashing beacons. As an interim solution, temporary crosswalks, managed by staff, would provide a designated crossing location without requiring crosswalk striping (**Figure 9**).

Figure 9: Traffic management agents and devices can be used to designate temporary crossing locations where large pedestrian crossing volumes are observed.

Carpool Incentives (SH 1.3)

Carpool incentives are a by-product of Sandy Hook's fee structure which collects an amenity fee per vehicle for entry rather than by the visitor. Sandy Hook staff have noted high vehicle occupancies for arriving visitors (up to 4 people per passenger car, or 6-8 passengers per minivan). This high vehicle occupancy suggests that groups are already carpooling, which, in turn, reduces the vehicle demand. In addition, visitors that enter on the bike path are not charged an entry fee, which further encourages alternative modes of travel to Sandy Hook.

Figure 10: Potential New Crossing Points



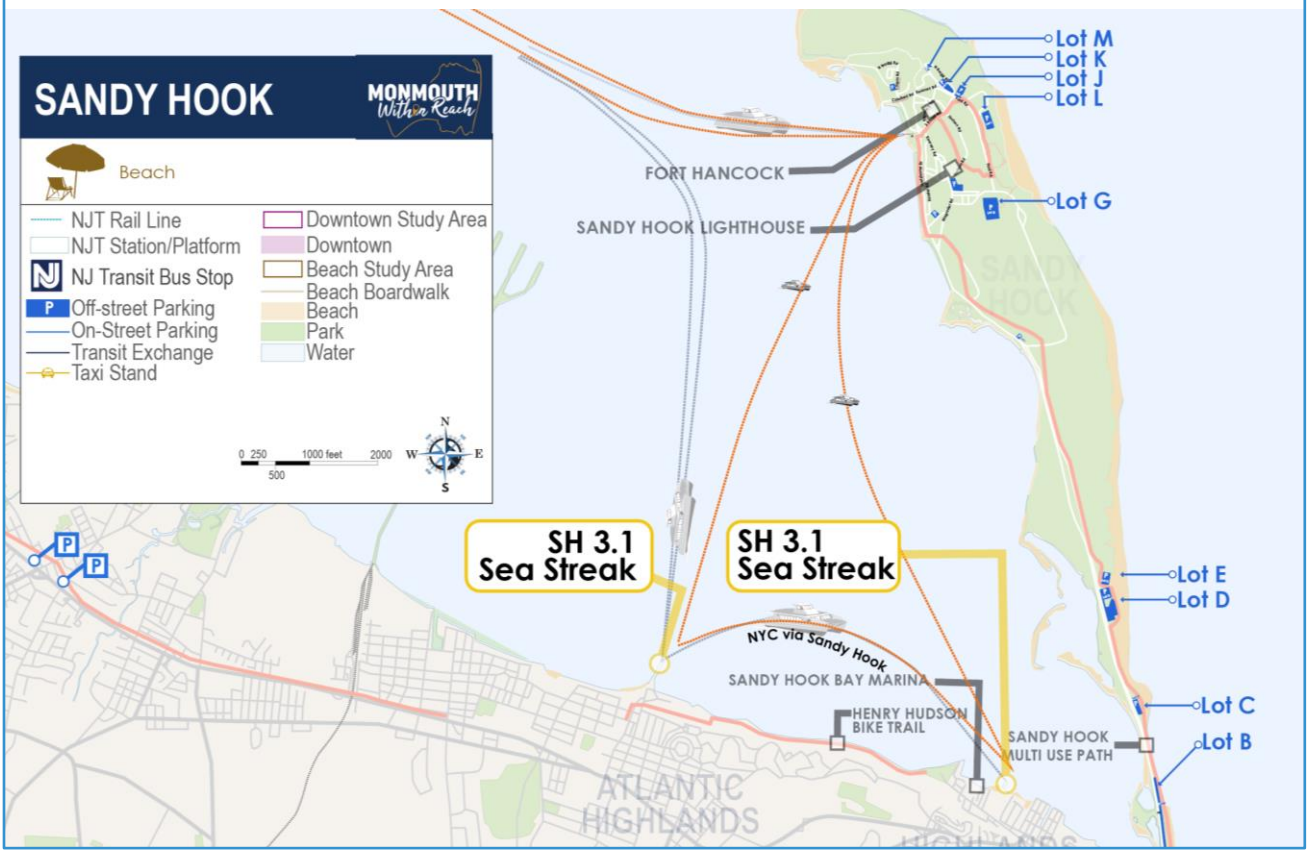
3 – Improve Existing Travel Options

Ferry Service (SH 3.1)

There are currently a number of ferry options to New York City from Monmouth County, including Seastreak and NY Waterway. A ferry terminal is located near the north end of Sandy Hook and connects to Pier 11 in NYC. This terminal is used to provide connecting service to New York City during the peak summer season. This provides a reliable alternative to driving to Sandy Hook for thousands of visitors per month. Seastreak operates a shuttle to transport passengers around the park, and there is a bike rental shop located at the ferry terminal and adjacent to the multi-use Pathway. Amenities, including food vending machines, food trucks, restrooms, changing areas, and beach equipment rentals, also provide the ability for people to travel to Sandy Hook without a car. Enhancing the ability to move around Sandy Hook and Seabright without access to a vehicle should be considered for future seasons.

Consideration could be given to coordinating with Seastreak to evaluate the feasibility of modifying the Highlands/Atlantic Highlands Ferry Route to add a stop at Sandy Hook en-route to NYC during the summer season to allow access to Sandy Hook from the Highlands and Atlantic Highlands areas (**Figure 11**). This would provide another option for visitors destined for Sandy Hook without the need for a vehicle. There would need to be coordination with Middletown regarding parking access and availability along with coordination with the National Park Service regarding fee recovery and visitor density. Currently the beach is considered full when the parking lots are full, rather than by counting the number of people. Additional people may require changes to the number of lifeguards on duty at certain beaches along with coordination of some form of shuttle service from the ferry terminal for those with beach equipment or who prefer not to walk or cycle across the peninsula.

Figure 11: Potential Summer Ferry Service Options



Electric Shuttles (SH 3.2)

EZ Ride was awarded funding to provide a seasonal shuttle between the Middletown train station and Sandy Hook. This shuttle would have utilized the Middletown train station parking lot as a park-and-ride facility and would have allowed connections via NJ TRANSIT rail. However, the service was never started due to the COVID-19 pandemic and the need to secure matching funds. However, it is recommended this service be implemented once the pandemic subsides to help provide an important transit connection and reduce vehicular traffic demand on NJ 36 (Navesink Avenue/Memorial Parkway) as it approaches Sandy Hook.

