



13860 Ballantyne Corporate Pl, Suite 140
Charlotte, NC 28277

704.247.6230
walkerconsultants.com

October 12, 2020

(sent via Email: joshq@hiltonheadislandsc.gov)

Mr. Joshua A. Gruber
Assistant Town Manager
Town of Hilton Head Island
One Town Center Court
Town of Hilton Head Island, SC 29928

Re: *Coligny Area and Beach Access Parking Study*
Task 3: Impact of Lowcountry Celebration Park and Future Parking Needs
Walker Project No. 19-001205.00

Dear Josh:

The Town of Hilton Head Island has hired Walker Consultants to prepare the following summary that supports the Task 3 Scope of Services for the Coligny Area and Beach Access Parking Study. The information contained herein represents our evaluation of the impact of the Lowcountry Celebration Park and future parking inventory needs.

Our evaluation highlights multiple options for the development of a parking structure on the Coligny Beach Parking Lot, opportunities for sharing existing surface parking inventory with the Coligny Area church and worship communities, and the development of an electronic messaging system to assist off-island motorists with wayfinding opportunities for beach access parking as they arrive on Hilton Head Island.

We appreciate the opportunity to be of service to you on this project. If you have any questions or comments, please do not hesitate to call.

Sincerely,

WALKER CONSULTANTS

A handwritten signature in blue ink, appearing to read "Jim Corbett", is written over a white background.

Jim Corbett, CAPP
Director of Planning Studies

Cc: Joey Rowland, P.E., Walker Consultants
Geoff Posluszny, CPP, Walker Consultants
Tom Szubka, CAPP, CPP, Walker Consultants



Coligny Area & Beach Access Parking Study

Task 3:

Impact of Lowcountry Celebration Park
and Future Parking Needs

October 12, 2020

Prepared for:
Town of Hilton Head Island, SC



WALKER
CONSULTANTS

Contents

Executive Summary	1
Additional Inventory Options	4
Estimate of Probable Cost	14
Community Partnerships	18
Bicycle Facility Infrastructure	23
Inverted-U Bicycle Parking	23
Providing Additional Bike Parking Capacity	23
High-Capacity Bicycle Parking	23
Bicycle Corrals	24
Bicycle Valet	24
Other Considerations	24
Branding Bicycle Facilities	24
Bicycle-Supportive Amenities	24
Vehicular Wayfinding Solutions	25
Communication to Motorists	25
Signs	26
Mobile Apps	27
Town Website	27
Data Generation	28
LIDAR Solutions	29
Camera-Based Solutions	30

Executive Summary

The scope of services for the Coligny Area and Beach Access Parking Study requires the consultant to analyze the impact the new Lowcountry Celebration Park will have on surrounding businesses and parking areas as well as recommend any potential infrastructure needs that may be required to support the Coligny area.

In response to this scope of service requirement, Walker has prepared a summary and list of recommendations to address the potential impacts, as well as provided considerations for bicycle facility infrastructure and technological solutions to improve communication of parking availability and related information to the public. The following is a list of our findings and recommendations for the Town's Task 3 deliverable requirements.

Additional Inventory Options

To accommodate a need for increasing public parking inventory in the Coligny area, Walker has developed three parking structure design concepts for the Coligny Beach parking lot site. Each of the concepts provide a ground-level design with two supported levels. With a design to use the northernmost portion of the Coligny Beach parking lot, one option details a stand-alone parking structure. Two alternate options consider 1) a similar stand-alone structure design with adjacent street side retail, and 2) a similar structure design with adjacent street side retail and residential above. The total estimate of probable cost for each of these design options range between \$9.7mm and \$9.9mm with a potential to gain a range of 264± to 320± net parking spaces. Further specifics are detailed in the body of this report.

Community Partnerships

With the consideration of introducing paid parking to the Coligny area, Walker continues to support the need to establish community partnerships in the Coligny area. When combining the parking inventory use of Holy Family Catholic Church (239± spaces) and St. Luke's Church (120± spaces) with the existing University of South Carolina Beaufort location (228± spaces), the community gains the benefit of 587± surface parking spaces. Use of this inventory has the potential to provide a valuable infrastructure resource during peak season activity periods and could be permanent or temporary depending upon the desire to build a parking structure.

Bicycle Facility Infrastructure

The Town of Hilton Head Island is recognized as one of the top 25 bicycle-friendly communities in the United States and one of 21 to achieve the Gold Level Bicycle Friendly Community award from the League of American Bicyclists. The Gold Level distinction recognizes the Town's commitment to improving conditions for bicycling through its investment in bicycling promotion, education programs, infrastructure and pro-bicycling policies.

We believe the Town needs to continue to focus on building bicycle facility infrastructure to promote available, convenient, and secure bicycle parking with supportive end-of-trip amenities. We believe these efforts are critical to welcoming bicyclists and encouraging bicycling as a viable form of recreation and transportation, in turn reducing vehicle congestion and travel and parking demand.

Vehicular Wayfinding Solutions

As a critical component to implementing an efficient paid parking program, Walker is recommending a need for the Town to implement a dynamic wayfinding solution. This will allow the Town to monitor the use of specific location inventory throughout the day as well as communicate the information to motorists in advance of their destination arrival to inform off-island travel decisions and reduce on-island traffic congestion.

There are two components to the wayfinding solution as recommended by Walker:

- 1) Communication to Motorists: signs, mobile apps and websites
- 2) Data Generation: vehicle occupancy solutions to provide data to communicate

Further details regarding these findings and recommendations may be found in the body of this report.



01 Additional Inventory Options

Additional Inventory Options

Walker was asked to analyze the impact that the new Lowcountry Celebration Park will have on its own designated parking areas as well as parking in general for the surrounding area, and recommend any potential infrastructure needs that may be required to successfully support this area.

During the Coligny area merchant and resident virtual stakeholder meeting held in June, Walker received stakeholder feedback concerns that the redesigned 400± surface parking spaces at the Coligny Beach Access parking lot and the proposed 99± surface parking spaces at the new Lowcountry Celebration Park would not be suitable to handle the parking needs during peak season activity. It was shared that capacity was already an issue before the design of the Lowcountry Celebration Park was approved. Some participants voiced their concern that the use of existing surface parking inventory (i.e. neighborhood church and worship centers) would not lend itself to serving the peak season utilization needs on weekends as many off-island visitors desire immediate access to the beach and retail areas without having to transport their beach amenities (i.e. coolers and beach chairs) on a shuttle or trolley circulator.

To address these concerns, Walker has developed three (3) separate design concepts incorporating the use of a portion of the Coligny Beach Access parking lot for structured parking. The options are as follows:

Option 1 – Stand-Alone Parking Deck

- 464 Spaces in Deck (Displaced 144 surface spaces)
- 720 Total spaces combined on site (464 deck + 256 surface)
- Net Gain of 320 spaces

Option 2 – Parking Deck + Adjacent Retail Building

- 464 Spaces in Deck + 11 additional surface lot (Displaced 211 surface spaces)
- 664 Total spaces combined on site (464 deck + 200 surface)
- Net Gain of 264 spaces
- 8,800 SF of Retail

Option 3 – Parking Deck + Adjacent Retail Building with Residential Above

- 465 Spaces in Deck +11 additional surface lot (Displaced 211 surface spaces)
- 665 Total spaces combined on site (465 deck + 200 surface)
- Net Gain of 265 spaces
- 12,800 SF of Retail + 8 Residential Units
- (4) 2BR Units and (4) 1BR Units

