

Date: November 3, 2016

To: Jason Learned (FDOT District 5)

From: Tim Palermo

RE: **DRAFT** Updated Special Attractions for CFRPM 6.1

Introduction

Given their dated, pre-recession provenance, limited documentation, and suspiciously illogical values, the special attraction production variables contained in CFRPM were updated for release 6.1. These values are used by the model to produce person trips associated with Central Florida's exceptional themed attractions, convention center, airport, cruise port, and water parks. These person trips are associated with substantially higher auto occupancies during the mode choice step later in the model stream. The original CFRPM production variables, which did not change for any of the model's future year scenarios, are shown on **Table 1**.

Table 1
Original CFRPM Special Attraction Productions

Description	2010	2015	2020	2025	2030	2035	2040	2045
Orlando International Airport	89,038	89,038	89,038	89,038	89,038	89,038	89,038	89,038
Orlando International Airport exp	-	-	-	-	-	-	-	-
Orange County Convention Center	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Orange County Convention Center exp	-	-	-	-	-	-	-	-
Universal Orlando	84,770	84,770	84,770	84,770	84,770	84,770	84,770	84,770
Universal Orlando Expansion	-	-	-	-	-	-	-	-
Sea World/Aquatica	17,270	17,270	17,270	17,270	17,270	17,270	17,270	17,270
Typhoon Lagoon	2,542	2,542	2,542	2,542	2,542	2,542	2,542	2,542
Pleasure Island / Downtown Disney	17,662	17,662	17,662	17,662	17,662	17,662	17,662	17,662
MGM Studios	15,709	15,709	15,709	15,709	15,709	15,709	15,709	15,709
Animal Kingdom	13,105	13,105	13,105	13,105	13,105	13,105	13,105	13,105
EPCOT Center	31,450	31,450	31,450	31,450	31,450	31,450	31,450	31,450
Blizzard Beach	3,903	3,903	3,903	3,903	3,903	3,903	3,903	3,903
Magic Kingdom	28,339	28,339	28,339	28,339	28,339	28,339	28,339	28,339
Kennedy Space Center	5,090	5,090	5,090	5,090	5,090	5,090	5,090	5,090
Port Canaveral	15,336	15,336	15,336	15,336	15,336	15,336	15,336	15,336

Theme and Water Park Productions

The 2010 and 2015 editions of the annually-published *Global Attractions Attendance Report* were used to update the level of theme park productions contained the CFRPM. **Table 2** below shows the amount of theme and water park related productions for 2010 and 2015. The production variables

were calculated by dividing reported annual attendance by an annualization factor and multiplying by two in order to account for each trip end associated with park attendance.

Table 2
Updated Theme Park Variables

Theme Park	2010 Productions (A/B)*2	2010 Global Attractions Attendance Report (A)	2015 Productions (A/B)*2	2015 Global Attractions Attendance Report (A)	Annualization Factor (B)
Universal Orlando	65,063	11,874,000	100,696	18,377,000	365
Sea World/Aquatica	36,164	6,600,000	34,942	6,377,000	365
Typhoon Lagoon	11,988	2,038,000	13,494	2,294,000	340
Hollywood Studios	52,619	9,603,000	59,332	10,828,000	365
Animal Kingdom	53,074	9,686,000	59,847	10,922,000	365
EPCOT Center	59,315	10,825,000	64,647	11,798,000	365
Blizzard Beach	11,012	1,872,000	12,394	2,107,000	340
Magic Kingdom	92,997	16,972,000	112,285	20,492,000	365

Source: 2010 and 2015 Global Attractions Attendance Report, hemed Entertainment Association/AECOM

It was determined that, given central Florida's long, consistent history of escalating theme park attendance, it was not realistic to keep these values static across future scenario years as was done previously. Therefore, each theme park was grown using a compound annual growth rate (CAGR) of 1.16 % which was derived from linearly-extrapolated historic (1991-2015) growth in annual Magic Kingdom attendance. Waterpark attendance remained constant for future years. Wet-n-Wild attendance was added to Universal Studios to account for its closing in summer 2016 and the subsequent opening of Volcano Bay by summer 2017.