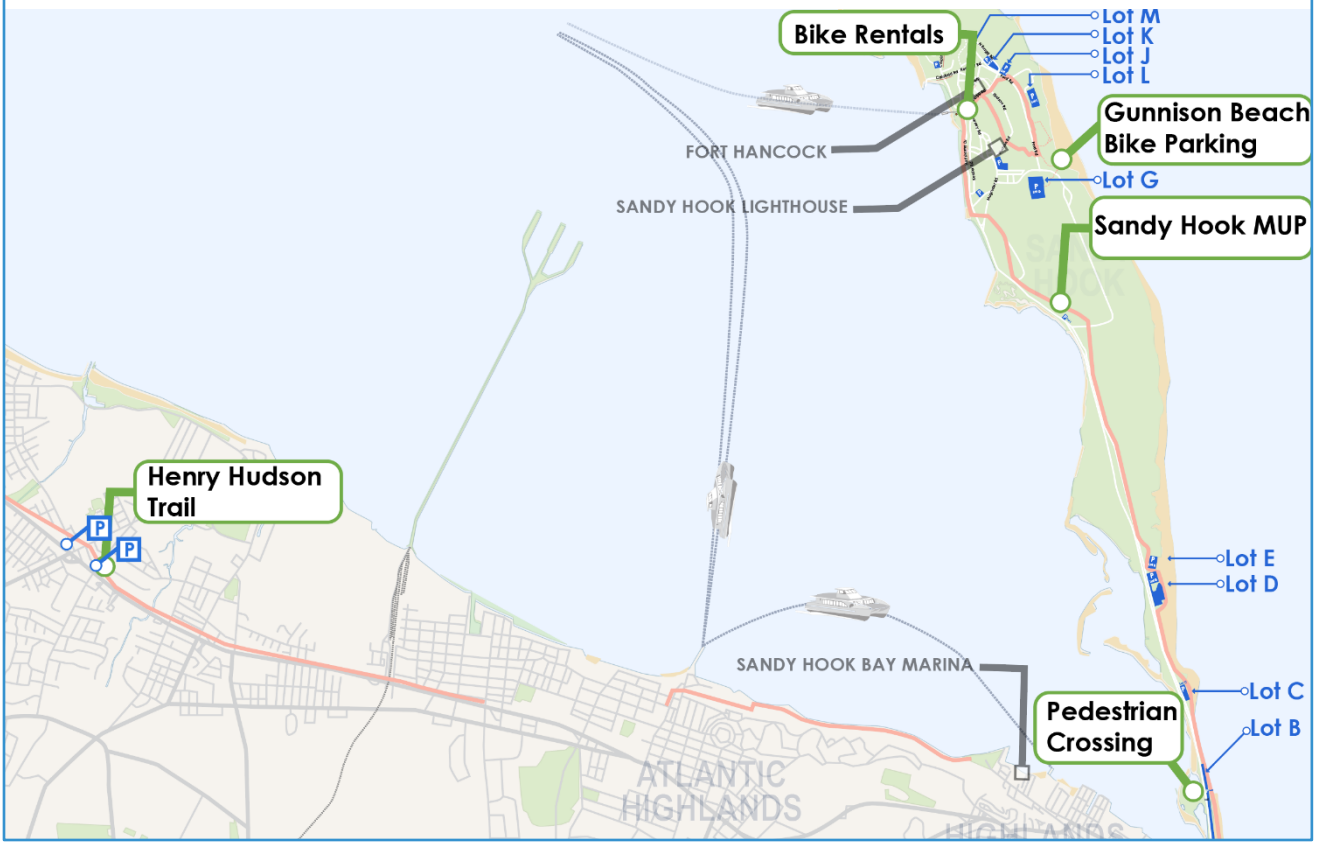
Bicycle Facilities and Parking (SH 3.3)

Two multi-use pathways provide access to Sandy Hook. One trail connects locations in Sea Bright to the northern end of Sandy Hook (**Figure 12**). Bike-on-shoulder facilities on NJ 36 (Navesink Avenue/Memorial Parkway) and along Ocean Avenue provide first-and last-mile connectivity options for travelers. The Henry Hudson Trail also provides connections to the Park from points west, ending in Keyport.

The trail is planned to continue to Freehold, which could provide the potential for recreational biking throughout much of the County, with the ability to access Sandy Hook and Sea Bright. A bike trip from Freehold to Sandy Hook would be over 25 miles, and is not feasible for most travelers, but the presence of the trail provides connectivity options for communities closer to the waterfront and Sandy Hook and Sea Bright communities. The trails provide a dedicated bike facility which is generally free of conflicts with vehicles (excluding driveways or intersections). There are also striped bike lanes over the Highlands Bridge to support access to the park by active modes.

The bike demand ranges from several hundred visitors to over a thousand per month during the summer season, which is comparable to the ferry operation during some months. It is recommended that the County complete the missing segments to complete the trail to Freehold and also engage in a campaign to inform bicyclists how they can take advantage of onsite amenities, such as beach equipment rentals to access the shore via bike in the north. Similar facilities in the south end of the park would support more cycling access from the Highlands and Sea Bright (there is a bike rack for several bikes at Beach Lot C).

Figure 12: Multi-Use Paths

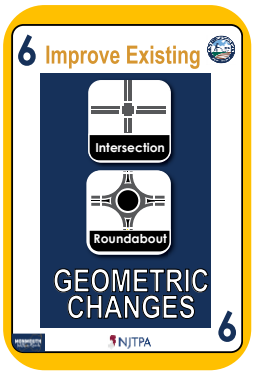


A dedicated bicycle parking area near Gunnison Beach encourages full-length trips along the park and provides a dedicated zone for visitors to park their bicycles, away from beaches, parking areas, and pedestrian paths (**Figure 13**). Having bike facilities at key locations allows cyclists to securely lock their bikes and enjoy the beaches.

There is an existing bike rental facility (Ray's Bike Rentals) at the Ferry Terminal on Sandy Hook that allows access to the Sandy Hook multi-use pathway as well as to other destinations in Sea Bright and across the Shrewsbury River.

Figure 13: Gunnison Beach Bicycle Parking

Source: Google Maps

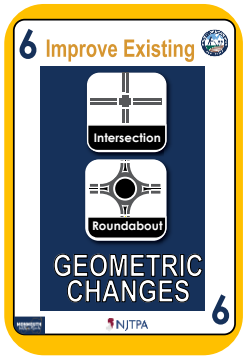


Parking Entry Operations (SH 3.4)

One of the primary contributing factors to congestion is the entrance capacity to Sandy Hook. Based on information from the park staff, visitors enter at a rate of 30 seconds per vehicle at each of the four pay stations, or 480 vehicles per hour across all lanes. Several options to increase the entry capacity are described below. When evaluating the mix of strategies, it should be noted that a one-mile queue in one lane has capacity for only 200 vehicles. Therefore, an increase in entry capacity by a few hundred vehicles can significantly reduce approach queues. However, it should be noted that an increase in processing rates should be coupled with improved advanced signage as it is likely that the park may close earlier than is typical due to the increased throughput. Park closure information must be communicated to drivers in advance so that they can choose to go to other shore locations.

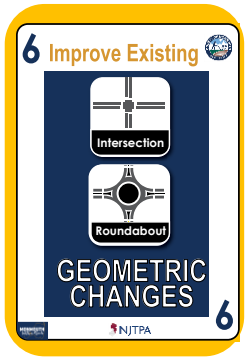
It is likely that increasing staffing at the entry plaza area would increase costs and may necessitate increased fees. However, if coupled with automated parking utilization monitoring, staff that typically counts parking utilization could be reassigned to entry fee collection to minimize additional labor costs.

The recommended modifications to the entry plaza discussed in the sections below are presented as potential options for Sandy Hook and other similar locations. The strategies are not intended to be implemented together.



Reconfigure Entry Plaza to Include More Lanes (SH 3.5)

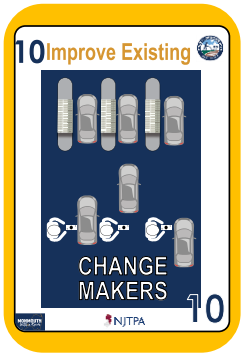
One option to increase entry capacity is to add more lanes. This would require modifications to the entry area to reduce the number of egress lanes during peak entry periods, reduce the space between lanes, and/or expand the right-of-way. Operational alternatives to these strategies are discussed below. Sea Bright experiences significant queueing on peak visitation days for Sandy Hook. Sea Bright police occasionally close Ocean Avenue northbound into Sandy Hook to relieve some of the congestion, however, this frequently results in more vehicles directed to NJ 36 (Navesink Avenue/Memorial Parkway) WB and more U-turns onto NJ 36 (Navesink Avenue/Memorial Parkway) WB as an alternative approach to Sandy Hook. Increased entry capacity at the Sandy Hook plazas would improve flow on NJ 36 (Navesink Avenue/Memorial Parkway) and within Sea Bright.



Dedicated Lanes (SH 3.6)

Dedicated lanes for pass holders at the entry plaza would allow a segment of users to bypass lineups at the toll booths and reduce congestion. The National Park Service has indicated that a reversible lane for pass holders, shuttles/transit, and employees during peak entry periods is being studied (**Error! Reference source not found.**). If a reversible lane cannot be provided, consideration could be given to dedicating one of the existing toll lanes for pass holders (**Figure 15**). A dedicated lane could also be dynamic and could be opened to general traffic if queuing reaches a certain length.