Option 1: Stand-Alone Parking Deck

POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA
CONCEPTUAL DESIGN



AERIAL

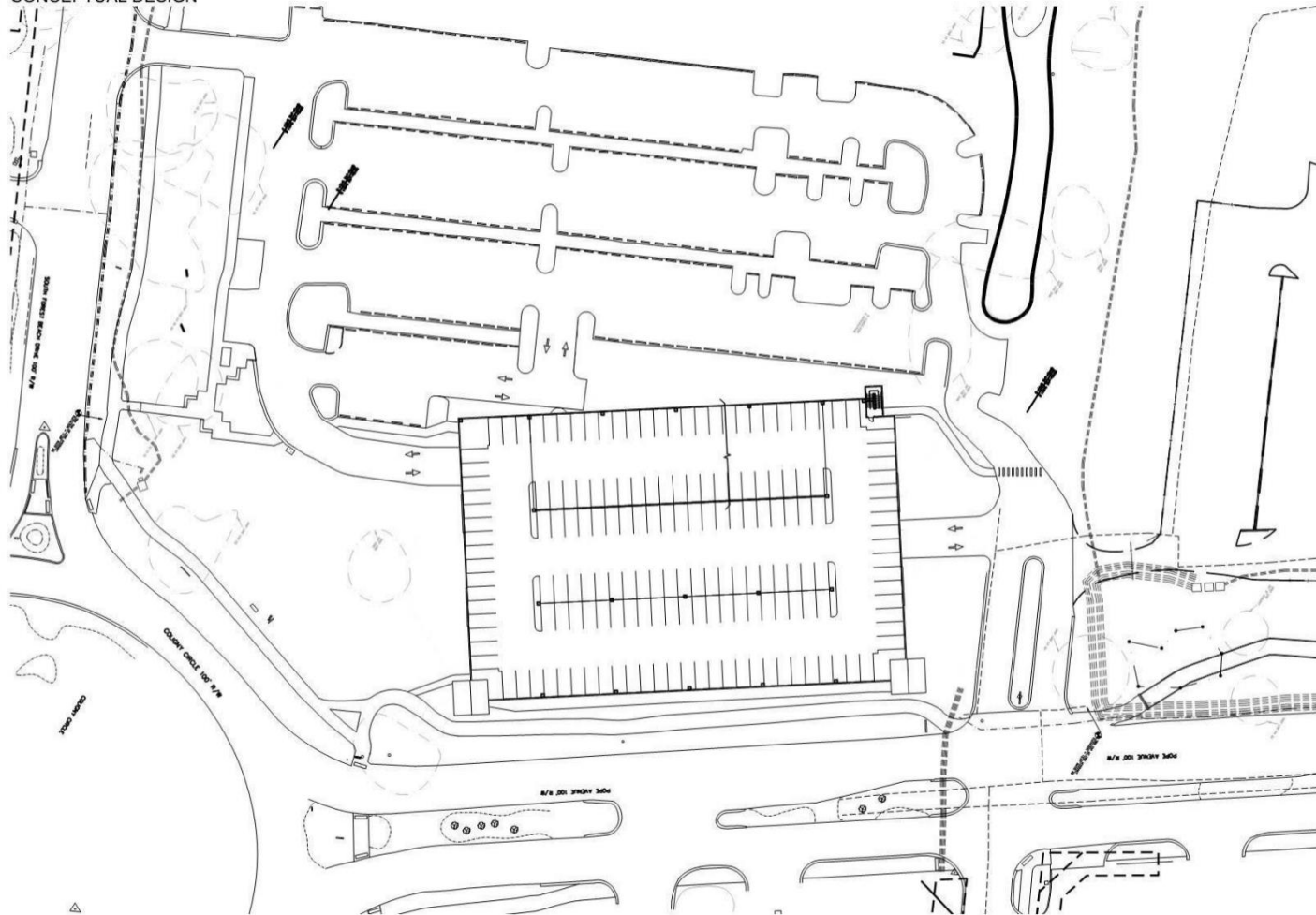
OPT 1 - P-100
19-001205.00



Option 1: Stand-Alone Parking Deck

POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA

CONCEPTUAL DESIGN



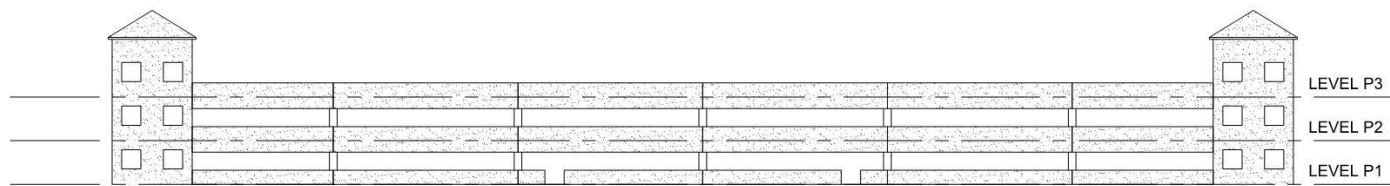
SITE PLAN

OPT 1 - P-101
19-001205.00



Option 1: Stand-Alone Parking Deck

POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA
CONCEPTUAL DESIGN



LEVEL P3
LEVEL P2
LEVEL P1

ELEVATION

OPT 1 - P-200
19-001205.00



Option 2: Parking Deck + Adjacent Retail Building

POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA
CONCEPTUAL DESIGN



AERIAL

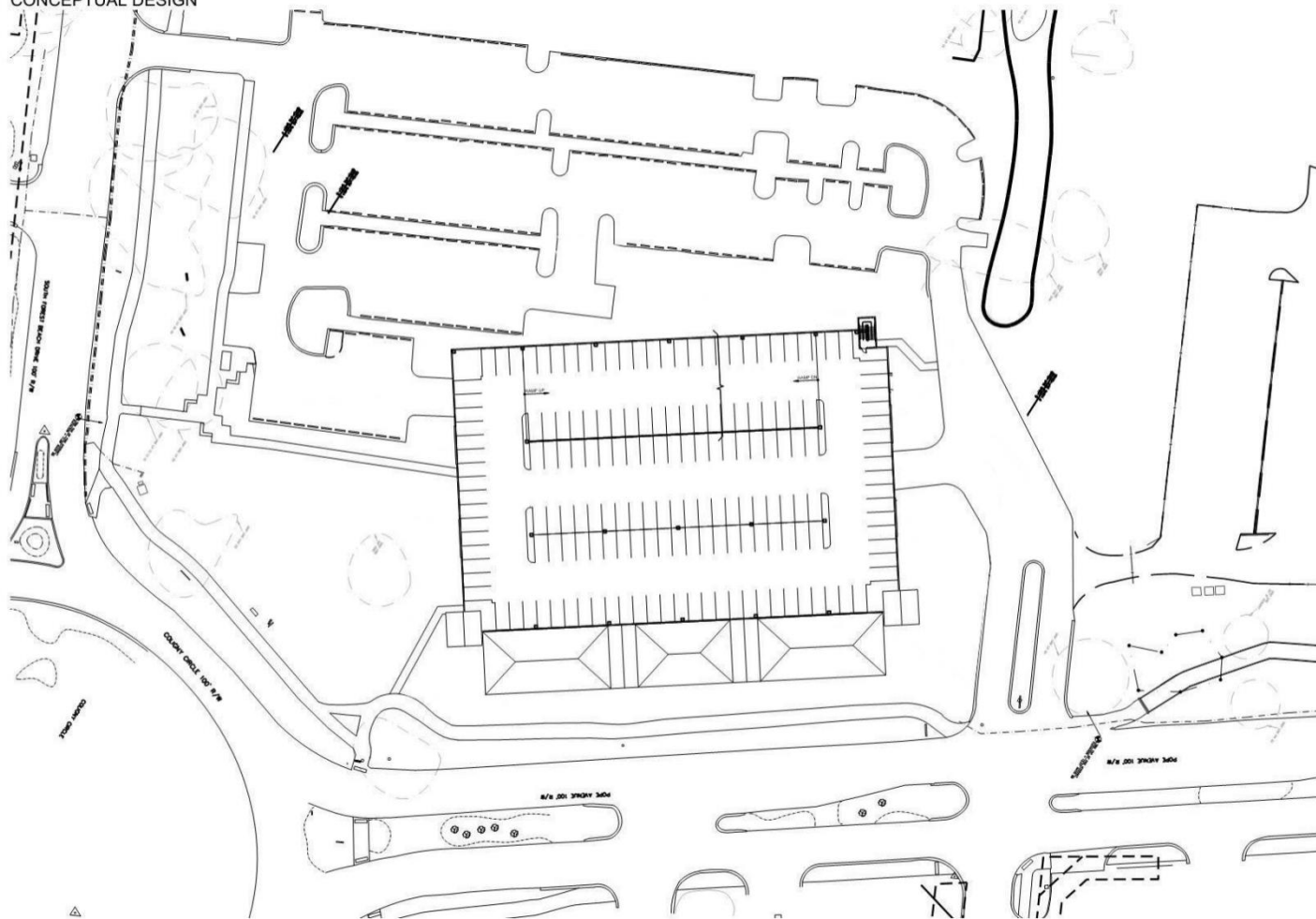
OPT 2 - P-100
19-001205.00



Option 2: Parking Deck + Adjacent Retail Building


POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA

CONCEPTUAL DESIGN



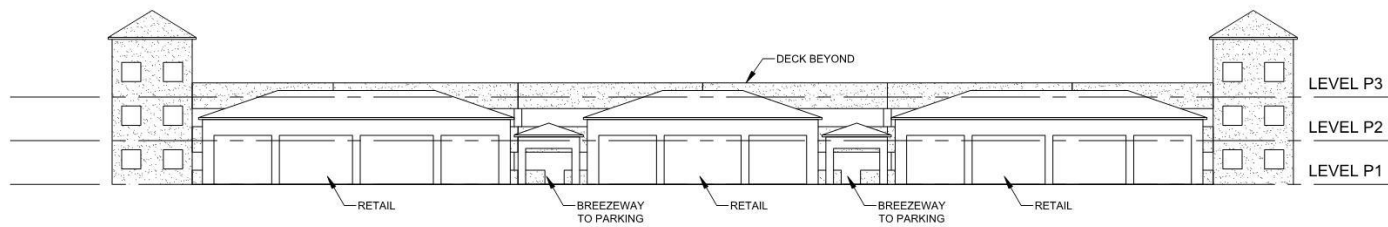
SITE PLAN

OPT 2 - P-101
19-001205.00



Option 2: Parking Deck + Adjacent Retail Building

POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA
CONCEPTUAL DESIGN



ELEVATION

