

PARKING DEMAND STUDY

**DAYS INN @ 1853 McCOY ROAD
CITY OF BELLE ISLE, FLORIDA**



Prepared for:

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July 2019 (Revised)

TPD № 5165

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with Traffic Planning & Design, Inc., a corporation authorized to operate as an engineering business, EB-3702, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Days Inn @ 1853 McCoy Road
LOCATION: City of Belle Isle, Florida
CLIENT: Go Construction Services

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.

NAME: Turgut Derwish
P.E. No.: 20400
DATE: July 28th, 2019
SIGNATURE:



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INTRODUCTION

This study was undertaken in order to assess the parking requirements for the requested 57 room addition to the existing 168 room Days Inn Hotel located at 1853 McCoy Road in the City of Belle Isle, Florida. The proposed project, with a total of 225 rooms, will be geared specifically towards Orlando theme attractions tourist and the Orlando International Airport market. The primary aim of the study is to determine a context appropriate parking ratio and supply for the proposed project to support a parking ratio variance request.

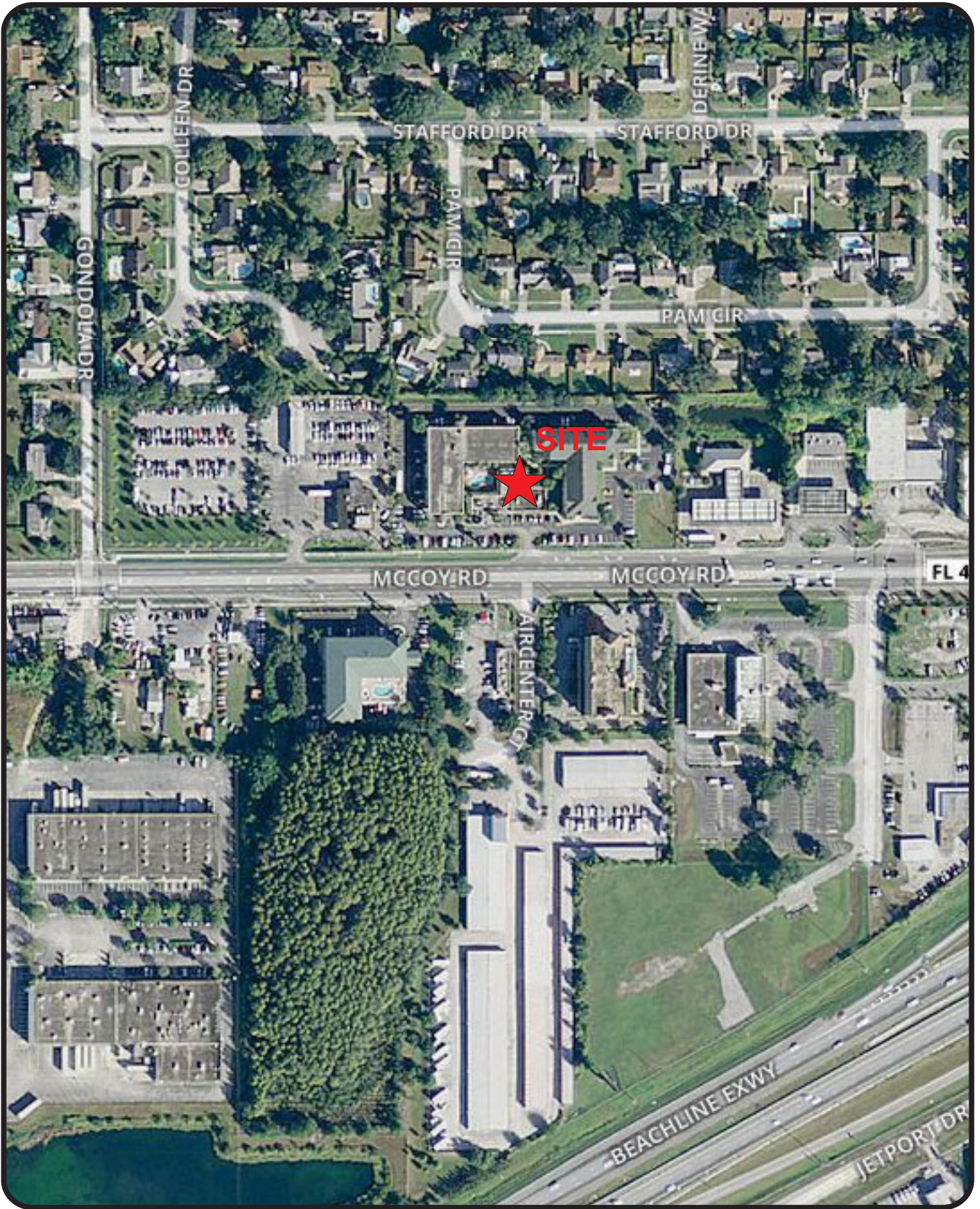
The existing Days Inn facility was bought as a distressed asset several years ago by current property owner. Over the past several years, the property owner invested a significant amount of time and effort in 'cleaning up', removing undesirable tenants, upgrading the interior and exterior, improving hotel service quality and increasing the overall occupancy of the hotel with considerable success. During this period, the owner noticed that roughly 50 to 60 percent of guests utilize shuttle buses, taxis, Uber and Lyft as means to travel to and from the hotel location. Consequently, much of the exiting parking spaces went unused.