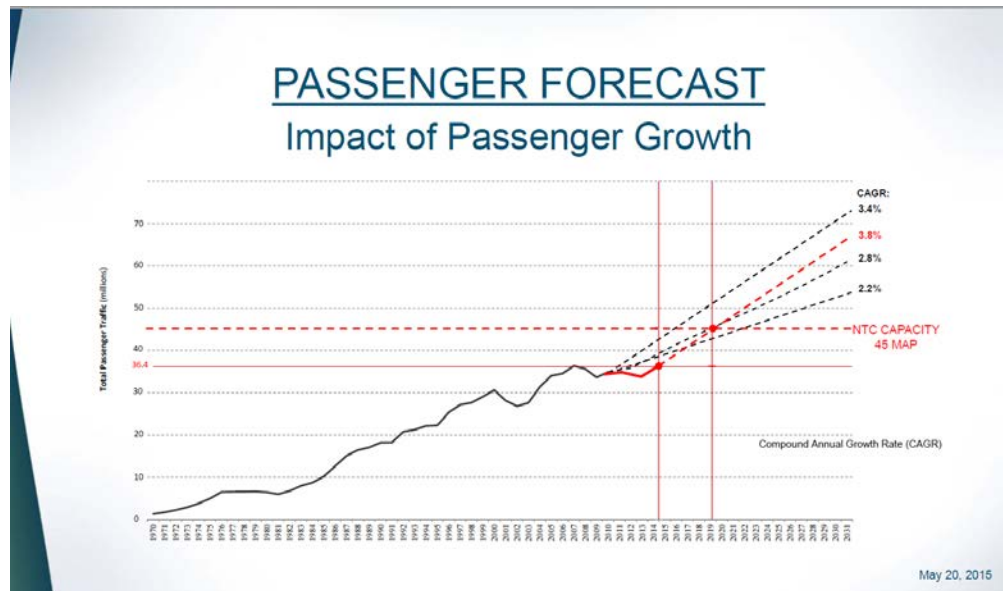
Orlando International Airport

Forecast airport passenger enplanements and deplanements were obtained from passenger forecasts developed during the course of SunRail Phase 3 model calibration and were based on GOAA's June 2015 *Traffic Summary Report* and grown for future years using a CAGR of 3.8%; consistent with official GOAA passenger forecasts (**Figure 1**). Forecast airport passengers were allocated between the north and south terminals based upon the portion of total gates contained in each as shown in **Table 3**.

Table 3
OIA CFRPM Special Attraction Productions

	2015	2020	2025	2030	2035	2040	2045
North Terminal Gates	129	129	129	129	129	129	129
South Terminal Gates	0	16	32	60	120	120	120
Total Gates	129	145	161	189	249	249	249
Percent North Terminal	100%	89%	80%	68%	52%	52%	52%
Percent South Terminal	0%	11%	20%	32%	48%	48%	48%
North Terminal Passengers	103,241	112,039	119,088	116,935	100,515	112,273	124,030
South Terminal Passengers	-	13,896	29,541	54,389	93,503	104,440	115,377
Total OIA Passengers	103,241	125,935	148,630	171,324	194,018	216,713	239,407

DRAFT

Figure 1ⁱ

ⁱ Source: <http://www.orlandoairports.net/statistics/monthly/trfc201506.pdf>

Visitor, Resident and External Airport Productions

The 2015 Passenger Survey was conducted by HNTB for the period between July 6 and July 17, 2015 as used along with zip code matching was performed to determine the percentage of resident and visitor passengers that originated within the CFRPM study area. **Tables 4 and 5** summarize the results of this effort.

Table 4
2015 HNTB Airport Passenger Survey

	Total Count	Within CFRPM	External CFRPM
Resident	32,884	29,511	3,372
Non-Resident	70,358	67,617	2,741
Totals	103,241	97,128	6,113

Data: HNTB; Calcs: AECOM

Table 5

Current CFRPM Spec_Attr		
VISRATE	RESRATE	EXTRATE
70%	27%	3%
Updated CFRPM Spec_Attr		
VISRATE	RESRATE	EXTRATE
68%	29%	3%

AECOM

Orange County Convention Center

Five years of monthly attendance data was used in an attempt to normalize the high level of variability associated with convention center activities. Upon review of this data, it was determined that normalization could be accomplished by taking the average of the top four consecutive months of the most recent year which complete data was available (2015) which yielded an average daily attendance of 12,602 which was allocated in proportion to the amount of total square footage at the North/South and West convention facilities. Future years were increased using the same CAGR (3.8%) as for OIA.

Port Canaveral

The original CFRPM daily Port Canaveral special attraction productions were used as the basis for future years which assumed three additional cruise ship berths on-line by 2025. Three additional berths account for Port Canaveral receiving approximately one-third of total forecast cruise passenger growth to 2040.

Final Updated CFRPM 6.1 Special Attraction Productions

FDOT approved the CFRPM special attraction productions and supporting assumptions on October 28, 2016 which are contained in **Table 6**. Supporting data and pertinent background materials are attached.

Table 6
Final Updated SPECATR1_YYA.DBF Productions - Approved October 28, 2016

Description	TAZ	2010	2015	2020	2025	2030	2035	2040	2045
Orlando International Airport	977	86,786	103,241	112,039	119,088	116,935	100,515	112,273	124,030
Orlando International Airport Exp	978	-	-	13,896	29,541	54,389	93,503	104,440	115,377
Orange County Convention Center	928	3,409	6,653	8,017	9,661	11,641	14,027	16,903	20,368
Orange County Convention Center Exp	927	3,048	5,949	7,168	8,638	10,408	12,542	15,113	18,211
Universal Orlando	801	65,063	100,696	114,379	120,711	127,420	134,526	142,054	150,029
Sea World/Aquatica	932	36,164	34,942	37,017	39,214	41,542	44,008	46,620	49,388
Discovery Cove	934	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600
Typhoon Lagoon	908	11,988	13,494	14,295	15,144	16,043	16,995	18,004	19,073
Disney Springs	902	17,662	17,662	18,710	19,821	20,998	22,244	23,565	24,963
Hollywood Studios	904	52,619	59,332	62,854	66,585	70,537	74,724	79,160	83,859
Animal Kingdom	900	53,074	59,847	63,399	67,163	71,149	75,373	79,847	84,587
EPCOT Center	903	59,315	64,647	68,484	72,549	76,856	81,418	86,251	91,371
Blizzard Beach	899	11,012	12,394	13,130	13,909	14,735	15,610	16,536	17,518
Magic Kingdom	898	92,997	112,285	118,950	126,011	133,492	141,416	149,810	158,703
Kennedy Space Center	2994	5,090	5,090	5,392	5,712	6,051	6,411	6,791	7,194
Port Canaveral	3182	15,336	15,336	15,336	26,838	26,838	26,838	26,838	26,838

