

# Harbour Isle Shoppes & Cumberland Farms Site Plan Location Map



# Harbour Isle Shoppes (Previously Approved) & Cumberland Farms (Proposed) Site Plan

## Harbour Isle Shoppes Land Uses

High Turnover Sit-Down Restaurant

Apparel Store

Liquor Store

## Cumberland Farms Land Uses

Convenience Store with Gas Pumps

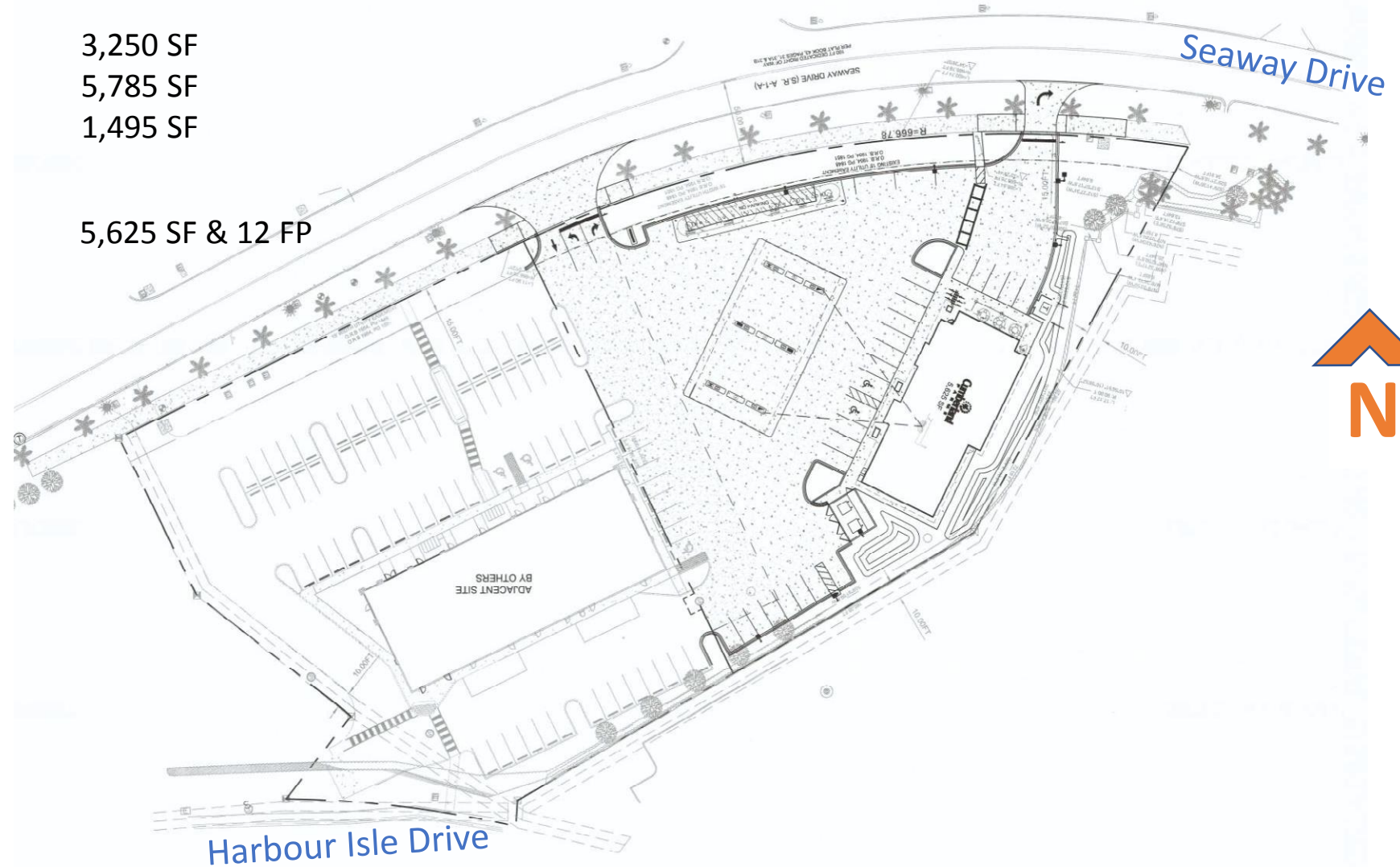
3,250 SF

5,785 SF

1,495 SF

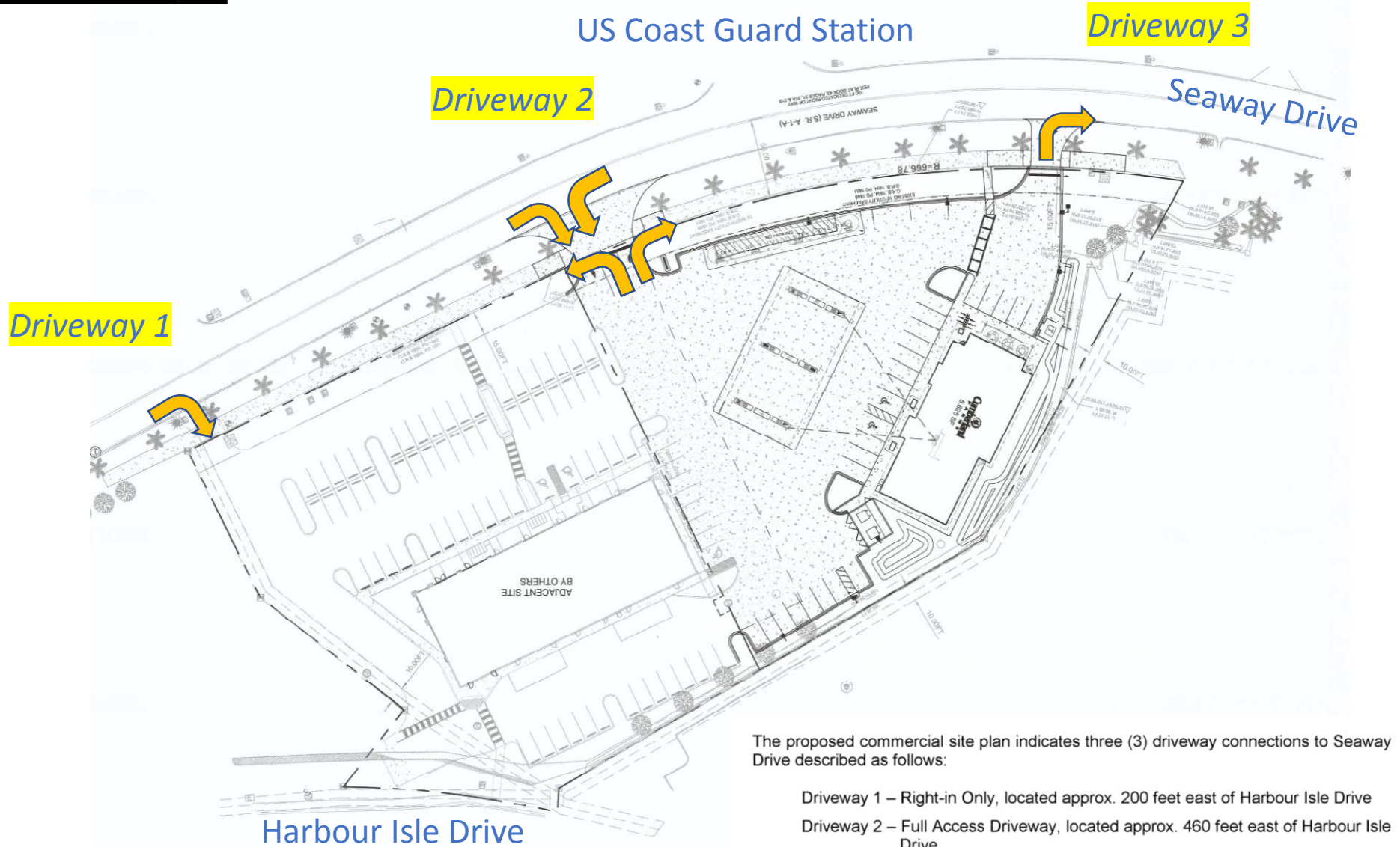
5,625 SF & 12 FP

US Coast Guard Station



# Harbour Isle Shoppes & Cumberland Farms

## Proposed Driveways



The proposed commercial site plan indicates three (3) driveway connections to Seaway Drive described as follows:

- Driveway 1 – Right-in Only, located approx. 200 feet east of Harbour Isle Drive
- Driveway 2 – Full Access Driveway, located approx. 460 feet east of Harbour Isle Drive
- Driveway 3 – Right-Out Only, located approx. 720 feet east of Harbour Isle Drive

# Trip Generation Calculations

Land Use	Intensity		Daily Trips	AM Peak Hour			PM Peak Hour			