The processing rate for entering vehicles is based on the fare collection amount and accepted payment methods. This dedicated passholder lane would have a higher entry capacity because it is reserved for passholders. A market study would be helpful in determining if there is sufficient seasonal pass demand for this lane, to confirm that there would be a corresponding increase in capacity. A parking permit barcode scan would be much faster than a cash or credit transaction, so processing rate for this lane could be 2-3 times faster than a normal lane. The faster lane may also provide incentives for regular visitors to purchase a seasonal pass, and this lane could also be used by employees.



Change Makers (SH 3.7)

Another effective strategy to increase entry capacity is the use of change makers (**Figure 16**). This refers to staff placed in front of the entry booth. Change makers greet visitors in queue, advise them of the parking fee, and make exact change, if necessary. They can also conduct a transaction and issue the driver a ticket as proof of payment, so they do not have to stop at the toll plaza. Change makers could increase the plaza entry capacity by 50-200%, based on the number of change makers, and the average transaction time.

Figure 14: Potential Reversible Lane

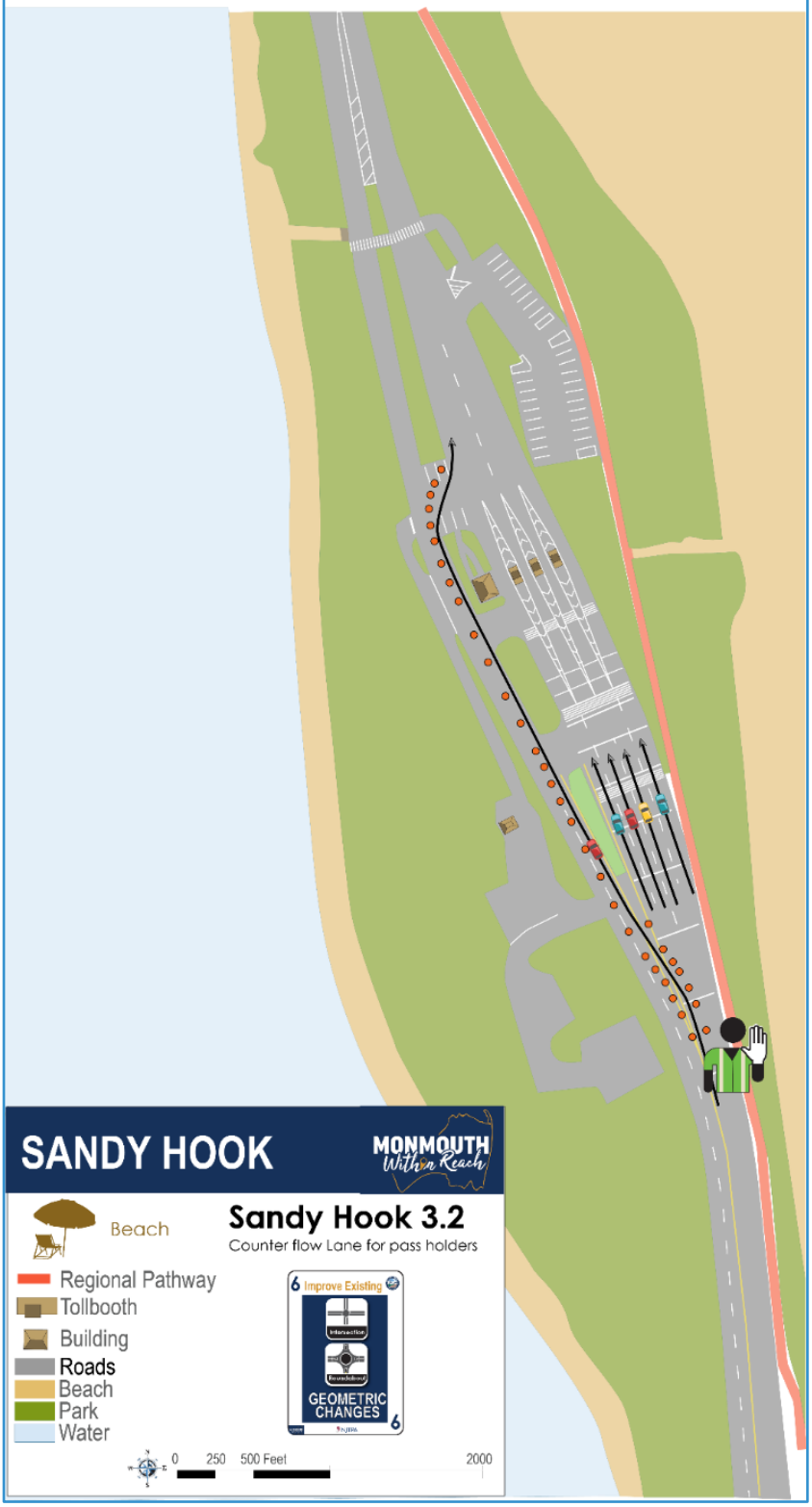


Figure 15: Potential Pass Holder Lane

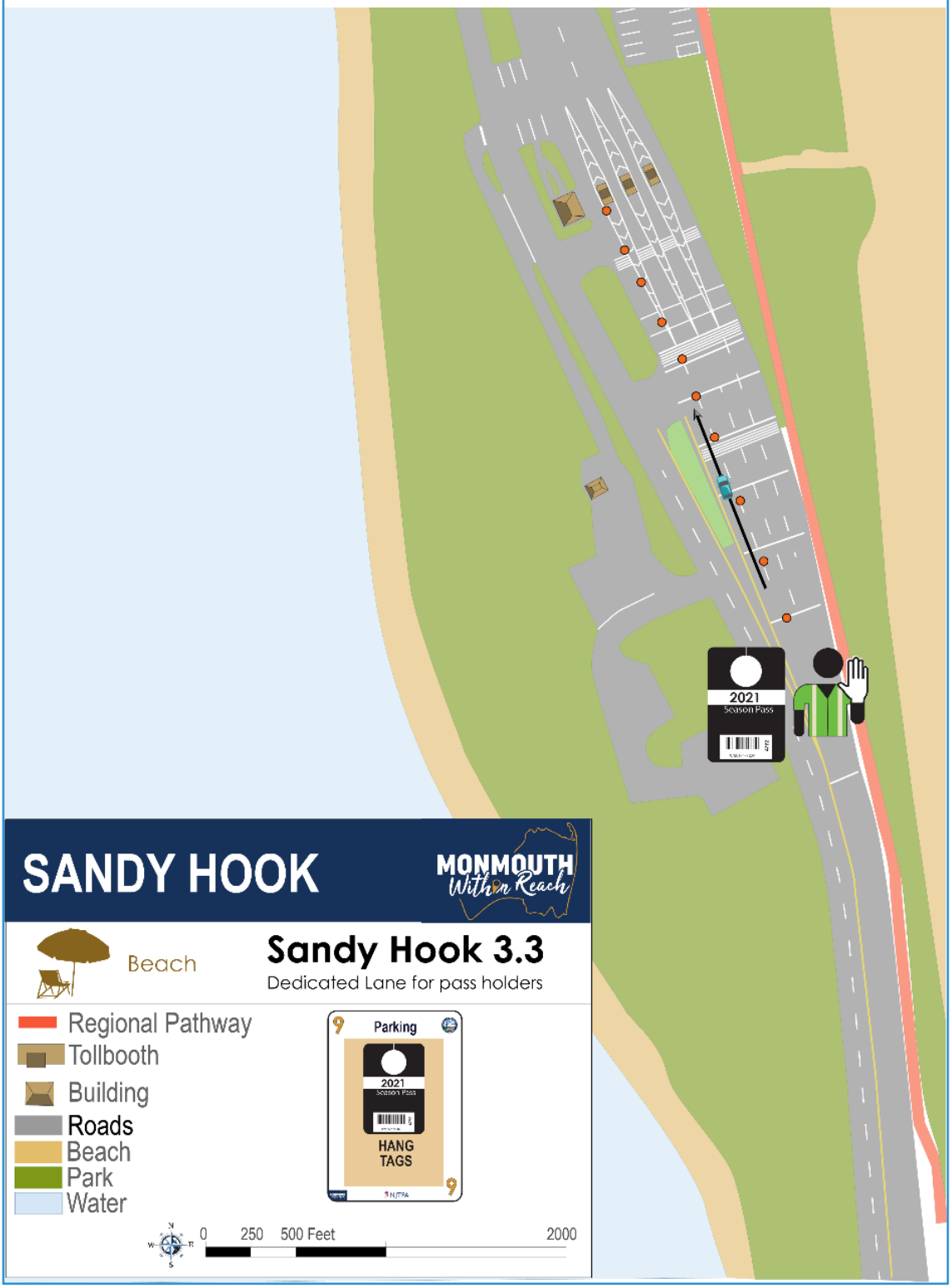
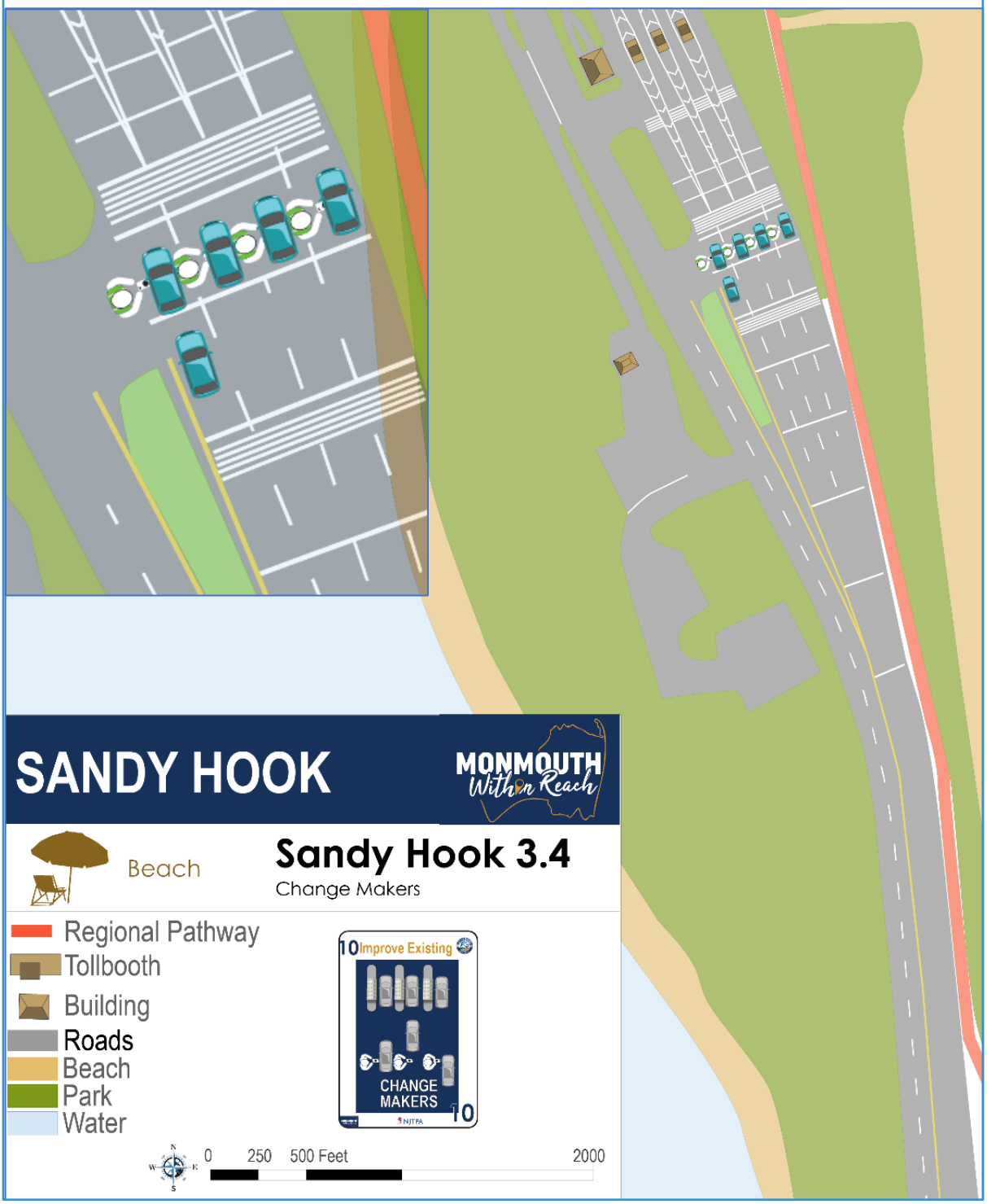


Figure 16: Change Makers



Offset Plazas (SH 3.8)

Another strategy is to use offset toll plazas at the entrances (see **Figure 17**, **Figure 18**, and **Figure 19**). This would increase entry capacity without requiring ROW widening at the plaza. Offset plazas can increase plaza entry capacity by 50-100%. When considering plaza reconfigurations, one consideration is the cost for additional plazas. Portable toll booths can help reduce this cost by providing protected, climate-controlled booths that can be rearranged to find the best operational strategy. These booths would also require modifications to utilities to provide electricity and internet.

Figure 17: Mobile toll plazas are a flexible and cost-effective alternative to permanent installations.