Assumptions:

OIA CAGR 3.8%, from OIA Passenger Forecast Report

OIA expansion is based on south terminal phases in OIA Master Plan

OCCC from top four consecutive months in 2015, subsequent growth keyed to the OIA 3.8% CAGR

All theme park growth keyed to Magic Kingdom CAGR of 1.16%. Based on 1991-2015 attendance linear trend extrapolation to 2045

Universal Orlando includes transfer of Wet'nWild attendance to Volcano Bay

Water parks remain constant

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SUPPORTING DOCUMENTATION

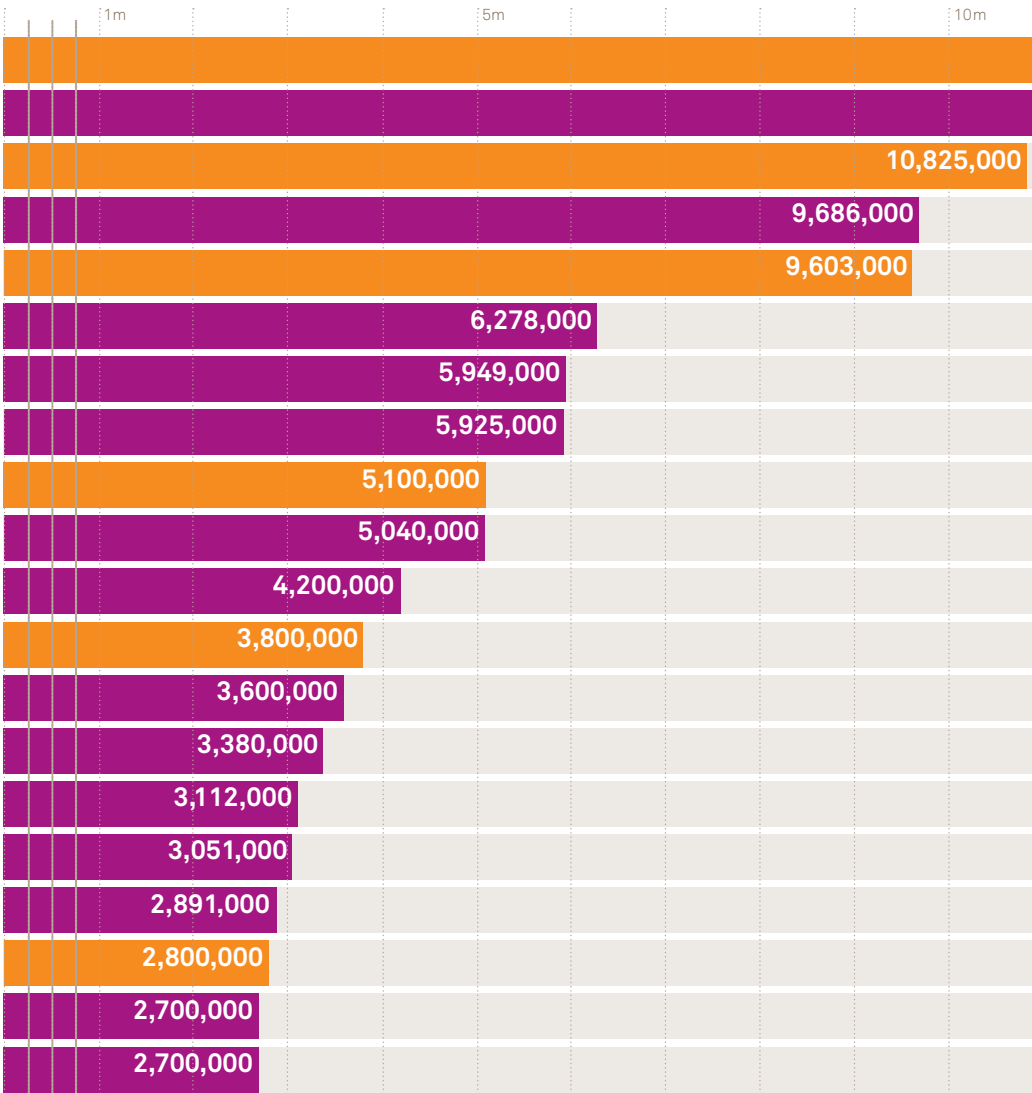


Economics

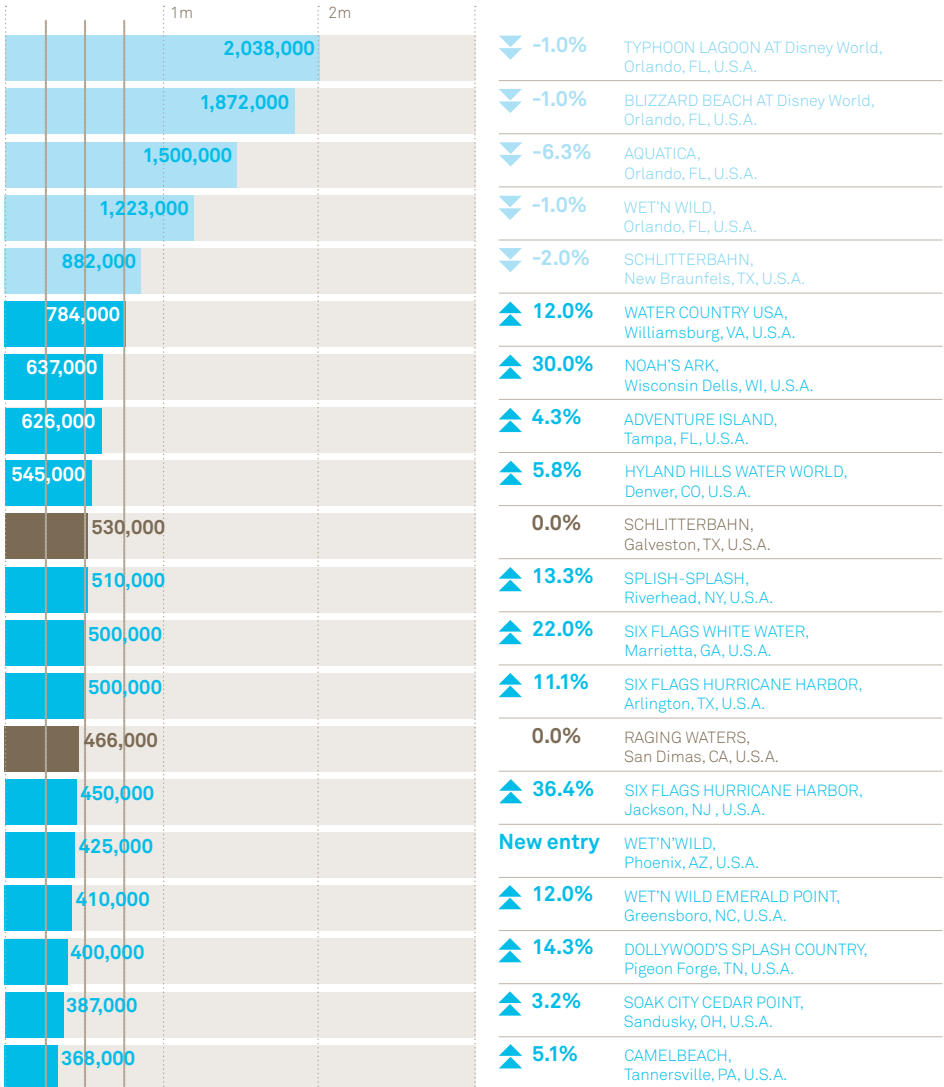


2010 THEME INDEX

Top 20 amusement parks/theme parks in North America



Top 20 waterparks in the United States



Percent changes for 2010 for certain parks are based on adjusted/updated figures for 2009, thus not directly comparable to published TEA/AECOM list for 2009/08.

**2015
THEME
INDEX**

m 2015
MUSEUM
INDEX

**Global
Attractions
Attendance
Report**



RANK	PARK Location	% CHANGE	ATTENDANCE 2015	ATTENDANCE 2014
1	MAGIC KINGDOM at Walt Disney World, Lake Buena Vista, FL	6.0%	20,492,000	19,332,000
2	DISNEYLAND , Anaheim, CA	9.0%	18,278,000	16,769,000
3	EPCOT at Walt Disney World, Lake Buena Vista, FL	3.0%	11,798,000	11,454,000
