

2.1. Traffic Engineering

The assessment of traffic engineering and operations within the six (6) parking lots were based on observations for the behavior and the travel patterns of drivers and pedestrians. In order to establish the efficiency of the parking lot, parking data was collected through a demand accumulation study performed during a 7-day period on the summer week of July 25, 2011

2.1.1. Field Observations

The general observed issues of all parking lots are summarized as below;

- Tight turning radius
- Substandard ADA compliance
- Lack of pedestrian guide-signs
- Sidewalk connectivity deficiency
- Vehicles parking along the aisles blocking operations
- Parking, circulation, and driveway design deficiencies
- Poor pavement and drainage conditions
- Deteriorated marking and signs

An outline of the field observation per parking lot is presented below;

a. **Parking Lot 1 (Collins Lot) : Southwest Corner of Collins Avenue and 93rd Street**

- Driveway to exit o Collins is used as entrance driveway.
- Some vehicles used the parking lot to bypass the signal or to head towards building in south side of the intersection front.
- Vehicles are using the parking as load and unload areas interfering with the other vehicles right at the entrance of the parking lot.
- Vehicles traveling in counter-flow were notices

b. **Parking Lot 2 (Town Hall Lot) : Northeast Corner of 93rd Street and Harding Avenue**

- Vehicles traveling in counter-flow
- Vehicles speeding were noticed inside the parking
- Overnight use of the parking lot
- Only one pay and display meter for the overall parking
- Lack of protective fencing (accident observed during a field visit)

c. **Parking Lot 3 (94th Street Lot) : Southeast Corner of 94th Street and Harding Avenue**

- Vehicles speeding
- Vehicles traveling in counter-flow
- Entrance and Exit driveways are very narrow for 2 vehicles
- There is only one pay and display meter at the entrance of the parking lot. People choose to park along the aisles to collect the ticket, which creates congestion and queues that interfere with the traffic along 94 Street.

Town of Surfside Parking Lot Improvements

d. Parking Lot 4 (Post Office Lot) : Southwest Corner of 95th Street and Collins Avenue

- Vehicles speeding
- Vehicles traveling in counter-flow
- The parking is used to bypass the signal at intersection
- Drivers were noticed looking for an exit driveway towards the south end of the parking lot

e. Parking Lot 5 (Shul Lot) : Northwest Corner of 95th Street and Collins Avenue

- Vehicles traveling in counter-flow
- Vehicles were observed using the exit driveway at the alleyway to access the parking lot
- Tight maneuverability causing potential conflicts between vehicles traveling along the aisle and vehicles backing up
- Vehicles stopping to obtain the ticket in the pay and display meter close to Collins are blocking the driveway and creating queues that block the northbound traffic along Collins Avenue

f. Parking Lot 6 (Abbott Lot) : East Side of 9500 Abbott Avenue

- Vehicles speeding
- Vehicles traveling in counter-flow
- Few Handicap spaces were noticed
- Large vehicle accumulation nearby the CVS pharmacy and Flannigan's restaurant
- Aisles are being use the parking as load drop off zone interfering with traffic
- Missing additional bicycle racks

2.1.2. Vehicle Accumulation Study

A parking accumulation study each 15-minute intervals were conducted during typical weekdays and weekends from Monday, July 25, 2011 to Sunday, July 31, 2011 for a twelve (12) hour period between 9:00 AM and 9:00 PM. The hourly parking demand and the raw traffic counts (15-minute interval) is provided in **Appendix B**.

a. Parking Lot 1 (Collins Lot) : Southwest Corner of Collins Avenue and 93rd Street

- The parking lot at the southwest corner of 93rd Street and Collins Avenue provides 17 spaces.
- The average number of parked vehicles over the twelve-hour period was 14 vehicles (82%) during the weekdays and 13 vehicles (76%) during the weekend.
- The highest hourly parking demand was 17 vehicles (100%) between 10:40 AM and 1:30 PM during the weekdays and 17 vehicles (100%) between 1:45 PM to 5:35 PM during the weekend.

b. Parking Lot 2 (Town Hall Lot) : Northeast Corner of 93rd Street and Harding Avenue

- The parking lot at the northeast corner of 93rd Street and Harding Avenue provides 37 spaces.