Figure 18: Offset Toll Plazas

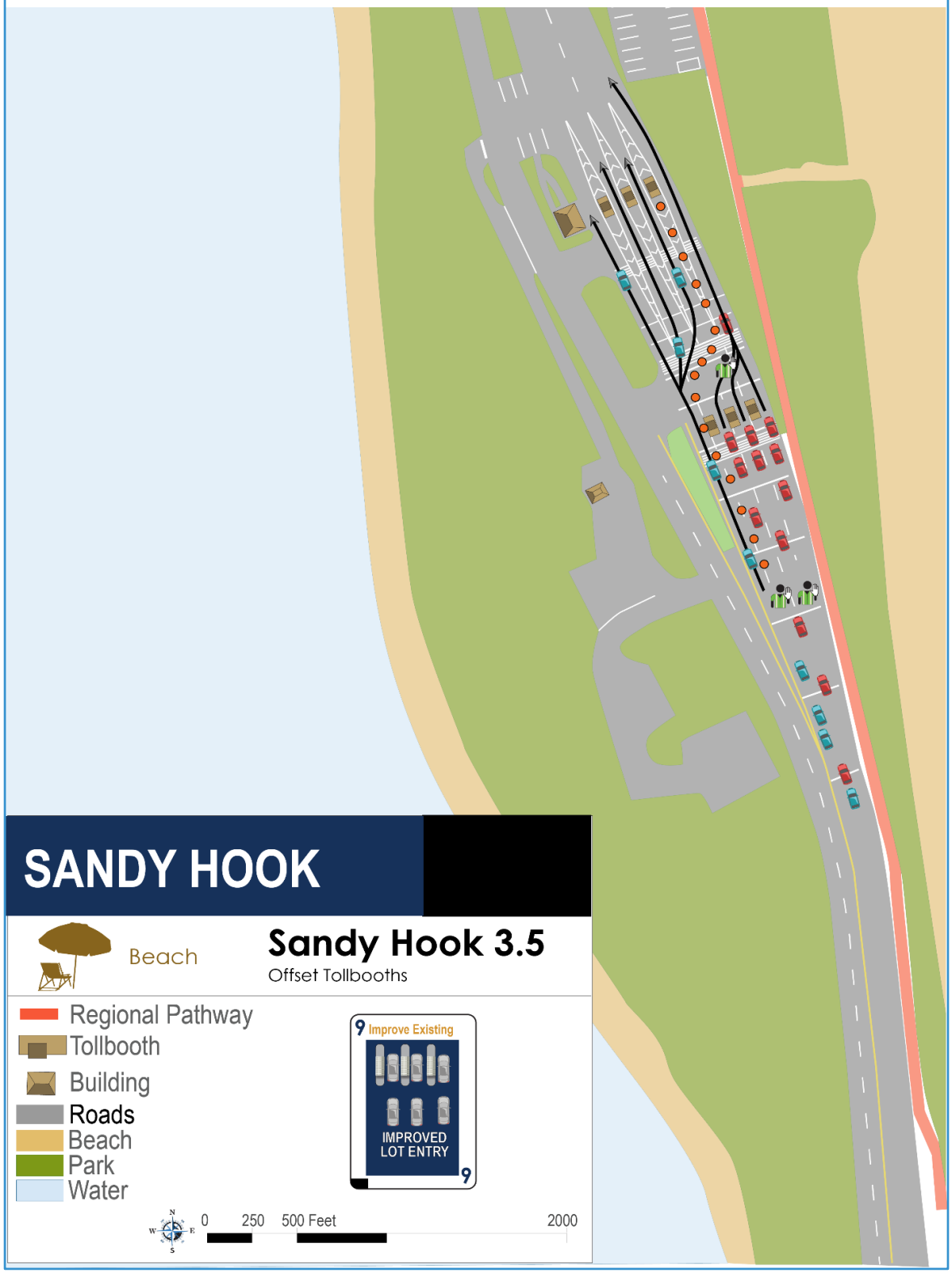
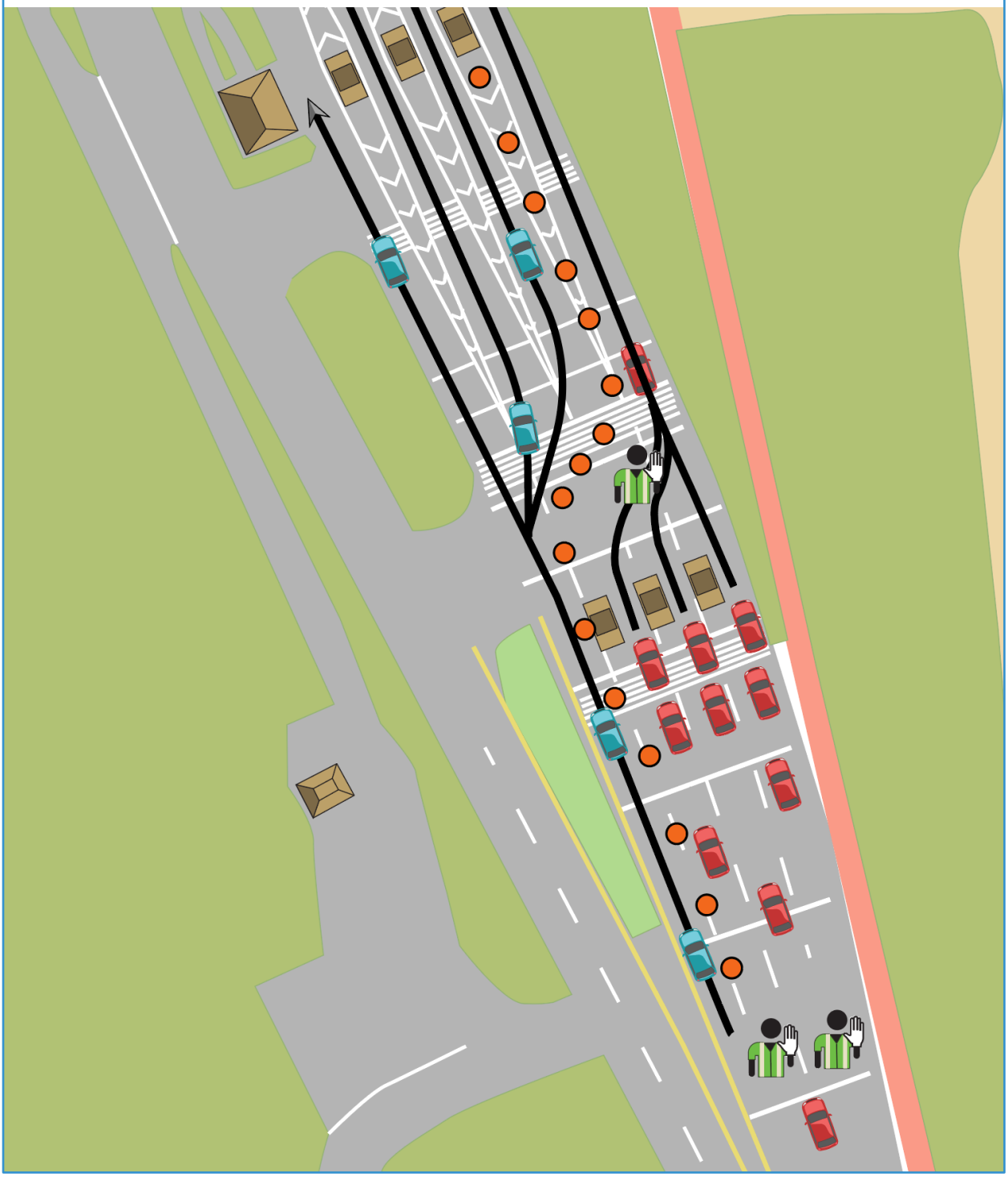
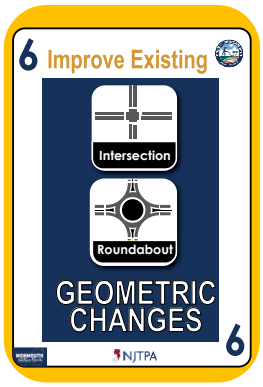


Figure 19: Offset Booths Detail



Plazas Further Inside the Park (SH 3.9)

The entry toll booths are located approximately 1,000 feet from NJ 36 (Navesink Avenue/Memorial Parkway). This provides queuing for up to 40 vehicles in each lane. One consideration may be to move the toll plaza location further inside the park. This would provide additional queuing capacity north of NJ 36 (Navesink Avenue/Memorial Parkway).



Turnaround Area (SH 3.10)

There is an area at the north end of Lot A that could be utilized as a turnback lane with some improvements that allows for drop offs or turning around when the lots are full. See discussion of SH 4.4, below.

4 – Parking

Parking Checks and Predictive Analytics (SH 4.1)

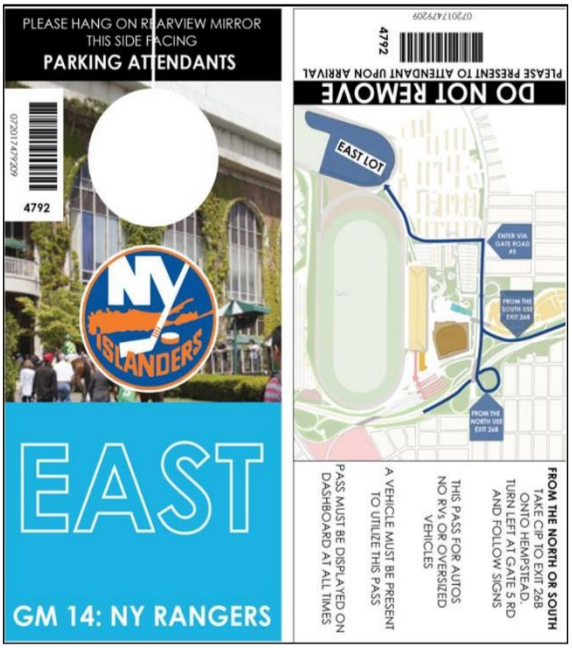
Park staff currently move through Sandy Hook and check on the availability of parking in different lots. This provides the staff with regular updates on the parking levels so that staff can direct visitors to different lots or close Sandy Hook when it reaches capacity. The on-site supply of 4,500 spaces is not sufficient to meet the peak summer demand, and as a result, visitors are turned away or observed parking in other locations outside Sandy Hook. These drivers contribute to congestion on the approaches to Sandy Hook for all visitors – even those not going to the park. A managed parking occupancy system could help alert Park operators when the on-site supply is approaching capacity, and it could help travelers find parking more easily after they have entered the park.

