

~~XXXXXXXXXX~~
UNLIMITED BIKING - CUP & DP
Traffic Impact Statement & Parking
Analysis

TRAFFIC IMPACT STATEMENT & PARKING ANALYSIS

Prepared for
Unit 3
Islander Center
2407 Periwinkle Way
City of Sanibel, Lee County, Florida

Prepared By
James H. Strothers, PE
FL. Lic #42292
46 Timberland Circle S
Fort Myers, FL 33919

File: 99-130-3

Date: 10-8-20



1 CONTENTS

Project Description
Sources of Information
Trip Generation
Summary
Conclusion
Parking Analysis
Conclusion
Site Plan

List of Tables

Table 1 Unit Data
Table 2 AM Trip End Generations
Table 3 PM Trip End Generations
Table 4 Internal Trip Capture
Table 5 External Trips Generated by Site
Table 6 Existing Parking Computations
Table 7 Future Parking Computations

2 PROJECT DESCRIPTION

This project is to determine the impact on the traffic that would be generated by a change in use of Suite 3 of the Islander Center. The report also analyzes the parking requirement of the site with the new change of use.

Currently there are 6 units in this center consisting of multiple uses. Information was obtained from a previous study by this office on the various uses and square footage breakdown. An onsite inspection was made to confirm the current tenants and use of each of the units. This information is listed in Table 1. In order to account for trip generations and parking requirements all units that are currently vacant have been designated as retail uses. Various land use codes from the ITE Trip Generation Manual were used for this project. The attached Site Plan prepared by this office dated 10-8-20 is used as reference of the available parking spaces for the parking analysis.

The use of Suite 3 is proposed as a bike rental facility. The tenant's proposal is to have one hundred (100) bikes at this location.

The ITE Trip Generation Manual does not list this specific type of use. Accordingly, it was assigned Land Use Code 820 Specialty Retail.

Table 1			
	UNIT DATA		
	2407 Periwinkle Way	Islander Center	
	Suite	Current Tenant	
		Sq. Ft. Floor Area	
	1	Sanibel Sprout	980
	2	Concierge Medicine	820
	3	Vacant (subject suite)	1452
	4	Cape Nails	843
	5	Clam Shack	1587
	6	Vacant	2214
	Total		7896

3 SOURCES OF INFORMATION

The following sources of information were used as part of this Traffic Impact Statement.

- ITE Trip Generation Manual (10th Edition)
- ITE Trip Generation Handbook (3rd Edition)
 - Land Use Code 820
 - Land Use Code 720
 - Land Use Code 933
 - Land Use Code 918
 - Land Use Code 932

Sanibel Public Works Traffic Count 2014

4 TRIP GENERATION

Review of the most current Traffic Count from the City of Sanibel for Periwinkle Way west of Palm Ridge Road indicated the peak AM traffic occurred at 11:00 AM and the peak PM volume at 12:00 PM. The various Land Use Codes were applied to the individual units for both the current usage and the proposed use of Suite 3. The results of these calculations provided the total trips generated for the site along with the distribution for entering and exiting. It should be noted that the Land Use Code for Suite 3 does not change from the existing use to the future use. Therefore, the trip generations would be the same for both the existing and proposed use. Calculations were for both the AM and PM Peak Hour of Adjacent Street Traffic. These values are shown in Tables 2 and 3.

As mentioned this Center contains a mix of different uses. With numerous uses within a site there are internal trips generated between the different uses. This basically means a trip generated externally for one use moves to another use within the site. This does not generate an external trip for the second use. This site is also located adjacent to a major Shared Use Path which would allow bicycle traffic being able to reach various uses within the center. Applying the Internal Capture computation including Non-Motorized Traffic a final trip generation was obtained for both the existing and future conditions. The results are shown in Table 4.

Table 2

TRIP END GENERATIONS

Calculated for: Islander Center
 ITE Land Use Varies
 Average Vehicle Trips Ends (AVTE) vs: 1000 Sq. Ft. Floor Area

On a: Weekday
 AM Peak Hour of Generator

Suite	Sq. Ft. Floor Area	ITE Land Use	AVTE	Trips	% Enter	Trips	% Exit	Trips
1	980	933	47.66	46.71	53	24.75	47	21.95
2	820	720	3.53	2.89	62	1.79	38	1.10
3	1452	820	3.00	4.36	54	2.35	46	2.00
4	843	918	1.21	1.02	54	0.55	46	0.47
5	1587	932	14.04	22.28	60	13.37	40	8.91
6	2214	820	3.00	6.64	54	3.59	46	3.06
			3.00					
Total	7896			83.90		46.41		37.49
				83		46		37
		Office		2		1		1
		Retail		12		6		5
		Resturant		68		38		30

Table 3

TRIP END GENERATIONS

Calculated for: Islander Center
 ITE Land Use Varies
 Average Vehicle Trips Ends (AVTE) vs: 1000 Sq. Ft. Floor Area

