American Dream Miami
&
The Graham Project

MIAMI-DADE COUNTY, FLORIDA

TRANSPORTATION IMPACT ANALYSIS (TIA)
for
Comprehensive Development Master Plan (CDMP) Amendment

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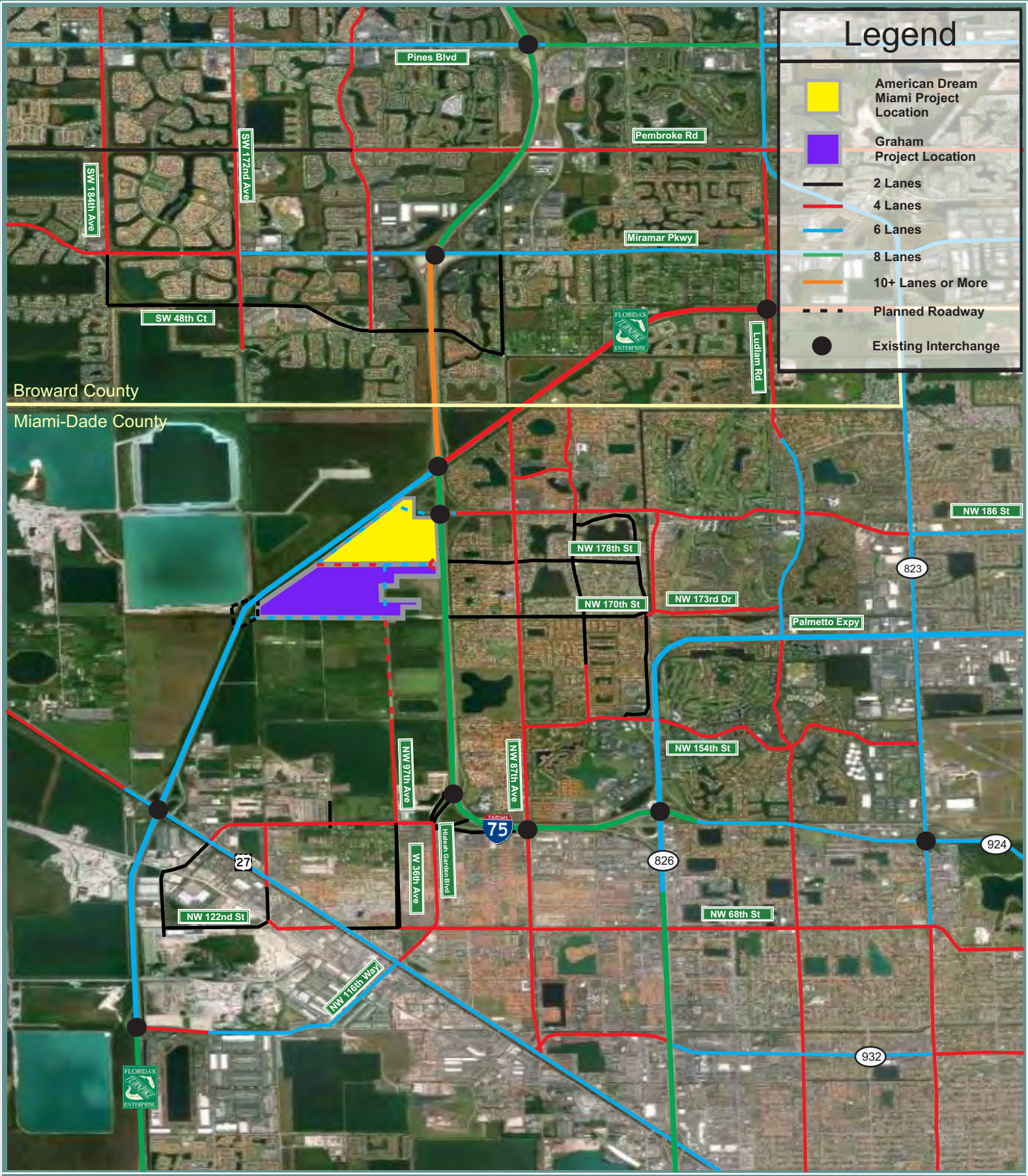
1.0 INTRODUCTION

This Transportation Impact Analysis (TIA) was prepared on behalf of International Atlantic, LLC ("the Applicant") to accompany applications for amendments to the Miami-Dade County Comprehensive Development Master Plan (CDMP) for the proposed American Dream Miami and adjacent Graham Project in north Miami-Dade County. The Applicants are proposing to undergo standard amendments to the Miami-Dade CDMP. As such, this TIA was prepared in accordance with the County's *Instructions for Preparing Applications* document dated April 2015, as well as a methodology statement and follow-up responses to agency comments as listed below.

As described in detail in the CDMP application, American Dream Miami is proposed as a unique retail/entertainment complex with 6,200,000 square feet of gross space, of which 3,500,000 square feet is leasable retail area, plus 2,000 on-site hotel rooms. The site is to be located on +/-194 acres of property currently designated as "Industrial and Office" use in the County Land Use Plan Map. The American Dream Miami property is generally located east of the Homestead Extension of Florida's Turnpike (HEFT), west of Interstate 75 (I-75), and north of a future NW 178th Street alignment. Project build-out is anticipated by Year 2020.

The Graham Project is proposed as a mixed-use development to be located immediately south of American Dream Miami between HEFT and I-75 on +/-340 acres of property south of future NW 178th Street and north of future NW 170th Street. This property is also currently designated as "Industrial and Office" use in the County Land Use Plan Map. Plans for the Graham Project call for 150,000 square feet of retail, 250,000 square feet of business park, and 500 multi-family dwelling units to be developed by Year 2020. At some point after Year 2020 and before Year 2040, build-out development is anticipated at 1,000,000 square feet of retail, 3,000,000 square feet of business park, and 2,000 multi-family dwelling units.

Figure 1 provides general locations for the American Dream Miami and Graham Project on the existing roadway network. **Figure 2** shows the anticipated primary access points for the proposed developments.



Project Location and Existing Roadways

American Dream Miami / Graham

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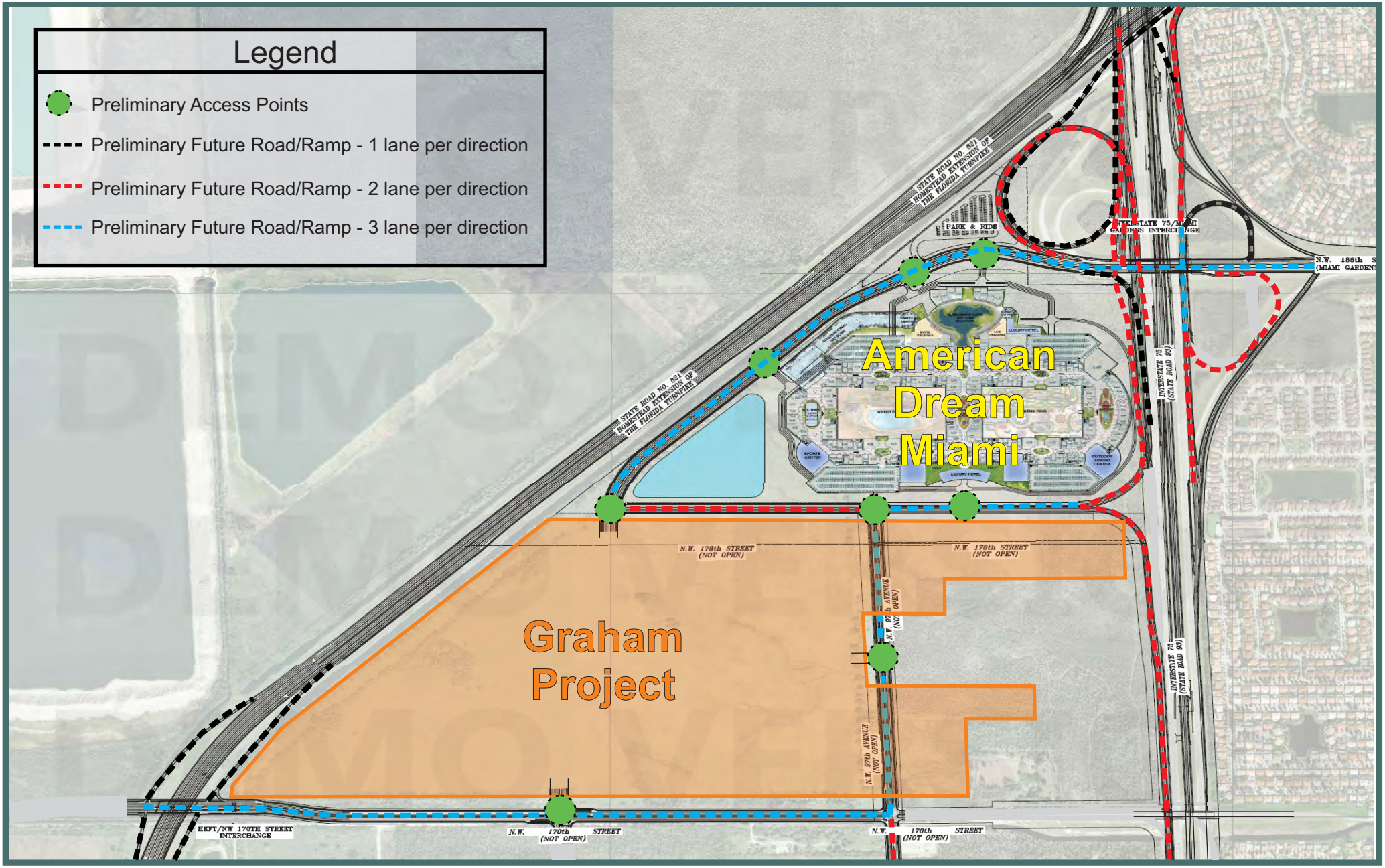
Figure: 1



Preliminary Access Plan

American Dream Miami / Graham Project

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Figure:

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In preparation for the CDMP TIA, the following timeline shows major meetings that have occurred and documents (provided in **Appendix A**) that have been submitted to Miami-Dade County to date:

- September 8, 2015: CDMP TIA Methodology Technical Memorandum (TM) for American Dream Miami dated September 3, 2015 was submitted.

- September 21, 2015: CDMP TIA Methodology Meeting w/ multiple agencies was held; "American Dream Miami Trip Generation Summary" presentation dated September 17, 2015 was provided.

- October 16, 2015: 1st CDMP TIA Methodology Comment Set Response dated October 16, 2015 was submitted. It included responses to comments from eleven different agencies.

- October 23, 2015: CDMP TIA Follow-up Meeting w/ multiple agencies was held; "American Dream Miami Transportation Methodology Status Update" presentation date October 10/23/15 was provided.

- October 26, 2015: 2nd CDMP TIA Methodology Comment Set Response to Miami-Dade County Transportation and Public Works October 26, 2015 was submitted.

- October 30, 2015: 2nd CDMP TIA Methodology Comment Set Response to FDOT Districts Four and Six dated October 30, 2015 was submitted.

- November 17, 2015: 3rd CDMP TIA Methodology Comment Set was received from Miami-Dade County Transportation and Public Works. It was agreed in a follow-up conference call with staff that the Applicant would respond to the comments as part of the CDMP TIA review.

- December 4, 2015: CDMP TIA Methodology Technical Memorandum (TM) Addendum dated November 24, 2015 was submitted to document the intention of analyzing the Graham Project in the American Dream CDMP TIA.

2.0 ANALYSIS YEARS

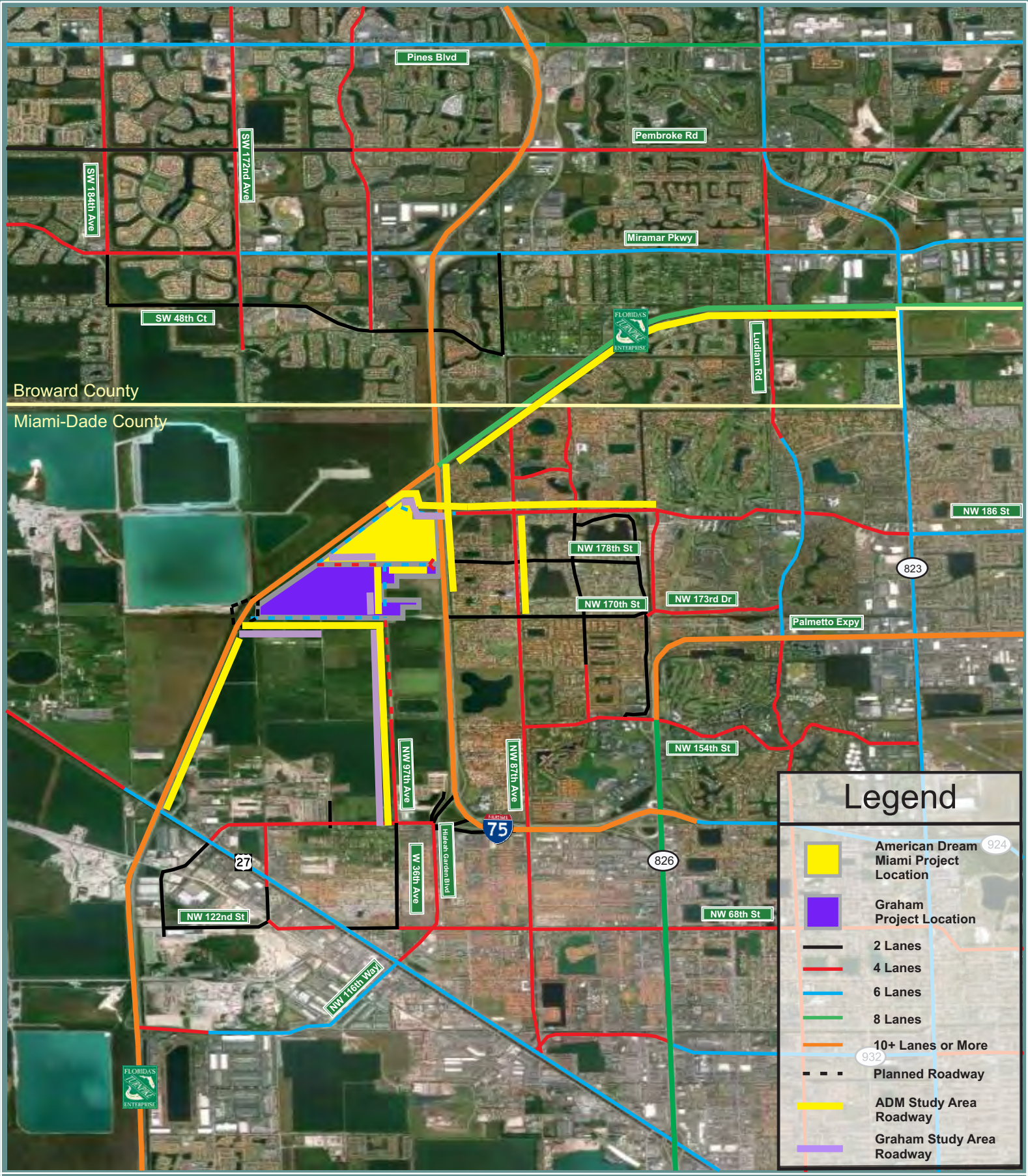
Analysis years for the CDMP TIA are as follows:

- Existing Year 2015
- Short-term Year 2020 - to correspond to American Dream Miami Project Build-out Year schedule
- Long-term Year 2040 - to correspond with Miami-Dade 2040 Regional Long Range Transportation Plan (LRTP)

3.0 STUDY AREA

As documented in the County's *Instructions for Preparing Applications*, the study area for American Dream Miami and the Graham Project is determined in terms of degree of project traffic impacts on the surrounding roadway network. Specifically, the study area for each development extends to all significant roadways where external trips from each project are forecast to be equivalent to or greater than five percent (5%) of the maximum service volume (MSV) at the adopted level of service (LOS) standard for each facility. The study area defines which roadway segments in the transportation network are analyzed in the CDMP TIA for LOS operation and potential capacity deficiency.

Trip Generation and Trip Assignment sections later in this report show how the build-out peak hour trips from each project were determined and assigned to the Cost Feasible roadway networks to determine the study area for each project. Additionally, tables provided for future year roadway segment analysis identify where the amount of project trips exceed 5% of the MSV for each facility. **Figure 3** and **Figure 4** provide the projects' study areas for the Year 2020 and Year 2040 roadway segment LOS analyses, respectively.



ADM & Graham 2020 Study Area

American Dream Miami / Graham

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Figure:

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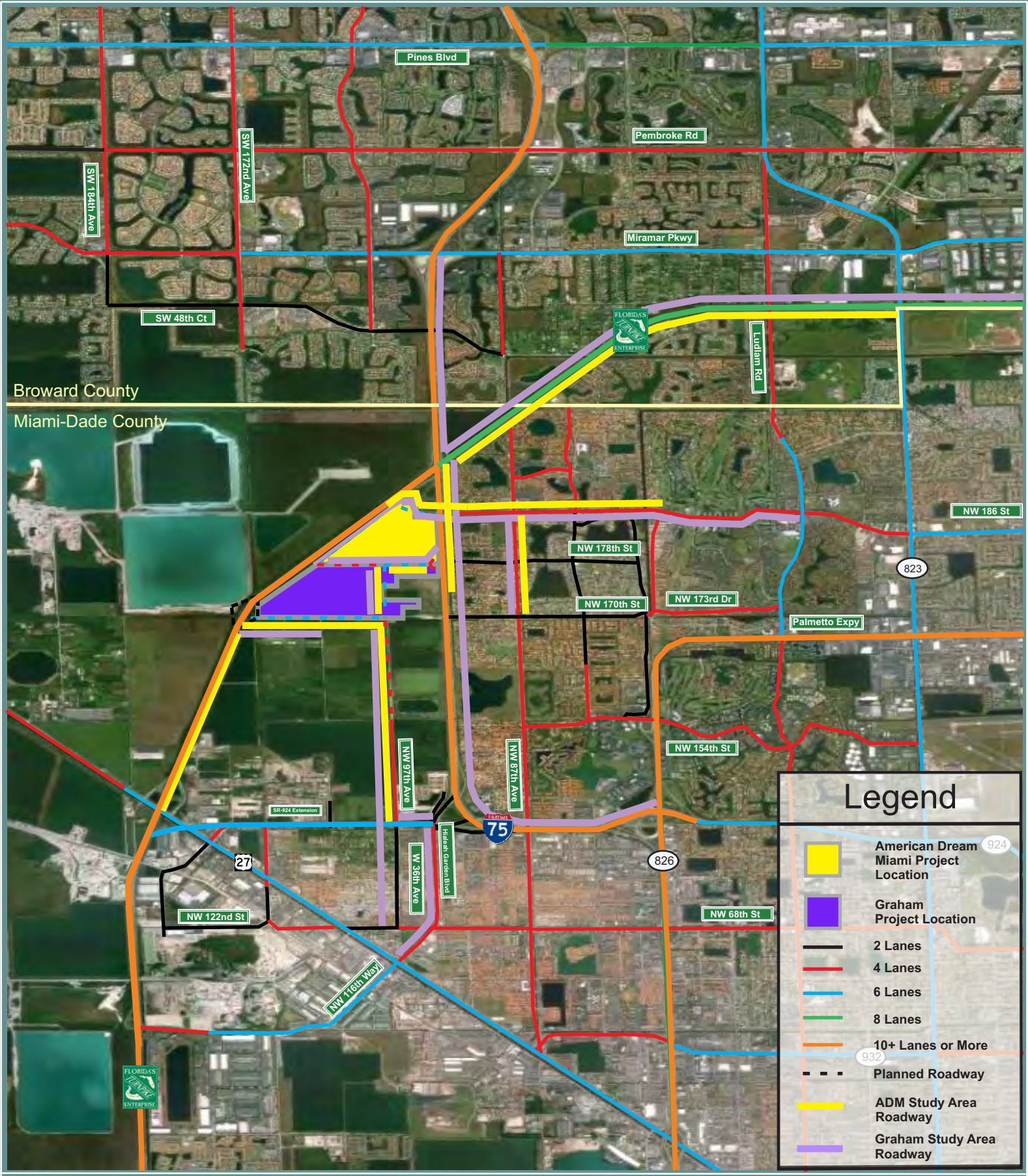

ADM & Graham 2040 Study Area

American Dream Miami / Graham

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4.0 EXISTING CONDITIONS (Year 2015)

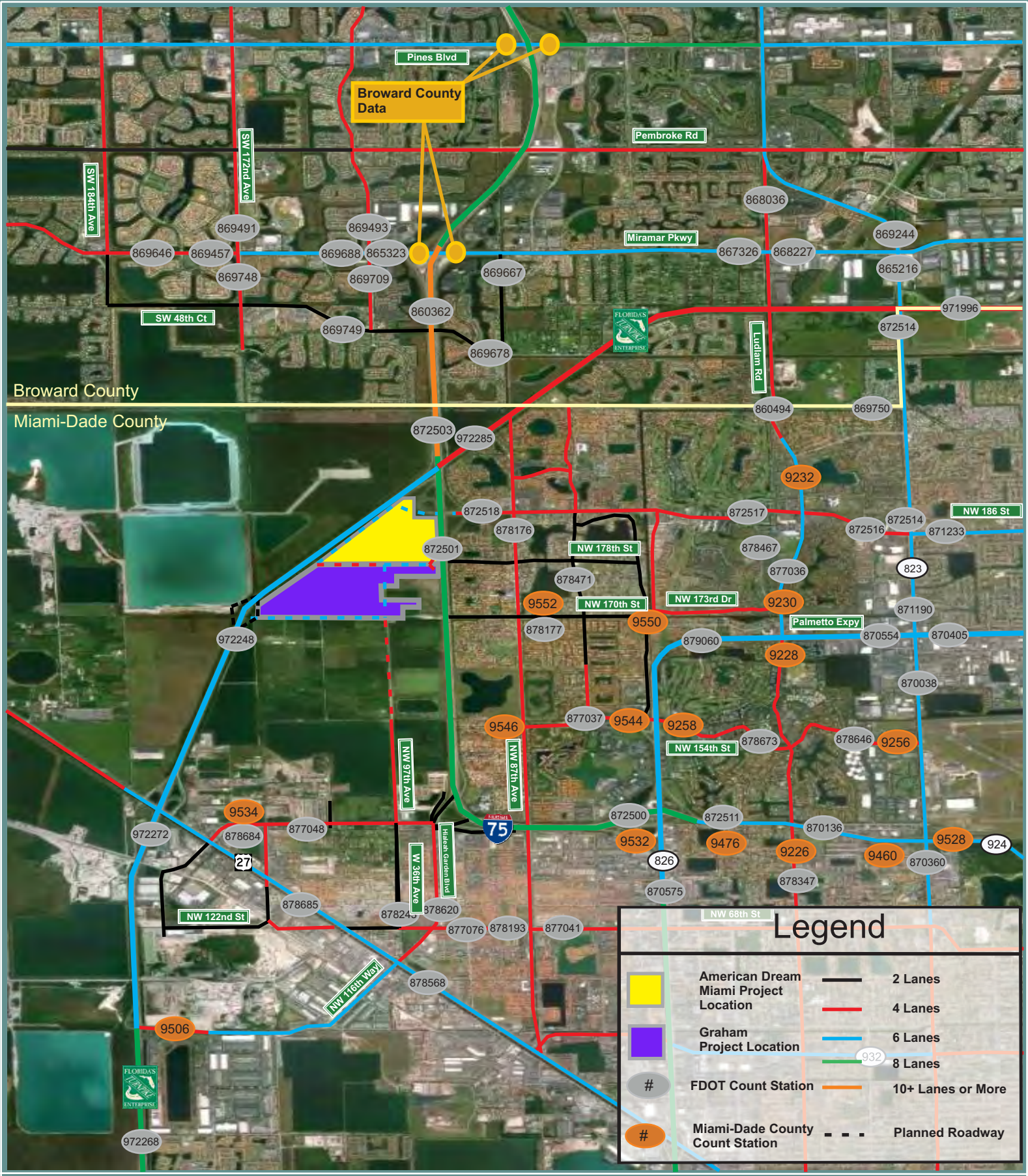
Existing operating conditions on study area roadway segments were determined for the PM peak hour when the highest traffic volumes generally occur. The analysis assigns an existing level of service (LOS) to each study area roadway segment by comparing Year 2015 traffic count data to the LOS standards defined by the maintaining agency. Where a volume exceeds the adopted maximum service volume (MSV) for a facility, an existing LOS deficiency may exist. At the request of Miami-Dade County and other agencies, this analysis was performed for each direction of travel throughout the study areas.

Several sources were referenced to obtain traffic counts for the study area roadways. FDOT's *Florida Traffic Information* (FTI) 2014 data was reviewed for State roadways. Miami-Dade Concurrency and Count Databases for 2014 were reviewed for County and local roadways (Miami-Dade County also provided vested trips on some roadways which were later used to forecast future volumes). Additionally, Broward County provided recent count data at major roadways near I-75 interchanges in their county. Where count data from Miami-Dade County was missing or incomplete, FDOT data was supplemented as available. Where Year 2015 data did not exist, volume growth was determined by extrapolating historical volumes to 2015 or by applying one percent (1%) annual growth, whichever was greater (A Background Volumes Worksheet is provided in **Appendix B** to show all future volume forecasting). In the event peak hour counts were not directly available, PM peak hour peak direction traffic volumes were determined from daily count data by application of an available peak hour intensity factor (K factor) and directional split factor (D factor). **Figure 5** shows the count stations available in the area for use in the analysis. Count data referenced for the CDMP TIA is provided in **Appendix C.**

For service volumes and MSV, an inventory of roadway characteristics was performed in order to identify existing number of traffic lanes, geometries, adopted standards, and other features necessary to determine volume standards for an LOS analysis on study area roadways. The latest generalized FDOT LOS tables from the *Quality/Level of Service Handbook* were referenced for State roadways and the Miami-Dade Concurrency Database was referenced for County roadways. Since the Miami-Dade Database is provided in non-directional format, service volumes were converted to directional values using directional split factors. FDOT generalized LOS tables are provided in **Appendix D.**

Table 1 shows the existing (Year 2015) level of service analysis for roadways within the American Dream Miami and Graham Project study areas. Based on the PM peak hour peak direction analysis, the following potential existing deficiencies were identified:

- HEFT (NW 57th Avenue to Turnpike Mainline) - This segment is funded for additional lane capacity in Turnpike's D4 2016/17 Work Program.
- I-75 (HEFT to Miami Gardens Drive) - This segment is funded for the addition of managed lanes as part of the I-75 Express Lanes project.
- Miami Gardens Drive (I-75 to NW 67th Avenue) - MSV for Miami Gardens Drive is designated in Miami-Dade's Concurrency Database at 120% of FDOT's generalized service volumes for a 4-lane Class I Arterial. Without this adjustment, an existing deficiency at LOS 'F' is shown for the segment in the existing PM peak hour peak direction analysis.



FDOT and County Count Station Map

American Dream Miami / Graham

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Figure:

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Table 1: Existing (Year 2015) Study Area Roadway Segment LOS Analysis

Roadway	From	To	Length (mi)	No. of Lanes	Adopted LOS	MDC RER Peak Hour Non-Directional Data				Peak Hour Peak Dir Service Vol					EXISTING YEAR 2015 Peak Hour Peak Dir Analysis								
						Max LOS	PHP	DOS	PH Total	LOS A	LOS B	LOS C	LOS D	LOS E	Daily Traffic Volume	K	Existing PH	D	Peak Dir	NB/EB (Vol / LOS)		SB/WB (Vol / LOS)	
Florida's Turnpike	NW 106th Street	US 27/ Okeechobee Rd	2.45	6	D	10,060	3,238	145	3,383	0	3,360	4,580	5,500	6,080	102,000	0.095	9,690	0.563	N	5,455	D	4,235	C
	US 27/ Okeechobee Rd	NW 170th St	2.00	6	D	10,060	3,238	3	3,241	0	3,360	4,580	5,500	6,080	93,900	0.095	8,921	0.563	N	5,023	D	3,898	C
	NW 170th St	Interstate 75	2.10	6	D	10,060	3,238	3	3,241	0	3,360	4,580	5,500	6,080	93,900	0.095	8,921	0.563	N	5,023	D	3,898	C
	Interstate 75	CR 823/Red Rd	4.10	4	D					0	2,260	3,020	3,660	3,940	51,500	0.095	4,893	0.563	W	2,138	B	2,755	C
	CR 823/Red Rd	CR 817/NW 27th Ave	3.00	4	D					0	2,260	3,020	3,660	3,940	69,700	0.095	6,622	0.563	W	2,894	C	3,728	E
Interstate 75	Miramar Pkwy/ S 33rd St	Florida's Turnpike	2.10	10	D					0	5,660	7,680	9,220	10,360	164,700	0.085	14,000	0.627	N	8,778	D	5,222	B
	Florida's Turnpike	Miami Gardens Dr/NW 186 St	0.40	8	D	13,390	11,223	20	11,243	0	4,500	6,080	7,320	8,220	168,700	0.085	14,340	0.627	N	8,991	F	5,349	C
	Miami Gardens Dr/NW 186 St	South Project Rd	0.50	8	D	13,390	8,814	313	9,127	0	4,500	6,080	7,320	8,220	124,700	0.085	10,600	0.627	N	6,646	D	3,954	B
	South Project Rd	NW 138th Street	2.70	8	D	13,390	8,814	313	9,127	0	4,500	6,080	7,320	8,220	124,700	0.085	10,600	0.627	N	6,646	D	3,954	B
	NW 138th Street	SR 826	1.30	8	D	13,390	8,525	194	8,719	0	4,500	6,080	7,320	8,220	131,800	0.085	11,203	0.627	W	4,179	B	7,024	D
Miami Gardens Dr	South Project Rd	Project Access Rd	0.50	-						NOT EXISTING ROADWAY LINK					0		0						
	Project Access Rd	Interstate 75 Western Ramps	0.50	-						NOT EXISTING ROADWAY LINK					0		0						
	Interstate 75 Western Ramps	Interstate 75 Eastern Ramps	0.80	-						NOT EXISTING ROADWAY LINK					0		0						
	Interstate 75 Eastern Ramps	NW 87th Ave	0.20	4	E	4,296	3,504	8	3,512	0	0	2,292	2,400	2,400	41,400	0.090	3,726	0.545	E	2,031	C	1,695	C
	NW 87th Ave	NW 82nd Ave	0.50	4	E	4,296	3,504	8	3,512	0	0	2,292	2,400	2,400	41,400	0.090	3,726	0.545	E	2,031	C	1,695	C
	NW 82nd Ave	NW 77nd Ave	0.60	4	E	4,296	4,058	26	4,084	0	0	2,292	2,400	2,400	42,400	0.090	3,816	0.545	W	1,736	C	2,080	C
	NW 77nd Ave	NW 67nd Ave	1.10	4	E	4,296	4,058	26	4,084	0	0	2,292	2,400	2,400	42,400	0.090	3,816	0.545	W	1,736	C	2,080	C
	NW 67nd Ave	NW 57nd Ave	0.90	4	E	4,296	3,512	46	3,558	0	0	2,292	2,400	2,400	35,400	0.090	3,186	0.545	W	1,450	C	1,736	C
NW 170th St	Florida Turnpike	Graham Access	0.55	-						NOT EXISTING ROADWAY LINK					0		0						
	Graham Access	NW 97th Ave	0.55	-						NOT EXISTING ROADWAY LINK					0		0						
NW 138th St	Florida's Turnpike	NW 107th Ave	1.17	4	D	3,620	641	166	807	0	0	1,910	2,000	2,000	17,500	0.090	1,575	0.545	E	858	C	717	C
	NW 107th Ave	NW 97th Ave	1.00	6	D					0	0	2,940	3,020	3,020	20,500	0.090	1,845	0.545	W	839	C	1,006	C
	NW 97th Ave	Hialeah Gardens Blvd	0.30	6	D					0	0	2,940	3,020	3,020	20,500	0.090	1,845	0.545	W	839	C	1,006	C
Hialeah Gardens Blvd	US 27/ Okeechobee Rd	NW 138th St	1.45	4	D					0	0	1,910	2,000	2,000	28,300	0.090	2,547	0.593	S	1,037	C	1,510	C
NW 97th Ave	NW 122nd St	NW 130th St	0.50	2	D					0	0	830	880	880	8,000	0.090	720	0.545	S	328	C	392	C
	NW 130th St	NW 138th St	0.50	2	D					0	0	830	880	880	8,000	0.090	720	0.545	S	328	C	392	C
	NW 138th St	NW 154th St	1.00	4	D					0	0	1,910	2,000	2,000	0	0.090	0	0.545	S	0	A	0	A
	NW 154th St	NW 170th St	1.00	-						NOT EXISTING ROADWAY LINK					0		0						
	NW 170th St	Graham Access	0.25	-						NOT EXISTING ROADWAY LINK					0		0						
	Graham Access	NW 178th St	0.25	-						NOT EXISTING ROADWAY LINK					0		0						
NW 87th Ave	Miami Gardens Dr/NW 186 St	NW 170th St	1.00	4	D					0	0	1,910	2,000	2,000	23,700	0.090	2,133	0.524	S	1,015	C	1,118	C
NW178th St	Graham Access	NW 97th Ave	0.46	-						NOT EXISTING ROADWAY LINK					0		0						
	NW 97th Ave	Iinterstate 75	0.46	-						NOT EXISTING ROADWAY LINK					0		0						
Miramar Pkwy	SW 160th Ave	Interstate 75	0.50	6	D					0	0	2,940	3,020	3,020	51,300	0.074	3,796	0.524	W	1,807	C	1,989	C
	Interstate 75	SW 148th Ave	0.48	6	D					0	0	2,940	3,020	3,020	43,200	0.093	4,018	0.524	E	2,105	C	1,913	C

Service Volumes on Miami Gardens Drive are adopted at 120% of FDOT's Class I Arterial Generalized. Otherwise, the segment from I-75 to NW 67th Avenue would show an existing deficiency at LOS 'F'.

5.0 TRIP GENERATION

As described in detail in the CDMP applications, the current CDMP designation for the properties associated with the American Dream Miami and Graham Project are designated "Industrial and Office" use. As part of Miami-Dade's CDMP TIA requirements, trip generation associated with the current designations is estimated within this section.

The proposed trip generation for the American Dream Miami has been presented and discussed with agencies thoroughly throughout the Methodology process. Unlike other common land use types published in the Institute of Transportation Engineers (ITE) *Trip Generation Handbook*, data for the unique retail/entertainment complex type proposed is not readily available. Therefore, the Applicant has studied ITE's guidance at length, collected data from the best available surrogate sources, and applied these elements to obtain a most representative trip generation forecast. The resulting trip generation forecast for American Dream Miami is consistent with ITE guidance, inclusive of the best representative data available, uncomplicated in its assumptions, and conservative for use in determining future impacts. Agency response to this overall approach has been positive with some reservations on details intended to be addressed in the presentation of this section of the CDMP TIA.

The proposed Graham Project by contrast was only presented recently as an Addendum to the American Dream Miami Methodology TM. However, land uses proposed for the Graham Project are much more standardized to the data ITE publishes which should reduce the amount of agency review involved. This section details the proposed trip generation forecasts for both projects.

5.1 Existing CDMP Designation

A trip generation forecast for the current CDMP Land Use Map designations associated with American Dream Miami and the Graham Project was conducted as required by Miami-Dade's CDMP TIA requirements. A majority of the properties is located west of NW 97th Avenue within an area with a previously defined trip allowance associated with Application No. 5 of the April 2005 CDMP Cycle. The remaining property is located to the east of NW 97th Avenue and is designated "Industrial and Office" use in CDMP Land Use Map. **Table 2** shows the approximate acreages with respect to each project and location relative to NW 97th Avenue.

Table 2: Approximate Acreage for American Dream Miami and the Graham Project

Parcels	American Dream Miami	Graham Project	Total
West of NW 97th Avenue	65.9	279.9	345.8
East of NW 97th Avenue	128.2	60.2	188.4
Total	**194.1**	**340.1**	534.2

The property west of NW 97th Avenue, associated with the April 2005 CDMP Cycle (Application No. 5), is +/-346 acres in size. The covenant that runs with the land currently allows for 2,582 net external PM peak hour trips based on 3,200,000 square feet of warehouse use, 500,000 square feet of business park, and 300,000 square feet of office using ITE, 7th Edition trip rates. To produce a trip generation forecast associated with both the American Dream Miami and Graham Project separately, trips associated with the covenant on the west parcels were proportioned by acreage between the two projects in the table below.

The property east of NW 97th Avenue is designated "Industrial and Office" use in CDMP Land Use Map. Miami-Dade County assumes a warehouse land use intensity on this +/-188 acres at an FAR of 0.5 which equates to +/-4.1 million square feet of building square footage. **Table 3** presents the Daily and PM peak hour trip generation summary for the CDMP Land Use Plan Map designations for the associated properties. An AM peak hour summary is provided in **Appendix E**.

Table 3: Trip Generation Summary for Existing CDMP Land Use Plan Map Designations

	Land Use	ITE Code	Size	Units	Trip Rates		Trips					
					Daily	PM Peak	Daily	PM Peak Hour				
								Total	In		Out	
American Dream Miami (+/-194 acres)	**WEST OF NW 97TH AVE (+/-66 Acres)**											
	Office	710	300	KSF	10.36	1.38	3,108	415	17%	71	83%	344
	Business Park	770	500	KSF	12.24	1.33	6,120	663	23%	152	77%	511
	Warehouse	150	3,200	KSF	4.96	0.47	15,872	1,504	25%	376	75%	1,128
	Gross Total Trips West						**25,100**	**2,582**		**599**		**1,983**
	ADM Portion of Land =	19.1%	(65.9 acres / 345.8 acres)									
	ADM Property Total Trips West						**4,783**	**492**		**114**		**378**
	EAST OF NW 97TH AVE (+/-128.2 Acres)											
	Warehouse (128.2 acre * 0.5 FAR)	150	2,792	KSF	4.96	0.47	13,849	1,312	25%	328	75%	984
	ADM Property Total Trips East						**13,849**	**1,312**		**328**		**984**
	TOTAL TRIPS (+/-194.1 Acres)											
	ADM Property Total Trips						**18,632**	**1,804**		**442**		**1,362**
	Land Use	ITE Code	Size	Units	Trip Rates		Trips					
					Daily	PM Peak	Daily	PM Peak Hour				
								Total	In		Out	
Graham Project (+/-340 acres)	**WEST OF NW 97TH AVE (+/-279.9 Acres)**											
	Office	710	300	KSF	10.36	1.38	3,108	415	17%	71	83%	344
	Business Park	770	500	KSF	12.24	1.33	6,120	663	23%	152	77%	511
	Warehouse	150	3,200	KSF	4.96	0.47	15,872	1,504	25%	376	75%	1,128
	Gross Total Trips West						**25,100**	**2,582**		**599**		**1,983**
	GP Portion of Land =	80.9%	(279.9 acres / 345.8 acres)									
	GP Property Total Trips West						**20,317**	**2,090**		**485**		**1,605**
	EAST OF NW 97TH AVE (+/-60.2 Acres)											
	Warehouse (60.2 acre * 0.5 FAR)	150	1,311	KSF	4.96	0.47	6,502	616	25%	154	75%	462
	GP Property Total Trips East						**6,502**	**616**		**154**		**462**
	TOTAL TRIPS (+/-345.8 Acres)											
	GP Property Total Trips						**26,819**	**2,706**		**639**		**2,067**

5.2 American Dream Miami

The American Dream Miami project is a unique attraction. At approximately 6,200,000 square feet of gross floor area (GFA), of which 3,500,000 square feet is gross leasable area (GLA) of retail use, it will be the largest single-enclosure retail/entertainment experience in the country. In addition to retail, the project is envisioned to include a theme park, a water park, a movie theater complex, restaurants, hotel, and other attractions intended to capture trips for an extended stay. As such, the trip characteristics at American Dream Miami (trip intensity per area, time-of-day behavior, trip duration, internal capture between uses, etc.) is neither entirely similar to established data available for retail uses or for entertainment uses.

The most representative land use category published in the Institute of Transportation Engineers (ITE) *Trip Generation Handbook* which could be used to forecast trips for the Project is ITE Code 820/Shopping Center. However, even as the fitted curve for ITE 820 shows larger shopping centers generate less external traffic per gross leasable area, the data available does not include any sample sizes which are comparable to the Project. Additionally, shopping centers do not typically have the theme park/water park element and other unique venues envisioned for American Dream Miami. Therefore, use of ITE Code 820 rates will likely underestimate the trip duration and capture behavior at the Project, which would overestimate the amount of external trips generated. As recommended by ITE methodology, a more representative site was identified to take collect data from for determination of trip generation behavior.

The Mall of America (MOA) in Bloomington, Minnesota was found to be the most representative site available to observe trip rates for use with American Dream Miami. MOA is operated by the same developer who is planning American Dream Miami and with similar scale and unique concept and mix of land uses. As shown in **Table 4**, MOA is comparable to the proposed square footage at American Dream Miami and is nearly equal in proportion of leasable retail use to gross floor area. Throughout the methodology process, a search for developments more representative or similar to MOA were discussed and conclusions documented (many of these are included in **Appendix A** materials along with information on MOA). The Applicant, and many of the agencies who submitted comments, concluded that MOA would be the best representative model to look to for use in American Dream Miami.

Table 4: Size and Land Use Comparison of the Project and MOA

Variable	MOA	American Dream
Gross Leasable Area of Retail (GLA)	2,581,582 sf	3,500,000 sf
Gross Floor Area (GFA)	4,404,698 sf	6,200,000 sf
% GLA of GFA	59%	56%

The Applicant performed external traffic counts at MOA in June 2015 and again in August 2015. Each effort was performed independently of each other (different consultants) and involved collecting traffic counts at MOA over 72 hours. This data was averaged over the 3 days and seasonally adjusted to partial data available at the entry points for the entire year. The two independent studies were reviewed for accurate procedure, variability and reasonableness before

the resulting seasonally adjusted rates from the two studies were averaged together and presented in the American Dream Miami CDMP TIA Methodology Technical Memorandum. The data indicated a traditional relationship of PM peak hour project generation occurring within the PM peak hour of adjacent traffic (between 4PM – 6PM). A summary of findings for MOA weekday and PM peak hour trip rates per 1,000 square feet of GLA of retail are provided in **Table 5.** The complete count reports for the data collection efforts are included in **Appendix F.**

Table 5: MOA External Trip Generation Rates for Weekday and PM Peak Hour

Period	Traffic Count (June 2015)	Trip Rate (June 2015)	Traffic Count (August 2015)	Trip Rate (August 2015)	Trip Rate Average
Weekday	49,408	19.14	49,800	19.29	19.21
PM Peak Hour	3,347	1.30	4,173	1.62	1.46

Notes:
- Traffic counts are in units of external vehicle trips per period and were averaged and seasonally adjusted.
- Rates shown in units of external vehicle trips per period per 1,000 square feet of GLA of retail.

A trip generation summary for American Dream Miami was prepared per ITE methodology as outlined in the *Trip Generation Manual, 9th Edition* and *Trip Generation Handbook* and based on the MOA trip rates. MOA trips rates were derived per 1,000 square feet of gross leasable area (GLA) of retail and applied to GLA at American Dream Miami. Trips forecasted for American Dream Miami at build-out are used in the Short-term Year 2020 and Long-term Year 2040 LOS analyses later in this report. In addition to the Daily and PM peak hour summary provided below, an AM peak hour and Saturday summary are provided in **Appendix E** as requested by some agencies during the methodology review.

Adjustments to the total generated trip forecast for American Dream Miami were made to determine new external trips for the project. No internal capture rate was applied as the MOA trip rates applied to American Dream Miami are based on external trip totals (similar to ITE's treatment of Shopping Center). Using external trip rate data to forecast American Dream Miami trips has the benefit of avoiding speculative assumptions on internal capture behavior at this unique project. An upward adjustment of 10.8% of net external trips was applied to account for light rail transit ridership at MOA (currently unplanned in Miami). A reduction for diverted trips was applied to account for future project trips on I-75 and HEFT that are already in the background traffic. This project trip type is expected to "divert" from their primary trip on the freeways to a retail use(s) onsite before returning to their primary trip route. Examples of a diverted trip from a primary route due to a new retail use includes a visit to get a meal, to make a purchase, to service a new stop on a pre-existing delivery route, as an addition to a vacation trip chain, to rejuvenate on a long trip, or to simply satisfy a passer-by's curiosity. American Dream Miami is expected to have these traditional retail diverted trip types, and potential more so due to the uniqueness of the attraction. Therefore, and conservatively, the percentage of diverted trips was derived from the best data available in ITE's fitted curve equation for Land Use 820 (Shopping Center) as provided in ITE's *Trip Generation Handbook.* This equation adjusts the percentage of pass-by trips lower as the retail use increases. At build-out, the diverted trips shown below are new external trips to the ramps and project roadways, but they are already in the background traffic on the adjacent freeways from which they divert from. The quantity of

diverted trips calculated was confirmed to be less than 10% of the background traffic volumes on I-75 and HEFT as requested during the methodology review. **Table 6** shows the trip generation summary of Daily and PM Peak Hour trip generation for American Dream Miami in Build-out Year 2020.

Table 6: Trip Generation Summary for American Dream Miami

Land Use	ITE Code	Size	Units	Trip Rates		Trips					
				Daily	PM Peak	Daily	PM Peak Hour				
							Total	In		Out	
Entertainment/Retail (GLA)	-	3,500	KSF	19.21	1.46	67,251	5,098	48%	2,447	52%	2,651
Total Generated Trips (pre-LRT adjustment)						**67,251**	**5,098**		**2,447**		**2,651**
PM Internal Capture =	0.0%					0	0		0		0
Net External Trips (pre-LRT adjustment)						**67,251**	**5,098**		**2,447**		**2,651**
LRT Adjustment =	10.8%	of net external trips				4,682	355		170		185
Net External Trips						**71,933**	**5,453**		**2,617**		**2,836**
Diverted Trips =	14.0%	of net external trips				10,071	763		343		420
New External Trips						**61,862**	**4,690**		**2,274**		**2,416**

Notes:
- Rates shown in units of external vehicle trips per period per 1,000 square feet of retail GLA where American Dream Miami consists of 3,500 ksf retail GLA within 6,200 ksf GFA (includes entertainment) plus hotel.
- Surveys at MOA show 10.8% LRT trips. This % added back into ADM with MOA auto occupancy of 2.3 applied.
- Diverted trips calculated from ITE's fitted curve for Shopping Center pass-by %.

5.3 Graham Project

Trip generation associated with the Graham Project for the analysis years 2020 and 2040 has been forecast per Institute of Transportation's (ITE) methodology as outlined in the Trip Generation Manual, 9th Edition. In Year 2020, the project estimates a partial build-out of uses to include 150 ksf of commercial use, 250 ksf of business park use, and 500 multi-family dwelling units. In Year 2040, full build-out of the Graham Project will include 1,000 ksf of commercial use, 3,000 ksf of business park use, and 2,000 multi-family dwelling units.

For each year, the internal trip capture rate was calculated for the site by utilizing the Multi-Use Development Internal Capture Matrix methodology outlined in the Trip Generation Handbook. Internal capture matrices are provided in **Appendix E**. The resulting capture rate was applied to total project trips generated by land uses. The quantity of captured trips was then deducted from total trip quantities to derive the net external trips generated by the site. Next, a reduction for diverted trips was applied to account for future project trips on I-75 and HEFT that are already in the background traffic. This project trip type is expected to "divert" from their primary trip on the freeways to a retail use(s) onsite before returning to their primary trip route. The percentage of diverted trips was derived from ITE's fitted curve equation for Land Use 820 (Shopping Center) as provided in ITE's *Trip Generation Handbook*. The diverted trips shown below are new external trips to the ramps and project roadways, but they are already in the background traffic on the adjacent freeways from which they divert from. The quantity of diverted trips calculated was confirmed to be less than 10% of the background traffic volumes on I-75 and HEFT. The quantity

of diverted trips was then deducted from net external trip quantities to derive the new external trips generated by the site. **Table 7** provides the Daily and PM peak hour trip generation summary for the Graham Project for Year 2020 and Build-out Year 2040. An AM peak hour summary is provided in **Appendix E**.

Table 7: Trip Generation Summary for Graham Project

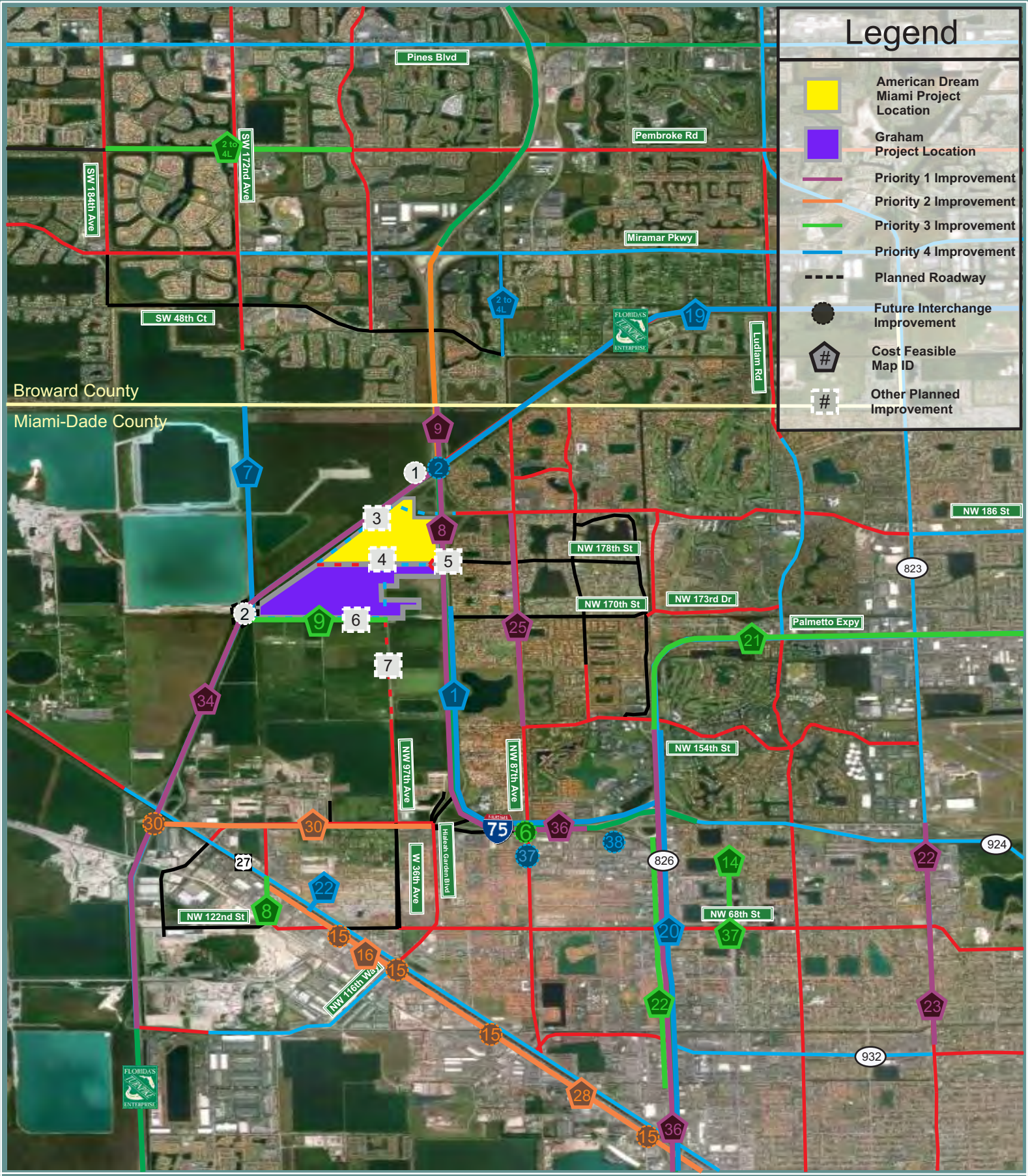
	Land Use	ITE Code	Size	Units	Trip Rates		Trips					
								PM Peak Hour				
					Daily	PM Peak	Daily	Total	In		Out	
Graham Project (2020)	Commercial	820	150	KSF	58.93	5.24	8,840	786	48%	377	52%	409
	Business Park	770	250	KSF	13.48	1.35	3,370	338	26%	88	74%	250
	Multi-Family Apartment	220	500	DU	6.31	0.59	3,155	295	65%	192	35%	103
	Total Generated Trips						**15,365**	**1,419**		**657**		**762**
	PM Internal Capture =	15.1%	of net external trips				2,317	214		99		115
	Net External Trips						**13,048**	**1,205**		**558**		**647**
	Diverted Trips =	35.0%	of external commercial trips				2,588	239		115		124
	New External Trips						**10,460**	**966**		**443**		**523**
Graham Project (2040)	Commercial	820	1,000	KSF	30.33	2.80	30,330	2,800	48%	1,344	52%	1,456
	Business Park	770	3,000	KSF	10.86	1.05	32,580	3,150	26%	819	74%	2,331
	Multi-Family Apartment	220	2,000	DU	6.12	0.56	12,240	1,120	65%	728	35%	392
	Total Generated Trips						**75,150**	**7,070**		**2,891**		**4,179**
	PM Internal Capture =	10.8%	of net external trips				8,121	764		312		452
	Net External Trips						**67,029**	**6,306**		**2,579**		**3,727**
	Diverted Trips =	20.0%	of external commercial trips				5,172	487		234		253
	New External Trips						**61,857**	**5,819**		**2,345**		**3,474**

6.0 BACKGROUND CONDITIONS (Years 2020 & 2040)

Background (non-project) traffic conditions were assessed for the Year 2020 (Short-term) and Year 2040 (Long-term) analyses by determining available roadway network and background LOS on roadway segments prior to applying project trips.

6.1 Future Roadway Networks

Cost-feasible roadway improvements in the vicinity of the projects are assumed in place for the respective future year analyses per CDMP TIA requirements. The Miami-Dade Metropolitan Planning Organization (MPO) Adopted 2040 Long Range Transportation Plan (LRTP) and other agency work programs were reviewed to determine the Cost Feasible 2020 and Cost Feasible 2040 networks for this area. Reasonable assumptions regarding the design and accessibility at the I-75/HEFT/Miami Gardens Boulevard interchange were incorporated into the future roadway networks based on ongoing discussions with FDOT D4 and D6. Additionally, several roadways are planned to be developed to provide access to the proposed projects and additional capacity for the local area. **Figure 6** and **Table 8** provide the location and description for these future cost feasible and other planned roadway projects improvements assumed in place for the background roadway networks. Respectively, **Figure 7** and **Figure 8** illustrate the Year 2020 (Short-term) and Year 2040 (Long-term) roadway networks.



Cost Feasible & Planned Improvements

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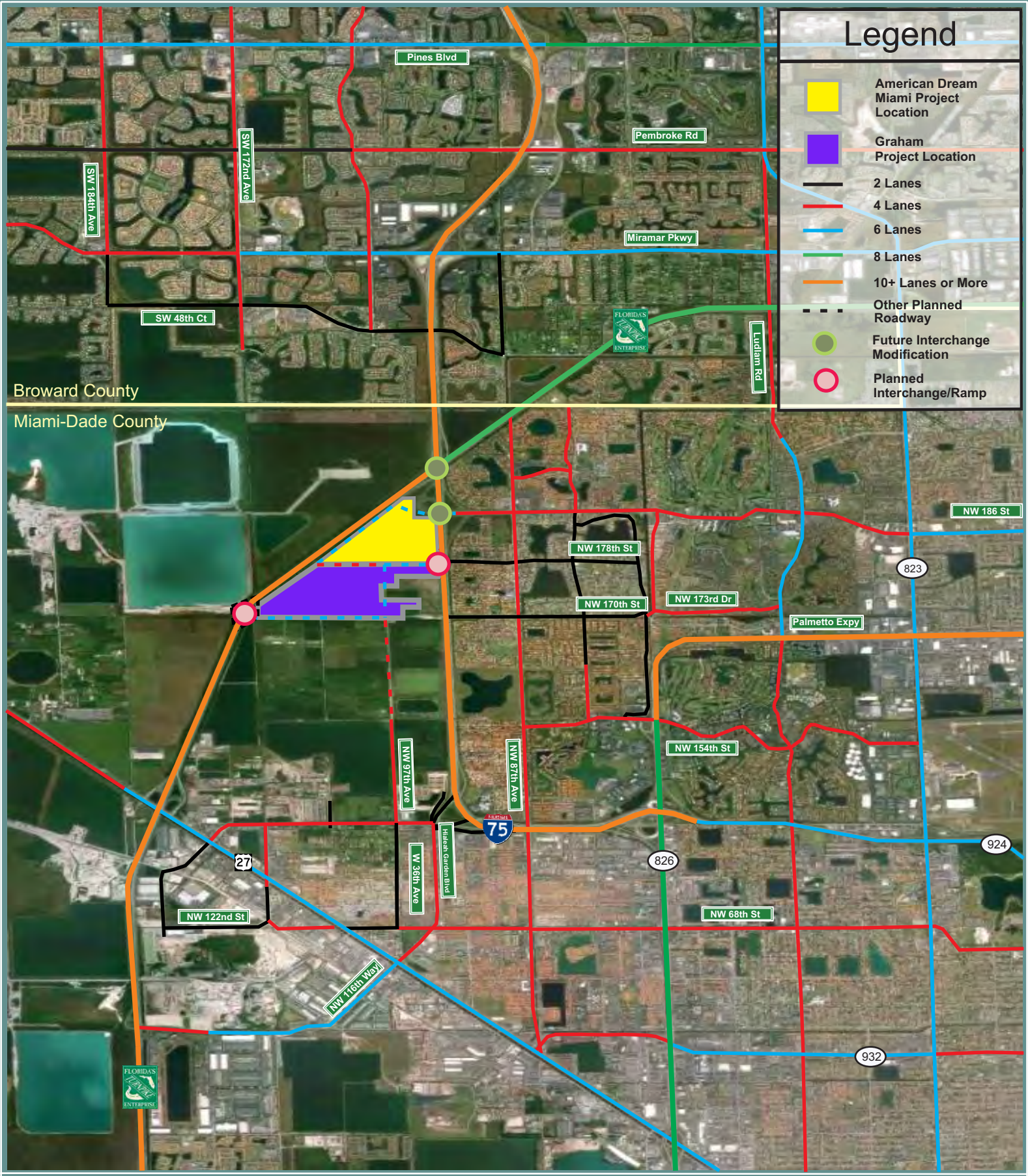
Figure: 6

Table 8: Cost Feasible and Planned Roadway Improvements

	County	LRTP Priority	Priority ID	Project	From	To	Improvement	Year	Notes
2020 Cost Feasible Improvements	Miami-Dade County	I	8	I-75	NW 170 St	S of HEFT Interchange	Managed Lanes	2015 - 2020	
		I	9	I-75	S of HEFT Interchange	Miami-Dade County Line	Managed Lanes	2015 - 2020	
		I	22	NW 57 Ave (Red)	W 65 St	W 84 St	Add 2 Lanes and Reconstruct (From 4 to 6)	2015 - 2020	
		I	23	NW 57 Ave (Red)	W 53 St	W 65 St	Add 2 Lanes and Reconstruct (From 4 to 6)	2015 - 2020	
		I	24	NW 74 St	SR 821 (HEFT)	SR 826 (Palmetto)	Add 2 Lanes and Reconstruct (From 4 to 6)	2015 - 2020	
		I	25	NW 87 Ave	NW 154 St	NW 186 St	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	26	NW 87 Ave	NW 74 St	NW 103 St	New 2 Lane Road Construction	2015 - 2020	
		I	27	NW 97 Ave	NW 70 St	NW 74 St	New 4 Lane Road Construction	2015 - 2020	
		I	28	NW 97 Ave	NW 58 St	NW 70 St	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	34	SR 821 (HEFT)	NW 106 St	I-75	Add Lanes and Reconstruct*	2015 - 2020	*6 lanes plus 4 managed lanes per 2016/17 Turnpike D6 Work Program
		I	35	SR 821 (HEFT)	SR-836 (Dolphin)	NW 74 St	Add Lanes and Reconstruct*	2015 - 2020	*6 lanes plus 4 managed lanes per 2016/17 Turnpike D6 Work Program
		I	36	SR 826 (Palmetto) and I-75	Flagler	NW 154 St	Managed Lanes	2015 - 2020	
		I	36	SR 826 (Palmetto) and I-75	NW 170 St	SR 826 (Palmetto)	Managed Lanes	2015 - 2020	
		I	44	SR 997 (Krome)	SW 88 St (Kendall)	One Mile N of SW 8 St (Tamiami)	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	45	SR 997 (Krome)	SW 136 St	SW 88 St (Kendall)	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	46	SR 997 (Krome)	N of SW 8 St (Tamiami)	MP 2.754	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	47	SR 997 (Krome)	MP 10.953	MP 14.184 / US 27 (Okeechobee)	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	48	SR 997 (Krome)	MP 2.754	MP 5.122	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	49	SR 997 (Krome)	MP 5.122	MP 8.151	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	50	SR 997 (Krome)	MP 8.151	MP 10.935	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		I	51	SR 997 (Krome)	SW 312 St (Camobell)	SW 296 St	Add 2 Lanes and Reconstruct (From 2 to 4)	2015 - 2020	
		IV	1	I-75	SR 826 (Palmetto)	NW 170 St	Widen with Express Lanes	2031 - 2040*	*Accelerated to 2020 (I-75 Express Lanes)
		IV	2	I-75	At Miami Gardens Drive		Modify Interchange	2031 - 2040*	*Accelerated to 2020 (I-75 Express Lanes)
		IV	18	SR 821 (HEFT)	NW 57 Ave (Red)	Turnpike (Mainline)	Widen to 8 Lanes*	2031 - 2040	*6 lanes plus 2 managed lanes per 2016/17 Turnpike D4 Work Program
		IV	19	SR 821 (HEFT)	I-75	NW 57 Ave (Red)	Widen to 8 Lanes*	2031 - 2040	*6 lanes plus 2 managed lanes per 2016/17 Turnpike D4 Work Program

Table 8 (continued): Cost Feasible and Planned Roadway Improvements

	County	LRTP Priority	Priority ID	Project	From	To	Improvement	Year	Notes
2040 Cost Feasible Improvements	Miami-Dade County	II	21	NW 117 Ave	NW 25 St	NW 41 St	New 2 Lane Road Construction	2021 - 2025	
		II	23	NW 122 Ave	NW 12 St	NW 41 St	New 2 Lane Road Construction	2021 - 2025	
		II	30	SR 924 / Gratigny West Ext'n	SR 826 (Palmetto / I-75)	SR 821 (HEFT)	Extend SR 924 to SR 821 (HEFT); connect to I-75 and SR 826	2021 - 2025	
		III	9	NW 170 St	SR 821 (HEFT)	NW 97 Ave	6 Lane Divided roadway	2026 - 2030	*Assumed for access by 2020
		III	21	SR 826 (Palmetto)	NW 154 St	NW 17 Ave	Managed Lanes	2026 - 2030	
		IV	9	Miami Gardens Dr/NW 186 St	NW 97 Ave	I-75	New 4 Lane Road Construction*	2031 - 2040	*Assumed for access at 6 lanes in 2020
		IV	13	NW 97 Ave	NW 58 St	NW 52 St	Add 2 Lanes and Reconstruct (From 2 to 4)	2031 - 2040	
	Broward County	-	19	Pembroke Rd	SW 184 Ave	SW 160 Ave	Add 2 Lanes (From 2 to 4)	2026 - 2030	
		-	28	SW 148 Ave	Bass Creek Rd	SR 858 / Miramar Pkwy	Add 2 Lanes (From 2 to 4)	2026 - 2040	
		-	32	SW 196 Ave	SR-858 / Miramar Pkwy	SR 820 / Pines Blvd	Add 2 Lanes (From 2 to 4)	2031 - 2040	
Other Planned Improvements	Miami-Dade County	-	**1**	I-75	At Miami Gardens Drive		Modify Interchange*	by 2020	*Developer working with FDOT to refine Priority IV-2 for project access.
		-	**2**	Florida Turnpike	At NW 170 St		New Interchange	by 2020	
		-	**3**	Miami Gardens Drive Extension / NW 102 Ave	NW 178 St/Southern ADM Road	I-75	New 6 Lane Divided Roadway*	by 2020	Similar to Priority IV-9
		-	**4**	NW 178 St/Southern ADM Road	Miami Gardens Drive Extension	I-75	New 4/6 Lane Road Construction	by 2020	
		-	**5**	NW 178 St/Southern ADM Road Southbound I-75 Ramps	At I-75		New Southbound On and Off Ramps at I-75	by 2020	
			6	NW 170 St	SR 821 (HEFT)	NW 97 Ave	6 Lane Divided roadway	by 2020	
		-	**7**	NW 97th Ave	Southern ADM Road	NW 154th St	Pave and widen to 4/6 lanes	by 2020	



2020 Cost Feasible & Planned Network

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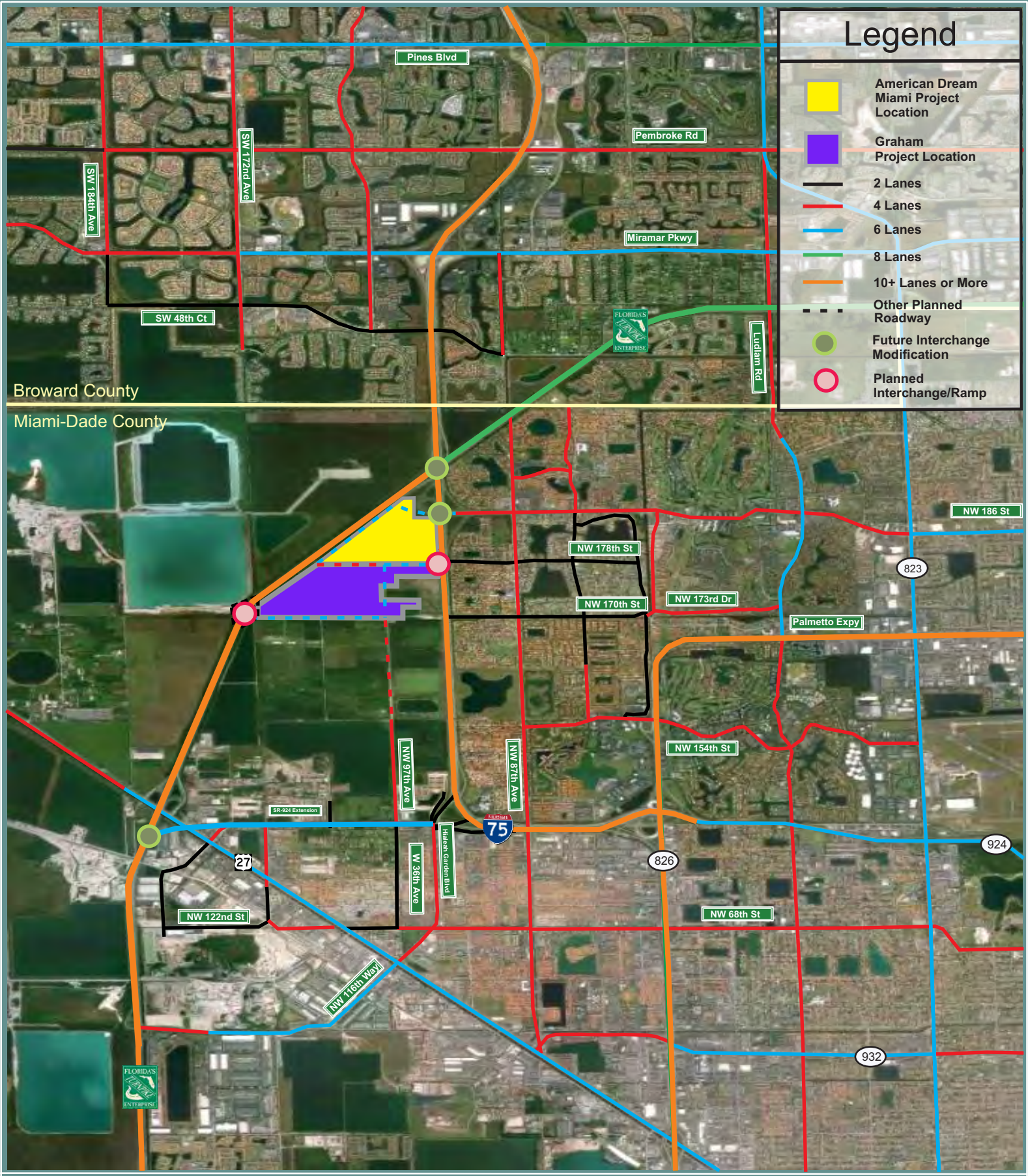
Figure: 7



2040 Cost Feasible & Planned Network

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6.2 Background Volumes and Analysis

Background LOS on study area roadways was determined for the PM peak hour by comparing future background traffic volumes to the associated LOS volume standards and MSV for each facility. At the request of Miami-Dade County and other agencies, this analysis was performed for each direction of travel throughout the study area. Where a volume exceeds the adopted maximum service volume (MSV) for a facility, a background LOS deficiency may exist and is identified in the analysis.