OPT 2 - P-200
19-001205.00



Option 3 – Parking Deck + Adjacent Retail Building with Residential Above

POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA
CONCEPTUAL DESIGN



AERIAL

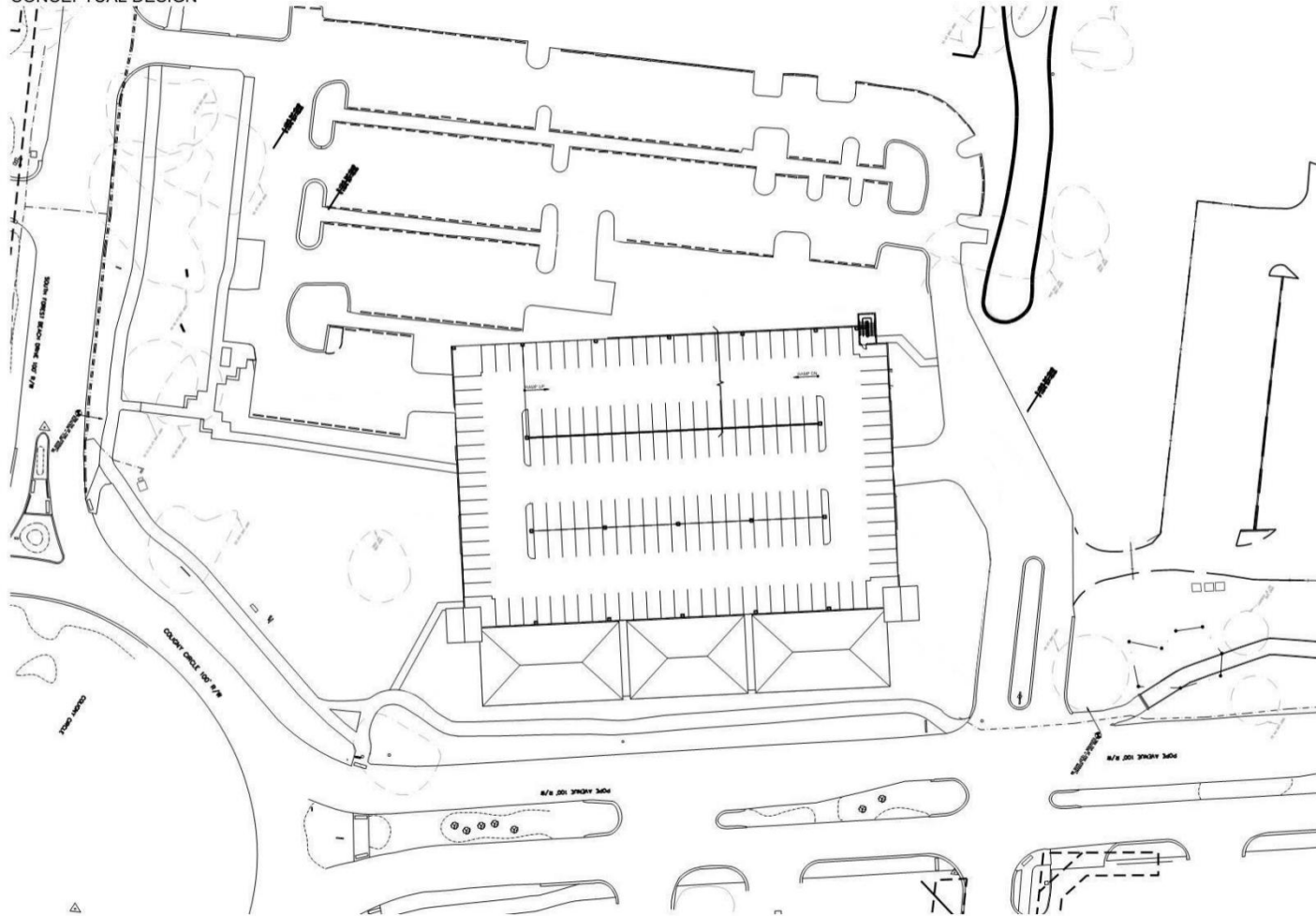
OPT 3 - P-100
19-001205.00



Option 3 – Parking Deck + Adjacent Retail Building with Residential Above

POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA

CONCEPTUAL DESIGN



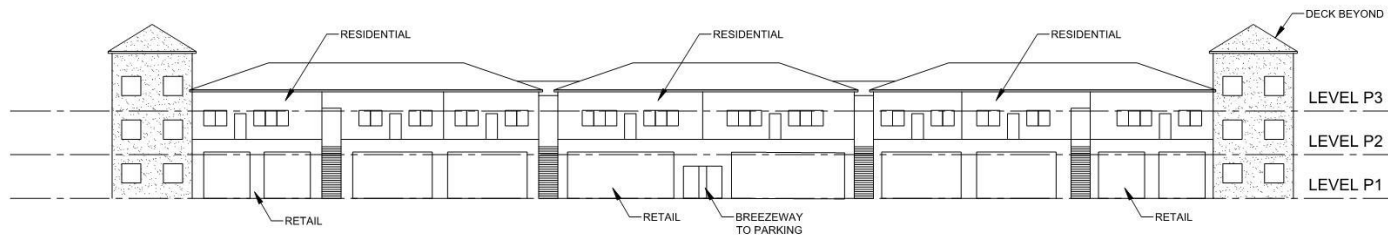
SITE PLAN

OPT 3 - P-101
19-001205.00



Option 3 – Parking Deck + Adjacent Retail Building with Residential Above

POPE AVENUE PARKING DECK
COLIGNY BEACH, SOUTH CAROLINA
CONCEPTUAL DESIGN



ELEVATION

OPT 2 - P-200
19-001205.00



Estimate of Probable Cost

The following estimates of probable cost have been provided to assist the Town with an understanding of construction cost per space for each of the parking structure options. The estimated costs below assumes an enhanced architectural façade in context with the Town of Hilton Head Island standards. The numbers below do not reflect the costs of the adjacent retail and combined retail/residential buildings.