On a: Weekday
 PM Peak Hour of Generator

Suite	Sq. Ft. Floor Area	ITE Land Use	AVTE	Trips	% Enter	Trips	% Exit	Trips
1	980	933	48.70	47.73	50	23.86	50	23.86
2	820	720	4.10	3.36	39	1.31	61	2.05
3	1452	820	4.21	6.11	50	3.06	50	3.06
4	843	918	1.94	1.64	38	0.62	62	1.01
5	1587	932	17.41	27.63	52	14.37	48	13.26
6	2214	820	4.21	9.32	50	4.66	50	4.66
Total	7896			95.79		47.88		47.91
				95		47		47
		Office		3		1		2
		Retail		17		8		8
		Restaurant		75		38		37

Table 4

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Islander Center	Organization:	
Project Location:	2407 Periwinkle Way	Performed By:	James H. Strothers, PE
Scenario Description:	Existing & Future	Date:	10/5/2020
Analysis Year:		Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				2	1	1
Retail				11	6	5
Restaurant				68	38	30
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
Total				81	45	36

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.05		1%	1.08		3%
Retail	1.14		3%	1.09		3%
Restaurant	1.90		1%	1.88		1%
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail	0					
Restaurant	0	1				
Cinema/Entertainment	0	0	0			
Residential	0	0	0			
Hotel	0	0	0			

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	142	80	62
Internal Capture Percentage	3%	3%	3%
External Vehicle-Trips ³	77	43	34
External Transit-Trips ⁴	0	0	0
External Non-Motorized Trips ⁴	2	1	1

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	0%	0%
Retail	14%	20%
Restaurant	1%	2%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

² Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

³ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

⁴ Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Islander Center
Analysis Period:	AM Street Peak Hour

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.05	1	1	1.08	1	1
Retail	1.14	6	7	1.09	5	5
Restaurant	1.90	38	72	1.88	30	56
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	1	0	0	0
Retail	1		1	0	1	0
Restaurant	17	8		0	2	2
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	17	0	0	0
Retail	0		36	0	0	0
Restaurant	0	1		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	14	0		0
Hotel	0	0	4	0	0	

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	1	1	1	0	0
Retail	1	6	7	5	0	0
Restaurant	1	71	72	37	0	1
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	1	1	1	0	0
Retail	1	4	5	4	0	0
Restaurant	1	55	56	29	0	1
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
²Person-Trips
³Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Islander Center	Organization:	
Project Location:	2407 Periwinkle Way	Performed By:	James H. Strothers, PE
Scenario Description:	Existing & Future	Date:	10/5/2020
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				3	1	2
Retail				16	8	8
Restaurant				75	38	37
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
Total				94	47	47

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.05		1%	1.08		3%
Retail	1.14		3%	1.14		3%
Restaurant	1.90		1%	1.88		1%
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		100	100			
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail	0					
Restaurant	0	5				
Cinema/Entertainment	0	0	0			
Residential	0	0	0			
Hotel	0	0	0			

	Total	Entering	Exiting
All Person-Trips	163	82	81
Internal Capture Percentage	10%	10%	10%
External Vehicle-Trips ³	82	41	41
External Transit-Trips ⁴	0	0	0
External Non-Motorized Trips ⁴	2	1	1

Land Use	Entering Trips	Exiting Trips
Office	0%	0%
Retail	56%	33%
Restaurant	4%	7%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

³Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

⁴Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Islander Center
Analysis Period:	PM Street Peak Hour

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.05	1	1	1.08	2	2
Retail	1.14	8	9	1.14	8	9
Restaurant	1.90	38	72	1.88	37	70
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		3	0	2	0
Restaurant	2	29		6	13	5
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	1	0	0	0
Retail	0		21	0	0	0
Restaurant	0	5		0	0	0
Cinema/Entertainment	0	0	2		0	0
Residential	1	1	10	0		0
Hotel	0	0	4	0	0	

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	1	1	1	0	0
Retail	5	4	9	4	0	0
Restaurant	3	69	72	36	0	1
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	2	2	2	0	0
Retail	3	6	9	5	0	0
Restaurant	5	65	70	34	0	1
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P
²Person-Trips
³Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

5 IMPACT TO EXISTING TRAFFIC

To check the impact of any projected increase in externally generated trips would have on the existing traffic on Periwinkle Way the most *current* (2014) traffic counts from the City of Sanibel were utilized. The information was obtained for Periwinkle Way west of Palm Ridge Road. This study showed a total AM Peak Hour volume of 907 vehicles and a PM Peak Hour volume of 938 vehicles.

Studies have indicated not all traffic entering or exiting a site is necessarily new traffic *added* to the street system. The actual amount of new traffic is dependent upon the purpose of the trip and the route used from its origin to its destination. Multiple use sites tend to attract a portion of their trips from traffic passing the site on the way from an origin to an ultimate destination. Accordingly, these "Pass-By" trips do not add new traffic to the adjacent street system and would reduce the total external trips generated by the site.

A "Non-Pass-By" trip is simply any trip generated by a site that is not a "Pass-By" trip. Information obtained for Land Use Code 820 shows that an average "Non-Pass-By" trips is 34 percent of the total external trips generated. Using this data, it was determined under the existing conditions 26 of the AM trips and 27 of the PM trips would be "Non-Pass-By" trips. Since the future use of Suite 3 is the same as the proposed use the trips generated by the site would be the same. See Table 5.