As described in the existing conditions section, several sources were referenced to obtain existing count data for the study area roadways. FDOT's *Florida Traffic Information* (FTI) 2014 data was reviewed for State roadways. Miami-Dade Concurrency and Count Databases for 2014 were reviewed for County and local roadways (Miami-Dade County also provided vested trips on some roadways which were later used to forecast future volumes). Additionally, Broward County provided recent count data at major roadways near I-75 interchanges in their county. Where count data from Miami-Dade County was missing or incomplete, FDOT data was supplemented as available. In the event existing peak hour counts were not directly available, PM peak hour peak direction traffic volumes were determined from daily count data by application of an available peak hour intensity factor (K factor) and directional split factor (D factor). Count data referenced for the CDMP TIA is provided in **Appendix C.**

Background year volumes were primarily developed from the existing data by applying linear growth from historical count data or one percent (1%) annual growth, whichever was greater. Where committed trips provided in the Miami-Dade County's Concurrency Database were greater than linear growth or 1% annual growth, they were used. For new area roadways, model volumes were referenced. A Background Volumes Worksheet is provided in **Appendix B** to show development of future background volume forecasting.

For service volumes and MSV, an inventory of existing roadway characteristics was performed in order to identify existing number of traffic lanes, geometries, adopted standards, and other features necessary to determine volume standards for an LOS analysis on study area roadways. The latest generalized FDOT LOS tables from the *Quality/Level of Service Handbook* were referenced for State roadways and the Miami-Dade Concurrency Database was referenced for County roadways. Since the Miami-Dade Database is provided in non-directional format, service volumes were converted to directional values. These existing service volumes and MSV were extrapolated up to match the cost feasible/planned number of lanes and facility type. FDOT generalized LOS tables are provided in **Appendix D**. In the Build-out Conditions section of this report, the background level of service analysis for Year 2020 and Year 2040 study area roadway segments are provided, respectively, within **Table 9** and **Table 10**. Forecasted deficiencies due to background traffic for Year 2020 and Year 2040 are also identified in these tables and in **Figure 11** and **Figure 12**.

Based on the PM peak hour peak direction analysis, the following potential background deficiencies were identified on the Cost Feasible networks:

Short-term (Year 2020)

- Miami Gardens Drive (I-75 to NW 67th Avenue) - MSV for Miami Gardens Drive is designated in Miami-Dade's Concurrency Database at 120% of FDOT's generalized service volumes for a Class I Arterial. Without this adjustment, a background deficiency at LOS 'F' is shown for the segment in the Year 2020 PM peak hour peak direction analysis before any project trips are added.

Long-term (Year 2040)

- HEFT (NW 106th Street to US 27) - This segment is funded for additional lane capacity in Turnpike's D6 2016/17 Work Program. Regression of historical count data shows Year 2040 background volumes could be higher than the available capacity even with the capacity improvement before any project trips are added. This segment is located just outside of the TIA study area.
- I-75 (Miramar Parkway to Miami Gardens Drive) - This segment is funded for the addition of managed lanes as part of the I-75 Express Lanes project. Regression of historical count data shows Year 2040 background volumes could be higher than the available capacity even with the capacity improvement and before any project trips are added.
- Miami Gardens Drive (I-75 to NW 67th Avenue) - This segment shows a background deficiency at LOS 'F' in the Year 2040 PM peak hour peak direction analysis even with designation of a MSV based on 120% of FDOT's generalized service volumes for a Class I Arterial. To obtain acceptable LOS for this background deficiency the segment would require six lanes for traffic in the Year 2040 PM peak hour peak direction analysis. This capacity increase is needed before any project trips are added.
- Miami Gardens Drive (NW 67th Avenue to NW 57th Avenue) - MSV for Miami Gardens Drive is designated in Miami-Dade's Concurrency Database at 120% of FDOT's generalized service volumes for a Class I Arterial. Without this adjustment, a background deficiency at LOS 'F' is shown for the segment in the Year 2040 PM peak hour peak direction analysis before any project trips are added.

7.0 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Distribution of forecasted project trips generated for American Dream Miami and the Graham Project was determined with the use of a regional travel demand model based on the Florida Standard Urban Transportation Model Structure (FSUTMS). In coordination with FDOT D4 & D6, the base model version used for this effort was the Southeast Regional Planning Model (SERPM), version 6.5 refined by FDOT D6 for SR 826 PD&E modeling work. In this version of SERPM, a sub-area module was added by D6 to improve calibration and streamline analysis in the area of SR 826. This model was provided to the Applicant by FDOT on March 13th 2015. Before use with the CDMP TIA model runs, the model roadway networks were updated to include Cost Feasible network improvements for the Short-term (Year 2020) and Long-term (Year 2040) conditions. Additionally, the latest approved socioeconomic data set from SERPM version 7 were incorporated into the model set.

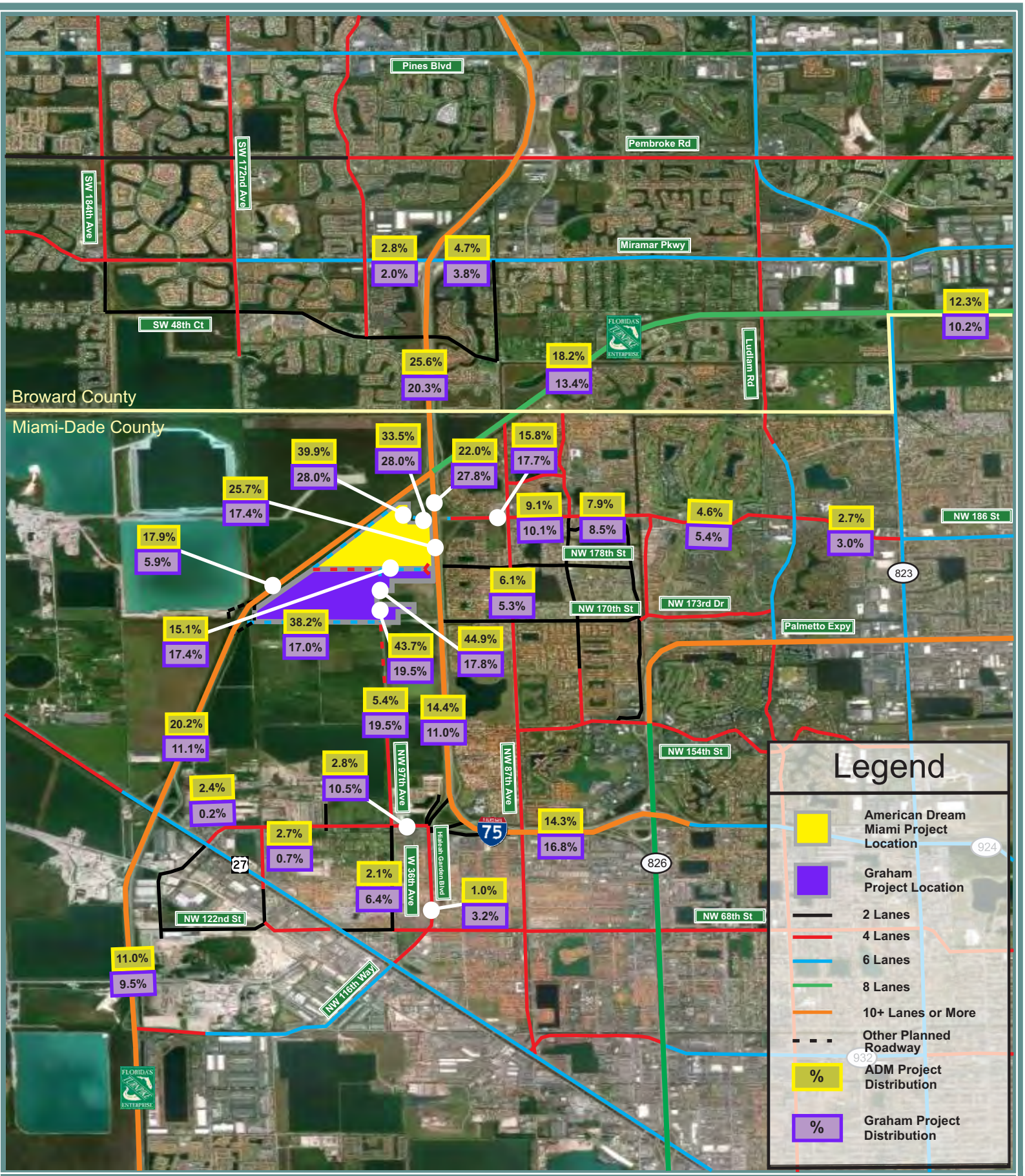
Land use data for the American Dream Miami Project and the Graham Project were entered into traffic analysis zones (TAZs) in a manner which appropriately represents the each project's land uses and access points. Additionally, roadways and interchange ramps anticipated in the networks beyond the Cost Feasible planned improvements (as provided in the previous section) were added to simulate access to the projects. The land use data for American Dream Miami and the Graham Project was then factored to match the daily ITE trip generation calculations for the external trip quantities displayed in **Table 6** and **Table 7**, respectively. The updated models were run to distribute trips for all model trip purposes between allocated origins and destinations. Project trip distribution percentages were extracted from the completed model run, and the data was reviewed to ensure the results were reasonable.

For American Dream Miami, the *Mall of America* (MOA) *Special Generator Survey*, by Cambridge Systematics, Inc. dated April 20, 2012, (included in **Appendix G**) was referenced to compare the initial SERPM run project distribution outputs to MOA trip behaviors for this unique trip type. Surveys from the Cambridge Systematics' report concluded that approximately 30% of MOA visits were made from outside of the region. Additionally, it is estimated from the surveys that nearly half of MOA trips travel over 30 minutes to arrive at the site. This trip behavior is not fully represented for American Dream Miami trips in the SERPM model which is designed to primarily forecast weekday commuter trips and similar local behaviors from traditional land use types. Typically, unique attractions such as American Dream Miami are assigned a special generator module to more accurately simulate unique project trip behaviors within the model. This approach can be a very involved exercise and invasive to much of the coding developed for an adopted regional planning tool. Therefore, a more creative solution was used to adjust project distribution for American Dream Miami such that project distribution is more representative of behaviors noted in the MOA survey data, as described below.

The Applicant for American Dream Miami intends to design the project, the access points, and advocate for a surrounding roadway network that will capture many of its regional and non-regional visitors (like the ones observed at MOA) directly from the I-75 and HEFT facilities. To do so, the Applicant is working with FDOT D4 and D6 to enhance the design of the interchange improvement at I-75/HEFT/Miami Gardens Drive. Improvements proposed at the interchange include ramps for direct access to NW 178th Street west of I-75, to and from the southbound I-75

travel lanes, so that these trips would not need to impact Miami Gardens Drive or other local roads. Additionally, the Applicant has requested that many of the left turns along Miami Gardens Drive be removed from the interchange design and replaced with loops to reduce delay times along the segment of Miami Gardens Drive from the project to NW 87th Avenue. The Applicant is also in talks with Florida's Turnpike regarding a new HEFT interchange at NW 170th Street. This interchange will be heavily marketed as the primary entry point for American Dream Miami to include roadway signs directing traffic from beyond the local area to this access point. This approach proposed by the Applicant is intended to minimize the use of local roadways by project trips.

As a result of the planned access management enhancements and the large amount of non-regional trips not accounted for in the model, the project distribution for American Dream Miami in the initial SERPM runs is lower than reasonable via the HEFT and NW 170th Street interchange. To forecast a more representative project distribution, an additional TAZ was added for American Dream Miami at NW 170th Street near the future HEFT interchange in addition to the original TAZ for the project. A portion of the project's socioeconomic data from the original TAZ representing the amount of non-regional trips expected (30% as per the MOA surveys) was transferred to the new TAZ and turning prohibitors were coded into the network to force this portion of project trips to access the project via the HEFT and NW 170th Street. Project trips were manually assigned the full route along NW 170th Street and NW 97th Avenue between the two TAZs to not underestimate project trips along the access route. Respectively, **Figure 9** and **Figure 10** show the percentage of new external project trips on the Year 2020 and Year 2040 roadway networks for the American Dream Miami and the Graham Project for Year 2020 and Year 2040. Model plots are provided in **Appendix H.**



2020 Daily Project Distributions

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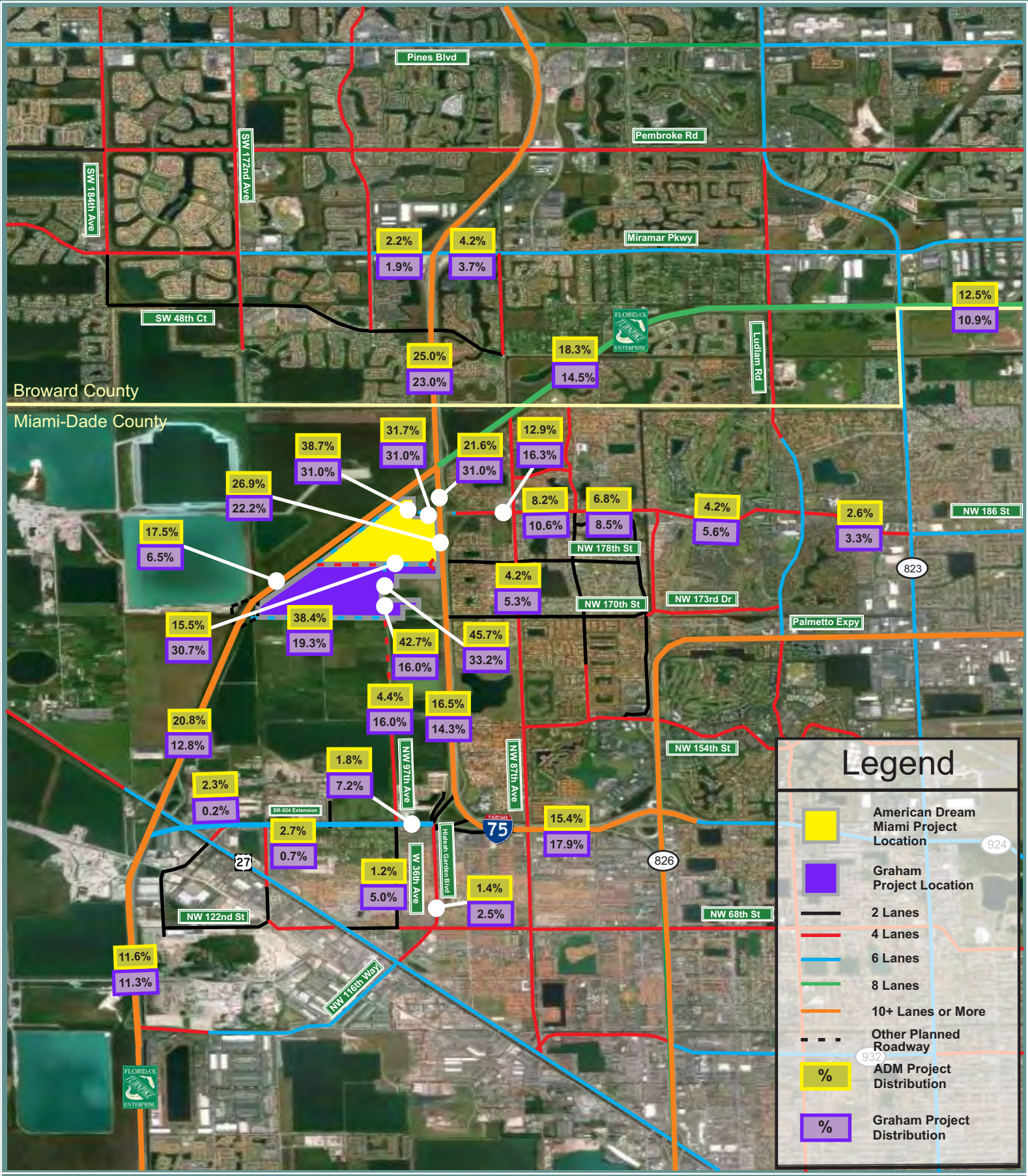

2040 Daily Project Distributions

American Dream Miami / Graham

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8.0 BUILD-OUT CONDITIONS (Years 2020 & 2040)

For each project, new PM peak hour peak direction external project trips were assigned to the roadway network by applying the trip generation quantities from **Table 6** and **Table 7** to the roadway networks in accordance with the project distribution developed for the projects from **Figures 9** and **Figure 10**. On routes where trips could divert from I-75 and HEFT, the project distribution was applied to the net external trips (before the diverted trip reduction was applied). Project trips were then added to the forecasted background traffic to obtain the total future roadway segment volumes to conduct the Short-term (Year 2020) and Long-term (Year 2040) LOS analysis.

Build-out LOS on study area roadways was determined for the PM peak hour by comparing future build-out traffic volumes to the associated LOS volume standards and MSV for each facility. At the request of Miami-Dade County and other agencies, this analysis was performed for each direction of travel throughout the study area. Where a volume exceeds the adopted maximum service volume (MSV) for a facility, a build-out LOS deficiency may exist and is identified in the analysis. The build-out level of service analysis for Year 2020 and Year 2040 study area roadway segments are provided, respectively, within **Table 9** and **Table 10**. Forecasted deficiencies due to background traffic and additional deficiencies due to project impacts for Year 2020 and Year 2040 are also identified in these tables and in **Figure 11** and **Figure 12**.

Based on the PM peak hour peak direction analysis, the following potential build-out deficiencies were identified on the Cost Feasible networks:

Short-term (Year 2020)

- Miami Gardens Drive (I-75 to NW 87th Avenue) - MSV for Miami Gardens Drive is designated in Miami-Dade's Concurrency Database at 120% of FDOT's generalized service volumes for a Class I Arterial. Without this adjustment, the segment shows an existing deficiency and requires a PM peak hour peak direction capacity equivalent of a six-lane Class I Arterial to achieve acceptable LOS. At build-out, no additional capacity is shown to be needed for project trips. The additional capacity needs for the existing deficiency will likely be accommodated for with the future interchange improvements at the I-75/HEFT/Miami Gardens Drive. The final design for Miami Gardens Drive from west of the ramps to NW 87th Avenue is expected to minimize left turns at the ramps by incorporating loops in the design. This will allow traffic to flow uninterrupted for nearly a mile allowing Miami Gardens Drive to operate at a higher capacity than a typical Class I Arterial section.

Long-term (Year 2040)

- HEFT (NW 106th Street to US 27) - This segment is funded for additional lane capacity in Turnpike's D6 2016/17 Work Program. Regression of historical count data shows Year 2040 background volumes could be higher than the available capacity even with the capacity improvement before any project trips are added. This segment is located just outside of the TIA study area.

- I-75 (Miramar Parkway to Miami Gardens Drive) - This segment is funded for the addition of managed lanes as part of the I-75 Express Lanes project. Regression of historical count data shows Year 2040 background volumes could be higher than the available capacity even with the capacity improvement before any project trips are added. The Applicant is working with FDOT D4 and D6 to introduce ramps for direct access to NW 178th Street west of I-75 to and from the southbound I-75 travel lanes, so that these trips would not need to impact Miami Gardens Drive or other local roads. This improvement will increase capacity in the I-75 corridor.
- Miami Gardens Drive (I-75 to NW 67th Avenue) - This segment shows a background deficiency at LOS 'F' in the Year 2040 PM peak hour peak direction analysis even with designation of a MSV based on 120% of FDOT's generalized service volumes for a Class I Arterial. To obtain acceptable LOS for this background deficiency the segment would require six lanes for traffic in the Year 2040 PM peak hour peak direction analysis before any project trips are added. No additional capacity is shown to be needed for project trips.

Table 9: Short-term (Year 2020) Study Area Roadway Segment LOS Analysis

Roadway	From	To	No. of Lanes CF + Proposed	Adopted LOS	Peak Hour Peak Dir Service Vol		BACKGROUND YEAR 2020								ADM PROJECT TRIPS							GRAHAM PROJECT TRIPS							BUILDOUT YEAR 2020						CAPACITY NEEDS		
							Peak Hour Peak Dir Analysis									2,274	OUT =	2,416	% Adopted LOS			443	OUT =	523	% Adopted LOS											
					LOS D	LOS E	Bkgd ADT Growth	K	D	Peak Dir	NB/EB (Vol / LOS)		SB/WB (Vol / LOS)		Daily PD	Project Peak Dir	PM PK Trips NB/EB	PM PK Trips SB/WB	NB/EB	SB/WB	Study Area Link?	Daily PD	Project Peak Dir	PM PK Trips NB/EB	PM PK Trips SB/WB	NB/EB	SB/WB	Study Area Link?	NB/EB (Vol / LOS)		SB/WB (Vol / LOS)		Pass/ Fail	Backlog Facility	# lanes BG Needs	# lanes Buildout Needs	Proposed Capacity Mitigation
Florida's Turnpike	NW 106th Street	US 27/ Okeechobee Rd	6+4	D	9,160	10,020	114,502	0.095	0.563	N	6,124	C	4,754	B	11.05%	S	251	267	2.74%	2.91%		9.45%	S	42	49	0.46%	0.54%		6,418	C	5,070	B	Pass				
	US 27/ Okeechobee Rd	NW 170th St	6+4	D	9,160	10,020	104,355	0.095	0.563	N	5,582	B	4,332	B	20.27%	S	491	459	5.36%	5.01%	Y	11.05%	S	59	47	0.65%	0.52%		6,132	C	4,839	B	Pass				
	NW 170th St	Interstate 75	6+4	D	9,160	10,020	104,355	0.095	0.563	N	5,582	B	4,332	B	17.95%	N	434	408	4.73%	4.46%		5.90%	N	57	0	0.62%	0.00%		6,072	C	4,741	B	Pass				
	Interstate 75	CR 823/Red Rd	6+2	D	7,330	8,050	57,783	0.095	0.563	W	2,399	B	3,090	B	18.26%	E	441	415	6.02%	5.67%	Y	13.41%	E	70	59	0.96%	0.81%		2,910	B	3,565	B	Pass				
	CR 823/Red Rd	CR 817/NW 27th Ave	6+2	D	7,330	8,050	76,801	0.095	0.563	W	3,188	B	4,108	B	12.38%	E	299	282	4.08%	3.84%		10.18%	E	53	45	0.73%	0.62%		3,541	B	4,434	B	Pass				
Interstate 75	Miramar Pkwy/ S 33rd St	Florida's Turnpike	10+4	D	12,880	14,300	180,718	0.085	0.627	N	9,631	C	5,730	B	25.69%	N	621	584	4.82%	4.54%		20.27%	N	106	90	0.82%	0.70%		10,358	C	6,404	B	Pass				
	Florida's Turnpike	Miami Gardens Dr/NW 186 St	8+4	D	10,980	12,160	177,104	0.085	0.627	N	9,439	D	5,615	B	22.05%	N	401	633	3.65%	5.77%	Y	27.78%	N	100	168	0.91%	1.53%		9,939	D	6,417	B	Pass				
	Miami Gardens Dr/NW 186 St	South Project Rd	8+4	D	10,980	12,160	134,224	0.085	0.627	N	7,153	C	4,256	B	25.71%	S	274	932	2.50%	8.49%	Y	17.44%	S	0	168	0.00%	1.53%		7,428	C	5,356	B	Pass				
	South Project Rd	NW 138th Street	8+4	D	10,980	12,160	134,224	0.085	0.627	N	7,153	C	4,256	B	14.42%	S	274	402	2.50%	3.66%		10.97%	S	0	106	0.00%	0.97%		7,428	C	4,764	B	Pass				
	NW 138th Street	SR 826	8+4	D	10,980	12,160	138,395	0.085	0.627	W	4,388	B	7,376	C	14.36%	E	380	294	3.46%	2.68%		16.77%	E	106	56	0.97%	0.51%		4,874	B	7,726	C	Pass				
Miami Gardens Dr	South Project Rd	Project Access Rd	6	E	3,624	3,624	4,352	0.090	0.550	N	216	C	176	C	0.00%	W	0	0	0.00%	0.00%		28.00%	E	181	156	5.00%	4.31%		397	C	333	C	Pass				
	Project Access Rd	Interstate 75 Western Ramps	6	E	3,624	3,624	4,352	0.090	0.550	W	176	C	216	C	39.91%	E	1,432	745	39.50%	20.55%	Y	28.00%	E	229	108	6.33%	2.98%	Y	1,837	C	1,069	C	Pass				
	Interstate 75 Western Ramps	Interstate 75 Eastern Ramps	6	E	3,624	3,624	24,564	0.090	0.550	W	995	C	1,216	C	33.55%	E	1,085	745	29.93%	20.55%	Y	28.00%	E	229	108	6.33%	2.98%	Y	2,309	C	2,069	C	Pass				
	Interstate 75 Eastern Ramps	NW 87th Ave	4	E	2,400	2,400	43,481	0.090	0.545	E	2,133	C	1,780	C	15.82%	E	382	360	15.92%	14.99%	Y	17.66%	E	92	78	3.85%	3.26%		2,607	F	2,218	C	Fail	Y	6	6	MGD Design
	NW 87th Ave	NW 82nd Ave	4	E	2,400	2,400	43,481	0.090	0.545	E	2,133	C	1,780	C	9.13%	E	209	219	8.70%	9.14%	Y	10.08%	E	48	49	2.00%	2.05%		2,389	D	2,049	C	Pass				
	NW 82nd Ave	NW 77nd Ave	4	E	2,400	2,400	44,520	0.090	0.545	W	1,824	C	2,183	C	7.90%	E	192	179	7.99%	7.44%	Y	8.48%	E	45	37	1.89%	1.52%		2,061	C	2,398	D	Pass				
	NW 77nd Ave	NW 67nd Ave	4	E	2,400	2,400	44,520	0.090	0.545	W	1,824	C	2,183	C	4.69%	E	113	107	4.72%	4.44%		5.40%	E	28	24	1.18%	1.00%		1,966	C	2,313	D	Pass				
	NW 67nd Ave	NW 57nd Ave	4	E	2,400	2,400	37,118	0.090	0.545	W	1,520	C	1,821	C	2.70%	E	65	61	2.71%	2.55%		3.02%	E	16	13	0.66%	0.56%		1,601	C	1,896	C	Pass				
NW 170th St	Florida Turnpike	Graham Access	6	D	3,020	3,020	5,862	0.090	0.550	W	238	C	290	C	38.22%	W	1,052	1,032	34.84%	34.17%	Y	16.95%	W	74	130	2.45%	4.31%		1,364	C	1,452	C	Pass				
	Graham Access	NW 97th Ave	6	D	3,020	3,020	5,079	0.090	0.550	W	206	C	251	C	38.30%	W	1,002	1,086	33.19%	35.96%	Y	0.00%	E	0	0	0.00%	0.00%		1,208	C	1,337	C	Pass				
NW 138th St	Florida's Turnpike	NW 107th Ave	4	D	2,000	2,000	19,317	0.090	0.545	E	948	C	791	C	2.43%	E	59	55	2.93%	2.76%		0.20%	E	1	1	0.05%	0.04%		1,007	C	847	C	Pass				
	NW 107th Ave	NW 97th Ave	6	D	3,020	3,020	22,770	0.090	0.545	W	932	C	1,117	C	2.75%	W	62	66	2.07%	2.20%		0.66%	W	3	3	0.10%	0.11%		998	C	1,187	C	Pass				
	NW 97th Ave	Hialeah Gardens Blvd	6	D	3,020	3,020	22,770	0.090	0.545	W	932	C	1,117	C	2.80%	E	50	81	1.65%	2.69%		10.45%	E	23	78	0.77%	2.57%		1,005	C	1,276	C	Pass				
Hialeah Gardens Blvd	US 27/ Okeechobee Rd	NW 138th St	4	D	2,000	2,000	29,694	0.090	0.593	S	1,088	C	1,584	C	1.05%	S	28	21	1.42%	1.04%		3.18%	S	19	12	0.94%	0.60%		1,135	C	1,617	C	Pass				
NW 97th Ave	NW 122nd St	NW 130th St	2	D	880	880	9,250	0.090	0.550	S	375	C	458	C	1.25%	S	33	26	3.75%	2.94%		4.44%	S	29	13	3.35%	1.53%		437	C	497	C	Pass				
	NW 130th St	NW 138th St	2	D	880	880	9,250	0.090	0.550	S	375	C	458	C	2.10%	S	57	42	6.46%	4.72%	Y	6.36%	S	37	24	4.25%	2.72%		469	C	524	C	Pass				
	NW 138th St	NW 154th St	4	D	2,000	2,000	3,775	0.090	0.550	S	153	C	187	C	5.11%	S	142	97	7.12%	4.85%	Y	18.81%	S	131	51	6.53%	2.56%	Y	426	C	335	C	Pass				
	NW 154th St	NW 170th St	4	D	2,000	2,000	1,578	0.090	0.550	S	64	C	78	C	5.48%	S	151	106	7.56%	5.28%	Y	19.45%	S	134	54	6.68%	2.72%	Y	349	C	238	C	Pass				
	NW 170th St	Graham Access	6	D	3,020	3,020	5,268	0.090	0.550	S	213	C	261	C	43.77%	S	1,229	1,158	40.70%	38.34%	Y	19.45%	S	167	68	5.52%	2.24%	Y	1,609	C	1,486	C	Pass				
	Graham Access	NW 178th St	6	D	3,020	3,020	4,376	0.090	0.550	S	177	C	217	C	44.90%	S	1,260	1,188	41.71%	39.35%	Y	17.79%	N	88	127	2.91%	4.19%		1,525	C	1,532	C	Pass				
NW 87th Ave	Miami Gardens Dr/NW 186 St	NW 170th St	4	D	2,000	2,000	24,922	0.090	0.524	S	1,068	C	1,175	C	6.19%	S	141	150	7.04%	7.48%	Y	7.15%	S	32	37	1.58%	1.87%		1,240	C	1,362	C	Pass				
NW178th St	Graham Access	NW 97th Ave	4	D	2,000	2,000	4,352	0.090	0.550	W	176	C	216	C	0.00%	W	0	0	0.00%	0.00%		17.79%	E	115	99	5.76%	4.96%	Y	292	C	315	C	Pass				
	NW 97th Ave	Iinterstate 75	6	D	3,020	3,020	915	0.090	0.550	W	37	C	45	C	15.19%	E	106	722	3.52%	23.91%	Y	10.62%	E	44	83	1.47%	2.76%		188	C	851	C	Pass				
Miramar Pkwy	SW 160th Ave	Interstate 75	6	D	3,020	3,020	53,830	0.074	0.524	W	1,896	C	2,087	C	2.80%	W	64	68	2.11%	2.24%		2.04%	W	9	11	0.30%	0.35%		1,969	C	2,165	C	Pass				
	Interstate 75	SW 148th Ave	6	D	3,020	3,020	45,397	0.093	0.524	E	2,212	C	2,010	C	4.73%	E	114	108	3.79%	3.57%		3.75%	E	20	17	0.65%	0.55%		2,346	C	2,134	C	Pass				

Volume from Model

Diverted Trip Route Segment (Net External Trips Applied)

Fails with background volumes. No additional capacity needed as a result of project trips.

Service Volumes on Miami Gardens Drive are adopted at 120% of FDOT's Class I Arterial Generalized.
Otherwise, the segment from I-75 to NW 67th Avenue would show a background deficiency at LOS 'F' and require 6 lanes of capacity before project trips are added.

Table 10: Long-term (Year 2040) Study Area Roadway Segment LOS Analysis

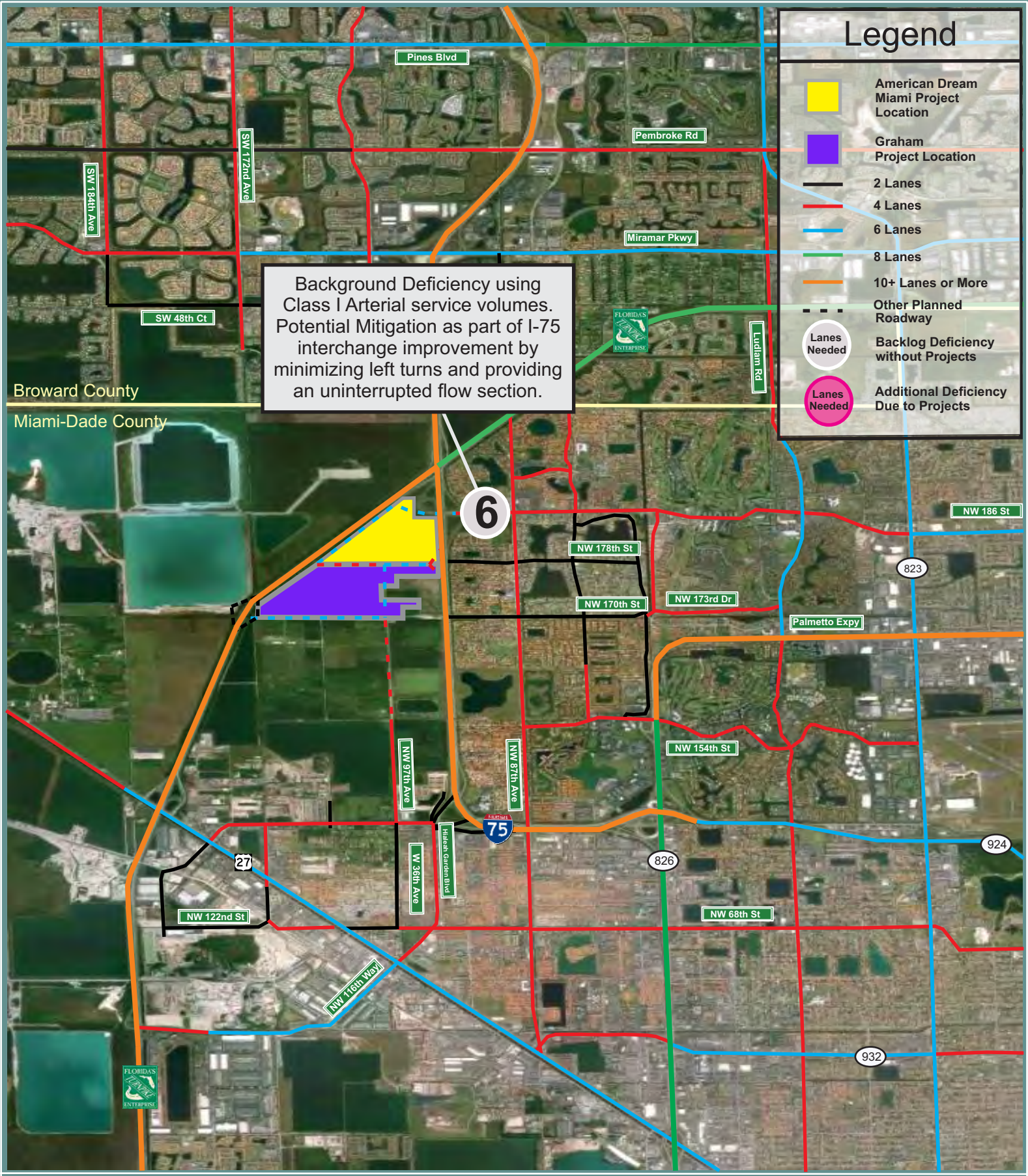
Roadway	From	To	No. of Lanes CF + Proposed	Adopted LOS	Peak Hour Peak Dir Service Vol		BACKGROUND YEAR 2040								ADM PROJECT TRIPS								GRAHAM PROJECT TRIPS								BUILDOUT YEAR 2040						CAPACITY NEEDS		
							Peak Hour Peak Dir Analysis								IN =	2,274	OUT =	2,416	% Adopted LOS				IN =	2,345	OUT =	3,474	% Adopted LOS												
					LOS D	LOS E	Bkgd ADT Growth	K	D	Peak Dir	NB/EB (Vol / LOS)		SB/WB (Vol / LOS)		Daily PD	Project Peak Dir	PM PK Trips NB/EB	PM PK Trips SB/WB	NB/EB	SB/WB	Study Area Link?		Daily PD	Project Peak Dir	PM PK Trips NB/EB	PM PK Trips SB/WB	NB/EB	SB/WB	Study Area Link?		NB/EB (Vol / LOS)		SB/WB (Vol / LOS)		Pass/ Fail	Backlog Facility	# lanes BG Needs	# lanes Buildout Needs	Proposed Capacity Mitigation
Florida's Turnpike	NW 106th Street	US 27/ Okeechobee Rd	6+4	D	9,160	10,020	173,016	0.095	0.563	N	9,254	E	7,183	C	11.69%	S	266	282	2.90%	3.08%			11.39%	S	267	396	2.92%	4.32%			9,787	E	7,861	D	Fail	Y	8+4	8+4	
	US 27/ Okeechobee Rd	NW 170th St	6+4	D	9,160	10,020	153,270	0.095	0.563	N	8,198	D	6,363	C	20.87%	S	510	469	5.56%	5.12%	Y		12.88%	S	420	329	4.59%	3.60%			9,128	D	7,161	C	Pass				
	NW 170th St	Interstate 75	6+4	D	9,160	10,020	153,270	0.095	0.563	N	8,198	D	6,363	C	17.53%	N	423	399	4.62%	4.35%			6.50%	N	378	0	4.13%	0.00%			9,000	D	6,762	C	Pass				
	Interstate 75	CR 823/Red Rd	6+2	D	7,330	8,050	85,154	0.095	0.563	W	3,535	B	4,555	C	18.30%	E	442	416	6.03%	5.68%	Y		14.52%	E	505	340	6.88%	4.64%	Y		4,482	B	5,311	C	Pass				
	CR 823/Red Rd	CR 817/NW 27th Ave	6+2	D	7,330	8,050	108,058	0.095	0.563	W	4,486	B	5,780	C	12.59%	E	304	286	4.15%	3.91%			10.97%	E	381	257	5.20%	3.51%	Y		5,172	C	6,323	D	Pass				
Interstate 75	Miramar Pkwy/ S 33rd St	Florida's Turnpike	10+4	D	12,880	14,300	246,080	0.085	0.627	N	13,115	E	7,802	B	25.01%	N	604	569	4.69%	4.42%			23.05%	N	801	540	6.22%	4.20%	Y		14,520	F	8,911	C	Fail	Y	12+4	12+4	
	Florida's Turnpike	Miami Gardens Dr/NW 186 St	8+4	D	10,980	12,160	211,729	0.085	0.627	N	11,284	E	6,713	B	21.59%	N	393	620	3.58%	5.64%	Y		31.07%	N	684	1,124	6.23%	10.24%	Y		12,361	F	8,457	C	Fail	Y	10+4	10+4	
	Miami Gardens Dr/NW 186 St	South Project Rd	8+4	D	10,980	12,160	179,652	0.085	0.627	N	9,574	D	5,696	B	26.93%	S	319	944	2.90%	8.60%	Y		22.24%	S	170	1,124	1.55%	10.24%	Y		10,063	D	7,764	C	Pass				
	South Project Rd	NW 138th Street	8+4	D	10,980	12,160	179,652	0.085	0.627	N	9,574	D	5,696	B	16.51%	S	319	455	2.90%	4.15%			14.37%	S	170	666	1.55%	6.07%	Y		10,063	D	6,817	C	Pass				
	NW 138th Street	SR 826	8+4	D	10,980	12,160	164,756	0.085	0.627	W	5,223	B	8,781	C	15.41%	E	398	325	3.63%	2.96%			17.91%	E	666	376	6.07%	3.42%	Y		6,288	B	9,481	D	Pass				
Miami Gardens Dr	South Project Rd	Project Access Rd	6	E	3,624	3,624	5,391	0.090	0.550	N	267	C	218	C	0.00%	W	0	0	0.00%	0.00%			31.04%	E	1,157	800	31.92%	22.08%	Y		1,424	C	1,019	C	Pass				
	Project Access Rd	Interstate 75 Western Ramps	6	E	3,624	3,624	5,391	0.090	0.550	W	218	C	267	C	38.70%	E	1,385	725	38.22%	20.01%	Y		31.04%	E	1,235	723	34.07%	19.94%	Y		2,838	C	1,715	C	Pass				
	Interstate 75 Western Ramps	Interstate 75 Eastern Ramps	6	E	3,624	3,624	26,840	0.090	0.550	W	1,087	C	1,329	C	31.78%	E	1,008	725	27.81%	20.01%	Y		31.04%	E	1,235	723	34.07%	19.94%	Y		3,330	C	2,777	C	Pass				
	Interstate 75 Eastern Ramps	NW 87th Ave	4	E	2,400	2,400	51,763	0.090	0.550	E	2,562	F	2,097	C	12.90%	E	289	316	12.03%	13.18%	Y		16.37%	E	456	497	18.98%	20.71%	Y		3,307	F	2,910	F	Fail	Y	6	6	
	NW 87th Ave	NW 82nd Ave	4	E	2,400	2,400	51,763	0.090	0.545	E	2,539	F	2,120	C	8.25%	E	199	188	8.31%	7.82%	Y		10.65%	E	370	250	15.41%	10.40%	Y		3,108	F	2,557	F	Fail	Y	6	6	
	NW 82nd Ave	NW 77nd Ave	4	E	2,400	2,400	53,000	0.090	0.545	W	2,170	C	2,600	F	6.80%	E	164	155	6.85%	6.45%	Y		8.55%	E	297	200	12.38%	8.35%	Y		2,632	F	2,955	F	Fail	Y	6	6	
	NW 77nd Ave	NW 67nd Ave	4	E	2,400	2,400	53,000	0.090	0.545	W	2,170	C	2,600	F	4.28%	E	103	97	4.31%	4.06%			5.69%	E	198	133	8.24%	5.56%	Y		2,472	F	2,830	F	Fail	Y	6	6	
	NW 67nd Ave	NW 57nd Ave	4	E	2,400	2,400	44,188	0.090	0.545	W	1,810	C	2,167	C	2.63%	E	64	60	2.65%	2.50%			3.38%	E	118	79	4.90%	3.31%			1,991	C	2,307	D	Pass				
NW 170th St	Florida Turnpike	Graham Access	6	D	3,020	3,020	8,932	0.090	0.550	W	362	C	442	C	38.40%	W	1,063	1,031	35.20%	34.13%	Y		19.38%	W	455	767	15.07%	25.39%	Y		1,880	C	2,240	C	Pass				
	Graham Access	NW 97th Ave	6	D	3,020	3,020	6,622	0.090	0.550	W	268	C	328	C	38.26%	W	1,001	1,085	33.16%	35.92%	Y		0.00%	E	0	0	0.00%	0.00%			1,270	C	1,413	C	Pass				
NW 138th St	Florida's Turnpike	NW 107th Ave	6	D	3,020	3,020	21,841	0.090	0.545	E	1,071	C	895	C	2.33%	E	56	53	1.86%	1.76%			0.25%	E	9	6	0.29%	0.19%			1,136	C	953	C	Pass				
	NW 107th Ave	NW 97th Ave	6	D	3,020	3,020	37,799	0.090	0.545	W	1,548	C	1,854	C	2.75%	W	63	67	2.07%	2.20%			0.72%	W	17	25	0.56%	0.83%			1,628	C	1,946	C	Pass				
	NW 97th Ave	Hialeah Gardens Blvd	6	D	3,020	3,020	37,799	0.090	0.545	W	1,548	C	1,854	C	1.85%	E	43	44	1.42%	1.45%			7.23%	E	131	290	4.33%	9.60%	Y		1,722	C	2,188	C	Pass				
Hialeah Gardens Blvd	US 27/ Okeechobee Rd	NW 138th St	4	D	2,000	2,000	35,350	0.090	0.593	S	1,295	C	1,887	C	1.41%	S	22	44	1.12%	2.19%			2.54%	S	107	41	5.34%	2.04%	Y		1,424	C	1,972	D	Pass				
NW 97th Ave	NW 122nd St	NW 130th St	2	D	880	880	14,250	0.090	0.550	S	577	C	706	C	0.45%	S	21	0	2.38%	0.00%			3.21%	S	135	52	15.36%	5.88%	Y		733	C	757	C	Pass				
	NW 130th St	NW 138th St	2	D	880	880	14,250	0.090	0.550	S	577	C	706	C	1.21%	S	44	13	4.98%	1.46%			5.07%	S	193	102	21.98%	11.56%	Y		815	C	820	C	Pass				
	NW 138th St	NW 154th St	4	D	2,000	2,000	8,152	0.090	0.550	S	330	C	404	C	3.86%	S	120	61	5.99%	3.06%	Y		14.98%	S	591	281	29.55%	14.05%	Y		1,041	C	746	C	Pass				
	NW 154th St	NW 170th St	4	D	2,000	2,000	4,181	0.090	0.550	S	169	C	207	C	4.43%	S	133	75	6.67%	3.73%	Y		16.01%	S	621	311	31.03%	15.53%	Y		923	C	592	C	Pass				
	NW 170th St	Graham Access	6	D	3,020	3,020	7,115	0.090	0.550	S	288	C	352	C	42.70%	S	1,214	1,114	40.20%	36.89%	Y		16.01%	S	673	337	22.27%	11.15%	Y		2,175	C	1,803	C	Pass				
	Graham Access	NW 178th St	6	D	3,020	3,020	5,585	0.090	0.550	S	226	C	277	C	45.73%	S	1,297	1,197	42.94%	39.62%	Y		16.64%	N	401	649	13.26%	21.48%	Y		1,924	C	2,122	C	Pass				
NW 87th Ave	Miami Gardens Dr/NW 186 St	NW 170th St	4	D	2,000	2,000	29,669	0.090	0.524	S	1,271	C	1,399	C	4.28%	S	97	103	4.87%	5.17%	Y		5.37%	S	126	187	6.30%	9.33%	Y		1,494	C	1,689	C	Pass				
NW178th St	Graham Access	NW 97th Ave	4	D	2,000	2,000	5,391	0.090	0.550	W	218	C	267	C	0.00%	W	0	0	0.00%	0.00%			16.64%	E	620	429	31.01%	21.45%	Y		838	C	696	C	Pass				
	NW 97th Ave	Interstate 75	6	D	3,020	3,020	1,724	0.090	0.550	W	70	C	85	C	15.57%	E	140	709	4.65%	23.47%	Y		14.14%	E	322	570	10.65%	18.87%	Y		532	C	1,364	C	Pass				
Miramar Pkwy	SW 160th Ave	Interstate 75	6	D	3,020	3,020	64,083	0.074	0.524	W	2,257	C	2,485	C	2.27%	W	52	55	1.71%	1.81%			1.98%	W	46	69	1.54%	2.28%			2,355	C	2,608	C	Pass				
	Interstate 75	SW 148th Ave	6	D	3,020	3,020	54,044	0.093	0.524	E	2,634	C	2,392	C	4.23%	E	102	96	3.38%	3.18%			3.76%	E	131	88	4.33%	2.92%			2,867	C	2,577	C	Pass				

Volume from Model

Diverted Trip Route Segment (Net External Trips Applied)

Fails with background volumes. No additional capacity needed as a result of project trips.

Service Volumes on Miami Gardens Drive are adopted at 120% of FDOT's Class I Arterial Generalized.
Otherwise, the segment from NW 67th Avenue to NW 57th Avenue would show a background deficiency at LOS 'F' and require 6 lanes of capacity before project trips are added.



2020 LOS Deficiencies & Study Area Needs

American Dream Miami / Graham

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Figure:

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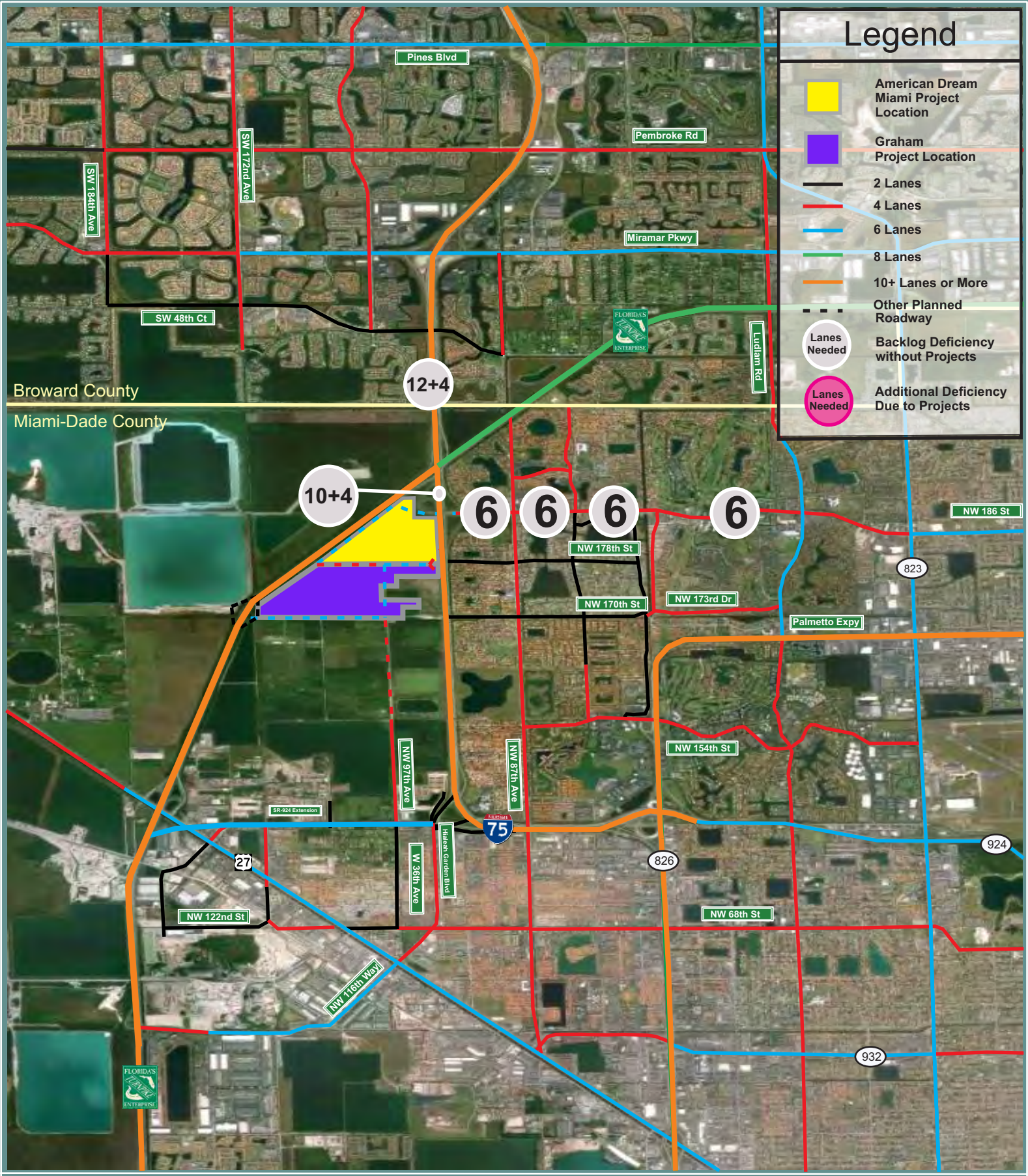

2040 LOS Deficiencies & Study Area Needs

American Dream Miami / Graham

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Figure:

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9.0 MITIGATION ANALYSIS

The Applicant is working with various agencies on a study area roadway improvement plan to include new roadway facilities and improvements in the vicinity of the projects in coordination with development timelines. These facilities include the non-cost feasible improvements assumed in the analyses, which are intended to accomplish several goals. The plan will provide multiple access points for the American Dream Miami and the Graham Project to increase regional connectivity and travel convenience. It will provide added capacity to existing travel corridors. It is designed to minimize impacts on Miami Gardens Drive and other local roads by routing many visitors directly to/from I-75 and HEFT. It accelerates several cost feasible priorities from the Miami-Dade MPO LRTP into an earlier timeframe.

A summary of the improvements proposed as part of the study area roadway improvement plan for American Dream Miami and the Graham Project (also provide in **Figure 6** and listed in **Figure 8)** are summarized below:

1. Interchange modifications at the I-75/HEFT/Miami Gardens Drive interchange
2. New interchange at HEFT and NW 170th Street
3. Extension of Miami Gardens Drive west of I-75.
4. New NW 178th Street west of I-75
5. New I-75 ramps at NW 178th Street from/to the I-75 southbound travel lanes.
6. New NW 170th Street from HEFT interchange to NW 97th Avenue
7. Extension of NW 97th Avenue from NW 178th Street to NW 154th Street.

All improvements were assumed to be place by the Short-term Year 2020. With these improvements in place, and within the scope of the CDMP TIA requirements, the Short-Term (Year 2020) and Long-term (Year 2040) roadway segment analyses concludes the build-out traffic impacts of American Dream Miami and the Graham Project can be accommodated without the need for additional capacity beyond that required for the forecasted background deficiencies identified. In addition to addressing roadway capacity needs with this study area roadway improvement plan, the developer of the American Dream Miami is a proven advocate for alternative travel modes and a supporter of transit-oriented services at other developments. In addition to an adjacent site lot donation for commuter sharing, the Applicant will work with the County and others on increasing the amount of project trips assigned to alternative travel modes.

APPENDIX

A – Methodologies and Correspondence
B – Background Traffic Volume Growth
C – Traffic Counts
D – FDOT Q/LOS Service Volumes
E – Trip Generation Supplemental Material
F – Mall of America Counts Reports
G – Mall of America Special Generator Survey Report
H – FSUTMS Model Plots

APPENDIX A1:
CDMP TIA Methodology Technical Memorandum (TM) for American Dream Miami_090315

American Dream Miami
MIAMI-DADE COUNTY, FLORIDA

TECHNICAL MEMORANDUM
Methodology for Transportation Impact Analysis (TIA)
for Comprehensive Development Master Plan (CDMP) Amendment

Prepared by:
Leftwich Consulting, Inc.
12151 Science Drive, Suite 101
Orlando, Florida 32826

September 3, 2015

1.0 INTRODUCTION

This Technical Memorandum was prepared on behalf of International Atlantic, LLC ("the Applicant") in order to detail assumptions being proposed for a future Traffic Impact Analysis (TIA) associated with American Dream Miami ("the Project") in Miami-Dade, Florida. The Applicant will be proposing to undergo a standard amendment to Miami-Dade Comprehensive Development Master Plan (CDMP). As such, a TIA will be submitted in accordance with the County's *Instructions for Preparing Applications* document, dated April 2015. This Memorandum sets forth some key areas where a different methodology is deemed to be more appropriate in relation to the Project. **Figure 1** shows the proposed location of American Dream Miami.

2.0 STUDY AREA

The study area for the TIA will be defined in terms of degree of project traffic impacts on the surrounding roadway networks. Specifically, the TIA analysis will extend to all State and County roadways where external trips from the Project are forecast to be equivalent to or greater than five percent (5%) of the maximum service volume (MSV) at the adopted level of service (LOS) standard for each facility. Local collectors roadways proximate to the Project will also be included.

3.0 ANALYSIS YEARS

Analysis years for the CDMP TIA are proposed as follows:

- Existing Year 2015
- Short-term Year 2020 - to correspond to preliminary Project build-out schedule
- Long-term Year 2040 - to correspond with Miami-Dade 2040 Regional Long Range Transportation Plan (LRTP)

4.0 EXISTING CONDITIONS (Year 2015)

Existing operating conditions will be determined for the PM peak hour by comparing non-directional count data for the Year 2015 to the associated LOS volume standards and MSV for each facility.

For traffic counts, the TIA will reference FDOT *Florida Traffic Information* (FTI) website count data for State roadways and Miami-Dade Concurrency and Count Databases for County roadways. Where Year 2015 data does not exist, volumes will be extrapolated from historical volumes or one percent (1%), whichever is greater. Otherwise, traffic count data will be collected in the field. PM peak hour traffic volumes will be determined from daily count data by application of an available peak hour intensity factor (K factor) in the event peak hour counts are not directly available.

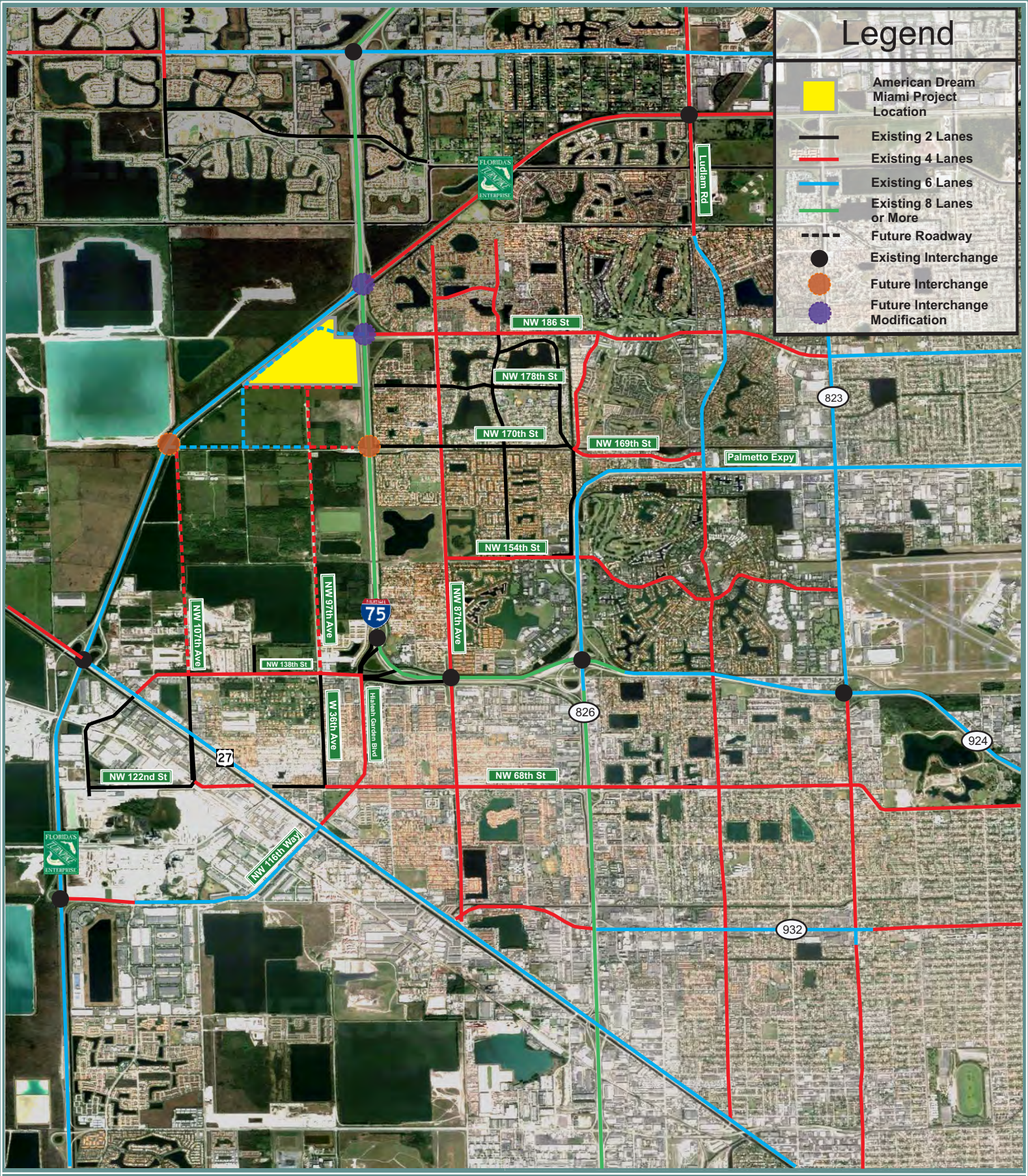
For service volumes and MSV, an inventory of roadway characteristics will be performed in order to identify existing number of traffic lanes, geometries, adopted standards, and other features necessary to determine volume standards on study area roadways. All projects funded for construction in the next three years will be assumed in place for existing conditions. The latest generalized FDOT LOS tables from the *Quality/Level of Service Handbook* will be referenced for State roadways and the Miami-Dade Concurrency Database will be referenced for County roadways. Otherwise, FDOT's LOSPLAN software will be used to derive service volumes as needed.