4	DISNEY'S ANIMAL KINGDOM at Walt Disney World, Lake Buena Vista, FL	5.0%	10,922,000	10,402,000
5	DISNEY'S HOLLYWOOD STUDIOS at Walt Disney World, Lake Buena Vista, FL	5.0%	10,828,000	10,312,000
6	UNIVERSAL STUDIOS at Universal Orlando, FL	16.0%	9,585,000	8,263,000
7	DISNEY'S CA ADVENTURE , Anaheim, CA	7.0%	9,383,000	8,769,000
8	ISLANDS OF ADVENTURE at Universal Orlando, FL	8.0%	8,792,000	8,141,000
9	UNIVERSAL STUDIOS HOLLYWOOD , Universal City, CA	4.0%	7,097,000	6,824,000
10	SEAWORLD FL , Orlando, FL	2.0%	4,777,000	4,683,000
11	BUSCH GARDENS TAMPA BAY , Tampa, FL	3.0%	4,252,000	4,128,000
12	KNOTT'S BERRY FARM , Buena Park, CA	5.0%	3,867,000	3,683,000
13	CANADA'S WONDERLAND , Maple, Ontario	2.0%	3,617,000	3,546,000
14	SEAWORLD CA , San Diego, CA	-7.0%	3,528,000	3,794,000
15	CEDAR POINT , Sandusky, OH	8.0%	3,507,000	3,247,000
16	KINGS ISLAND , Kings Island, OH	3.0%	3,335,000	3,238,000
17	HERSHEY PARK , Hershey, PA	2.0%	3,276,000	3,212,000
18	SIX FLAGS MAGIC MOUNTAIN , Valencia, CA	9.0%	3,104,000	2,848,000
19	SIX FLAGS GREAT ADVENTURE , Jackson, NJ	9.0%	3,052,000	2,800,000
20	BUSCH GARDENS WILLIAMSBURG , Williamsburg, VA	3.0%	2,780,000	2,699,000
TOP 20 TOTAL ATTENDANCE 2015			146,270,000	138,144,000
TOP 20 TOTAL ATTENDANCE 2014			5.9%	138,144,000