As a result, there is no additional traffic to be added into the existing traffic on Periwinkle Way for the proposed use of Suite 3.

6 SUMMARY

Summarizing the results of the calculations it was found that the proposed change to allow the proposed use of Suite 3 adds no additional trips for this site.

7 CONCLUSIONS

The conclusion of this analysis is that the proposed change from the current retail to the proposed bike rental retail use would have no impact on total traffic generated for this site and does not adversely affect traffic flow to a significantly greater extent than permitted uses.

Table 5

EXTERNAL TRIPS GENERATED BY SITE

Calculated for: Islander Center
 ITE Land Use 820

On a: Weekday
 Peak Hour of Generator

Non-Pass-by percentage of total trips: 34 percent

Existing AM

	Total	Entering	Exiting
External Vehicle Trips	79	44	35
Non-Pass-by trips	27	15	12

Existing PM

	Total	Entering	Exiting
External Vehicle Trips	81	41	40
Non-Pass-by trips	28	14	14

Future AM

	Total	Entering	Exiting
External Vehicle Trips	79	44	35
Non-Pass-by trips	27	15	12

Future PM

	Total	Entering	Exiting
External Vehicle Trips	81	41	40
Non-Pass-by trips	28	14	14

8 PARKING ANALYSIS

The Site Plan for this project shows there are 58 total spaces provided on the site. These spaces are broken down into 55 standard spaces and 3 Handicap spaces.

The parking requirements were computed to determine the parking spaces to comply with Section 126-1361 of the Sanibel Code for the present usages of the units. For calculation purposes the units currently vacant were considered to be retail use. It should be noted that the change of use designation of Suite 6 increased the required parking by 2 spaces from the previous report by this office due to now being vacant. Table 6 shows the result that using the direct application of the code the minimum required spaces would be 61. Based upon the internal capture, which includes bicycle trips, a reduction of 1 space could be applied to reduce the actual parking demand to 60 during the AM hour and a reduction of 6 to reduce the actual PM parking demand to 55..

Computing the required spaces with the proposed change of use for Suite 3 it was found 65 spaces would be required due to the proposed change of use. This is shown in Table 7. Reducing for internal capture by 1 brings the AM parking demand to 64. Reducing for the internal capture by 6 brings the PM parking demand to 59 spaces

Using the information obtained in the trip generations it was found the peak traffic occurs during the PM Peak Hour. Since this is the peak of trip generation it can be estimated this is also the peak demand for parking. It is shown that 10% of the trips are internal capture which leaves 90% generated externally. Using the externally generated percentage it can be estimated the peak demand for parking would be 59 spaces. This would occur at the PM Peak Hour of Adjacent Street Traffic.

9 CONCLUSION

In conclusion applying strict compliance of the Sanibel LDC for off street parking would require a total of 65 spaces for the proposed change of use of Suite 3 also accounting for the change of use of Suite 6.

Taking a practical approach to the parking requirements applying additional factors of internal trip capture, bicycle trips and Peak Hour Traffic it is shown that 59 spaces would be required. It should be noted again that a contributor to this increase in required parking as determined by a previous study by this office last dated June 20, 2016 is the change of use assigned to Suite 6. This use changed from office to now vacant retail which required 2 additional parking spaces, Disregarding

the increase due to the change of use of Suite 6 this site would require 57 spaces. As previously stated there are 58 spaces available on the site.

Therefore, considering all the above factors and the deminimis increase of one space the site has adequate parking for the proposed change of use for Suite 3.

Table 6

PARKING COMPUTATIONS

Calculated for:

Islander Center

Current Uses

Minimum per Code per unit

Suite	Tenant	Sq. Ft. Floor Area	Use	Req. Spaces
1	Sanibel Sprout	980	Food Store	8.0
2	Concierge Medicine	820	Medical Office	5.0
3	Vacant	1452	Retail	7.3
4	Cape Nails	843	Service	5.0
5	Clam Shack	1587	Resturant (50 seats)	25.0
6	Vacant	2214	Retail	11.1
Total		7896		61.4
	PM Internal Capture Trips		10%	6
	Adjusted PM Parking Required			55
	Total Spaces per Site plan			58

Table 7

PARKING COMPUTATIONS

Calculated for: Future Uses	Minimum per Code per unit	Islander Center		
Suite	Tenant	Sq. Ft. Floor Area	Use	Req. Spaces
1	Sanibel Sprout	980	Food Store	8.0
2	Concierge Medicine	820	Medical Office	5.0
3	Unlimited Biking	1452	Bike Rental (100 units)	11.0
4	Cape Nails	843	Service	5.0
5	Clam Shack	1587	Resturant (50 seat)	25.0
6	Vacant	2214	Retail	11.1
Total		7896		65.1
	PM Internal Capture Trips	10%		6
	Adjusted PM Parking Required			59
	Total Spaces per Site plan			58