5.0 BACKGROUND TRAFFIC (Years 2020 & 2040)

Background (non-project) traffic conditions will be analyzed for the Years 2020 (Short-term) and 2040 (Long-term) to assess roadway segment LOS prior to applying project trips to the study area roadway network. Background LOS will be determined for the PM peak hour by comparing non-directional volumes for the future years to the associated LOS volume standards and MSV for each facility.

Cost-feasible roadway improvements in the study area will be assumed in place for the respective future year analyses. The TIA will reference Miami-Dade Metropolitan Planning Organization (MPO) Adopted 2015 Transportation Improvement Program (TIP) and planned roadway improvements listed in the Adopted 2040 LRTP, as well as other applicable work programs. Additionally, access roadways and interchange ramps assumed for the Project will be included in the respective future roadway networks. **Figure 2** includes a preliminary access plan for the Project which may be subject to change in the TIA as project access needs are further analyzed.

Background year volumes will be derived by applying linear growth from historical count data or one percent (1%) annual growth, whichever is greater. For the Year 2020, committed trips provided in the Miami-Dade County's Concurrency Database will be used if greater than linear growth. Additionally, background traffic patterns from regional model runs may be reviewed to anticipate the impact of future cost-feasible infrastructure improvements on background traffic patterns. Any deviation in growth projections as a result of future infrastructure will be documented and discussed in the TIA.



Project Location Map

American Dream Miami

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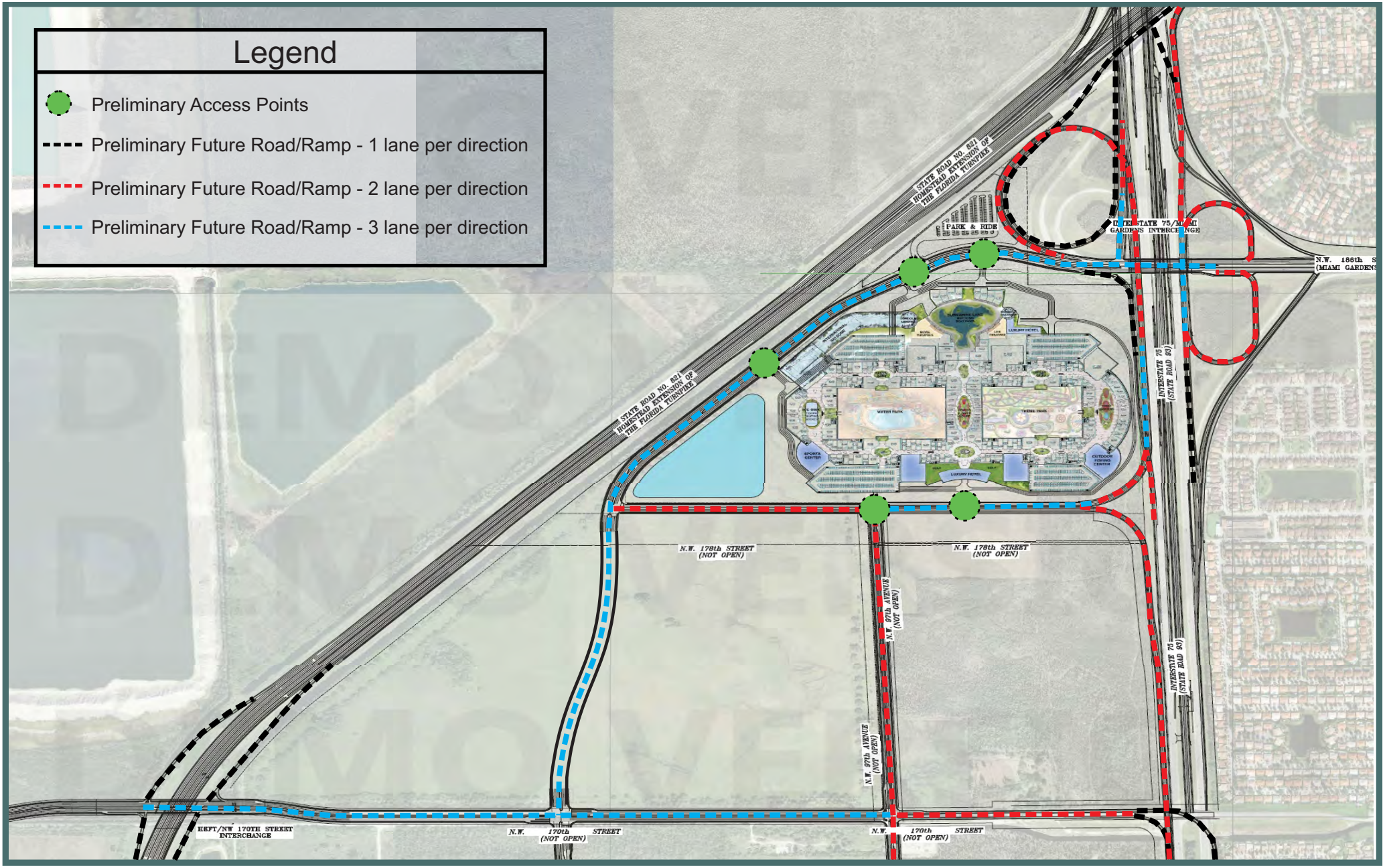
Figure:

1



Preliminary Access Plan

American Dream Miami

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Figure:

2

6.0 TRIP GENERATION

The American Dream Miami project is a unique attraction. At approximately 6,200,000 gross square feet, of which 3,500,000 square feet is leasable retail area, it will be the largest self-contained shopping/entertainment experience in the country. In addition to shopping, the project is envisioned to include a theme park, a water park, a movie theater complex, restaurants, hotel, and other attractions intended to capture trips for an extended stay.

The most representative land use category published in the Institute of Transportation Engineers (ITE) *Trip Generation Handbook* which could be used to forecast trips for the Project is ITE Code 820/Shopping Center. However, even as the fitted curve for ITE 820 shows larger shopping centers generate less external traffic per gross leasable area, the data available does not include any sample sizes which are comparable to the Project. Additionally, shopping centers do not typically have the theme park/water park element and other unique venues envisioned for American Dream Miami. Therefore, use of ITE Code 820 rates will likely underestimate the trip duration and capture behavior at the Project, which would overestimate the amount of external trips generated. As recommended by ITE methodology, a more representative site was identified to take collect data from for determination of trip generation behavior.

The Mall of America (MOA) in Bloomington, Minnesota was found to be the most representative site available to observe trip rates for use with American Dream Miami. MOA is operated by the same developer who is planning American Dream Miami and with similar scale and unique concept and mix of land uses as shown in **Table 1**. The Applicant proposes use of count data at MOA to determine trip generation characteristics for the Miami Project.

Table 1: Size and Land Use Comparison of the Project and MOA

Variable	MOA	American Dream
Gross Leasable Area of Retail (GLA)	2,581,582 sf	3,500,000 sf
Gross Floor Area (GFA)	4,404,698 sf	6,200,000 sf
% GLA of GFA	59%	56%

The Applicant recently completed external traffic counts at MOA in June 2015 and again in August 2015 and seasonally adjusted. Complete documentation of data and calculations will be provided to Miami-Dade County for review with the CDMP TIA. A preliminary summary of findings for MOA trip rates are provided in **Table 2.**

Table 2: Preliminary MOA External Trip Generation Rates

Period	Traffic Count (June 2015)	Trip Rate (June 2015)	Traffic Count (August 2015)	Trip Rate (August 2015)	Trip Rate Average
Weekday	49,408	19.14	49,800	19.29	19.21
PM Peak Hour	3,347	1.30	4,173	1.62	1.46

Notes:
- Traffic counts are in units of external vehicle trips per period and were averaged and seasonally adjusted.
- Rates shown in units of external vehicle trips per period per 1,000 square feet of GLA.

Based on MOA trip rates, a preliminary trip generation forecast was performed for American Dream Miami at build-out. No internal capture rate was applied as MOA trip rates are based on external trips (similar to ITE's treatment of Shopping Center). An upward adjustment of 10.8% of net external trips was applied to American Dream to account for light rail transit ridership at MOA (currently unplanned in Miami). A pass-by trip reduction was applied due to project trips in the background traffic to derive the new external trip forecast for the Project. The percent reduction was derived from the ITE fitted curve equation for Land Use 820 (Shopping Center) as provided in ITE's *Trip Generation Handbook*. **Table 3** shows a preliminary summary of Daily and PM Peak Hour trip generation for American Dream Miami.

Table 3: Preliminary Trip Generation Summary for American Dream Miami

Land Use	ITE Code	Size	Units	Trip Rates		Trip Forecast	
				Daily	PM Peak	Daily	PM Peak
Entertainment/Retail (GLA)	-	3,500	KSF	19.21	1.46	67,251	5,098
Total Generated Trips (pre-LRT adjustment)						**67,251**	**5,098**
PM Internal Capture =	0.0%					0	0
Net External Trips (pre-LRT adjustment)						**67,251**	**5,098**
LRT Adjustment =	10.8%	of net external trips				3,540	268
Net External Trips						**70,791**	**5,366**
Passerby Trips =	14.0%	of net external trips				9,911	751
New External Trips						**60,880**	**4,615**

Notes:
- Rates shown in units of external vehicle trips per period per 1,000 square feet of Retail GLA where American Dream consists of 3,500 ksf Retail GLA of 6,200 ksf GFA including entertainment plus hotel.
- Surveys at MOA show 10.8% LRT trips. This % added back into ADM with MOA auto occupancy of 2.3 applied.
- Pass-by percentage calculate per ITE fitted curve for Shopping Center.

For comparison, the CDMP TIA will provide a trip generation forecast to estimate maximum trip generation from the current CDMP Land Use Plan map designations for the land parcels to be affected by the amendment.

7.0 TRIP DISTRIBUTION AND ASSIGNMENT

Distribution of forecasted project trips generated by American Dream Miami will be determined with the use of an adopted region travel demand model based on the Florida Standard Urban Transportation Model Structure (FSUTMS). Adopted cost-feasible roadway networks and socio-economic (SE) data for Years 2020 and 2040 will be used for the model runs.

The Project data will be distributed into one or more traffic analysis zones (TAZ) that will be situated within the roadway network in a manner to appropriately represent the project's land uses and access points. Any roadways and interchange ramps assumed for access to the project will be coded into the cost-feasible networks. The loaded 2020 and 2040 models will then be run to distribute person-trips for all model trip purposes between allocated trip origins and destinations.

From the loaded run output files, project trip distribution percentages will be abstracted and checked to ensure the values are reasonable. The percent distribution will be taken with respect to the total external project trips assigned by the model at a screenline established outside of the area where any internalization is occurring in the model. Therefore, the Project trip distribution at the screenline will represent all external trips from the Project and will sum to 100%. Project trips will then be assigned to the corresponding study area roadway segments based on the resulting distributions.

8.0 SHORT-TERM (Year 2020) & LONG-TERM (Year 2040) ANALYSIS

Project trips will be added to the forecasted background traffic to obtain the total future roadway segment volumes to conduct the Short-term (Year 2020) and Long-term (Year 2040) LOS analysis. Total link volumes (background plus project traffic) will be compared to service volumes standards and MSV to determine future operating conditions for roadway segments within the study area. These analyses will first be performed assuming the Project is built with maximum allowable impact using the current CDMP land use designations. Then, the analyses will assume the Project is built as proposed. The impact of the proposed amendment change on LOS will be summarized by comparison of the "Without Amendment" scenarios to the "With Amendment" scenarios for roadways within the study area. Roadway segments with volumes that exceed adopted MSV in the future years will be clearly identified in the TIA.

9.0 MITIGATION ANALYSIS

As needed, a mitigation analysis will be included in the TIA to address the need for new facilities or improvement to existing facilities which may be required to mitigate project impacts as a result of the proposed amendment. Recommended mitigation will include consideration of maintaining adopted LOS on study area roadways where LOS was not forecast to be exceeded in the "Without Amendment" scenarios. Consideration of any mitigation measures will also include a range of options to address any safety and mobility needs for the Short-term (Year 2020) and Long-term (Year 2040) time frames.

APPENDIX A2:
American Dream Miami Trip Generation Summary_09172015

AMERICAN DREAM MIAMI TRIP GENERATION SUMMARY

09/17/15

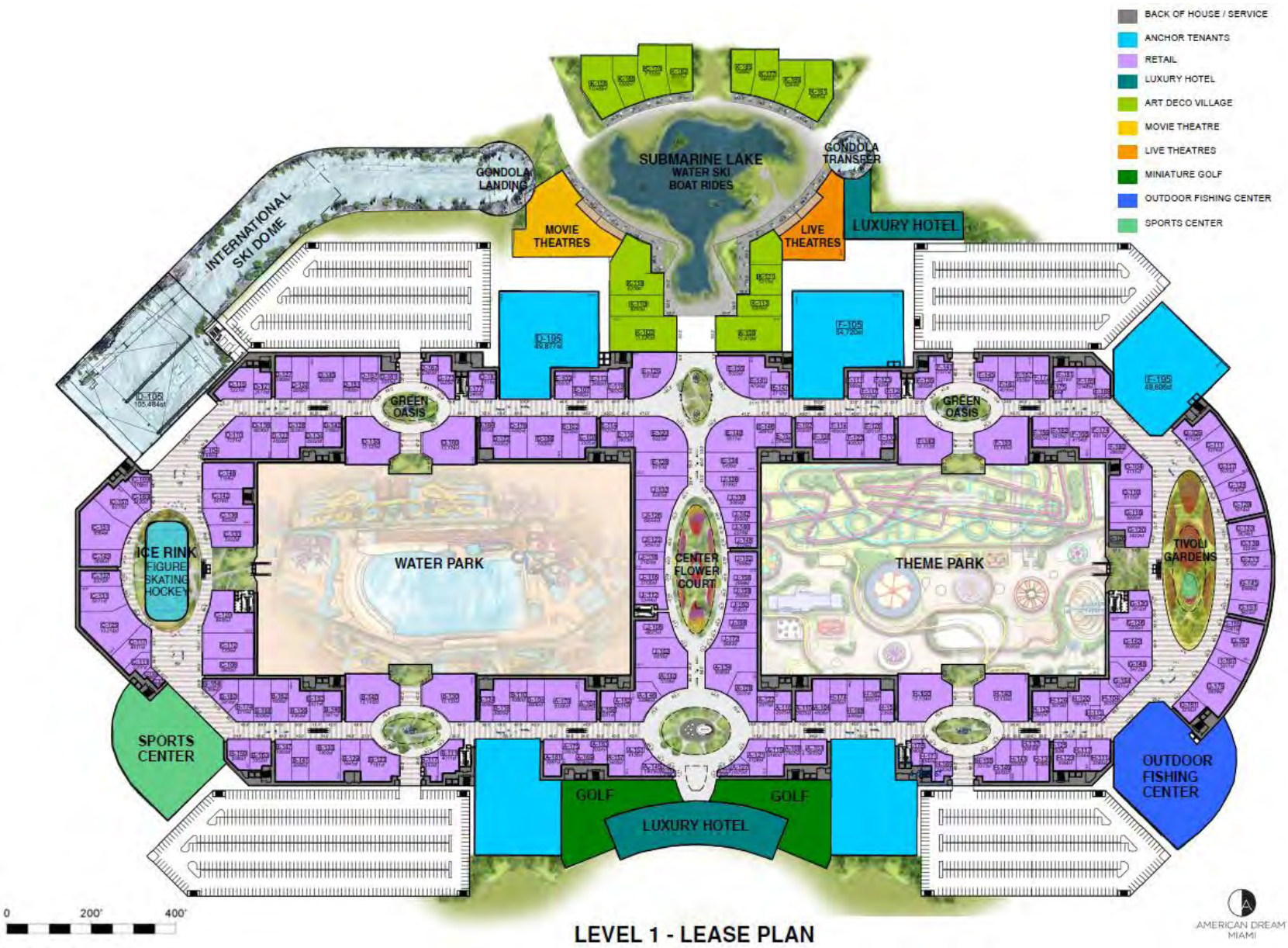
To be Considered…

1. What is American Dream Miami (ADM)?
2. What guidance/data does ITE provide for use in forecasting trips for ADM?
3. Are there any adjustments that should be made to improve the forecast?
4. Has the best data available been used to achieve the ADM forecast?

What is American Dream Miami?

- It's a tourist attraction…a job center…a shopping destination…an entertainment complex…It's **unique**.
- 6,200,000 square feet gross floor area (GFA) plus hotel
- 3,500,000 square feet gross leasable area (GLA) of retail
- 2,700,000 square feet of entertainment and common space use, including:
  - Indoor Theme Park
  - Indoor Water Park
  - Sports Complex
  - Theaters (Movie & Live Action)
  - Other Unique Exhibits and Attractions

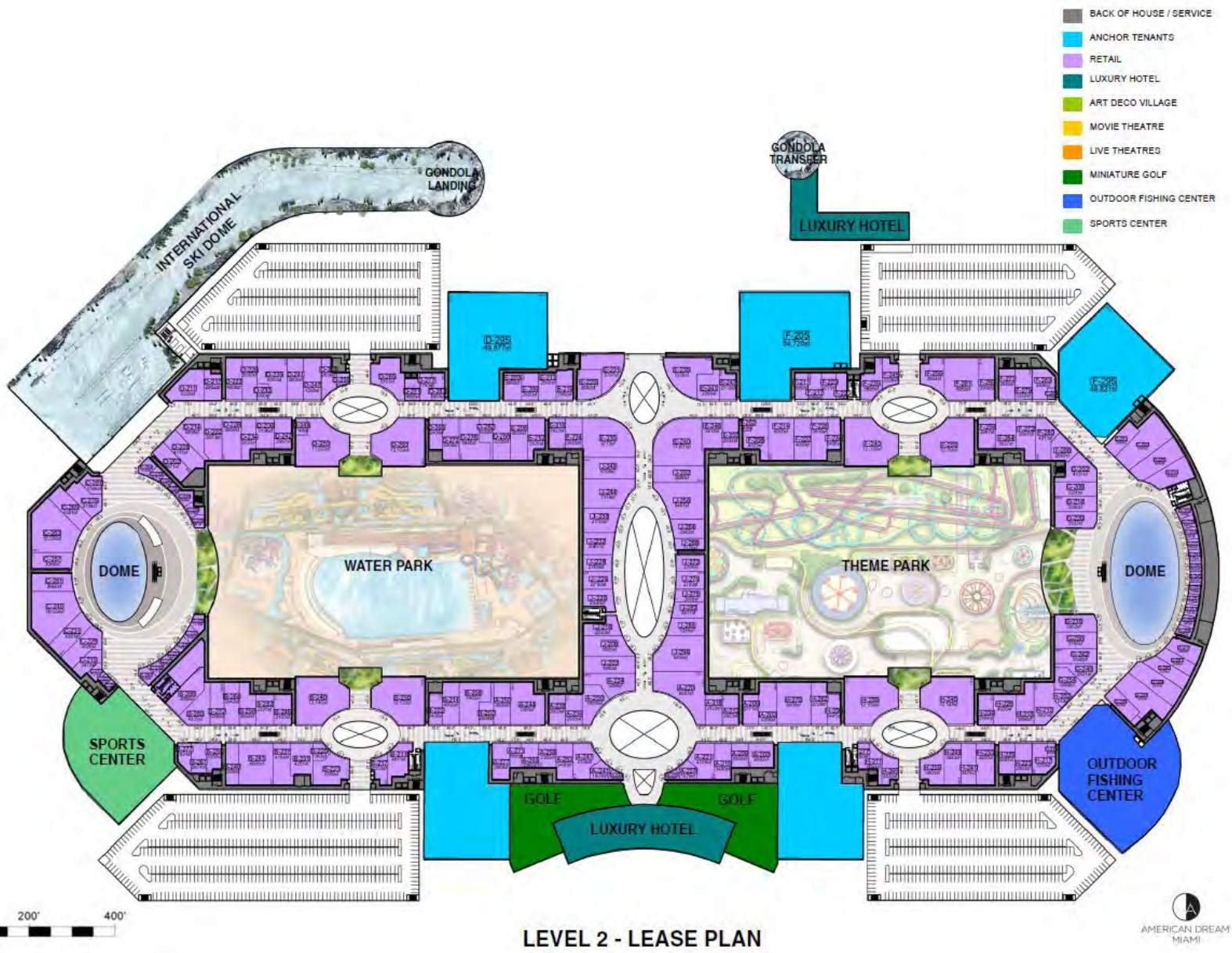
What is American Dream Miami?



LEVEL 1 - LEASE PLAN

AMERICAN DREAM MIAMI

What is American Dream Miami?



What Guidance from ITE?

- **Trip rates** derived from count data from (primarily) single-use, free-standing sites
- Methodology for estimating **internal capture** of Mixed-Use Development
- Methodology for estimating **pass-by** trips for (primarily) retail uses
- **Cautionary notes** for the appropriate use of ITE data and guidance

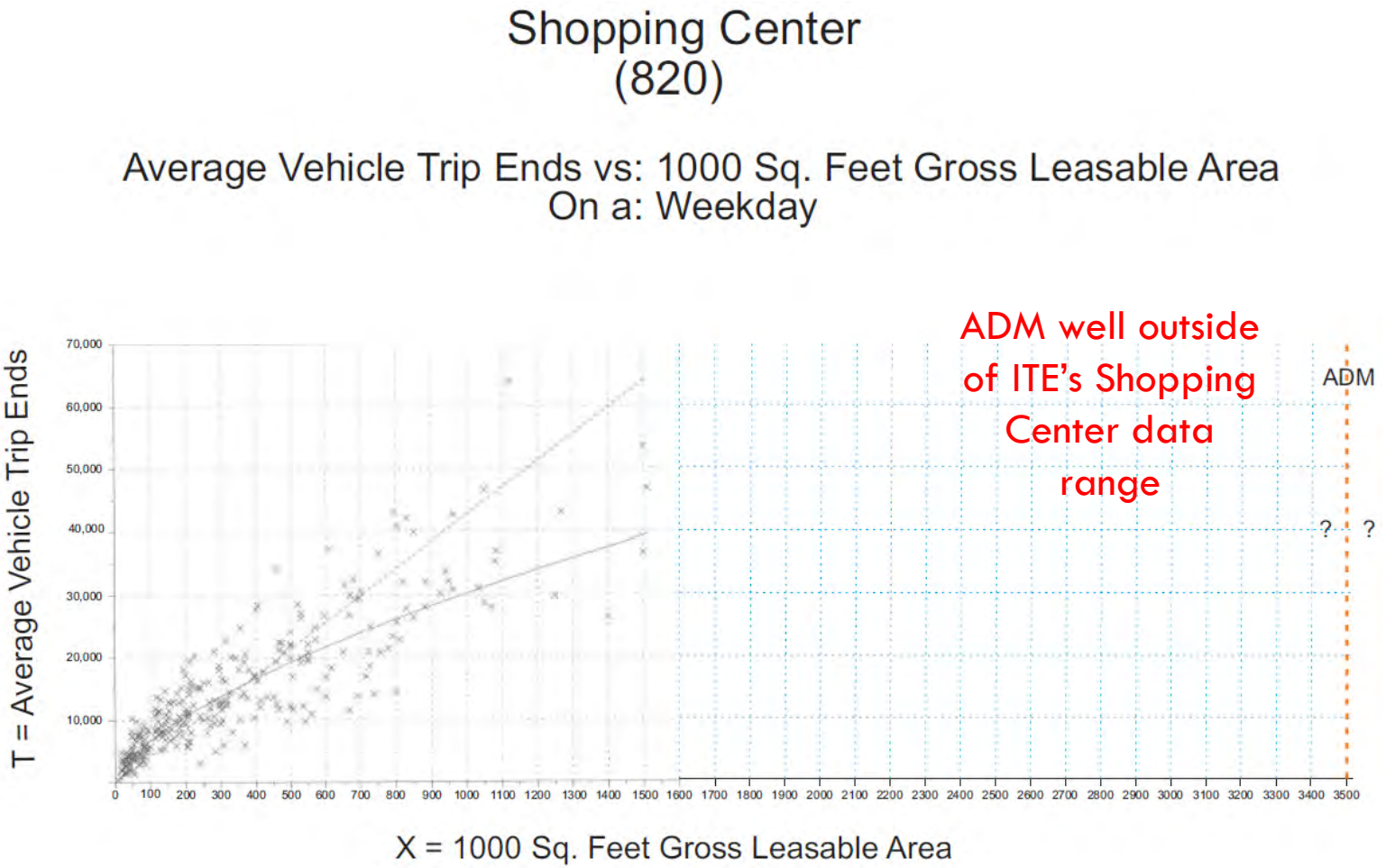
Potential Trip Rates for ADM

- For the **retail** portion, ITE Code 820 (Shopping Center)?
  - Integrated uses (ex: retail, office, movie theaters, restaurants, post offices, banks, health clubs) developed and managed as a unit
  - 302 sites for Daily, 426 sites for PM Peak
  - Sites range from 1,700 to 2,200,000 sf (only 2 sites > 2 msf for PM Peak)
  - Fitted curve equations show that as sites increase in size, trip rate decreases
  - All rates determined with respect to GLA

Potential Trip Rates for ADM

- Issues w/ applying Shopping Center:
  - ITE's description doesn't quite match (ADM not a traditional shopping center site)
    - Self-contained
    - Tourist attraction
    - Specialty retail uses
    - More internal capture possibilities
    - Longer durations per visit expected
    - Not a typical retail trip
  - ADM is well outside of the range of sizes from ITE sites (size matters)…

Potential Trip Rates for ADM



Potential Trip Rates for ADM

- For the **entertainment** portion…
  - ITE Code 414 (Water Slide Park)?
    - Limited data, small sites, description doesn't match well
  - ITE Code 431 (Mini Golf Course)?
    - 1 sample, free-standing site
  - ITE Code 435 (Multipurpose Recreational Facility)?
    - Limited data, small sites
  - ITE Code 441 (Live Theater)?
    - 1 sample (from NY in 1979)
  - ITE Code 445 (Multiplex Movie Theater)?
    - Limited data, description doesn't match well
  - ITE Code 466 (Snow Ski Area)?
    - Limited to facilities in the mountains w/ real snow
  - ITE Code 480 (Amusement Park)?
    - Limited data, free-standing sites

ITE Internal Capture for ADM?

- ITE methodology for predicting internal capture for mixed-use sites based on NCHRP Report 684:
  - Only 6 site surveys ranging from 7 to 300 acres
  - Representative in a range from 0.5 to 3 msf of development
  - No data from fully self-contained development
  - No data for significant entertainment included in the land use mix (mostly movie theaters)
  - Not appropriate methodology for developments that differ significantly from those surveyed

Conclusion on use of ITE Data

- ITE trip rates are not ideal in estimating trips for ADM due to:
  - Large size of retail component
  - Limited data for entertainment components
  - ITE rates based on data from free-standing sites and with other parameters inconsistent with ADM
- ITE internal capture methodology are not ideal for ADM due to:
  - Large size of project
  - Limited data for unique land use mix
  - No data for a fully self-contained development like ADM

So, what does ITE suggest?

*"…**data should be collected and used to estimate trip generation** under the following circumstances:*

- *…study site not covered by land use description…; OR*
- *…study site not within range of data points; OR*
- *…database has insufficient number of data points; OR*
- *…study site may have different trip-making characteristics than the baseline sites…"*

We contend that all of these circumstances apply and that better data is available for use in forecasting trips for ADM.

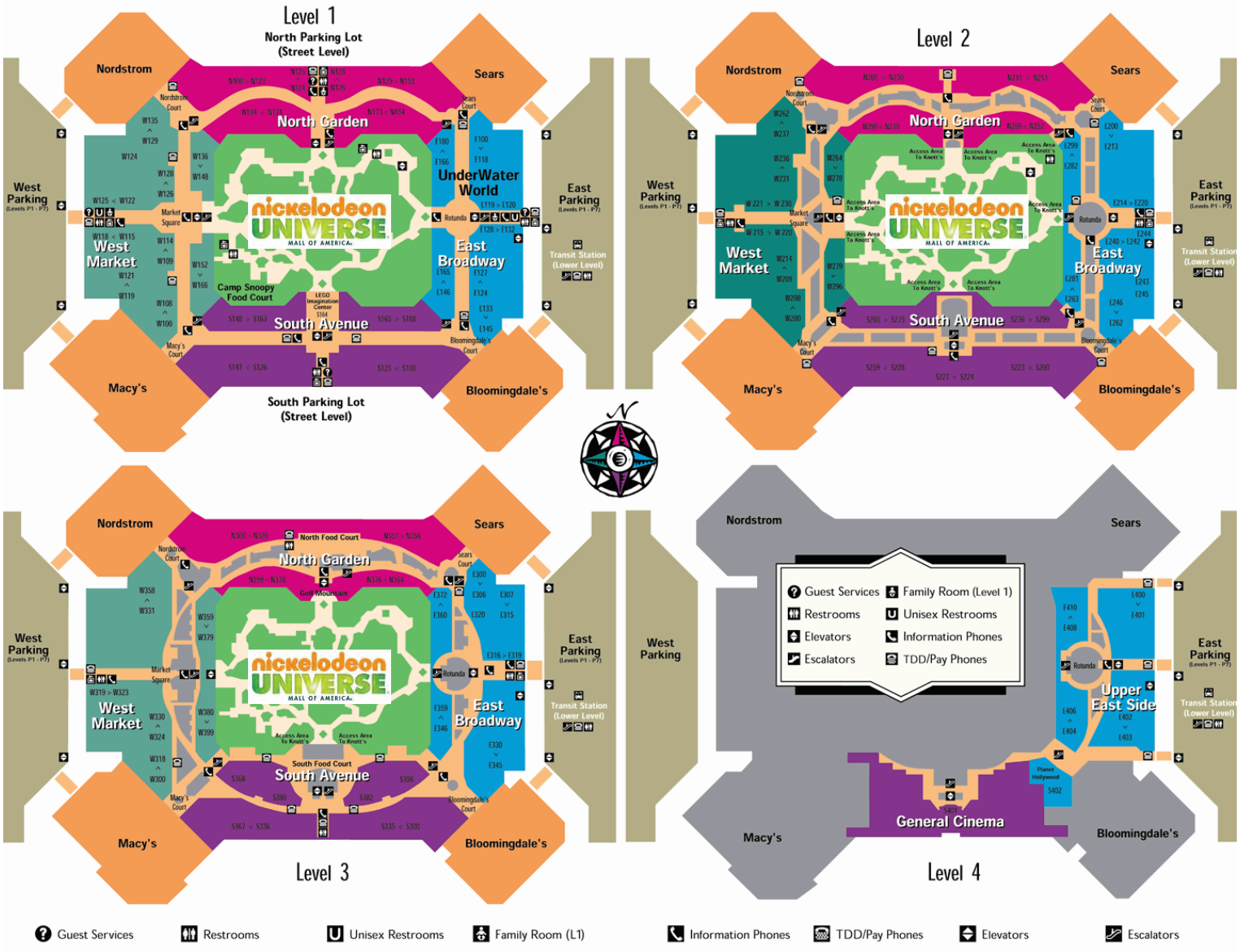
What is the best data source?

- A development of similar:
  - Size
  - Land Use Mix
  - Site Design (distance/travel mode between uses)
  - Customer Base/Trip Types
  - Uniqueness/Vision

What is Mall of America?

- It's a tourist attraction…a job center…a shopping destination…an entertainment complex…It's **unique**.
- 4,400,000 square feet gross floor area (GFA) plus hotel
- 2,600,000 square feet gross leasable area (GLA) of retail
- 1,800,000 square feet of entertainment and common space use, including:
  - Indoor Theme Park
  - Aquarium
  - Comedy House
  - Movie Theater
  - Other Unique Exhibits and Attractions

What is Mall of America?



MOA vs. ADM

Variable	MOA	ADM
Gross Leasible Area (GLA) in sf	2,581,582	3,500,000
Gross Floor Area (GFA) in sf	4,404,698	6,200,000
% GLA of GFA	59%	56%

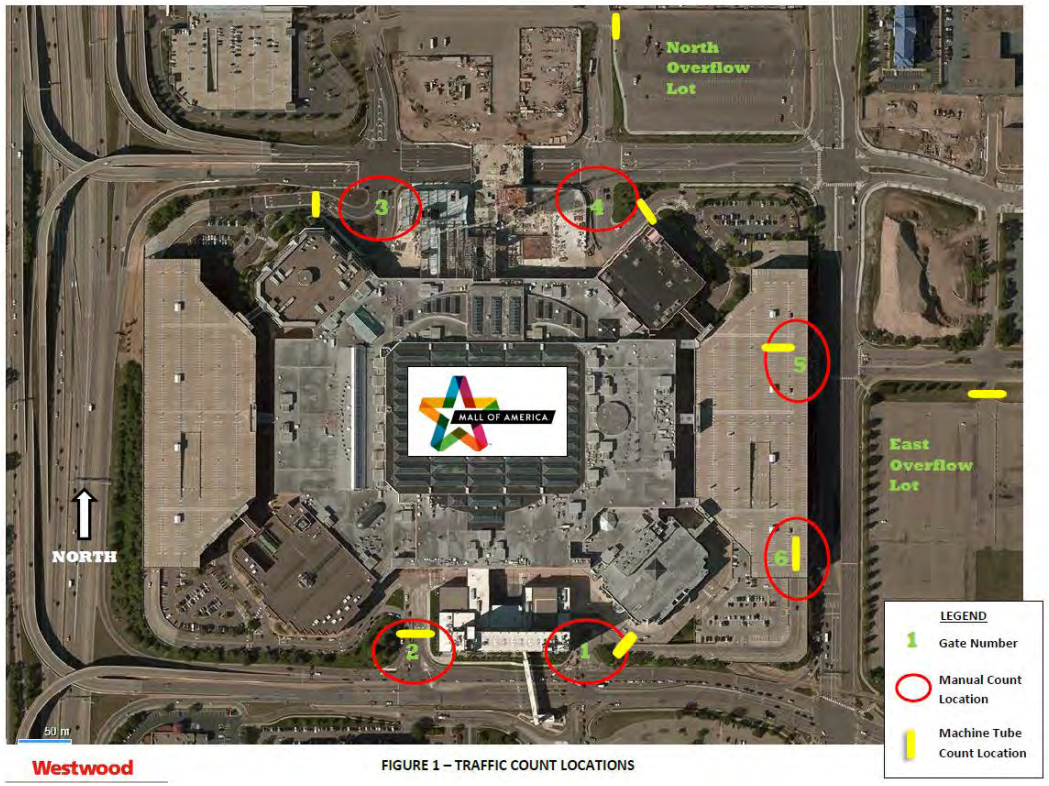
MALL OF AMERICA		Retail (GLA)	Entertainment	Common
1. (a) Retail Mall GLA	1,888,898	1,888,898		
1. (b) Retail Anchor Dept Stores	692,684	692,684		
2. Nickelodeon Universe	275,600		275,600	
3. Sea Life Aquarium	44,827		44,827	
4. Lego	6,180		6,180	
5. Movie Theaters	64,087		64,087	
6. Aces Flight Simulator	1,792		1,792	
7. House of Comedy	8,015		8,015	
8. Moose Mountain Golf	11,055		11,055	
9. Amazing Mirror Maze	2,554		2,554	
10. Barbie the Dreamhouse	30,346		30,346	
11. CSI the Experience	11,681		11,681	
12. Star Trek the Exhibition	15,642		15,642	
13. Common/stairs/mech/BOH/etc	950,713			1,351,337
14. Hotel (506 rooms)	386,690			
SUBTOTALS		2,581,582	471,779	1,351,337
TOTAL GROSS BUILDING AREA (sf) less Hotel				4,404,698

"CORRECTED AFTER MEETING"

AD MIAMI		Retail (GLA)	Entertainment	Common
1. Retail (sf)	3,500,000	3,500,000		
2. Theme Park (sf)	370,000		370,000	
3. Water Park (sf)	370,000		370,000	
4. Tivoli Garden (sf)	35,000		35,000	
5. Submarine Lake (sf)	110,000		110,000	
6. Art Deco Village (sf)	120,000		120,000	
7. Movie Theaters (sf)	35,000		35,000	
8. Live Venue (sf)	25,000		25,000	
9. Ski Slope (sf)	200,000		200,000	
10. Sports Center (sf)	75,000		75,000	
11. Outdoor Fishing (sf)	65,000		65,000	
12. Miniature Golf (sf)	95,000		95,000	
13. (a) Common Area (sf)	600,000			600,000
13. (b) Common Area - BOH (sf)	600,000			600,000
14. Hotel (2,000 keys)				
SUBTOTALS (sf)		3,500,000	1,500,000	1,200,000
TOTAL GROSS BUILDING AREA (sf) less Hotel				6,200,000

MOA Data Collection Methodology

- Collected counts at external stations and developed external trip rates per GLA of retail (similar to ITE's treatment of Shopping Center) per period (Daily, PM)
- Stationed counters and/or personnel at external stations for 72 hours to get 3-day averages for weekday rates
- Adjusted the counts for seasonal variability based on data from video feeds



MOA Data Collection Methodology

- Two independent count programs:
  - June 2015 Westwood
  - August 2015 Kimley»Horn
- The seasonally adjusted external trip rates per GLA per period were averaged from the two independent reports

Period	Traffic Count (June 2015)	Trip Rate (June 2015)	Traffic Count (August 2015)	Trip Rate (August 2015)	Trip Rate Average
Weekday	49,408	19.14	49,800	19.29	19.21
PM Peak Hour	3,347	1.30	4,173	1.62	1.46

ADM Trip Generation

- Applied MOA rates to ADM
- Internal capture built into the external trip rate (similar to ITE's treatment of Shopping Center)
- Using MOA rates likely conservative for ADM b/c:
  - ADM is larger than MOA (ITE shows as GLA increases, rates decrease)
  - W-F counts instead of T-Th for weekday rates (Friday produces higher counts)
  - Proportion of hotel/tourists expected to be greater at ADM to capture more trips onsite
  - Vehicle Occupancy expected to be higher at ADM to mirror Florida theme park type trip behaviors

Land Use	ITE Code	Size	Units	Trip Rates		Trip Forecast	
				Daily	PM Peak	Daily	PM Peak
Entertainment/Retail (GLA)	-	3,500	KSF	19.21	1.46	67,251	5,098
Total Generated Trips (pre-LRT adjustment)						**67,251**	**5,098**
PM Internal Capture =	0.0%					0	0
Net External Trips (pre-LRT adjustment)						**67,251**	**5,098**

ADM Trip Generation

- Transit Adjustment for Light Rail
  - MOA has LRT access with various sources indicating a MOA visitor ridership between 3% to 11%
  - ADM will not have a LRT system for mode split
  - From a 2012 survey at MOA, LRT indicated 10.8% ridership:

Travel Class	Travel Mode	Mode Total	Class Total	% Class
Standard Vehicle Trip	Private Vehicle Park	183	**201**	**75.0%**
	Private Vehicle Drop	2		
	Private Vehicle Short Term	1		
	Limo	2		
	RV	1		
	Rental Vehicle Park	11		
	Taxi	1		
Transit - Non-Rail	Public Bus	11	**11**	**4.1%**
Transit - Rail	Light Rail	29	**29**	**10.8%**
Other Vehicle Trip	Hotel Shuttle	18	**23**	**8.6%**
	Senior Shuttle	2		
	Charter Bus	3		
Non-Vehicle Trip	Bicycle	2	**4**	**1.5%**
	Walk	2		
		268	**268**	**100.0%**

ADM Trip Generation

- Transit Adjustment for Light Rail (cont'd)
  - ADM is being planned to achieve all alternative mode splits at MOA with the exception of LRT
  - ADM trip generation was adjusted up to include the 10.8% person-trip LRT ridership into the external vehicle count at Florida theme park vehicle occupancy rates
- Pass-by reduction was calculated per ITE's Shopping Center fitted curve equation to account for vehicles in the background traffic of adjacent freeways (best data available).

ADM Trip Generation

"CORRECTED AFTER MEETING"

Land Use	ITE Code	Size	Units	Trip Rates		Trip Forecast	
				Daily	PM Peak	Daily	PM Peak
Entertainment/Retail (GLA)	-	3,500	KSF	19.21	1.46	67,251	5,098
Total Generated Trips (pre-LRT adjustment)						**67,251**	**5,098**
PM Internal Capture =	0.0%					0	0
Net External Trips (pre-LRT adjustment)						**67,251**	**5,098**
LRT Adjustment =	10.8%	of net external trips				4,682	355
Net External Trips						**71,933**	**5,453**
Passerby Trips =	14.0%	of net external trips				10,071	763
New External Trips						**61,862**	**4,690**

In Summary…

1. What is American Dream Miami (ADM)?

A unique self-contained attraction with large retail and entertainment components plus hotel, dining and other attractions. It is dissimilar to a typical shopping center that ITE has data for, and its components are also difficult to match up with data available from ITE.

2. What guidance/data does ITE provide for use in forecasting trips for ADM?

ITE recommends data collection at similar sites for ADM instead of using ITE data due to dissimilar land use descriptions, the size of the ADM falling outside of the ranges of ITE data, lack of data for some uses, and overall differences in variables that will affect trip-making characteristics. Additionally, there are limitations in the data used to derive ITE's internal capture methodology that discourage its use for ADM's trip generation forecast.

3. Are there any adjustments that should be made to improve the forecast?

The trip generation presented for ADM using MOA rates is likely conservative. One adjustment that is proposed is an adjustment for the LRT opportunity at MOA that will not be available at ADM.

4. Has the best data available been used to achieve the ADM forecast?

Yes. MOA is the most similar facility existing today to the proposed ADM. Two independent counts programs were conducted, per ITE guidance, to derive the MOA trip rates for use at ADM. A logical adjustment was made for LRT and ITE's pass-by reduction was utilized where no alternative data exists.

APPENDIX A3:
CDMP TIA Methodology Comment Set Response _101615

AMERICAN DREAM MIAMI
MIAMI-DADE CDMP TIA METHODOLOGY
COMMENT SET & RESPONSES
October 16, 2015

Introduction to CDMP TIA Methodology Comment Responses

Attached are the responses to comments received from eleven (11) reviewing agencies and interested parties on the proposed traffic study methodology for the CDMP amendment. Comments were received from Miami Dade County, FDOT Districts 4 and 6, Florida's Turnpike, MDX, Broward County, SFRPC, and the cities of Hialeah, Hialeah Gardens, Miami Lakes, and Miramar. The comments and responses were numerous while many pertained to the same topic. Accordingly, to allow the follow-up methodology meeting on October 23, 2015 to be focused and efficient we will provide a presentation which groups these comments and the Applicant response.

As we review the CDMP methodology comments and responses it is helpful to keep in mind all the traffic studies that are yet to be performed related to this project. Many of the answers that will not come from the CDMP traffic study will come from other subsequent studies. For example, after the CDMP traffic study is completed, an additional traffic study will be prepared for Miami-Dade County that generally follows the guidelines for the Response to Question-21 of a DRI. Since the CDMP also follows most of these guidelines, including the limits of the study area, the DRI type traffic study will use and expand the CDMP traffic study to also include key intersections, and interchanges that are located along significantly impacted roadways as identified from the CDMP analysis.

In addition to these two traffic studies, the interchanges themselves must undergo State and Federal studies including but not limited to; Reevaluations of the interchange analysis included in the I-75 PD&E, Interchange Access Requests (IAR), and Turnpike Interchange Justification Reports (TIJR). All these studies will be reviewed and coordinated by the FDOT and FHWA, and are very comprehensive with detailed State and Federal guidelines.

With the foregoing in mind the ADM team is hopeful that we can address all significant methodology items pertaining to the CDMP at the follow-up methodology meeting in October 23, 2015. We anticipate that additional follow up information will continue to be exchanged while the CDMP TIA is in progress, along with addressing review comments pursuant to the submittal of the CDMP TIA.

Miami-Dade County Traffic Engineering Division - September 23, 2015

1. Due to its proximity to the County line, the project needs to be coordinated with Broward County.

   LC: Broward County was notified of the project by the SFRPC and was represented at the methodology meeting.

2. The consultant needs to show the limits of the study area on a map by delineating where the proposed 5% maximum service volumes would terminate. In addition, the study boundary may be adjusted to include roadway corridors as specified by the County.

   LC: The study area provided in the CDMP TIA will be driven by the final trip generation, which is currently under review by all reviewing agencies, and the trip distribution from model runs which have not yet been performed. Therefore, a definitive boundary is premature at this time. Per the requirement of the CDMP, the study area will extend to all roadways where external project trips from the project are forecast to be equivalent to or greater than 5% of the MSV for each facility.

3. Upon further review, directional volumes should be requested based on the County's knowledge of the local surface roadways that would be impacted.

   LC: We will provide total and directional volumes in the TIA as requested. However, the CDMP TIA must also satisfy the minimum requirements of the CDMP adopted guidelines.

4. At a minimum, 3-day counts need to be collected on the major roadways. From this data, the peak hour can be determined. Use of the K factor should be avoided to calculate the peak hour volumes. All effort should be made to collect actual traffic counts.

   LC: Existing traffic counts will primarily be derived from existing County and FDOT databases and supplemented with three day counts where insufficient reliable data is available.

5. In addition to PM peak hour volumes, AM peak hour volumes may be required for roadway segments where a school exists.

   LC: Note that any AM peak hour generation from the project would be a small fraction of the PM peak hour. However, AM peak hour data will be collected and analyzed for any specific school zones identified. A note of caution that where roadway segments have school zones the speed limit is generally reduced and level of service calculations will be inconclusive.

6. The following sentence needs to be revised: "All projects funded for construction in the next 5 years will be assumed in place for short-term 2020 conditions." The existing traffic analysis should only use the existing roadway condition.

   LC: The intent of showing "All projects funded for construction in the next 3 years" in the existing analysis was to account for additional system capacity under construction or soon to be under construction. In light of the preference to exclude these projects in the existing condition analysis, the CDMP TIA will exclude them in the existing analysis. For future year

background conditions (Years 2020 and 2040), the CDMP TIA will include all planned cost feasible improvements consistent with the CDMP TIA instructions.

7. The Adopted TIP year is 2016 instead of 2015.

   LC: The most recent adopted plans will be utilized in the CDMP TIA.

8. Although I-75 and the HEFT provide the main access to the project, it is required that the background growth rate be calculated separately for expressways vs. surface roadways since these have different characteristics.

   LC: Each roadway link in the study area will be analyzed individually in the CDMP TIA as proposed in the Methodology Statement.

9. Background traffic patterns from regional model runs should be reviewed for 2020 and are required for 2040.

   LC: Model runs will be performed and reviewed for 2020 Short Term and 2040 Long Term conditions as proposed in the Methodology Statement.

10. Due to the magnitude of the project, a detailed land use trip generation calculation should be conducted with ITE LUC 820/Shopping Center only being applied to the retail/services component. The rest of the breakdown should be comprised of hotel and entertainment land use codes. Furthermore, a more detailed description of the attractions is required.

    LC: The Applicant's presentation addressed the trip generation proposal in the methodology meeting. The trip generation will be based on ITE's recommendation to derive trip generation forecasts from count data at the most comparable land use available which is the Mall of America in Bloomington, MN (Minneapolis/St Paul Metropolitan Area).

11. A detailed breakdown of the existing land use for the Mall of America (MoA) in Bloomington, Minnesota is necessary in order to compare this with the proposed project. Also, the trip generation rate produced by MoA should be compared with the detailed land use trip generation calculation for American Dream Mall as requested in the previous comment. A section documenting the proposed trip generation should be added to the methodology as well.

    LC: This breakdown of land uses was provided at the methodology meeting and was provided to the County and every other party that requested it. The CDMP TIA will have the PowerPoint attached describing the details being requested.

12. Is the pass-by percentage being applied on the entire project or just the retail component? If it is deemed that the ITE trip generation rate is not applicable to this unique project, then the same argument can be made for the use of the pass-by percentage and would require one to be calculated from a study of the MoA. Otherwise, this pass-by percentage should be 0%.

    LC: Consistent with providing a trip generation forecast based on the best available data (ITE's recommendation), the fitted curve equation for Shopping Center was used to forecast pass-

by trips using only GLA of the retail square footage portion of ADM. Due to the inverse relationship of GLA to pass-by percentage from the equation, the resulting 14% pass-by is much lower than the rate from a more traditional sized shopping center. This appears to be a realistic assumption based on the hundreds of thousands of commuters on the two adjacent freeways who will pass by the project at build-out. These trips may be work trips for a commuter making a quick shopping or dining stop during their regular commute. It may be a new carpool stop for an employees from a vehicle already in the background traffic. It could be for a delivery to the project from a vehicle on a pre-existing route. It could be from commuters on business travel or vacation who are curious about ADM and make an unplanned stop.

13. It is recommended to coordinate with Miami-Dade Transit Department to include/add any bus routes that would service the project. This would predicate the need for a modal choice 'step' in the model.

    LC: We have substantial reliable mode choice data from the MOA from Year 2005 and again in 2012 from the Cambridge Systematics Special Generator study. At this time we must be conservative so as not to understate the trip impacts. Any further increase in transit will be desired and the Applicant will work with Miami Dade County Transit toward that end throughout the approvals and throughout the life of the project.

    Notwithstanding, the traffic impact analysis methodology needs to be revised in order to follow the Development of Regional Impact (DRI) review process as outlined in the Florida Department of Transportation (FDOT) Transportation Site Impact Handbook April 2014. Please note that a DRI is defined by Section 380.06(1), Florida Statutes (FS.), as any development which, because of its character, magnitude or location, would have a substantial effect on the health, safety or welfare of citizens in more than one county, in this case Miami-Dade and Broward counties. Thresholds which determine when a development should undergo the DRI review process can be found in Section 380.0651, F.S., and Chapter 28-24, Florida Administrative Code (F.A.C.).

    LC: The ADM is located within a DULA and as such is exempt from DRI review. However, the Applicant has committed to generally follow the DRI study guidelines to fully address impacts.

    In addition, a review was also made of the Mall of America Special Generator Survey that was submitted separately for the surrogate shopping destination, MoA, as follows:

1. The size of the surrogate site is stated as 4.2 million sq. ft. with a variety of entertainment and non-shopping/retail attractions. Any proposed similar site in the County should consider the effect of the size and variety of uses with the project.

   LC: The Applicant's presentation addressed the trip generation proposal in the methodology meeting. These adjustments have been made as presented at the meeting.

2. The survey listed 30% out-of-region visitors for the surrogate site as shown on page 1-1 and summarized on pages 3-6 and 3-7. This percentage may differ for a similar type of shopping

mall in Miami-Dade County; therefore, the results need to be adapted accordingly for local and regional differences.

LC: Given the tourist characteristics of Miami-Dade County and Broward County the "out of region" visitors are not expected to decrease below MOA levels. At this time the MOA provides the best comparable data and local adjustments would at best constitute a guess in the absence of data. The Sawgrass Mills Mall in Sunrise has a high percentage of foreign visitors from Europe and South America (Miami Herald) and we assume that will be the same for ADM.

3. The "Primary Reason to Visit the MoA" is shown in Figure 3.3 on page 3-5 differs with similar information provided in Appendix A, Table A.1 and A.3. We need the clarification.

   LC: This Applicant did not commission the Cambridge Systematics report; it was done independently for the Minneapolis MPO. Therefore, we cannot clarify any inconsistencies with any authority.

4. Figure 3.14 on page 3-14 and Table A.19 in Appendix A show a difference in the information for the "Unreported/Did not report" percentage (i.e. 14% and 25%, respectively.)

   LC: See response to comment 3 above.

5. The surrogate site is served by a light rail line and public bus transit as indicated in Table A.10, with the percentage contributions at 11% and 4%, respectively. These transit capture percentages need to be verified for use with a similar site in Miami-Dade County.

   LC: The Applicant's trip generation presentation from the methodology meeting described how the percentage of LRT ridership from MOA was added back into the trip generation forecast for ADM and converted to vehicular trips.

6. There was no seasonal variation indicated for the number of visitors collected in the survey. Therefore, any trip generation information used from this survey will also require a seasonal variation adjustment.

   LC: The Applicant's trip generation presentation from the methodology meeting described that the MOA trip rates were "annualized" based on continuous data collected at the entry point of MOA. Seasonal data is available and will be provided with the CDMP TIA.

Broward County Planning and Development Management Division - October 2, 2015

1. The trip generation proposed indicates a PM peak hour trip generation rate representing approximately 7.58% of total daily traffic. This implies that the hourly trip generation is relatively constant throughout the operating hours of the mall. Given the unique characteristics of the project, the traffic consultant should review the hourly trip generation totals from the Mall of America site and, if appropriate, utilize that data to better model the hourly trip-making patterns throughout the day.

   LC: As described in the Methodology Statement and within the presentation provided at the methodology meeting, the weekday trip rates provided in the Methodology Statement were derived from two independent counts programs. Each effort (one in June 2015 and one in August 2015) involved collecting traffic counts at MOA over 72 hours. This data was averaged over the 3 days and seasonally adjusted. The two studies were reviewed for accurate procedure, variability and reasonableness before the resulting rates from the two studies were averaged together as shown in the Methodology Statement. The data indicated a traditional relationship of PM peak hour project generation occurring within the PM peak hour of adjacent traffic (between 4PM – 6PM). Complete documentation of the count data will be provided for review with the CDMP TIA.

2. South Florida has distinct trip-making characteristics that vary depending on whether it is peak season during the winter months, or whether it is during the summer months when school is out of session and more summer vacation trip-making occurs. These characteristics will influence winter peak season versus summer vacation period trip-making to this site given its unique theme park characteristics. The consultant should include the two distinct seasonal scenarios in its traffic analysis.

   LC: The trip rates provided in the Methodology Statement were seasonally adjusted to continuous data from video feeds at the MOA access points. Consistent with ITE recommended practice, these rates are intended to provide reviewers a trip generation estimate for a typical day.

3. The trip lengths for this particular site are most likely longer than the trip lengths that would be derived from typical regional shopping center trip-distribution curves. The traffic consultant should present their methodology with regard to trip-length as this could influence the radius of the impact area. In particular, the traffic analysis should, at a minimum, evaluate impacts along Miramar Parkway and Pines Boulevard, two heavily congested arterials; and adjacent local roads, such as Flamingo Road/NW 67 Avenue, that traverse between Broward and Dade Counties.

   LC: It is acknowledged that a significant portion of ADM trips will originate from outside of the local area as a result of the uniqueness of the trip purpose. This behavior will likely reduce the percentage of project traffic on local roadways when compared to a more traditional shopping center. The Methodology Statement proposes to utilize adopted travel demand models to derive project distribution for ADM, however, it allows that the output will be subject to a check for reasonableness. This leaves the CDMP TIA open to considering adjustments to the trip distribution as logic dictates. Per the requirement of the CDMP, the study area will extend to all roadways where external project trips from the project are forecast to be

equivalent to or greater than 5% of the MSV for each facility. Likely, this requirement will deem portions of Miramar Parkway and/or Pines Boulevard within the study area.

In addition, the following comments are specific to the Technical memorandum dated September 3, 2015 that was provided for our review:

1. The total gross area of the project (6.2 million sq. ft.) excludes the proposed hotel use shown on the conceptual plan.

   LC: The external trip generation rates from MOA (and proposed for ADM) were derived with respect to the gross leasable area of the retail portion consistent with how ITE treats the Code 820 Shopping Center use. The gross area for the retail and entertainment portions is provided to show the similarity of retail/entertainment mix at MOA versus ADM and, therefore, the appropriateness for use of the rates at ADM. Availability of hotel for overnight guests is complimentary to the trip demand driven by the retail/entertainment components.

2. The trips generated by "2000 room keys" were not included in the "Net External Trips" in Table 3.

   LC: The external trip generation rates from MOA (and proposed for ADM) have the complimentary hotel traffic built into the trip rates. They are derived from counts at the external stations at MOA.

3. As noted above, if the hotels are not built at same time or ahead of the theme park and commercial uses, then the impact on roadways will be much higher than forecast.

   LC: The hotel uses will complement the demand for trips driven by the retail and entertainment portions of the project, not the other way around. ADM is far removed from the airport, business district, beaches and other tourist attractions in the area. There will be negligible demand to stay at an ADM hotel without the retail and entertainment portions of the project.

4. Given the location of the project and the project's access from major freeways, the pass-by percentage appears to be overestimated. Also, the ITE fitted curve equation for pass-by trips for Land Use Code 820 is subject to the same limitations as the ITE trip generation rate for Land Use Code 820, and may overestimate the percentage of pass-by trips.

   LC: [Duplicated from response to Miami-Dade County Traffic Engineering 9/23/15, #12] Consistent with providing a trip generation forecast based on the best available data (ITE's recommendation), the fitted curve equation for Shopping Center was used to forecast pass-by trips using only GLA of the retail square footage portion of ADM. Due to the inverse relationship of GLA to pass-by percentage from the equation, the resulting 14% pass-by is much lower than the rate from a more traditional sized shopping center. This appears to be a realistic assumption based on the hundreds of thousands of commuters on the two adjacent freeways who will pass by the project at build-out. These trips may be work trips for a commuter making a quick shopping or dining stop during their regular commute. It may be a new carpool stop for an employees from a vehicle already in the background traffic. It could be for a delivery to the project from a vehicle on a pre-existing route. It could be from

commuters on business travel or vacation who are curious about ADM and make an unplanned stop.

5. The number of trips added due to the light rail transit adjustment factor do not equal 10.8%.

   LC: Visitor Average Vehicle Occupancy (AVO) at MOA has been reported as 2.3 persons/vehicle. The trip generation summary shown in the Methodology Statement assumes an AVO of 4.0 persons/vehicle to rival data at theme parks in Florida. The adjusted external trips for the LRT adjustment in the CDMP TIA will be corrected to display 4,682 trips.

6. There are several references to the Miami-Dade LRPT and Miami-Dade Concurrency and Count Databases. Since traffic impacts north of the site will extend into Broward County, reference to the Broward County LRTP and corresponding data should be added.

   LC: Acknowledged. The study area will extend to all roadways where external project trips from the project are forecast to be equivalent to or greater than 5% of the MSV for each facility. Likely, this requirement will include portions of Broward County. The CDMP TIA will reference the appropriate sources for data associated with Broward County.

Florida's Turnpike Enterprise, Pompano Operations Center - October 1, 2015

1. We concur with the County's request for the applicant to prepare a methodology that is consistent with the Site Impact Handbook (due to correlation in size to a "DRI"). At a minimum, a methodology of this type would identify PM peak hour traffic for both directions (not the identified two-way volumes). However, it is requested that the applicant develop both AM and PM peak hour traffic and any associated data collection. This methodology would be comparable with a typical interchange access request.

   LC: The ADM is located within a DULA and as such is exempt from DRI review. However, the Applicant has committed to generally follow the DRI study guidelines to fully address impacts as part of the CDMP TIA. The TIA will present an AM peak hour trip generation summary to show that project trip generation in the traditional AM peak period for adjacent traffic (7am – 9am) is only estimated to be roughly 20% of the project PM peak generation. As such, the PM peak hour analysis will control, making an AM peak analysis moot. However, the Applicant will address specific concerns in the AM peak if there is an established need.

2. The applicant should provide re-assess seasonality to be more specific to patterns expected in South Florida. The County has received other proposals for development of entertainment/water park land uses, such as the Miami Wilds. Information contained these proposals included local vs. national attendance at various "entertainment/attraction" type venues. Some of this information may be of use to the applicant in determining the applicability of seasonality and location differences.

   LC: [Duplicated from Broward County Traffic Engineering 10/2/15, #9]. The trip rates provided in the Methodology Statement were seasonally adjusted to continuous data from video feeds at the MOA access points. Consistent with ITE recommended practice, these rates are intended to provide reviewers a trip generation estimate for a typical day.

3. The applicant should confirm that all of the Mall of the America comparative land uses existed and where operational during the data collection. Recent aerials show construction in the area.

   LC: The trip rates provided in the Methodology Statement were derived from two independent counts programs which only included MOA Phase 1 traffic. There were no significant vacancies at the time. Construction is associated with Phase 2 and was having no effect on Phase 1 operations during the data collection. Complete documentation of the count data and methodology will be provided with the CDMP TIA.

4. The calculation of pass-by percent should also be checked for reasonableness against the available traffic, to assure that it represents a conservatively low percentage of that traffic.

   LC: Consistent with providing a trip generation forecast based on the best available data (ITE's recommendation), the fitted curve equation for Shopping Center was used to forecast pass-by trips using only GLA of the retail square footage portion of ADM. Due to the inverse relationship of GLA to pass-by percentage from the equation, the resulting 14% pass-by is much lower than the rate from a more traditional sized shopping center.

5. The applicant proposes a light rail transit adjustment of 10.8 percent, however, no light rail transit is planned for the area. At best, bus rapid transit may be available via the I-75 Express lanes. It is suggested that the LRT adjustment be renamed to Transit adjustment. Also, more research should be performed to determine the appropriate mode split adjustment considering the location and proximity to existing and future transit service.

   LC: It's acknowledged that no LRT is planned for ADM. The adjustment for light rail was additive to the ADM trip generation estimate because MOA has LRT.

6. The methodology mentions the approved LRTP model will be used. More detail should be provided regarding the model version and source of the background network and land use. The Florida's Turnpike has a model version which includes refinements for this area (updated land use and Turnpike facility coding) which may provide improved forecasts.

   LC: The Applicant has reviewed all of the recent regional models and refinements available for the area for most realistic volume forecasts for 2040. We tend to agree that the Turnpike's version of SERPM 6 w/ SERPM 7 socioeconomic data is one of the better options to use for the CDMP TIA and will likely recommend its use to Miami-Dade County.

South Florida Regional Planning Council, dated October 2, 2015

1. Existing Conditions – Weekend Analysis
   The TIA methodology will use non-directional count data for pm peak conditions to determine existing year (2015) level-of-service (LOS) conditions for the major roadways of the study area. While the weekday pm-peak period is the LOS standard for the County and State jurisdictions, it is well understood that shopping centers and entertainment uses peak on Saturday afternoons (not accounting for seasonal variations). The ADM is a very significant generator, and for some roadways in the study area where ADM generates a very large proportion of the trips for a roadway link, there is a possibility that the critical peak may coincide with the ADM peak as a trip generator. Additional information is needed to identify the magnitude and timing of the ADM's peak trip generation. With the identification of the ADM's peak period for gross trip generation (on its own driveways), the existing conditions methodology must be augmented with the appropriate weekend roadway counts and conditions.

   Further, because the ADM is such a large generator located at the edge of urban development and the roadway network, a more pronounced directional distribution is expected on the non-highway roads. The existing conditions analysis should use directional count data for any local, collector or arterial roadways.

   LC: Total and directional volumes will be provided in the TIA as requested. However, the CDMP TIA will need to adhere to the CDMP adopted guidelines which does not consider weekend analyses. Saturday peak site hour trip generation will be provided. Note that ADM is located within a DULA and as such is exempt from DRI review. However, the Applicant has committed to generally follow the DRI study guidelines to fully address impacts as part of the CDMP TIA.

2. Background Traffic – Weekend Analysis
   The existing year 2015 roadway data will be factored and analyzed along with committed development for the Year 2020 short range analysis and the Year 2040 long range analysis. Based on the identification of the ADM's peak period for trip generation, short range 2020 and long range 2040 conditions must to be augmented with the appropriate weekend period analysis. Also consistent with the existing conditions recommendation, future conditions analysis should use directional count data for any local, collector or arterial roadways.

   LC: See response to comment 1 above.

3. Background Traffic – Planned and Committed Development
   There is a large land area abutting to the south of the ADM land use amendment proposal that may be poised for redevelopment that itself may be regionally significant. The status of these vacant lands, pending development orders associated with them, and any land use plan amendments associated with these lands should be identified, and appropriate adjustments made to the TIA.

   LC: Any approved developments within that area will be included as committed developments. The area poised for development immediately south of the site up to NW 170th Street is mostly controlled by the Graham Companies. The Applicant has met with

representatives of the Graham Companies and received their anticipated land use program for that area. Their development at buildout would consist of 1 million square feet of retail; a business Park of 3 million square feet, and an additional 2,000 multi-family residential units (apartments). Since this is a substantial amount of diverse development it is not anticipated to be built in one single phase unlike the American Dream Miami. As such, we will assume that for the short term analysis (2020) the Graham Companies will build 150,000 square feet of retail; 250,000 square feet of Business Park; and, 500 Apartments. The remainder will be included in the long term analysis for 2040. Since these developments also require a land use amendment, the developments will be loaded into background traffic. Land areas further south of NW 170th Street will be included based on what is currently coded in the 2040 LRTP.