Option 1 – Stand-Alone Parking Deck + Site Work

Land Disturbance	95,000 sf
Parking Deck Capacity	464
Estimated Construction Cost	\$9,794,229
Estimated Cost Per Space	\$21,108
Soft Costs + Contingency	12.6%
Total Estimated Project Costs	\$11,025,565
Total Spaces Gained	320
Total Cost per Space Gained	\$34,455

Option 2 – Parking Deck + Site Work + Retail Building Pad

Land Disturbance	117,400 sf
Parking Deck Capacity	464
Estimated Construction Cost	\$9,946,151
Estimated Cost Per Space	\$21,436
Soft Costs + Contingency	12.6%
Total Estimated Project Costs	\$11,194,959
Total Spaces Gained	264
Total Cost per Space Gained	\$42,405

Option 3 – Parking Deck + Site Work + Retail/Residential Building Pad

Land Disturbance	117,400 sf
Parking Deck Capacity	465
Estimated Construction Cost	\$9,737,162
Estimated Cost Per Space	\$20,940
Soft Costs + Contingency	12.6%
Total Estimated Project Costs	\$10,961,936
Total Spaces Gained	265
Total Cost per Space Gained	\$41,366



Pope Avenue Parking Deck
Coligny Beach, Hilton Head Island, SC
Option 1 - Parking Deck + Site Work



Engineer's Estimate of Probable Construction Costs

Ground Floor Sq. Ft. =	53,487	sf	No. Levels =	3
Elevated Area Sq. Ft. =	97,950	sf	No. Spaces =	464
Total Area =	151,437	sf	Efficiency =	326

Div.	Item	Unit	Unit Cost	Qty.	Cost	Cost/SF
02	Site Work and Utilities	SF	\$ 8.00	94,690	\$ 757,520	\$ 5.00
03	Foundations	SF	\$ 20.00	53,487	\$ 1,069,740	\$ 7.06
	Concrete Slab-on-Grade	SF	\$ 8.50	53,487	\$ 454,640	\$ 3.00
	Precast Structure - Base	SF	\$ 28.00	97,950	\$ 2,742,600	\$ 18.11
	Perimeter Architecture	SF	\$ 80.00	18,558	\$ 1,484,640	\$ 9.80
04	CMU Walls	SF	\$ 0.10	151,437	\$ 15,144	\$ 0.10
05	Stairs and Railings	EA	\$ 15,000	3	\$ 45,000	\$ 0.30
	Misc. Metals	LS	\$ 45,431	1	\$ 45,431	\$ 0.30
07	Waterproofing	LS	\$ 142,089	1	\$ 142,089	\$ 0.94
09	Striping	Space	\$ 35.00	464	\$ 16,240	\$ 0.11
	Misc. Painting	SF	\$ 0.15	97,950	\$ 14,693	\$ 0.10
10	Signage	SF	\$ 0.15	151,437	\$ 22,716	\$ 0.15
	Security Allowance	LS	\$ 100,000	1	\$ 100,000	\$ 0.66
14	Elevators	Stop	\$ 45,000	6	\$ 270,000	\$ 1.78
15	Fire Protection	SF	\$ 0.80	151,437	\$ 121,150	\$ 0.80
	Plumbing and Mech.	SF	\$ 1.20	151,437	\$ 181,724	\$ 1.20
16	Electrical	SF	\$ 4.00	151,437	\$ 605,748	\$ 4.00

TOTAL COST OF WORK = \$ 8,089,074 \$ 53.42

Estimate Contingency	5.0%	\$ 404,454	\$ 2.67
Escalation	2.5%	\$ 202,227	\$ 1.34
Construction Contingency	3.0%	\$ 242,672	\$ 1.60
Contractor Fees and General Conditions	10.58%	\$ 855,803	\$ 5.65

Total Construction Cost = \$ 9,794,229 \$ 64.68

Construction Cost Per Space =	\$ 21,108	per space
Construction Cost Per Sq. Ft. =	\$ 64.68	per sf

Soft Costs

Owner Reserves	5.0%	\$ 489,711	\$ 3.23
A/E Fees	6.5%	\$ 636,625	\$ 4.20
Geotechnical	LS	\$ 30,000	\$ 0.20
Special Inspections/Material Testing	LS	\$ 75,000	\$ 0.50

Sub-Total 12.6% \$ 1,231,336 \$ 8.13

Total Project Cost = \$ 11,025,565 \$ 72.81

Project Cost Per Space =	\$ 23,762	per space
Project Cost Per Sq. Ft. =	\$ 72.81	per sf



Pope Avenue Parking Deck
Coligny Beach, Hilton Head Island, SC
Option 2 - Parking Deck + Site Work + Retail Building Pad



Engineer's Estimate of Probable Construction Costs

Ground Floor Sq. Ft. =	53,487	sf	No. Levels =	3
Elevated Area Sq. Ft. =	97,950	sf	No. Spaces =	464
Total Area =	151,437	sf	Efficiency =	326

Div.	Item	Unit	Unit Cost	Qty.	Cost	Cost/SF
02	Site Work and Utilities	SF	\$ 8.00	117,400	\$ 939,200	\$ 6.20
03	Foundations	SF	\$ 20.00	53,487	\$ 1,069,740	\$ 7.06
	Concrete Slab-on-Grade	SF	\$ 8.50	53,487	\$ 454,640	\$ 3.00
	Precast Structure	SF	\$ 28.00	97,950	\$ 2,742,600	\$ 18.11
	Perimeter Architecture	SF	\$ 80.00	15,908	\$ 1,272,640	\$ 8.40
04	CMU Walls	SF	\$ 0.10	151,437	\$ 15,144	\$ 0.10
05	Stairs and Railings	EA	\$ 15,000	3	\$ 45,000	\$ 0.30
	Misc. Metals	LS	\$ 45,431	1	\$ 45,431	\$ 0.30
07	Waterproofing	LS	\$ 142,089	1	\$ 142,089	\$ 0.94
09	Striping	Space	\$ 35.00	464	\$ 16,240	\$ 0.11
	Misc. Painting	SF	\$ 0.15	97,950	\$ 14,693	\$ 0.10
10	Signage	SF	\$ 0.15	151,437	\$ 22,716	\$ 0.15
	Security Allowance	LS	\$ 100,000	1	\$ 100,000	\$ 0.66
14	Elevators	Stop	\$ 45,000	6	\$ 270,000	\$ 1.78
15	Fire Protection	SF	\$ 0.80	151,437	\$ 121,150	\$ 0.80
	Plumbing and Mech.	SF	\$ 1.20	151,437	\$ 181,724	\$ 1.20
16	Electrical	SF	\$ 4.00	151,437	\$ 605,748	\$ 4.00

TOTAL COST OF WORK = \$ 8,058,754 \$ 53.22

Estimate Contingency	5.0%	\$ 402,938	\$ 2.66
Escalation	2.5%	\$ 201,469	\$ 1.33
Construction Contingency	3.0%	\$ 241,763	\$ 1.60
Contractor Fees and General Conditions	12.92%	\$ 1,041,229	\$ 6.88

Total Construction Cost = \$ 9,946,151 \$ 65.68

Construction Cost Per Space =	\$ 21,436	per space
Construction Cost Per Sq. Ft. =	\$ 65.68	per sf

Soft Costs

Owner Reserves	5.0%	\$ 497,308	\$ 3.28
A/E Fees	6.5%	\$ 646,500	\$ 4.27
Geotechnical	LS	\$ 30,000	\$ 0.20
Special Inspections/Material Testing	LS	\$ 75,000	\$ 0.50

Sub-Total 12.6% \$ 1,248,807 \$ 8.25

Total Project Cost = \$ 11,194,959 \$ 73.92

Project Cost Per Space =	\$ 24,127	per space
Project Cost Per Sq. Ft. =	\$ 73.92	per sf



Pope Avenue Parking Deck
Coligny Beach, Hilton Head Island, SC
Option 3 - Parking Deck + Site Work + Retail/Residential Building Pad



Engineer's Estimate of Probable Construction Costs

Ground Floor Sq. Ft. =	53,487	sf	No. Levels =	3
Elevated Area Sq. Ft. =	97,950	sf	No. Spaces =	465
Total Area =	151,437	sf	Efficiency =	326