				Total	In	Out	Total	In	Out	
<b><u>Proposed Site Traffic</u></b>										
High Turnover Sit-Down Rest	3.250	1000 SF	365	32	18	14	32	20	12	
Apparel Store	5.785	1000 SF	384	6	5	1	24	12	12	
Conv. Mrkt w/ Gas Pumps	5.625 ksf + 12 f.p.		3,361	235	118	117	235	118	117	
Liquor Store	1.495	1000 SF	152	1	1	0	26	13	13	
Subtotal			4,110	273	141	132	291	150	141	
<b><u>Internal Capture</u></b>										
	AM	PM	DAILY							
High Turnover Sit-Down Rest	6.3%	12.5%	12.5%	46	2	1	1	4	2	2
Apparel Store	0.0%	8.3%	8.3%	32	0	0	0	2	1	1
Conv. Mrkt w/ Gas Pumps	1.3%	3.4%	3.4%	114	3	1	2	8	4	4
Liquor Store	0.0%	7.7%	7.7%	12	0	0	0	2	1	1
Subtotal	1.8%	4.8%	4.7%	192	5	2	3	14	7	7
<b><u>Pass-By Traffic</u></b>										
High Turnover Sit-Down Rest	43.0%		137	13	7	6	12	8	4	
Apparel Store	34.0%		120	2	2	0	7	4	3	
Conv. Mrkt w/ Gas Pumps	78.0%		2,533	181	91	90	177	89	88	
Liquor Store	34.0%		48	0	0	0	8	4	4	
Subtotal			2,790	196	100	96	196	101	95	
<b><i>NET PROPOSED TRIPS</i></b>										
<b>Total Proposed Driveway Volumes</b>										
			1,128	72	39	33	81	42	39	