If parking utilization information is archived, it may be possible to predict when parking is expected to reach capacity based on days of the time of year and weather conditions. This, in turn, could be used to predict peak days and indicate on the Sandy Hook website or on variable message boards that the park is likely to be closed by a certain time of day on specific days. This could be combined with real-time notification methods discussed below.

Hangtag design for pass holders (SH 4.2)

One of the benefits of a seasonal parking pass is that it allows for a credential that can be used for event day operations. A seasonal pass, for example, could be designed to be a hangtag, possibly color coded by lot area or visitor type (passholder/employee/single-day attendee) (**Error! Reference source not found.**). Operations staff could be trained to recognize this hangtag at a distance and divert vehicles to the appropriate lanes, and the permit design could be used on signage as well.

Figure 20: Examples of hangtags to identify vehicles by parking category



Directed Parking to Specific Lots (SH 4.3)

Directed parking is used at major event facilities to direct motorists to specific parking lots, rows, or spaces. It could be utilized here to direct visitors to specific parking lots, using staff at key decision points at regularly spaced intervals along Ocean Avenue north of the toll plazas (**Figure 21**).

Figure 20: Directed Parking and Ridehail Areas

Dedicated Area for Ridehailing (SH 4.4)

Ridehailing vehicles are currently allowed into Sandy Hook, to conduct pick-up and drop-off activities. These activities can currently occur anywhere in Sandy Hook, and they may interfere with pedestrian and vehicle flow. Furthermore, a ridehail visitor who gets dropped off at a specific location may not be able to request a pick-up at that location if the lot if full and constrained, and that would discourage visitors from using ridehail.

These locations are designated off-street parking areas for ridehailing services, with designated queueing areas for vehicles and pedestrian, and multiple, parallel, designated pick-up areas. Lot A may be an ideal location for a dedicated area for a ridehail drop off and pick up operation because it is closed to parking during the season due to security concerns regarding people observing the fee collection area (**Figure 21**). A specific ridehailing location would allow for geofencing, which is the practice of restricting pick-ups to a specific location, to avoid having ridehail vehicles driving through Sandy Hook. Furthermore, vehicles would only be permitted to be in Lot A to pick up or discharge passengers; thus, it would not pose a significant risk to the fee collection area.

This type of operation would be most effective during the egress period to provide a consolidated ridehail pick-up area. For travel within Sandy Hook, a shuttle bus system could be established, using

one or two vehicles, or a bikeshare program, can be set up using Lot A (**Figure 21**). Additional amenities like restrooms and a sheltered waiting area would also encourage people to use ridehailing.

Alternatively, ridehail could be set up in Lot B where there are amenities such as restrooms and equipment rentals, however, that would require that ridehail vehicles enter further into Sandy Hook. Lot B is also a larger lot, so a ridehail operation here would impact more parking spaces. The walking distance between Lots A and B is approximately 2,000 feet.

Figure 21: Lot A Ridehail Detail

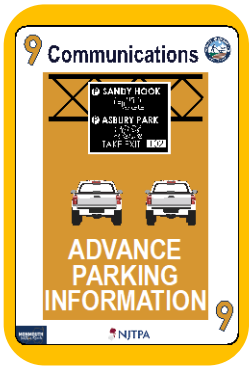
There are opportunities to improve the understanding of parking availability by using:

Parking Occupancy Sensors (SH 4.5)

Entry/exit sensors at parking lot entrances could be used to measure total accumulation in each lot. A small number of sensors – one at each lot entry and exit point – would provide park operators with an on-going, real-time assessment of the total supply in each lot. This information could also be tied into signs at the entrance plazas (as described in the section above) if those recommendations are implemented.

Park Notification Service (SH 4.6)

One way to indicate when Sandy Hook is at capacity is to update this information on a webpage, or to provide text notifications to registered visitors. This would supplement roadway signage to prevent travelers from waiting in queue when Sandy Hook is closed to visitors. The webpage would be updated by park operators using the current method of Park Rangers reporting occupancy rates or a system of parking sensors, along with a historical database. Using the live parking counts as well as predictive parking analyses could help provide information well in advance of Sandy Hook. Recommendations include:



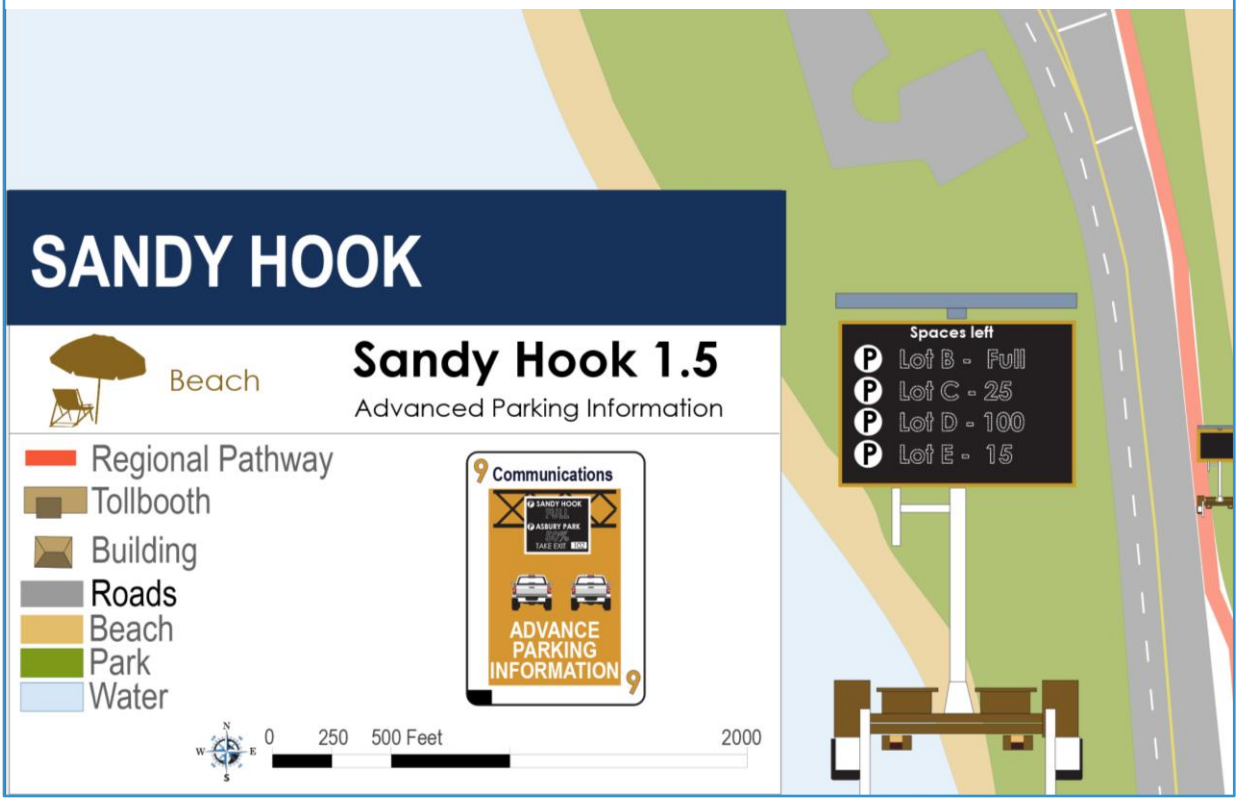
Parking Guidance Upstream on NJ 36 (Navesink Avenue/Memorial Parkway) near Navesink Avenue (Refer to SH 1.4)

If parking sensors are used to capture real-time information on occupancy/availability, this information could be conveyed to travelers on dynamic signs along the freeway and near the entry booths. There are variable message boards on the NJ 36 (Navesink Avenue/Memorial Parkway) bridge as it approaches Ocean Avenue. However, traffic at this location has traveled nearly the entire distance to Sandy Hook. Alternatively, a new dynamic sign at a location on NJ 36 (Navesink Avenue/Memorial Parkway) upstream of Navesink Avenue could be manually changed to indicate “AVAILABLE”, “ALMOST FULL”, or “FULL-PARK CLOSED”. This would reduce the amount of congestion in approach to Sandy Hook when the park is closed and allow travelers to choose alternate routes to other shore communities.