Div.	Item	Unit	Unit Cost	Qty.	Cost	Cost/SF
02	Site Work and Utilities	SF	\$ 8.00	117,400	\$ 939,200	\$ 6.20
03	Foundations	SF	\$ 20.00	53,487	\$ 1,069,740	\$ 7.06
	Concrete Slab-on-Grade	SF	\$ 8.50	53,487	\$ 454,640	\$ 3.00
	Precast Structure	SF	\$ 28.00	97,950	\$ 2,742,600	\$ 18.11
	Perimeter Architecture	SF	\$ 80.00	13,788	\$ 1,103,040	\$ 7.28
04	CMU Walls	SF	\$ 0.10	151,437	\$ 15,144	\$ 0.10
05	Stairs and Railings	EA	\$ 15,000	3	\$ 45,000	\$ 0.30
	Misc. Metals	LS	\$ 45,431	1	\$ 45,431	\$ 0.30
07	Waterproofing	LS	\$ 142,089	1	\$ 142,089	\$ 0.94
09	Striping	Space	\$ 35.00	465	\$ 16,275	\$ 0.11
	Misc. Painting	SF	\$ 0.15	97,950	\$ 14,693	\$ 0.10
10	Signage	SF	\$ 0.15	151,437	\$ 22,716	\$ 0.15
	Security Allowance	LS	\$ 100,000	1	\$ 100,000	\$ 0.66
14	Elevators	Stop	\$ 45,000	6	\$ 270,000	\$ 1.78
15	Fire Protection	SF	\$ 0.80	151,437	\$ 121,150	\$ 0.80
	Plumbing and Mech.	SF	\$ 1.20	151,437	\$ 181,724	\$ 1.20
16	Electrical	SF	\$ 4.00	151,437	\$ 605,748	\$ 4.00

TOTAL COST OF WORK = \$ 7,889,189 \$ 52.10

Estimate Contingency	5.0%	\$ 394,459	\$ 2.60
Escalation	2.5%	\$ 197,230	\$ 1.30
Construction Contingency	3.0%	\$ 236,676	\$ 1.56
Contractor Fees and General Conditions	12.92%	\$ 1,019,609	\$ 6.73

Total Construction Cost = \$ 9,737,162 \$ 64.30

Construction Cost Per Space =	\$ 20,940	per space
Construction Cost Per Sq. Ft. =	\$ 64.30	per sf

Soft Costs

Owner Reserves	5.0%	\$ 486,858	\$ 3.21
A/E Fees	6.5%	\$ 632,916	\$ 4.18
Geotechnical	LS	\$ 30,000	\$ 0.20
Special Inspections/Material Testing	LS	\$ 75,000	\$ 0.50

Sub-Total 12.6% \$ 1,224,774 \$ 8.09

Total Project Cost = \$ 10,961,936 \$ 72.39

Project Cost Per Space =	\$ 23,574	per space
Project Cost Per Sq. Ft. =	\$ 72.39	per sf



02 Community Partnerships

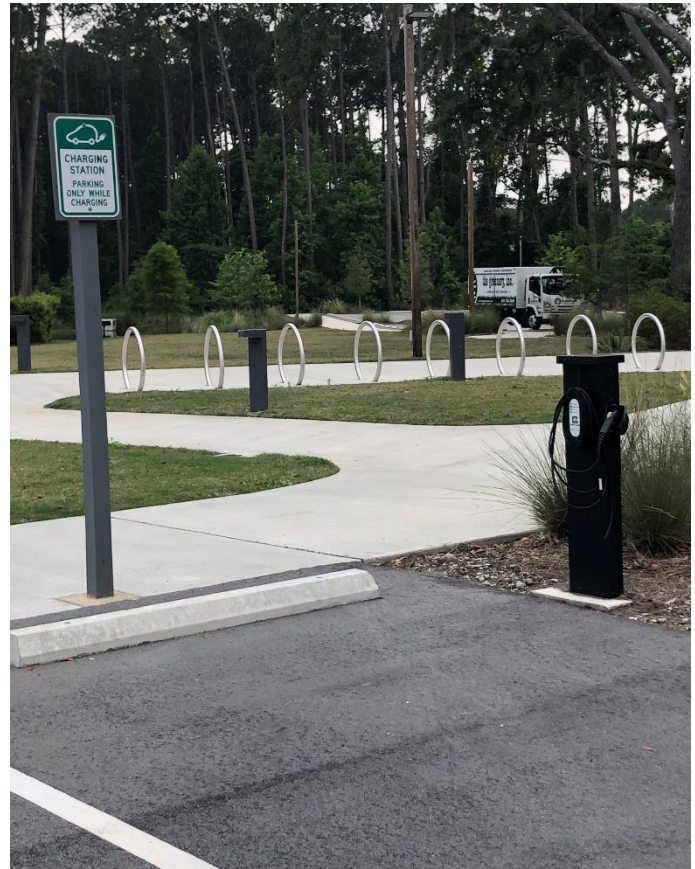
Community Partnerships

In an effort to utilize the available existing parking infrastructure, Walker supports the continued relationship with the University of South Carolina Beaufort campus located at 1 Sand Shark Drive. Approximately 1.1 miles from Coligny Circle and Coligny Beach Access, this location offers 228± paved parking spaces to include an electric vehicle charging stations and bicycle parking storage racks.

University of South Carolina Beaufort Location – Hilton Head Island



Walker Consultants; 2020



Currently, a free shuttle service is provided by Palmetto Breeze Transportation for users of this location at a daily cost to the Town. Walker understands initial costs for this service amounted to \$160 per day and \$3,200 for the 10-week season. The free services operates a continuous loop from 10 a.m. to 1 p.m. After 1 p.m., guests are able to ride the regularly scheduled Breeze Trolleys, which picks up guests from Coligny Beach Park and other locations on the island.

In addition to the University of South Carolina Beaufort location, Walker has reached out to two neighboring church properties located along the Pope Avenue corridor. St. Luke's Church located at 50 Pope Avenue has an estimated inventory of 120± surface parking spaces with vehicular access from Pope Avenue on the north, Cordillo Parkway on the east and Woodhaven Drive on the west. The location offers a .7 mile walk to Coligny Circle and a ¼ mile walk to the western entrance of the new Lowcountry Celebration Park.

Holy Family Catholic Church, located at 24 Pope Avenue, has an estimated inventory of 239± surface parking spaces with vehicular access from Pope Avenue on the north and Woodhaven Drive on the east. The location offers a .8 mile walk to Coligny Circle and a .26 mile walk to the western entrance of the new Lowcountry Celebration Park. Both of these locations are also located along the Pope Avenue bike pathway system.

Aerial Map of Community Partnerships



Walker Consultants; 2020

As of the date of this report, Walker is waiting to confirm interest from the community partners. We anticipate the ability to negotiate potential operational concepts, which will provide income opportunities and liability protection for these organizations.