4. Trip Generation – Trip Generation Study – Number of Samples

   At least three trip generation survey sites must be used to provide reliable trip generation forecast rates for AGM. It is suggested that in addition to trip generation survey data from Mall of Americas, survey data from West Edmonton Mall, and methodology information from American Dream (NJ) be incorporated into the AGM methodology for trip generation. When compared, various factors must be considered in addition to the mix of uses and their floor area. These include, but should not be limited to the size and population of the trade area, volume of tourism, employment, annual visitors, design throughput of attractions and other factors may offer guidance as to the development of trip generation rates for AGM. These should be the subject of a special review committee.

   LC: ADM is a very unique project without many similar sources to draw data from. Fortunately, MOA mirrors the size and mix of unique retail an entertainment uses and it was developed and managed by the same entity that proposes ADM. Because of this, it is the logical choice to collect data from and draw informed conclusions for ADM trip estimates. The trip rates proposed for ADM were derived from two independent counts programs at MOA by two different consultants at different times (June and August). The variability between the counts was small and the results were logical. A presentation provided at the methodology meeting gave several reasons why the external trip rates are conservative to include ADM being larger than MOA (rate reduction expected), counts taken W through F for the weekday rates (Friday higher than average weekday data), proportion of tourists at ADM expected to be higher (more hotel capture), ADM AVO expected to be higher (to mirror Florida theme parks). The Applicant stands by the statement that MOA data is the best available source for ADM.

   The trip generation data for American Dream in the Meadowlands, formerly known as "Xanadu" is not a good comparison to the proposed American Dream Miami for a number of reasons, the most significant are enumerated as follows:

   A. The American Dream project in the Meadowlands was approved in 2003 for the Mills Corporation, then to be known as Xanadu, as an integral part of the larger expanding Meadowlands Sports Complex Master Plan. It broke ground in 2004 as a family entertainment, retail, hotel, and office complex. After bankruptcy of two successive owners it was taken over by Triple Five in 2013. The original trips associated with this development were not developed or negotiated by Triple Five. The trip entitlements and approvals which were also a part of the larger Meadowlands Sports Complex EIS were retained and slightly modified to allow a small expansion for the entertainment component. Since they were sufficient to support project trips, Triple Five retained the

project's vested trips other than to allow some small acreage to be added for a water park resulting in an overall increase of 58 PM peak hour trips.

B. *A NJ Transit rail station was built adjacent to the American Dream Meadowlands in 2009 to serve the area and especially the NY Jets and Giants Stadium. It is unclear to what degree if any the Mills Corporation consultants were allowed to rely on this transit station in 2002-2003 since they were originally programmed for a 2006 opening date. With excellent connections to Northern New Jersey and Manhattan, these transit assumptions would have significant impacts on the trip estimates.*

C. *American Dream Meadowlands is currently programmed for opening in 2016. To rely on trip generation studies performed by other developers and other consultants starting back in 2002 for this development with numerous unknown assumptions is far less reliable than to use the 2015 traffic count studies of the same development model, owned by the same developer, and with the same land use mix as proposed in Miami. The Mills Corporation consultants could not have used public traffic study information from Mall of America (MOA) since they received their approvals in 2003 and the MOA conducted and submitted their expansion studies in 2005 and 2006. If the traffic studies initiated in 2002 and 2003 by Mills Corp. used the ITE Trip Generation Report it would have been the 6th or 7th edition whereas currently the 9th edition is in effect. All this makes the use of this old data very unreliable.*

An additional trip generation study of the West Edmonton Mall (WEM) as a second site is not considered necessary and would be anticipated to result in lower trip generation. The land use mix and transit access are comparable, but other traffic predictors are not. The WEM has a gross floor area of 5.3 million square feet as compared to 4.87 million square feet at Mall of America (MOA). The WEM is therefore 9% larger than MOA. Yet, the annual visitors at WEM are 23% lower than at MOA, 30.8 million versus 40 million respectively based on each site's website. This may in part be a result of a much larger Metropolitan Area population in the Minneapolis St. Paul area than for the Edmonton Metropolitan Area, nearly double by some census data (1.3 million vs 2.8 million). The population of the area including Miami and Fort Lauderdale is nearly 4 million. Based on these general characteristics, the MOA is a better trip generation model than what we would expect from WEM.

5. Trip Generation – Independent Variables

The methodology proposed is based on net floor area (leasable area) of the mall; therefore, trip generation rates are factored based on 3.5-million square feet. This is consistent with way typical shopping centers, such as those conforming to Land Use 820 of the Institute for Transportation Engineers (ITE) *Trip Generation Handbook*; however, for the purpose of this multi-attraction destination use it is not demonstrated to be adequate. The applicant states that the ADM project land use is not captured by the ITE land uses due to its scale and because of its unique mix of non-merchandising attractions with retail. Accordingly, the decision to exclude the entertainment and hotel uses from calculation of trip generation is unwarranted and unsubstantiated, even though the rate is based on the similar Mall of America. Compared to MOA, too many distinctions are possible between the MOA entertainment uses and the ADM entertainment uses and their independent potential as primary trip attractors in different markets. At 2,000 hotel rooms and 2.5-million square feet of entertainment including theater seats, sports attractions and theme attractions, the scope of these uses is too large to dismiss on assumption, especially as it is clear that the entertainment uses are indeed included to draw a higher than typical patronage to the retail.

Some of these uses are so unique to this region (such as but not limited to indoor skiing) that they must be analyzed for their potential as primary destinations and then consider the shared trip potential with retail and restaurant. The assumption made by the proposed TIA methodology is that the entertainment and hotel components interact with retail in a mixed use concept with 100% internal capture between components. This is not substantiated and unlikely. Most notably, in similar super regional mall/entertainment complexes (see Comment 5), the entertainment venues are not free; they are ticketed, and therefore not incidental to the merchandising space. Furthermore, data from the American Dream mall in East Rutherford (not yet opened) will yield some information regarding the discrete attraction of entertainment trips apart from retail trips. Bergen County, NJ where the AD mall is located, still has "blue laws" requiring the retail components to close on Sunday, while the mall may remain open for visitors to its entertainment and restaurant attractions. Understandably, as the AD is not open, survey data is not available; however, the applicant may share AD TIA methodology until actual data is available. The entertainment and hotel uses must be identified as independent variables for calculating trip generation, and internal capture rates established for reductions.

The retail component of the trip generation independent variable follows the form of the ITE Land Use 820, in which restaurant space is averaged with anchor tenants, retail mall tenants, and kiosk tenants. Promotional material for the ADM provide that among the usual eateries incidental to the merchandising space (food court type eateries), destination restaurants will also be a significant part of the tenant mix. Trip generation rates from similar super-regional centers like ADM will account for this; however the relationship is not certain to be transferable among markets and proportions of destination eateries. Destination restaurant space should be distinguished from merchandising space, and assumptions or averaging it with merchandising space must receive further analysis.

LC: It is acknowledged that gross leasable area was chosen as the independent variable to be consistent with ITE's treatment Shopping Center (ITE 820). In this way it is also easier to compare to other shopping centers.

We disagree that by using gross leasable (GLA) versus gross floor area (GFA) for the independent variable, the external trips attributed to the entertainment and hotel portions of the site are not accounted for or are 100% captured on site. First on accountability, because the two projects are similar in land use mix as provided in the Methodology Statement (ratio of GLA/GFA) deriving either rate for MOA and then applying it to ADM will provide the same external trip total for ADM within 4%. That is, the conversion from a GLA rate to a GFA rate for MOA and then applying the rate to ADM GFA versus ADM GLA cancels out the difference in independent variable use. Second on 100% capture, the rates proposed are external trip rates derived from external count data. Whatever capture happens at MOA (and is expected to happen at ADM) is built into the rate. It does not imply that internal capture is 100% for entertainment and hotel portions. Another benefit of using external trip rates is that it takes out all the speculation and guesswork for internal capture or the need for surveys for the CDMP TIA. The CDMP TIA requirement only concerns itself with external trip impacts.

To the point of this comment that MOA is not a good fit for estimating ADM trip generation, the Applicant stands by the statement that MOA data is the best available source for ADM,

and it's use is consistent with ITE recommendations, for as discussed at length in the comment response above.

6. Trip Generation – Peak of Generator

   As noted for Comments 1 and 2, a thorough analysis must include impacts during the peak period of the generator. While the weekday pm-peak period is the LOS standard for the County and State jurisdictions, it is well understood that shopping centers and entertainment uses peak on Saturday afternoons. Additional information is needed to identify the magnitude and timing of the ADM's peak trip generation on a peak period of week basis. The trip generation rate must include at minimum, the concurrency requirement for pm peak of the adjacent roadways (4pm-6pm), and the peak period of the generator (most likely Saturday afternoon), and seasonality (weekly) factors for the ADM as a trip generator based on peer properties.

   LC: See response to comment 1 above. Complete documentation of the count data and methodology will be provided with the CDMP TIA.

7. Trip Generation – Seasonal Trip Generation Factors

   Seasonal trip variation has not been addressed in the TIA methodology. Typically, Florida Department of Transportation (FDOT) tabular data for averages on the roadway network in Dade County would be used. These values reflect the weekly variation of all trip making averaged, and tend to suppress season peaks of regional destination shopping centers and entertainment uses that have greater variation and differently timed peaks among seasons. Additional information is needed to identify the magnitude and timing of the ADM's peak trip generation on a week-of-year basis. Weekly seasonality may be available through parking survey data that may already exist for the peer sites; continuous annual hose counts are not necessary. While the FDOT seasonal variation will be appropriate for evaluating background traffic, the gross trip generation across the ADM driveways must be based on seasonal factors from the peer surveys discussed in Comment 5.

   LC: The Applicant's trip generation presentation from the methodology meeting described that the MOA trip rates were "annualized" based on continuous data collected at the entry point of MOA. Seasonal data is available and will be provided with the CDMP TIA.

8. Net External Trip Generation - Pass-By

   Pass-by trip reduction to net roadway trips in the proposed TIA methodology is based on the ITE *Trip Generation Manual* data for Land Use #820, Shopping Center. While the methodology clearly states that the ITE data for shopping centers does not support this use, the ITE data has been relied upon for a pass-by trip reduction to net external trips calculation. There is no evidence to support that this data, excluded for the more basic task of trip generation, should then be used for a pass-by reduction. Further, considering the size of ADM, its very substantial entertainment and hotel components, its location at the intersection of two major highways, and that it is marketed as a major stand-alone destination, such a high pass-by reduction appears dubious. This is not a neighborhood supermarket or 4-corners shopping center. ITE Shopping Center (Land Use #820) data must not be used to estimate pass-by trips. A pass-by trip estimate should be based on survey data from peer land uses. In the absence of such survey data and in consideration of the intended destination characteristic of ADM, then the pass-by trip percentage should be considered zero.

LC: [Duplicated from response to Miami-Dade County Traffic Engineering 9/23/15, #12] Consistent with providing a trip generation forecast based on the best available data (ITE's recommendation), the fitted curve equation for Shopping Center was used to forecast pass-by trips using only GLA of the retail square footage portion of ADM. Due to the inverse relationship of GLA to pass-by percentage from the equation, the resulting 14% pass-by is much lower than the rate from a more traditional sized shopping center. This appears to be a realistic assumption based on the hundreds of thousands of commuters on the two adjacent freeways who will pass by the project at build-out. These trips may be work trips for a commuter making a quick shopping or dining stop during their regular commute. It may be a new carpool stop for an employees from a vehicle already in the background traffic. It could be for a delivery to the project from a vehicle on a pre-existing route. It could be from commuters on business travel or vacation who are curious about ADM and make an unplanned stop.

9. Trip Generation - Parking Inventory Comparisons

   Trip generation for the unique AGM use is to be developed through this process. While not directly comparable, parking capacity, both standard and overflow will provide an additional point of reference when comparing to other super-regional mall peer uses and to more traditional malls. Proposed parking capacity should be provided as part of the TIA.

   LC: Parking needs will be addressed subsequent to the CDMP TIA. Comparisons of parking supplies for different facilities must consider transit availability, use of transit, and vehicle occupancies unique to that particular use.

10. Trip Generation - Mode Split

    As this land is currently designated industrial use, vacant, west of I-75 and near the UDB, there is virtually no existing transit service nor is there any planned transit service. The closest bus service is over ¾-mile away at NW 87th Avenue and NW 186th Street. (Metrobus Routes 54; the 183rd Street Local – Route 183; and the Ludlam Limited – 267). Given the existing state of transit coverage to the site, the existing lack of bike or pedestrian facilities, and without a site plan to show any such improvements, then the mode split for the trips generated must be 100% private automobile. In converting the MOA trip generation for this site, the ADM TIA methodology correctly proposes to add in the MOA trips that use the Minneapolis / St. Paul region's LRT system, and divide by the MOA auto occupancy of 2.3. For the short-range forecasts at build-out and for the Year 2020, a transit mode split of 0% may be reasonable; however, tied in to the mitigation analysis, transit service and capacity planning should be integrated into the analysis for the long range 2040 analysis.

    LC: Acknowledged. By applying MOA trip rates from MOA to ADM (with the LRT credit) the assumption is that ADM will be served by a comparable percentage of transit and other rideshare components as MOA at build-out. However, since we cannot guarantee that the same transit services will materialize over time at ADM the trip generation analysis must be conservative as forecasted through 2040. The evolution of more transit services will reduce the impacts currently being anticipated.

11. Trip Generation - Non-Public Alternative Modes

In recent years, new transportation innovations are redefining urban mobility. Of importance to this urban edge site, car sharing, Uber and traditional taxi services can reduce driveway trips through increased use of transit or increased vehicle occupancy. The positive impact of increasing use of these alternatives through mitigation strategies that support their use should be explored along with appropriate reductions in net external trip generation.

LC: Acknowledged. As part of the CDMP TIA, an analysis is required to address any mitigation measures to include a wide range of options for mobility and safety needs.

12. Trip Distribution and Assignment
Distribution of forecast project trips generated by ADM will be determined with the run and recalibration of the Miami Urbanized Area Transportation Study (MUATS) transportation model. There are no comments at this time.

LC: The Applicant will likely recommend to the County that the SERPM 6 model with SERPM 7 data and subarea refinements by Florida Turnpike be used to determine project distribution for ADM. Model output will be subject to review and any adjustments for logic will be discussed with the County.

13. Mitigation Analysis
Mitigation analysis is included in the ADM TIA to address the need for transportation facility improvements that may be required to remedy project impacts that cause degradation of roadway level-of-service with in the study area. Mitigation measures are suggested to include a range of options to address safety and mobility needs for the Year 2020 and Year 2040 networks. While the subject area has no significant or planned transit capacity, it is noteworthy that the Mall of America has LRT service, the West Edmonton Mall has a planned station for extension of the Edmonton region's LRT, and the American Dream in New Jersey is developed with direct service for New Jersey Transit rail and bus service. For the peer developments, premium and high capacity transit play a major role in mitigating the impact of vehicular trips for those centers. It is recommended that mitigation consider a multimodal approach that includes the development of enhanced transit service for Year 2020, and more significant transit infrastructure for meeting the 2040 future year mobility and ADM access needs.

LC: See response to comment 11 above.

14. Electric Vehicle Infrastructure
Plug-in Electric Vehicle (PEV) use in the South Florida Region is expanding; however, the installation of recharging equipment at longer distance, long-duration destination locations is a necessary and important tool to promote their use. The use of PEV have well documented benefits in the reduction of non-point source emissions. The benefits of reducing air quality impacts is a tangible benefit that is tied to transportation. The recommendation is to incorporate in the methodology for gross trip generation, a partial mitigation tied to the provision of permanent PEV recharging infrastructure.

LC: See response to comment 11 above.

Florida Department of Transportation, District 6, District 4 - October 2, 2015

General Comments

1. The proposed analysis does not include the anticipated Graham property development located immediately south of ADM. Significant traffic volumes are expected to be generated from the Graham property in the future which will influence the magnitude and the traffic patterns on the area's Strategic Intermodal System (SIS) facilities and arterial roadway network. The inclusion of the Graham property development in the analysis is critical to accurately assess the transportation network's needs as a result of the proposed developments.

   LC: [Duplicated from response to SFRPC 10/2/15, comment #3]. Any approved developments within that area will be included as committed developments. The area poised for development immediately south of the site up to NW 170th Street is mostly controlled by the Graham Companies. The Applicant has met with representatives of the Graham Companies and received their anticipated land use program for that area. Their development at buildout would consist of 1 million square feet of retail; a business Park of 3 million square feet, and an additional 2,000 multi-family residential units (apartments). Since this is a substantial amount of diverse development it is not anticipated to be built in one single phase unlike the American Dream Miami. As such, we will assume that for the short term analysis (2020) the Graham Companies will build 150,000 square feet of retail; 250,000 square feet of Business park; and, 500 Apartments. The remainder will be included in the long term analysis for 2040. Since these developments also require a land use amendment, the developments will be loaded into background traffic. Land areas further south of NW 170th Street will be included based on what is currently coded in the 2040 LRTP.

2. The proposed roadway network includes interchange modifications and new ramp connections at 1-75 and Miami Gardens Drive and NW 170th Street, respectively. In addition, substantial transportation impacts may be realized at 1-75 and HEFT, 1-75 at NW 138th Street, 1-75 at Miramar Parkway, HEFT at Okeechobee Road, and HEFT at State Road (S.R.) 823/Red Road/NW 57th Avenue. Interchange improvements will require an Interchange Access Request (IAR), and must adhere to Florida Department of Transportation (FDOT) Procedure 525-030-160 concerning new or modified interchanges.

   LC: Acknowledged as a separate matter from the CDMP TIA. However, in part on consideration of this matter, the directional interchange at I-75 and NW 170th Street will no longer be included in the CDMP TIA for the short-term (2020) and long-term (2040) analyses.

3. The ADM project will require coordination with the FDOT and Federal Highway Administration (FHWA) concerning an IAR. A separate Methodology Letter of Understanding (MLOU) must be prepared specifically for any proposed new or modified interchange access. The amount of analysis and documentation required is related to the proposed action and type of IAR document, and will be determined subsequently by FDOT and FHWA.

   LC: Acknowledged as a separate matter from the CDMP TIA. The ADM team will continue to coordinate interchange proposal requirements during the CDMP review with FDOT, FHWA and Florida Turnpike Enterprise.

Section 2.0 Study Area

4. The proposed study area definition is consistent with the Miami-Dade County instructions for study area definition when preparing a Comprehensive Development Master Plan amendment (5% of adopted level of service (LOS) capacity), which is also consistent with the Transportation Concurrency Best Practices Guide. The latter document also suggests inclusion of any critically deficient roadways with project traffic equivalent to more than 1% of adopted LOS capacity, which is not noted in the proposed methodology. Please include this as an additional definition of the study area determination.

   LC: Per the requirement of the CDMP, the study area will extend to all roadways where external project trips from the project are forecast to be equivalent to or greater than 5% of the MSV for each facility. However, the CDMP TIA has committed to generally follow the DRI study guidelines to fully address impacts as part of the CDMP TIA.

Section 4.0 Existing Conditions

5. The last paragraph states that "All projects funded for construction in the next three years will be assumed in place for existing conditions." It is unclear if "project" in this context means only transportation projects or other development projects. The FDOT Transportation Site Impact Handbook notes that pursuant to Section 163.3180, F.S., "vested trips" (major committed developments, either having an approved Development Order or an approved concurrency management certificate) also must be included in background trips. Please clarify the meaning of "project" and specify if vested trips are proposed to be included in the existing conditions analysis.

   LC: The intent of showing "All projects funded for construction in the next 3 years" in the existing analysis was to account for additional system capacity under construction or soon to be under construction. However, Miami-Dade County has requested a preference to exclude these committed roadway projects in the existing condition analysis, therefore the CDMP TIA will exclude them in the existing analysis. For future year background conditions (Years 2020 and 2040), the CDMP TIA will include all planned cost feasible improvements consistent with the CDMP TIA instructions. For the Year 2020, committed (vested) trips provided in the Miami-Dade County's Concurrency Database will be used if greater than linear growth.

6. It is stated that 2015 volumes will be used to represent existing conditions. If 2015 volume data is unavailable, it is proposed to extrapolate the available data to estimate 2015 conditions using 1% or the historical growth rate, whichever is greater. Please provide the origins and justification for the 1% growth rate, and identify if the estimation of 2015 volumes applies to daily and peak hour volumes.

   LC: The 1% growth rate is proposed as a bare minimum if historical patterns are shown to less or negative. Daily and PM peak volumes will be treated similarity.

7. It is recommended that K and D factor values be proposed for each of the roadways evaluated for existing and future conditions. The values of these factors should be consistent with the Department's Project Traffic Forecasting Handbook.

   LC: FDOT volumes, K factors and D factors will source FDOT data as available.

Section 5.0 Background Traffic

8. The 2040 Long Range Transportation Plan (LRTP) Cost Feasible Plan includes four roadway extensions or new roadways in the study area. If background year volumes are derived from historical counts, volumes on these roadways cannot be determined. The third paragraph states that "...background traffic patterns from regional model runs may be reviewed to anticipate the impact of future cost-feasible infrastructure improvements on background traffic patterns." The roadway projects include:

    - NW 170th Street from HEFT to NW 97th Avenue -- new 6-lane roadway funded in Priority III
    - NW 107th Avenue from NW 170th Street to Broward County line -roadway extension funded in Priority IV
    - NW 186th Street from NW 97th Avenue to 1-75 -- new 4-lane roadway funded in Priority IV
    - Gratigny Parkway from S.R. 826 and 1-75 to HEFT -- roadway extension funded in Priority II

    Please revise the methodology to state that Southeast Regional Planning Model (SERPM) model runs of the no-build will be included to estimate background traffic on these roadways.

    LC: The Applicant will likely recommend that SERPM runs be used for the CDMP TIA consistent with the Methodology Statement. To estimate future volumes on roadways which do not exist today, or where a shift in traffic is expected in the future, model runs subject to review for logic will be utilized.

9. Please explicitly identify the interchange, access, and ramp configurations that the project assumes are representative of the future roadway network. For example, the access via NW 170th Street at 1-75 is shown in Figure 2, and an alternative interchange configuration is shown at 1-75 and Miami Gardens Drive. Improvements not noted in the LRTP Cost Feasible Plan will be considered commitments by the Applicant and must be constructed and operational prior to the opening of the project.

    LC: The traffic analysis for the CDMP assumes interchange configurations for I-75 and HEFT and Miami Gardens Drive as have been jointly developed by the ADM and FDOT consultants. The I-75 and NW 170th Street interchange was an assumption for the 2040 planning horizon to support plans by others to the south, however, on consideration of this matter in part, the directional interchange at I-75 and NW 170th Street will no longer be included in the CDMP TIA for the short-term (2020) and long-term (2040) analyses. The applicant understands that interchanges not in the LRTP will require new funding sources to be identified before any interchange access, modification or justification report process can be initiated.

10. It is recommended that a complete listing of the transportation improvements and network changes for 2020 and 2040 as compared to the existing conditions be included in the methodology document.

    LC: Specific improvements and network changes will also be identified in the CDMP TIA.

11. It is recommended that the Applicant use the SERPM transportation model developed for

the 1-75 project development and environment (PD&E) study (and subsequent re-evaluations) for the 2020 and 2040 background volumes, since substantial traffic pattern changes are anticipated as a result of the proposed 6.2 million square feet of development that will not be reflected in historical growth along area roadways. Historical growth, however, can be used as a reasonableness check for future year background volumes.

LC: The Applicant has reviewed all of the recent regional models and refinements available for the area for most realistic volume forecasts for 2040 as this comment proposes. We tend to agree with the Turnpike that their version of SERPM 6 w/ SERPM 7 socioeconomic data is one of the better options to use for the CDMP TIA and we will likely recommend its use to Miami-Dade County for this reason.

12. Please note that future year travel demand forecasts along SIS and State Highway System (SHS) facilities must be reviewed and approved by FDOT.

    LC: The FDOT will be one of the reviewing agencies for the CDMP TIA as coordinated by Miami-Dade County.

Section 6.0 Trip Generation

13. While it is agreed that utilizing the Institute of Transportation Engineers (ITE) trip rates for a shopping mall will underestimate internal capture and thus overestimate external trips, it is unclear whether traffic counts collected at the Mall of America (MOA) development are sufficiently representative of the proposed ADM development for two reasons:

    First, from a regional perspective, it is likely that the MOA serves as a primary attraction destination in the Bloomington area, which is likely to result in a high internal capture rate, whereas the ADM would be located in a region with multiple international destinations including Miami Beach, the Everglades National Park, and the Florida Keys. It is reasonable, then, to assume that while visitors to ADM may be likely to stay at the resort, it also is likely they will venture out to visit attractions other than or in addition to ADM.

    Second, it is not clear whether the non-retail attractions proposed for ADM are similar enough in nature, attraction power, and size to be comparable to MOA. The square footage alone of the entertainment portion of the ADM development is more than double that of MOA whereas the Gross Leasable Area (GLA) square footage of ADM is only 35% greater than MOA. While the proposed trip generation rates developed from MOA data implicitly include the entertainment attractions, the recommended trip generation rates are based on GLA square footage, which does not include the entertainment and hotel portions of the development.

    The regional context of the proposed development could play an important role in both trip generation and internal capture. Please review Aventura Mall and American Dream Meadowlands trip generation data. Whereas Aventura Mall is primarily composed of retail and restaurants, it also features several hotels and resorts within walking distance, and it should be used as a point of reference, even if not for direct comparison of trip generation rates. American Dream Meadowlands also could provide more relevant comparison due to its regional context near New York City.

Given the disproportionate share of square footage allocated to entertainment uses at ADM, relative to MOA, it is recommended the trip generation function of the GLA and entertainment portions be separated in the trip generation analysis. If available, trip generation data from amusement parks in Central Florida should be reviewed to determine whether the proposed rates for ADM sufficiently capture the entertainment attraction.

LC: [Portions duplicated from response to SFRPC 10/2/15, comment #4]. ADM is a very unique project without many similar sources to draw data from. Fortunately, MOA rivals the size and mix of unique retail and entertainment uses and it was developed and managed by the same entity that proposes ADM. Because of this, it is the logical choice to collect data from and draw informed conclusions for ADM trip estimates.

By comparison, Aventura mall is much smaller and has no entertainment or hotel uses which are intended for substantial onsite capture. By comparison, even if data was readily available, Florida theme parks don't normally include a free-entry shopping center under the same roof as their entertainment districts. After months of researching, the Applicant stands by the statement that MOA data is the best available source for ADM.

Also note that the rates proposed are external trip rates derived from external count data. Whatever capture happens at MOA (and is expected to happen at ADM) is built into the rate. It does not imply that internal capture is 100% for entertainment and hotel portions. Another benefit of using external trip rates is that it takes out all the speculation and guesswork for internal capture or the need for surveys for the CDMP TIA. The CDMP TIA requirement only concerns itself with external trip impacts.

The trip generation data for American Dream in the Meadowlands, formerly known as "Xanadu" is not a good comparison to the proposed American Dream Miami for a number of reasons, the most significant are enumerated as follows:

A. *The American Dream project in the Meadowlands was approved in 2003 for the Mills Corporation, then to be known as Xanadu, as an integral part of the larger expanding Meadowlands Sports Complex Master Plan. It broke ground in 2004 as a Family Entertainment, retail, hotel, and office complex. After bankruptcy of two successive owners it was taken over by Triple Five in 2013. The original trips associated with this development were not developed or negotiated by Triple Five. The trip entitlements and approvals which were also a part of the larger Meadowlands Sports Complex EIS were retained and slightly modified to allow a small expansion for the entertainment component. While the peak hour trips are similar in magnitude, since they were sufficient to support project trips and Triple Five retained the project's vested trips other than to allow some small acreage to be added for a water park resulting in an overall increase of 58 PM peak hour trips.*
B. *A NJ Transit rail station was built adjacent to the American Dream Meadowlands in 2009 to serve the area and especially the NY Jets and Giants Stadium. It is unclear to what degree if any the Mills Corporation consultants were allowed to rely on this transit station in 2002-2003 since they were originally programmed for a 2006 opening date. With excellent connections to Northern New Jersey and Manhattan, these transit assumptions would have significant impacts on the trip estimates.*
C. *American Dream Meadowlands is currently programmed for opening in 2016. To rely on trip generation studies performed by other developers and other consultants starting back*

in 2002 for this development with numerous unknown assumptions is far less reliable than to use the 2015 traffic count studies of the same development model, owned by the same developer, and with the same land use mix as proposed in Miami. The Mills Corporation consultants could not have used public traffic study information from Mall of America (MOA) since they received their approvals in 2003 and the MOA conducted and submitted their expansion studies in 2005 and 2006. If the traffic studies initiated in 2002 and 2003 by Mills Corp. consultants used the ITE Trip Generation Report it would have been the 6th or 7th edition whereas currently the 9th edition is in effect. All this makes the use of this old data very unreliable.

14. If MOA trip generation rates are utilized for ADM, please clarify the seasonal adjustment factor applied to the MOA observed data. An explanation of the factor and its relationship to the June and August counts should be provided. Clarification of consistency with the SERPM model, which is calibrated to average annual conditions, should also be included. Given that the development is likely to be highly sensitive to seasonal demand, adjustment of SERPM results may be warranted.

    LC: The Applicant's trip generation presentation from the methodology meeting described that the MOA trip rates were "annualized" based on continuous data collected at the entry point of MOA. Seasonal data is available and will be provided with the CDMP TIA.

15. The characterization of the ADM as a "self-contained shopping/entertainment experience" implies 100% internal capture. This characterization either should be supported by data or removed from the methodology text.

    LC: "Self-contained" was intended to imply that the project has all uses within a single structure with shared access and parking. Because the trip rates were developed from external count data, whatever capture happens at MOA (and is expected to happen at ADM) is built into the rate. It does not imply that internal capture is 100% for entertainment and hotel portions.

16. It is assumed that a large portion of the proposed pass-by trips are from 1-75 and HEFT. Given the type of trip using a limited access facility during the peak hour (i.e., home-to-work trip/work-to-home trip), it is unlikely that 14.8% (or 9,900 daily trips and 750 weekday PM peak hour trips) will exit from 1-75 or HEFT and access a destination shopping area/entertainment complex of the magnitude proposed.

    To validate the pass-by reduction for the project, it is recommended that the actual pass-by trip percentage at a comparable site, such as Mall of America and American Dream Meadowlands, be quantified. This approach also would be consistent with the proposed trip generation methodology where deviating from ITE trip generation rates was proposed because of the uniqueness of the land use and the site's size, which is greater than most of the example uses in the Trip Generation Manual. Please note that 1TE suggests pass-by reduction should represent no more than 10% of the volume of the adjacent street. Such a reasonableness check should be provided in the trip generation analysis.

    LC: [Duplicated from response to Miami-Dade County Traffic Engineering 9/23/15, #12] Consistent with providing a trip generation forecast based on the best available data (ITE's

recommendation), the fitted curve equation for Shopping Center was used to forecast pass-by trips using only GLA of the retail square footage portion of ADM. Due to the inverse relationship of GLA to pass-by percentage from the equation, the resulting 14% pass-by is much lower than the rate from a more traditional sized shopping center. This appears to be a realistic assumption based on the hundreds of thousands of commuters on the two adjacent freeways who will pass by the project at build-out. These trips may be work trips for a commuter making a quick shopping or dining stop during their regular commute. It may be a new carpool stop for an employees from a vehicle already in the background traffic. It could be for a delivery to the project from a vehicle on a pre-existing route. It could be from commuters on business travel or vacation who are curious about ADM and make an unplanned stop.

17. By definition from the ITE Trip Generation Handbook, 2nd Edition, pass-by trips "...do not involve a route diversion to enter the site driveway." Since the 1-75 and HEFT "pass-by" trips will need to alter their route to gain entry to the mall, it appears these trips are more appropriately labelled as Diverted Link trips. Diverted Link trips "...add traffic to streets adjacent to the site [and the interchanges], but may not add traffic to the area's major travel routes." It is recommended that this trip reduction be labelled as Diverted Link Trips, which will assist in identifying and tracking the project's impact to the interchanges, ramps, and SIS facilities.

    LC: Acknowledged. Diverted trip is a more specific description of these trips and analysis would be consistent with this intent.

18. Given the scale of this project, please provide an AM peak hour trip generation analysis for the project.

    LC: [Duplicated from response to Florida Turnpike 10/1/15, #1] The TIA will present an AM peak hour trip generation summary to show that project trip generation in the traditional AM peak period for adjacent traffic (7am – 9am) is only estimated to be roughly 20% of the project PM peak generation. As such, the PM peak hour analysis will control, making an AM peak analysis moot. However, the Applicant will address specific concerns in the AM peak if there is an established need.

19. Please provide a weekend trip generation analysis for the project, particularly since the retail and entertainment components of the project may attract more trips during a Saturday or Sunday.

    LC: [Duplicated from response to SFRPC 10/2/15, #1]. Total and directional volumes will be provided in the TIA as requested. However, the CDMP TIA will need to adhere to the CDMP adopted guidelines which does not consider weekend analyses. Note that ADM is located within a DULA and as such is exempt from DRI review. However, the Applicant has committed to generally follow the DRI study guidelines to fully address impacts as part of the CDMP TIA.

20. It is noted that only the retail square footage portion or **GLA** of Mall of America is used in determining the trip generation rate. This excludes the trip generating characteristics of the entertainment portion of MOA. The entertainment portion represents 2.7 million square feet of proposed development for ADM.

The use of Gross Floor Area (GFA) as the independent variable for the trip generation calculation which will include the entertainment component of the development (i.e., the total proposed development intensity of 6.2 million square feet) should be considered.

LC: Because MOA and ADM are similar in land use mix as provided in the Methodology Statement (ratio of GLA/GFA) deriving either rate for MOA and then applying it to ADM will provide the same external trip total for ADM within 4%. That is, the conversion from a GLA rate to a GFA rate for MOA and then applying the rate to ADM GFA versus ADM GLA cancels out the difference in independent variable use.

21. The use of comparable sites for the trip generations analysis only sampled Mall of America. In previous discussions with the Applicant, references were made to American Dream Meadowlands mall in New Jersey that included many of the unique retail and entertainment uses proposed for the ADM. It is recommended that the American Dream Meadowlands mall trip generation data be added for comparison purposes to broaden the sample size beyond one site in Minneapolis.

    LC: See response to #13 above.

Section 7.0 Trip Distribution and Assignment

22. It is implied in Section 7.0 that project demand will be included in the model run(s) to estimate directional distribution of trips to/from the ADM development. It is stated in the methodology that the directional distribution proportions from the build run(s) will be added to background network volumes obtained from the growth rate methodology described in Section 5.0 Background Traffic. It is unclear how new roadways in future year Cost Feasible networks will be handled. Please clarify the use of directional distribution in the background traffic for all affected roadway links, including new roadways in the Cost Feasible Plan.

    LC: Project distribution on 2020 and 2040 networks will be derived, and subject to review for logic, from the corresponding cost feasible network build-out run.

23. Please list and/or graphically depict the 2020 and 2040 roadway improvements from the Cost Feasible network that will be used in the project's analysis.

    LC: Specific improvements and network changes will also be identified in the CDMP TIA.

24. For SIS and interchange analyses, vehicular trips (rather than person-trips) must be assigned to the transportation network and represent the basis for any traffic analysis. Please revise the methodology accordingly.

    LC: External vehicular trips from the trip generation summary will be applied to the network in the CDMP TIA.

25. Please explicitly specify the number of Traffic Analysis Zones (TAZs) that will represent the project in the transportation model. This will assist in clarifying the proposed model structure and the potential effects upon the distribution and assignment of trips within the model.

LC: The TAZs will be identified in the CDMP TIA and model files will be available for review.

26. It is recommended that the use of the SERPM model from the 1-75 PD&E study (and subsequent re-evaluations) be explicitly noted for the development of trip distribution and assignment. This model is considered the best current representation of future traffic flow within the study area.

    LC: The Applicant has reviewed all of the recent regional models and refinements available for the area for most realistic volume forecasts for 2040 as this comment proposes. We tend to agree with the Turnpike that their version of SERPM 6 w/ SERPM 7 socioeconomic data is one of the better options to use for the CDMP TIA and we will likely recommend its use to Miami-Dade County for this reason.

Section 8.0 Mitigation Analysis

27. The mitigation analysis states that mitigation measures will include "a range of options" but does not specifically refer to multimodal strategies. It is recommended that potential express bus service on the 1-75 and S.R. 826 express lanes, a park-and-ride at or near this site, and multimodal facilities connecting the site to the residential area on the east side of 1-75 be considered.

    LC: Multi-modal is included in the intent of "a range of options".

28. Please modify the methodology to explicitly note that the AM peak hour, PM peak hour, and a weekend peak period will be evaluated for the short and long term analysis of roadway segments, intersections, and interchanges. Also, please include text stating that the peak direction and off-peak direction of flow on each roadway segment will be analyzed.

    LC: The CDMP TIA will be consistent with the requirements of the Miami-Dade County CDMP requirements. Additionally, the Applicant has committed to generally follow the DRI study guidelines to fully address impacts.

29. Please include in the proposed methodology the approach to analyze the current and proposed interchanges impacted by ADM. This should include a definition of significant impact to ramps and interchanges, similar to that briefly described in Section 2.0.

    LC: Roadways in the CDMP study area will be analyzed per the Methodology Statement. If there is a specific concern identified at an interchange it will be subject to the mitigation analysis portion of the CDMP TIA.

City of Hialeah – October 13, 2015

The City of Hialeah would like to have a detailed analysis of the impact of the proposed development on NW 97th Avenue and NW 107th Avenue south of the proposed project down to NW 138th Street. Said analysis should include the future traffic projections and projected LOS for the most intense scenario of the future land uses in the area, within the City of Hialeah.

LC: Per the requirement of the CDMP, the study area will extend to all roadways where external project trips from the project are forecast to be equivalent to or greater than 5% of the MSV for each facility. This requirement will most likely include NW 97th and NW 107th Avenues within the study area. For CDMP study purposes, the alignment of NW 97th and 107th Avenues will be assumed for traffic connectivity and to avoid conflict with Florida's Turnpike at NW 170th Street. The final alignment will be determined through discussions with the affected land owners, and jurisdictions.

Any approved developments within that area will be included as committed developments. The area poised for development immediately south of the site up to NW 170th Street is mostly controlled by the Graham Companies. The Applicant has met with representatives of the Graham Companies and received their anticipated land use program for that area. Their development at buildout would consist of 1 million square feet of retail; a business Park of 3 million square feet, and an additional 2,000 multi-family residential units (apartments). Since this is a substantial amount of diverse development it is not anticipated to be built in one single phase unlike the American Dream Miami. As such, we will assume that for the short term analysis (2020) the Graham Companies will build 150,000 square feet of retail; 250,000 square feet of Business Park; and, 500 Apartments. The remainder will be included in the long term analysis for 2040. Since these developments also require a land use amendment, the developments will be loaded into background traffic. Land areas further south of NW 170th Street will be included based on what is currently coded in the 2040 LRTP.

City of Hialeah Gardens – October 13, 2015

The city of Hialeah Gardens would like to know a potential traffic impact, specifically through NW 107 Av. and NW 138 St. as part of our jurisdictional lines.

LC: Per the requirement of the CDMP, the study area will extend to all roadways where external project trips from the project are forecast to be equivalent to or greater than 5% of the MSV for each facility. This requirement will most likely include portions of NW 138th Street and NW 107th Avenue within the study area. For CDMP study purposes, the alignment of NW 107th Avenue will be assumed for traffic connectivity and to avoid conflict with Florida's Turnpike at NW 170th Street. The final alignment will be determined through discussions with the affected land owners, and jurisdictions.

Town of Miami Lakes – October 13, 2015

1. It appears that the analysis will assume an interchange of I-75 at NW 170th Street. What will the analysis assume about this interchange, i.e. will it be westbound only or also eastbound?

   LC: The directional interchange at I-75 and NW 170th Street will no longer be included in the CDMP TIA for the short-term (2020) and long-term (2040) analyses.

2. Performing a "traffic" analysis, rather than a broad based mobility analysis that includes consideration of impacts and opportunities associated with all modes of travel, is a fundamental error that will result in exacerbating an already dire situation of lack of mobility options and strangling traffic congestion that currents exists in northwest Miami-Dade County.

   Indeed, it is this precise approach to evaluating the impacts of, and evaluation the infrastructure needs of, planned land uses that has created the mobility crisis that exists today, with frequent laments about the lack of viable transit options and ever-increasing times spent in traffic. This is because transportation planning is, to a large degree, a self-fulfilling prophecy: if infrastructure needs are determined based on the assumption that everyone will drive for all trips, then the resulting infrastructure will make driving the only viable option. This keeps driving demand high, ensuring congestion and thus the resulting "need" for still more auto infrastructure at the expense of all other modes of travel. There is no reason to believe that using this same approach once again will create a different result this time.

   On the other hand, if ever there was a project that had the potential to begin creating real change in Miami-Dade County's transportation system, it is American Dream Miami. As the Technical Memorandum notes, the project would be the "... largest self-contained shopping / entertainment experience in the country." A project of this size will have an unprecedented impact on its surrounding landscape, including the transportation system. What that change will look like, however, depends upon how its approvals are handled.

   Rather than following the same approaches that have failed in the past, Miami-Dade County should take advantage of the broad legislative and policymaking discretion afforded by a comprehensive plan amendment, and use this exceedingly rare opportunity to address the mobility needs - and not just the traffic needs - of the County's residents and businesses.

   LC: The CDMP TIA for ADM will need to adhere to the CDMP adopted guidelines. As part of the CDMP TIA, an analysis is required to address any mitigation measures to include a wide range of options for mobility and safety needs. This will include consideration of multi-modal options.

City of Miramar – October 13, 2015

1. Prior to preparing the transportation impact analysis, the traffic consultant should meet with City staff to review committed development projects and roads that will be evaluated within the City of Miramar.

   LC: Consultants for the Applicant plan to coordinate with agencies to collect data for the CDMP TIA. Additionally, it is our understanding that Miami-Dade County will provide continued opportunities for input from other agencies.

2. At a minimum, the analysis should evaluate traffic impacts to Miramar Parkway, Pembroke Road and Flamingo Road/NW 67th Avenue.

   LC: Per the requirement of the CDMP, the study area will extend to all roadways where external project trips from the project are forecast to be equivalent to or greater than 5% of the MSV for each facility. This requirement will most likely include portions of Miramar Parkway and others.

3. The analysis should include justifications for all trip reductions, including internalization, transit and pass-by trips.

   LC: A trip generation summary and explanation is provided in the Methodology Statement. In addition, a presentation provided at the methodology meeting addressed the specific reasoning and data behind the trip generation proposal, specifically, justification for the use of count data at the most comparable land use available (Mall of America in Bloomington, MN) to derive trip generation forecasts for ADM based on ITE's guidance. No reduction to the MOA rate is proposed for ADM, however, an adjustment up due to the light rail ridership at MOA was performed because no light rail is assumed for ADM. Additionally, the internal capture between the retail, entertainment and hotel portions of MOA (and for ADM) is built into the rate and no additional capture is assumed beyond that. Consistent with providing a trip generation forecast based on the best available data (ITE's recommendation), the fitted curve equation for Shopping Center was used to forecast pass-by trips using only GLA of the retail square footage portion of ADM. Due to the inverse relationship of GLA to pass-by percentage from the equation, the resulting 14% pass-by is much lower than the rate from a more traditional sized shopping center. This appears to be a realistic assumption based on the hundreds of thousands of commuters on the two adjacent freeways who will pass by the project at build-out.

4. Entertainment and hotel uses do not appear to be included in the trip generation summary (Table 3).

   LC: The trip rates per gross leasable area (GLA) were derived from external count data at MOA. Whatever capture happens at MOA (and is expected to happen at ADM) is built into these external trip rates. As shown in the Methodology Statement MOA and ADM are similar in land use mix (ratio of GLA/GFA) which makes applying the per GLA rate applicable to ADM. Note that using GLA as the independent variable is consistent with ITE's treatment of Shopping Center (ITE 820).

5. Please see our comments marked on Page 17 of the presentation provided at the September 21, 2015 meeting.

   LC: Please note on Slide 17 of the presentation exhibit that a row on the ADM breakout was hidden unintentionally. Number 3 in the ADM break-out list of entertainment uses is a 370 ksf Water Park. With this information included, the subtotal discretion is resolved. Specifically, with the additional 370 ksf from the water park use, the sum of the entertainment uses now equal the 1,500 ksf of entertainment uses subtotaled at the bottom of the ADM table.

Miami-Dade Expressway Authority (MDX) – October 13, 2015

Our request is to document any potential traffic impact on our highways and projects in the area due to the additional demand generated by the new development. This includes NW 138th street and the SR 924/Gratigny West extension design project (MDX 92404). We asked for a one on one meeting with the consultants to discuss their approach to the project's transportation needs and traffic impacts.

LC: Per the requirement of the CDMP, the study area will extend to all roadways where external project trips from the project are forecast to be equivalent to or greater than 5% of the MSV for each facility. This requirement will most likely include these MDX projects within the study area. The Applicant has reached out to staff at MDX and indicated they would set a meeting shortly.

APPENDIX A4:
ADM Methodology Status Update Presentation_10232015

AMERICAN DREAM MIAMI TRANSPORTATION METHODOLOGY STATUS UPDATE

10/23/15

INTRODUCTION

CDMP TIA Methodology History

- **Sept 8** – Methodology Statement submitted to MDC (dated Sept 3, 2015)
- **Sept 17** - Methodology Meeting, TG Presentation
- **Sept 23 through Oct 13** - Agency comments received
- **Oct 16** - Response to Comments to MDC
- **Today** - Goal to discuss and finalize methodology

Agencies Providing Comments

- Miami-Dade County Traffic Engineering Div.
- Broward County Planning & Development Management Div.
- Florida's Turnpike Enterprise
- South Florida RPC
- FDOT Districts 6 and 4
- City of Hialeah
- City of Hialeah Gardens
- Town of Miami Lakes
- City of Miramar
- Miami-Dade Expressway Authority (MDX)

OVERVIEW OF KEY COMMENTS AND APPLICANT RESPONSES

CDMP TIA Scope

- Miami-Dade's Comprehensive Development Master Plan (CDMP) process is a periodic review of development capacity, including the availability of adequate travel network to serve future development.
- Proposed changes to the County's Land Use Plan (LUP) map must submit a CDMP application to show additional impacts.
- TIA to include:
  - Trip Generation (current LUP designation vs. requested designation)
  - Trip Distribution and Assignment
  - 5% significance study area
  - Existing, Short-term and Long-term LOS analyses on Cost Feasible roadway segments (Background vs. Current LUP Designation vs. Requested Designation)
  - Address the need for and mitigation of new facilities to provide a "safe and efficient" transportation network

Trip Generation Approach I

Comment:

- Additional/Alternative sites for trip rate development

Response:

- American Dream Miami (ADM) is unique
- MOA is the only site with size, mix and tourism comparison
- Several studies suggested for reference but none represent a better comparative than MOA

➡ MOA represents the most relevant site to reference. It's use is consistent with ITE's guidance.

Trip Generation Approach II

Comment:

- Use Total GFA SF instead of GLA SF

Response:

- Ratio of GLA to Total GFA SF is very similar for MOA and ADM
- Applying either rate will output same external trips (within 4%)

➡ TG per GLA SF remains applicable

Trip Generation Approach III

Comment:

- Use individual ITE rates for each land use type

Response:

- Presentation on Sept 17 provided details on limitations of ITE Manual's rates relative to ADM project
- ITE recommends traffic count study based on similar site
- Two separate count programs conducted at MOA

➡ TG rates are based on best available data (MOA)

➡ MOA count data to be provided with CDMP TIA

Trip Generation Approach IV

Comment:

- Separate TG rate needed for hotel/entertainment land use

Response:

- TG rates from MOA are “external” trip rates. For a similar mix of uses at MOA, the ADM hotel/entertainment uses are “built into” these rates.
- Internal capture is not implied to be 100% for these LUs

➡ One combined site rate is best approach

➡ Hotel/entertainment trips are accounted for

➡ Studying external trips eliminates the need to assume internal capture behavior

AM Trip Generation

Comment:

- AM peak hour trip generation requested; especially for school zones

Response:

- ADM has low TG for AM peak hour of adjacent roadways (1/5 of PM rate)
- Mall hours do not coincide w/ roadway AM peak hour
- Generally, no need for AM peak hour link analysis

➡ TG tables will include AM peak hour summary

➡ AM peak hour link analysis for roads w/ school zones

Weekend Trip Generation

Comment:

- Weekend TG may be critical for some nearby roadway

Response:

- The CDMP TIA will need to adhere to CDMP guidelines
- These guidelines do not consider weekend analyses

➡ TG tables will include Saturday peak site hour results

➡ Weekend impacts will be investigated by collecting Saturday counts at key facilities for the DRI-level analysis required subsequent the CDMP.

Pass-By/Diverted Trips

Comments:

- How is pass-by trips applied? Why is it not 0%?
- Should be referred to as “diverted trips”

Response:

- 100,000’s of commuters avail for “pass-by” trips on fwys
- Trips will detour from planned route due to Mall’s many opportunities for “pass-by” (dinning, shopping, etc.)
- Some future employees/deliveries/shoppers already on these routes today

➡ Lower 14% pass-by rate reflects ADM’s large size

➡ Reduction based only on ADM GLA retail

➡ Trips will be treated as “diverted trips” in the analysis

Travel Demand Model

Comments:

- Consider Turnpike's model w/ refinements for area
- Consider other models

Response:

- Applicant has reviewed all available models for area
- Considering using SERPM 6 model plus SERPM 7 SE data

➡ Recommend SERPM 6/7 combo for use

➡ Travel demand forecasts will be reviewed for logic

Background Traffic/Network I

Comment:

- CF projects must be incl. for future roadway networks
- Vested trips must be incl. in BG trips

Response:

- 2020 and 2040 networks will incl. all CF improvements consistent w/ CDMP TIA instructions
- 2020 and 2040 analyses will incl. vested trips and/or growth rate on a segment-by-segment basis
  - ➡ Committed improvements accounted for
  - ➡ Committed/vested trips accounted for

Background Traffic/Network II

Comment:

- The status of vacant land south of site needs to be reviewed

Response:

- Applicant has met with Graham Companies (owner)
- Has received anticipated land use for their development
- Will incl. Graham land use in ADM background analysis

➡ Assumptions presented for phasing Graham land uses

➡ Note: Graham will require separate LU amendment

Study Area & Significant Impact

Comment:

- Requests for ensuring encompassing study area

Response:

- Per CDMP, 5% will be used to identify threshold
- CDMP TIA also committed to generally follow DRI guidelines

➡ 5% threshold for defining study area

➡ Based on TG, will cover a considerable study area

Mitigation

Comment:

- Mitigation should include multimodal and safety

Response:

- Analysis uses conservative approach for transit
- Multimodal is included in the intent of “range of options” for mitigation

➡ Mitigation will address multimodal and safety

➡ Analysis is deemed conservative

ADDITIONAL CONSIDERATIONS

Beyond CDMP Req’ts…

- Total and directional PM peak hour analysis.
- Trip generation summary for AM, Saturday, and Saturday peak hour in addition to Weekday and PM peak
- TG Adjustment to account for MOA LRT adjustment
- Provide the MOA counts reports from KH and WPS
- Use of the SERPM 6 model w/ SERPM 7 model data as recommended by Turnpike
- Study area to extend beyond Miami-Dade to accommodate 5% significance
- A portion of Graham in the 2020 model background, total Graham in 2040 model background

Traffic Studies to Come

- **CDMP TIA** for Future Land Use Amendment
- Separate **County Traffic Analysis** similar to a DRI Question 21 Transportation Analysis, incl. intersections and interchanges along significantly impacted roadways
- **Interchange analyses,** incl. but not limited to:
  - I-75 PD&E Reevaluation
  - Interchange Access Requests (IAR)
  - Turnpike Interchange Justification Reports (TIJRs)

DISCUSSION

APPENDIX A5:
CDMP TIA Methodology Comment Set Response to Miami-Dade County Transportation and Public Works_10262015

AMERICAN DREAM MIAMI
MIAMI-DADE CDMP TIA METHODOLOGY
COMMENT SET & RESPONSES
Muhammad Khan October 26, 2015

Dear Mr. Kahn;

Thank you for your email comments following the last methodology conference on Monday October 23, 2015. We delved much deeper into the trip generation studies and rationale for our approach at our prior methodology conference on September 21, 2015, which I believe you did not attend. We had a robust discussion on many of the concerns you raised which would have been helpful to you. That is perhaps why Dr. Shen was generally on board with our approach during the conference call on October 21, and we did not hear any comments when Jack Osterholt asked if there were any additional questions regarding the trip generation at the meeting on October 23.

Nonetheless, we want to address any concerns you may have going forward as we have done below. Please understand that respectfully we must move forward with our analysis based on the general consensus of the reviewing agencies to date in order to meet our November 30 submission deadline. Any corrections or valid revisions will have to be considered during the review process. We look forward to working with you and other reviewing agencies throughout the CDMP and subsequent traffic studies and interchange proposals related to the American Dream Miami.

1) As commented before, we have concerns regarding 14% pass by trips. Was there any pass-by trip data collected for MOA site to support it. It is recommended that this rate should be reduced.

A specific pass-by study was not conducted at MOA for either their own expansion study or our American Dream Miami project. It should be noted that the pass-by rate was derived from ITE's Trip Generation for retail centers (ITE 820) and only calculated based on the retail GLA. There is no reason to assume it should be different here than for any other retail shopping center. In the past, DRI's for shopping centers located in Florida and along freeways have also applied the ITE pass-by rates and once off the freeway mainline treated them as "link-diverted" trips, thus having the same impact on the interchanges and access roads as a new trip. We really don't see any supported rationale to treat this center differently.

2) The size of about 1.5 million-SF of entertainment uses in ADM appears significantly higher than MOA. Therefore, it is expected to create its own separate trip generation apart from retail. Please revise trip generation accordingly.

The Applicant has considered all alternative sites that reviewers to date has presented for use and concluded that MOA is the closest model to ADM that exists to best forecast ADM trip generation based on the size, mix, trip type and design. The primary trip purpose at MOA remains overwhelmingly "shopping". Based on the Cambridge Systematics 2012 study it was 68% shopping, and another mixed 7% of shopping and other purposes (total 75%). Therefore the primary driver of the trip generation is the retail component and the same will be true of ADM to be operated under same owner.

One difference anticipated between the MOA and ADM ancillary entertainment trips, however, is vehicle occupancy. Florida entertainment facilities and theme parks have much higher vehicle occupancy rates than reported at MOA. The range is from 2.3 at MOA and is reported near 4.0 at theme parks in Central Florida. Therefore, if we increased a small portion of the trips for entertainment as you suggest, and then use internal capture matrices and apply the higher occupancy rates for Florida to all entertainment trips, the trip total is less. We opted to keep the rate conservative and avoid multiple adjustments up and down that may be questionable. Also, please keep in mind many of the entertainment uses measure large, but have significant unusable areas such as a 100,000 sf submarine lake, and a 65,000 sf outdoor fishing lake. We did not adjust MOA rates for use at ADM for these reasons.

3) Vehicle occupancy rates are not mentioned. If they are available they can be used to support trip generation by applying to estimated persons/customers of ADM project.

Please see the response to comment (2). At MOA it ranges from 2.1 for resident trips (within 150 miles) and 3.6 for Non-Resident trips (beyond 150 miles) with a weighted average of 2.3 persons per vehicle. These rates are already reflected in the trip counts taken at MOA. Note again that the average vehicle occupancy for theme entertainment centers in Florida is higher which if applied would lower our trip generation.

4) Provisions should be kept in planning and design phases for right-of-ways and space to accommodate any future rail or transit service with dedicated travel way.

As you suggest we are planning to incorporate a transit center within the parking system such as at MOA along with having an FDOT Park-and-Ride lot just off the exit ramps from I-75/HEFT. At this stage we are seeking land use and will be able to more accurately respond when developing the site plan. The developers have historically placed great value on transit access and services.

5) Based on review of slide 18, if the vehicles were tube counted for MOA, then no transit or non-motorized reductions should be made.

That is correct. The bus transit and other shared vehicle modes are inherent in the trip rates. The LRT adjustment was "added" to the trip rates to account for a lack of light rail transit within our planning horizon and based on the current 2040 LRTP.

6) No discussion is provided regarding the parking demand.

Parking will be addressed at the site plan review. Please keep in mind that most parking will be provided in structures as is the case at MOA.

7) We are working in coordination with our RER department for the stations' traffic data and will provide you soon.

We look forward to reviewing County's existing an historical count data and vested trips, by direction, for use in the CDMP TIA.

APPENDIX A6:
CDMP TIA Methodology Comment Set Response to FDOT Districts Four and Six_10302015

AMERICAN DREAM MIAMI
MIAMI-DADE CDMP TIA METHODOLOGY
COMMENT SET & RESPONSES
FDOT D4/D6 October 30, 2015

Dear Mrs. Colmenares;

Thank you for your additional comments following the last methodology conference on Monday October 23, 2015. We want to address any concerns you may have going forward as we have done below in red font. Please understand that respectfully we must move forward with our analysis based on the general consensus of the reviewing agencies to date in order to meet our November 30 submission deadline. Any corrections or valid revisions will have to be considered during the review process. We look forward to working with you and other reviewing agencies throughout the CDMP and subsequent traffic studies and interchange proposals related to the American Dream Miami.

General Comments

1. The proposed analysis does not include the anticipated Graham property development located immediately south of ADM. Significant traffic volumes are expected to be generated from the Graham property in the future which will influence the magnitude and the traffic patterns on the area's Strategic Intermodal System (SIS) facilities and arterial roadway network. The inclusion of the Graham property development in the analysis is critical to accurately assess the transportation network's needs as a result of the proposed developments.

   ADM RESPONSE (10/16/15): Any approved developments within that area will be included as committed developments. The area poised for development immediately south of the site up to NW 170th Street is mostly controlled by the Graham Companies. The Applicant has met with representatives of the Graham Companies and received their anticipated land use program for that area. Their development at buildout would consist of 1 million square feet of retail; a business Park of 3 million square feet, and an additional 2,000 multi-family residential units (apartments). Since this is a substantial amount of diverse development it is not anticipated to be built in one single phase unlike the American Dream Miami. As such, we will assume that for the short term analysis (2020) the Graham Companies will build 150,000 square feet of retail; 250,000 square feet of Business park; and, 500 Apartments. The remainder will be included in the long term analysis for 2040. Since these developments also require a land use amendment, the developments will be loaded into background traffic. Land areas further south of NW 170th Street will be included based on what is currently coded in the 2040 LRTP.

   FDOT REPLY (10/27/15): Please provide additional documentation and confirmation for the specific development intensity on the Graham property for the short-term (2020) and long term (2040) analysis. While it is understood that it is unlikely the Graham property will be developed in one phase by 2020 to the buildout intensities initially proposed, it is unclear how ADM determined that 150,000 square feet of retail; 250,000 square feet of Business Park; and 500 Apartments is a reasonable development intensity estimate for 2020, as well as their estimated 2040 development intensity.

ADM RESPONSE (10/29/15): The Graham property development was provided to ADM at our request by the Graham Company's consultant. This anticipated development will also require a land use amendment. ADM has again met with representatives from the Graham Companies (10/28) and to date the land use program was agreed to be the best planning estimate for 2020, and buildout sometime between 2021 and 2040. The Graham Companies may adjust these values as they proceed with their own CDMP application which may require some adjustments at that time.

2. The proposed roadway network includes interchange modifications and new ramp connections at 1-75 and Miami Gardens Drive and NW 170th Street, respectively. In addition, substantial transportation impacts may be realized at 1-75 and HEFT, 1-75 at NW 138th Street, 1-75 at Miramar Parkway, HEFT at Okeechobee Road, and HEFT at State Road (S.R.) 823/Red Road/NW 57th Avenue. Interchange improvements will require an Interchange Access Request (IAR), and must adhere to Florida Department of Transportation (FDOT) Procedure 525-030-160 concerning new or modified interchanges.

   ADM RESPONSE (10/16/15): Acknowledged as a separate matter from the CDMP TIA. However, in part on consideration of this matter, the directional interchange at I-75 and NW 170th Street will no longer be included in the CDMP TIA for the short-term (2020) and long-term (2040) analyses.

   FDOT REPLY (10/27/15): Response accepted.

3. The ADM project will require coordination with the FDOT and Federal Highway Administration (FHWA) concerning an IAR. A separate Methodology Letter of Understanding (MLOU) must be prepared specifically for any proposed new or modified interchange access. The amount of analysis and documentation required is related to the proposed action and type of IAR document, and will be determined subsequently by FDOT and FHWA.

   ADM RESPONSE (10/16/15): Acknowledged as a separate matter from the CDMP TIA. The ADM team will continue to coordinate interchange proposal requirements during the CDMP review with FDOT, FHWA and Florida Turnpike Enterprise.

   FDOT REPLY (10/27/15): Response accepted.

Section 2.0 Study Area

4. The proposed study area definition is consistent with the Miami-Dade County instructions for study area definition when preparing a Comprehensive Development Master Plan amendment (5% of adopted level of service (LOS) capacity), which is also consistent with the Transportation Concurrency Best Practices Guide. The latter document also suggests inclusion of any critically deficient roadways with project traffic equivalent to more than 1% of adopted LOS capacity, which is not noted in the proposed methodology. Please include this as an additional definition of the study area determination.

ADM RESPONSE (10/16/15): Per the requirement of the CDMP, the study area will extend to all roadways where external project trips from the project are forecast to be equivalent to or greater than 5% of the MSV for each facility. However, the CDMP TIA has committed to generally follow the DRI study guidelines to fully address impacts as part of the CDMP TIA.

FDOT REPLY (10/27/15): Response accepted.

Section 4.0 Existing Conditions

5. The last paragraph states that "All projects funded for construction in the next three years will be assumed in place for existing conditions." It is unclear if "project" in this context means only transportation projects or other development projects. The FDOT Transportation Site Impact Handbook notes that pursuant to Section 163.3180, F.S., "vested trips" (major committed developments, either having an approved Development Order or an approved concurrency management certificate) also must be included in background trips. Please clarify the meaning of "project" and specify if vested trips are proposed to be included in the existing conditions analysis.

   ADM RESPONSE (10/16/15): The intent of showing "All projects funded for construction in the next 3 years" in the existing analysis was to account for additional system capacity under construction or soon to be under construction. However, Miami-Dade County has requested a preference to exclude these committed roadway projects in the existing condition analysis, therefore the CDMP TIA will exclude them in the existing analysis. For future year background conditions (Years 2020 and 2040), the CDMP TIA will include all planned cost feasible improvements consistent with the CDMP TIA instructions. For the Year 2020, committed (vested) trips provided in the Miami-Dade County's Concurrency Database will be used if greater than linear growth.

   FDOT REPLY (10/27/15): Response accepted.

6. It is stated that 2015 volumes will be used to represent existing conditions. If 2015 volume data is unavailable, it is proposed to extrapolate the available data to estimate 2015 conditions using 1% or the historical growth rate, whichever is greater. Please provide the origins and justification for the 1% growth rate, and identify if the estimation of 2015 volumes applies to daily and peak hour volumes.

   ADM RESPONSE (10/16/15): The 1% growth rate is proposed as a bare minimum if historical patterns are shown to less or negative. Daily and PM peak volumes will be treated similarity.

   FDOT REPLY (10/27/15): Response accepted.

7. It is recommended that K and D factor values be proposed for each of the roadways evaluated for existing and future conditions. The values of these factors should be consistent with the Department's Project Traffic Forecasting Handbook.

ADM RESPONSE (10/16/15): FDOT volumes, K factors and D factors will source FDOT data as available.

FDOT REPLY (10/27/15): Response accepted.

Section 5.0 Background Traffic

8. The 2040 Long Range Transportation Plan (LRTP) Cost Feasible Plan includes four roadway extensions or new roadways in the study area. If background year volumes are derived from historical counts, volumes on these roadways cannot be determined. The third paragraph states that "...background traffic patterns from regional model runs may be reviewed to anticipate the impact of future cost-feasible infrastructure improvements on background traffic patterns." The roadway projects include:

   - NW 170th Street from HEFT to NW 97th Avenue -- new 6-lane roadway funded in Priority III
   - NW 107th Avenue from NW 170th Street to Broward County line -roadway extension funded in Priority IV
   - NW 186th Street from NW 97th Avenue to 1-75 -- new 4-lane roadway funded in Priority IV
   - Gratigny Parkway from S.R. 826 and 1-75 to HEFT -- roadway extension funded in Priority II

   Please revise the methodology to state that Southeast Regional Planning Model (SERPM) model runs of the no-build will be included to estimate background traffic on these roadways.

   ADM RESPONSE (10/16/15): The Applicant will likely recommend that SERPM runs be used for the CDMP TIA consistent with the Methodology Statement. To estimate future volumes on roadways which do not exist today, or where a shift in traffic is expected in the future, model runs subject to review for logic will be utilized.