This study consisted of an evaluation of (a) the City of Belle Isle parking requirements; (b) an alternative parking calculation performed using guidance provided in the Institute of Transportation (ITE) *Parking Generation 4th Edition*; and, (c) past parking surveys at similar existing hotel sites to determine the existing parking usage during peak parking activity. Based on this evaluation, the projected parking usage was subsequently used to evaluate the adequacy of the proposed parking provisions at the subject hotel. **Figure 1** depicts the site location and **Figure 2** provides the proposed parking configuration.

Data and Methodology

Data used in the analysis consisted of site plan/development information provided by the Project Engineers, parking counts obtained by TPD, Inc. and parking guidance published by the Institute of Transportation Engineers (ITE) and as documented in the City of Belle Isle Land Development Code/Code of Ordinances. Excerpts from these documents are referenced in the study as appropriate and provided in the Appendix section.

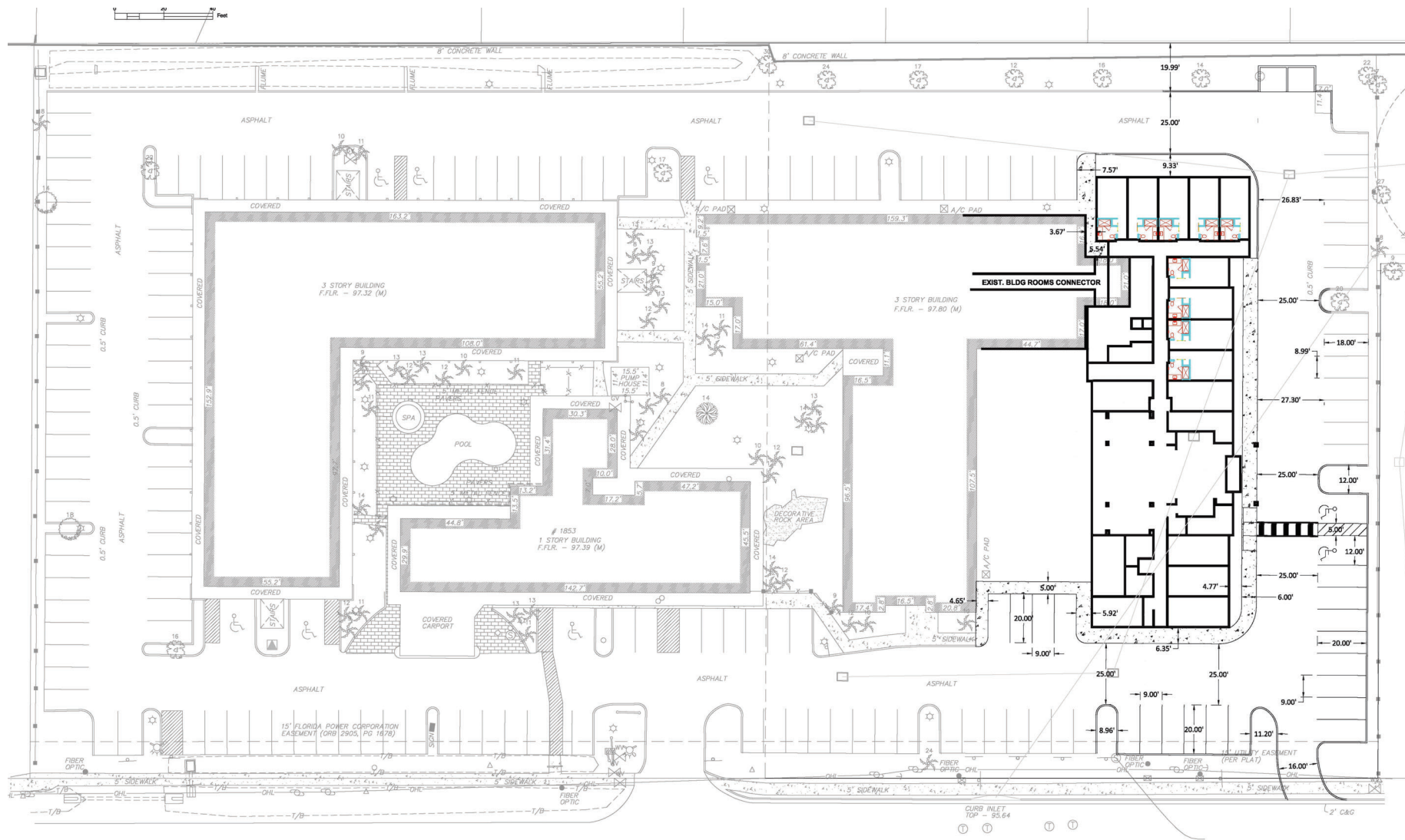




Days Inn @ 1853 McCoy Road
Project № 5165
Figure 1

Project Location Map





*Not to scale



Days Inn @ 1853 McCoy Road
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 Figure 2

Site Plan



MULTIMODAL TRANSPORTATION OPTIONS

A major premise of this variance request is the multimodal transportation options available to hotel guests which reduce the parking demand of the hotel. Specifically, with the mainstream prevalence of ride share services, such as Uber and Lyft, and the airport shuttle bus service that run 21 hours a day between the hotel and the airport, it is not necessary for hotel guests to obtain a rental car as their primary means of transportation. The airport shuttle bus service, is a free service available to guests at various hotels in the immediate area, paid for by the hotel owners. Guests are able to use the shuttle service to get to and from the hotel and then use Uber and Lyft to move around Orlando without the need to park a car in the hotel parking lot. The City's parking standards were developed prior to the advent of ride share services, such as Uber and Lyft, and likely were not developed for hotels which also operate a shuttle service.