5.9%

Top 20 amusement/theme
parks attendance growth
North America 2014–15

146.3m

Top 20 amusement/theme parks
North America attendance 2015

138.1m

Top 20 amusement/theme parks
North America attendance 2014

RANK	PARK Location	% CHANGE	ATTENDANCE 2015	ATTENDANCE 2014
1	TYPHOON LAGOON AT DISNEY WORLD , Orlando, FL	5.0%	2,294,000	2,185,000
2	BLIZZARD BEACH AT DISNEY WORLD , Orlando, FL	5.0%	2,107,000	2,007,000
3	AQUATICA , Orlando, FL	2.0%	1,600,000	1,569,000
4	WET 'N WILD , Orlando, FL	2.0%	1,310,000	1,284,000
5	SCHLITTERBAHN , New Braunfels, TX	0.0%	1,037,000	1,037,000
6	WATER COUNTRY USA , Williamsburg, VA	0.0%	726,000	726,000
7	ADVENTURE ISLAND , Tampa, FL	3.0%	663,000	644,000
8	SCHLITTERBAHN , Galveston, TX	0.0%	551,000	551,000
9	SIX FLAGS-HURRICANE HARBOR , Arlington, TX	5.0%	549,000	523,000
10	SIX FLAGS-WHITE WATER , Marietta, GA	6.1%	541,000	510,000
11	HYLAND HILLS WATER WORLD , Denver, CO	0.0%	527,000	527,000
12	SPLISH-SPASH , Calverton NY	21.9%	513,000	421,000
13	WET'N'WILD SPLASHTOWN , Houston, TX	0.8%	501,000	497,000
14	WET N' WILD , Phoenix, AZ	3.0%	481,000	467,000
15	SIX FLAGS HURRICANE HARBOR , Jackson, NJ	4.0%	440,000	423,000
16	CAMEL BEACH , Tannersville, PA	30.8%	437,000	334,000
17	ZOO MEZI BAY , Powell, OH	1.7%	423,000	416,000
18	DOLLYWOOD'S SPLASH COUNTRY , Pigeon Forge, TN	2.0%	416,000	408,000
19	RAGING WATERS , San Dimas, CA	-6.1%	403,000	429,000
20	WET N' WILD EMERALD POINT , Greensboro, NC	1.0%	402,000	398,000
TOP 20 TOTAL ATTENDANCE 2015			15,921,000	15,356,000
TOP 20 TOTAL ATTENDANCE 2014			4.3%	15,268,000

4.3%

Top 20 water parks attendance
growth North America 2014–15

15.9m

Top 20 water parks North
America attendance 2015

15.3m

Top 20 water parks North
America attendance 2014

OIA Passenger Forecast

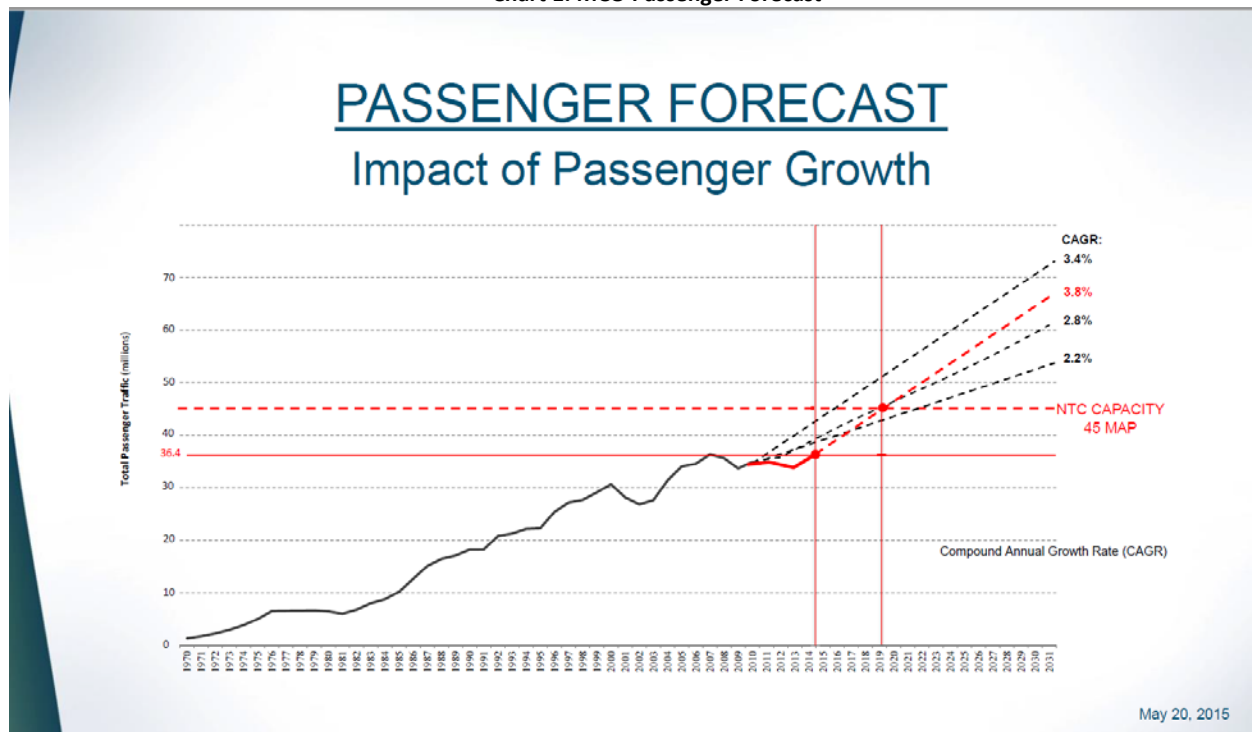
June 2015 passenger counts are used for the model calibration and are tabulated below. These counts were obtained from the GOAA Traffic Summary report for the month of June, 2015¹. The total daily passengers were calculated to be 107,186. Of these, the percentage of passengers with connecting flight at MCO was speculated to be 3.68% (from the 2011-2014 GOAA PAX Survey). Therefore, the estimated OIA air passenger travel market using the OIA intermodal facility was reduced to 103,241.