			3,918	268	139	129	277	143	134	
<b>NET EXTERNAL TRIPS (FOR THE PURPOSES OF CONCURRENCY)</b>										
			1,128	72	39	33	81	42	39	
<b>NET CHANGE IN DRIVEWAY VOLUMES</b>										
			3,918	268	139	129	277	143	134	

317 vs 291

16 vs 14

204 vs 196

97 vs 81

301 trips vs 277 trips – 24 fewer trips reported

# Trip Generation Calculation

2014 FDOT Trip Generation equation for Convenience Market with Gas Pumps

Daily =  $256.7 \times FP - 144.5 \times kft^2 = 2267$  trips

AM Peak Hour = No data provided

PM Peak Hour =  $12.3 \times FP + 15.5 \times$  **235 trips**

2017 ITE Trip Generation equation for Super Convenience Market/Gas Station

Daily =  $230.52 \times FP = 2,767$  trips

AM Peak Hour =  $28.08 \times FP = 337$  trips

PM Peak Hour =  $22.96 \times FP =$  **276 trips**

	Daily Driveway Volume	AM Peak-Hour Driveway Volume	PM Peak-Hour Driveway Volume
Applicant's May 2019 TIA	4,058	269	301
KH Calculations	3,455	376	334
% Difference	<b>15% decrease</b>	<b>40% increase</b>	<b>11% increase</b>