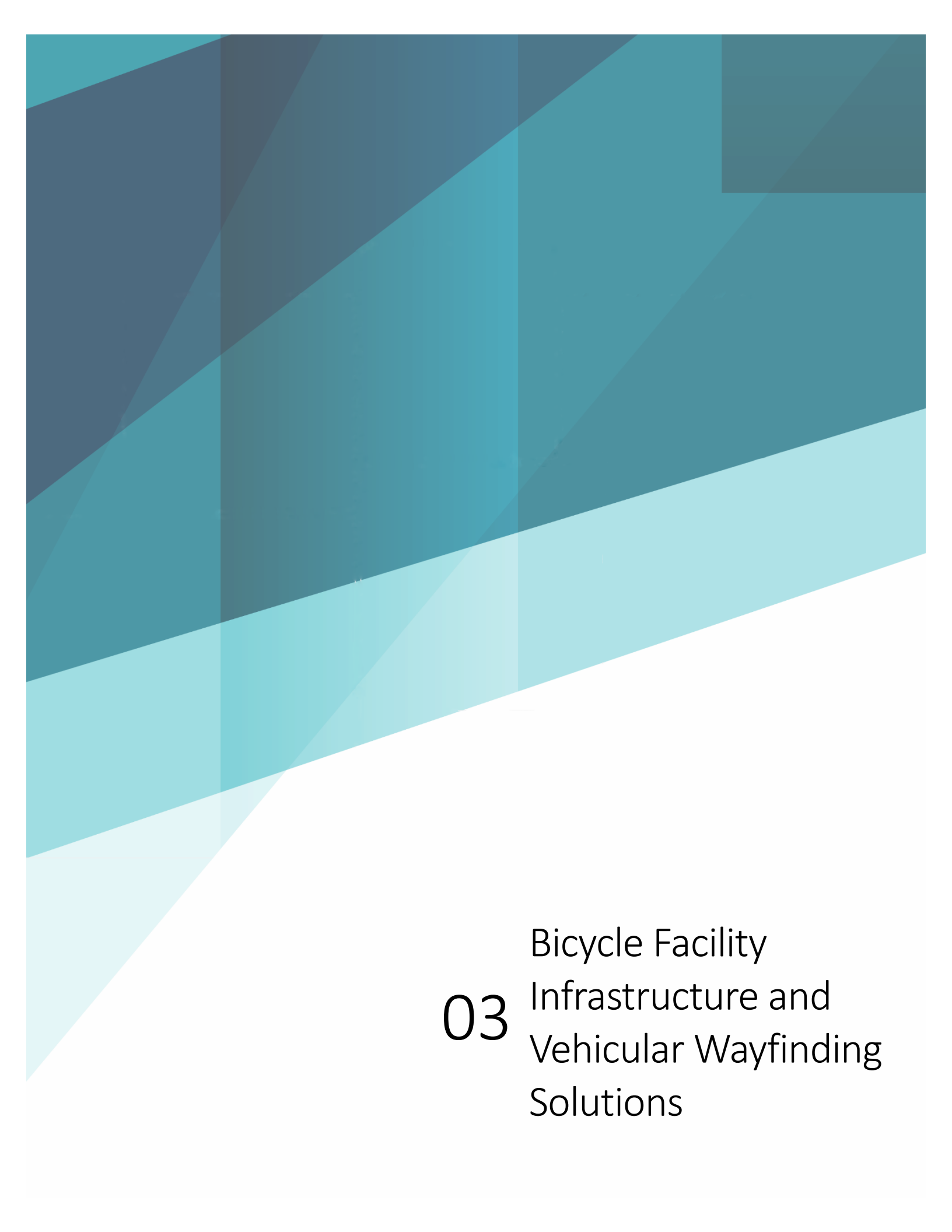
As discussed in Walker’s Task 2 deliverable, *Evaluation of Financial, Current Assets and Programs*, the pursuit of a professional parking operator to manage the Town’s beach access parking assets offers a unique opportunity to create a unified parking operation between the Town and its community partners.

Under this system, the Town’s contracted parking operator could also serve as the parking operator for the community partners, relieving these organizations from any daily operating obligations. Individual management agreements would be required of all partners, allowing for labor and operational cost savings between individual and collective operations. Location revenues generated for parking at the individual locations would be collected and deposited in separate owner bank accounts, keeping the Town’s parking revenues separate from the community partner revenues. The parking operator would report to a public/private advisory board, consisting of equal members from the Town and the community partners. Designated parking operation personell would be assigned to each organization and managed by a district manager with leadership responsibilities for the oversight of all public and private parking facilities.

At last count, at least two of the professional parking operators shown below are under contract with municipalities in the coastal areas of South Carolina. ABM Services contracts with the City of Charleston and SP+ Municipal Services contracts with the City of Beaufort. Walker recognizes the following firms as suitable options for contracting parkings services in the Town of Hilton Head Island.

Business Logos for National and Regional-Based Professional Parking Operator Firms





03 Bicycle Facility
Infrastructure and
Vehicular Wayfinding
Solutions

Bicycle Facility Infrastructure

With its commitment to bicycling promotion and infrastructure, the Town of Hilton Head Island is recognized as a Gold Level Bicycle Friendly Community by the League of American Bicyclists. Comfortable and convenient bicycle infrastructure is recognized as a key component of the identity of Hilton Head Island as a great place to live and visit. Much like bicycle routes, available, convenient, and secure bicycle parking with supportive end-of-trip amenities are critical to welcoming bicyclists and encouraging bicycling as a viable form of recreation and transportation, in turn reducing vehicle congestion and travel and parking demand.

Beach access points are popular destinations for bicyclists on Hilton Head Island, and the provision of high-quality bicycle parking in these locations is essential. Best practice considerations for providing bicycle parking and supportive amenities at these locations are included below.

Inverted-U Bicycle Parking

Inverted-U bike racks are recommended as the standard for all bicycle parking. These racks offer several benefits, including:

- Heavy-duty and intuitive to use;
- High-capacity, as one bicycle can be secured to both sides of each inverted-U station;
- Offer stable and secure bicycle parking (without the risk of bikes falling over and wheels bending), and allowing easy locking of both the bicycle's wheel and frame to the rack; and
- Relatively inexpensive, with the flexibility of adding as many inverted-U locking stations as appropriate for a given site.



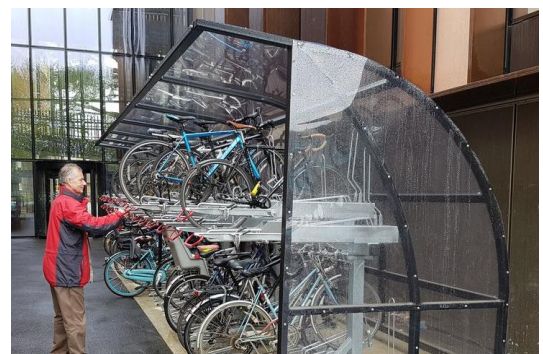
Inverted-U bicycle rack. Photo credit: cyclesafe.com

Providing Additional Bike Parking Capacity

Walker recognizes bicycle parking limitations at several Hilton Head Island beach access points. A few relevant solutions for providing additional bicycle parking capacity are provided below for consideration.

High-Capacity Bicycle Parking

A variety of high-capacity bicycle parking options are available on the market, many of which include vertical and/or tiered bicycle parking components. These options are generally easy to use but may not be intuitive for those unfamiliar with their use. Nonetheless, they present a viable option for significantly



Two-tiered high-capacity bicycle rack. Photo credit: External Works

expanding bicycle parking capacity in high-demand locations. Solutions offered are free-standing and can be integrated into covered and/or enclosed bicycle parking areas if desired to blend bicycle parking areas in with the beach aesthetic and theme of the island.

Bicycle Corrals

A bicycle corral is the conversion of curb lane or parking spaces into protected bicycle parking areas. A typical bicycle corral can accommodate 10-20 bicycles in the area of a standard motor vehicle parking space, depending on how it is configured. Bicycle corrals are demarcated by removable bollards or planters, and movable bicycle racks can be used, making them flexible and easy to install and remove as needed.



Bike corrals. Photo credit: cyclesafe.com and NJ Bicycle and Pedestrian Resource Center

Bicycle Valet

Operating much like vehicle valet, bicycle valet services offer a way to accommodate a large volume of bicycles, which is particularly relevant at high-demand areas, during peak days and times, or during special events. Bicycle valet services offer a high degree of customer service as valet attendants handle parking for guests, and ensure bicycles are safe and secure during the parking session. This type of service is helpful to visitors who may be unfamiliar with an area. In popular beach access areas that offer appropriate locations and space (either on-site or nearby), a bike valet may be an appropriate option for enhancing service for visitors and significantly expanding bicycle parking capacity. The Town may wish to partner with local community or advocacy organizations to implement bicycle valet services on a limited or pilot basis.

Other Considerations

Branding Bicycle Facilities

Integrating color, artistic elements, and other elements specific to Hilton Head Island's identity into bicycle parking and amenities can help brand these facilities, promote the Town as a proponent of high-quality bicycle facilities, and assist visitors with recognition and wayfinding. Branding can include signage, markers, or decorative bicycle racks.



Branded bicycle parking in Myrtle Beach, SC. Photo credit: WPDE

Bicycle-Supportive Amenities

Several other considerations are offered below to enhance the experience of bicyclists traveling to and arriving at beach access points.

Covered Bicycle Parking

Covered bicycle parking offers protection from sun and weather elements and can enhance the bicyclist experience. Coverings can take a variety of forms and aesthetics, and integrate items like branding, signage, maps, wayfinding, and other information.

Lockers

Bicycle lockers offer secure storage of bicycles and are attractive for bicyclists desiring extra security and protection for their bicycle or needing to secure their bicycle for longer periods of time. Bicycle lockers are typically offered on a rental basis.

Bicycle Repair and Maintenance Stations

Bicycle repair and maintenance stations are fixed stations offering basic bicycle repair tools and air for bike tires. These facilities can be installed along bicycle routes, and near bicycle information kiosks and bicycle parking areas, and are a welcome amenity for bicyclists who have basic service needs.



Covered bicycle parking and bicycle lockers.
Photo credit: Lehigh University.