   FDOT REPLY (10/27/15): Response accepted.

9. Please explicitly identify the interchange, access, and ramp configurations that the project assumes are representative of the future roadway network. For example, the access via NW 170th Street at 1-75 is shown in Figure 2, and an alternative interchange configuration is shown at 1-75 and Miami Gardens Drive. Improvements not noted in the LRTP Cost Feasible Plan will be considered commitments by the Applicant and must be constructed and operational prior to the opening of the project.

   ADM RESPONSE (10/16/15): The traffic analysis for the CDMP assumes interchange configurations for I-75 and HEFT and Miami Gardens Drive as have been jointly developed by the ADM and FDOT consultants. The I-75 and NW 170th Street interchange was an assumption for the 2040 planning horizon to support plans by others to the south, however, on consideration of this matter in part, the directional interchange at I-75 and NW 170th Street will no longer be included in the CDMP TIA for the short-term (2020) and long-term (2040) analyses. The applicant understands that interchanges not in the LRTP will require new

funding sources to be identified before any interchange access, modification or justification report process can be initiated.

FDOT REPLY (10/27/15): Response accepted.

10. It is recommended that a complete listing of the transportation improvements and network changes for 2020 and 2040 as compared to the existing conditions be included in the methodology document.

    ADM RESPONSE (10/16/15): Specific improvements and network changes will also be identified in the CDMP TIA.

    FDOT REPLY (10/27/15): Response accepted.

11. It is recommended that the Applicant use the SERPM transportation model developed for the 1-75 project development and environment (PD&E) study (and subsequent re-evaluations) for the 2020 and 2040 background volumes, since substantial traffic pattern changes are anticipated as a result of the proposed 6.2 million square feet of development that will not be reflected in historical growth along area roadways. Historical growth, however, can be used as a reasonableness check for future year background volumes.

    ADM RESPONSE (10/16/15): The Applicant has reviewed all of the recent regional models and refinements available for the area for most realistic volume forecasts for 2040 as this comment proposes. We tend to agree with the Turnpike that their version of SERPM 6 w/ SERPM 7 socioeconomic data is one of the better options to use for the CDMP TIA and we will likely recommend its use to Miami-Dade County for this reason.

    FDOT REPLY (10/27/15): The recommended use of the Turnpike model, I-75 PD&E study model, or the adopted SERPM 7 model must be reviewed, documented, and approved by the review agencies as part of the transportation analysis. A reasonableness check of the model volumes along roadway segments, such as I-75 and other regionally significant roads, must be performed as part of this documentation and approval process. It is suggested that an agreement concerning which model will be used for the traffic analysis occur at the onset of the traffic analysis study.

    ADM RESPONSE (10/29/15): For the CDMP TIA for MDC land use map amendment consideration, we contend we are using the best travel demand modeling tool available for ADM. This assessment is based on months of review of 2040 outputs in the study area from every other SERPM version 6 and 7 model available for use against growth of existing counts. As we proceed through the CDMP analysis we will continue to evaluate the model's use and output against other forecast methods. The model we are using is the same model FDOT provided for joint interchange/access feasibility exercises earlier this year. It is the SERPM 6.5/Managed Lanes PD&E model, plus Turnpike network edits for their planned future projects, plus the approved SERPM 7 socioeconomic data integrated in. This version of the model produced much more logical future volumes on major area roadways in 2040. The

Applicant will make the CDMP TIA and model files available to MDC for review of appropriate use of the model for forecasting distribution of project trips and, as necessary, background volumes or diverted traffic patterns due to new facilities. It is anticipated that the County will ask FDOT and other agencies to review at that time.

12. Please note that future year travel demand forecasts along SIS and State Highway System (SHS) facilities must be reviewed and approved by FDOT.

    ADM RESPONSE (10/16/15): The FDOT will be one of the reviewing agencies for the CDMP TIA as coordinated by Miami-Dade County.

    FDOT REPLY (10/27/15): Response accepted.

Section 6.0 Trip Generation

13. While it is agreed that utilizing the Institute of Transportation Engineers (ITE) trip rates for a shopping mall will underestimate internal capture and thus overestimate external trips, it is unclear whether traffic counts collected at the Mall of America (MOA) development are sufficiently representative of the proposed ADM development for two reasons:

    First, from a regional perspective, it is likely that the MOA serves as a primary attraction destination in the Bloomington area, which is likely to result in a high internal capture rate, whereas the ADM would be located in a region with multiple international destinations including Miami Beach, the Everglades National Park, and the Florida Keys. It is reasonable, then, to assume that while visitors to ADM may be likely to stay at the resort, it also is likely they will venture out to visit attractions other than or in addition to ADM.

    Second, it is not clear whether the non-retail attractions proposed for ADM are similar enough in nature, attraction power, and size to be comparable to MOA. The square footage alone of the entertainment portion of the ADM development is more than double that of MOA whereas the Gross Leasable Area (GLA) square footage of ADM is only 35% greater than MOA. While the proposed trip generation rates developed from MOA data implicitly include the entertainment attractions, the recommended trip generation rates are based on GLA square footage, which does not include the entertainment and hotel portions of the development.

    The regional context of the proposed development could play an important role in both trip generation and internal capture. Please review Aventura Mall and American Dream Meadowlands trip generation data. Whereas Aventura Mall is primarily composed of retail and restaurants, it also features several hotels and resorts within walking distance, and it should be used as a point of reference, even if not for direct comparison of trip generation rates. American Dream Meadowlands also could provide more relevant comparison due to its regional context near New York City.

    Given the disproportionate share of square footage allocated to entertainment uses at ADM, relative to MOA, it is recommended the trip generation function of the GLA and entertainment portions be separated in the trip generation analysis. If available, trip generation data from amusement parks in Central Florida should be reviewed to determine whether the proposed rates for ADM sufficiently capture the entertainment attraction.

ADM RESPONSE (10/16/15): ADM is a very unique project without many similar sources to draw data from. Fortunately, MOA rivals the size and mix of unique retail and entertainment uses and it was developed and managed by the same entity that proposes ADM. Because of this, it is the logical choice to collect data from and draw informed conclusions for ADM trip estimates.

By comparison, Aventura mall is much smaller and has no entertainment or hotel uses which are intended for substantial onsite capture. By comparison, even if data was readily available, Florida theme parks don't normally include a free-entry shopping center under the same roof as their entertainment districts. After months of researching, the Applicant stands by the statement that MOA data is the best available source for ADM.

Also note that the rates proposed are external trip rates derived from external count data. Whatever capture happens at MOA (and is expected to happen at ADM) is built into the rate. It does not imply that internal capture is 100% for entertainment and hotel portions. Another benefit of using external trip rates is that it takes out all the speculation and guesswork for internal capture or the need for surveys for the CDMP TIA. The CDMP TIA requirement only concerns itself with external trip impacts.

The trip generation data for American Dream in the Meadowlands, formerly known as "Xanadu" is not a good comparison to the proposed American Dream Miami for a number of reasons, the most significant are enumerated as follows:

A. *The American Dream project in the Meadowlands was approved in 2003 for the Mills Corporation, then to be known as Xanadu, as an integral part of the larger expanding Meadowlands Sports Complex Master Plan. It broke ground in 2004 as a Family Entertainment, retail, hotel, and office complex. After bankruptcy of two successive owners it was taken over by Triple Five in 2013. The original trips associated with this development were not developed or negotiated by Triple Five. The trip entitlements and approvals which were also a part of the larger Meadowlands Sports Complex EIS were retained and slightly modified to allow a small expansion for the entertainment component. While the peak hour trips are similar in magnitude, since they were sufficient to support project trips and Triple Five retained the project's vested trips other than to allow some small acreage to be added for a water park resulting in an overall increase of 58 PM peak hour trips.*
B. *A NJ Transit rail station was built adjacent to the American Dream Meadowlands in 2009 to serve the area and especially the NY Jets and Giants Stadium. It is unclear to what degree if any the Mills Corporation consultants were allowed to rely on this transit station in 2002-2003 since they were originally programmed for a 2006 opening date. With excellent connections to Northern New Jersey and Manhattan, these transit assumptions would have significant impacts on the trip estimates.*
C. *American Dream Meadowlands is currently programmed for opening in 2016. To rely on trip generation studies performed by other developers and other consultants starting back in 2002 for this development with numerous unknown assumptions is far less reliable than to use the 2015 traffic count studies of the same development model, owned by the same developer, and with the same land use mix as proposed in Miami. The Mills Corporation consultants could not have used public traffic study information from Mall of America (MOA) since they received their approvals in 2003 and the MOA conducted and submitted*

their expansion studies in 2005 and 2006. If the traffic studies initiated in 2002 and 2003 by Mills Corp. consultants used the ITE Trip Generation Report it would have been the 6th or 7th edition whereas currently the 9th edition is in effect. All this makes the use of this old data very unreliable.

FDOT REPLY (10/27/15): Response accepted. Please note that if American Dream Meadowlands is operational prior to the approval of ADM, trip generating data may be requested from American Dream Meadowlands to provide a second comparable trip generation site.

14. If MOA trip generation rates are utilized for ADM, please clarify the seasonal adjustment factor applied to the MOA observed data. An explanation of the factor and its relationship to the June and August counts should be provided. Clarification of consistency with the SERPM model, which is calibrated to average annual conditions, should also be included. Given that the development is likely to be highly sensitive to seasonal demand, adjustment of SERPM results may be warranted.

    ADM RESPONSE (10/16/15): The Applicant's trip generation presentation from the methodology meeting described that the MOA trip rates were "annualized" based on continuous data collected at the entry point of MOA. Seasonal data is available and will be provided with the CDMP TIA.

    FDOT REPLY (10/27/15): Response accepted.

15. The characterization of the ADM as a "self-contained shopping/entertainment experience" implies 100% internal capture. This characterization either should be supported by data or removed from the methodology text.

    ADM RESPONSE (10/16/15): "Self-contained" was intended to imply that the project has all uses within a single structure with shared access and parking. Because the trip rates were developed from external count data, whatever capture happens at MOA (and is expected to happen at ADM) is built into the rate. It does not imply that internal capture is 100% for entertainment and hotel portions.

    FDOT REPLY (10/27/15): Response accepted.

16. It is assumed that a large portion of the proposed pass-by trips are from 1-75 and HEFT. Given the type of trip using a limited access facility during the peak hour (i.e., home-to-work trip/work-to-home trip), it is unlikely that 14.8% (or 9,900 daily trips and 750 weekday PM peak hour trips) will exit from 1-75 or HEFT and access a destination shopping area/entertainment complex of the magnitude proposed.

    To validate the pass-by reduction for the project, it is recommended that the actual pass-by trip percentage at a comparable site, such as Mall of America and American Dream Meadowlands, be quantified. This approach also would be consistent with the proposed trip

generation methodology where deviating from ITE trip generation rates was proposed because of the uniqueness of the land use and the site's size, which is greater than most of the example uses in the Trip Generation Manual. Please note that 1TE suggests pass-by reduction should represent no more than 10% of the volume of the adjacent street. Such a reasonableness check should be provided in the trip generation analysis.

ADM RESPONSE (10/16/15): Consistent with providing a trip generation forecast based on the best available data (ITE's recommendation), the fitted curve equation for Shopping Center was used to forecast pass-by trips using only GLA of the retail square footage portion of ADM. Due to the inverse relationship of GLA to pass-by percentage from the equation, the resulting 14% pass-by is much lower than the rate from a more traditional sized shopping center. This appears to be a realistic assumption based on the hundreds of thousands of commuters on the two adjacent freeways who will pass by the project at build-out. These trips may be work trips for a commuter making a quick shopping or dining stop during their regular commute. It may be a new carpool stop for an employees from a vehicle already in the background traffic. It could be for a delivery to the project from a vehicle on a pre-existing route. It could be from commuters on business travel or vacation who are curious about ADM and make an unplanned stop.

FDOT REPLY (10/27/15): Given that the Methodology states the ITE Trip Generation manual was not considered an appropriate tool for evaluating the trip generation of ADM, its use to justify pass-by reductions is inconsistent. As a result, it is recommended that the actual pass-by trip percentage at a comparable site, such as Mall of America, be used to quantify the assumptions presented in the proposed methodology. Otherwise, the pass-by reduction should be eliminated. Also, please amend the methodology to include a reasonableness check of the pass-by reduction to ensure it represents no more than 10% of the volume of the adjacent street.

ADM RESPONSE (10/29/15): It should be noted that the pass-by rate was derived from the best available data from ITE for retail centers (ITE 820) and only calculated based on the retail GLA at ADM. Of the 100 studies that make up the ITE pass-by equation for ITE 820, three (3) of the data points exceed 1,000,000 square feet of GLA and showed pass-by of 34%, 17%, and 25%. By comparison, a conservative 14% is proposed for ADM.

There is no reason to assume ADM shopping trips (of which is the overwhelming primary trip purpose at MOA per the Cambridge Systematics 2012 reports which shows 75%) should be different for ADM than for other retail shopping centers. In the past, DRI's for shopping centers located in Florida and along freeways have also applied the ITE pass-by rates and once off the freeway mainline treated them as "link-diverted" trips, thus having the same impact on the interchanges and access roads as a new trip. We really don't see any supported rationale to treat this center differently.

Per FDOT's request, the pass-by will be checked for reasonability and capped at 10% of adjacent background traffic.

17. By definition from the ITE Trip Generation Handbook, 2nd Edition, pass-by trips "...do not involve a route diversion to enter the site driveway." Since the 1-75 and HEFT "pass-by"

trips will need to alter their route to gain entry to the mall, it appears these trips are more appropriately labelled as Diverted Link trips. Diverted Link trips "...add traffic to streets adjacent to the site [and the interchanges], but may not add traffic to the area's major travel routes." It is recommended that this trip reduction be labelled as Diverted Link Trips, which will assist in identifying and tracking the project's impact to the interchanges, ramps, and SIS facilities.

ADM RESPONSE (10/16/15): Acknowledged. Diverted trip is a more specific description of these trips and analysis would be consistent with this intent.

FDOT REPLY (10/27/15): Response accepted.

18. Given the scale of this project, please provide an AM peak hour trip generation analysis for the project.

ADM RESPONSE (10/16/15): The TIA will present an AM peak hour trip generation summary to show that project trip generation in the traditional AM peak period for adjacent traffic (7am – 9am) is only estimated to be roughly 20% of the project PM peak generation. As such, the PM peak hour analysis will control, making an AM peak analysis moot. However, the Applicant will address specific concerns in the AM peak if there is an established need.

FDOT REPLY (10/27/15): While the PM peak hour period trip generation is likely greater than the AM peak period, the scale and magnitude of ADM will still result in a substantial traffic volume generated in the morning. Understanding this project's impact upon SIS facilities, interchanges, and state roadways during the morning peak period is essential to identify movements, approaches, and roadway segments that may require improvements to maintain acceptable levels of service.

ADM RESPONSE (10/29/15): By analyzing the PM peak in the CDMP TIA, we are confident we are evaluating worst case conditions on study area roadway segments. Not only will AM trip generation be one-fifth of the PM peak generation, the AM peak hour for background traffic occurs well before the facility will be open for business in reduced background conditions. We will expand this explanation in the CDMP TIA.

19. Please provide a weekend trip generation analysis for the project, particularly since the retail and entertainment components of the project may attract more trips during a Saturday or Sunday.

ADM RESPONSE (10/16/15): Total and directional volumes will be provided in the TIA as requested. However, the CDMP TIA will need to adhere to the CDMP adopted guidelines which does not consider weekend analyses. Note that ADM is located within a DULA and as such is exempt from DRI review. However, the Applicant has committed to generally follow the DRI study guidelines to fully address impacts as part of the CDMP TIA.

FDOT REPLY (10/27/15): The magnitude of ADM and its composition of retail and entertainment uses indicates substantial traffic generation during weekend periods.

Quantifying this weekend traffic generation must be explicitly included in the Methodology, as well as peak period weekend traffic analyses.

ADM RESPONSE (10/29/15): Weekend analysis is beyond the scope of the CDMP process. Furthermore, the regional models are not calibrated to weekend conditions when traffic patterns shift dramatically from the traditional work week. Agencies do not collect weekend count data or track vested trips for the weekend. As such, there are no requirements in MDC's CDMP TIA instructions to consider weekend conditions. The CDMP TIA will adhere to the County's requirements as well as provide an analysis that will generally follow the DRI format as described in the Methodology Statement and subsequent comment responses.

20. It is noted that only the retail square footage portion or **GLA** of Mall of America is used in determining the trip generation rate. This excludes the trip generating characteristics of the entertainment portion of MOA. The entertainment portion represents 2.7 million square feet of proposed development for ADM.

    The use of Gross Floor Area (GFA) as the independent variable for the trip generation calculation which will include the entertainment component of the development (i.e., the total proposed development intensity of 6.2 million square feet) should be considered.

    ADM RESPONSE (10/16/15): Because MOA and ADM are similar in land use mix as provided in the Methodology Statement (ratio of GLA/GFA) deriving either rate for MOA and then applying it to ADM will provide the same external trip total for ADM within 4%. That is, the conversion from a GLA rate to a GFA rate for MOA and then applying the rate to ADM GFA versus ADM GLA cancels out the difference in independent variable use.

    FDOT REPLY (10/27/15): It is recommended that Gross Floor Area (GFA) be used as the independent variable for the trip generation analysis to ensure that the total proposed development intensity of 6.2 million square feet is included in the analysis.

    ADM RESPONSE (10/29/15): Either method (using GLA or GFA as an independent variable) accounts for all traffic from every use for the entire site. The rates were derived from MOA with respect to 100% of the external traffic that impact the roadway network and then effectively factored up to the size of ADM. Any difference in amount of primary trips for retail versus entertainment trips are built into the rates. Any internal capture is built into the rates. This approach avoids the need to guess at the gross rates and internal capture. This approach is also conservative as the increase in size of ADM will likely increase the internal capture rate and decrease the external trip total captured to MOA.

    Using GLA as the independent variable is consistent with the way ITE categorizes Shopping Center (ITE 820). This make it easy to compare between ADM, the 400+ studies ITE publishes for ITE 820, and other industry publications. Eleven (11) agencies have seen the rates using GLA since early September. Changing them now would be confusing and also unnecessary to the trip generation output for ADM. As described previously, using GFA results in approximately the same external trips for ADM because the mix of GLA/GFA is so similar at MOA and ADM. The CDMP TIA will show the trip generation with GLA as the independent variable as discussed and agreed to with MDC traffic engineering department.

21. The use of comparable sites for the trip generations analysis only sampled Mall of America. In previous discussions with the Applicant, references were made to American Dream Meadowlands mall in New Jersey that included many of the unique retail and entertainment uses proposed for the ADM. It is recommended that the American Dream Meadowlands mall trip generation data be added for comparison purposes to broaden the sample size beyond one site in Minneapolis.

    ADM RESPONSE (10/16/15): See response to #13 above.

    FDOT REPLY (10/27/15): Response accepted. Please note that if American Dream Meadowlands is operational prior to the approval of ADM, trip generating data may be requested from American Dream Meadowlands to provide a second comparable trip generation site.

Section 7.0 Trip Distribution and Assignment

22. It is implied in Section 7.0 that project demand will be included in the model run(s) to estimate directional distribution of trips to/from the ADM development. It is stated in the methodology that the directional distribution proportions from the build run(s) will be added to background network volumes obtained from the growth rate methodology described in Section 5.0 Background Traffic. It is unclear how new roadways in future year Cost Feasible networks will be handled. Please clarify the use of directional distribution in the background traffic for all affected roadway links, including new roadways in the Cost Feasible Plan.

    ADM RESPONSE (10/16/15): Project distribution on 2020 and 2040 networks will be derived, and subject to review for logic, from the corresponding cost feasible network build-out run.

    FDOT REPLY (10/27/15): It is still unclear how new roadways that do not have historical data to generate background growth rate estimates will be analyzed for future conditions. Please clarify the methodology to include details concerning the proposed approach to estimate background traffic for new roadways.

    ADM RESPONSE (10/29/15): Where historical data doesn't exist and application of a standard growth rate may not be appropriate, the method and use of the model to determine background volumes or traffic pattern shifts will be documented and justified in the CDMP TIA. It is anticipated that the County will ask FDOT and other agencies to review at that time. Model files will be made available.

23. Please list and/or graphically depict the 2020 and 2040 roadway improvements from the Cost Feasible network that will be used in the project's analysis.

    ADM RESPONSE (10/16/15): Specific improvements and network changes will also be identified in the CDMP TIA.

    FDOT REPLY (10/27/15): Response accepted.

24. For SIS and interchange analyses, vehicular trips (rather than person-trips) must be assigned to the transportation network and represent the basis for any traffic analysis. Please revise the methodology accordingly.

ADM RESPONSE (10/16/15): External vehicular trips from the trip generation summary will be applied to the network in the CDMP TIA.

FDOT REPLY (10/27/15): Response accepted.

25. Please explicitly specify the number of Traffic Analysis Zones (TAZs) that will represent the project in the transportation model. This will assist in clarifying the proposed model structure and the potential effects upon the distribution and assignment of trips within the model.

ADM RESPONSE (10/16/15): The TAZs will be identified in the CDMP TIA and model files will be available for review.

FDOT REPLY (10/27/15): Response accepted.

26. It is recommended that the use of the SERPM model from the 1-75 PD&E study (and subsequent re-evaluations) be explicitly noted for the development of trip distribution and assignment. This model is considered the best current representation of future traffic flow within the study area.

ADM RESPONSE (10/16/15): The Applicant has reviewed all of the recent regional models and refinements available for the area for most realistic volume forecasts for 2040 as this comment proposes. We tend to agree with the Turnpike that their version of SERPM 6 w/ SERPM 7 socioeconomic data is one of the better options to use for the CDMP TIA and we will likely recommend its use to Miami-Dade County for this reason.

FDOT REPLY (10/27/15): The recommended use of the Turnpike model, I-75 PD&E study model, or the adopted SERPM 7 model must be reviewed, documented, and approved by the review agencies as part of the transportation analysis. A reasonableness check of the model volumes along roadway segments, such as I-75 and other regionally significant roads, must be performed as part of this documentation and approval process. It is suggested that an agreement concerning which model will be used for the traffic analysis occur at the onset of the traffic analysis study.

ADM RESPONSE (10/29/15): Please see response to #11.

Section 8.0 Mitigation Analysis

27. The mitigation analysis states that mitigation measures will include "a range of options" but does not specifically refer to multimodal strategies. It is recommended that potential express bus service on the 1-75 and S.R. 826 express lanes, a park-and-ride at or near this site, and

multimodal facilities connecting the site to the residential area on the east side of 1-75 be considered.

ADM RESPONSE (10/16/15): Multi-modal is included in the intent of "a range of options".

FDOT REPLY (10/27/15): Please revise the last sentence in Section 9.0 to include the following bold text to explicitly note that multi-modal and transit options are included.

*"Consideration of any mitigation measures will also include a range of options, **including multi-modal and transit options**, to address any safety and mobility needs for the Short-term (Year 2020) and Long-term (Year 2040) time frames."*

*ADM RESPONSE (10/29/15): The CDMP TIA will also include a range of options, **including multi-modal and transit options**, to address any safety and mobility needs for the Short-term (Year 2020) and Long-term (Year 2040) time frames.*

28. Please modify the methodology to explicitly note that the AM peak hour, PM peak hour, and a weekend peak period will be evaluated for the short and long term analysis of roadway segments, intersections, and interchanges. Also, please include text stating that the peak direction and off-peak direction of flow on each roadway segment will be analyzed.

    ADM RESPONSE (10/16/15): The CDMP TIA will be consistent with the requirements of the Miami-Dade County CDMP requirements. Additionally, the Applicant has committed to generally follow the DRI study guidelines to fully address impacts.

    FDOT REPLY (10/27/15): The magnitude of ADM and its composition of retail and entertainment uses indicates substantial traffic generation during AM, PM, and weekend periods. Evaluating each of these periods must be explicitly included in the Methodology to understand this project's impact upon SIS facilities, interchanges and state roadways. Such analyses is essential to identify movements, approaches, and roadway segments that may require improvements to maintain acceptable levels of service.

    ADM RESPONSE (10/29/15): Please see responses to #18 and #19.

29. Please include in the proposed methodology the approach to analyze the current and proposed interchanges impacted by ADM. This should include a definition of significant impact to ramps and interchanges, similar to that briefly described in Section 2.0.

    ADM RESPONSE (10/16/15): Roadways in the CDMP study area will be analyzed per the Methodology Statement. If there is a specific concern identified at an interchange it will be subject to the mitigation analysis portion of the CDMP TIA.

    FDOT REPLY (10/27/15): In the absence of explicit definitions in the methodology, currently accepted traffic volume thresholds and level of service standards, as noted in state and federal

guidelines, will define significant impact to ramps and interchanges. Any disagreement by ADM concerning significant impact to SIS facilities will be resolved by FDOT.

ADM RESPONSE (10/29/15): Acknowledged.

Additional Comment

Can the proposed build out (2020) of the project be explained in greater detail? Also, is the timeline realistic given the current constraints and reviews that will need to occur prior to final approval?

ADM RESPONSE (10/29/15): - The Applicant is proposing full build-out of the 6.2 million square feet facility by 2020 in a single phase. ADM is currently assessing the timelines and concurrent studies and applications. ADM will be discussing this with FDOT and the Turnpike in the next few weeks.

APPENDIX A7:
3rd CDMP TIA Methodology Comment Set from Miami-Dade County Transportation and Public Works_11172015

Additional County staff responses in blue below provided 11/17/15. On a follow-up conference call with Dr. Shen, the Applicant's consultants explained they would continue to work with staff on these concerns as the CDMP progressed, but had to proceed with the TIA to make the December 15, 2015 timeline for submitting in the upcoming CDMP cycle. Therefore, responses to these comments will be prepared after the CDMP TIA is submitted.

AMERICAN DREAM MIAMI
MIAMI-DADE CDMP TIA METHODOLOGY
COMMENT SET & RESPONSES
Muhammad Khan October 26, 2015

Dear Mr. Kahn;

Thank you for your email comments following the last methodology conference on Monday October 23, 2015. We delved much deeper into the trip generation studies and rationale for our approach at our prior methodology conference on September 21, 2015, which I believe you did not attend. We had a robust discussion on many of the concerns you raised which would have been helpful to you. That is perhaps why Dr. Shen was generally on board with our approach during the conference call on October 21, and we did not hear any comments when Jack Osterholt asked if there were any additional questions regarding the trip generation at the meeting on October 23.

Nonetheless, we want to address any concerns you may have going forward as we have done below. Please understand that respectfully we must move forward with our analysis based on the general consensus of the reviewing agencies to date in order to meet our November 30 submission deadline. Any corrections or valid revisions will have to be considered during the review process. We look forward to working with you and other reviewing agencies throughout the CDMP and subsequent traffic studies and interchange proposals related to the American Dream Miami.

1) As commented before, we have concerns regarding 14% pass by trips. Was there any pass-by trip data collected for MOA site to support it. It is recommended that this rate should be reduced.

A specific pass-by study was not conducted at MOA for either their own expansion study or our American Dream Miami project. It should be noted that the pass-by rate was derived from ITE's Trip Generation for retail centers (ITE 820) and only calculated based on the retail GLA. There is no reason to assume it should be different here than for any other retail shopping center. In the past, DRI's for shopping centers located in Florida and along freeways have also applied the ITE pass-by rates and once off the freeway mainline treated them as "link-diverted" trips, thus having the same impact on the interchanges and access roads as a new trip. We really don't see any supported rationale to treat this center differently.

The response is acknowledged. However, as it was discussed in a previous conference call over the phone, most of the pass-by trips are anticipated from FDOT roadways, therefore, approval should be obtained from FDOT prior to using this percentage. Furthermore, for any pass-by

trips along the County roadway system, it may be reviewed and commented during CDMP TIA review phase.

2) The size of about 1.5 million-SF of entertainment uses in ADM appears significantly higher than MOA. Therefore, it is expected to create its own separate trip generation apart from retail. Please revise trip generation accordingly.

The Applicant has considered all alternative sites that reviewers to date has presented for use and concluded that MOA is the closest model to ADM that exists to best forecast ADM trip generation based on the size, mix, trip type and design. The primary trip purpose at MOA remains overwhelmingly "shopping". Based on the Cambridge Systematics 2012 study it was 68% shopping, and another mixed 7% of shopping and other purposes (total 75%). Therefore the primary driver of the trip generation is the retail component and the same will be true of ADM to be operated under same owner.
One difference anticipated between the MOA and ADM ancillary entertainment trips, however, is vehicle occupancy. Florida entertainment facilities and theme parks have much higher vehicle occupancy rates than reported at MOA. The range is from 2.3 at MOA and is reported near 4.0 at theme parks in Central Florida. Therefore, if we increased a small portion of the trips for entertainment as you suggest, and then use internal capture matrices and apply the higher occupancy rates for Florida to all entertainment trips, the trip total is less. We opted to keep the rate conservative and avoid multiple adjustments up and down that may be questionable. Also, please keep in mind many of the entertainment uses measure large, but have significant unusable areas such as a 100,000 sf submarine lake, and a 65,000 sf outdoor fishing lake. We did not adjust MOA rates for use at ADM for these reasons.

The response is not accepted. The sizes of different uses in MOA and ADM are proportionally different. Such as, the entertainment and hotel uses are significantly high in ADM as compared to retail size of the mix. Therefore, we recommend that trip generation be revised for CDMP TIA.

3) Vehicle occupancy rates are not mentioned. If they are available they can be used to support trip generation by applying to estimated persons/customers of ADM project.

Please see the response to comment (2). At MOA it ranges from 2.1 for resident trips (within 150 miles) and 3.6 for Non-Resident trips (beyond 150 miles) with a weighted average of 2.3 persons per vehicle. These rates are already reflected in the trip counts taken at MOA. Note again that the average vehicle occupancy for theme entertainment centers in Florida is higher which if applied would lower our trip generation.

The response is accepted.

4) Provisions should be kept in planning and design phases for right-of-ways and space to accommodate any future rail or transit service with dedicated travel way.

As you suggest we are planning to incorporate a transit center within the parking system such as at MOA along with having an FDOT Park-and-Ride lot just off the exit ramps from I-75/HEFT. At this stage we are seeking land use and will be able to more accurately respond when developing the site plan. The developers have historically placed great value on transit access and services.

The response is accepted.

5) Based on review of slide 18, if the vehicles were tube counted for MOA, then no transit or non-motorized reductions should be made.

That is correct. The bus transit and other shared vehicle modes are inherent in the trip rates. The LRT adjustment was "added" to the trip rates to account for a lack of light rail transit within our planning horizon and based on the current 2040 LRTP.

The response is accepted.

6) No discussion is provided regarding the parking demand.

Parking will be addressed at the site plan review. Please keep in mind that most parking will be provided in structures as is the case at MOA.

The response is accepted.

7) We are working in coordination with our RER department for the stations' traffic data and will provide you soon.

We look forward to reviewing County's existing an historical count data and vested trips, by direction, for use in the CDMP TIA.

The 2014 data and some detailed are already provided. We are further coordinating with the County's RER department for analysis and information.

APPENDIX A8:
CDMP TIA Methodology Technical Memorandum (TM) Addendum_11242015

American Dream Miami
MIAMI-DADE COUNTY, FLORIDA

TECHNICAL MEMORANDUM
Methodology for Transportation Impact Analysis (TIA)
for Comprehensive Development Master Plan (CDMP) Amendment

ADDENDUM

Prepared by:
Leftwich Consulting, Inc.
12151 Science Drive, Suite 101
Orlando, Florida 32826

November 24, 2015

1.0 PURPOSE FOR ADDENDUM

Subsequent to the Methodology Meetings of September 3, 2015 and October 23, 2015 the American Dream Miami Applicant (International Atlantic, LLC) responded to comments from the reviewing agencies and other participating jurisdictions. During this process, the Graham Companies, owners of the adjoining properties to the south, made it known that they were going to submit a CDMP for the approximate 300 acres concurrently with the American Dream Miami. This presented a number of challenges related to coordination of traffic study methodology and consistency of SERPM model data and analysis of common study area roads.

After discussing the traffic studies required for the two contiguous but separate CDMP applications with representatives from International Atlantic LLC, the Graham Companies, and Miami Dade County, it was agreed that while these are two independent CDMP applications it would be best to address the traffic impacts in a single traffic study. This study will now include both developments while separating the output data to identify discreet impacts of each development on each roadway facility being studied.

All technical aspects of the study methodology previously presented and reviewed will generally remain the same. **Figure 1** shows the proposed location of American Dream Miami and the Graham Companies Project.

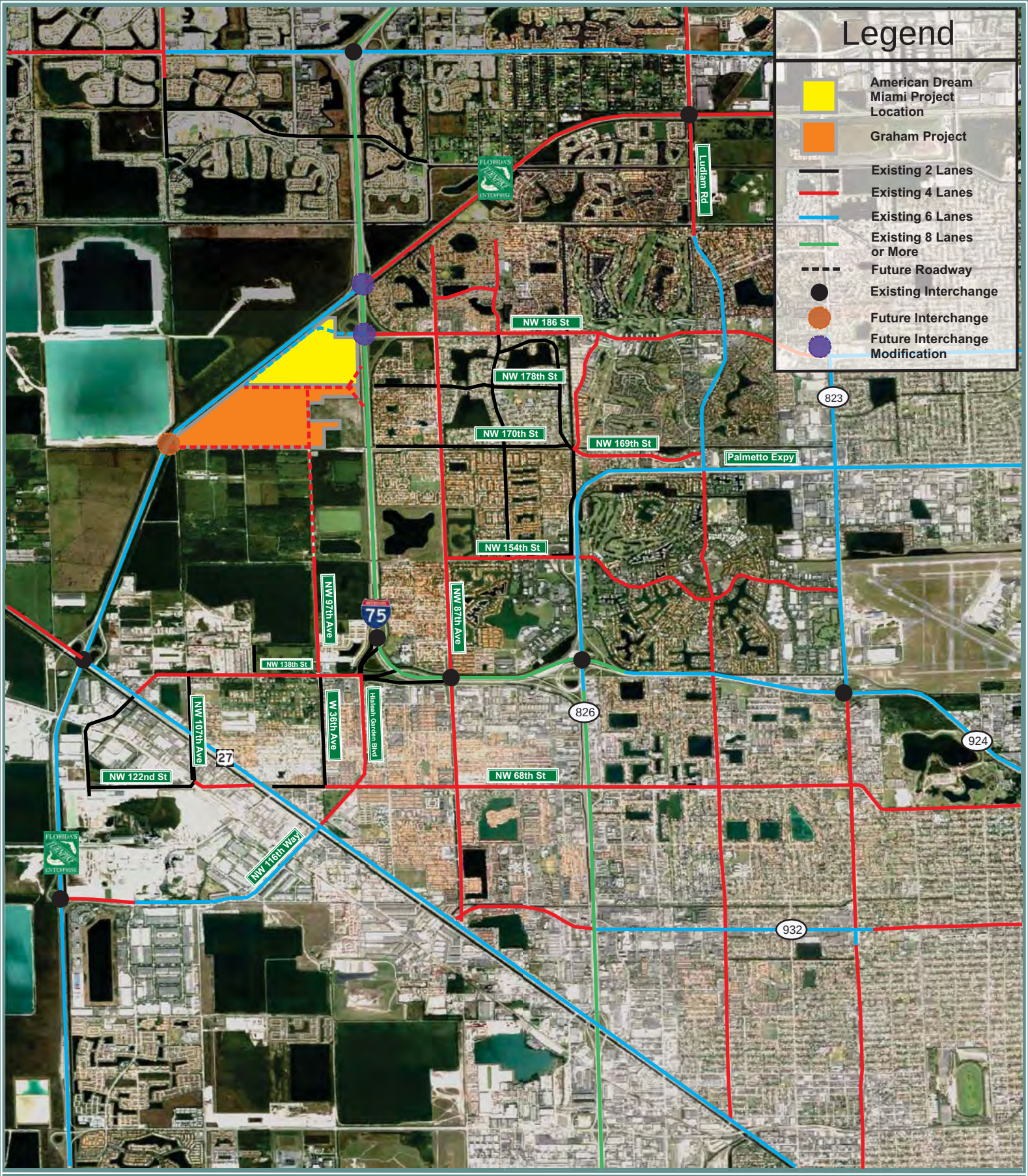
2.0 STUDY AREA

The study area for the TIA will be defined in terms of degree of project traffic impacts on the surrounding roadway networks. Specifically, the TIA analysis will extend to all State and County roadways where external trips are forecast to be equivalent to or greater than five percent (5%) of the maximum service volume (MSV) at the adopted level of service (LOS) standard for each facility. Local collectors roadways proximate to the Project will also be included.

The study area for the TIA will be defined by first determining the study areas for each project (Graham Project and American Dream Miami) separately. Then, the two study areas will be overlaid and the maximum outer boundary of the two study areas will form the final study area.

3.0 SITE ACCESS

American Dream Miami and the Graham Project intends to seek access to an extension of Miami Gardens Drive, Interstate 75 and Florida's Turnpike via a future interchange at NW 170th Street. **Figure 2** includes a preliminary access plan for the two Projects which may be subject to change in the TIA as project access needs are further analyzed.

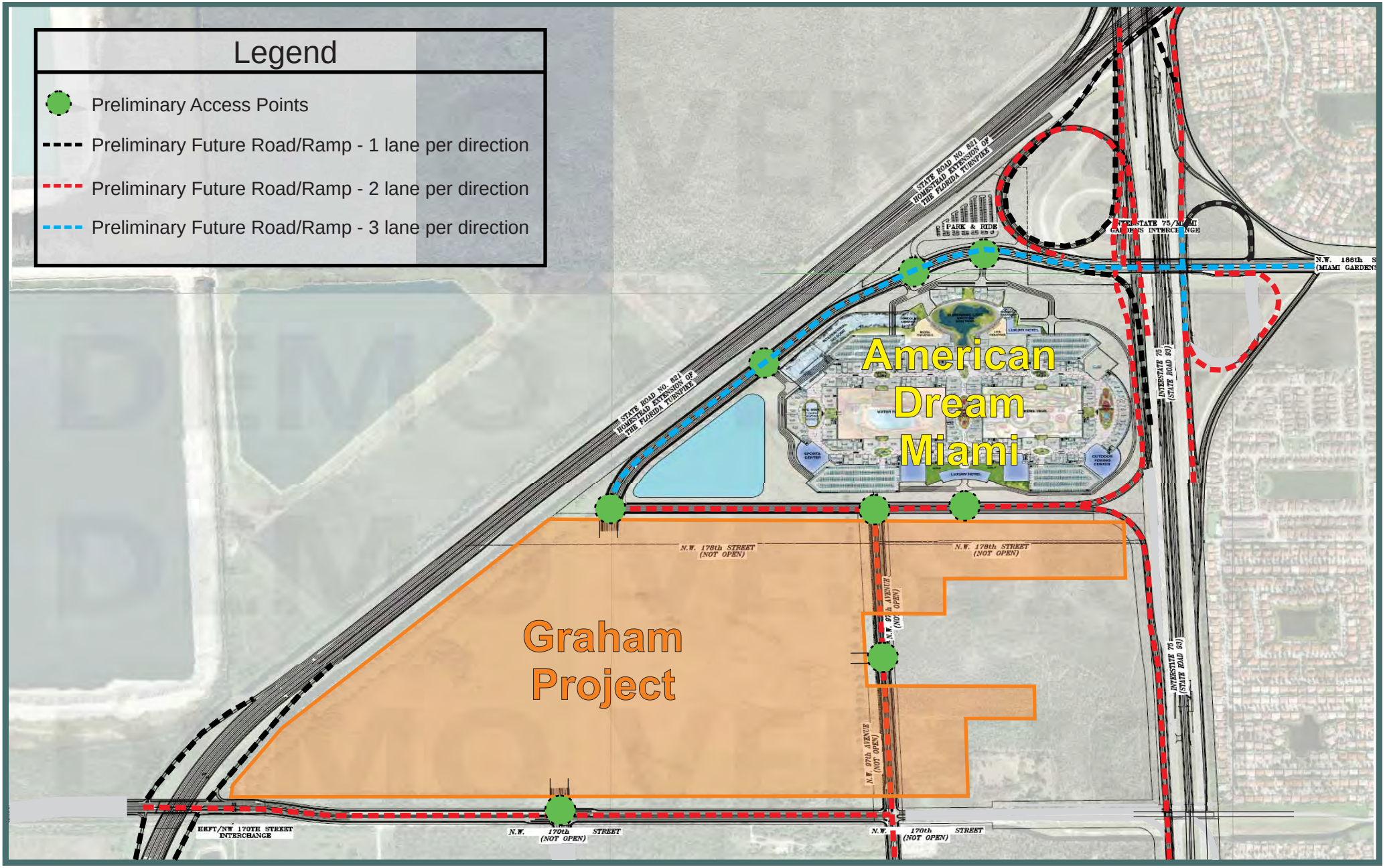


Project Location Map

American Dream Miami / Graham Project

NTS

Figure: 1



Preliminary Access Plan

American Dream Miami / Graham Project

N

W E

S

NTS

Figure:

2

4.0 TRIP GENERATION FOR GRAHAM PROJECT

Trip generation associated with the Graham Project for the analysis years 2020 and 2040 has been forecast per Institute of Transportation's (ITE) methodology as outlined in the Trip Generation Manual, 9th Edition. In Year 2020, the project estimates a partial build-out of uses to include 150 ksf of commercial use, 250 ksf of business park use, and 500 multi-family dwelling units. In Year 2040, full build-out of the Graham Project will include 1,000 ksf of commercial use, 3,000 ksf of business park use, and 2,000 multi-family dwelling units.

For each year, the internal trip capture rate was calculated for the site by utilizing the Multi-Use Development Internal Capture Matrix methodology outlined in the Trip Generation Handbook. The resulting capture rate was applied to total project trips generated by land uses. The quantity of captured trips was then deducted from total trip quantities to derive the net external trips generated by the site. Next, and for each year, a pass-by trip reduction was applied to the amount of net external project trips generated by the retail uses. This percent reduction was derived from the ITE fitted curve equation for ITE Land Use 820 (Shopping Center) per ITE's Trip Generation Handbook. The quantity of pass-by trips was then deducted from net external trip quantities to derive the new external trips generated by the site. **Table 1** presents the Daily and PM peak hour trip generation summary for the Graham Project for Years 2020 and 2040.

Table 1: Trip Generation Summary for Graham Project

					Trip Rates		Trip Forecast	
Graham Project (2020)	**Land Use**	**ITE Code**	**Size**	**Units**	**Daily**	**PM Peak**	**Daily**	**PM Peak**
	Commercial	820	150	KSF	58.93	5.24	8,840	786
	Business Park	770	250	KSF	13.48	1.35	3,370	338
	Multi-Family Apartment	220	500	DU	6.31	0.59	3,155	295
	Total Generated Trips						**15,365**	**1,419**
	PM Internal Capture =	15.1%	of net external trips				2,317	214
	Net External Trips						**13,048**	**1,205**
	Passerby Trips =	35.0%	of ext'l comm'l trips				2,588	239
	New External Trips						**10,460**	**966**
					Trip Rates		**Trip Forecast**	
Graham Project (2040)	**Land Use**	**ITE Code**	**Size**	**Units**	**Daily**	**PM Peak**	**Daily**	**PM Peak**
	Commercial	820	1,000	KSF	30.33	2.80	30,330	2,800
	Business Park	770	3,000	KSF	10.86	1.05	32,580	3,150
	Multi-Family Apartment	220	2,000	DU	6.12	0.56	12,240	1,120
	Total Generated Trips						**75,150**	**7,070**
	PM Internal Capture =	10.8%	of net external trips				8,121	764
	Net External Trips						**67,029**	**6,306**
	Passerby Trips =	20.0%	of ext'l comm'l trips				5,172	487
	New External Trips						**61,857**	**5,819**

5.0 CDMP TIA ANALYSIS

The combined CDMP TIA analysis will be performed as outlined in the submitted Methodology Statement (dated September 3, 2015) and subsequent comment responses drafted to address agency review comments. Trips for American Dream Miami and the Graham Project will be tracked separately in the analysis, but will be combined to determine full impact of both projects together.

APPENDIX B:
Background Growth Spreadsheet

Background Volumes Worksheet

(1% Growth vs. 5-Year Regression vs. Existing plus Vested)

Roadway	To	From	Historic Volumes						EXISTING			BACKGROUND					BACKGROUND				
			2009	2010	2011	2012	2013	2014	2015 1% Growth	2015 5-Y Forecast	Final 2015 Daily Traffic Volume	2020 1% Growth	2020 5-Y	2020 *Vested RER DOS Trips (PH)*	2020 Vested 2015 + DOS/9%	Final 2020 Daily Traffic Volume	2040 1% Growth	2040 5-Y	2040 *Vested RER DOS Trips (PH)*	2040 Vested 2015 + DOS/9%	Final 2040 Daily Traffic Volume
Florida's Turnpike	NW 106th Street	US 27/ Okeechobee Rd	83,100	85,700	89,000	89,000	90,000	101,000	102,010	99,873	102,010	107,111	114,502	*145*	103,621	114,502	127,513	173,016	*145*	103,621	173,016
	US 27/ Okeechobee Rd	NW 170th St	78,100	80,300	83,000	83,000	84,000	93,000	93,930	92,127	93,930	98,627	104,355	*3*	93,963	104,355	117,413	153,270	*3*	93,963	153,270
	NW 170th St	Interstate 75	78,100	80,300	83,000	83,000	84,000	93,000	93,930	92,127	93,930	98,627	104,355	*3*	93,963	104,355	117,413	153,270	*3*	93,963	153,270
	Interstate 75	CR 823/Red Rd	44,700	42,200	45,000	47,000	47,000	51,000	51,510	50,940	51,510	54,086	57,783	*0*	51,510	57,783	64,388	85,154	*0*	51,510	85,154
	CR 823/Red Rd	CR 817/NW 27th Ave	60,000	61,100	63,000	64,000	64,000	69,000	69,690	68,987	69,690	73,175	76,801	*0*	69,690	76,801	87,113	108,058	*0*	69,690	108,058
Interstate 75	Miramar Pkwy/ S 33rd St	Florida's Turnpike		150,236	150,500	151,562	157,485	163,084	164,715	164,378	164,715	172,951	180,718	*0*	164,715	180,718	205,894	246,080	*0*	164,715	246,080
	Florida's Turnpike	Miami Gardens Dr/NW 186 St	148,000	148,000	148,500	148,500	141,500	167,000	168,670	157,800	168,670	177,104	168,586	*20*	168,892	177,104	210,838	211,729	*20*	168,892	211,729
	Miami Gardens Dr/NW 186 St	South Project Rd	114,000	110,000	110,000	112,000	120,000	123,500	124,735	122,867	124,735	130,972	134,224	*313*	128,213	134,224	155,919	179,652	*313*	128,213	179,652
	South Project Rd	NW 138th Street	114,000	110,000	110,000	112,000	120,000	123,500	124,735	122,867	124,735	130,972	134,224	*313*	128,213	134,224	155,919	179,652	*313*	128,213	179,652
	NW 138th Street	SR 826	127,000	127,000	115,500	112,000	111,500	130,500	131,805	117,333	131,805	138,395	112,690	*194*	133,961	138,395	164,756	94,119	*194*	133,961	164,756
Miami Gardens Dr	South Project Rd	Project Access Rd	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
	Project Access Rd	Interstate 75 Western Ramps	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
	Interstate 75 Western Ramps	Interstate 75 Eastern Ramps	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
	Interstate 75 Eastern Ramps	NW 87th Ave		42,000	38,000	41,000	42,000	41,000	41,410	41,400	41,410	43,481	42,400	*8*	41,499	43,481	51,763	46,400	*8*	41,499	51,763
	NW 87th Ave	NW 82nd Ave		42,000	38,000	41,000	42,000	41,000	41,410	41,400	41,410	43,481	42,400	*8*	41,499	43,481	51,763	46,400	*8*	41,499	51,763
	NW 82nd Ave	NW 77nd Ave		41,000	46,500	47,500	41,500	41,500	41,915	42,400	42,400	44,520	40,400	*26*	42,689	44,520	53,000	32,400	*26*	42,689	53,000
	NW 77nd Ave	NW 67nd Ave		41,000	46,500	47,500	41,500	41,500	41,915	42,400	42,400	44,520	40,400	*26*	42,689	44,520	53,000	32,400	*26*	42,689	53,000
	NW 67nd Ave	NW 57nd Ave		46,500	37,000	48,500	35,500	35,000	35,350	33,150	35,350	37,118	20,900	*46*	35,861	37,118	44,188	0	*46*	35,861	44,188
NW 170th St	Florida Turnpike	Graham Access	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
	Graham Access	NW 97th Ave	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
NW 138th St	Florida's Turnpike	NW 107th Ave						17,300	17,473	0	17,473	18,347	0	*166*	19,317	19,317	21,841	0	*166*	19,317	21,841
	NW 107th Ave	NW 97th Ave	15,000	15,900	15,700	15,500	15,900	20,300	20,503	19,013	20,503	21,528	22,770	*0*	20,503	22,770	25,629	37,799	*0*	20,503	37,799
	NW 97th Ave	Hialeah Gardens Blvd	15,000	15,900	15,700	15,500	15,900	20,300	20,503	19,013	20,503	21,528	22,770	*0*	20,503	22,770	25,629	37,799	*0*	20,503	37,799
Hialeah Gardens Blvd	US 27/ Okeechobee Rd	NW 138th St				28,000	28,000	28,000	28,280	28,000	28,280	29,694	28,000	*0*	28,280	29,694	35,350	28,000	*0*	28,280	35,350
NW 97th Ave	NW 122nd St	NW 130th St			7,100	7,000	7,700	7,700	7,777	8,000	8,000	8,400	9,250	*0*	8,000	9,250	10,000	14,250	*0*	8,000	14,250
	NW 130th St	NW 138th St			7,100	7,000	7,700	7,700	7,777	8,000	8,000	8,400	9,250	*0*	8,000	9,250	10,000	14,250	*0*	8,000	14,250
	NW 138th St	NW 154th St	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
	NW 154th St	NW 170th St	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
	NW 170th St	Graham Access	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
	Graham Access	NW 178th St	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
NW 87th Ave	Miami Gardens Dr/NW 186 St	NW 170th St				23,500	23,500	23,500	23,735	23,500	23,735	24,922	23,500	*0*	23,735	24,922	29,669	23,500	*0*	23,735	29,669
NW178th Ave	Graham Access	NW 97th Ave	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
	NW 97th Ave	Iinterstate 75	NOT EXISTING ROADWAY LINK						0	0	0	0	0	*0*	0	0	0	0	*0*	0	0
Miramar Pkwy	SW 160th Ave	Interstate 75						50,759	51,267	0	51,267	53,830	0	*0*	51,267	53,830	64,083	0	*0*	51,267	64,083
	Interstate 75	SW 148th Ave						42,807	43,235	0	43,235	45,397	0	*0*	43,235	45,397	54,044	0	*0*	43,235	54,044

APPENDIX C1:
County Traffic Counts

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 03/04/14 LOCATION: NW 170 ST

STATION: 9552 E/O NW 87 AVE TO NW 77 AVE

EASTBOUND						WESTBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	5	9	8	3	25	12 AM	4	4	10	1	19	44
01 AM	3	4	4	1	12	01 AM	2	3	0	2	7	19
02 AM	1	1	1	1	4	02 AM	0	1	1	0	2	6
03 AM	0	1	0	1	2	03 AM	0	3	0	0	3	5
04 AM	0	3	2	1	6	04 AM	2	1	1	4	8	14
05 AM	3	3	6	7	19	05 AM	4	6	9	13	32	51
06 AM	9	11	24	55	99	06 AM	12	23	43	46	124	223
07 AM	88	108	70	87	353	07 AM	61	60	91	61	273	626
08 AM	101	68	40	52	261	08 AM	72	79	74	43	268	529
09 AM	30	34	38	28	130	09 AM	56	46	46	36	184	314
10 AM	23	28	24	33	108	10 AM	42	35	34	40	151	259
11 AM	25	22	35	29	111	11 AM	37	31	27	37	132	243
12 PM	36	29	28	31	124	12 PM	30	33	35	32	130	254
01 PM	38	33	49	36	156	01 PM	40	64	35	32	171	327
02 PM	52	67	66	60	245	02 PM	33	39	83	79	234	479
03 PM	73	87	67	56	283	03 PM	74	57	80	82	293	576
04 PM	49	73	54	52	228	04 PM	59	60	58	50	227	455
05 PM	57	63	80	80	280	05 PM	60	56	83	82	281	561
06 PM	71	85	62	62	280	06 PM	71	67	66	100	304	584
07 PM	78	54	59	45	236	07 PM	58	59	53	48	218	454
08 PM	52	36	43	29	160	08 PM	48	47	41	48	184	344
09 PM	31	34	27	24	116	09 PM	36	38	48	50	172	288
10 PM	28	21	18	15	82	10 PM	26	12	19	16	73	155
11 PM	15	14	6	5	40	11 PM	16	12	8	5	41	81
TOTAL:					**3360**						**3531**	**6891**

PHP: 568 **PHF:** 0.817 **D FACTOR:** 0.564

AADT: 6785 **K FACTOR:** 0.088

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 03/05/14 LOCATION: NW 170 ST

STATION: 9552 E/O NW 87 AVE TO NW 77 AVE

EASTBOUND						WESTBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	12	5	6	4	27	12 AM	9	8	12	5	34	61
01 AM	7	2	2	0	11	01 AM	5	7	0	0	12	23
02 AM	2	1	0	0	3	02 AM	0	3	1	2	6	9
03 AM	4	0	0	0	4	03 AM	0	2	1	2	5	9
04 AM	1	1	3	2	7	04 AM	2	1	4	4	11	18
05 AM	3	2	6	15	26	05 AM	5	6	13	8	32	58
06 AM	9	16	35	53	113	06 AM	19	34	33	48	134	247
07 AM	92	97	56	83	328	07 AM	68	64	86	58	276	604
08 AM	99	73	42	39	253	08 AM	61	86	79	48	274	527
09 AM	38	26	21	36	121	09 AM	49	47	42	40	178	299
10 AM	19	18	24	32	93	10 AM	24	28	32	34	118	211
11 AM	30	33	30	20	113	11 AM	48	40	38	45	171	284
12 PM	36	30	31	47	144	12 PM	26	32	28	24	110	254
01 PM	43	39	41	36	159	01 PM	44	45	37	54	180	339
02 PM	80	60	54	60	254	02 PM	42	44	85	94	265	519
03 PM	49	79	65	45	238	03 PM	57	46	62	105	270	508
04 PM	55	55	56	59	225	04 PM	70	52	51	65	238	463
05 PM	50	65	50	71	236	05 PM	58	85	72	71	286	522
06 PM	68	64	80	73	285	06 PM	65	62	83	65	275	560
07 PM	63	46	53	47	209	07 PM	75	47	55	51	228	437
08 PM	52	52	52	42	198	08 PM	71	63	41	44	219	417
09 PM	40	25	29	25	119	09 PM	56	27	27	32	142	261
10 PM	21	20	20	20	81	10 PM	23	24	16	17	80	161
11 PM	18	11	10	9	48	11 PM	2	10	3	6	21	69
TOTAL:					**3295**						**3565**	**6860**

PHP: 554 **PHF:** 0.845 **D FACTOR:** 0.543

AADT: 6721 **K FACTOR:** 0.085

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 03/06/14 LOCATION: NW 170 ST

STATION: 9552 E/O NW 87 AVE TO NW 77 AVE

EASTBOUND						WESTBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	7	13	7	9	36	12 AM	8	8	3	3	22	58
01 AM	5	3	4	1	13	01 AM	3	0	3	3	9	22
02 AM	2	8	1	0	11	02 AM	2	2	3	2	9	20
03 AM	2	2	0	0	4	03 AM	0	1	1	1	3	7
04 AM	1	3	3	4	11	04 AM	2	1	1	4	8	19
05 AM	7	4	7	11	29	05 AM	4	7	10	12	33	62
06 AM	5	18	24	49	96	06 AM	11	27	38	51	127	223
07 AM	81	84	74	96	335	07 AM	66	74	91	72	303	638
08 AM	86	68	58	34	246	08 AM	75	105	70	41	291	537
09 AM	40	36	25	24	125	09 AM	48	45	33	50	176	301
10 AM	30	32	22	39	123	10 AM	36	33	46	39	154	277
11 AM	27	30	28	30	115	11 AM	26	25	40	28	119	234
12 PM	35	30	33	43	141	12 PM	41	34	38	33	146	287
01 PM	37	41	46	54	178	01 PM	42	26	51	38	157	335
02 PM	41	58	67	68	234	02 PM	45	43	86	91	265	499
03 PM	79	72	56	67	274	03 PM	90	51	74	95	310	584
04 PM	62	58	52	39	211	04 PM	63	58	48	71	240	451
05 PM	61	62	58	50	231	05 PM	52	55	58	52	217	448
06 PM	51	45	55	51	202	06 PM	62	52	53	57	224	426
07 PM	44	50	43	35	172	07 PM	62	74	42	42	220	392
08 PM	44	32	39	36	151	08 PM	39	37	46	23	145	296
09 PM	27	30	30	23	110	09 PM	32	21	22	24	99	209
10 PM	22	13	10	18	63	10 PM	20	26	12	18	76	139
11 PM	18	11	6	16	51	11 PM	12	8	14	11	45	96
TOTAL:					**3162**						**3398**	**6560**

PHP: 572 **PHF:** 0.872 **D FACTOR:** 0.525

AADT: 6395 **K FACTOR:** 0.094

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

SUMMARY FOR STATION NUMBER: 9552

	PHP	AADT	K	D	PHF
03/04/14	568	6785	0.088	0.564	0.817
03/05/14	554	6721	0.085	0.543	0.845
03/06/14	572	6395	0.094	0.525	0.872
AVG	564	6633	0.089	0.544	0.845

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 03/04/14 LOCATION: NW 154 ST

STATION: 9544 E/O NW 79 AVE SR 826 TO NW 87 AVE

EASTBOUND						WESTBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	28	11	17	9	65	12 AM	34	30	21	18	103	168
01 AM	11	6	8	6	31	01 AM	13	20	13	7	53	84
02 AM	6	2	6	5	19	02 AM	10	7	9	6	32	51
03 AM	6	2	9	7	24	03 AM	5	7	5	9	26	50
04 AM	9	11	11	28	59	04 AM	10	12	1	4	27	86
05 AM	23	38	68	64	193	05 AM	6	14	19	30	69	262
06 AM	90	142	185	161	578	06 AM	27	44	86	146	303	881
07 AM	182	223	214	256	875	07 AM	178	140	167	143	628	1503
08 AM	250	264	248	264	1026	08 AM	172	172	158	144	646	1672
09 AM	222	222	187	220	851	09 AM	162	146	127	122	557	1408
10 AM	204	188	186	182	760	10 AM	100	134	111	130	475	1235
11 AM	159	182	164	177	682	11 AM	140	151	139	162	592	1274
12 PM	190	179	185	186	740	12 PM	155	180	160	160	655	1395
01 PM	176	203	170	184	733	01 PM	190	184	159	180	713	1446
02 PM	172	184	220	224	800	02 PM	223	196	209	190	818	1618
03 PM	212	204	195	195	806	03 PM	260	250	230	241	981	1787
04 PM	217	202	242	205	866	04 PM	204	232	254	239	929	1795
05 PM	250	218	212	197	877	05 PM	235	289	259	273	1056	1933
06 PM	212	218	222	214	866	06 PM	275	267	243	247	1032	1898
07 PM	193	178	150	140	661	07 PM	234	206	224	204	868	1529
08 PM	144	126	127	108	505	08 PM	192	195	182	158	727	1232
09 PM	121	114	98	108	441	09 PM	152	164	147	147	610	1051
10 PM	96	66	46	54	262	10 PM	106	88	95	74	363	625
11 PM	46	33	23	17	119	11 PM	71	53	40	38	202	321
TOTAL:					**12839**						**12465**	**25304**

PHP: 1885 **PHF:** 0.913 **D FACTOR:** 0.546

AADT: 24913 **K FACTOR:** 0.074

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 03/05/14 LOCATION: NW 154 ST

STATION: 9544 E/O NW 79 AVE SR 826 TO NW 87 AVE

EASTBOUND						WESTBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	28	19	17	14	78	12 AM	29	34	26	29	118	196
01 AM	10	8	11	2	31	01 AM	23	20	11	9	63	94
02 AM	7	5	5	11	28	02 AM	11	7	7	3	28	56
03 AM	4	11	9	6	30	03 AM	8	8	5	6	27	57
04 AM	20	8	13	25	66	04 AM	14	2	5	4	25	91
05 AM	32	33	75	54	194	05 AM	5	14	16	22	57	251
06 AM	80	152	202	206	640	06 AM	46	50	94	134	324	964
07 AM	176	242	212	244	874	07 AM	182	133	149	164	628	1502
08 AM	253	274	262	265	1054	08 AM	174	143	156	124	597	1651
09 AM	254	220	222	214	910	09 AM	143	160	162	106	571	1481
10 AM	202	178	194	187	761	10 AM	133	145	120	136	534	1295
11 AM	178	170	150	194	692	11 AM	131	136	136	146	549	1241
12 PM	176	166	204	198	744	12 PM	166	172	162	166	666	1410
01 PM	173	196	200	224	793	01 PM	200	195	192	210	797	1590
02 PM	217	231	260	210	918	02 PM	259	240	247	184	930	1848
03 PM	196	190	176	197	759	03 PM	215	225	222	198	860	1619
04 PM	204	170	172	192	738	04 PM	172	214	234	202	822	1560
05 PM	208	170	210	209	797	05 PM	234	216	249	248	947	1744
06 PM	246	219	208	230	903	06 PM	266	265	249	260	1040	1943
07 PM	196	172	153	172	693	07 PM	250	247	256	231	984	1677
08 PM	170	155	108	113	546	08 PM	192	193	165	160	710	1256
09 PM	102	92	76	77	347	09 PM	156	198	138	118	610	957
10 PM	77	55	54	62	248	10 PM	99	108	98	94	399	647
11 PM	42	41	35	26	144	11 PM	74	60	60	36	230	374
TOTAL:					**12988**						**12516**	**25504**

PHP: 1806 **PHF:** 0.977 **D FACTOR:** 0.535

AADT: 24986 **K FACTOR:** 0.074

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 03/06/14 LOCATION: NW 154 ST

STATION: 9544 E/O NW 79 AVE SR 826 TO NW 87 AVE

EASTBOUND						WESTBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	32	15	13	14	74	12 AM	33	37	36	44	150	224
01 AM	15	4	7	10	36	01 AM	18	10	15	19	62	98
02 AM	6	9	5	10	30	02 AM	13	7	15	7	42	72
03 AM	7	9	10	7	33	03 AM	8	4	7	8	27	60
04 AM	15	8	17	18	58	04 AM	9	5	7	6	27	85
05 AM	24	42	58	58	182	05 AM	8	6	20	27	61	243
06 AM	90	127	184	244	645	06 AM	33	47	86	149	315	960
07 AM	198	244	222	258	922	07 AM	169	162	183	172	686	1608
08 AM	250	270	250	270	1040	08 AM	169	152	156	128	605	1645
09 AM	210	210	194	217	831	09 AM	146	140	123	120	529	1360
10 AM	190	180	192	196	758	10 AM	122	120	126	116	484	1242
11 AM	161	170	172	182	685	11 AM	165	146	146	154	611	1296
12 PM	174	179	162	184	699	12 PM	152	146	166	180	644	1343
01 PM	200	170	200	183	753	01 PM	182	191	174	161	708	1461
02 PM	175	206	240	250	871	02 PM	194	247	200	242	883	1754
03 PM	226	179	196	190	791	03 PM	270	234	228	216	948	1739
04 PM	187	155	172	184	698	04 PM	209	248	194	198	849	1547
05 PM	174	243	190	204	811	05 PM	230	245	254	196	925	1736
06 PM	192	190	194	176	752	06 PM	253	221	204	265	943	1695
07 PM	160	183	164	154	661	07 PM	214	210	226	181	831	1492
08 PM	144	136	111	90	481	08 PM	160	168	161	140	629	1110
09 PM	90	88	86	78	342	09 PM	146	113	138	120	517	859
10 PM	69	78	56	56	259	10 PM	106	94	79	64	343	602
11 PM	48	37	28	17	130	11 PM	88	61	63	50	262	392
TOTAL:					**12542**						**12081**	**24623**