# Trip Generation Calculation

2014 FDOT Trip Generation equation for Convenience Market with Gas Pumps

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AM Peak Hour = No data available

PM Peak Hour =  $12.3 \times FP + 15.5 \times kft^2 = 235$  trips

“applicant utilized PM Peak Hour projected volume”

2017 ITE Trip Generation equation for Super Convenience Market/Gas Station

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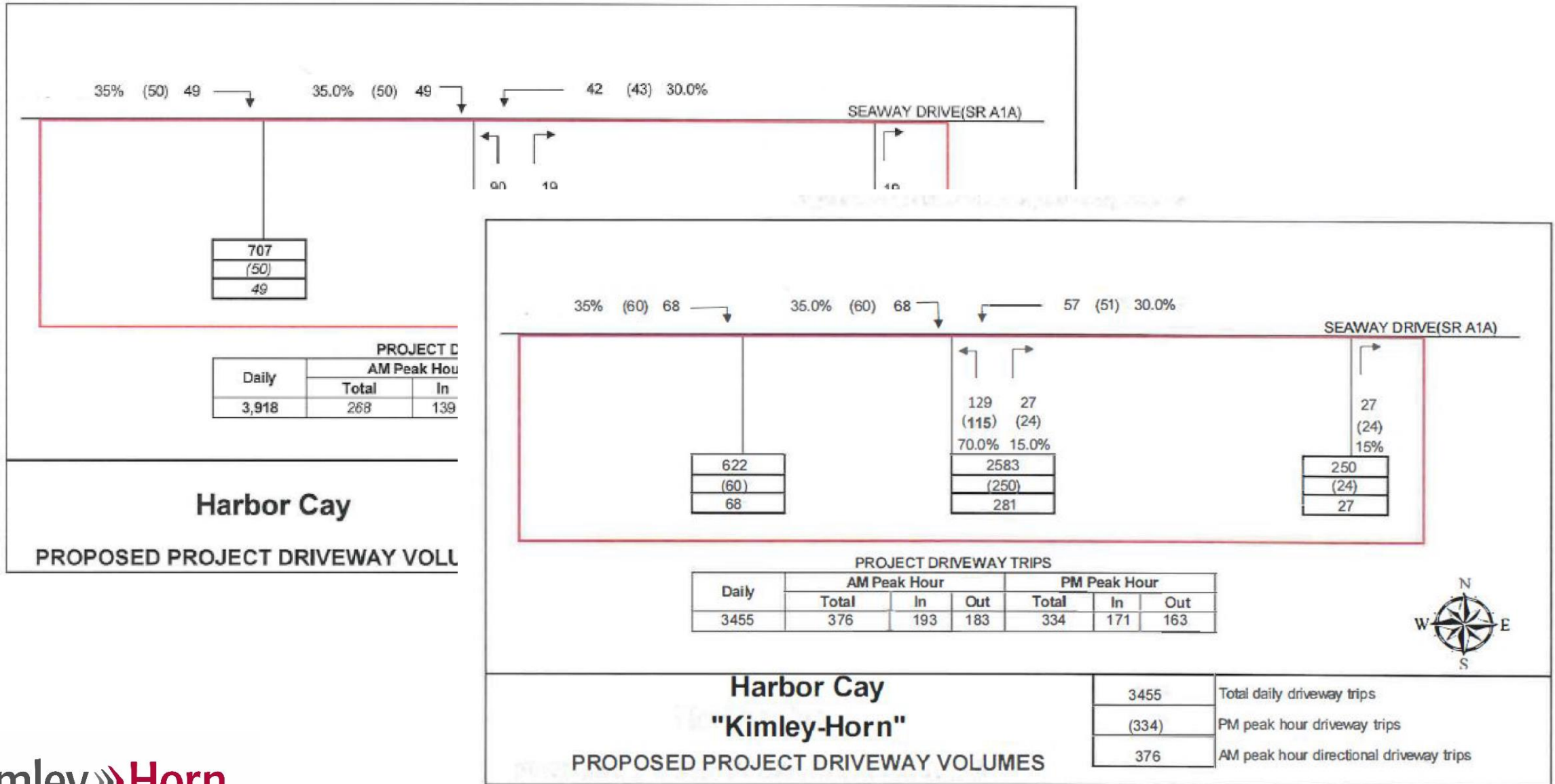
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Applicant's May 2019 TIA	4,058	269	301
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% Difference	15% decrease	40% increase	11% increase