CITY OF BELLE ISLE PARKING REQUIREMENTS

Based upon the City of Belle Isle Land Development Code (see **Appendix A** for excerpt), the parking requirements for the subject hotel use is provided in **Table 1**.

Table 1
City of Belle Isle Parking Requirement Calculation

Number of Unites	County Parking Ratio	Spaces Required
225 Rooms	1 space per 1 room = 1.00	225
5,879 sq. ft. office/lobby	1 space per 100 sq. ft. = 0.10	59
Total		284

As indicated, the proposed hotel is required by the City of Belle Isle to provide 284 parking spaces. It should be noted that while the hotel has a lobby area, this area is for hotel room guests and does not have an additional parking demand. More specifically, guests come to the hotel for the hotel rooms not the hotel lobby and, consequently, the parking requirement for the hotel rooms incorporates that of the lobby area. Therefore, additional parking for lobby use is not typically calculated.

In addition, shuttle service is currently provided at the hotel to take guest to and from the Airport.



Based on this experience, guests tend to use the shuttle to go to and from the airport and then use ride-share service (such as Uber and Lyft) to move around Orlando. Currently, this has reduced the existing Days Inn parking demand.

ADJACENT JURISDICTION PARKING REQUIREMENTS

A review was conducted of the City of Orlando and Orange County Land Development Codes (See **Appendix B** - Section 61.322 and Section 38-1476, respectively.) in an effort to compare parking requirements/standards in the area. The comparative parking requirements for the subject hotel use is provided in **Table 2**.

Table 2
Adjacent Jurisdiction Parking Requirements

Number of Unites	County Parking Ratio	Spaces Required for Proposed Project
City of Orlando	0.5 spaces per 1 room = 0.5	113 spaces
Orange County	1 space per 1.5 room = 0.67	150 spaces

As indicated, the proposed hotel project would require 112 and 150 parking spaces per the City of Orlando and Orange County Land Development Codes, respectively.

ALTERNATIVE PARKING CALCULATION

An alternative parking calculation was performed utilizing trip generation rates compiled by the Institute of Transportation (ITE) in its 4th Edition *Parking Generation* (see **Appendix C** for excerpts). ITE provides trip generation data for different types of lodging facilities. The lodging types appropriate for this calculation are ITE Land Use Code 310: Hotel and Code 320: Motel.

Utilizing average peak period parking demand during weekdays, the parking demand calculations as per ITE rates was calculated for each type of lodging facility as follows:

- Hotel - 0.89 spaces/occupied room = 225 x 0.89 = 201 spaces
- Motel - 0.71 spaces/occupied room = 225 x 0.71 = 160 spaces
- Average Rate parking demand = (0.89+0.71) ÷ 2 = 225 x 0.80 = 180 spaces



PARKING SURVEYS (ORLANDO AREA)

The survey was performed on two days (Friday and Saturday) on January 5th and 6th, 2018 during peak winter tourist season in Orlando. It was conducted from 10:00 P.M. to 12:00 P.M. on each survey day. Based upon discussions with the hotel front desk staff, past similar project experience and field observations, this time period was determined to represent the peak parking activity/demand at each hotel. Three similar hotels were utilized as data was available from a past project and due to their similarity to the proposed hotel project. The hotels evaluated were:

- SpringHill Suites at SeaWorld - 10801 International Dr, Orlando, FL 32821
- Fairfield Inn & Suites at SeaWorld - 10815 International Dr, Orlando, FL 32821
- Courtyard South/John Young Parkway - 4120 W Taft Vineland Rd, Orlando, FL 32837

Figure 3 and **Figure 4** provide aerial images of these hotels and their parking areas.

The survey consisted of a count every 15 minutes of the vehicles parked in the parking lot (parking accumulation) of the similar hotel sites as summarized in **Table 3**. The survey parking demand = $225 \times 0.73 = \underline{165 \text{ spaces}}$.

Table 3
Parking Supply Summary (Orlando Area)