PHP: 1702 **PHF:** 0.894 **D FACTOR:** 0.503

AADT: 24004 **K FACTOR:** 0.069

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

SUMMARY FOR STATION NUMBER: 9544

	PHP	AADT	K	D	PHF
03/04/14	1885	24913	0.074	0.546	0.913
03/05/14	1806	24986	0.074	0.535	0.977
03/06/14	1702	24004	0.069	0.503	0.894
AVG	1797	24634	0.072	0.528	0.928

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 04/15/14 LOCATION: NW 138 ST

STATION: 9534 S/W OF OKEECHOBEE RD TO NW 107 AVE

NORTHBOUND						SOUTHBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	17	15	8	8	48	12 AM	5	5	3	5	18	66
01 AM	9	3	5	10	27	01 AM	3	7	4	4	18	45
02 AM	10	3	2	7	22	02 AM	5	3	3	11	22	44
03 AM	11	16	4	12	43	03 AM	7	15	20	33	75	118
04 AM	17	27	28	31	103	04 AM	25	25	23	31	104	207
05 AM	28	35	32	22	117	05 AM	34	32	40	68	174	291
06 AM	45	33	40	37	155	06 AM	47	56	73	81	257	412
07 AM	50	59	50	45	204	07 AM	66	74	71	89	300	504
08 AM	44	34	62	62	202	08 AM	74	73	79	76	302	504
09 AM	68	52	56	80	256	09 AM	67	56	60	45	228	484
10 AM	48	62	65	44	219	10 AM	40	46	39	41	166	385
11 AM	61	61	59	64	245	11 AM	42	37	47	48	174	419
12 PM	81	73	51	83	288	12 PM	33	48	47	35	163	451
01 PM	66	64	63	68	261	01 PM	54	46	46	51	197	458
02 PM	72	63	55	70	260	02 PM	42	42	47	39	170	430
03 PM	67	88	112	90	357	03 PM	40	34	34	40	148	505
04 PM	72	97	155	116	440	04 PM	44	52	37	34	167	607
05 PM	188	134	163	125	610	05 PM	17	26	19	23	85	695
06 PM	99	90	79	62	330	06 PM	33	41	25	29	128	458
07 PM	93	74	54	44	265	07 PM	24	22	16	15	77	342
08 PM	53	29	37	19	138	08 PM	19	12	14	13	58	196
09 PM	22	20	21	30	93	09 PM	18	10	11	13	52	145
10 PM	12	18	47	10	87	10 PM	15	16	15	10	56	143
11 PM	13	10	14	3	40	11 PM	8	5	5	8	26	66
TOTAL:					**4810**						**3165**	**7975**

PHP: 654 **PHF:** 0.811 **D FACTOR:** 0.878

AADT: 8014 **K FACTOR:** 0.085

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 04/16/14 LOCATION: NW 138 ST

STATION: 9534 S/W OF OKEECHOBEE RD TO NW 107 AVE

NORTHBOUND						SOUTHBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	13	24	14	12	63	12 AM	9	3	3	7	22	85
01 AM	8	5	2	4	19	01 AM	3	3	1	6	13	32
02 AM	9	2	5	6	22	02 AM	5	5	7	7	24	46
03 AM	8	7	18	24	57	03 AM	11	17	10	30	68	125
04 AM	29	27	21	17	94	04 AM	25	14	23	31	93	187
05 AM	34	21	20	19	94	05 AM	29	26	42	73	170	264
06 AM	28	23	34	35	120	06 AM	63	49	69	76	257	377
07 AM	55	44	27	29	155	07 AM	62	66	68	83	279	434
08 AM	52	24	57	36	169	08 AM	76	64	75	79	294	463
09 AM	62	56	59	66	243	09 AM	59	55	50	61	225	468
10 AM	54	45	57	61	217	10 AM	52	37	48	44	181	398
11 AM	64	60	67	56	247	11 AM	36	42	37	42	157	404
12 PM	76	64	81	63	284	12 PM	40	41	42	44	167	451
01 PM	65	56	62	69	252	01 PM	39	48	51	50	188	440
02 PM	60	66	84	69	279	02 PM	48	32	42	45	167	446
03 PM	81	89	121	96	387	03 PM	44	39	40	41	164	551
04 PM	83	96	140	134	453	04 PM	48	36	39	32	155	608
05 PM	149	132	131	133	545	05 PM	33	32	37	31	133	678
06 PM	109	73	82	115	379	06 PM	34	42	25	24	125	504
07 PM	71	64	41	46	222	07 PM	30	23	26	14	93	315
08 PM	28	31	21	24	104	08 PM	17	9	12	14	52	156
09 PM	30	24	26	13	93	09 PM	10	10	12	16	48	141
10 PM	12	15	48	21	96	10 PM	13	15	12	14	54	150
11 PM	8	12	21	13	54	11 PM	7	4	9	9	29	83
TOTAL:					**4648**						**3158**	**7806**

PHP: 649 **PHF:** 0.914 **D FACTOR:** 0.804

AADT: 7884 **K FACTOR:** 0.084

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DATE: 04/17/14 LOCATION: NW 138 ST

STATION: 9534 S/W OF OKEECHOBEE RD TO NW 107 AVE

NORTHBOUND						SOUTHBOUND						TWO-WAY
TIME	1ST	2ND	3RD	4TH	TOTAL HR	TIME	1ST	2ND	3RD	4TH	TOTAL HR	TOTAL
12 AM	17	17	14	10	58	12 AM	6	5	1	3	15	73
01 AM	7	3	6	7	23	01 AM	1	6	3	6	16	39
02 AM	7	13	6	7	33	02 AM	3	3	7	11	24	57
03 AM	18	13	12	14	57	03 AM	9	12	23	24	68	125
04 AM	11	21	34	38	104	04 AM	27	32	17	30	106	210
05 AM	25	15	17	36	93	05 AM	36	22	41	56	155	248
06 AM	32	30	38	39	139	06 AM	48	62	70	83	263	402
07 AM	43	60	47	27	177	07 AM	59	66	80	93	298	475
08 AM	41	37	40	49	167	08 AM	80	75	58	63	276	443
09 AM	63	67	76	70	276	09 AM	51	51	56	52	210	486
10 AM	51	68	60	71	250	10 AM	49	35	45	42	171	421
11 AM	58	82	50	58	248	11 AM	37	29	48	42	156	404
12 PM	76	36	58	73	243	12 PM	47	40	49	43	179	422
01 PM	67	56	75	54	252	01 PM	47	53	44	49	193	445
02 PM	70	65	78	78	291	02 PM	48	53	46	47	194	485
03 PM	88	70	113	75	346	03 PM	46	46	35	45	172	518
04 PM	95	85	158	95	433	04 PM	44	43	34	27	148	581
05 PM	155	136	159	97	547	05 PM	26	32	22	29	109	656
06 PM	96	94	109	60	359	06 PM	35	27	22	25	109	468
07 PM	76	54	50	31	211	07 PM	18	14	19	21	72	283
08 PM	35	22	25	22	104	08 PM	10	18	11	11	50	154
09 PM	22	20	16	8	66	09 PM	8	6	16	6	36	102
10 PM	7	10	48	15	80	10 PM	8	17	13	11	49	129
11 PM	25	15	13	18	71	11 PM	11	4	10	5	30	101
TOTAL:					**4628**						**3099**	**7727**

PHP: 621 **PHF:** 0.86 **D FACTOR:** 0.834

AADT: 7766 **K FACTOR:** 0.082

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
TRAFFIC ENGINEERING DIVISION

SUMMARY FOR STATION NUMBER: 9534

	PHP	AADT	K	D	PHF
04/15/14	654	8014	0.085	0.878	0.811
04/16/14	649	7884	0.084	0.804	0.914
04/17/14	621	7766	0.082	0.834	0.86
AVG	641	7888	0.084	0.839	0.862

APPENDIX C2:
FDOT Traffic Counts

Florida Department of Transportation
Transportation Statistics Office
2014 Historical AADT Report

County: 97 - FL. TURNPIKE

Site: 2272 - HEFT/SR-821 M/L, S OF OKEECHOBEE ROAD

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2014	101000 C	N 50500	S 50500	9.50	56.30	7.40
2013	90000 C	N 45000	S 45000	9.50	56.80	7.60
2012	89000 E	N 44500	S 44500	9.50	57.60	6.30
2011	89000 E	N 44500	S 44500	9.50	57.30	5.90
2010	85700 C	N 42850	S 42850	10.77	58.94	5.70
2009	83100 C	N 41550	S 41550	10.76	59.03	6.20
2008	89200 C	N 44600	S 44600	9.93	59.27	6.60
2007	95800 C	N 47900	S 47900	9.52	58.18	6.20
2006	95100 C	N 47550	S 47550	9.49	57.76	8.10
2005	91400 C	N	S	9.80	59.10	7.60
2004	82600 C	N	S	12.40	59.90	8.30
2003	71500 C	N	S	8.50	60.30	5.30
2002	65600 C	N	S	8.60	57.60	4.70
2001	64000 C	N	S	8.90	59.10	7.10
2000	56800 C	N	S	9.00	60.40	3.80
1999	49600 C	N	S	9.20	56.60	3.70

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; F = Fourth Year Estimate
V = Fifth Year Estimate; 6 = Sixth Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2013 HISTORICAL AADT REPORT

COUNTY: 97 - FL. TURNPIKE

SITE: 2248 - HEFT/SR-821 M/L, N OF OKEECHOBEE RD/SR-25

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2013	84000 C	N 42000	S 42000	9.50	56.80	7.60
2012	83000 E	N 41500	S 41500	9.50	57.60	6.30
2011	83000 E	N 41500	S 41500	9.50	57.30	5.90
2010	80300 C	N 40150	S 40150	10.77	58.94	5.70
2009	78100 C	N 39050	S 39050	10.76	59.03	6.20
2008	83300 C	N 41650	S 41650	9.93	59.27	6.60
2007	89000 C	N 44500	S 44500	9.52	58.18	6.20
2006	89600 C	N 44800	S 44800	9.49	57.76	8.10
2005	85800 C	N	S	9.80	59.10	7.60
2004	77900 C	N	S	12.40	59.90	8.30
2003	67600 C	N	S	8.50	60.30	5.30
2002	64000 C	N	S	8.60	57.60	4.70
2001	63100 C	N	S	8.90	59.10	7.10
2000	61300 C	N	S	9.00	60.40	3.80
1999	53000 C	N	S	9.20	56.60	3.70
1998	50700 C	N	S	11.00	68.90	3.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
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V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
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Florida Department of Transportation
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County: 97 - FL. TURNPIKE

Site: 2285 - HEFT/SR-821 M/L, E OF I-75 INTERCHANGE

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2014	51000 C	E 25500	W 25500	9.50	56.30	7.40
2013	47000 C	E 23500	W 23500	9.50	56.80	7.60
2012	47000 E	E 23500	W 23500	9.50	57.60	6.30
2011	45000 E	E 22500	W 22500	9.50	57.30	5.90
2010	42200 C	E 21100	W 21100	10.77	58.94	5.70
2009	44700 C	E 22350	W 22350	10.76	59.03	6.20
2008	47200 C	E 23600	W 23600	9.93	59.27	6.60
2007	51700 C	E 25850	W 25850	9.52	58.18	6.20
2006	49600 C	N 24800	S 24800	9.49	57.76	8.10
2005	46200 C	E	W	9.80	59.10	7.60
2004	40500 C	E	W	12.40	59.90	8.30
2003	34000 C	E	W	8.50	60.30	5.30
2002	29500 C	E	W	8.60	57.60	4.70
2001	29200 C	E	W	8.90	59.10	7.10
2000	27800 C	E	W	9.00	60.40	3.80
1999	22900 C	E	W	9.20	56.60	3.70

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
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V = Fifth Year Estimate; 6 = Sixth Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

Florida Department of Transportation
Transportation Statistics Office
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County: 97 - FL. TURNPIKE

Site: 1996 - SR-821/HEFT M/L, E OF RED RD/FLAMINGO RD

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2014	69000 C	E 34500	W 34500	9.50	56.30	7.40
2013	64000 C	E 32000	W 32000	9.50	56.80	7.60
2012	64000 E	E 32000	W 32000	9.50	57.60	6.30
2011	63000 E	E 31500	W 31500	9.50	57.30	5.90
2010	61100 C	E 30550	W 30550	10.77	58.94	5.70
2009	60000 C	E 30000	W 30000	10.76	59.03	6.20
2008	62000 C	E 31000	W 31000	9.93	59.27	6.60
2007	64900 C	E 32450	W 32450	9.52	58.18	6.20
2006	62100 C	E 31050	W 31050	9.49	57.76	8.10
2005	58100 C	E	W	10.40	57.60	9.90
2004	5290 C	E	W	11.20	57.80	10.00
2003	44600 C	E	W	8.50	60.30	5.30
2002	40300 C	E	W	8.60	57.60	4.70
2001	36800 C	E	W	8.90	59.10	7.10
2000	31900 C	E	W	9.00	60.40	3.80
1999	27200 C	E	W	9.20	56.60	3.70

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
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COUNTY: 86 - BROWARD

SITE: 0362 - SR-93/I-75, 0.78 MI N OF DADE CO/L, BROWARD CO.

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	163084 C	N 81661	S 81423	8.50	62.70	4.90
2013	157485 C	N 79150	S 78335	8.50	63.90	4.20
2012	151562 C	N 76320	S 75242	8.50	63.40	3.80
2011	150500 F	N 0	S 0	8.50	63.40	3.80
2010	150236 C	N 75420	S 74816	9.47	63.40	3.80
2009	148587 C	N 74507	S 74080	9.42	65.21	3.80
2008	145982 C	N 73332	S 72650	7.80	51.91	3.90
2007	150626 C	N 76636	S 73990	7.06	50.89	6.30

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
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*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

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COUNTY: 87 - MIAMI-DADE

SITE: 2503 - SR 93/I-75, 200' N FLA TPK/HEFT/SR 821

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	167000 C	N 83500	S 83500	8.50	62.70	4.90
2013	141500 C	N 70000	S 71500	8.50	63.90	4.20
2012	148500 F	N 75000	S 73500	8.50	52.90	4.70
2011	148500 C	N 75000	S 73500	8.50	51.90	3.80
2010	148000 C	N 73500	S 74500	8.28	52.35	3.80
2009	145000 C	N 71500	S 73500	8.30	54.21	3.80
2008	158000 C	N 77000	S 81000	8.33	52.48	3.90
2007	148500 C	N 72500	S 76000	8.36	54.73	6.10
2006	146500 C	N 73500	S 73000	9.21	54.53	13.20
2005	139500 C	N 74000	S 65500	8.20	53.90	13.40
2004	146500 C	N 76500	S 70000	8.20	55.60	5.60
2003	138500 C	N 70500	S 68000	8.20	53.50	5.70
2002	137500 C	N 67500	S 70000	8.30	55.80	5.10
2001	144500 C	N 73000	S 71500	11.30	55.30	7.20
2000	138000 C	N 69000	S 69000	8.10	53.60	9.20
1999	118000 C	N 58500	S 59500	11.40	57.50	7.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
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COUNTY: 87 - MIAMI-DADE

SITE: 2501 - SR 93/I-75, 200' S MIAMI GARDENS DR/SR 860

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	123500 C	N 60000	S 63500	8.50	62.70	4.90
2013	120000 C	N 60500	S 59500	8.50	63.90	4.20
2012	112000 C	N 58000	S 54000	8.50	52.90	4.70
2011	110000 C	N 57000	S 53000	8.50	51.90	3.80
2010	110000 C	N 56500	S 53500	8.28	52.35	3.80
2009	114000 C	N 58000	S 56000	8.30	54.21	3.80
2008	114000 C	N 57500	S 56500	8.33	52.48	3.90
2007	107000 C	N 54000	S 53000	8.36	54.73	6.10
2006	108500 C	N 53500	S 55000	9.21	54.53	13.20
2005	111000 C	N 57000	S 54000	8.20	53.90	13.40
2004	118500 C	N 61500	S 57000	8.20	55.60	5.60
2003	102500 C	N 53000	S 49500	8.20	53.50	5.70
2002	106500 C	N 55000	S 51500	8.30	55.80	5.10
2001	105000 C	N 49500	S 55500	11.30	55.30	7.20
2000	110500 C	N 53500	S 57000	8.10	53.60	9.20
1999	90500 C	N 44000	S 46500	11.40	57.50	7.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
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COUNTY: 87 - MIAMI-DADE

SITE: 2500 - SR 93/I-75, 1000' W PALMETTO EXPWY/SR 826

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	130500 C	E 62500	W 68000	8.50	62.70	4.90
2013	111500 C	E 55000	W 56500	8.50	63.90	4.20
2012	112000 C	E 54000	W 58000	8.50	52.90	4.70
2011	115500 C	E 55500	W 60000	8.50	51.90	3.80
2010	127000 C	E 57500	W 69500	8.28	52.35	3.80
2009	127000 C	E 64000	W 63000	8.30	54.21	3.80
2008	110500 C	E 56000	W 54500	8.33	52.48	3.90
2007	104000 C	E 53000	W 51000	8.36	54.73	6.10
2006	112000 C	E 57000	W 55000	9.21	54.53	13.20
2005	114000 C	E 55500	W 58500	8.20	53.90	13.40
2004	120000 C	E 59500	W 60500	8.20	55.60	5.60
2003	107000 C	E 54000	W 53000	8.20	53.50	5.70
2002	108000 C	E 53500	W 54500	8.30	55.80	5.10
2001	99000 C	E 50000	W 49000	8.50	54.30	7.20
2000	102500 C	E 50500	W 52000	8.10	53.60	9.20
1999	91500 C	E 46000	W 45500	9.70	55.00	7.20

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TRANSPORTATION STATISTICS OFFICE
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COUNTY: 87 - MIAMI-DADE

SITE: 2518 - SR 860/MIAMI GARDENS DR, 800' W OF NW 87 AV

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	41000 C	E 21500	W 19500	9.00	54.50	2.30
2013	42000 C	E 22000	W 20000	9.00	52.40	2.20
2012	41000 C	E 21500	W 19500	9.00	55.70	2.10
2011	38000 C	E 19000	W 19000	9.00	55.10	3.30
2010	42000 C	E 23000	W 19000	8.98	54.08	3.30
2009	36000 C	E 22500	W 13500	8.99	53.24	3.90
2008	27500 C	E 13000	W 14500	9.09	55.75	2.90
2007	30500 C	E 15000	W 15500	8.01	54.34	2.50
2006	40000 C	E 20500	W 19500	7.97	54.22	3.80
2005	37500 C	E 19000	W 18500	8.80	53.80	3.00
2004	39000 C	E 18500	W 20500	9.00	53.30	3.00
2003	34000 C	E 17500	W 16500	8.80	53.40	3.30
2002	32000 C	E 16000	W 16000	9.80	52.30	4.40
2001	29000 C	E 15000	W 14000	8.20	53.50	4.70
2000	30000 C	E 15000	W 15000	8.20	53.10	4.30
1999	25500 C	E 13000	W 12500	9.10	52.70	4.10

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
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County: 87 - MIAMI-DADE

Site: 2517 - SR 860/MIAMI GARDENS DR, 200' W NW 67 AV

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2014	41500 C	E 21000	W 20500	9.00	54.50	4.60
2013	41500 C	E 20500	W 21000	9.00	52.40	4.10
2012	47500 C	E 23500	W 24000	9.00	55.70	6.30
2011	46500 C	E 22500	W 24000	9.00	55.10	4.10
2010	41000 C	E 21500	W 19500	8.98	54.08	2.60
2009	41000 C	E 20500	W 20500	8.99	53.24	4.00
2008	35500 C	E 18500	W 17000	9.09	55.75	4.20
2007	40000 C	E 20500	W 19500	8.01	54.34	3.80
2006	40500 C	E 19500	W 21000	7.97	54.22	3.00
2005	35500 C	E 17500	W 18000	8.80	53.80	2.40
2004	41500 C	E 19500	W 22000	9.00	53.30	5.90
2003	38000 C	E 19500	W 18500	8.80	53.40	4.80
2002	36000 C	E 18000	W 18000	9.80	52.30	5.70
2001	38000 C	E 18500	W 19500	8.20	53.50	4.60
2000	30000 C	E 15000	W 15000	8.20	53.10	3.80
1999	42500 C	E 23000	W 19500	9.10	52.70	3.50

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County: 87 - MIAMI-DADE

Site: 2516 - SR 860/MIAMI GARDENS DR, 200' W SR 823/RED RD

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2014	35000 C	E 18000	W 17000	9.00	54.50	4.60
2013	35500 C	E 18000	W 17500	9.00	52.40	4.10
2012	48500 C	E 24000	W 24500	9.00	55.70	6.30
2011	37000 C	E 18500	W 18500	9.00	55.10	4.10
2010	46500 C	E 22500	W 24000	8.98	54.08	2.60
2009	35500 C	E 18000	W 17500	8.99	53.24	4.00
2008	31000 C	E 15500	W 15500	9.09	55.75	4.20
2007	34500 C	E 17500	W 17000	8.01	54.34	3.80
2006	39000 C	E 20000	W 19000	7.97	54.22	3.00
2005	35000 C	E 18000	W 17000	8.80	53.80	2.40
2004	45000 C	E 21000	W 24000	9.00	53.30	5.90
2003	34500 C	E 18000	W 16500	8.80	53.40	4.80
2002	35500 C	E 19000	W 16500	9.80	52.30	5.70
2001	37000 C	E 19000	W 18000	8.20	53.50	4.60
2000	33500 C	E 17500	W 16000	8.20	53.10	3.80
1999	33500 C	E 18000	W 15500	9.10	52.70	3.50

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
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COUNTY: 87 - MIAMI-DADE

SITE: 8177 - NW 170TH ST/NW 169TH ST, 200' EAST OF NW 87TH AVE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	12100 F	E 6900	W 5200	9.00	54.50	21.90
2013	12000 C	E 6800	W 5200	9.00	52.40	16.20

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COUNTY: 87 - MIAMI-DADE

SITE: 7037 - NW 154TH ST 500 FT EAST OF NW 82ND AVE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	27000 F	E 14500	W 12500	9.00	54.50	13.30
2013	27000 C	E 14500	W 12500	9.00	52.40	13.30
2012	24000 F	E 12000	W 12000	9.00	55.70	4.50
2011	24000 C	E 12000	W 12000	9.00	55.10	5.80
2010	28500 F	E 15000	W 13500	8.98	54.08	4.60
2009	29500 C	E 15500	W 14000	8.99	53.24	5.70

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
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COUNTY: 87 - MIAMI-DADE

SITE: 8684 - NW 138 STREET 600' WEST OF NW 107 AVENUE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	17300 C	E 8600	W 8700	9.00	54.50	21.90

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
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V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
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COUNTY: 87 - MIAMI-DADE

SITE: 7048 - NW 138TH ST 0.5 MILE WEST OF 36TH AVE/97TH AVE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	20300 C	E 9800	W 10500	9.00	54.50	22.30
2013	15900 E	E 8100	W 7800	9.00	52.40	5.00
2012	15500 S	E 7900	W 7600	9.00	55.70	4.30
2011	15700 F	E 8000	W 7700	9.00	55.10	3.90
2010	15900 C	E 8100	W 7800	8.98	54.08	4.00
2009	15000 C	E 7300	W 7700	8.99	53.24	2.80

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
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COUNTY: 87 - MIAMI-DADE

SITE: 8620 - HIALEAH GRDS BLVD, 200 FT N OF W 72ND ST, HIALEAH

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	28000 S	N 14000	S 14000	9.00	59.30	14.60
2013	28000 F	N 14000	S 14000	9.00	58.90	16.20
2012	28000 C	N 14000	S 14000	9.00	59.70	16.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
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V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
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County: 87 - MIAMI-DADE

Site: 8243 - W 68 ST/W 36 AVE, 200' SOUTH OF NW 130TH STREET

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2014	7700 F	N 4100	S 3600	9.00	54.50	14.60
2013	7700 C	N 4100	S 3600	9.00	52.40	16.20
2012	7000 F	0	0	9.00	55.70	16.00
2011	7100 C	N 0	S 0	9.00	55.10	14.70

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; F = Fourth Year Estimate
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COUNTY: 87 - MIAMI-DADE

SITE: 8176 - NW 87TH AVE, 200' SOUTH OF NW 186TH STREET

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	23500 S	N 10500	S 13000	9.00	54.50	17.40
2013	23500 F	N 10500	S 13000	9.00	52.40	16.20
2012	23500 C	N 10500	S 13000	9.00	55.70	16.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Florida Department of Transportation
Transportation Statistics Office
2014 Historical AADT Report

County: 87 - MIAMI-DADE

Site: 7076 - NW 122 ST- 300 FET EAST OF NW 92 AVE

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2014	25000 C	E 13000	W 12000	9.00	54.50	6.50
2013	20100 F	E 10500	W 9600	9.00	52.40	3.40
2012	20300 C	E 10500	W 9800	9.00	55.70	3.40
2011	17700 F	E 8900	W 8800	9.00	55.10	3.90
2010	17900 C	E 9000	W 8900	8.98	54.08	4.00

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; F = Fourth Year Estimate
V = Fifth Year Estimate; 6 = Sixth Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

APPENDIX C3:
RER DATABASE EXCERPT (MIAMI-DADE COUNTY)
PROVIDE October 2015

RER DATABASE EXCERPT (MIAMI-DADE COUNTY) PROVIDE October 2015

STUDY AREA	MDC ORI	STATION	ROADWAY	LOCATION	CL	MAX LOS	PHP	DOS TRIPS	AVAILABLE TRIPS	5%	EXISTING LOS	ADOPTED LOS	CNCRNCY LOS	UPDATED	AGENCY
1	41	9226	LUDLAM RD/NW 67 AVE	S/O NW 138 ST FROM NW 122 ST TO NW 138 ST	4	4800	1885	0	2915		B	E+50	B	10/21/2015 8:14	MDC
1	42	9228	NW 67 AVE/LUDLAM RD	S/O PALMETTO EXPWY/SR 826 TO NW 138 ST	4	5490	2575	0	2915		D	E+50	D	10/21/2015 8:14	MDC
1	43	9230	LUDLAM RD/NW 67 AVE	S/O SR 826 FROM NW 167 ST TO NW 170 ST	6	6156	3973	37	2146		E	EE	E	10/21/2015 8:14	MDC
1	44	9232	LUDLAM RD/NW 67 AVE	N/O NW 186 ST FROM NW 186 ST TO NW 202 ST	6	5060	2709	14	2337		C	D	C	10/21/2015 8:14	MDC
1	52	9256	MIAMI LAKES DRIVE WEST	W/O RED RD/NW 57 AVE TO NW 67 AVE	4	3360	859	158	2343		C	E+20	C	10/21/2015 8:14	MDC
1	53	9258	NW 154 ST	E/O SR 826 FROM NW 67 AVE TO SR 826	4	3160	2397	3	760		C	E	C	10/21/2015 8:14	MDC
1	126	9460	NW 62 AVE	S/O NW 138 ST TO NW 122 ST	2	2550	294	0	2256		C	E+50	C	10/21/2015 8:14	MDC
1	134	9476	NW 72 AVE	S/O NW 138 ST TO NW 114 ST	2	1740	597	0	1143		E	E+50	E	10/21/2015 8:14	MDC
1	154	9528	NW 138 ST (SR 916)	E/O NW 57 AVE TO NW 42 AVE	4	3680	1829	136	1715		B	E	B	10/21/2015 8:14	MDC
1	155	9532	NW 138 ST	W/O SR 826 TO NW 87 AVE	2	1820	939	10	871		B	D	B	10/21/2015 8:14	MDC
1	156	9534	NW 138 ST	S/W OF OKEECHOBEE RD TO NW 107 AVE	4	3620	641	166	2813		B	D	B	10/21/2015 8:14	MDC
1	158	9544	NW 154 ST	E/O NW 79 AVE SR 826 TO NW 84 AVE	4	2540	1797	0	743		C	D	C	10/21/2015 8:14	MDC
1	159	9546	NW 154 ST	W/O NW 87 AVE TO NW 92 AVE	2	710	202	0	508		C	D	C	10/21/2015 8:14	MDC
1	160	9550	NW 169 ST	E/O NW 77 CT TO NW 67 AVE	4	2510	1325	2	1183		C	D	C	10/21/2015 8:14	MDC
1	161	9552	NW 170 ST	E/O NW 87 AVE TO NW 77 AVE	2	1130	564	0	566		D	D	D	10/21/2015 8:14	MDC
1	367	870032	NW 47 AVE	S/O NW 215 ST FROM NW 199 ST TO BROWARD CO	A 2	1600	1337	0	263		C	HE	C	10/21/2015 11:29	FDOT
1	373	870038	NW 57 AVE/RED RD (SR 823)	N/O NW 159 ST FROM NW 138 ST TO SR 826	A 6	5390	3064	276	2050		C	E	C	10/21/2015 11:29	FDOT
1	416	870136	NW 138 ST (SR 916)	W/O NW 67 AVE FROM SR 826 TO NW 57 AVE	A 2	1130	1092	288	-250	Y	D	E	F	10/21/2015 11:29	FDOT
1	440	870360	NW 57 AVE/RED RD (SR 823)	S/O NW 138 ST TO NW 103 ST	A 4	3580	4053	450	-923	Y	F	E	F	10/21/2015 11:29	FDOT
1	445	870405	PALMETTO EXPWY (SR 826)	E/O NW 57 AVE/RED RD TO NW 47 AVE	8	13390	9252	0	4138		C	D	C	10/21/2015 11:29	FDOT
1	466	870554	PALMETTO EXPWY (SR 826)	W/O NW 57 AVE TO NW 67 AVE	6	10060	8885	0	1175		D	D	D	10/21/2015 11:29	FDOT
1	483	870575	PALMETTO EXPWY (SR 826)	N/O NW 122 ST TO NW 138 ST	8	13390	12673	15	702		D	D	D	10/21/2015 11:29	FDOT
1	535	871190	NW 57 AVE/RED RD (SR 823)	S/O NW 173 DR BET SR 826-MIAMI GARDENS DR	A 6	6468	4894	55	1519		C	EE	C	10/21/2015 11:29	FDOT
1	554	871233	NW 183 ST/MIAMI GARDENS DR	E/O NW 57 AVE/RED RD TO NW 37 AVE	A 6	6468	2316	14	4138		C	EE	C	10/21/2015 11:29	FDOT
1	583	972248	FLA TNPK. (HEFT/SR 821)	N/O OKEECHOBEE RD TO CCOUNTY LINE RD	6	10060	3238	3	6819		B	D	B	10/21/2015 11:29	FDOT
1	594	972272	FLA TNPK. (HEFT/SR 821)	S/O OKEECHOBEE RD TO SR 836	6	10060	3238	145	6677		B	D	B	10/21/2015 11:29	FDOT
1	600	872500	I-75 (SR 93)	W/O PALMETTO EXPWY TO BROWARD CO. LINE	8	13390	8525	194	4671		C	D	C	10/21/2015 11:29	FDOT
1	601	872501	I-75 (SR 93)	S/O NW 186 ST TO BROWARD CO. LINE	8	13390	8814	313	4263		C	D	C	10/21/2015 11:29	FDOT
1	603	872503	I-75 (SR 93)	N/O HEFT/SR 821 TO BROWARD CO. LINE	8	13390	11223	20	2147		D	D	D	10/21/2015 11:29	FDOT
1	604	872514	NW 57 AVE/RED RD (SR 823)	N/O NW 183 ST TO NW 199 ST	A 6	5080	2346	47	1431			D	B	9/3/2009 11:35	FDOT
1	605	872515	NW 57 AVE/RED RD (SR 823)	S/O NW 215 ST TO NW 199 ST	A 6	5080	3487	28	2050			D	B	9/3/2009 11:35	FDOT
1	606	872516	MIAMI GARDENS DR/NW 183 ST	W/O NW 57 AVE FROM NW 57 AVE TO NW 67 AVE	A 4	4296	3512	46	738		D	EE	D	10/21/2015 11:29	FDOT
1	607	872517	NW 186 ST/MIAMI GARDENS DR	W/O NW 67 AVE TO NW 77 AVE	A 4	4296	4058	26	212	Y	F	EE	E+14%	10/21/2015 11:29	FDOT
1	608	872518	MIAMI GARDENS DR/NW 183 ST	E/O I-75 TO NW 77 AVE	A 4	4296	3504	8	784		D	EE	D	10/21/2015 11:29	FDOT
1	633	877041	NW 122 ST / W 68 ST	W/O W 26TH AVE; FROM 826 TO NW 87 AVE	4	2920	1151	0	1769		C	D	C	10/21/2015 11:29	FDOT
1	634	877076	NW 122 ST / W 68 ST	E/O NW 92 AVE; FROM NW 87 AVE TO NW 97 AVE	4	2920	1088	127	1705		C	D	C	10/21/2015 11:29	FDOT

APPENDIX D:
FDOT LOS TABLES

TABLE 4

Generalized **Peak Hour Two-Way** Volumes for Florida's **Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,510	1,600	**
4	Divided	*	3,420	3,580	**
6	Divided	*	5,250	5,390	**
8	Divided	*	7,090	7,210	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	660	1,330	1,410
4	Divided	*	1,310	2,920	3,040
6	Divided	*	2,090	4,500	4,590
8	Divided	*	2,880	6,060	6,130

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	260	680	1,770
50-84%	190	600	1,770	>1,770
85-100%	830	1,770	>1,770	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,420
85-100%	340	960	1,560	>1,770

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	4,120	5,540	6,700	7,190
6	6,130	8,370	10,060	11,100
8	8,230	11,100	13,390	15,010
10	10,330	14,040	16,840	18,930
12	14,450	18,880	22,030	22,860

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	770	1,530	2,170	2,990
4	Divided	3,300	4,660	5,900	6,530
6	Divided	4,950	6,990	8,840	9,790

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 4
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's **Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (lu, u)	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n								
Median (n, nr, r)		n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		80							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.97	0.98						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				4	4	10	10	4	6
Arrival type (1-6)				3	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	120	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 7

Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	830	880	**
2	Divided	*	1,910	2,000	**
3	Divided	*	2,940	3,020	**
4	Divided	*	3,970	4,040	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	370	750	800
2	Divided	*	730	1,630	1,700
3	Divided	*	1,170	2,520	2,560
4	Divided	*	1,610	3,390	3,420

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,260	3,020	3,660	3,940
3	3,360	4,580	5,500	6,080
4	4,500	6,080	7,320	8,220
5	5,660	7,680	9,220	10,360
6	7,900	10,320	12,060	12,500

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	420	840	1,190	1,640
2	Divided	1,810	2,560	3,240	3,590
3	Divided	2,720	3,840	4,860	5,380

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	150	390	1,000
50-84%	110	340	1,000	>1,000
85-100%	470	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 7
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (lu, u)	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n								
Median (n, nr, r)		n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		80							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.97	0.98						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				4	4	10	10	4	6
Arrival type (1-6)				3	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	120	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, w)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

APPENDIX E1:
Trip Generation for Existing CDMP Designations – AM Peak

Trip Generation Summary for Existing CDMP Land Use Plan Map Designations (AM Analysis)

	Land Use	ITE Code	Size	Units	Trip Rates Daily	Trip Rates AM Peak	Trips Daily	Trips AM Peak Hour Total		Trips AM Peak Hour In		Trips AM Peak Hour Out
American Dream Miami (+/-194 acres)	**WEST OF NW 97TH AVE (+/-66 Acres)**											
	Office	710	300	KSF	10.36	1.51	3,108	452	88%	398	12%	54
	Business Park	770	500	KSF	12.24	1.39	6,120	693	84%	582	16%	111
	Warehouse	150	3,200	KSF	4.96	0.45	15,872	1,440	82%	1,181	18%	259
	Gross Total Trips West						**25,100**	**2,585**		**2,161**		**424**
	ADM Portion of Land =	19.1%	(65.9 acres / 345.8 acres)									
	ADM Property Total Trips West						**4,783**	**493**		**412**		**81**
	EAST OF NW 97TH AVE (+/-128.2 Acres)											
	Warehouse (128.2 acre * 0.5 FAR)	150	2,792	KSF	4.96	0.45	13,849	1,256	82%	1,030	18%	226
	ADM Property Total Trips East						**13,849**	**1,256**		**1,030**		**226**
	TOTAL TRIPS (+/-194.1 Acres)											
	ADM Property Total Trips						**18,632**	**1,749**		**1,442**		**307**

	Land Use	ITE Code	Size	Units	Trip Rates Daily	Trip Rates AM Peak	Trips Daily	Trips AM Peak Hour Total		Trips AM Peak Hour In		Trips AM Peak Hour Out
Graham Project (+/-340 acres)	**WEST OF NW 97TH AVE (+/-279.9 Acres)**											
	Office	710	300	KSF	10.36	1.51	3,108	452	88%	398	12%	54
	Business Park	770	500	KSF	12.24	1.39	6,120	693	84%	582	16%	111
	Warehouse	150	3,200	KSF	4.96	0.45	15,872	1,440	82%	1,181	18%	259
	Gross Total Trips West						**25,100**	**2,585**		**2,161**		**424**
	GP Portion of Land =	80.9%	(279.9 acres / 345.8 acres)									
	GP Property Total Trips West						**20,317**	**2,092**		**1,749**		**343**
	EAST OF NW 97TH AVE (+/-60.2 Acres)											
	Warehouse (60.2 acre * 0.5 FAR)	150	1,311	KSF	4.96	0.45	6,502	590	82%	484	18%	106
	GP Property Total Trips East						**6,502**	**590**		**484**		**106**
	TOTAL TRIPS (+/-345.8 Acres)											
	GP Property Total Trips						**26,819**	**2,682**		**2,233**		**449**

APPENDIX E2:
Trip Generation Summary for American Dream Miami-
AM Peak & Saturday

Trip Generation Summary for American Dream Miami
(Daily & AM Peak)

Land Use	ITE Code	Size	Units	Trip Rates		Trips					
							AM Peak Hour				
				Daily	AM Peak	Daily	Total		In		Out
Entertainment/Retail (GLA)	-	3,500	KSF	19.21	0.32	67,251	1,104	51%	563	49%	541
Total Generated Trips (pre-LRT adjustment)						**67,251**	**1,104**		**563**		**541**
AM Internal Capture =	0.0%					0	0				0
Net External Trips (pre-LRT adjustment)						**67,251**	**1,104**		**563**		**541**
LRT Adjustment =	10.8%	of net external trips				4,682	77		39		38
Net External Trips						**71,933**	**1,027**		**524**		**503**
Passerby Trips =	14.0%	of net external trips				10,071	155		79		76
New External Trips						**61,862**	**949**		**484**		**465**

Notes:
- Rates shown in units of external vehicle trips per period per 1,000 square feet of retail GLA where American Dream Miami consists of 3,500 ksf retail GLA within 6,200 ksf GFA (includes entertainment) plus hotel.
- Surveys at MOA show 10.8% LRT trips. This % added back into ADM with MOA auto occupancy of 2.3 applied.
- Diverted trips calculated from ITE's fitted curve for Shopping Center pass-by %.

Trip Generation Summary for American Dream Miami
(Saturday & Saturday Peak Hour Generator)

Land Use	ITE Code	Size	Units	Trip Rates		Trips					
				Saturday Daily	Saturday Pk Hr Generator		Peak Hour (Generator)				
						Daily	Total		In		Out
Entertainment/Retail (GLA)	-	3,500	KSF	29.06	2.34	101,710	8,183	50%	4,092	50%	4,091
Total Generated Trips (pre-LRT adjustment)						**101,710**	**8,183**		**4,092**		**4,091**
Saturday Internal Capture =	0.0%					0	0		0		0
Net External Trips (pre-LRT adjustment)						**101,710**	**8,183**		**4,092**		**4,091**
LRT Adjustment =	10.8%	of net external trips				7,081	570		285		285
Net External Trips						**108,791**	**8,753**		**4,377**		**4,376**
Passerby Trips =	14.0%	of net external trips				15,231	1,225		573		652
New External Trips						**93,560**	**7,528**		**3,804**		**3,724**

Notes:
- Rates shown in units of external vehicle trips per period per 1,000 square feet of retail GLA where American Dream Miami consists of 3,500 ksf retail GLA within 6,200 ksf GFA (includes entertainment) plus hotel.
- Surveys at MOA show 10.8% LRT trips. This % added back into ADM with MOA auto occupancy of 2.3 applied.
- Diverted trips calculated from ITE's fitted curve for Shopping Center pass-by %.

APPENDIX E3:
Trip Generation Summary for Graham Project – AM Peak

Trip Generation Summary for Graham Project
(Daily & AM Peak)

	Land Use	ITE Code	Size	Units	Trip Rates		Trips					
								AM Peak Hour				
					Daily	AM Peak	Daily	Total	In		Out	
Graham Project (2020)	Commercial	820	150	KSF	58.93	0.96	8,840	144	62%	89	38%	55
	Business Park	770	250	KSF	13.48	1.38	3,370	345	85%	293	15%	52
	Multi-Family Apartment	220	500	DU	6.31	0.50	3,155	250	20%	50	80%	200
	Total Generated Trips						**15,365**	**739**		**432**		**307**
	PM Internal Capture =	5.4%	of net external trips					40		23		17
	Net External Trips							**699**		**409**		**290**
	Passerby Trips =	35.0%	of ext'l comm'l trips					44		27		17
	New External Trips							**655**		**382**		**273**

	Land Use	ITE Code	Size	Units	Trip Rates		Trips					
								AM Peak Hour				
					Daily	AM Peak	Daily	Total	In		Out	
Graham Project (2040)	Commercial	820	1,000	KSF	30.33	0.96	30,330	960	62%	595	38%	365
	Business Park	770	3,000	KSF	10.86	1.28	32,580	3,840	85%	3,264	15%	576
	Multi-Family Apartment	220	2,000	DU	6.12	0.49	12,240	980	20%	196	80%	784
	Total Generated Trips						**75,150**	**5,780**		**4,055**		**1,725**
	PM Internal Capture =	4.3%	of net external trips					250		175		75
	Net External Trips							**5,530**		**3,880**		**1,650**
	Passerby Trips =	20.0%	of ext'l comm'l trips					168		104		64
	New External Trips							**5,362**		**3,776**		**1,586**

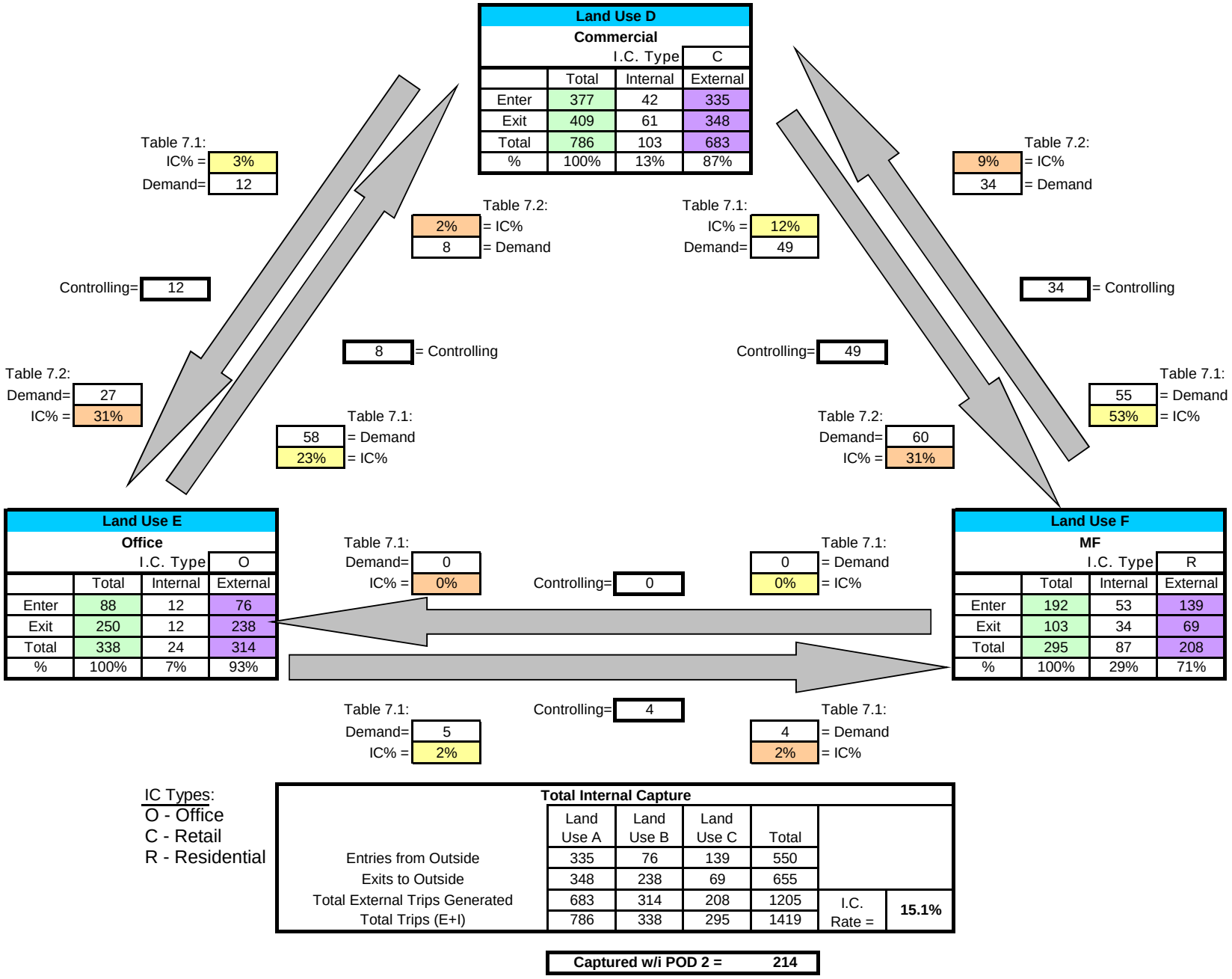
APPENDIX E4:
Internal Capture Matrices for Graham Project

GRAHAM PROJECT

Internal Capture

PM Peak - Year 2020

Source: ITE's *Trip Generation Handbook, 2004.*



IC Types:
O - Office
C - Retail
R - Residential

Total Internal Capture

	Land Use A	Land Use B	Land Use C	Total		
Entries from Outside	335	76	139	550		
Exits to Outside	348	238	69	655		
Total External Trips Generated	683	314	208	1205	I.C. Rate =	**15.1%**
Total Trips (E+I)	786	338	295	1419		

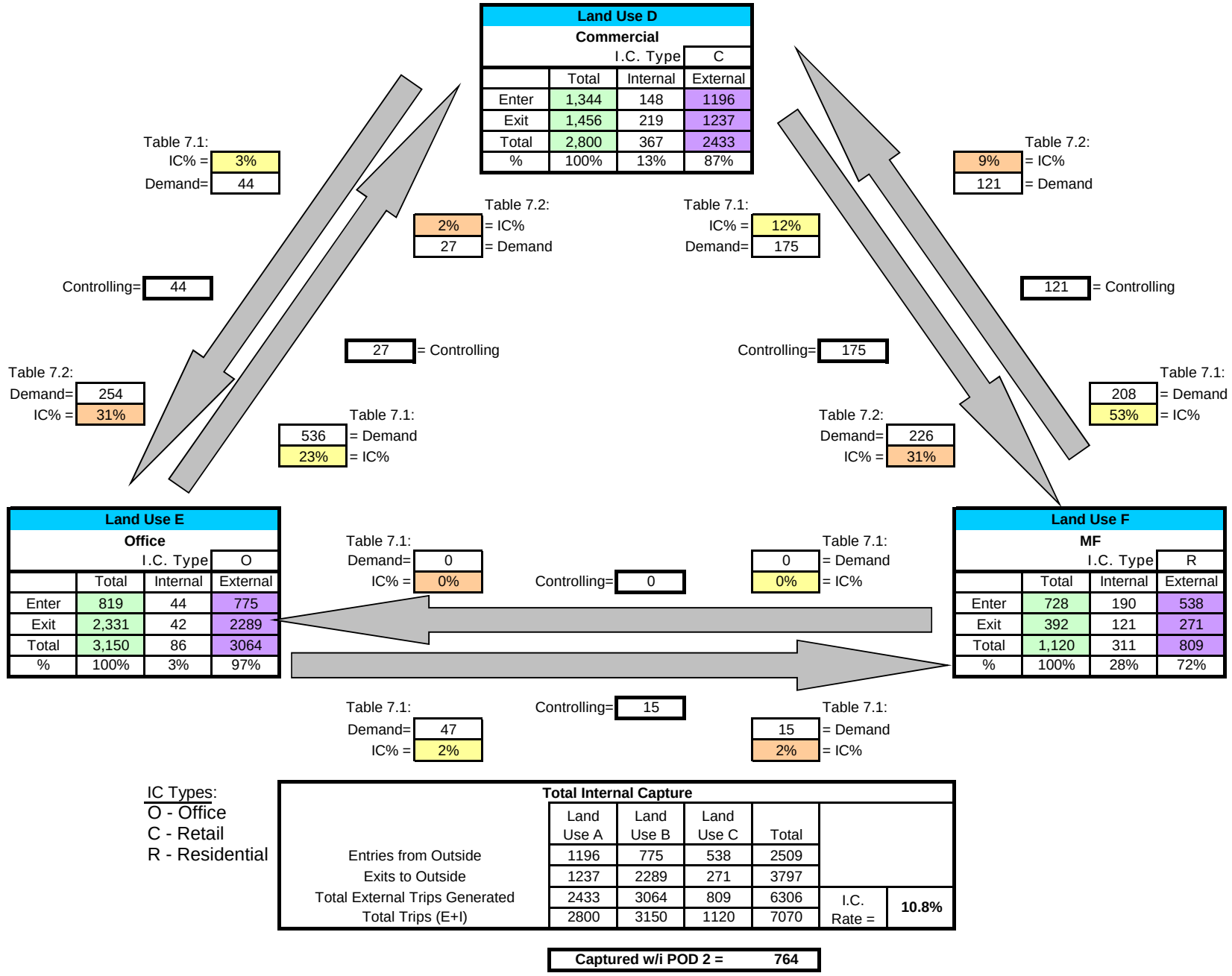
Captured w/i POD 2 = 214

GRAHAM PROJECT

Internal Capture

PM Peak - Year 2040

Source: ITE's *Trip Generation Handbook, 2004.*



IC Types:
O - Office
C - Retail
R - Residential

Total Internal Capture

	Land Use A	Land Use B	Land Use C	Total		
Entries from Outside	1196	775	538	2509		
Exits to Outside	1237	2289	271	3797		
Total External Trips Generated	2433	3064	809	6306	I.C. Rate =	**10.8%**
Total Trips (E+I)	2800	3150	1120	7070		

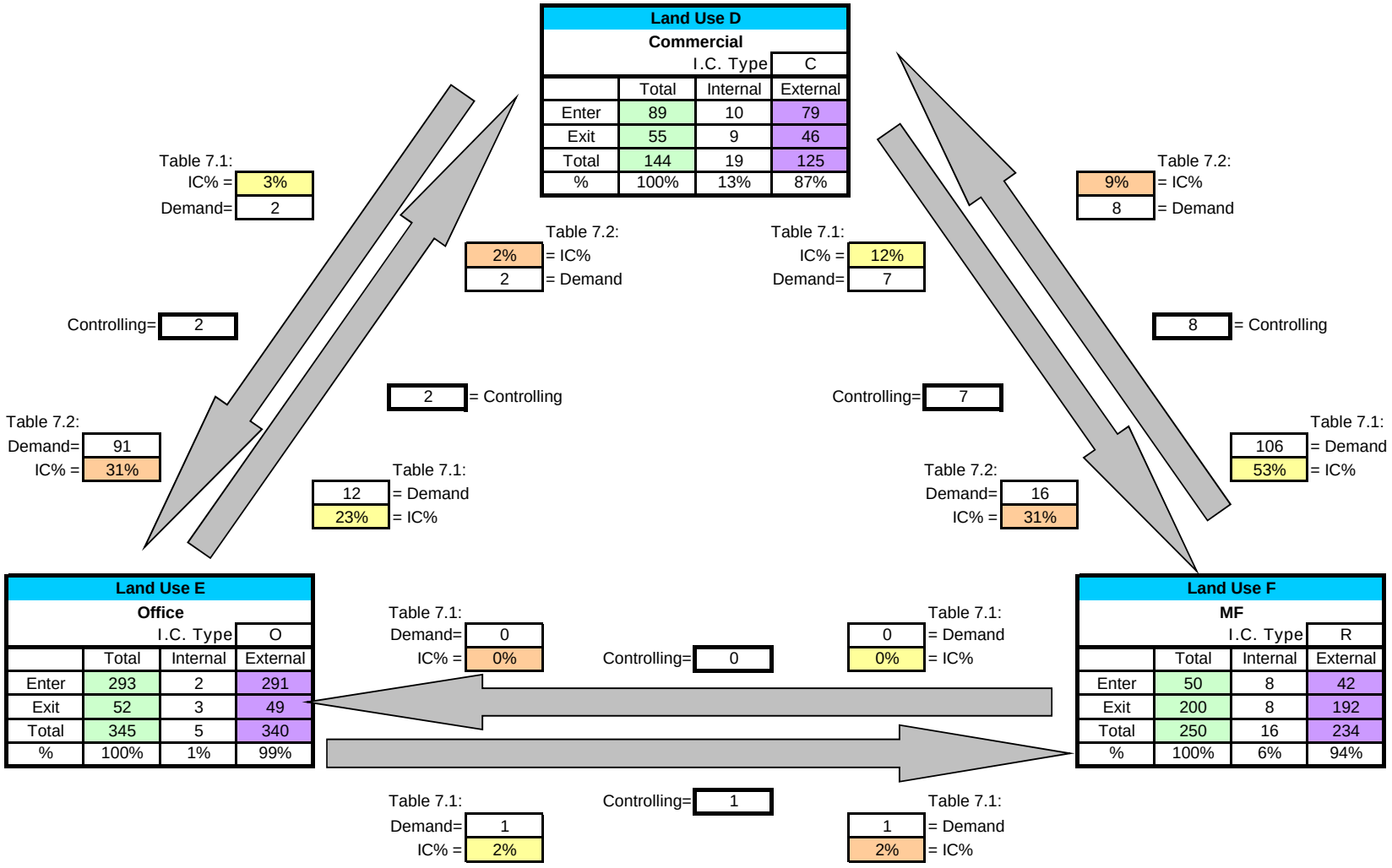
Captured w/i POD 2 = 764

GRAHAM PROJECT

Internal Capture

AM Peak - Year 2020

Source: ITE's *Trip Generation Handbook, 2004.*



IC Types:
O - Office
C - Retail
R - Residential

Total Internal Capture

	Land Use A	Land Use B	Land Use C	Total		
Entries from Outside	79	291	42	412		
Exits to Outside	46	49	192	287		
Total External Trips Generated	125	340	234	699	I.C. Rate =	**5.4%**
Total Trips (E+I)	144	345	250	739		

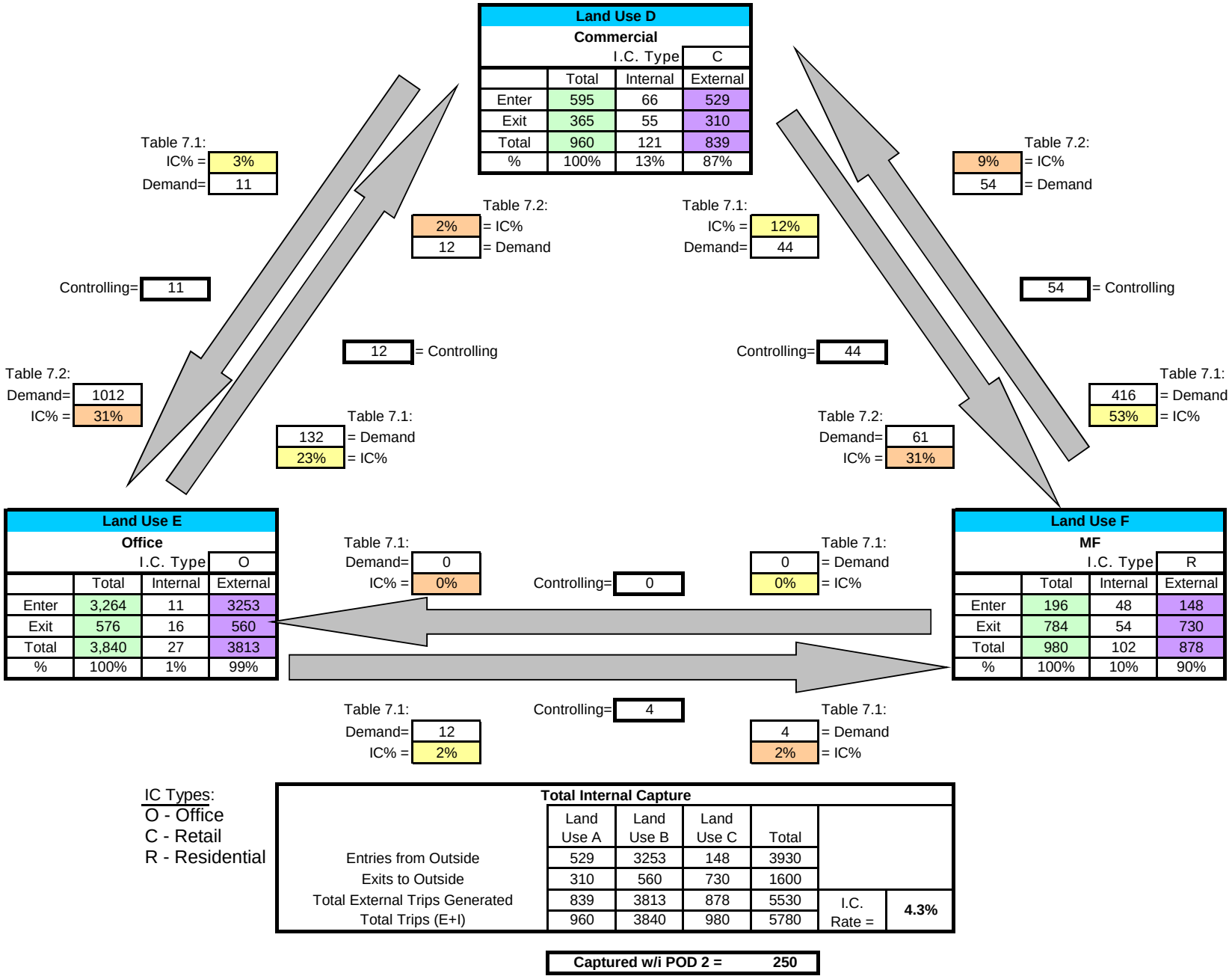
Captured w/i POD 2 = 40

GRAHAM PROJECT

Internal Capture

AM Peak - Year 2040

Source: ITE's *Trip Generation Handbook, 2004.*



IC Types:
O - Office
C - Retail
R - Residential

Total Internal Capture

	Land Use A	Land Use B	Land Use C	Total		
Entries from Outside	529	3253	148	3930		
Exits to Outside	310	560	730	1600		
Total External Trips Generated	839	3813	878	5530	I.C. Rate =	**4.3%**
Total Trips (E+I)	960	3840	980	5780		

Captured w/i POD 2 = 250

APPENDIX F:
MOA Traffic Counts Reports

Kimley»Horn

MEMORANDUM

To: Lori Hartglass, Esq.
Arnstein & Lehr, LLP

From: Douglas Arnold, P.E.
Kimley-Horn and Associates, Inc.

Date: September 9, 2015

Re: Trip Generation Study
Mall of America, Bloomington, Minnesota

Introduction

Kimley-Horn and Associates, Inc., (Kimley-Horn) was retained by Arnstein and Lehr to the vehicle trip generation characteristic of the Mall of America (MOA) in Bloomington, Minnesota. The MOA is a unique land use as it provides shopping, hotels, and an indoor amusement park, which differs from a typical shopping mall. As such, published trip generation data is not available.

The purpose of this study is to establish trip generation characteristics for the MOA which can be used to project trips that may be generated by a similar development. Trip generation rates will be calculated for weekday (daily, AM peak hour, and PM peak hour) and Saturday (daily and peak hour).

Existing Conditions

The MOA is a 4,600,000 square feet mall in Bloomington, Minnesota, which includes 2,581,582 square feet of leasable area in addition to attractions, hotel, and common areas. The MOA is located near two major highways, TH 77 and I-494, and the Minneapolis-St. Paul International Airport, offering easy access from all directions. Vehicular traffic to the MOA is served by eight access points for parking facilities along Lindau Lane, Killebrew Drive, 24th Avenue South, and two overflow lots.

- Lindau Lane is an E-W six-lane divided road that runs along the north side of MOA. To the east, Lindau Lane connects to 24th Avenue South, and to the west, Lindau Lane merges with TH 77.

- Killebrew Drive is an E-W six-lane divided road that runs along the south side of MOA. To the east, Killebrew Drive connects to 24th Avenue South, and to the west, Killebrew Lane merges with TH 77.

- 24th Avenue South is a six-lane N-S road that runs along the east side of the MOA. In addition to its intersections with Lindau Lane and Killebrew Drive, this road connects to I-494 in the north and TH 77 in the south.

- The east overflow lot is located east of 24th Ave. South, directly across from the MOA, and the north overflow lot is located north of Lindau Lane, directly north of the MOA.

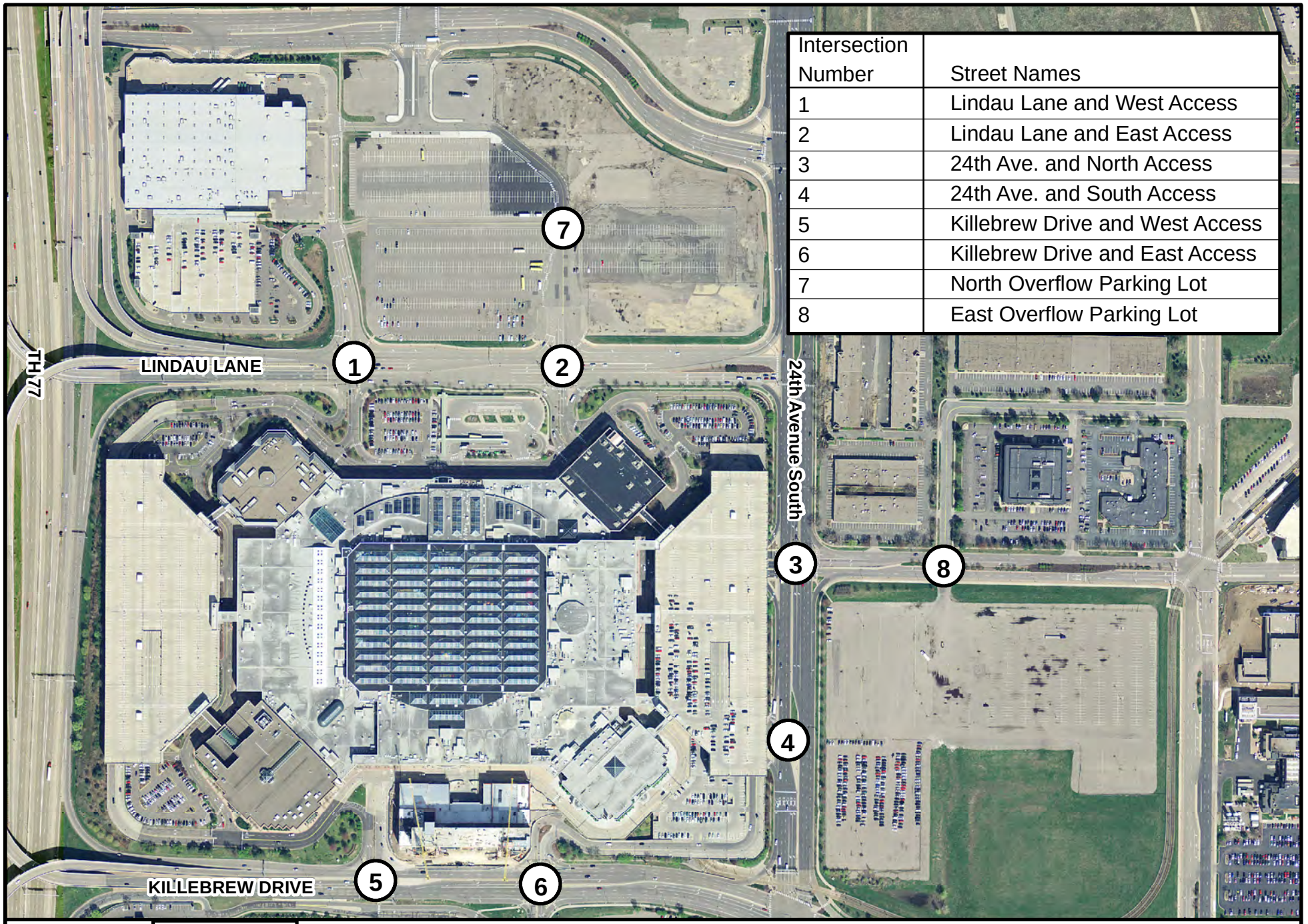
Data Collection

To understand the total number of vehicles travelling to and from the MOA, traffic volumes were collected in 15-minute increments at all ingress/egress points of the MOA for a 4-day period from Wednesday, August 12th, 2015 to Sunday, August 16th, 2015. The locations of the counts can be seen in **Exhibit 1** and are listed below.