107 trips greater than applicant projected

# Projected Driveway Turning Movements



# Seaway Drive Capacity Evaluation

Roadway From                      To		Roadway Attributes <sup>1</sup>				Peak Hour Directional Maximum Service Volume <sup>2</sup>	Existing Peak Season Traffic Conditions			
		Functional Classification	Area Type	Adopted LOS Standard	Number of Lanes		Volumes <sup>3</sup>		Max V/C Ratio	LOS
							NB / EB	SB / WB		
<b>SR A1A South</b>										
Ocean Drive	Binney Drive	Minor Arterial	U	D	2U	600	718	852	1.42	F
Binney Drive	S Causeway Park	Minor Arterial	U	D	2U	790	718	852	1.08	F

Note:

1. The roadway attributes were obtained from the St. Lucie County Transportation Element and the latest FDOT Federal Functional Classification and Urban Area Boundaries Map for St. Lucie County.
2. Peak Hour Directional Maximum Service Volumes were determined using St. Lucie County Transportation Planning Organization (TPO) Traffic Counts and Level of Service Report Fall 2018.
3. Existing peak season traffic volumes are based on FDOT 2018 Synopsis Report for station 940115 along SR A1A in the City of Fort Pierce.

# Left Turn Lane Warrant Evaluation

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

2-lane roadway (English)

INPUT

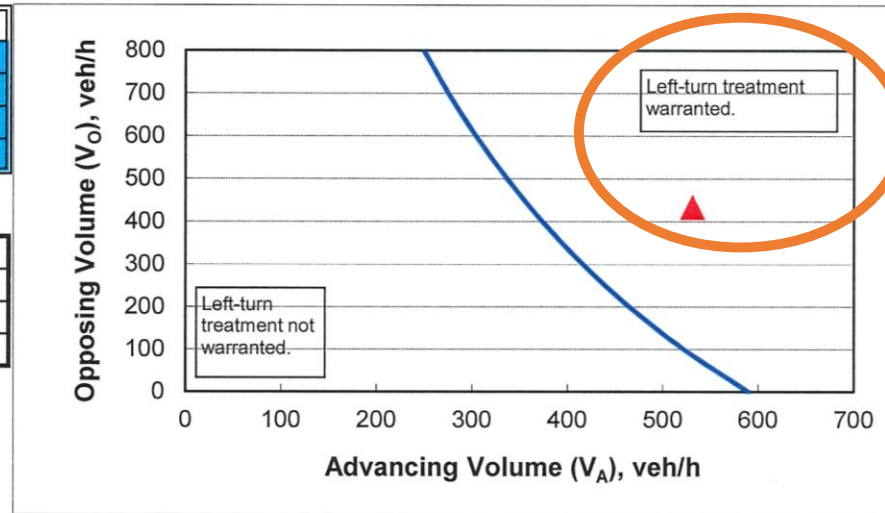
Variable	Value
85 <sup>th</sup> percentile speed, mph:	35
Percent of left-turns in advancing volume ( $V_A$ ), %:	11%
Advancing volume ( $V_A$ ), veh/h:	531
Opposing volume ( $V_O$ ), veh/h:	433