Bicycle air and maintenance station. Photo credit: publicworksgroup.com

Vehicular Wayfinding Solutions

As a critical component to implementing an efficient paid parking program, Walker is recommending a need for the Town to implement a dynamic wayfinding solution. This will allow the Town to monitor the use of specific location inventory throughout the day as well as communicate the information to motorists in advance of their destination arrival to inform off-island travel decisions and reduce on-island traffic congestion.

There are two components to the wayfinding solution as recommended by Walker:

- 1) Communication to Motorists: signs, mobile apps and websites
- 2) Data Generation: vehicle occupancy solutions to provide data to communicate

Communication to Motorists

Serving as the primary objective of wayfinding efforts, communicating to motorists should be strategic and simple. While the Town has already implemented static wayfinding to direct motorists to destination points, improving the wayfinding efforts would include communication of dynamic data (space availability) concerning

those destinations. Upgrading these efforts will present a higher-level amenity to motorists as they will have a better idea of what to expect prior to their arrival.

Signs

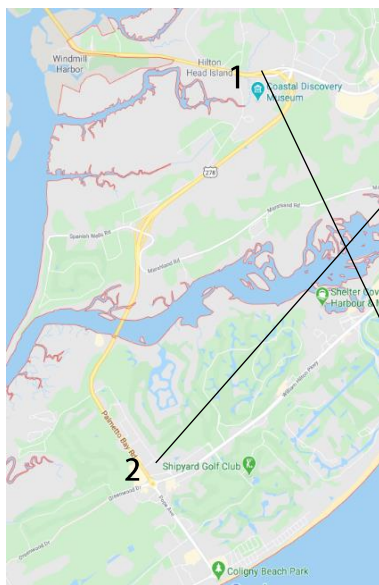
Understanding efforts to reduce sign pollution on the island, and given the stakeholder feedback during this study, the use of signs as a wayfinding solution should be very minimal. Monument and wayfinding signs should be kept simple in order to be effective in communicating to motorists in a quick and efficient way. Consideration also needs to be given to the ability for a motorist to safely read a sign while driving, process the information and decide prior to the decision-making point.

There are two decision points on the island for which Walker recommends monument signs that should communicate the space availability of multiple lots:

- 1) As the motorist arrives on the island via SR 278, at the junction of William Hilton Parkway and the Cross-Island Parkway. Communication at this decision point will allow motorists to choose a more direct route to the Coligny Beach area, or if unavailable, defer to the other northern and mid-island beach areas.
- 2) As the motorist approaches the Sea Pines Circle roundabout from Palmetto Bay Road (via the Cross-Island Parkway). Communication at this decision point will allow motorists to proceed to Coligny Beach area, or if unavailable, deter to William Hilton Parkway to access the mid-island and northern beach areas.

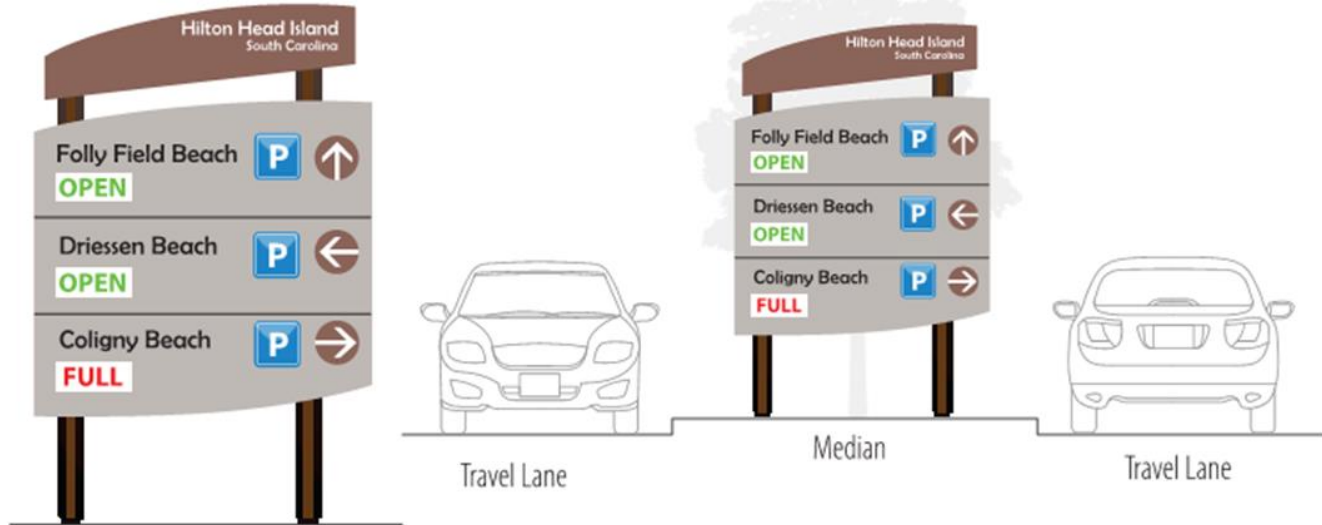
Additional availability signs should complement existing wayfinding signs that communicate the location of the various northern and mid-island beaches along William Hilton Parkway. A simple “OPEN / FULL” sign next to the beach name will allow the motorist the confidence that they will find parking available when arriving