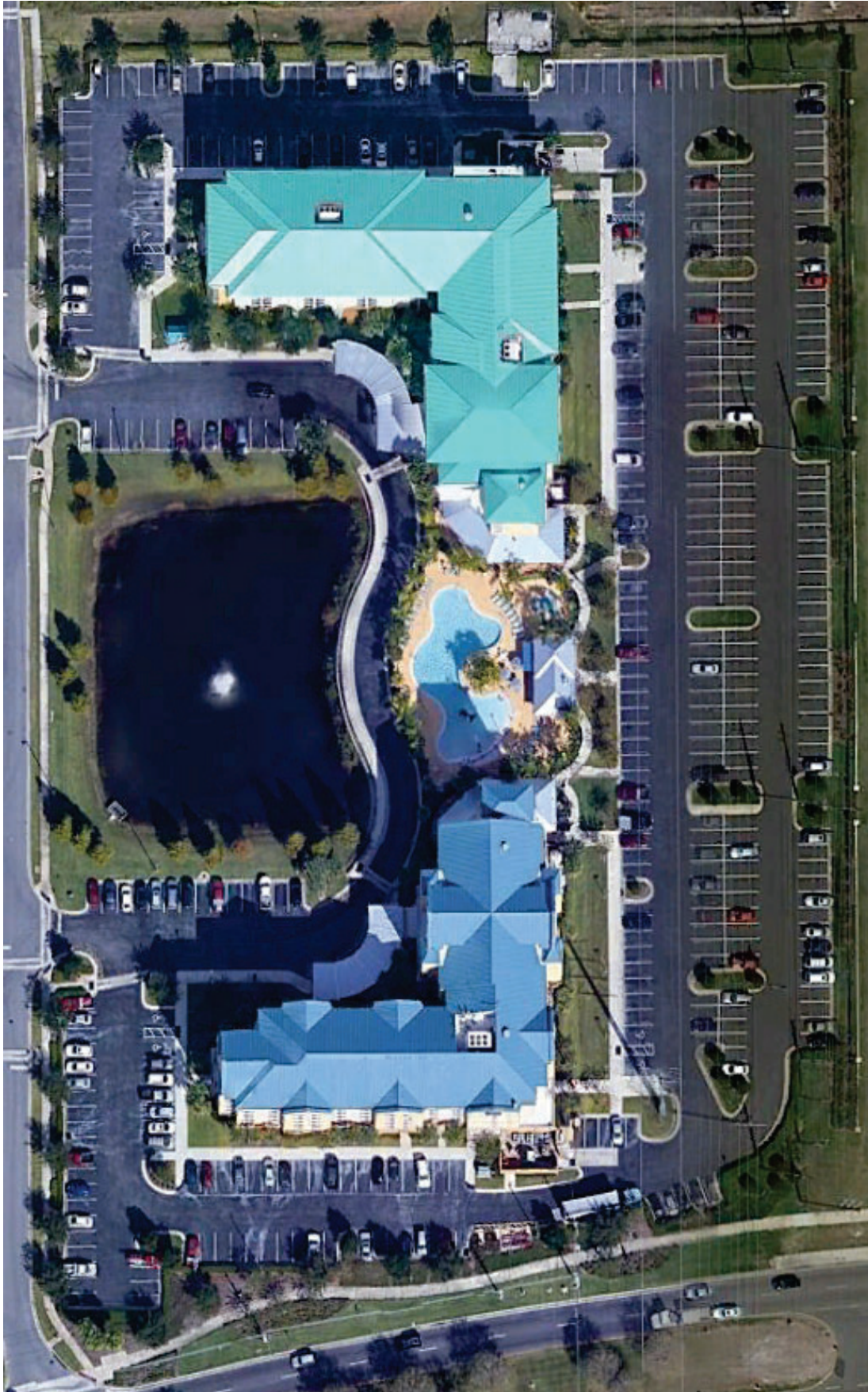
No.	Hotel Name	Total Number of Rooms	Number of Rooms Occupied	Total Number of Parking Spaces	Peak Parking Accumulation	Peak Parking Ratio ²
1	SpringHill Suites by Marriott Orlando at SeaWorld ¹	200	166	377	213	0.71
2	Fairfield Inn & Suites by Marriott Orlando at SeaWorld ¹	200	133			
3	Courtyard by Marriott Orlando South/John Young Parkway	128	88	139	66	0.75
Average						0.73

Notes:

1. Hotel share parking

2. Peak Parking Ratio = Peak Parking Accumulation/Number of Rooms Occupied

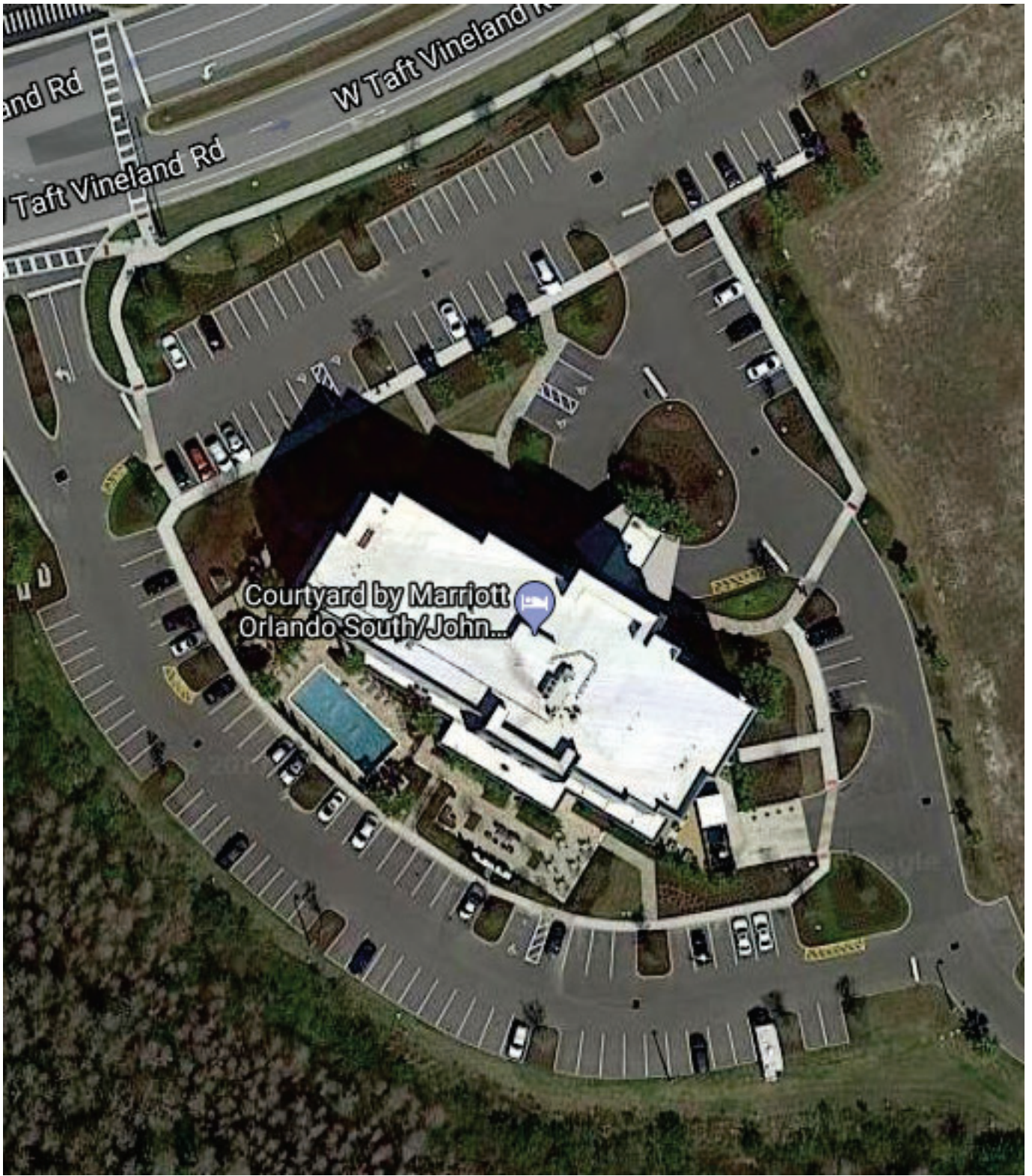




Days Inn @ 1853 McCoy Road
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Figure 3

Parking Aerial - SpringHill Suites & Fairfield Inn





Days Inn @ 1853 McCoy Road
Project № 5165

Figure 4

**Parking Aerial -
Courtyard Marriott**



PARKING SURVEYS (CITY OF BELLE ISLE AREA)

The survey was performed on two days (Friday and Saturday) on February 1st and 2nd, 2019 in the City of Belle Isle Area. The surveys were conducted from 10:00 P.M. to 12:00 P.M. on each survey day. Based upon discussions with the hotel front desk staff, past similar project experience and field observations, this time period was determined to represent the peak parking activity/demand at such hotels. The hotels evaluated were:

- Best Western – 8101 Aircenter Court, Orlando, FL 32809
- Comfort Suites – 1936 McCoy Road, Orlando, FL 32809
- Days Inn - 1853 McCoy Road, Orlando, FL 32809

Figure 5, Figure 6 and Figure 7 provide aerial images of these hotels and their parking areas.

The survey consisted of a count every 15 minutes of the vehicles parked in the parking lot (parking accumulation) of the similar hotel sites as summarized in **Table 4**. Note, the number of rooms occupied was determined by asking the front desk personnel.

Table 4
Parking Supply Summary (Belle Isle)

No.	Hotel Name	Total Number of Rooms	Number of Rooms Occupied	Total Number of Parking Spaces	Peak Parking Accumulation	Peak Parking Ratio ²
1	Best Western Airport Inn & Suites	100	96	71	43	0.45
2	Comfort Suites Orlando Airport	96	89	147	79	0.89
3	Days Inn and Suites Orlando Airport	168	160	164	95	0.59
Average						0.64

Notes:

1. Peak Parking Ratio = Peak Parking Accumulation/Number of Rooms Occupied

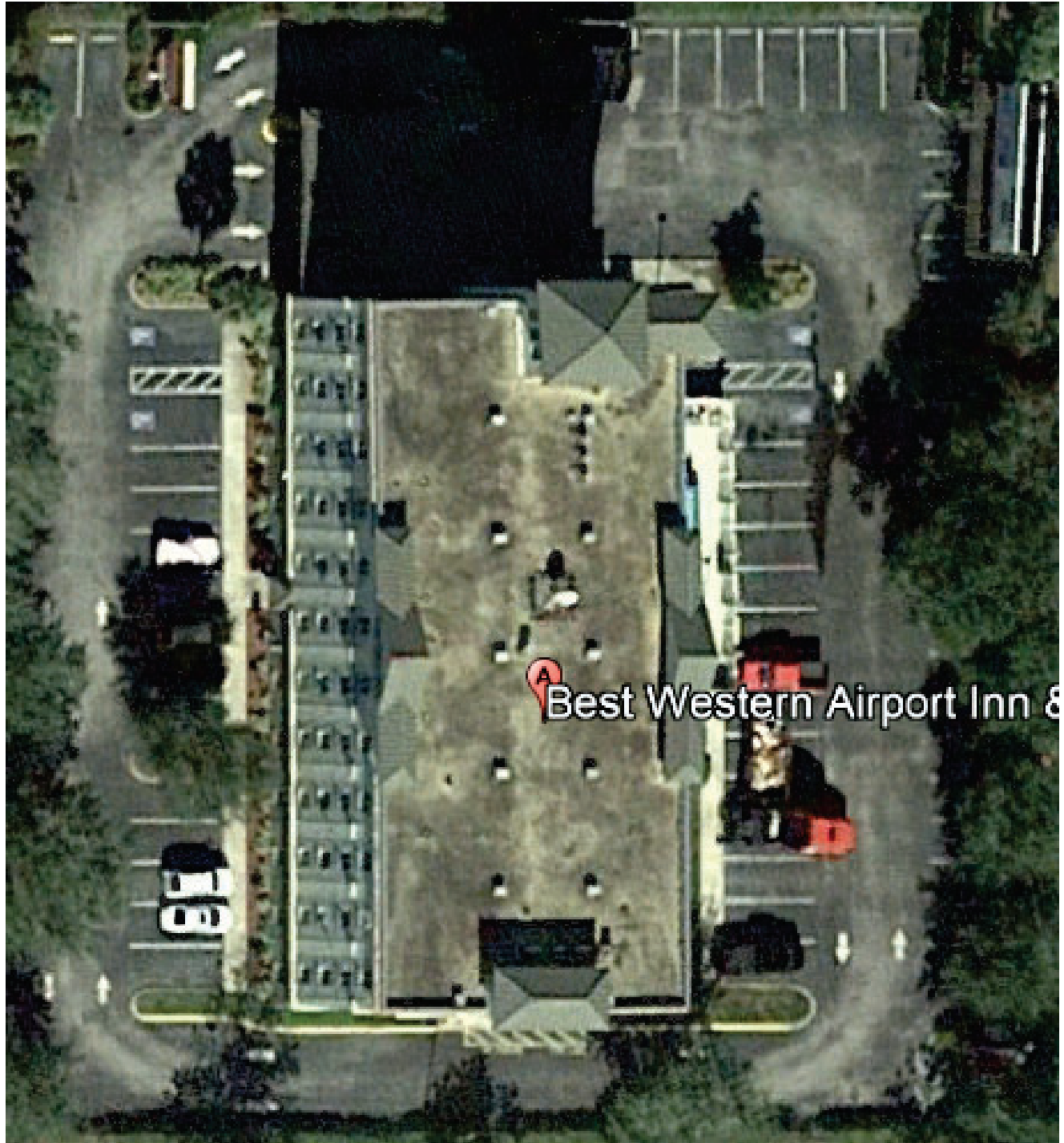


As shown, the parking survey average peak parking ratio was 0.64 and a reasonable ratio as compared to both guidance documented by Orange County, City of Orlando, ITE and past studies, as previously discussed.

Consequently, the parking survey derived parking demand is as follows:

- Parking survey derived parking demand = $225 \times 0.64 = \underline{144 \text{ spaces}}$







Days Inn @ 1853 McCoy Road
Project № 5165

Figure 6

Parking Aerial -
Comfort Suites





Days Inn @ 1853 McCoy Road
Project № 5165
Figure 7

**Parking Aerial -
Days Inn**



PARKING SURVEY (DAYS INN HOTEL)

A parking was conducted every night between March 30th, 2019 to May 2nd, 2019. The result of this three-week effort is tabulated in **Table 5**. As indicted the average paring ratio is 54%.

Table 5
Parking Supply Summary (Days Inn)

Date	Hotel Occupancy (No. of rooms)	No. of Parking Spaces Occupied	Parking Ratio
30-Mar-19	147	76	52%
31-Mar-19	107	71	66%
1-Apr-19	105	65	62%
2-Apr-19	98	54	55%
3-Apr-19	101	66	65%
4-Apr-19	116	57	49%
5-Apr-19	151	75	50%
6-Apr-19	146	71	49%
7-Apr-19	122	59	48%
8-Apr-19	125	58	46%
9-Apr-19	113	55	49%
10-Apr-19	138	68	49%
11-Apr-19	135	56	41%
12-Apr-19	147	99	67%
13-Apr-19	145	72	50%
14-Apr-19	80	54	68%
15-Apr-19	90	57	63%
16-Apr-19	113	52	46%
17-Apr-19	107	58	54%
18-Apr-19	107	74	69%
19-Apr-19	147	75	51%
20-Apr-19	124	71	57%
21-Apr-19	101	68	67%
22-Apr-19	100	65	65%
23-Apr-19	97	65	67%
24-Apr-19	105	61	58%
25-Apr-19	115	25	22%
26-Apr-19	144	68	47%
27-Apr-19	152	87	57%
28-Apr-19	91	48	53%
29-Apr-19	87	44	51%
30-Apr-19	84	45	54%
1-May-19	107	33	31%
2-May-19	116	72	62%
Average			54%



STUDY CONCLUSIONS

This study was undertaken in order to assess the parking requirements for the requested 57 room addition to the existing 168 room Days Inn Hotel located at 1853 McCoy Road in the City of Belle Isle, Florida. The proposed project, with a total of 225 rooms, will be geared specifically towards Orlando theme attractions tourist and the Orlando International Airport market. The primary aim of the study is to determine a context appropriate parking ratio and supply for the proposed addition project to support a parking ratio variance request. A major premise of this variance request is the multimodal transportation options available to hotel guests which reduce the parking demand of the hotel. Specifically, the mainstream prevalence of rideshare services, such as Uber and Lyft, and the airport shuttle bus service.

This study consisted of an evaluation of (a) the City of Belle Isle parking requirements; (b) an alternative parking calculation performed using guidance provided in the Institute of Transportation (ITE) *Parking Generation 4th Edition*; and, (c) past parking surveys at similar existing hotel sites to determine the existing parking usage during peak parking activity. Based on this evaluation, the projected parking usage was subsequently used to evaluate the adequacy of the proposed parking provisions at the subject hotel.