Town of Surfside Parking Lot Improvements

- The average number of parked vehicles over the twelve-hour period was 21 vehicles (57%) during the weekdays and 19 vehicles (51%) in the weekend.
 - The highest hourly parking demand was 28 vehicles (76%) between 11:45 AM and 11:45 AM during the weekdays and 29 vehicles (78%) between 2:00 PM and 2:45 PM in the weekend.
- c. Parking Lot 3 (94th Street Lot) : Southeast Corner of 94th Street and Harding Avenue**
- The parking lot at the southeast corner of 94th Street and Harding Avenue provides 99 spaces.
 - The average number of parked vehicles over the twelve-hour period was 48 vehicles (47%) during both weekdays and weekend.
 - The highest hourly parking demand was 63 vehicles (64%) between 11:30 AM and 12:15 PM during the weekdays and 76 vehicles (76%) between 4:45 PM and 5:00 PM during the weekend.
- d. Parking Lot 4 (Post Office Lot) : Southwest Corner of 95th Street and Collins Avenue**
- The parking lot at the southwest corner of 95th Street and Collins Avenue provides 61 spaces.
 - The average number of parked vehicles over the twelve-hour period was 29 vehicles (48%) during the weekdays and 38 vehicles (62%) in the weekend.
 - The highest hourly parking demand was 41 vehicles (67%) at 1:30 PM during the weekdays and 49 vehicles (80%) between 3:30 PM and 4:00 PM during the weekend.
- e. Parking Lot 5 (Shul Lot) : Northwest Corner of 95th Street and Collins Avenue**
- The parking lot at the northwest corner of 95th Street and Collins Avenue provides 20 spaces.
 - The average number of parked vehicles over the twelve-hour period was 13 vehicles (65%) during the weekdays and 8 vehicles (40%) in the weekend.
 - The highest hourly parking demand was 18 vehicles (90%) between 10:00 AM and 11:45 AM during the weekdays and 12 vehicles (60%) between 5:15 PM and 6:30 PM in the weekend.
- f. Parking Lot 6 (Abbott Lot) : East Side of 9500 Abbott Avenue**
- The parking lot at 95th Street and Abott Avenue provides 207 spaces.
 - The average number of parked vehicles over the twelve-hour period was 113 vehicles (55%) during the weekdays and 77 vehicles (37%) in the weekend.
 - The highest hourly parking demand was 157 vehicles (76%) at 2:00 PM during the weekdays and 93 vehicles (45%) between 4:30 PM and 4:45 PM in the weekend.

Therefore, from the parking accumulation study, it is concluded as below;

- All parking lots have 3 or more hours of occupancy above 60% average during weekdays
- High occupancy is noted in the parking lots nearby the coastal area in the weekend
- Slightly higher occupancy is recorded for the parking lots west of Harding and Abbott Avenue during the weekdays than during the weekends

Town of Surfside Parking Lot Improvements

- However, it is noted that the occupancy of Harding and Abbott Avenue parking lots during the weekend nighttime (7 PM to 9PM) is above 20%.
- It is important to mention that the parking lot at 95th and Abbott Avenue presents an average occupancy close to 40% at 9 PM during the weekend

2.1.3. Parking Garage Analysis

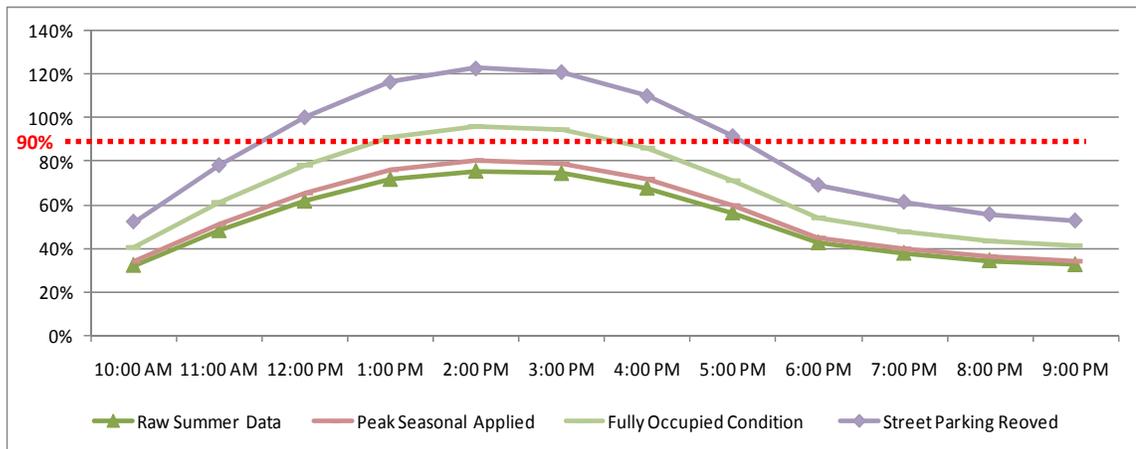
The Town of Surfside has been considering a new parking garage at 95th Street and Abbot Avenue. It is determined that a parking garage could be required when the occupancy reaches to a level of 90% of the capacity. In order to properly validate the need of a parking garage at this location, additional site-specific aspects that need to be aggregated to the raw traffic data collected. Among those aspects are as follows and **Table 2** summarizes the result of parking garage analysis;