- Lindau Lane and West Access
- Lindau Lane and East Access
- 24th Avenue South and North Access
- 24th Avenue South and South Access
- Killebrew Drive and West Access
- Killebrew Drive and East Access
- North Overflow Parking Lot
- East Overflow Parking Lot

It should be noted that the 24th Avenue South and South Access intersection is gate controlled with a security guard, and only serves buses, taxis, hotel shuttles, and other authorized vehicles. All other access locations provide access to/from the MOA parking garages and overflow lots.

In addition to the traffic counts collected in August 2015, the MOA recorded entering traffic throughout the year in 2014. The data was summarized on a monthly basis in order to determine the variation in traffic throughout the year.



Intersection Number	Street Names
1	Lindau Lane and West Access
2	Lindau Lane and East Access
3	24th Ave. and North Access
4	24th Ave. and South Access
5	Killebrew Drive and West Access
6	Killebrew Drive and East Access
7	North Overflow Parking Lot
8	East Overflow Parking Lot

Kimley»Horn

AUGUST 2015

EXHIBIT 1
Parking Ingress/Egress Locations
Mall of America

Trip Generation Analysis

Site-generated trip projections are typically calculated with the use of data in the Institute of Transportation Engineers (ITE) manual, Trip Generation, 9th Edition (often referred to as the Trip Generation Manual). In situations where information is not available in the manual for the specified land use, or the size of the proposed development is beyond the applicable range for the rates/equations in the manual, rates are typically developed by surveying an existing land use of similar size. The ITE land use code (LUC) Shopping Center (820), which is defined by ITE as *an integrated group of commercial establishments that is planned, developed, owned and managed as a unit*, is most similar to the MOA.

The sites used to develop the data for ITE LUC 820 were surveyed from the 1960s to the 2000s, and range in size from 1,700 square feet to 2,200,000 square feet, with an average size of +/- 350,000 square feet. Due to the unique nature of the MOA, the ITE land use code would not be considered a comparable land use. Therefore, the count data described previously was used to calculate trip generation characteristics of the MOA.

Trip Generation based on Observed Volumes

The traffic count data was summarized for the weekday (Wednesday, Thursday, and Friday) and Saturday time periods. Trip generation rates were calculated for the following scenarios:

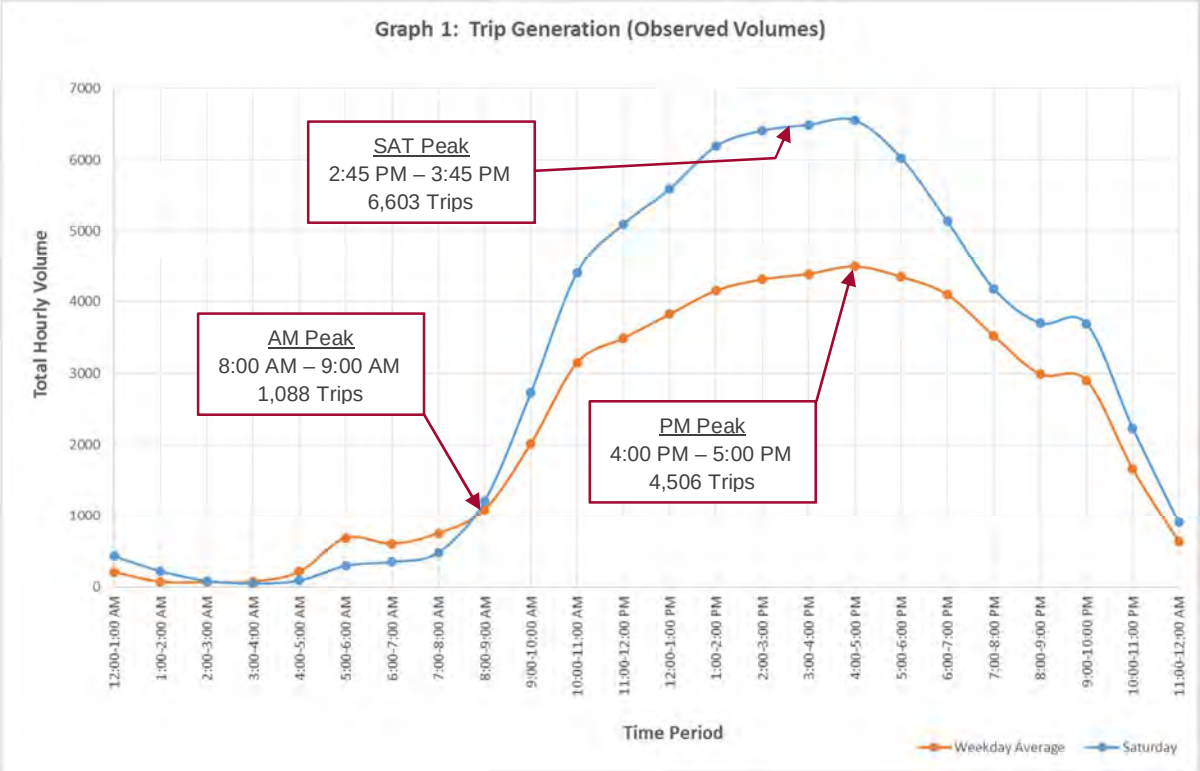
- Weekday Daily
- Weekday AM Peak Hour (Adjacent Street Traffic)
- Weekday AM Peak Hour (Generator)
- Weekday PM Peak Hour (Adjacent Street Traffic)
- Weekday PM Peak Hour (Generator)
- Saturday Daily
- Saturday Peak Hour (Peak Hour of Generator)

Consistent with the ITE Trip Generation Manual, the AM peak hour of the adjacent street traffic was calculated between 7:00 AM and 9:00 AM, and the PM peak hour of the adjacent street was calculated between 4:00 PM and 6:00 PM. The weekday data was averaged across all study locations in 15-minute increments to determine a weekday trip generation rate. For Saturday, the peak hour of the entire day was calculated.

Table 1 provides a summary of the trip generation for the MOA. The trip generation rates are based on 2,581,582 square feet of gross leasable area that currently exists as part of the MOA. Volume information for each of the study intersections is included as an attachment to this memorandum.

Table 1: Trip Generation Summary (Observed Volumes)								
Analysis Period	Scenario	Hour	Raw Data (August 2015)			Trip Rate	Percent Entering	Percent Exiting
			Entering	Exiting	Total			
Weekday	Daily		26,276	27,501	53,777	20.83	49%	51%
	AM Peak Hour (Adjacent Street Traffic)	8:00 AM - 9:00 AM	550	538	1,088	0.42	51%	49%
	AM Peak Hour (Generator)	11:00 AM - 12:00 PM	1,608	1,881	3,489	1.35	46%	54%
	PM Peak Hour (Adjacent Street Traffic)	4:00 PM - 5:00 PM	2,205	2,301	4,506	1.75	49%	51%
	PM Peak Hour (Generator)	3:45 PM - 4:45 PM	2,233	2,285	4,518	1.75	49%	51%
Saturday	Daily		35,231	37,355	72,586	28.12	49%	51%
	Saturday Peak Hour (Generator)	2:45 PM - 3:45 PM	3,296	3,307	6,603	2.56	50%	50%

Graph 1 provides the raw hourly volumes for the average weekday and Saturday.



Trip Generation based on Average Annual Volumes

Because of the unique characteristics of the MOA being a national/international destination, there are seasonal variations in traffic generated by the MOA. Year 2014 weekly entering volume counts were provided and used to determine the annual average trips generated by the MOA during the weekday and Saturday. The adjustment factor to convert the observed volumes to average annual volumes was calculated using **Equation 1** below.

Equation 1: $$Percent\ of\ Traffic = \frac{Average\ Daily\ Trips\ Generated\ in\ One\ Month}{Average\ Trips\ Generated\ across\ the\ Year} * 100$$

If the percent of traffic is less than 100 percent, then the traffic generated by the MOA during a given month is less than the annual average traffic generated, and the observed traffic should be increased to account for the seasonal traffic variations. Similarly, if the percent of traffic is greater than 100percent, then the observed traffic should be decreased to account for seasonal variations. By applying these corrections, the measured trips generated can be adjusted to represent the average annual daily trips generated. Based on the seasonal traffic distribution and the month of data collection, the weekday observed volumes were 108% (or 8% higher) of the average annual weekday trips generated and the Saturday observed volumes were 96% (or 4% lower) of the average annual trips generated for a Saturday.

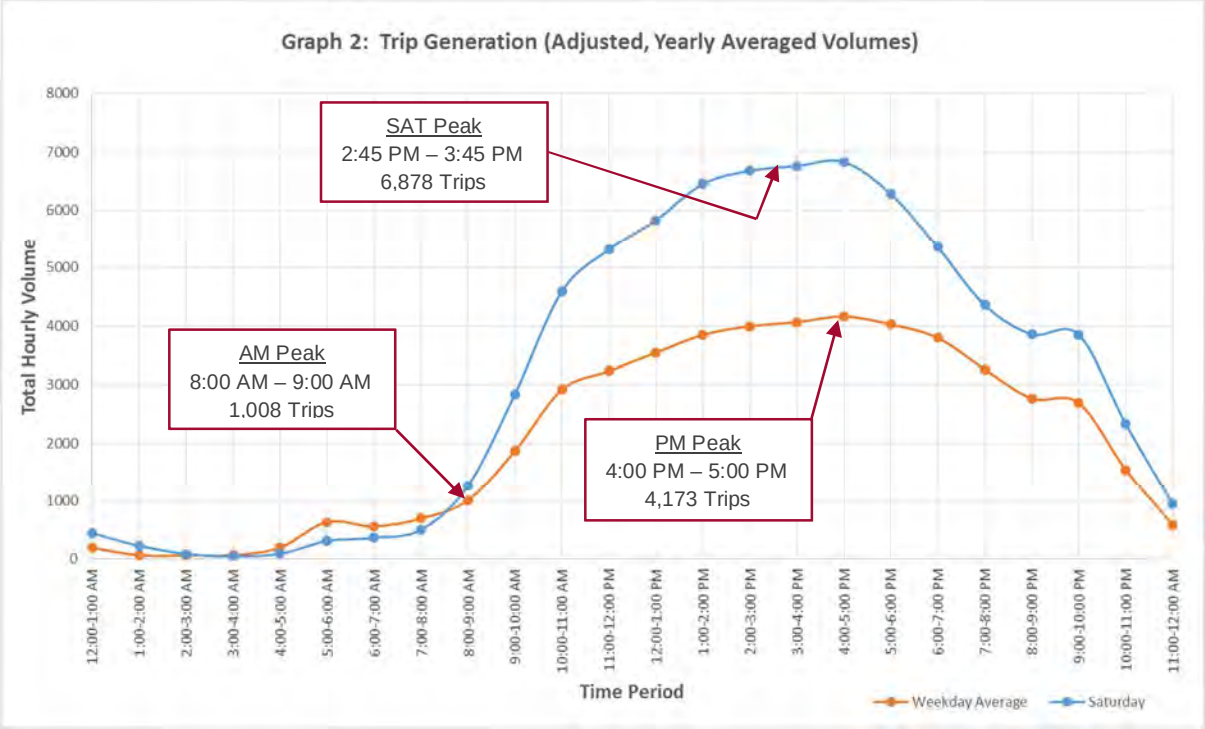
Based on the percent of traffic, the observed volumes were adjusted to reflect the annual average trip generation for a typical weekday and Saturday using the following equation (**Equation 2**).

Equation 2: $$Annual\ Average\ Traffic\ Volume = \frac{Observed\ Traffic\ Volume}{Percent\ of\ Traffic * 100}$$

Table 2 provides a summary of the trip generation for the MOA, adjusted to an annual average volume. The trip generation rates are based on 2,581,582 square feet of gross leasable area that currently exists as part of the MOA.

Table 2: Trip Generation Summary (Average Annual Volumes)								
Analysis Period	Scenario	Hour	Adjusted (Yearly Average)			Trip Rate	Percent Entering	Percent Exiting
			Entering	Exiting	Total			
Weekday	Daily		24,332	25,468	49,800	19.29	49%	51%
	AM Peak Hour (Adjacent Street Traffic)	8:00 AM - 9:00 AM	510	498	1,008	0.39	51%	49%
	AM Peak Hour (Generator)	11:00 AM - 12:00 PM	1,489	1,742	3,231	1.25	46%	54%
	PM Peak Hour (Adjacent Street Traffic)	4:00 PM - 5:00 PM	2,042	2,131	4,173	1.62	49%	51%
	PM Peak Hour (Generator)	3:45 PM - 4:45 PM	2,068	2,115	4,183	1.62	49%	51%
Saturday	Daily		36,702	38,911	75,613	29.29	49%	51%
	Saturday Peak Hour (Generator)	2:45 PM - 3:45 PM	3,433	3,445	6,878	2.66	50%	50%

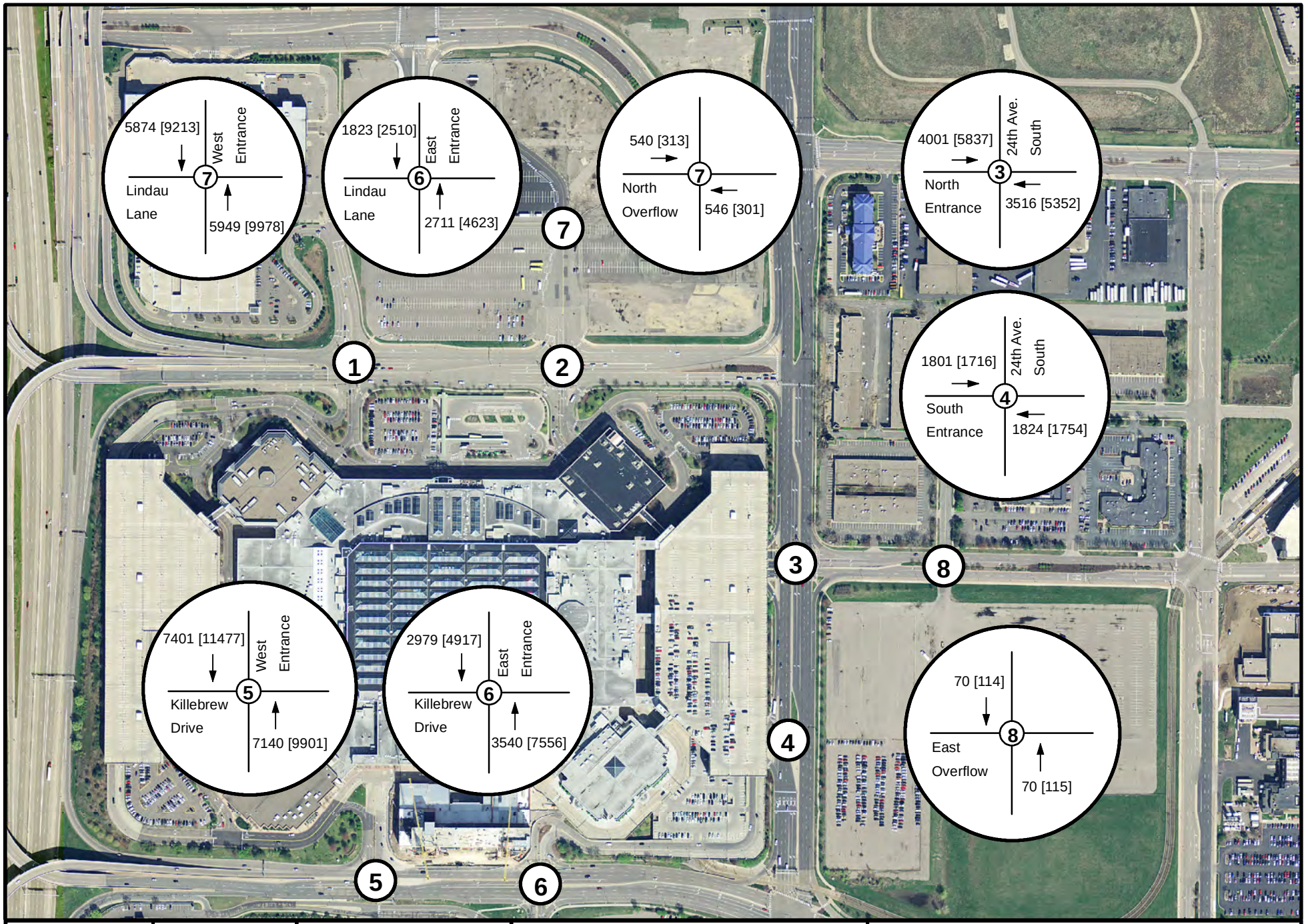
Graph 2 provides the average annual hourly volumes for the weekday and Saturday.



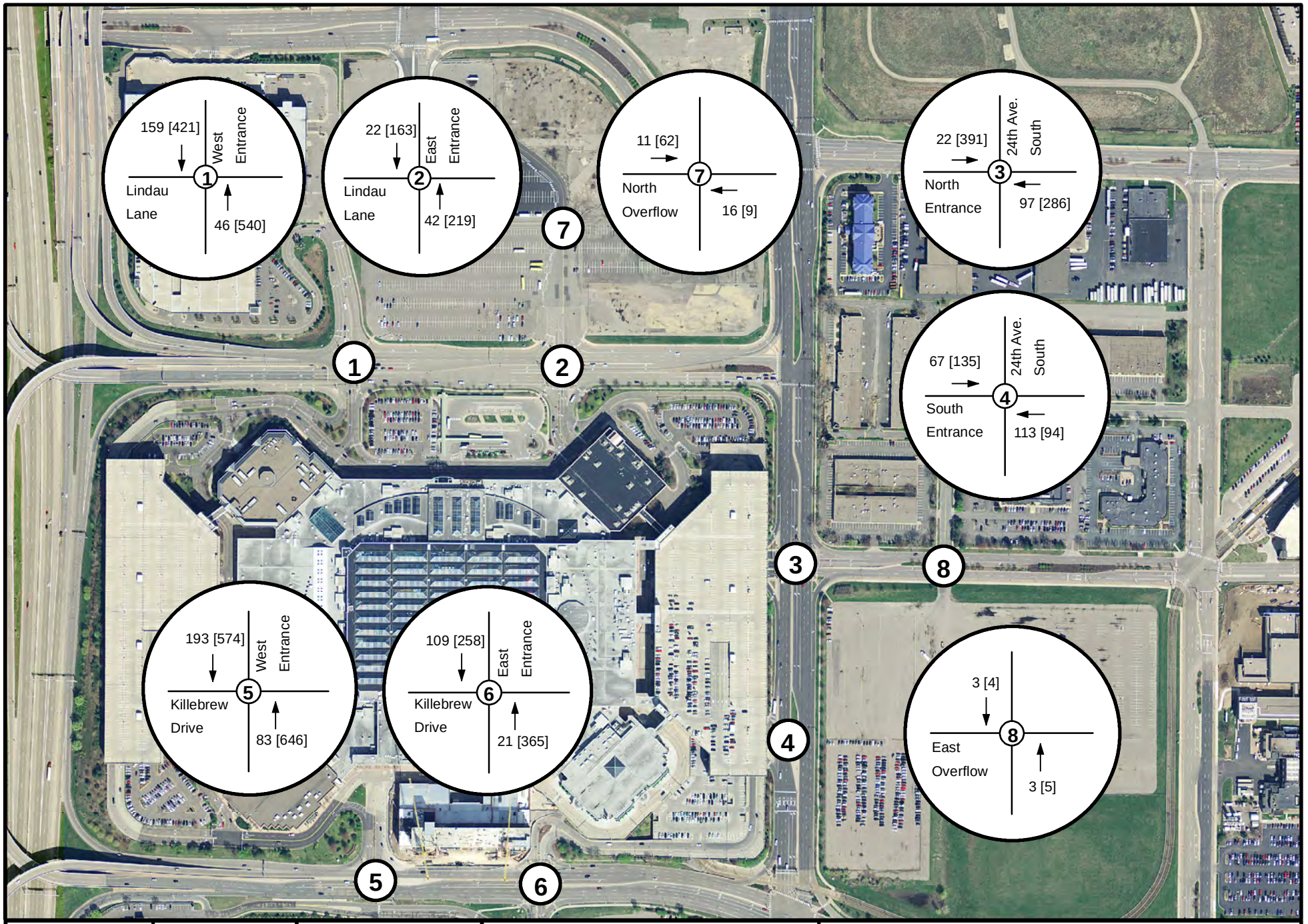
Summary

Based upon the data provided in the ITE manual for LUC 820, it does not appear to be an applicable land use. The traffic steadily increases until the PM peak and then declines. The Saturday peak hour is generally higher throughout the day as comparted to the average weekday data; however the adjacent street traffic is likely lower during the Saturday peak hour.

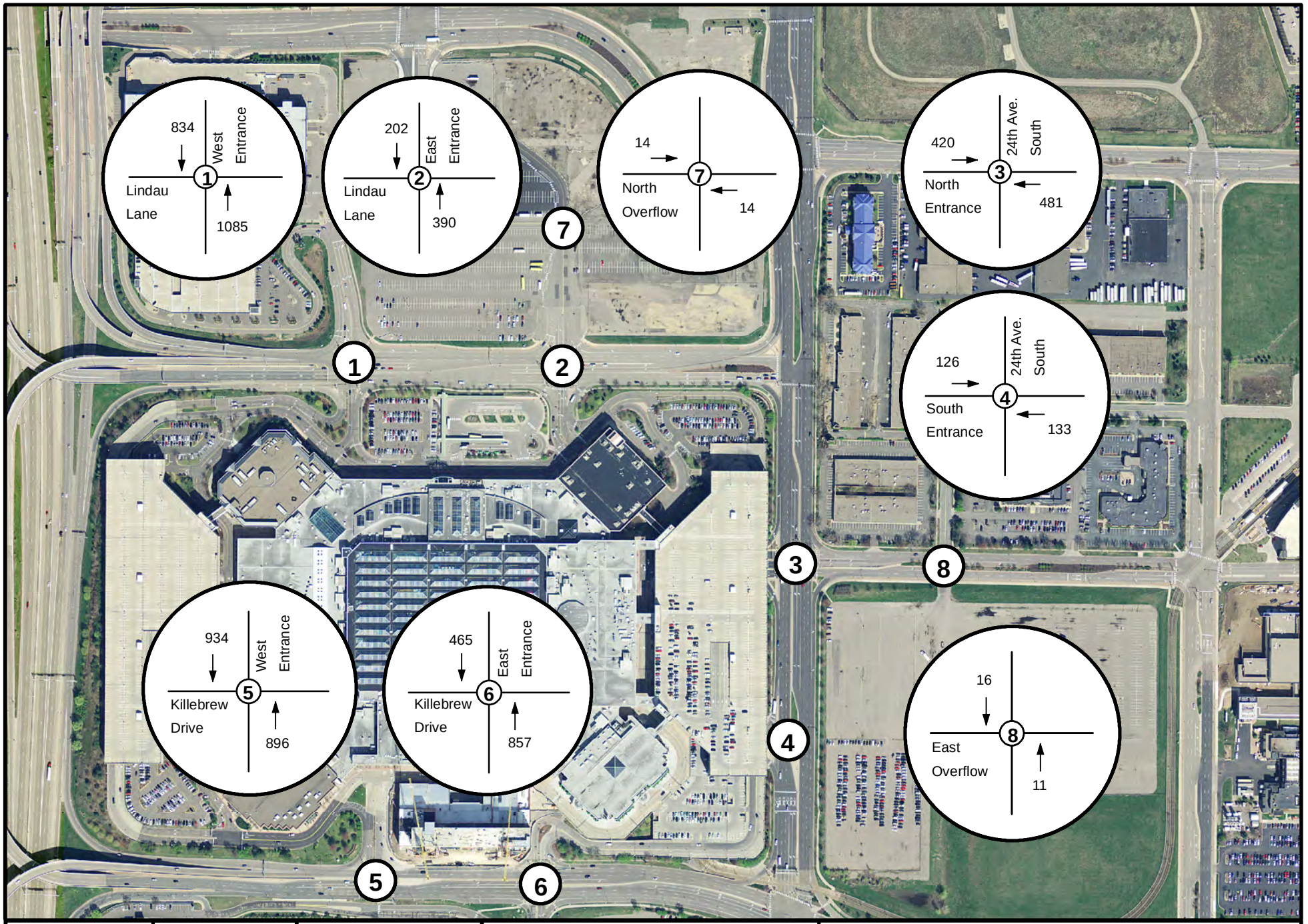
Exhibit 2 provides the entering and exiting annual average daily volumes at each of the study intersections for the weekday and Saturday. **Exhibit 3** provides the annual average weekday AM and PM peak hour (of adjacent street) volumes at the study intersection. **Exhibit 4** provides the annual average Saturday peak hour (of adjacent street) volumes at the study intersections.



Kimley»Horn	**AUGUST 2015**	**Legend** **xx = Weekday** **[xx] = Saturday**		**EXHIBIT 2** **Adjusted Daily Trip Generation** **Mall of America**



Kimley»Horn	**AUGUST 2015**	**Legend** **xx = AM Peak** **[xx] = PM Peak**		**EXHIBIT 3** **Adjusted Weekday Peak Hour Trip Generation** **Mall of America**



Kimley»Horn	**AUGUST 2015**	**Legend** **xx = Sat. Peak**		**EXHIBIT 4** **Adjusted Saturday Peak Hour Trip Generation** **Mall of America**

Other Modes of Transportation to MOA

It is important to note that a customer has a wide variety of mode choices when travelling to/from the MOA, which would reduce the overall trip generation. There is currently a transit transfer station located at the east end of the MOA, which serves light rail transit (LRT) that terminates at the MOA, in addition to bus routes. The METRO Blue Line LRT serves the airport and downtown Minneapolis, and the METRO Green Line LRT provides service between downtown Minneapolis and downtown Saint Paul. There are many hotels in the area that offer free shuttles to the MOA for their guests. The Minneapolis-Saint Paul International Airport located on the other side of I-494 from the MOA, and provides transportation to the MOA through the LRT and taxis.

Conclusions and Recommendations

Based on a review of existing year traffic counts at the ingress and egress access points of the MOA, the MOA is generating the following trips (and associated trip rate) based on the annual average volumes:

- Weekly Daily: 49,800 trips (19.29 trips per 1,000 SF)
- Weekday AM Peak Hour of Adjacent Street: 1,008 trips (0.39 trips per 1,000 SF)
- Weekday PM Peak Hour of Adjacent Street: 4,173 trips (1.62 trips per 1,000 SF)
- Saturday Daily: 75,613 trips (29.29 trips per 1,000 SF)
- Saturday Peak Hour of Generator: 6,878 trips (2.66 trips per 1,000 SF)

Kimley»Horn

ATTACHMENTS

- RAW DATA COLLECTION
- SEASONAL VOLUME INFORMATION

Lindau Lane at West Access

Start Time	End Time	Wednesday (8/12/2015)		Thursday (08/13/2015)		Friday (08/14/2015)		Saturday (08/15/2015)	
		In Total	Out Total	In Total	Out Total	In Total	Out Total	In Total	Out Total
12:00 AM	12:15 AM	1	2	1	2	2	10	3	11
12:15 AM	12:30 AM	0	5	0	2	1	6	5	10
12:30 AM	12:45 AM	1	2	1	6	3	9	3	7
12:45 AM	1:00 AM	1	5	0	2	0	2	0	5
1:00 AM	1:15 AM	0	4	0	4	0	1	1	7
1:15 AM	1:30 AM	0	4	1	2	0	0	0	15
1:30 AM	1:45 AM	1	1	0	0	1	1	4	3
1:45 AM	2:00 AM	1	0	1	0	1	1	0	5
2:00 AM	2:15 AM	1	1	0	4	1	7	0	7
2:15 AM	2:30 AM	0	1	0	0	2	3	0	1
2:30 AM	2:45 AM	0	3	0	0	0	0	0	0
2:45 AM	3:00 AM	0	0	0	1	0	4	0	0
3:00 AM	3:15 AM	0	1	0	0	1	0	0	0
3:15 AM	3:30 AM	1	0	0	0	0	1	0	0
3:30 AM	3:45 AM	0	0	1	1	2	0	1	0
3:45 AM	4:00 AM	1	1	1	0	1	1	0	0
4:00 AM	4:15 AM	0	1	1	1	1	1	0	0
4:15 AM	4:30 AM	1	1	0	1	0	0	0	0
4:30 AM	4:45 AM	0	0	1	3	0	0	0	0
4:45 AM	5:00 AM	0	3	1	0	2	0	1	0
5:00 AM	5:15 AM	1	2	2	1	4	1	1	0
5:15 AM	5:30 AM	8	2	10	3	4	1	7	1
5:30 AM	5:45 AM	14	2	13	2	15	4	8	1
5:45 AM	6:00 AM	45	5	32	1	23	4	14	1
6:00 AM	6:15 AM	12	4	15	2	12	2	4	4
6:15 AM	6:30 AM	5	1	6	4	3	4	9	3
6:30 AM	6:45 AM	5	3	12	4	10	1	10	2
6:45 AM	7:00 AM	43	8	32	9	32	9	19	5
7:00 AM	7:15 AM	16	6	14	3	14	3	16	2
7:15 AM	7:30 AM	19	4	18	7	18	2	15	4
7:30 AM	7:45 AM	25	9	19	5	20	7	25	4
7:45 AM	8:00 AM	41	3	30	8	41	14	52	11
8:00 AM	8:15 AM	36	12	35	8	40	12	26	8
8:15 AM	8:30 AM	34	8	39	9	29	7	46	6
8:30 AM	8:45 AM	46	15	39	17	39	21	56	11
8:45 AM	9:00 AM	60	13	56	12	62	14	100	19
9:00 AM	9:15 AM	54	20	58	15	60	18	69	22
9:15 AM	9:30 AM	79	17	90	12	75	14	110	15
9:30 AM	9:45 AM	87	28	86	20	107	16	154	26
9:45 AM	10:00 AM	146	16	154	33	190	24	197	27
10:00 AM	10:15 AM	131	29	150	31	175	36	179	41
10:15 AM	10:30 AM	122	45	120	48	170	37	190	56
10:30 AM	10:45 AM	145	47	140	44	180	50	221	67
10:45 AM	11:00 AM	138	43	188	38	180	63	255	55
11:00 AM	11:15 AM	128	44	143	52	184	70	236	78
11:15 AM	11:30 AM	134	61	133	68	174	84	210	65
11:30 AM	11:45 AM	123	61	109	79	169	99	225	99
11:45 AM	12:00 PM	148	67	154	69	202	72	247	109
12:00 PM	12:15 PM	155	74	171	72	173	98	215	125
12:15 PM	12:30 PM	115	85	147	94	169	105	257	128
12:30 PM	12:45 PM	118	88	138	97	190	105	243	145
12:45 PM	1:00 PM	134	86	127	106	177	124	242	149
1:00 PM	1:15 PM	149	111	136	95	176	136	242	199
1:15 PM	1:30 PM	162	103	141	107	211	148	259	163
1:30 PM	1:45 PM	128	121	131	120	173	123	232	200
1:45 PM	2:00 PM	140	130	146	127	172	144	238	210
2:00 PM	2:15 PM	128	120	113	149	148	177	213	219
2:15 PM	2:30 PM	106	119	90	127	141	148	224	211
2:30 PM	2:45 PM	117	145	104	119	156	182	188	241
2:45 PM	3:00 PM	86	137	160	121	135	192	201	214
3:00 PM	3:15 PM	96	145	101	157	147	159	206	261
3:15 PM	3:30 PM	92	119	113	155	156	167	214	264
3:30 PM	3:45 PM	118	145	120	167	138	185	180	303
3:45 PM	4:00 PM	112	135	133	135	151	160	179	254
4:00 PM	4:15 PM	79	145	112	147	147	157	185	287
4:15 PM	4:30 PM	88	138	97	145	115	198	196	241
4:30 PM	4:45 PM	124	124	95	125	128	179	192	216
4:45 PM	5:00 PM	108	113	111	122	160	156	176	204
5:00 PM	5:15 PM	117	128	106	126	140	172	139	264
5:15 PM	5:30 PM	114	134	121	152	155	159	163	247
5:30 PM	5:45 PM	124	128	111	125	122	174	148	209
5:45 PM	6:00 PM	98	102	105	100	135	159	116	235
6:00 PM	6:15 PM	103	122	115	132	156	166	139	221
6:15 PM	6:30 PM	123	123	118	115	126	159	113	221
6:30 PM	6:45 PM	98	107	128	122	130	155	128	186
6:45 PM	7:00 PM	109	115	118	107	154	132	142	205
7:00 PM	7:15 PM	93	103	99	115	110	163	108	188
7:15 PM	7:30 PM	89	125	89	122	126	151	99	161
7:30 PM	7:45 PM	79	112	93	108	130	143	84	187
7:45 PM	8:00 PM	68	122	71	126	87	130	69	174
8:00 PM	8:15 PM	51	127	47	125	84	170	63	155
8:15 PM	8:30 PM	48	102	48	131	67	144	65	182
8:30 PM	8:45 PM	30	133	32	113	46	151	40	163
8:45 PM	9:00 PM	35	135	30	129	36	152	39	198
9:00 PM	9:15 PM	28	136	20	136	38	159	35	183
9:15 PM	9:30 PM	13	118	20	133	28	192	28	169
9:30 PM	9:45 PM	13	183	14	170	13	204	24	225
9:45 PM	10:00 PM	12	109	15	120	24	202	28	223
10:00 PM	10:15 PM	13	117	11	80	25	158	17	168
10:15 PM	10:30 PM	6	66	9	73	24	116	12	99
10:30 PM	10:45 PM	6	50	6	59	24	63	15	80
10:45 PM	11:00 PM	7	27	5	47	14	66	10	63
11:00 PM	11:15 PM	1	15	4	20	0	41	7	41
11:15 PM	11:30 PM	3	16	0	20	0	25	6	38
11:30 PM	11:45 PM	1	23	1	7	0	23	3	23
11:45 PM	12:00 AM	3	9	3	17	0	27	4	23

Lindau Lane at East Access									
Start Time	End Time	Wednesday (8/12/2015)		Thursday (08/13/2015)		Friday (08/14/2015)		Saturday (08/15/2015)	
		In Total	Out Total	In Total	Out Total	In Total	Out Total	In Total	Out Total
12:00 AM	12:15 AM	5	2	5	0	4	2	10	4
12:15 AM	12:30 AM	3	1	2	2	7	2	2	4
12:30 AM	12:45 AM	2	0	3	1	1	2	4	0
12:45 AM	1:00 AM	1	0	2	1	0	4	10	1
1:00 AM	1:15 AM	3	1	2	0	3	1	1	1
1:15 AM	1:30 AM	0	1	1	3	0	0	6	4
1:30 AM	1:45 AM	1	1	0	1	0	0	1	1
1:45 AM	2:00 AM	0	0	0	0	0	1	0	2
2:00 AM	2:15 AM	0	1	0	0	1	2	1	0
2:15 AM	2:30 AM	1	2	1	1	1	0	3	0
2:30 AM	2:45 AM	0	0	0	0	3	1	0	0
2:45 AM	3:00 AM	0	0	0	0	0	0	2	2
3:00 AM	3:15 AM	0	0	0	0	2	0	1	1
3:15 AM	3:30 AM	0	1	0	0	0	0	1	0
3:30 AM	3:45 AM	0	0	1	1	0	0	0	0
3:45 AM	4:00 AM	0	1	0	0	1	1	0	0
4:00 AM	4:15 AM	0	0	0	0	0	0	0	2
4:15 AM	4:30 AM	3	1	0	1	1	0	1	1
4:30 AM	4:45 AM	1	1	1	0	0	0	0	1
4:45 AM	5:00 AM	1	0	0	0	0	0	0	0
5:00 AM	5:15 AM	2	3	2	1	1	0	0	2
5:15 AM	5:30 AM	1	1	0	2	0	0	3	2
5:30 AM	5:45 AM	1	4	2	6	0	4	1	3
5:45 AM	6:00 AM	2	9	2	9	1	10	2	7
6:00 AM	6:15 AM	1	3	1	3	0	3	1	5
6:15 AM	6:30 AM	0	5	2	6	3	5	1	2
6:30 AM	6:45 AM	5	7	3	3	2	4	3	5
6:45 AM	7:00 AM	8	13	6	12	4	5	3	8
7:00 AM	7:15 AM	3	7	3	5	3	4	2	6
7:15 AM	7:30 AM	3	10	5	8	1	6	0	1
7:30 AM	7:45 AM	3	7	0	8	2	7	3	3
7:45 AM	8:00 AM	5	9	5	16	8	16	2	8
8:00 AM	8:15 AM	4	11	4	3	9	7	4	4
8:15 AM	8:30 AM	1	7	6	6	8	12	1	9
8:30 AM	8:45 AM	3	16	6	10	6	11	4	15
8:45 AM	9:00 AM	15	19	6	14	4	19	7	33
9:00 AM	9:15 AM	10	24	6	32	8	18	7	47
9:15 AM	9:30 AM	10	32	4	23	15	51	13	69
9:30 AM	9:45 AM	13	28	9	39	13	54	17	67
9:45 AM	10:00 AM	16	57	15	53	11	69	14	81
10:00 AM	10:15 AM	18	56	12	60	15	55	16	107
10:15 AM	10:30 AM	22	55	24	71	18	77	19	102
10:30 AM	10:45 AM	10	57	17	69	22	78	27	94
10:45 AM	11:00 AM	15	62	14	52	30	86	33	151
11:00 AM	11:15 AM	21	71	21	82	20	66	29	104
11:15 AM	11:30 AM	33	54	22	45	27	77	33	95
11:30 AM	11:45 AM	19	63	23	59	30	87	41	136
11:45 AM	12:00 PM	27	56	22	80	35	80	39	119
12:00 PM	12:15 PM	26	54	29	61	25	87	35	103
12:15 PM	12:30 PM	22	63	30	58	39	83	50	104
12:30 PM	12:45 PM	24	47	31	65	28	73	40	114
12:45 PM	1:00 PM	29	49	26	76	40	68	37	101
1:00 PM	1:15 PM	30	45	29	57	41	72	41	112
1:15 PM	1:30 PM	42	56	22	67	38	71	33	98
1:30 PM	1:45 PM	22	53	35	51	38	67	55	110
1:45 PM	2:00 PM	21	45	31	60	38	65	45	102
2:00 PM	2:15 PM	52	66	36	55	42	78	32	112
2:15 PM	2:30 PM	33	39	37	50	44	92	57	108
2:30 PM	2:45 PM	39	52	32	44	46	67	65	116
2:45 PM	3:00 PM	42	42	37	58	38	64	44	93
3:00 PM	3:15 PM	40	47	38	56	41	70	54	86
3:15 PM	3:30 PM	31	58	48	60	51	63	46	93
3:30 PM	3:45 PM	34	44	35	31	35	46	50	102
3:45 PM	4:00 PM	45	54	40	48	49	57	48	86
4:00 PM	4:15 PM	34	46	54	65	49	60	48	111
4:15 PM	4:30 PM	38	53	44	56	46	76	60	100
4:30 PM	4:45 PM	39	64	47	59	53	66	59	105
4:45 PM	5:00 PM	42	49	43	53	40	63	77	86
5:00 PM	5:15 PM	43	40	33	68	53	52	43	83
5:15 PM	5:30 PM	39	50	45	83	42	72	44	76
5:30 PM	5:45 PM	41	42	35	62	44	67	47	98
5:45 PM	6:00 PM	38	56	40	70	52	72	40	75
6:00 PM	6:15 PM	42	55	40	62	42	84	39	69
6:15 PM	6:30 PM	42	58	50	39	45	64	50	70
6:30 PM	6:45 PM	37	52	31	47	30	66	47	68
6:45 PM	7:00 PM	22	40	43	48	39	75	36	56
7:00 PM	7:15 PM	24	42	42	40	53	61	41	53
7:15 PM	7:30 PM	28	40	45	62	44	56	44	48
7:30 PM	7:45 PM	30	38	25	27	40	58	39	43
7:45 PM	8:00 PM	34	36	30	37	35	56	38	43
8:00 PM	8:15 PM	45	41	40	28	34	34	38	45
8:15 PM	8:30 PM	31	28	26	32	42	48	37	29
8:30 PM	8:45 PM	35	25	51	23	41	34	45	23
8:45 PM	9:00 PM	34	20	28	15	44	38	46	25
9:00 PM	9:15 PM	41	18	36	14	49	24	42	26
9:15 PM	9:30 PM	28	11	41	18	74	22	58	32
9:30 PM	9:45 PM	42	10	40	12	71	27	57	16
9:45 PM	10:00 PM	18	17	38	17	51	19	47	15
10:00 PM	10:15 PM	34	16	25	14	48	20	39	25
10:15 PM	10:30 PM	23	4	23	11	31	21	34	14
10:30 PM	10:45 PM	11	12	18	8	25	23	46	11
10:45 PM	11:00 PM	22	9	17	6	19	12	17	13
11:00 PM	11:15 PM	6	7	9	6	22	7	15	8
11:15 PM	11:30 PM	32	4	7	6	13	7	19	10
11:30 PM	11:45 PM	13	3	5	4	5	3	9	5
11:45 PM	12:00 AM	5	3	4	2	11	4	10	6

East 24th Avenue at North Access									
Start Time	End Time	Wednesday (8/12/2015)		Thursday (08/13/2015)		Friday (08/14/2015)		Saturday (08/15/2015)	
		In Total	Out Total	In Total	Out Total	In Total	Out Total	In Total	Out Total
12:00 AM	12:15 AM	1	4	4	8	1	9	9	24
12:15 AM	12:30 AM	1	10	1	7	2	4	2	14
12:30 AM	12:45 AM	2	7	0	7	1	4	0	11
12:45 AM	1:00 AM	1	6	1	7	1	5	1	19
1:00 AM	1:15 AM	0	1	1	3	1	2	0	13
1:15 AM	1:30 AM	1	3	0	3	0	1	1	13
1:30 AM	1:45 AM	0	3	0	1	0	0	0	3
1:45 AM	2:00 AM	0	4	0	5	0	3	0	6
2:00 AM	2:15 AM	0	2	0	2	0	1	2	10
2:15 AM	2:30 AM	0	1	0	1	0	1	0	4
2:30 AM	2:45 AM	0	4	0	3	0	0	0	1
2:45 AM	3:00 AM	0	0	1	2	1	3	0	2
3:00 AM	3:15 AM	0	2	0	0	0	0	0	1
3:15 AM	3:30 AM	0	1	1	0	0	1	0	0
3:30 AM	3:45 AM	1	0	0	0	0	0	0	1
3:45 AM	4:00 AM	1	0	0	0	0	1	0	0
4:00 AM	4:15 AM	0	0	0	0	0	1	0	0
4:15 AM	4:30 AM	1	0	1	0	1	0	0	0
4:30 AM	4:45 AM	1	0	1	1	0	1	0	0
4:45 AM	5:00 AM	2	3	3	2	1	0	1	0
5:00 AM	5:15 AM	1	2	1	1	0	2	1	1
5:15 AM	5:30 AM	3	3	1	2	3	0	0	2
5:30 AM	5:45 AM	13	5	10	2	6	2	1	0
5:45 AM	6:00 AM	25	3	14	6	23	4	4	1
6:00 AM	6:15 AM	8	4	6	6	4	5	2	1
6:15 AM	6:30 AM	6	3	6	4	7	3	3	1
6:30 AM	6:45 AM	12	5	10	3	7	1	10	2
6:45 AM	7:00 AM	23	2	20	3	17	5	14	2
7:00 AM	7:15 AM	10	3	6	2	13	3	6	2
7:15 AM	7:30 AM	4	3	13	2	9	2	6	1
7:30 AM	7:45 AM	18	5	19	4	20	2	13	3
7:45 AM	8:00 AM	21	4	18	4	19	4	17	2
8:00 AM	8:15 AM	16	5	16	3	16	4	11	3
8:15 AM	8:30 AM	18	6	28	5	22	5	21	3
8:30 AM	8:45 AM	27	11	29	5	31	4	49	6
8:45 AM	9:00 AM	41	8	33	9	36	6	73	16
9:00 AM	9:15 AM	32	8	36	11	35	8	51	10
9:15 AM	9:30 AM	61	7	43	14	52	12	65	15
9:30 AM	9:45 AM	36	21	57	12	58	11	80	12
9:45 AM	10:00 AM	64	11	89	14	73	17	86	12
10:00 AM	10:15 AM	63	18	87	9	98	24	129	25
10:15 AM	10:30 AM	58	19	119	24	92	22	110	40
10:30 AM	10:45 AM	77	25	85	35	125	24	135	25
10:45 AM	11:00 AM	93	24	87	43	126	27	164	45
11:00 AM	11:15 AM	55	24	93	32	86	32	127	40
11:15 AM	11:30 AM	69	29	84	34	99	34	104	39
11:30 AM	11:45 AM	68	32	97	43	116	57	158	61
11:45 AM	12:00 PM	77	47	88	35	136	55	120	68
12:00 PM	12:15 PM	70	44	84	42	78	44	129	38
12:15 PM	12:30 PM	48	53	89	62	89	69	120	86
12:30 PM	12:45 PM	63	46	92	60	94	74	119	53
12:45 PM	1:00 PM	49	60	68	60	98	80	144	77
1:00 PM	1:15 PM	73	50	76	66	84	84	135	87
1:15 PM	1:30 PM	66	66	84	63	100	108	133	99
1:30 PM	1:45 PM	67	58	67	62	110	88	141	83
1:45 PM	2:00 PM	60	60	74	57	91	101	113	114
2:00 PM	2:15 PM	58	62	88	68	73	92	140	108
2:15 PM	2:30 PM	50	73	61	92	67	84	85	113
2:30 PM	2:45 PM	67	66	71	108	81	95	114	88
2:45 PM	3:00 PM	50	76	72	80	83	101	111	109
3:00 PM	3:15 PM	54	76	79	92	87	120	116	100
3:15 PM	3:30 PM	63	89	83	110	79	121	115	83
3:30 PM	3:45 PM	53	62	76	103	73	119	120	111
3:45 PM	4:00 PM	58	79	78	118	101	119	118	101
4:00 PM	4:15 PM	84	71	55	117	108	130	112	123
4:15 PM	4:30 PM	66	83	43	133	76	130	118	91
4:30 PM	4:45 PM	73	86	73	103	109	113	119	122
4:45 PM	5:00 PM	72	93	59	99	110	108	91	94
5:00 PM	5:15 PM	67	88	68	88	84	116	100	125
5:15 PM	5:30 PM	54	99	81	103	118	109	109	136
5:30 PM	5:45 PM	80	82	71	91	97	95	105	131
5:45 PM	6:00 PM	77	70	81	92	128	105	107	115
6:00 PM	6:15 PM	82	84	82	95	103	125	60	144
6:15 PM	6:30 PM	65	58	61	125	89	127	101	137
6:30 PM	6:45 PM	62	71	77	100	94	101	87	159
6:45 PM	7:00 PM	90	82	81	76	119	109	94	130
7:00 PM	7:15 PM	64	69	69	77	66	97	62	165
7:15 PM	7:30 PM	77	72	56	80	71	87	55	110
7:30 PM	7:45 PM	49	94	30	88	66	97	42	113
7:45 PM	8:00 PM	27	70	31	101	70	109	33	129
8:00 PM	8:15 PM	36	89	32	72	45	107	34	149
8:15 PM	8:30 PM	25	92	28	96	43	121	36	106
8:30 PM	8:45 PM	16	89	24	107	36	124	22	135
8:45 PM	9:00 PM	11	82	21	81	24	109	19	142
9:00 PM	9:15 PM	13	83	9	95	18	105	17	136
9:15 PM	9:30 PM	11	108	10	90	20	115	11	141
9:30 PM	9:45 PM	5	93	6	133	17	177	13	166
9:45 PM	10:00 PM	12	82	11	92	25	127	7	141
10:00 PM	10:15 PM	14	55	9	47	15	116	9	94
10:15 PM	10:30 PM	6	58	10	48	17	94	12	96
10:30 PM	10:45 PM	6	38	6	44	12	67	10	85
10:45 PM	11:00 PM	5	38	4	29	10	43	9	51
11:00 PM	11:15 PM	4	15	4	15	7	52	3	26
11:15 PM	11:30 PM	1	27	0	12	3	28	4	36
11:30 PM	11:45 PM	0	10	3	11	3	15	3	25
11:45 PM	12:00 AM	0	9	1	9	3	32	4	41

East 24th Avenue at South Access (Authorized Vehicle Entrance)									
Start Time	End Time	Wednesday (8/12/2015)		Thursday (08/13/2015)		Friday (08/14/2015)		Saturday (08/15/2015)	
		In Total	Out Total	In Total	Out Total	In Total	Out Total	In Total	Out Total
12:00 AM	12:15 AM	7	9	10	17	4	14	7	9
12:15 AM	12:30 AM	5	7	6	10	6	6	5	15
12:30 AM	12:45 AM	2	18	4	11	3	16	0	24
12:45 AM	1:00 AM	4	8	5	11	2	6	5	4
1:00 AM	1:15 AM	3	8	2	4	2	6	5	7
1:15 AM	1:30 AM	1	2	2	5	0	2	4	4
1:30 AM	1:45 AM	1	6	6	3	5	3	7	5
1:45 AM	2:00 AM	5	6	1	6	2	3	2	5
2:00 AM	2:15 AM	3	1	5	2	1	2	4	3
2:15 AM	2:30 AM	0	2	2	2	5	9	4	3
2:30 AM	2:45 AM	5	2	2	2	1	3	0	5
2:45 AM	3:00 AM	1	0	0	1	2	2	2	2
3:00 AM	3:15 AM	2	1	0	0	0	3	2	3
3:15 AM	3:30 AM	6	3	3	0	1	2	1	1
3:30 AM	3:45 AM	2	2	1	3	3	2	4	3
3:45 AM	4:00 AM	2	2	1	2	3	6	1	1
4:00 AM	4:15 AM	4	3	2	1	4	1	2	4
4:15 AM	4:30 AM	1	7	5	3	4	4	1	1
4:30 AM	4:45 AM	3	7	9	5	11	1	4	2
4:45 AM	5:00 AM	17	7	10	14	7	3	5	1
5:00 AM	5:15 AM	19	13	13	8	15	16	2	4
5:15 AM	5:30 AM	15	15	25	11	23	8	10	1
5:30 AM	5:45 AM	31	8	28	6	29	7	12	2
5:45 AM	6:00 AM	34	6	28	7	35	8	17	0
6:00 AM	6:15 AM	30	11	41	13	39	10	7	7
6:15 AM	6:30 AM	33	12	47	16	38	16	18	5
6:30 AM	6:45 AM	34	13	35	13	33	16	26	8
6:45 AM	7:00 AM	36	20	38	17	29	15	20	6
7:00 AM	7:15 AM	24	15	22	21	29	25	11	17
7:15 AM	7:30 AM	19	15	27	17	28	18	13	8
7:30 AM	7:45 AM	28	8	28	15	22	16	7	18
7:45 AM	8:00 AM	37	25	34	17	34	16	8	7
8:00 AM	8:15 AM	38	18	29	22	32	15	12	9
8:15 AM	8:30 AM	33	14	36	14	31	21	13	5
8:30 AM	8:45 AM	30	26	29	18	31	13	8	13
8:45 AM	9:00 AM	26	17	29	20	23	20	17	4
9:00 AM	9:15 AM	31	21	25	17	21	17	19	14
9:15 AM	9:30 AM	18	14	32	21	31	16	25	12
9:30 AM	9:45 AM	30	20	37	23	30	29	30	22
9:45 AM	10:00 AM	34	25	24	26	32	25	21	21
10:00 AM	10:15 AM	28	20	38	25	22	26	21	25
10:15 AM	10:30 AM	32	36	22	24	34	27	26	23
10:30 AM	10:45 AM	25	26	20	21	28	19	25	22
10:45 AM	11:00 AM	25	18	28	19	20	19	27	21
11:00 AM	11:15 AM	27	29	22	32	24	30	22	25
11:15 AM	11:30 AM	25	24	24	22	27	27	25	18
11:30 AM	11:45 AM	27	28	25	27	23	34	24	20
11:45 AM	12:00 PM	27	21	17	18	22	17	24	22
12:00 PM	12:15 PM	28	38	18	30	22	34	30	31
12:15 PM	12:30 PM	21	23	31	27	30	28	28	24
12:30 PM	12:45 PM	16	25	22	26	22	38	21	25
12:45 PM	1:00 PM	21	20	20	24	24	20	20	21
1:00 PM	1:15 PM	26	21	27	21	27	31	27	28
1:15 PM	1:30 PM	33	23	29	31	32	26	23	14
1:30 PM	1:45 PM	17	28	30	23	33	30	37	23
1:45 PM	2:00 PM	31	24	27	24	21	27	29	24
2:00 PM	2:15 PM	32	42	31	41	37	44	33	37
2:15 PM	2:30 PM	28	53	26	57	37	52	29	25
2:30 PM	2:45 PM	30	49	26	45	24	42	26	32
2:45 PM	3:00 PM	32	27	31	27	40	28	30	21
3:00 PM	3:15 PM	22	34	22	39	30	44	43	36
3:15 PM	3:30 PM	23	34	22	37	34	40	30	28
3:30 PM	3:45 PM	20	31	26	41	24	40	25	36
3:45 PM	4:00 PM	20	20	16	31	18	18	21	20
4:00 PM	4:15 PM	33	38	27	41	35	32	29	35
4:15 PM	4:30 PM	28	42	22	34	26	41	27	29
4:30 PM	4:45 PM	20	36	21	45	23	38	17	21
4:45 PM	5:00 PM	20	22	30	36	20	33	20	20
5:00 PM	5:15 PM	23	33	23	40	29	37	25	22
5:15 PM	5:30 PM	29	59	21	39	29	39	21	25
5:30 PM	5:45 PM	15	41	19	29	29	38	21	30
5:45 PM	6:00 PM	22	26	23	17	28	20	18	24
6:00 PM	6:15 PM	28	31	27	34	30	34	28	21
6:15 PM	6:30 PM	20	24	28	36	16	22	23	26
6:30 PM	6:45 PM	28	36	23	30	34	32	24	28
6:45 PM	7:00 PM	19	26	19	26	24	27	18	19
7:00 PM	7:15 PM	30	28	24	26	31	33	25	17
7:15 PM	7:30 PM	20	21	15	14	26	27	23	24
7:30 PM	7:45 PM	24	16	15	21	22	16	20	26
7:45 PM	8:00 PM	13	14	15	17	13	21	19	10
8:00 PM	8:15 PM	24	21	26	20	20	23	21	26
8:15 PM	8:30 PM	19	26	20	25	24	35	18	23
8:30 PM	8:45 PM	18	17	14	18	14	37	14	22
8:45 PM	9:00 PM	22	9	27	12	20	26	19	20
9:00 PM	9:15 PM	36	23	35	22	27	32	23	25
9:15 PM	9:30 PM	28	17	27	19	22	22	25	26
9:30 PM	9:45 PM	30	24	30	28	20	28	29	37
9:45 PM	10:00 PM	16	24	17	24	19	24	16	27
10:00 PM	10:15 PM	24	23	26	21	28	24	32	31
10:15 PM	10:30 PM	20	20	17	18	28	30	22	25
10:30 PM	10:45 PM	14	23	14	16	19	19	25	30
10:45 PM	11:00 PM	21	16	13	13	17	15	26	20
11:00 PM	11:15 PM	17	12	9	17	15	17	14	26
11:15 PM	11:30 PM	14	17	9	14	12	26	11	18
11:30 PM	11:45 PM	10	19	4	10	8	20	12	18
11:45 PM	12:00 AM	5	8	10	5	7	9	10	11

Killebrew Drive at West Access									
Start Time	End Time	Wednesday (8/12/2015)		Thursday (08/13/2015)		Friday (08/14/2015)		Saturday (08/15/2015)	
		In Total	Out Total	In Total	Out Total	In Total	Out Total	In Total	Out Total
12:00 AM	12:15 AM	13	8	13	4	21	4	32	11
12:15 AM	12:30 AM	10	4	6	4	19	12	20	7
12:30 AM	12:45 AM	9	0	12	5	6	1	11	4
12:45 AM	1:00 AM	11	3	5	1	6	4	17	8
1:00 AM	1:15 AM	4	5	2	1	4	2	6	4
1:15 AM	1:30 AM	0	1	0	1	1	1	11	6
1:30 AM	1:45 AM	3	5	0	0	0	2	5	2
1:45 AM	2:00 AM	5	4	3	4	3	1	6	2
2:00 AM	2:15 AM	4	2	1	0	6	3	4	0
2:15 AM	2:30 AM	1	1	0	3	5	1	2	5
2:30 AM	2:45 AM	0	1	1	0	1	1	0	1
2:45 AM	3:00 AM	0	0	1	0	2	1	1	1
3:00 AM	3:15 AM	0	0	1	2	2	2	2	3
3:15 AM	3:30 AM	1	1	2	0	2	3	1	0
3:30 AM	3:45 AM	0	1	0	2	1	0	1	1
3:45 AM	4:00 AM	1	0	0	2	0	3	1	2
4:00 AM	4:15 AM	0	0	0	1	3	0	2	1
4:15 AM	4:30 AM	0	0	1	0	0	1	1	1
4:30 AM	4:45 AM	0	1	4	1	1	3	2	5
4:45 AM	5:00 AM	1	4	1	4	2	2	5	0
5:00 AM	5:15 AM	4	7	3	2	0	2	1	1
5:15 AM	5:30 AM	3	11	2	8	1	3	1	9
5:30 AM	5:45 AM	8	21	8	18	4	14	3	10
5:45 AM	6:00 AM	3	31	6	22	10	17	6	19
6:00 AM	6:15 AM	8	7	7	7	8	10	4	11
6:15 AM	6:30 AM	10	10	5	14	7	14	4	9
6:30 AM	6:45 AM	16	21	17	29	13	21	10	25
6:45 AM	7:00 AM	15	41	21	35	14	42	9	22
7:00 AM	7:15 AM	20	25	24	13	9	21	7	14
7:15 AM	7:30 AM	18	20	19	37	21	26	11	24
7:30 AM	7:45 AM	23	31	25	32	9	32	7	23
7:45 AM	8:00 AM	24	46	21	45	14	52	14	41
8:00 AM	8:15 AM	23	33	23	40	16	41	11	44
8:15 AM	8:30 AM	15	44	23	32	14	56	19	48
8:30 AM	8:45 AM	28	51	33	64	22	50	17	60
8:45 AM	9:00 AM	20	61	17	77	36	76	26	113
9:00 AM	9:15 AM	23	52	21	60	36	84	29	107
9:15 AM	9:30 AM	21	72	35	119	19	96	42	180
9:30 AM	9:45 AM	21	116	25	121	29	119	37	166
9:45 AM	10:00 AM	24	140	38	198	43	184	53	254
10:00 AM	10:15 AM	47	156	28	156	36	209	46	243
10:15 AM	10:30 AM	38	163	43	169	53	190	70	271
10:30 AM	10:45 AM	59	138	44	180	57	206	61	266
10:45 AM	11:00 AM	57	177	55	195	75	255	93	278
11:00 AM	11:15 AM	60	156	56	181	83	209	75	269
11:15 AM	11:30 AM	55	186	78	169	72	216	101	265
11:30 AM	11:45 AM	65	166	77	177	90	227	112	296
11:45 AM	12:00 PM	69	186	87	193	102	222	123	290
12:00 PM	12:15 PM	93	167	89	170	116	217	108	281
12:15 PM	12:30 PM	100	173	88	190	121	235	142	276
12:30 PM	12:45 PM	104	156	116	167	136	240	125	293
12:45 PM	1:00 PM	114	145	101	170	128	223	138	276
1:00 PM	1:15 PM	101	127	122	162	114	244	150	271
1:15 PM	1:30 PM	123	159	110	193	154	164	143	275
1:30 PM	1:45 PM	103	136	138	166	190	195	142	265
1:45 PM	2:00 PM	137	130	137	149	168	231	151	267
2:00 PM	2:15 PM	120	154	120	154	169	178	156	263
2:15 PM	2:30 PM	137	148	185	145	176	177	197	265
2:30 PM	2:45 PM	134	124	147	159	181	176	162	258
2:45 PM	3:00 PM	146	128	179	150	181	186	227	220
3:00 PM	3:15 PM	168	128	184	117	230	179	205	222
3:15 PM	3:30 PM	148	121	146	142	192	184	231	216
3:30 PM	3:45 PM	142	117	153	162	192	175	197	239
3:45 PM	4:00 PM	169	157	187	138	188	152	174	212
4:00 PM	4:15 PM	159	106	168	149	209	185	212	228
4:15 PM	4:30 PM	149	128	170	145	187	183	198	189
4:30 PM	4:45 PM	168	127	174	134	206	190	281	261
4:45 PM	5:00 PM	144	160	169	166	189	187	261	192
5:00 PM	5:15 PM	162	131	177	133	196	185	201	223
5:15 PM	5:30 PM	158	139	160	145	187	175	240	192
5:30 PM	5:45 PM	160	136	172	153	186	173	278	191
5:45 PM	6:00 PM	139	137	180	171	142	201	237	195
6:00 PM	6:15 PM	159	159	164	165	162	169	233	154
6:15 PM	6:30 PM	139	127	165	133	184	199	205	159
6:30 PM	6:45 PM	110	125	130	160	183	186	182	176
6:45 PM	7:00 PM	139	136	131	115	188	173	188	145
7:00 PM	7:15 PM	154	119	161	143	179	158	181	164
7:15 PM	7:30 PM	145	132	164	102	168	150	200	133
7:30 PM	7:45 PM	95	104	144	96	180	139	153	126
7:45 PM	8:00 PM	142	84	152	80	156	113	172	98
8:00 PM	8:15 PM	139	77	150	72	189	101	179	69
8:15 PM	8:30 PM	139	66	159	59	173	79	190	90
8:30 PM	8:45 PM	108	54	141	56	188	80	210	83
8:45 PM	9:00 PM	157	50	126	43	173	70	168	59
9:00 PM	9:15 PM	168	36	142	46	220	57	215	48
9:15 PM	9:30 PM	174	29	151	30	192	38	193	43
9:30 PM	9:45 PM	186	36	213	39	215	55	246	50
9:45 PM	10:00 PM	134	15	171	24	231	37	198	38
10:00 PM	10:15 PM	121	23	128	13	213	38	177	28
10:15 PM	10:30 PM	107	25	105	12	135	30	160	35
10:30 PM	10:45 PM	80	18	95	20	116	32	118	33
10:45 PM	11:00 PM	53	18	42	13	78	24	69	28
11:00 PM	11:15 PM	44	12	36	11	68	17	61	14
11:15 PM	11:30 PM	47	7	26	13	35	14	56	28
11:30 PM	11:45 PM	35	9	24	9	32	9	33	13
11:45 PM	12:00 AM	12	4	18	11	47	12	41	13