Parking Guidance at the Entry Plazas (Refer to SH 1.5)

Additional signage could be placed upstream of the toll plazas (**Figure 22**). These signs would help drivers know where parking is available before entering or reinforce the message that Sandy Hook is closed. Optional messaging could be added to provide exclusions for fishers or other permitted uses. The recommended signage would provide a coherent, consistent, and sequential message to park visitors. Variable message signs are recommended at these locations, since they can be changed remotely. These signs could be mounted on the shoulder of the GSP and/or NJ 36 (Navesink Avenue/Memorial Parkway) at strategic locations where they do not interfere with traffic flow.

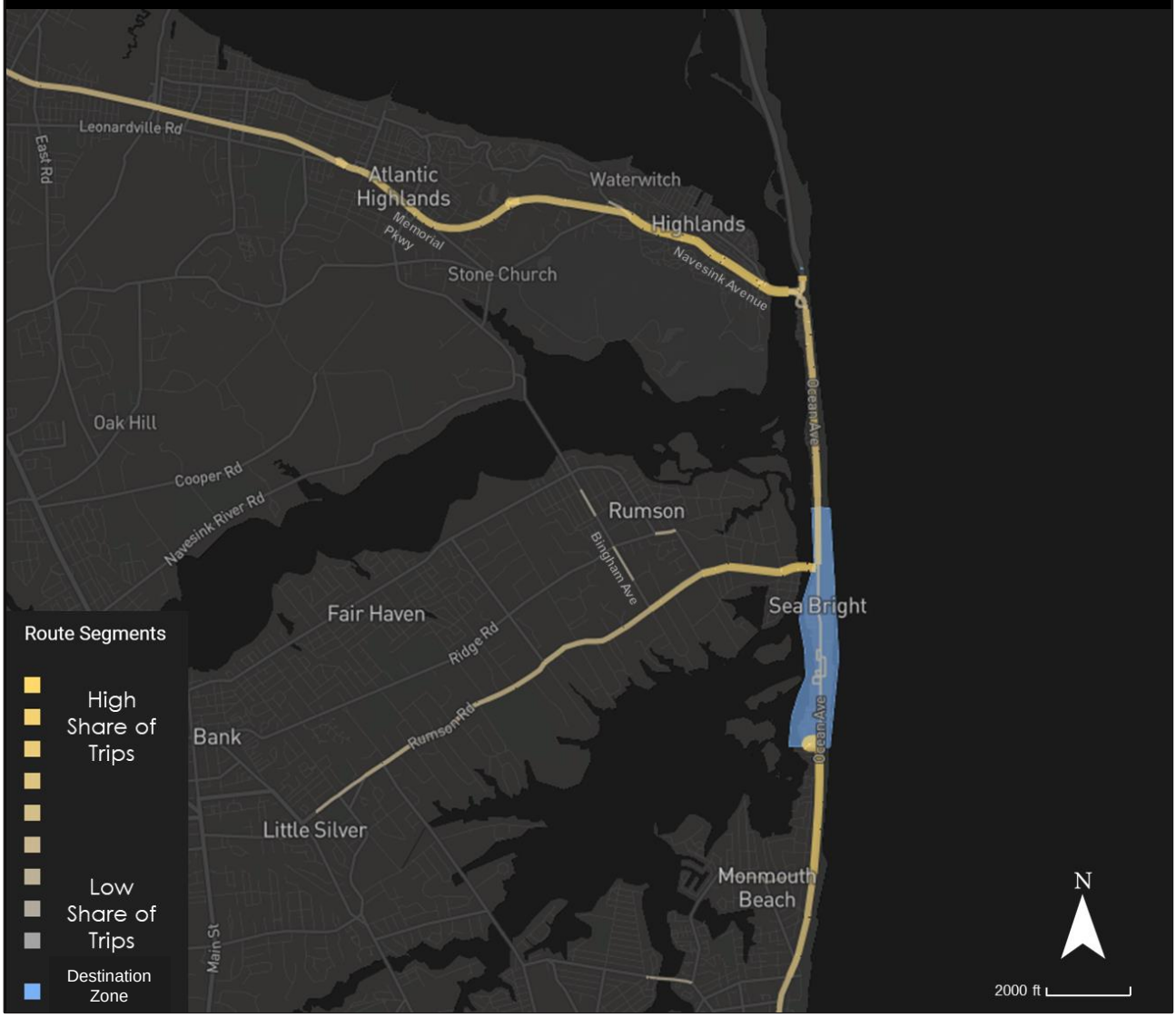
Figure 22: Advanced Parking Information at Entry



Regional Park and Ride (SH 4.7)

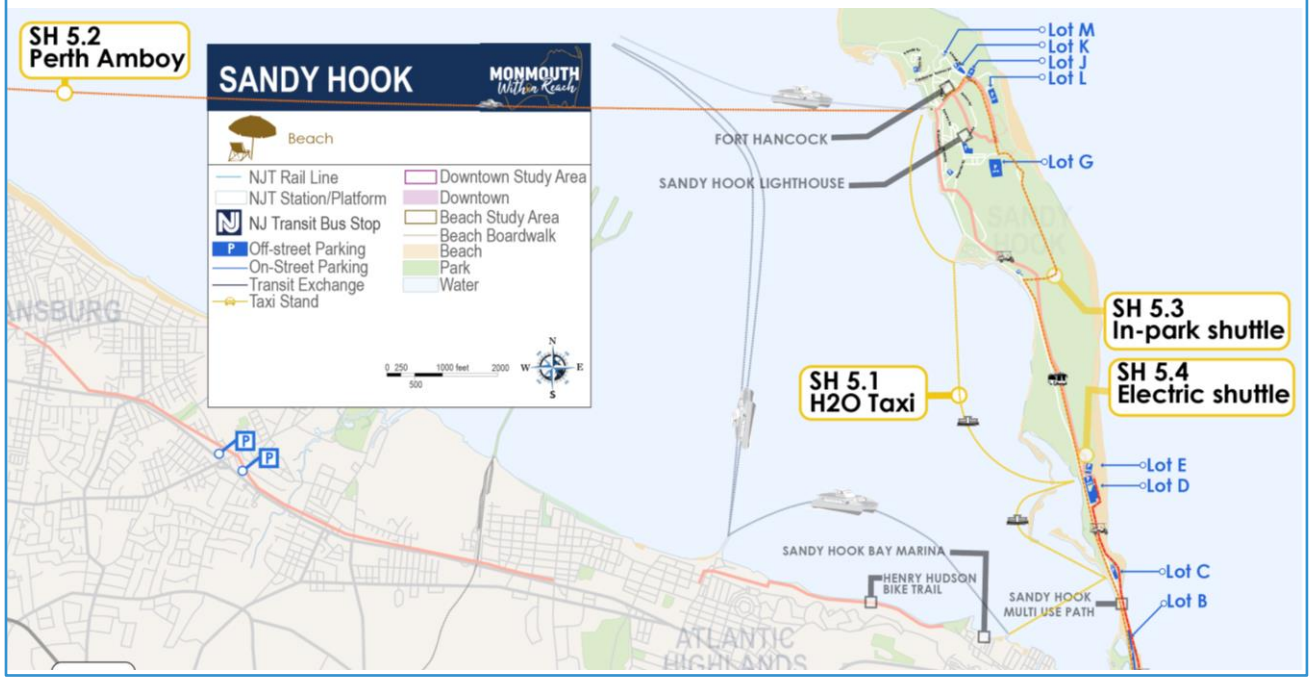
A review of the origin and destination routes for travelers approaching Sandy Hook shows the primary routes that travelers are already taking to Sandy Hook . Parking-and-ride and other parking facilities along these routes could be used to provide off-site parking. Signage could be placed at key decision points to encourage travelers to park there and take a shuttle bus or water-borne mode of travel to Sandy Hook.