The following is a summary of the results of the alternative parking demand calculations as described herein:

- City of Belle Isle Requirements.....1.00 spaces/occupied room, etc. (284 spaces)
1.00 spaces/ 100 sq. ft. lobby/office

Alternative Parking Ratio:

- City of Orlando Requirements 0.50 spaces/occupied room (113 spaces)
- Orange County Requirements 0.67 spaces/occupied room (150 spaces)
- ITE Parking Rates 0.80 spaces/occupied room (180 spaces)
- Parking Survey (Orlando) 0.73 spaces/occupied room (165 spaces)
- Parking Survey (Belle Isle) 0.64 spaces/occupied room (144 spaces)
- Parking Survey (Days Inn) 0.54 spaces/occupied room (122 spaces)
- Alternative Parking Ratio 0.65 spaces/occupied room (147 spaces)**

The proposed development will provide 161 parking spaces (153 regular, 8 handicap) with a minimum parking ratio of 0.72 parking spaces/occupied room (at full occupancy). It anticipated



that this parking ratio is sufficient to accommodate the parking demand at the subject hotel given that the parking survey, conducted at three hotels in the City of Bell Isle area, indicated a parking demand ratio of 0.64 spaces/per occupied room and the three week parking survey at the subject Days Inn indicated a parking demand ratio of 0.54 spaces/per occupied room. In addition, the average parking ratio of the six (6) methods utilized to establish an alternative parking was 0.65 spaces/per occupied room.



APPENDIX A

City of Belle Isle Parking Requirements Excerpts

General business establishments: Hardware, furniture, appliances, jewelry, apparel stores, etc.	per 300 gross floor area minimum of 3 spaces
Hospitals, sanitariums, rest and convalescent homes, etc.	2 spaces for each bedroom plus 2 spaces per 5 employees
Hotels, motels, tourist courts	per 1 guestroom plus 1 space per each 100 square feet of office/lobby
Industrial use, manufacturing and warehousing	per 1,000 square feet plus 1 space per bay
Kennels and veterinary clinics	per 300 square feet of office animal shelter and run area
Medical, dental, optical clinics and offices	per 200 square feet of building area
Miniwarehouses	per 50 units to be located at office/entrance area
Mortuaries	per 4 people of chapel capacity
Office building, including business, commercial and government	per 200 square feet of floor area
Personal services establishments: Beauty salons, barbershops, banks, financing institutions	per 100 square feet for 1st floor plus per 200 square feet above 1st floor, excluding storage
Post office	4 spaces per service window plus per government vehicle plus per 4 employees

APPENDIX B

Adjacent Jurisdiction Parking Requirements Excerpts

<i>Clubs, lodges, fraternities</i>	1 space for each bedroom, plus 1 space for each 5 members
<i>Day care centers and kindergartens</i>	1 space for each 10 children, plus with a pickup and drop-off area one space for each 10 children or without a pick-up or drop-off area one space for each 5 children.
<i>General business establishments, such as hardware, furniture, appliance, jewelry, apparel stores, and all other general retail establishments of fifteen thousand (15,000) square feet gross floor area or less</i>	1 spaces for each 300 square feet of gross floor area; provided, however, that no use shall have less than 3 spaces.
<i>Hospitals, sanitariums, foster group homes, and similar institutions</i>	2 spaces for each bedroom and office building criteria.
<i>Hotels, motels, tourist courts</i>	1 space for each 1½ rooms, plus 1 space for each 100 square feet of office, plus restaurant and retail sales criteria must be met when applicable
<i>Industrial uses, manufacturing and warehousing</i>	1 space for each bay, plus 1 space for each 1,000 square feet
<i>Kennels and veterinary clinics</i>	1 space for each 300 square feet of office, animal shelter and run area
<i>Mechanical garages</i>	1 space for every employee, plus 1 space per bay or 1 space for each one thousand (1,000) square feet if no bays
<i>Medical dental, optical clinics and offices</i>	1 space for each employee, plus 2 spaces for each examination room

Hotels & motels - total all of the following:

Guest Rooms	0.5:lodging unit	1:lodging unit
Restaurant, cocktail lounge	5:1000 sf GFA	10:1000 sf GFA
Banquet/meeting rooms	0.25:seat	0.5:seat
Other uses: ½ the number of spaces ordinarily required by the land use category		
Laboratories, medical & dental	2.5:1000 sf GFA	4:1000 sf GFA
Libraries	2.5:1000 sf GFA	4:1000 sf GFA
Manufacturing & processing	1.5:1000 sf GFA	3.5:1000 sf GFA
Museums & art galleries	2.5:1000 sf GFA	4:1000 sf GFA
Offices - general, government, postal	2.5:1000 sf GFA	4:1000 sf GFA
Offices/Clinics - medical, dental	2.8:1000 sf GFA	5.3:1000 sf GFA
Offices - telemarketing, call center	2.5:1000 sf GFA	6:1000 sf GFA
Open air markets	2.5:1000 sf BSA	4:1000 sf BSA