Table 1: MCO Passenger Counts for June 2015

June 2015	Enplanements		Deplanements		Total	
	Monthly	Daily	Monthly	Daily	Monthly	Daily
Domestic	1,407,482	46,916.07	1,428,061	47,602.03	2,835,543	94,518
International	188,947	6,298.23	191,099	6,369.97	380,046	12,668
Total	1,596,429	53,214	1,619,160	53,972	3,215,589	107,186

The future year air passenger counts were determined based on the passenger growth chart from the 2015_05_20 GOAA presentation. Compound Annual Growth Rate (CAGR) of 3.8% was used for these calculations.

Chart 1: MCO Passenger Forecast



¹ Source: <http://www.orlandoairports.net/statistics/monthly/trfc201506.pdf>

Total 2015 enplanement of 19,561 (in millions) are calculated from the reported 107,186 daily PAX trips. The daily passenger counts for the years 2020 and 2030 are determined by applying the above growth factor to 2015 enplanements. The estimated 2020 and 2030 OIA passengers were distributed into the North and South terminals based on the number of operational gates at each terminal. It was assumed that there will be 24 gates operational at South terminal by the year 2020 and 32 by the end of year 2030. Current gate count at North terminal is 119 and is assumed to remain same for future years.

Table 2: MCO Daily Passenger Counts Forecast (includes Connecting Flights)

TOTAL PAX	YEAR (using CAGR = 3.8%)		
	2015	2020	2030
North Terminal (In K)	107.186	108.804	140.177
South Terminal (In K)	-	21.944	37.695
Ratio of gates (NT/(NT+ST))	1.00	0.832	0.788
TOTAL (in Million Annual Enplanements)	19.561	23.861	32.461
Daily PAX (In K)	107.186	130.748	177.871

Connecting flight passengers account for 3.68% of total PAX traffic. Below is the final daily passenger traffic forecast at OIA which excludes the connecting passenger:

Table 3: MCO Daily Passenger Counts Forecast (excludes Connecting Flights)

Terminal	Daily PAX traffic			Annual PAX traffic (millions)		
	2015	2020	2030	2015	2020	2030
North	103,241	104,799	135,017	37.68	38.25	49.28
South	-	21,136	36,307	-	7.71	13.25
Total	103,241	125,935	171,324	37.68	45.97	62.53

DISTRIBUTION BY TRIP PURPOSE

The 2015 Passenger Survey (PAX) was conducted by HNTB for the period between July 6 and July 17, 2015. The respondents only included passengers starting their trip from OIA. It did not include the passengers having connecting flight at OIA. According to this survey, around 68% of air-passengers are visitors.

Table 4: MCO Passenger Counts by Trip Purpose

Purpose	# Passengers	# Passengers (%)
Resident – Business (% of Total Resident Trips)	7,241	22%
Resident - Non Business (% of Total Resident Trips)	25,596	78%
Total Resident	32,834	32%
Non-Resident – Business (% of Total Non-Resident Trips)	13,762	20%
Non-Resident – Non-Business (% of Total Non-Resident Trips)	56,640	80%
Total Non-Resident	70,407	68%

DISTRIBUTION BY AREA

Based on the passenger's origin/destination, the trips were divided into Internal and External. These districts were identified based on the zip-codes. Trips to/from the zip codes which are not covered in the OUATS model were identified in the 'External' study area. Below is the map of OUATS area extent.