OUTPUT

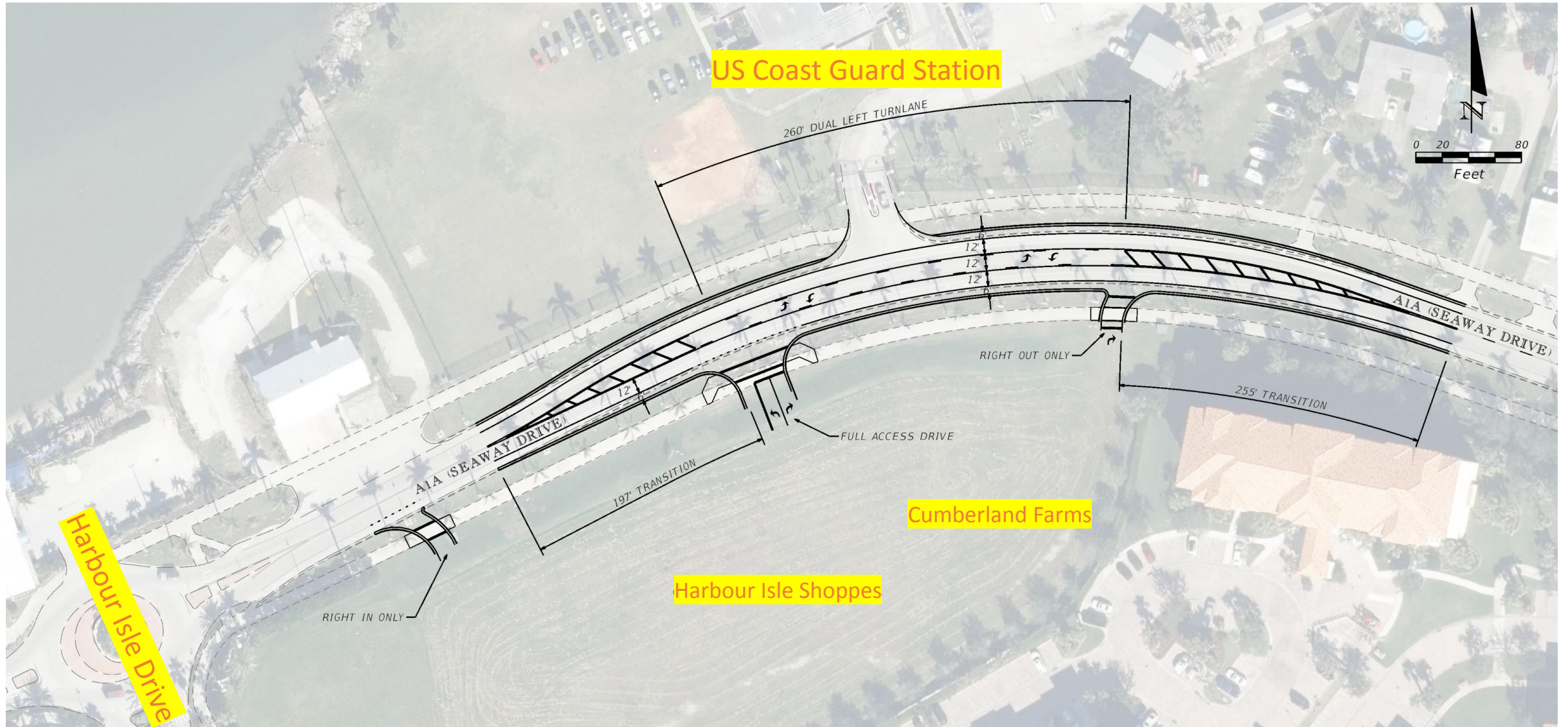
Variable	Value
Limiting advancing volume ( $V_A$ ), veh/h:	361
<b>Guidance for determining the need for a major-road left-turn bay:</b>	
<b>Left-turn treatment warranted.</b>	

CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9



# Conceptual Seaway Drive Left Turn Lane



# Conceptual Seaway Drive Left Turn Lane