- A peak seasonal factor of 1.06 is applied to the raw traffic counts (15-minute interval) since the raw traffic counts were collected during the summer period. The seasonal factor was obtained from a nearby FDOT station.
- Currently, there are eight (8) vacant stores front along Harding Avenue abutting the parking lot. When these stores are fully occupied, it is expected that 32 new trips will be generated based on the ITE Trip Generation Manual
 - 1,000 S.F. per Store
 - 4 vehicles per 1,000 S.F. for Retail/Small Restaurant
- Furthermore, the Town of Surface is planning the removal of the existing side-street parking spaces (74 spaces) along Harding Avenue between 94th and 96th Street.
- It is assessed that a parking garage is required when the occupancy reaches a 90% level.

Table 2. Parking Demand Analysis for the Proposed Parking Garage

95 St & Abbot Ave (207 Spaces) - Summer Weekdays								
Time	Raw Data		Peak Seasonal Applied		Fully Occupied		Street Parking Reoved	
	veh	%	veh	%	veh	%	veh	%
10:00 AM	67	32%	70	34%	84	41%	108	52%
11:00 AM	100	48%	106	51%	126	61%	162	78%
12:00 PM	128	62%	135	65%	162	78%	207	100%
1:00 PM	149	72%	157	76%	188	91%	241	116%
2:00 PM	156	76%	166	80%	198	96%	254	123%
3:00 PM	154	75%	164	79%	195	94%	250	121%
4:00 PM	140	68%	149	72%	177	86%	228	110%
5:00 PM	117	56%	124	60%	148	71%	189	91%
6:00 PM	88	43%	93	45%	111	54%	143	69%
7:00 PM	78	38%	83	40%	99	48%	127	61%
8:00 PM	71	34%	75	36%	90	43%	115	56%
9:00 PM	67	32%	71	34%	85	41%	109	53%

Town of Surfside Parking Lot Improvements



This analysis indicates that, after the site-specific aspects are applied, the occupancy in the existing parking lot will exceed 90% of the capacity during the daytime between 10:00 AM and 5:00 PM. Therefore, it is calculated that a parking garage could be justified for a further study at this location.

2.2. Architecture and Parking Design

A preliminary review of the parking layout was performed by FTE and CHALGUB, INC. This preliminary review vetted the zoning standards compliance for each of the six Town Parking Lots and evaluates preliminary parking layouts considering the RFP requirements and the applicable codes (Town of Surfside & Miami-Dade County).

2.2.1. Zoning Standards

The RFP indicates that improvements shall conform to Miami Dade County code & all Town Codes as a result a summary of the Town of Surfside Zoning Ordinance requirements that are applicable to the architectural design of the Parking Lots are presented follows:

a. ARTICLE III – Establishment of Zoning Designations

- Section 90-39: Zoning Districts, & the Zoning Map: designates each lot as **MUNICIPAL**

b. ARTICLE VII – Off-Street Parking & Loading

- Division 1 Off-street Parking; Section 90-77 Off-street parking requirements.
- 90-81.1 Minimum Stall Area: 9 foot x 18 foot exclusive of driveways and Miami-Dade County is 8 foot x 23 foot.
- Aisle dimensions: shall comply with Miami-Dade County Standards "Minimum Parking Stall Dimensions": 45 deg. spaces-12 foot aisle; 60 deg. spaces-17 foot aisle; 75 deg. spaces-21 foot aisle; and 90 deg. spaces-22 foot aisle
- Bumper overhang per Miami-Dade County: 45 deg. spaces-1.8 foot; 60 deg. spaces-2.2 foot; 75 deg. spaces-2.4 foot; and 90 deg. spaces-2.5 foot.
- Handicap parking spaces per Chapter 11 FBC: 12 foot x 18 foot with 5 foot access;
- 90-81.2 adequate Ingress/Egress and interior driveways; Miami-Dade County requirements indicates that Interior driveways: 12 foot-one way, 20 foot- two way