Figure 1: Map of OUATS Area

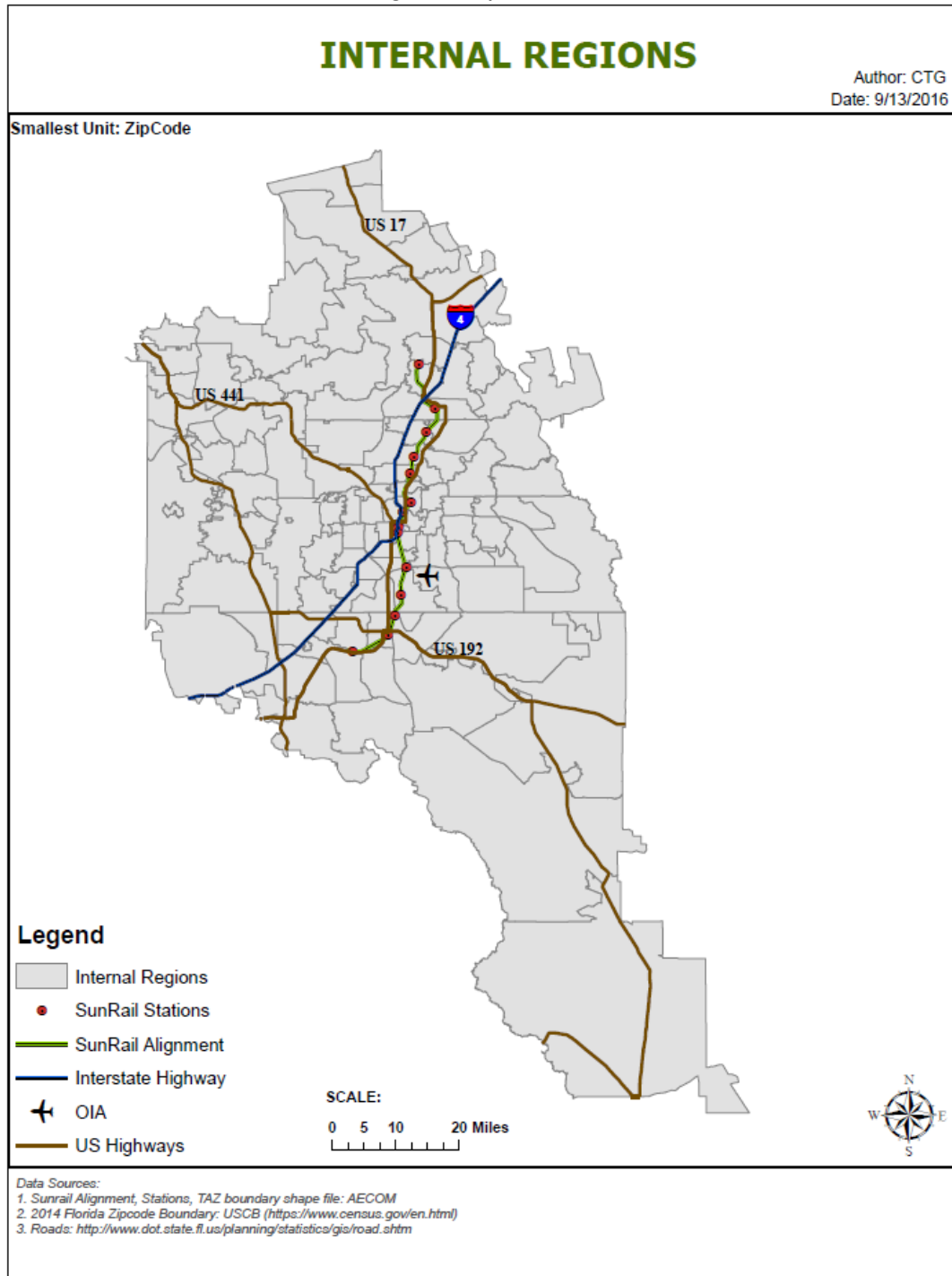


Table 5: 2015 Daily PAX by Residents, Visitor and External trips

Trip Type	2015 OIA Daily PAX
Residents	20,791
Visitors	60,264
External	22,186
Grand Total	103,241

OIA TERMINAL LAYOUTS:

Below are the diagrams and layouts of the future OIA South and North terminals.