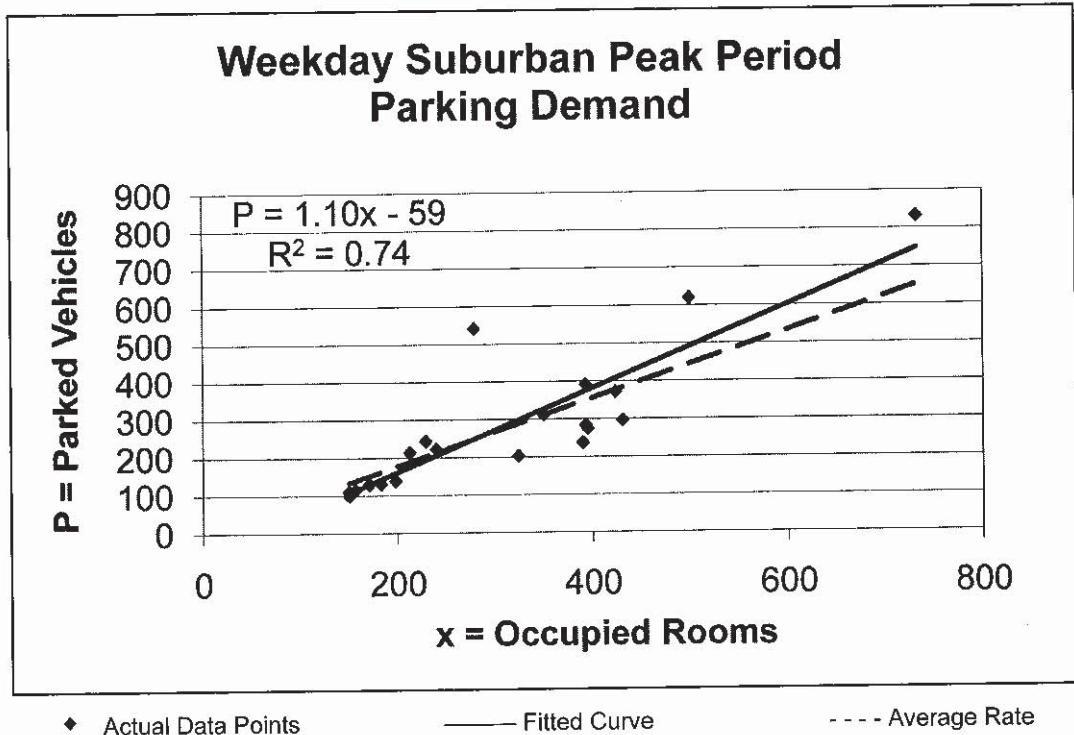
APPENDIX C

ITE Park Generation 4th Edition Excerpts

Land Use: 310 Hotel

**Average Peak Period Parking Demand vs. Occupied Rooms
On a Weekday
Location: Suburban**

Statistic	Peak Period Demand
Peak Period	12:00–1:00 p.m.; 7:00–10:00 p.m.; 11:00 p.m.–5:00 a.m.
Number of Study Sites	20
Average Size of Study Sites	315 occupied rooms
Average Peak Period Parking Demand	0.89 vehicles per occupied room
Standard Deviation	0.31
Coefficient of Variation	35%
95% Confidence Interval	0.75–1.02 vehicles per occupied room
Range	0.61–1.94 vehicles per occupied room
85th Percentile	1.08 vehicles per occupied room
33rd Percentile	0.72 vehicles per occupied room

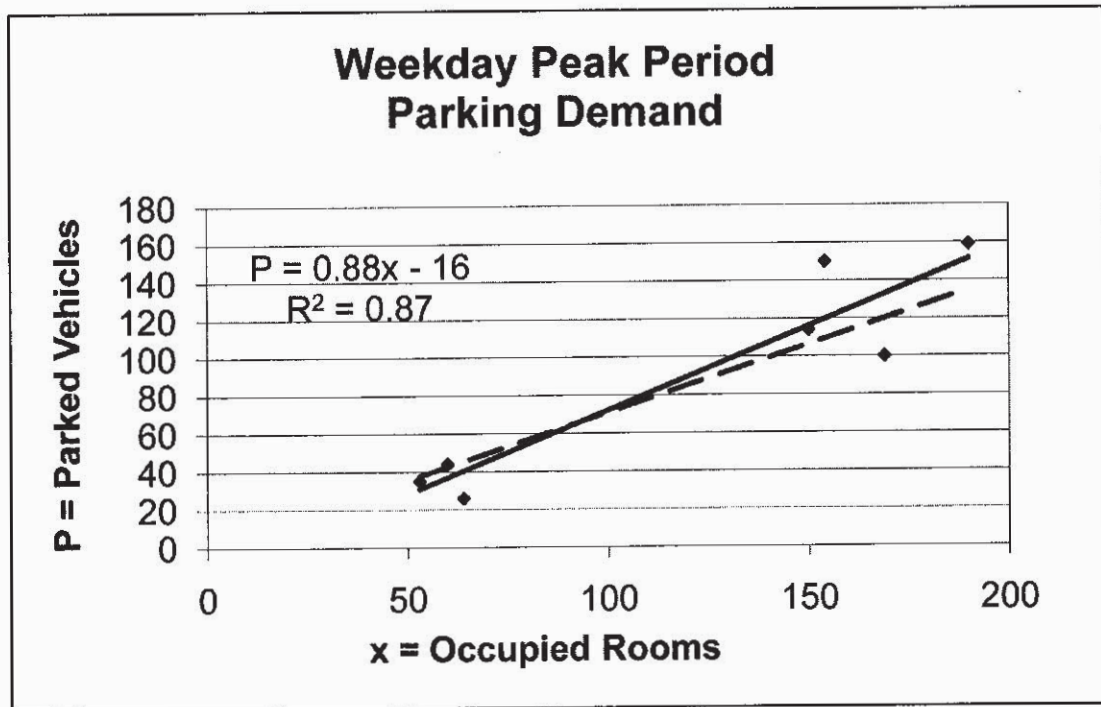


Land Use: 320 Motel

Average Peak Period Parking Demand vs. Occupied Rooms On a Weekday

Statistic	Peak Period Demand
Peak Period	Varies*
Number of Study Sites	7
Average Size of Study Sites	120 occupied rooms
Average Peak Period Parking Demand	0.71 vehicles per occupied room
Standard Deviation	0.18
Coefficient of Variation	26%
Range	0.41–0.97 vehicles per occupied room
85th Percentile	0.85 vehicles per occupied room
33rd Percentile	0.66 vehicles per occupied room

* Refer to the "Database Description" section for an explanation of the undefined peak parking period.



◆ Actual Data Points — Fitted Curve - - - Average Rate