Hilton Head Island Recommended Monument Wayfinding Sign Locations



Hilton Head Island Recommended Availability Wayfinding Sign Example

Conceptual Designs



Design courtesy of Walker Consultants; 2020

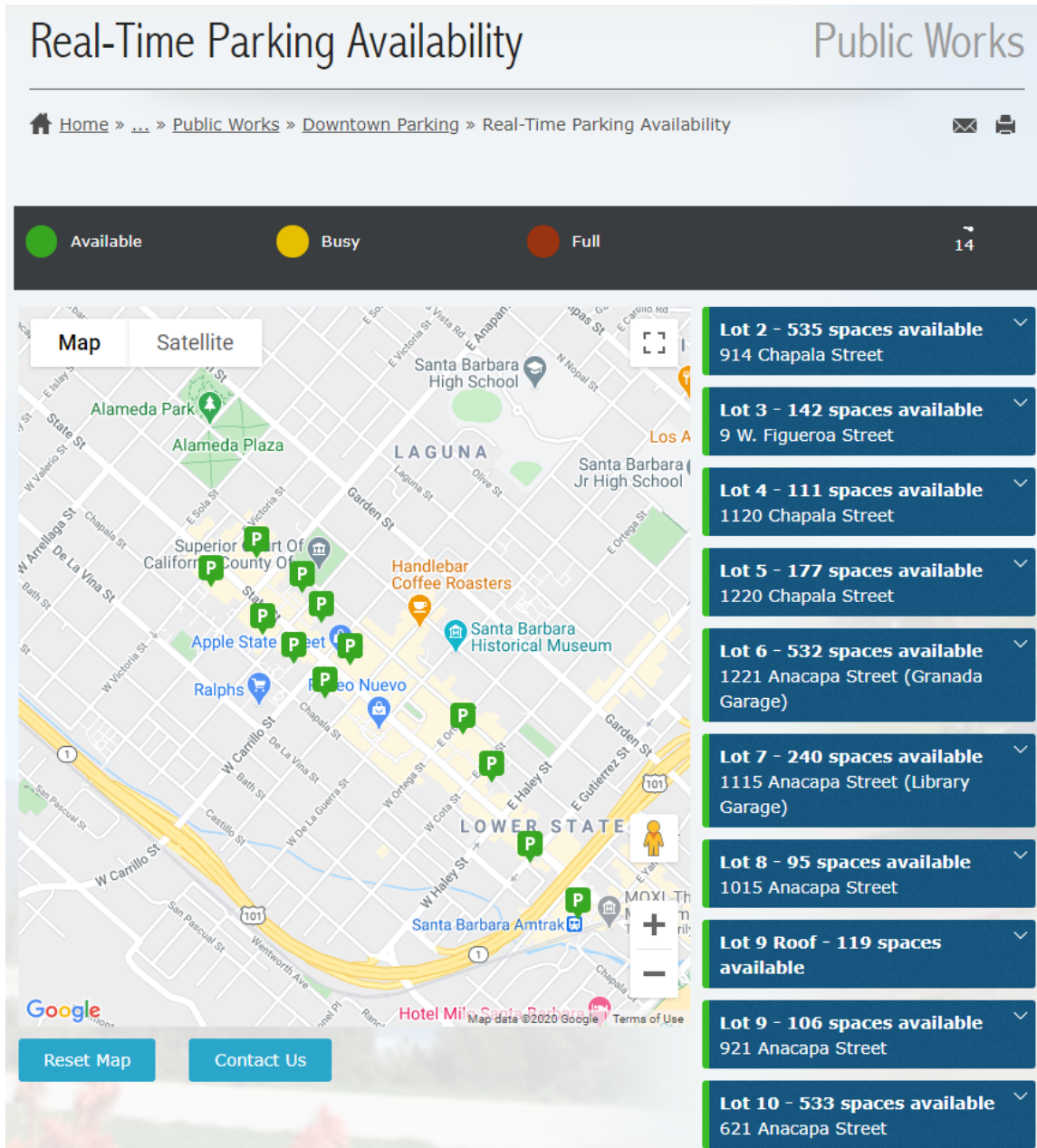
Mobile Apps

Used in conjunction with wayfinding signage, or independently, a mobile app can communicate availability to the motorist at any time, not just at decision points along the route. This would require the motorist to download an app, either a Town-specific app or use of the established ParkMobile brand parking payment app currently active at the airport. This method is certainly more discreet than wayfinding sign packages, which will complement the Town’s efforts to reduce sign pollution, however, it will require motorists to be aware of the application and its wayfinding features. The Town will need to market the use of the app so that both the Town and the motorists will achieve the benefits of the wayfinding efforts. The mobile payment app solution should have wayfinding features as part of its solution scope and be able integrate with the occupancy counting solutions with which the Town will partner.

Town Website

A number of destination communities have enhanced the use of their parking and transportation website pages to provide a live look at real-time parking availability. The City of Santa Barbara, CA is one such community that has developed a dynamic map on their Public Works website that displays the name and address of each of their public parking locations, showing the available parking count every fifteen (15) seconds. Using a similar color scheme, parking lot “P” symbols turn green, yellow, and red as parking location availability changes from “available”, to “busy”, to “full”. The following has been provided to demonstrate the design of the city’s real-time parking availability.

City of Santa Barbara Real-Time Parking Availability



Source: City of Santa Barbara, California; 2020

Data Generation

Counting solutions native to revenue collections platforms (multi-space meters or mobile payment apps) are convenient in that they are providing the service ancillary to the primary features of revenue collection. However, there are limitations to the accuracy of the data as the vehicle counts are dependent on active interaction with those platforms and are transaction based. This means that vehicles that do not interact with the system by choosing not to pay, or those that may have a pre-authorized permit, will not appear in the count data.

Independent occupancy counting solutions will be more accurate as they are dedicated to counting vehicles when they physically enter a location and are not dependent on transactions or algorithms. LIDAR (Light Detection and Ranging) uses pulsed laser and sensors in a camera-based system to track movements and measure activity. Similar to the technology that is being developed with the use of autonomous vehicles, this form of technology is quickly improving in the marketplace and can provide the most reasonable level of accuracy as long as sightline conditions are met.

LIDAR Solutions

LIDAR devices mounted on posts or light poles at the entry and exit points of the surface lots will count vehicles as they enter and exit the lot and communicate the data to the back-end software solution. The software will calculate the data in real-time to assess the occupancy levels. The vehicle is counted when it drives through the lane and breaks the plane of the laser/sensor circuit. This solution will require defined lanes (entry and exit lanes are distinct) in order to provide the optimal accuracy levels.

The photo on the right has been provided to demonstrate the installation of a pole-mounted LIDAR device in a parking entry lane.



Photo courtesy of All Traffic Solutions

Camera-Based Solutions

Camera based solutions rely on well-placed cameras with line of sight of area in which vehicles are to be counted. These solutions can take two forms:

- 1) Cameras mounted strategically in a surface lot to capture images of the parking spaces. Images will be captured at a continuous or predetermined rate and the software will identify which spaces are occupied by a vehicle. This type of solution can identify to the level of occupancy by space. The most efficient manner to install this type of cameras is to locate them thirty feet above ground level on existing light post or post specific to this use. This solution would be a challenge with the tree canopies that exist in many of the Town's parking lots, and while this could be addressed with the use to additional cameras, the other solutions presented would be more efficient.

Example of Occupancy Counts by Camera Image Software



Photo courtesy of VADE Group, Inc.; 2020

- 2) Cameras mounted at the entry and exit points of the parking lot. Similar to a LIDAR solution, in this case the cameras will capture the movement of vehicles and the software will identify the vehicles and the direction of movement to determine if the vehicle is entering or exiting and calculate the occupancy on an aggregate basis. The software will then communicate data to the appropriate applications. This solution will require cameras to be placed in or near the entry and exit points with unobstructed lines of sight.

Example of Entry and Exit Photo Capture Software

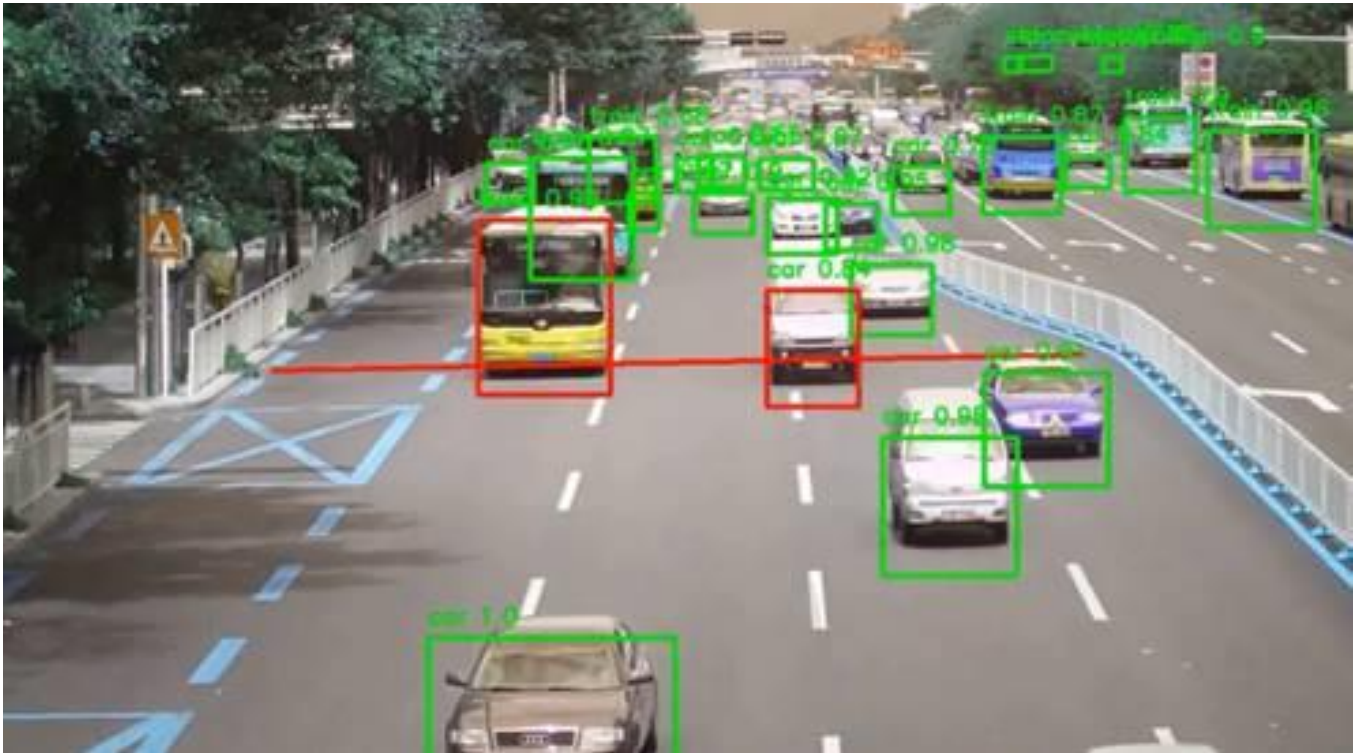


Photo courtesy of pythonawesome.com