Figure 2: South Terminal Complex

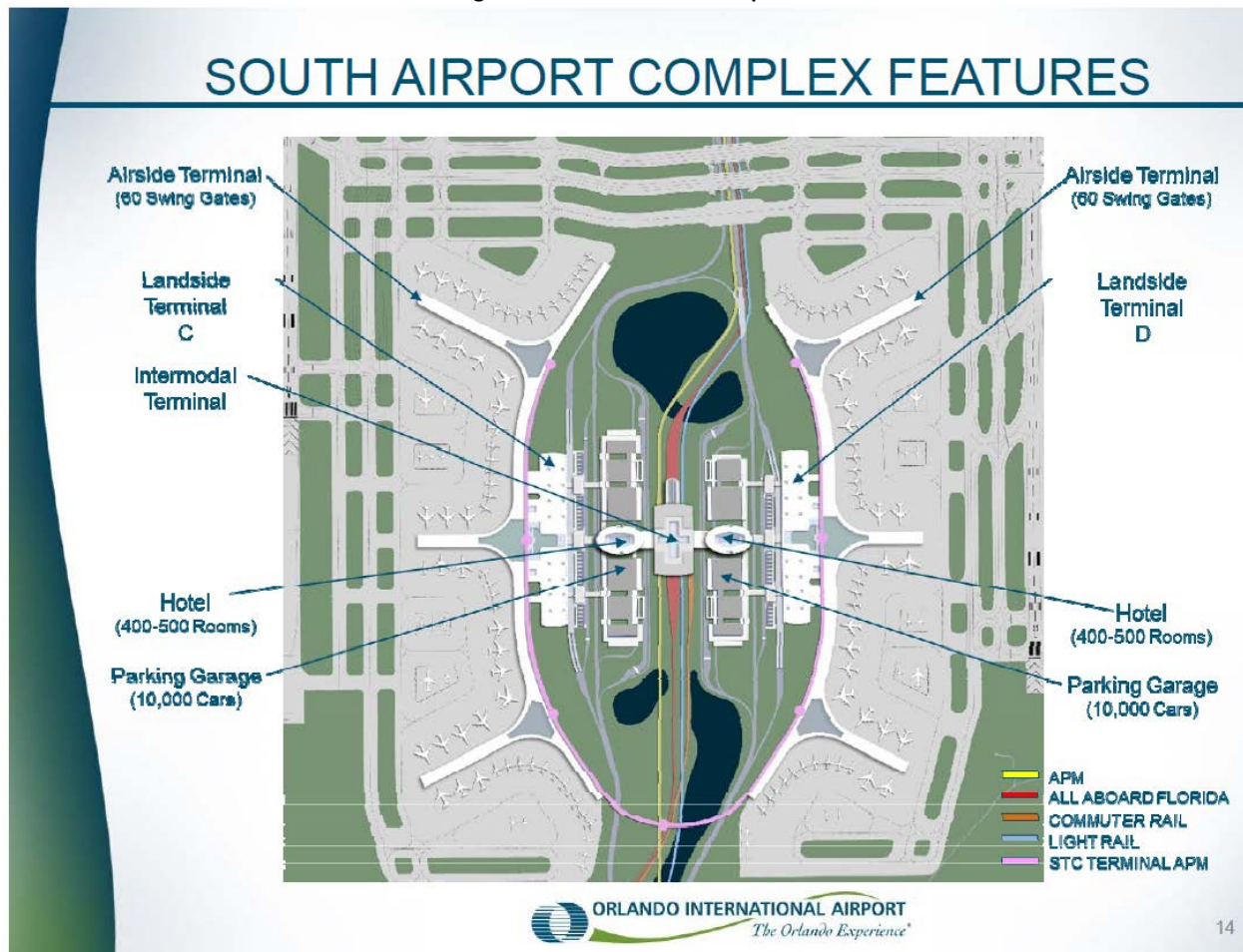


Figure 3: South Terminal Build design

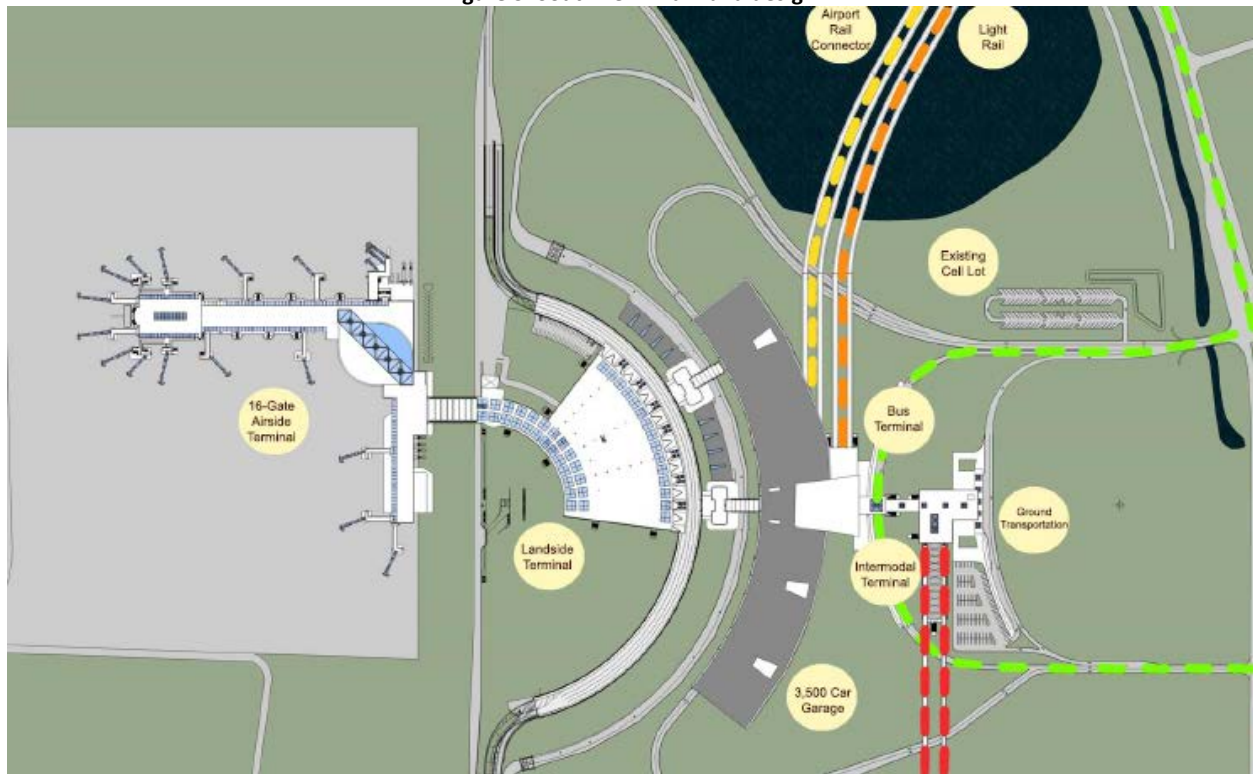


Figure 4: North Terminal Build design