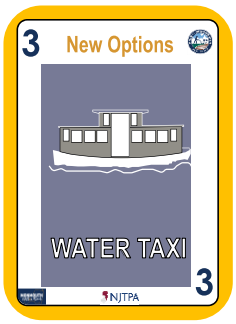
Figure 23: Top Routes Used By Visitors to Sandy Hook and Sea Bright



5 – New Options

Figure 24: Summary Diagram of New Options





New Ferry/Water Taxi (SH 5.1 and SH 5.2)

It would be worthwhile to examine the feasibility of using water taxis or extend existing ferry services to provide parking options in Middletown and Highlands as an alternative to parking at Sandy Hook. A ferry is a larger open ocean vehicle that can carry 20 or more passengers whereas a Water Taxi is a smaller 4-20 passenger vehicle with a flat bottom that is typically electric powered and intended for smaller distances across water to connect areas. As noted earlier, this would require coordination with National Park Service staff in order to recover amenity fees and to control crowds on guarded beaches.

Water-borne options include:

- New Water Taxi from Atlantic Highlands/Highlands to Sandy Hook With Multiple Stops (SH 5.1). Water taxis are smaller, electric, shuttles that carry between 4 and 20 passengers and usually work in more protected waterways and harbors. A new water taxi would be able to service multiple locations on the bay side of Sandy Hook. Water taxis require little infrastructure, typically just a dock, compared to a full-sized ferry. Water taxis are usually also electric, which makes them more environmentally acceptable than ferries and have a low draught which helps in sensitive areas.

  There are several potential options such as a shuttle from Atlantic Highlands to several points on Sandy Hook (this requires further review in terms of acceptable low impact areas in the

park). Water taxi service could also be provided from other park and rides or downtown locations such as Red Bank, that are located adjacent to major connecting bodies of water. This would provide remote parking locations while also drawing additional visitors to Red Bank.

- New Water Ferry from Northern NJ Destinations to Sandy Hook (SH 5.2). A shuttle from northern coastal towns may be a consideration to increase access from the northwestern areas of New Jersey depending upon the total volumes and whether a practical landing point can be determined that makes a system economically viable.

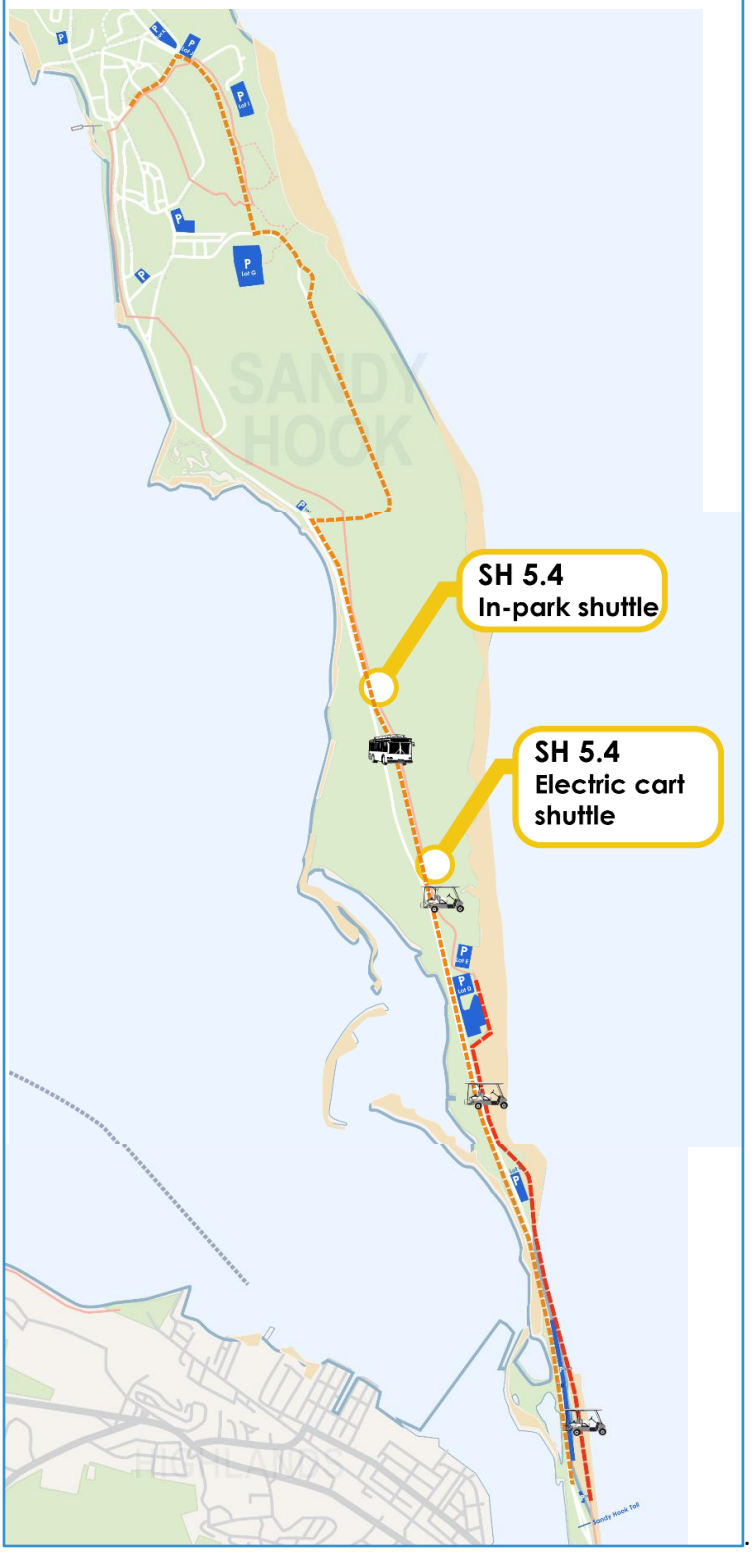
Shuttles (SH 5.3)

Create a shuttle in the park (SH 5.4) from the ferry terminal and western portion of Sandy Hook to link the various beaches together with a ridehail/taxi area near the toll booth that allows visitors to access the park without any requirement for a private vehicle. Sandy Hook staff stakeholder discussions revealed that Seastreak was providing this type of service through the park prior to the pandemic.

Based on feedback from park staff, these shuttles should also have storage space for visitor items such as coolers. This type of vehicle was used to provide shuttle service in Sandy Hook in the past. An ADA-accessible shuttle would also meet the needs of visitors requiring mobility aids. No marked accessible parking spaces are provided in the park except in Lots A and B.

There are two potential options for further consideration from a shuttle perspective. An accessible hop-on/hop-off type service could be created to link the ferry terminal with non-amenity parking lots at the north end of the park, amenity areas at Lots D, C, B, and a turnaround/ridehail area in Lot A, as noted earlier (**Figure 25**). The second option to consider is to make use of the existing multi-use pathway to create a connection utilizing small electric carts between Lots D, C, B and A to allow people to move between beaches when they are forced to park at one particular lot due to availability.

Figure 25: In-Park Shuttles



Conclusions and Implementation

Sandy Hook and Sea Bright are popular shore destinations for the New Jersey-New York area. Millions of people visit these locations on an annual basis. The large number of visitors can strain the transportation network in the area, particularly when Sandy Hook closes when it reaches capacity. The recommendations presented in this report, including improved communications and signage, incentivizing carpooling, improving other modes, and modifying parking and payment processing, among others, should help the National Park Service, as well as the municipal staff of Sea Bright, reduce peaking and manage congestion during peak summer weekends.

A summary implementation matrix is provided below which depicts each strategy based on its complexity to implement as well as its effectiveness (see **Figure 26**). The matrices can be used by decision makers to help select strategies to pursue as funding for or interest in certain strategies arise.

Figure 26: Sandy Hook and Sea Bright Implementation Matrix