Killebrew Drive at East Access									
Start Time	End Time	Wednesday (8/12/2015)		Thursday (08/13/2015)		Friday (08/14/2015)		Saturday (08/15/2015)	
		In Total	Out Total	In Total	Out Total	In Total	Out Total	In Total	Out Total
12:00 AM	12:15 AM	13	3	22	2	10	1	42	5
12:15 AM	12:30 AM	9	3	14	2	18	2	20	4
12:30 AM	12:45 AM	3	0	12	0	8	0	16	2
12:45 AM	1:00 AM	8	1	2	3	3	0	22	1
1:00 AM	1:15 AM	2	1	5	0	2	0	28	2
1:15 AM	1:30 AM	3	1	4	2	0	1	28	0
1:30 AM	1:45 AM	0	1	1	1	2	2	2	1
1:45 AM	2:00 AM	0	1	2	0	3	1	4	0
2:00 AM	2:15 AM	3	1	0	0	2	0	5	0
2:15 AM	2:30 AM	2	0	3	2	0	0	2	1
2:30 AM	2:45 AM	4	1	1	1	1	1	1	0
2:45 AM	3:00 AM	0	0	0	0	0	1	2	1
3:00 AM	3:15 AM	0	0	2	0	0	0	3	1
3:15 AM	3:30 AM	0	0	0	0	0	0	0	0
3:30 AM	3:45 AM	0	1	0	1	0	0	0	1
3:45 AM	4:00 AM	0	0	0	2	3	2	1	1
4:00 AM	4:15 AM	1	0	1	0	0	0	1	0
4:15 AM	4:30 AM	1	0	0	0	0	0	2	0
4:30 AM	4:45 AM	0	0	0	0	0	0	0	0
4:45 AM	5:00 AM	0	3	0	0	1	1	1	0
5:00 AM	5:15 AM	3	0	3	1	2	1	4	2
5:15 AM	5:30 AM	3	2	1	4	1	2	2	1
5:30 AM	5:45 AM	0	3	1	5	2	5	1	3
5:45 AM	6:00 AM	2	8	0	18	0	13	4	12
6:00 AM	6:15 AM	0	9	0	11	2	11	1	4
6:15 AM	6:30 AM	0	6	1	5	4	3	1	4
6:30 AM	6:45 AM	4	10	3	14	3	11	2	5
6:45 AM	7:00 AM	2	22	2	19	3	16	3	10
7:00 AM	7:15 AM	2	7	1	10	6	8	2	5
7:15 AM	7:30 AM	4	18	3	12	6	9	3	11
7:30 AM	7:45 AM	8	20	2	17	4	16	2	8
7:45 AM	8:00 AM	4	24	6	32	4	22	2	13
8:00 AM	8:15 AM	4	23	5	23	4	12	4	19
8:15 AM	8:30 AM	3	22	5	22	3	23	7	21
8:30 AM	8:45 AM	5	21	5	30	6	29	7	39
8:45 AM	9:00 AM	10	48	4	44	13	56	7	69
9:00 AM	9:15 AM	5	30	16	45	6	45	10	53
9:15 AM	9:30 AM	10	46	18	51	12	71	16	61
9:30 AM	9:45 AM	10	52	11	71	11	52	17	77
9:45 AM	10:00 AM	10	65	19	77	18	79	21	119
10:00 AM	10:15 AM	12	68	13	78	14	79	23	93
10:15 AM	10:30 AM	23	56	18	96	22	83	26	115
10:30 AM	10:45 AM	8	44	25	85	27	92	23	121
10:45 AM	11:00 AM	17	65	29	89	21	84	39	124
11:00 AM	11:15 AM	26	69	23	72	27	58	50	121
11:15 AM	11:30 AM	26	67	26	76	29	81	52	126
11:30 AM	11:45 AM	35	54	30	70	30	82	55	121
11:45 AM	12:00 PM	30	72	47	86	38	79	65	152
12:00 PM	12:15 PM	34	51	30	56	36	88	65	103
12:15 PM	12:30 PM	30	56	57	57	62	85	83	143
12:30 PM	12:45 PM	33	54	54	59	53	78	94	113
12:45 PM	1:00 PM	43	65	53	65	68	71	103	123
1:00 PM	1:15 PM	37	44	53	56	48	93	130	84
1:15 PM	1:30 PM	52	49	49	76	80	68	118	110
1:30 PM	1:45 PM	57	63	57	48	65	83	134	119
1:45 PM	2:00 PM	45	64	51	57	76	77	158	111
2:00 PM	2:15 PM	73	44	73	55	73	67	146	90
2:15 PM	2:30 PM	68	53	68	58	103	74	182	104
2:30 PM	2:45 PM	58	49	79	53	98	69	159	116
2:45 PM	3:00 PM	60	38	59	47	91	87	190	142
3:00 PM	3:15 PM	62	45	83	67	87	52	225	94
3:15 PM	3:30 PM	68	41	93	59	100	66	198	98
3:30 PM	3:45 PM	67	58	90	66	106	70	210	112
3:45 PM	4:00 PM	70	56	100	73	119	80	210	106
4:00 PM	4:15 PM	92	34	119	69	107	92	208	100
4:15 PM	4:30 PM	81	71	120	58	115	79	214	104
4:30 PM	4:45 PM	61	72	114	52	110	78	232	104
4:45 PM	5:00 PM	65	75	94	66	105	89	203	103
5:00 PM	5:15 PM	86	66	102	63	113	74	209	80
5:15 PM	5:30 PM	83	68	92	56	98	65	197	85
5:30 PM	5:45 PM	65	57	104	70	100	93	190	70
5:45 PM	6:00 PM	52	52	75	65	102	78	158	84
6:00 PM	6:15 PM	74	64	91	50	107	69	148	75
6:15 PM	6:30 PM	59	63	79	53	91	69	152	73
6:30 PM	6:45 PM	66	57	70	53	100	71	114	57
6:45 PM	7:00 PM	60	41	78	47	94	58	105	66
7:00 PM	7:15 PM	82	51	83	37	100	52	164	60
7:15 PM	7:30 PM	61	32	75	41	81	60	114	40
7:30 PM	7:45 PM	57	32	71	28	75	38	105	30
7:45 PM	8:00 PM	45	24	92	28	79	40	108	21
8:00 PM	8:15 PM	77	23	65	27	84	34	121	27
8:15 PM	8:30 PM	65	21	64	18	102	41	102	24
8:30 PM	8:45 PM	62	20	65	17	94	24	134	32
8:45 PM	9:00 PM	65	17	58	14	115	15	127	31
9:00 PM	9:15 PM	65	10	72	16	91	22	125	30
9:15 PM	9:30 PM	80	9	93	8	103	25	105	11
9:30 PM	9:45 PM	86	8	90	10	116	17	152	17
9:45 PM	10:00 PM	84	7	81	11	133	16	128	20
10:00 PM	10:15 PM	76	8	67	8	121	15	106	10
10:15 PM	10:30 PM	55	8	57	6	85	20	102	13
10:30 PM	10:45 PM	30	11	43	7	63	11	105	12
10:45 PM	11:00 PM	40	11	31	1	49	7	63	5
11:00 PM	11:15 PM	28	8	29	7	62	10	56	12
11:15 PM	11:30 PM	48	4	24	2	35	10	62	10
11:30 PM	11:45 PM	12	1	24	1	31	10	42	5
11:45 PM	12:00 AM	23	2	7	0	46	5	70	11

North Overflow Lot									
Start Time	End Time	Wednesday (8/12/2015)		Thursday (08/13/2015)		Friday (08/14/2015)		Saturday (08/15/2015)	
		In Total	Out Total	In Total	Out Total	In Total	Out Total	In Total	Out Total
12:00 AM	12:15 AM	0	0	0	0	0	0	0	0
12:15 AM	12:30 AM	0	0	0	0	0	0	1	2
12:30 AM	12:45 AM	1	0	0	0	0	0	0	0
12:45 AM	1:00 AM	0	0	0	0	0	0	2	0
1:00 AM	1:15 AM	0	0	0	0	0	0	0	0
1:15 AM	1:30 AM	0	0	0	0	0	0	0	0
1:30 AM	1:45 AM	0	0	0	0	0	0	0	0
1:45 AM	2:00 AM	0	0	1	0	0	0	0	0
2:00 AM	2:15 AM	2	0	0	0	0	0	2	0
2:15 AM	2:30 AM	8	0	9	0	5	0	6	0
2:30 AM	2:45 AM	0	0	1	0	1	0	0	0
2:45 AM	3:00 AM	0	0	0	0	3	0	0	0
3:00 AM	3:15 AM	0	0	0	0	1	1	1	0
3:15 AM	3:30 AM	0	0	0	1	1	2	0	0
3:30 AM	3:45 AM	0	3	0	0	1	1	0	0
3:45 AM	4:00 AM	1	1	1	0	1	8	0	0
4:00 AM	4:15 AM	0	1	1	3	0	8	0	2
4:15 AM	4:30 AM	2	9	1	7	1	11	0	2
4:30 AM	4:45 AM	0	9	1	10	1	12	1	2
4:45 AM	5:00 AM	2	25	2	20	1	15	1	3
5:00 AM	5:15 AM	3	14	3	10	3	7	0	4
5:15 AM	5:30 AM	1	36	2	37	3	44	1	11
5:30 AM	5:45 AM	1	120	3	98	1	110	1	17
5:45 AM	6:00 AM	2	82	5	92	6	88	0	23
6:00 AM	6:15 AM	2	20	2	18	1	14	4	2
6:15 AM	6:30 AM	2	5	0	9	1	14	1	2
6:30 AM	6:45 AM	5	17	2	14	1	14	2	2
6:45 AM	7:00 AM	4	20	3	19	10	14	1	2
7:00 AM	7:15 AM	5	6	2	10	2	6	0	3
7:15 AM	7:30 AM	2	9	4	2	0	1	1	0
7:30 AM	7:45 AM	3	6	2	7	3	5	1	0
7:45 AM	8:00 AM	3	2	5	8	4	5	0	0
8:00 AM	8:15 AM	4	7	4	6	4	6	0	3
8:15 AM	8:30 AM	2	4	1	7	1	3	1	0
8:30 AM	8:45 AM	2	3	2	3	5	3	1	3
8:45 AM	9:00 AM	4	6	4	2	4	3	1	0
9:00 AM	9:15 AM	6	9	2	3	1	1	3	2
9:15 AM	9:30 AM	4	10	4	2	3	5	3	3
9:30 AM	9:45 AM	7	6	1	1	3	6	1	5
9:45 AM	10:00 AM	2	4	1	3	5	9	1	8
10:00 AM	10:15 AM	4	3	5	5	7	4	4	1
10:15 AM	10:30 AM	5	8	9	6	4	2	3	4
10:30 AM	10:45 AM	5	2	5	4	8	8	1	3
10:45 AM	11:00 AM	2	5	10	8	4	9	9	14
11:00 AM	11:15 AM	8	7	3	2	4	4	2	4
11:15 AM	11:30 AM	9	6	6	5	8	9	6	4
11:30 AM	11:45 AM	5	10	8	6	9	5	4	5
11:45 AM	12:00 PM	6	8	6	4	18	6	5	9
12:00 PM	12:15 PM	12	10	6	7	19	4	6	3
12:15 PM	12:30 PM	6	13	12	8	7	11	4	10
12:30 PM	12:45 PM	4	3	4	7	18	10	4	3
12:45 PM	1:00 PM	3	5	12	10	10	3	10	10
1:00 PM	1:15 PM	10	5	5	4	13	2	8	8
1:15 PM	1:30 PM	13	12	7	8	22	12	4	7
1:30 PM	1:45 PM	16	6	11	5	4	6	10	9
1:45 PM	2:00 PM	12	2	11	6	20	3	8	9
2:00 PM	2:15 PM	21	10	17	1	38	1	10	12
2:15 PM	2:30 PM	157	3	138	6	105	2	24	5
2:30 PM	2:45 PM	21	8	21	6	23	5	10	6
2:45 PM	3:00 PM	12	8	19	5	15	2	3	1
3:00 PM	3:15 PM	18	2	14	4	12	8	3	3
3:15 PM	3:30 PM	23	6	11	6	18	6	2	4
3:30 PM	3:45 PM	12	5	12	7	7	8	5	5
3:45 PM	4:00 PM	11	3	15	4	5	5	6	4
4:00 PM	4:15 PM	26	5	28	5	18	2	7	0
4:15 PM	4:30 PM	38	4	32	4	20	2	8	8
4:30 PM	4:45 PM	5	1	9	4	9	0	10	2
4:45 PM	5:00 PM	6	1	5	0	4	2	8	3
5:00 PM	5:15 PM	4	1	3	5	6	3	4	1
5:15 PM	5:30 PM	7	4	8	5	5	3	8	2
5:30 PM	5:45 PM	4	2	5	2	3	1	3	4
5:45 PM	6:00 PM	4	2	3	3	3	2	3	1
6:00 PM	6:15 PM	1	0	6	2	5	5	3	2
6:15 PM	6:30 PM	8	1	3	2	5	1	5	4
6:30 PM	6:45 PM	0	1	6	1	6	2	3	5
6:45 PM	7:00 PM	3	0	2	1	2	0	7	4
7:00 PM	7:15 PM	1	0	0	1	2	0	2	0
7:15 PM	7:30 PM	3	3	2	1	1	2	5	1
7:30 PM	7:45 PM	0	1	1	2	1	1	2	1
7:45 PM	8:00 PM	1	0	3	2	5	2	4	2
8:00 PM	8:15 PM	2	2	2	1	0	0	2	0
8:15 PM	8:30 PM	0	2	5	0	0	0	0	0
8:30 PM	8:45 PM	0	0	1	1	0	0	4	0
8:45 PM	9:00 PM	4	0	2	0	1	1	3	2
9:00 PM	9:15 PM	2	0	2	0	0	3	7	1
9:15 PM	9:30 PM	0	0	0	0	4	0	2	0
9:30 PM	9:45 PM	3	1	0	0	2	1	1	0
9:45 PM	10:00 PM	3	1	2	0	5	2	0	0
10:00 PM	10:15 PM	1	1	0	0	0	0	0	0
10:15 PM	10:30 PM	0	0	1	0	1	0	5	0
10:30 PM	10:45 PM	0	0	0	0	0	0	2	2
10:45 PM	11:00 PM	0	0	0	0	0	0	2	0
11:00 PM	11:15 PM	0	0	0	0	0	0	0	1
11:15 PM	11:30 PM	0	0	0	0	0	0	2	0
11:30 PM	11:45 PM	1	1	0	0	0	0	1	0
11:45 PM	12:00 AM	0	0	0	0	0	0	1	0

East Overflow Lot									
Start Time	End Time	Wednesday (8/12/2015)		Thursday (08/13/2015)		Friday (08/14/2015)		Saturday (08/15/2015)	
		In Total	Out Total	In Total	Out Total	In Total	Out Total	In Total	Out Total
12:00 AM	12:15 AM	0	0	0	1	0	0	0	0
12:15 AM	12:30 AM	0	0	1	1	0	0	1	1
12:30 AM	12:45 AM	1	1	0	0	1	0	0	0
12:45 AM	1:00 AM	0	0	0	0	0	0	0	0
1:00 AM	1:15 AM	0	0	0	0	0	0	1	2
1:15 AM	1:30 AM	0	0	0	0	0	0	0	0
1:30 AM	1:45 AM	0	0	0	0	0	0	0	0
1:45 AM	2:00 AM	0	0	0	0	0	0	0	0
2:00 AM	2:15 AM	0	0	0	0	0	0	0	0
2:15 AM	2:30 AM	0	0	0	0	0	0	0	0
2:30 AM	2:45 AM	0	0	0	0	0	0	0	0
2:45 AM	3:00 AM	1	0	0	0	0	0	0	0
3:00 AM	3:15 AM	0	1	0	0	0	0	0	2
3:15 AM	3:30 AM	0	0	0	0	0	0	0	0
3:30 AM	3:45 AM	0	0	0	0	0	0	0	0
3:45 AM	4:00 AM	0	0	0	0	0	0	0	0
4:00 AM	4:15 AM	0	0	0	0	0	0	0	0
4:15 AM	4:30 AM	0	0	0	0	1	1	0	0
4:30 AM	4:45 AM	0	0	0	0	0	0	0	0
4:45 AM	5:00 AM	1	1	1	1	0	0	0	0
5:00 AM	5:15 AM	0	0	0	0	0	0	0	0
5:15 AM	5:30 AM	0	0	0	0	0	0	0	0
5:30 AM	5:45 AM	0	0	0	0	0	0	0	0
5:45 AM	6:00 AM	1	0	2	0	1	0	0	0
6:00 AM	6:15 AM	1	0	0	0	1	0	1	1
6:15 AM	6:30 AM	0	0	0	0	0	0	0	0
6:30 AM	6:45 AM	1	0	0	0	0	0	0	0
6:45 AM	7:00 AM	0	1	0	0	0	0	0	0
7:00 AM	7:15 AM	1	0	1	1	1	0	2	0
7:15 AM	7:30 AM	0	1	0	0	0	0	0	1
7:30 AM	7:45 AM	0	0	2	0	4	1	1	0
7:45 AM	8:00 AM	1	0	0	1	3	4	1	1
8:00 AM	8:15 AM	0	0	0	0	1	3	0	0
8:15 AM	8:30 AM	1	0	0	1	2	2	0	0
8:30 AM	8:45 AM	0	1	1	0	0	2	0	0
8:45 AM	9:00 AM	0	0	1	1	4	1	0	0
9:00 AM	9:15 AM	1	1	2	2	0	1	1	1
9:15 AM	9:30 AM	2	2	1	0	0	0	1	1
9:30 AM	9:45 AM	2	2	1	2	1	0	0	0
9:45 AM	10:00 AM	0	0	0	0	0	1	0	0
10:00 AM	10:15 AM	1	1	0	0	1	0	0	0
10:15 AM	10:30 AM	1	0	6	3	3	0	2	0
10:30 AM	10:45 AM	1	2	1	0	2	1	4	1
10:45 AM	11:00 AM	0	0	3	1	2	3	5	1
11:00 AM	11:15 AM	3	1	3	0	0	0	1	1
11:15 AM	11:30 AM	1	1	1	1	0	0	0	0
11:30 AM	11:45 AM	0	1	0	1	1	0	1	1
11:45 AM	12:00 PM	2	2	1	0	3	2	1	0
12:00 PM	12:15 PM	0	0	2	1	0	3	2	0
12:15 PM	12:30 PM	3	0	3	3	1	0	5	0
12:30 PM	12:45 PM	2	1	1	1	3	2	3	2
12:45 PM	1:00 PM	2	1	5	2	1	3	4	2
1:00 PM	1:15 PM	3	3	1	0	2	1	6	3
1:15 PM	1:30 PM	0	2	0	0	0	1	5	5
1:30 PM	1:45 PM	0	1	1	1	3	2	0	1
1:45 PM	2:00 PM	1	1	2	1	0	3	4	2
2:00 PM	2:15 PM	0	0	1	4	1	2	3	2
2:15 PM	2:30 PM	2	1	2	2	0	0	1	4
2:30 PM	2:45 PM	1	0	4	4	1	1	1	1
2:45 PM	3:00 PM	0	3	3	3	0	0	3	4
3:00 PM	3:15 PM	1	0	1	2	0	0	5	2
3:15 PM	3:30 PM	2	3	2	5	1	1	2	3
3:30 PM	3:45 PM	1	3	0	0	3	3	5	2
3:45 PM	4:00 PM	1	2	1	2	0	1	2	3
4:00 PM	4:15 PM	0	0	0	0	1	2	4	3
4:15 PM	4:30 PM	1	1	3	2	1	0	2	0
4:30 PM	4:45 PM	1	2	0	5	1	0	2	2
4:45 PM	5:00 PM	3	2	2	1	1	0	5	3
5:00 PM	5:15 PM	1	2	2	2	1	1	3	4
5:15 PM	5:30 PM	3	2	1	2	1	0	3	8
5:30 PM	5:45 PM	1	1	1	2	1	2	2	2
5:45 PM	6:00 PM	2	2	1	1	1	1	2	3
6:00 PM	6:15 PM	1	0	2	2	0	0	0	1
6:15 PM	6:30 PM	0	0	1	2	1	1	1	1
6:30 PM	6:45 PM	0	0	1	0	0	0	1	1
6:45 PM	7:00 PM	3	1	3	2	2	2	1	1
7:00 PM	7:15 PM	3	1	0	0	3	1	0	0
7:15 PM	7:30 PM	3	2	2	1	1	2	0	0
7:30 PM	7:45 PM	0	0	1	3	1	1	1	2
7:45 PM	8:00 PM	0	3	1	4	1	1	0	3
8:00 PM	8:15 PM	1	1	1	0	1	1	1	1
8:15 PM	8:30 PM	1	1	1	2	2	1	0	1
8:30 PM	8:45 PM	0	0	0	0	0	3	0	0
8:45 PM	9:00 PM	1	0	1	1	2	3	0	1
9:00 PM	9:15 PM	1	2	0	0	0	1	0	1
9:15 PM	9:30 PM	0	0	2	2	0	0	1	1
9:30 PM	9:45 PM	0	1	0	1	3	1	3	5
9:45 PM	10:00 PM	0	0	0	1	1	0	1	2
10:00 PM	10:15 PM	0	0	1	1	0	2	1	2
10:15 PM	10:30 PM	1	2	1	0	0	0	0	2
10:30 PM	10:45 PM	0	0	2	3	1	0	0	5
10:45 PM	11:00 PM	1	2	0	0	1	1	1	3
11:00 PM	11:15 PM	1	0	0	0	0	0	1	2
11:15 PM	11:30 PM	0	1	0	0	0	1	0	1
11:30 PM	11:45 PM	0	0	0	0	0	0	0	0
11:45 PM	12:00 AM	0	2	0	0	0	0	0	2

WEEKDAY SEASONAL FACTOR				
Year	Month	Date	Week #	Volume [1]
2014	1	1/8/2014	1	20,203
2014	1	1/15/2014	2	19,136
2014	1	1/22/2014	3	18,045
2014	1	1/29/2014	4	19,262
2014	2	2/5/2014	5	19,055
2014	2	2/12/2014	6	22,293
2014	2	2/19/2014	7	19,632
2014	2	2/26/2014	8	20,553
2014	3	3/5/2014	9	20,378
2014	3	3/12/2014	10	24,895
2014	3	3/19/2014	11	23,219
2014	3	3/26/2014	12	24,215
2014	4	4/2/2014	13	23,512
2014	4	4/9/2014	14	19,831
2014	4	4/16/2014	15	20,186
2014	4	4/23/2014	16	19,803
2014	4	4/30/2014	17	21,069
2014	5	5/7/2014	18	19,566
2014	5	5/14/2014	19	19,575
2014	5	5/21/2014	20	21,860
2014	5	5/28/2014	21	18,695
2014	6	6/4/2014	22	21,710
2014	6	6/11/2014	23	23,145
2014	6	6/18/2014	24	23,711
2014	6	6/25/2014	25	24,016
2014	7	7/2/2014	26	24,602
2014	7	7/9/2014	27	23,827
2014	7	7/16/2014	28	25,075
2014	7	7/23/2014	29	26,002
2014	7	7/30/2014	30	24,803
2014	8	8/6/2014	31	25,211
2014	8	8/13/2014	32	24,707
2014	8	8/20/2014	33	24,227
2014	8	8/27/2014	34	22,031
2014	9	9/3/2014	35	18,454
2014	9	9/10/2014	36	22,272
2014	9	9/17/2014	37	19,686
2014	9	9/24/2014	38	19,782
2014	10	10/1/2014	39	20,403
2014	10	10/8/2014	40	21,319
2014	10	10/15/2014	41	20,094
2014	10	10/22/2014	42	20,243
2014	10	10/29/2014	43	19,759
2014	11	11/5/2014	44	20,234
2014	11	11/12/2014	45	20,162
2014	11	11/19/2014	46	21,372
2014	11	11/26/2014	47	23,205
2014	12	12/3/2014	48	22,596
2014	12	12/10/2014	49	25,902
2014	12	12/17/2014	50	32,045
2014	12	12/24/2014	51	27,894
2014	12	12/31/2014	52	32,099
Average				22,223
August Average				*24,044*
Percent of August vs. Yearly Average				*1.08*
Adjustment Factor				0.926

SATURDAY SEASONAL FACTOR				
Year	Month	Date	Week #	Volume [1]
2014	1	1/11/2014	1	36,669
2014	1	1/18/2014	2	34,981
2014	1	1/25/2014	3	38,906
2014	2	2/1/2014	4	38,420
2014	2	2/8/2014	5	41,574
2014	2	2/15/2014	6	41,781
2014	2	2/22/2014	7	43,449
2014	3	3/1/2014	8	44,424
2014	3	3/8/2014	9	42,337
2014	3	3/15/2014	10	42,140
2014	3	3/22/2014	11	42,362
2014	3	3/29/2014	12	40,776
2014	4	4/5/2014	13	41,234
2014	4	4/12/2014	14	39,206
2014	4	4/19/2014	15	36,817
2014	4	4/26/2014	16	34,096
2014	5	5/3/2014	17	35,075
2014	5	5/10/2014	18	35,126
2014	5	5/17/2014	19	32,683
2014	5	5/24/2014	20	30,132
2014	5	5/31/2014	21	31,202
2014	6	6/7/2014	22	36,163
2014	6	6/14/2014	23	37,158
2014	6	6/21/2014	24	28,543
2014	6	6/28/2014	25	31,517
2014	7	7/5/2014	26	28,396
2014	7	7/12/2014	27	33,414
2014	7	7/19/2014	28	34,442
2014	7	7/26/2014	29	35,611
2014	8	8/2/2014	30	34,072
2014	8	8/9/2014	31	34,348
2014	8	8/16/2014	32	37,702
2014	8	8/23/2014	33	35,579
2014	8	8/30/2014	34	36,514
2014	9	9/6/2014	35	28,583
2014	9	9/13/2014	36	36,059
2014	9	9/20/2014	37	34,774
2014	9	9/27/2014	38	31,517
2014	10	10/4/2014	39	42,483
2014	10	10/11/2014	40	37,016
2014	10	10/18/2014	41	36,223
2014	10	10/25/2014	42	34,586
2014	11	11/1/2014	43	35,670
2014	11	11/8/2014	44	43,677
2014	11	11/15/2014	45	39,262
2014	11	11/22/2014	46	39,695
2014	11	11/29/2014	47	35,549
2014	12	12/6/2014	48	39,820
2014	12	12/13/2014	49	43,369
2014	12	12/20/2014	50	39,498
2014	12	12/27/2014	51	37,676
2014	1	1/3/2015	52	39,759
Average				36,963
August Average				*35,643*
Percent of August vs. Yearly Average				*0.96*
Adjustment Factor				1.042

Note 1: The volume represents the entering volume that was recorded over a 24-hour period by MOA.

Westwood

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MEMORANDUM

- - - - - ATTORNEY CLIENT PRIVILEDGED COMMUNICATION - - - - -

Date: September 11, 2015

Re: **Trip Generation Summary – Mall of America, Bloomington, MN**
File R0005963.00

To: Lori R. Hartglass, Partner, Arnstein & Lehr, LLP

From: Vernon E. Swing, P.E.

Westwood has conducted a traffic study to estimate the trip generation rates for the Mall of America in Bloomington, Minnesota. The intent of this study is to determine trip generation rates for weekday and Saturday daily and peak hour periods.

BACKGROUND

The Mall of America is located in Bloomington, a suburb of Minneapolis and Saint Paul, Minnesota. The Mall is located just southwest of the Minneapolis/Saint Paul International Airport. The Mall lies just south of I-494 and just east of Minnesota Highway 77 (Cedar Avenue). The Mall is also served by Metro Transit's Blue Line LRT and several bus lines.

The Mall of America opened to the public on August 11, 1992. Since then, it has welcomed millions of guests through its doors. Besides being a shopping and dining venue, the Mall offers an amusement park and aquarium to its guests. Over the years, retailers have come and gone, but the Mall remains one of the top tourist and shopping destinations for residents of and visitors to the Twin Cities at all times of the year.

PURPOSE

Because of its size (Gross Floor Area of 4,791,388 sq. ft.; Gross Leasable Area of 2,581,582 sq. ft.), any estimation of trip generation rates for the Mall of America using standard rates and formulae found in the Institute of Transportation Engineers' Trip

Generation Manual, Ninth Edition, would be untenable. The rates and formulae found therein are suitable for shopping centers much smaller than the Mall of America.

Therefore, Westwood collected data for weekday and Saturday periods to calculate daily and peak hour traffic volumes on those days. From these samples, daily and peak hour rates have been calculated.

The results of this study is to provide more realistic trip generation rates for malls that are much larger than the shopping centers used for calculating rates in the ITE Trip Generation Manual. As a result, a more accurate forecast of trips entering and leaving these "mega-malls" can be determined.

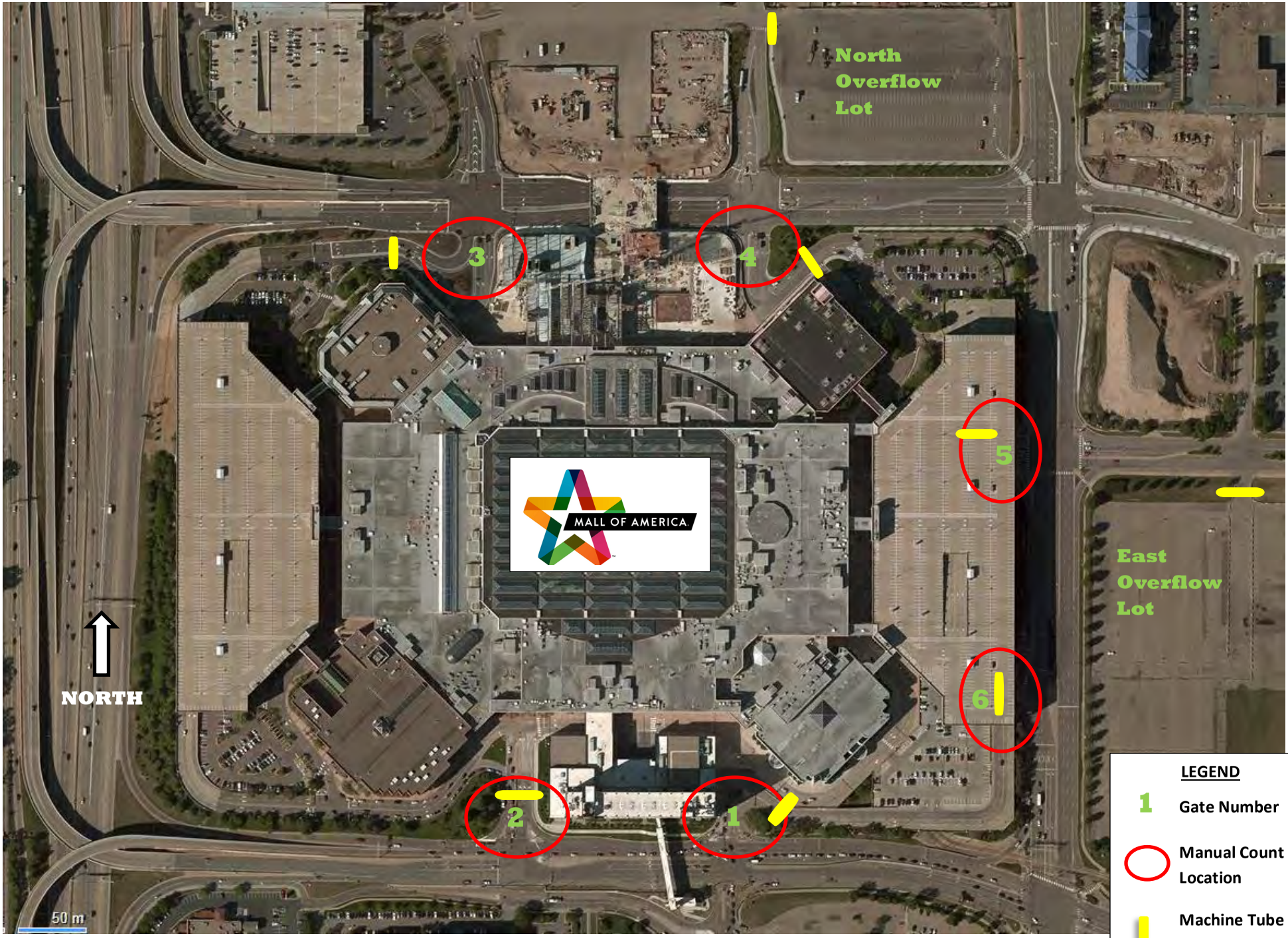
APPROACH

The Mall of America has six gates for vehicular traffic accessing to and from the adjacent street system – two gates each on the north, east and south sides of the Mall. There are no gates directly accessing the arterial roadway to the west of the Mall. Each gate has lanes inbound and outbound.

To count the vehicular traffic inbound and outbound, mechanical tube counters were strung across the inbound and outbound lanes of each gate. These tube counters have internal clocks and tallying mechanisms to record the volume of traffic passing over these tubes every fifteen minutes. These units were used to record daily and hourly traffic volume totals. (NOTE: Because the units were deployed Wednesday morning, a full 24-hour count on that day was not possible, and therefore only Thursday through Saturday daily totals were counted.)

Westwood also deployed personnel at each gate to manually record inbound and outbound traffic during time periods identified as when peak hours of adjacent street traffic would occur. Personnel used manual count boards to record inbound and outbound vehicular traffic during the periods from 7:00 A.M. to 9:00 A.M. and from 4:00 P.M. to 6:00 P.M. for three consecutive weekdays (Wednesday through Friday, June 24-26, 2015). Personnel also counted the peak Saturday vehicular traffic entering and exiting these gates from 2:00 P.M. to 5:00 P.M. (Saturday, June 27, 2015).

The Mall of America also provides overflow parking availability at surface lots to the north and east of the Mall. During the count periods, the overflow lot to the north was occupied by construction workers during weekdays and until noon on Saturdays. The overflow lot to the east of the Mall is used primarily on weekends. Mall staff contracts with Bloomington Police to direct patrons to park in these lots when the internal parking garages are full and gates are closed. Westwood placed mechanical tube counters at the access points for these overflow lots to record the vehicular entries and exits on Saturday afternoon. Figure 1 shows all the count locations.



Westwood

FIGURE 1 – TRAFFIC COUNT LOCATIONS

FINDINGS

Following the completion of these count periods, the mechanical tube counters and manual count boards were retrieved and the data was downloaded. Table 1 below lists the raw count figures recorded by the tube counters. (For count information by gate, see the Count Data Summary found as an Attachment to this document.)

Table 1 – 2015 Raw Mechanical Tube Count Results
Total Vehicular Count of All Gates

Day	24-Hour Count Volumes
Thursday	48,840
Friday	59,085
Saturday	64,692

Source: Westwood Professional Services, June 2015

It is noted that the Mall monitors inbound traffic with a sophisticated camera system which can be adjusted to provide estimated traffic counts. The Westwood counts were compared with count data recorded by the Mall's inbound traffic cameras during the last week and weekend in June 2014, as a check.

During the fourth week of June, 2014, the Mall recorded an inbound-only volume on Wednesday, June 25, 2014, of 24,016 trips. If one assumes that all inbound traffic leaves the mall that same day, it is logical that total daily inbound and outbound traffic for that day was twice the inbound volume, or 48,032 trips. This compares within 2% of the Thursday volume recording in 2015.

Likewise, Westwood compared the total volume recorded by Mall cameras from the last Saturday of June, 2014, with the count recorded by the tube counters this year. The Mall recorded an inbound-only volume on Saturday, June 28, 2014, of 31,517 trips. Assuming that the total daily inbound and outbound traffic for that day was twice the inbound volume, the daily total estimate for that Saturday was 63,034 trips. This compares within 3% of the volume recorded in 2015.

To determine seasonal average daily trips, Westwood utilized 2014 inbound traffic volumes at all gates, as recorded by Mall of America staff. (Note: The fourth Wednesdays were chosen for the monthly review so as avoid Thanksgiving Thursday.) Table 2 shows the monthly variation from the average number of inbound daily traffic volumes for all gates recorded in 2014. In that year, the average number of inbound trips on a Wednesday was 21,989 trips. When doubled to estimate both inbound and outbound trips, the average daily total weekday trips inbound and outbound are 43,978 trips.

Similarly, the average number of inbound trips on a Saturday was 36,261 trips. When doubled to estimate both inbound and outbound trips, the average daily total Saturday trips inbound and outbound are 72,522 trips.

Table 2 – 2014 Monthly Variation of Total Vehicular Count of All Gates

Weekday Variation – Fourth Wednesday of Each Month (inbound only)

year	Month	date	week	Count	Variation
2014	1	01/29/14	4	19,262	0.875983
2014	2	02/26/14	8	20,553	0.934695
2014	3	03/26/14	12	24,215	1.101232
2014	4	04/23/14	16	19,803	0.900587
2014	5	05/28/14	21	18,695	0.850198
2014	6	06/25/14	25	24,016	1.092182
2014	7	07/23/14	29	26,002	1.182500
2014	8	08/27/14	34	22,031	1.001910
2014	9	09/24/14	38	19,782	0.899632
2014	10	10/22/14	42	20,243	0.920597
2014	11	11/19/14	46	21,372	0.971941
2014	12	12/24/14	51	27,894	1.268543
Daily Inbound Average Volume (2014)				21,989	

Source: Mall of America, June 2015

Saturday Variation – Fourth Saturday of Each Month (inbound only)

year	Month	date	week	Count	Variation
2014	1	01/25/14	3	38,906	1.072958
2014	2	02/22/14	7	43,449	1.198246
2014	3	03/22/14	11	42,362	1.168269
2014	4	04/26/14	16	34,096	0.940307
2014	5	05/24/14	20	30,132	0.830987
2014	6	06/28/14	25	31,517	0.869183
2014	7	07/26/14	29	35,611	0.982088
2014	8	08/23/14	33	35,579	0.981205
2014	9	09/27/14	38	31,517	0.869183
2014	10	10/25/14	42	34,586	0.953820
2014	11	11/22/14	46	39,695	1.094717
2014	12	12/27/14	51	37,676	1.039037
Daily Inbound Average Volume (2014)				36,261	

Source: Mall of America, June 2015

(Note: The fourth Wednesdays were chosen for the monthly review so as avoid Thanksgiving Thursday.)

Westwood used these average volumes to calculate seasonal variations by month for weekday and Saturday volumes at the Mall, as shown in the last column of Table 2. From these variation rates, Westwood calculated the annualized average volumes for the 2015 weekday and Saturday counts. These annualized volumes are shown in Table 3.

Table 3 – 2015 Annualized Daily Volumes Using Total Vehicular Count of All Gates

Day of Week	24-Hour Count Volume	Seasonal Variation	Annualized Daily Volume
Thursday	48,840	1.092182	44,718
Friday	59,085	1.092182	54,098
Saturday	64,692	0.869183	74,429

Source: Westwood Professional Services, June 2015

Therefore, the Average Annualized Daily Volume recorded at the Mall of America between Thursday and Friday, June 25-26, 2015, was **49,408 trips per day**. The Average Annualized Saturday Volume recorded at the Mall of America on Saturday, June 27, 2015, was **74,429 trips per day**. (Note: Saturday totals include daily traffic volumes recorded at the North and East Overflow Lots.)

To determine the Mall's peak hour volumes of adjacent street traffic, the City of Bloomington provided Westwood with the peak hours of the streets surrounding the Mall. The typical peak hours for intersections on the streets surrounding the Mall of America are:

- Weekday A.M. Peak Hour -- 7:00 A.M. to 8:00 A.M.
- Weekday P.M. Peak Hour – 4:30 P.M. to 5:30 P.M.
- Saturday Peak Hour – 3:00 P.M. to 4:00 P.M.

Table 4 lists the total hourly volumes of traffic entering and exiting the Mall at the peak hour of the adjacent street traffic. These totals do not necessarily align with the peak hour of the generator. (Note: Saturday totals include peak hour traffic volumes recorded at the North and East Overflow Lots.)

Because the Mall hours of operation are from 10:00 A.M. to 9:30 P.M., the time when customer traffic is entering the gates does not correspond with the typical A.M. Peak Hour of Adjacent Street Traffic. Early morning traffic to and from the Mall comprises employees arriving to work and deliveries coming to the Mall.

Table 4 – 2015 Peak Hour Volumes Using Total Hourly Vehicular Count of All Gates

		Inbound	Outbound		Total
Wednesday	7:00 - 8:00 AM	419	210		629
Thursday	7:00 - 8:00 AM	495	227		722
Friday	7:00 -8:00 AM	480	204		684
AVERAGE		**465**	**214**		**678**
DIRECTIONAL DISTRIBTIION - A.M. PEAK		**69%**	**31%**		

		Inbound	Outbound		Total
Wednesday	4:30 - 5:30 PM	1614	1816		3430
Thursday	4:30 - 5:30 PM	1581	1804		3385
Friday	4:30 - 5:30 PM	1961	2191		4152
AVERAGE		**1719**	**1937**		**3656**
DIRECTIONAL DISTRIBTIION - P.M. PEAK		**47%**	**53%**		

		Inbound	Outbound		Total
Satruday	3:00 - 4:00 PM	**2337**	**2271**		**4608**
DIRECTIONAL DISTRIBTIION - SAT. PEAK		**51%**	**49%**		

NOTE: Volumes shown are for the Peak Hour of Adjacent Street Traffic, not necessarily the Peak Hour of the Generator.

Source: Westwood Professional Services, June 2015

Westwood verified these volumes by comparing the manual traffic counts with the mechanical tube counts for the same time periods. These counts compared favorably and are considered accurate.

As with the mechanical tube counts, the peak hour counts were seasonally adjusted. Westwood used the same factors to adjust the Peak Hour counts (see Table 5).

Table 5 – 2015 Annualized Peak Hour Volumes Using Hourly Vehicular Count of All Gates

Weekday Average	Average Volume	Seasonal Variation	Annualized Volume
-- A.M. Peak Hour	678	1.092182	**621**
-- P.M. Peak Hour	3656	1.092182	**3347**
-- Saturday Peak	4608	0.869183	**5302**

Source: Westwood Professional Services, June 2015

TRIP GENERATION RATES

Using the Annualized daily and peak hour volumes derived above, Westwood has developed trip generation rates for the Mall of America. These rates have been calculated based on 1,000 square feet of Gross Leasable Area, and have been identified for:

- Weekday Daily
- Weekday Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 A.M.
- Weekday Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 P.M.
- Weekend Daily, Saturday
- Saturday Peak Hour of Adjacent Street Traffic

Table 6 identifies the trip generation rates calculated for each condition. Each calculation is based on the Mall's gross leasable area of 2,581,582 sq. ft. Inbound and outbound percentages are based on the seasonally-adjusted average volume counts indicated above.

ANALYSIS

The rates and equations for Land Use Code 820 (Shopping Center) as found in the ITE Trip Generation Manual, Ninth Edition, were also used to estimate the trip generation for the Mall. The resulting calculations of the trip generation for the Mall of America would vastly overestimate the actual volumes counted.

Table 7 shows the trip generation for the Mall of America based on the ITE rates and fitted curve equations for Shopping Centers. It is noted all ITE data plots for Land Use 820 are for shopping centers less than 1.6 million GLA, except the plot for Weekday Peak Hour of Adjacent Street Traffic, which provides limited data up to 2.2 million GLA.

As shown earlier in this study, the annualized daily trip volume for the Mall of America is 49,408 trips/day. The Mall of America's trip generation estimate using standard ITE Trip Generation rates result in an estimation of 110,234 trips/day (-- over two times greater than actual). Using ITE's fitted curve equation, the Mall of America's trip weekday generation would have been 56,190 trips/day (-- closer, but still 14% greater than actual).

Therefore, in terms of trip generation of very large shopping centers, the use of the ITE Trip Generation Manual, Ninth Edition will yield significant overestimations of trip volumes.

Table 6 – Trip Generation per 1000 Sq. Feet Gross Leasable Area
Based on Weekday and Saturday Count Data
Mall of America, Bloomington, MN

Average Vehicle Trip Ends vs:	1000 Sq. Ft. Gross Leasable Area
On a:	Weekday
Average Rate:	19.14
Directional Distribution:	50% Entering, 50% Exiting

Average Vehicle Trip Ends vs:	1000 Sq. Ft. Gross Leasable Area
On a:	Weekday, Peak Hour of Adjacent
	Street Traffic, One Hour between
	7 and 9 A.M.
Average Rate:	0.24
Directional Distribution:	69% Entering, 31% Exiting

Average Vehicle Trip Ends vs:	1000 Sq. Ft. Gross Leasable Area
On a:	Weekday, Peak Hour of Adjacent
	Street Traffic, One Hour between
	4 and 6 P.M.
Average Rate:	1.30
Directional Distribution:	47% Entering, 53% Exiting

Average Vehicle Trip Ends vs:	1000 Sq. Ft. Gross Leasable Area
On a:	Saturday
Average Rate:	28.83
Directional Distribution:	50% Entering, 50% Exiting

Average Vehicle Trip Ends vs:	1000 Sq. Ft. Gross Leasable Area
On a:	Saturday, Peak Hour of Adjacent
	Street Traffic, One Hour between
	3 and 5 P.M.
Average Rate:	2.05
Directional Distribution:	51% Entering, 49% Exiting

Source: Westwood Professional Services, June 2015

Table 7 – Trip Generation for Mall of America
Based on ITE Trip Generation Manual
Rates and Equations for Land Use 820 (Shopping Center)

Mall of America Trip Generation Rates (based on ITE Rates)						
Time Period	ITE Trip Generation Rate per 1,000 sq. ft.	MOA Trip Generation Estimate	Trip Direction	ITE Trip Generation Rate	Directional distribution	
Weekday	42.7	110,234	Enter	55,117	50%	inbound
			Exit	55,117	50%	outbound
Weekday AM Peak	0.96	2,478	Enter	1,537	62%	inbound
			Exit	942	38%	outbound
Weekday PM Peak	3.71	9,578	Enter	4,597	48%	inbound
			Exit	4,980	52%	outbound
Saturday	49.97	129,002	Enter	64,501	50%	inbound
			Exit	64,501	50%	outbound
Saturday Mid-day Peak	4.82	12,443	Enter	6,470	52%	inbound
			Exit	5,973	48%	outbound
Mall of America Trip Generation Rates (based on ITE Equations)						
Time Period	ITE Fitted Curve Equation	MOA Trip Generation Estimate	Trip Direction	ITE Trip Generation Rate	Directional distribution	
Weekday	Ln(t)=0.65 Ln(X)+5.83	56,190	Enter	28,095	50%	inbound
			Exit	28,095	50%	outbound
Weekday AM Peak	Ln(t)=0.61 Ln(X)+2.24	1,132	Enter	702	62%	inbound
			Exit	430	38%	outbound
Weekday PM Peak	Ln(t)=0.67 Ln(X)+3.31	5,290	Enter	1,534	29%	inbound
			Exit	2,751	52%	outbound
Saturday	Ln(t)=0.63 Ln(X)+6.23	71,638	Enter	35,819	50%	inbound
			Exit	35,819	50%	outbound
Saturday Mid-day Peak	Ln(t)=0.65 Ln(X)+3.78	7,234	Enter	3,762	52%	inbound
			Exit	3,472	48%	outbound

Source: Trip Generation Manual, Ninth Edition, Institute of Transportation Engineers, 2012.

CONCLUSION AND RECOMMENDATION

The data plots in the ITE Trip Generation Manual, Ninth Edition for Land Use 820 (Shopping Centers) are shown for sites up to 2.2 million sq. ft. Gross Leasable Area. (Note: All ITE data plots for Land Use 820 are for shopping centers less than 1.6 million GLA, except the plot for Weekday Peak Hour of Adjacent Street Traffic, which provides limited data up to 2.2 million GLA.)

Based on the findings of this study, shopping centers that are significantly larger should not use the trip generation rates or fitted curve equations found in the ITE Trip Generation Manual, Ninth Edition. Rates should be compared and used from other larger malls, such as the Mall of America.

The results of this study were derived from existing daily and peak hour volumes tallied for the Mall of America. The Average Annualized Daily Volume recorded at the Mall between Thursday and Friday, June 25-26, 2015, was **49,408 trips per day**. The Average Annualized Saturday Volume recorded at the Mall on Saturday, June 27, 2015, was **74,429 trips per day**.

Based on these volumes and the current gross leasable area of the mall (2,968,272 sq. ft. G.L.A.), the Mall of America has a weekday trip generation rate of **19.14 trips per 1000 sq. ft. of gross leasable area**. Similarly, the Mall of America has a Saturday trip generation rate of **28.83 trips per 1000 sq. ft. of gross leasable area**. This report also details peak hour rates of the adjacent street traffic:

- Average Rate during A.M. Peak Hour of Adjacent Street Traffic = **0.24 trips per 1000 sq. ft. GLA**
- Average Rate during P.M. Peak Hour of Adjacent Street Traffic = **1.30 trips per 1000 sq. ft. GLA**
- Average Rate during Saturday Peak Hour of Adjacent Street Traffic = **2.05 trips per 1000 sq. ft. GLA**

cc: Stephen J. Manhart, Westwood

ATTACHMENT - COUNT DATA SUMMARY

A-1 – Daily Inbound/Outbound Traffic Volume Totals by Gate

(Note: Saturday totals include inbound/outbound volumes at North and East Overflow Lots.)

Day of Week	Gate 1		Gate 2		Gate 3		Gate 4		Gate 5		Gate 6		Total		Two-Way Daily Total
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	in	Out	
Wednesday[1]	3329	3144	5900	7038	5034	5145	2225	2133	3397	3773	2099	3123	21984	24356	**46340**
Thursday	3447	3190	6064	6883	5342	5151	2303	2155	3593	3953	2845	3914	23594	25246	**48840**
Friday	4189	4640	8070	8590	6658	6460	2947	2553	4412	3569	2892	4105	29168	29917	**59085**
Saturday	4487	6387	8014	8916	6726	8250	3343	2814	4404	4459	2414	3457	29388	34283	**63671**

Day of Week	MOA		North Lot		East Lot		Total		Two-Way Daily Total
	In	Out	In	Out	in	Out	in	Out	
Saturday	29388	34283	428	478	47	68	29863	34829	**64692**

[1]Wednesday counts did not commence at any gate until 7:00 a.m.

Source: Westwood Professional Services, June 2015

A-2 – Peak Hour Inbound/Outbound Traffic Volume Totals by Gate

Wednesday June 24, 2015															
Time	Gate 01		Gate 02		Gate 03		Gate 04		Gate 05		Gate 06		Total IN	Total OUT	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
7:00 - 7:15 AM	15	2	45	30	8	4	8	5	11	5	23	11	110	57	Peak Hour of
7:15 - 7:30 AM	12	5	26	19	9	7	10	7	10	7	20	15	87	60	Adjacent
7:30 - 7:45 AM	13	3	37	18	12	5	10	5	11	4	25	13	108	48	Street (7:00 -
7:45 - 8:00 AM	9	3	33	16	5	3	21	7	23	2	23	14	114	45	8:00 AM)
8:00 - 8:15 AM	19	5	25	18	35	11	12	13	23	3	33	14	147	64	
8:15 - 8:30 AM	17	8	43	23	22	14	15	3	32	6	22	10	151	64	
8:30 - 8:45 AM	25	7	43	23	35	12	9	6	30	8	36	20	178	76	
8:45 - 9:00 AM	20	3	43	12	57	13	35	9	39	3	32	19	226	59	
4:00 - 4:15 PM	49	82	88	159	78	136	55	40	66	78	40	30	376	525	
4:15 - 4:30 PM	44	60	93	120	99	130	58	39	77	63	25	28	396	440	
4:30 - 4:45 PM	56	72	104	118	83	121	62	50	66	83	17	34	388	478	Peak Hour of
4:45 - 5:00 PM	42	67	126	105	97	107	56	25	86	75	11	34	418	413	Adjacent
5:00 - 5:15 PM	60	69	108	154	98	92	37	45	94	72	20	32	417	464	Street (4:30 -
5:15 - 5:30 PM	48	62	122	138	84	100	50	39	62	73	25	49	391	461	5:30 PM)
5:30 - 5:45 PM	66	73	147	127	118	108	45	37	67	90	14	35	457	470	
5:45 - 6:00 PM	61	69	131	128	134	93	54	35	50	60	23	28	453	413	
7:00 - 8:00 AM	**49**	**13**	**141**	**83**	**34**	**19**	**49**	**24**	**55**	**18**	**91**	**53**	**419**	**210**	**629**
4:30 - 5:30 PM	**206**	**270**	**460**	**515**	**362**	**420**	**205**	**159**	**308**	**303**	**73**	**149**	**1614**	**1816**	**3430**

Thursday June 25, 2015															
Time	Gate 01		Gate 02		Gate 03		Gate 04		Gate 05		Gate 06		Total IN	Total OUT	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
7:00 - 7:15 AM	12	3	28	21	24	7	8	4	16	5	29	16	117	56	Peak Hour of
7:15 - 7:30 AM	14	4	16	18	18	5	19	14	11	4	23	14	101	59	Adjacent
7:30 - 7:45 AM	9	2	20	14	33	7	17	12	10	2	31	14	120	51	Street (7:00 -
7:45 - 8:00 AM	15	2	35	16	48	12	8	6	19	7	32	18	157	61	8:00 AM)
8:00 - 8:15 AM	17	2	41	9	61	5	14	11	22	8	22	14	177	49	
8:15 - 8:30 AM	15	4	21	24	40	15	13	6	27	5	24	13	140	67	
8:30 - 8:45 AM	11	2	31	23	35	13	16	10	41	17	32	19	166	84	
8:45 - 9:00 AM	29	8	42	14	54	3	20	13	48	18	35	17	228	73	
4:00 - 4:15 PM	41	80	99	152	91	132	45	36	77	75	34	45	387	520	
4:15 - 4:30 PM	52	70	72	102	75	121	48	35	82	71	19	40	348	439	
4:30 - 4:45 PM	39	73	91	132	100	111	43	35	71	75	17	30	361	456	Peak Hour of
4:45 - 5:00 PM	48	63	120	118	80	95	55	38	68	60	15	25	386	399	Adjacent
5:00 - 5:15 PM	51	85	109	145	94	108	46	46	73	94	26	47	399	525	Street (4:30 -
5:15 - 5:30 PM	66	71	109	101	89	99	60	28	87	75	24	50	435	424	5:30 PM)
5:30 - 5:45 PM	52	55	103	100	97	127	54	30	82	60	27	40	415	412	
5:45 - 6:00 PM	48	65	104	84	116	95	59	37	82	79	19	24	428	384	
7:00 - 8:00 AM	**50**	**11**	**99**	**69**	**123**	**31**	**52**	**36**	**56**	**18**	**115**	**62**	**495**	**227**	**722**
4:30 - 5:30 PM	**204**	**292**	**429**	**496**	**363**	**413**	**204**	**147**	**299**	**304**	**82**	**152**	**1581**	**1804**	**3385**

Friday June 26, 2015															
Time	Gate 01		Gate 02		Gate 03		Gate 04		Gate 05		Gate 06		Total IN	Total OUT	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
7:00 - 7:15 AM	12	3	28	15	15	2	12	7	13	4	22	23	102	54	Peak Hour of
7:15 - 7:30 AM	14	4	11	8	19	5	14	8	11	4	21	12	90	41	Adjacent
7:30 - 7:45 AM	9	2	38	16	25	3	15	6	10	3	28	13	125	43	Street (7:00 -
7:45 - 8:00 AM	15	2	46	20	50	7	9	9	19	5	24	23	163	66	8:00 AM)
8:00 - 8:15 AM	17	2	33	9	42	10	16	12	22	8	35	13	165	54	
8:15 - 8:30 AM	15	4	31	21	35	9	9	4	27	5	35	14	152	57	
8:30 - 8:45 AM	11	2	46	24	49	14	14	14	41	5	32	21	193	80	
8:45 - 9:00 AM	29	8	49	34	66	22	22	11	48	4	39	19	253	98	
4:00 - 4:15 PM	41	80	153	203	99	150	63	54	89	89	30	36	475	612	
4:15 - 4:30 PM	52	70	126	166	133	160	60	42	95	89	20	35	486	562	
4:30 - 4:45 PM	39	73	160	179	115	130	68	54	81	73	19	42	482	551	Peak Hour of
4:45 - 5:00 PM	48	63	129	146	161	131	58	51	75	94	21	39	492	524	Adjacent
5:00 - 5:15 PM	51	85	118	151	135	141	64	49	91	78	30	39	489	543	Street (7:00 -
5:15 - 5:30 PM	66	71	141	187	128	147	76	37	66	90	21	41	498	573	8:00 AM)
5:30 - 5:45 PM	52	55	123	150	125	155	73	54	92	101	19	29	484	544	
5:45 - 6:00 PM	48	65	145	139	108	99	61	37	70	111	24	23	456	474	
7:00 - 8:00 AM	**50**	**11**	**123**	**59**	**109**	**17**	**50**	**30**	**53**	**16**	**95**	**71**	**480**	**204**	**684**
4:30 - 5:30 PM	**204**	**292**	**548**	**663**	**539**	**549**	**266**	**191**	**313**	**335**	**91**	**161**	**1961**	**2191**	**4152**

A-2 (cont'd.) – Peak Hour Inbound/Outbound Traffic Volume Totals by Gate

Saturday June 27, 2015															
Time	Gate 01		Gate 02		Gate 03		Gate 04		Gate 05		Gate 06		Total IN	Total OUT	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
2:00 - 2:15 PM	88	75	160	128	156	140	75	52	66	84	28	31	573	510	
2:15 - 2:30 PM	84	52	156	132	154	127	69	52	85	85	34	18	582	466	
2:30 - 2:45 PM	94	62	160	141	151	141	75	33	72	91	24	25	576	493	
2:45 - 3:00 PM	97	68	155	137	150	148	84	51	97	89	34	22	617	515	
3:00 - 3:15 PM	114	85	105	145	144	145	69	50	84	88	38	39	554	552	Peak Hour of Adjacent Street (3:00 - 4:00 PM)
3:15 - 3:30 PM	117	56	135	178	143	164	79	66	112	85	30	28	616	577	
3:30 - 3:45 PM	102	61	115	127	145	177	77	50	84	97	26	28	549	540	
3:45 - 4:00 PM	98	68	149	143	170	163	77	54	72	85	30	17	596	530	
4:00 - 4:15 PM	94	64	136	152	102	194	84	40	100	76	47	28	563	554	
4:15 - 4:30 PM	88	58	130	148	138	152	61	61	92	103	27	28	536	550	
4:30 - 4:45 PM	108	67	140	165	148	179	60	46	106	109	21	21	583	587	
4:45 - 5:00 PM	97	67	136	128	130	150	69	51	118	102	22	16	572	514	
3:00 - 4:00 PM	**431**	**270**	**504**	**593**	**602**	**649**	**302**	**220**	**352**	**355**	**124**	**112**	**2315**	**2199**	**4514**

Saturday June 27, 2015									
Time	MOA		N. Overflow Lot		E. Overflow Lot		Total IN	Total OUT	Total for Peak Hour (3:00 - 4:00 PM)
	IN	OUT	IN	OUT	IN	OUT			
3:00 - 4:00 PM	**2315**	**2199**	**16**	**59**	**6**	**13**	**2337**	**2271**	**4608**

Source: Westwood Professional Services, June 2015

APPENDIX G:
Mall of America (MOA) Special Generator Survey

CAMBRIDGE SYSTEMATICS

Mall of America Special Generator Survey

Metropolitan Council Travel Behavior Inventory

Final Report

prepared for

Metropolitan Council

prepared by

Cambridge Systematics, Inc.

April 20, 2012

www.camsys.com

report

Mall of America Special Generator Survey

Metropolitan Council Travel Behavior Inventory

prepared for

Metropolitan Council

prepared by

Cambridge Systematics, Inc.
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date

April 20, 2012

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1.0 Background

In 1982, Minnesota's professional baseball and football teams, the Twins and the Vikings, moved from Metropolitan Stadium in Bloomington to the Metrodome in downtown Minneapolis[1]. The resulting 78 acres of vacant prime real estate was converted into what is now the Mall of America (MoA). The MoA is situated is extremely accessible to a majority of residents in the region and is, in fact, only a mile and a half away from the Minneapolis -St. Paul international Airport and is at the intersection of major highways.

- The MoA has a gross area of nearly 4.2 million sq. ft. and is one of the **largest malls** in the United States.
- The mall employs between **11,000 – 13,000 employees** and attracts nearly **40 million visitors** annually, making it one of the preeminent destinations in the Metropolitan Council (Met Council) region.
- Further, analyses carried out by the MoA indicate that over 30 percent of all visitors to the MoA are **out-of-region visitors**.

Given the number of visitors and, to a certain degree, employees that the mall attracts, the impact of the mall on regional travel patterns is substantial. Therefore, Met Council determined that it was critical to administer surveys at the MoA as part of the Travel Behavior Inventory to better understand the travel behavior of MoA visitors. Cambridge Systematics and its partners conducetd the survey on behalf of Met Council. The survey team (CS Team) consisted of:

- **Cambridge Systematics**, who were responsible for the oversight of the process, to support the development of the questionnaire and sampling plan and to develop a database useful for travel modeling;
- **Kevin Tierney**, who was responsible for the overall design and sampling procedures for the survey, field implementation, and survey expansion. He was supported in the field by **Robert Gollnik Jr**. ;
- **NexPro Personnel Services**, who provided fieldworkers for the survey effort.

This report summarizes the key findings of the MoA special generator survey. The report is structured as follows. **Section 2** presents an outline of the sampling plan, survey questionnaire and the field administration. **Section 3** discusses the expansion methodology and presents some key findings from the data collected through the survey effort.

[1] http://www.mallofamerica.com/about/moa/history

2.0 Survey Implementation

Special generator surveys have been administered in several large cities across the United States and the most relevant information to ask in such surveys is well documented.

- However, the size and scale of the Mall of America provide unique logistical challenges.
- Further, this survey effort was designed to leverage recent technological advances in data collection that have not been widely used.

This section describes the survey effort including questionnaire design, sampling and field implementation with a special emphasis on the defining elements of this endeavor.

2.1 SURVEY APPROACH

Past research has shown that studies where respondents are either asked to mail-back completed surveys or are asked for an address to receive a survey often have low response rates.

In-person surveys have higher response rates, but participation is dependent on the length of the questionnaire. However, traditional pen and paper surveys require data transcription which tends to negatively impact data quality and cost.

For this effort, a short web-based in-person survey approach was taken to improve participation and data quality. The surveys were coded into a web-based software called Survey Gizmo® and tested for soundness in logic and reasoning. The survey effort was conducted using wireless enabled IPad® devices.

2.2 SURVEY QUESTIONNAIRE

The survey scripts were designed by the CS Team and by Met Council staff, and were revised iteratively to incorporate changes suggested by both internal team members as well as staff from the MoA. Typical travel survey questionnaires such as detailed origin location and household income were dropped from this survey based on the recommendation from staff at the MoA. These changes were implemented ensure that MoA customers were not inconvenienced or made to feel uncomfortable. The survey questionnaire covered several key aspects including:

- **Socio-Demographics.** Respondents were asked to provide information about household variables such as family size and vehicle ownership, and personal information such as age, gender and worker status.
- **Residency.** Given the large number of out-of-region visitors that frequent the MoA, a question focusing on the residency status of the participants was included in the survey questionnaire. Out-of-region residents were asked to provide their primary reason for visiting the Met Council region and also asked to provide their state and city of residence.
- **Trip Information.** Responses to these questions are most relevant in the development of the new travel demand model. Respondents were asked to provide information about their origin location, time of travel, mode of transportation and travel party size. Greater detail was asked about the transit routes, bus stops and mode of access.
- **Trip Purpose**. Visitors to the MoA pursue different activities when they arrive at the mall – including shopping, recreation, fitness, group sessions and social meetings. Respondents were asked to fill information about their primary purpose of visiting the MoA on that particular trip.

The final survey script is attached to this memorandum in **Appendix A**.

2.3 SAMPLING

A customized sampling plan was designed for this study. The sampling plan focused on two key elements:

- **Survey all Entrances**. The MoA has entrances in all four directions with parking garages in the East and West directions. The sampling plan covered entrances in all directions because the mall entrance locations are expected to be related to the access mode, the activities within the mall, and the access trip origin location.
- **Focus on Visitors**. Mall employees were not interviewed beyond initial screening questions. The reasoning behind this was that mall employees are not expected to have substantially different characteristics and travel patterns than other regional retail employees whose travel behavior is well documented using the regional household survey.

2.4 FIELD IMPLEMENTATION

The Mall of America intercept surveys were performed on Thursday, September 29, 2011, and Friday, September 30, 2011, by NexPro staff under the supervision of Kevin Tierney. A typical weekday and an end of the week day were selected to capture a variety of visitors that visit the MoA.

As discussed in **Section 2.1**, the surveys were administered using web-based survey software called Survey Gizmo® on wireless enabled IPads® . There were

no major issues encountered during data collection and the technology worked relatively smoothly and supported instantaneous transmission of survey data into a ready-to-use database.

Some of the key findings and procedures are highlighted below:

- To ensure that Mall of America customers were **not inconvenienced** or made to feel uncomfortable, the surveys were designed to take only a few minutes and did not include sensitive information.
- Survey workers restricted themselves to **mall entrance locations only** so that the conduct of the survey provided only minimal interference with mall tenants. It must be noted that the MoA may be accessed by walking into the departmental stores that are at each corner of the building. However, the survey workers did not receive permission to be stationed here.
- At the time of field implementation, the **South Entrance of the MoA was closed** for renovation. Hence, survey field workers operated only out of the other three entrances.
- Since mall activity typically peaks during the later part of the day, the survey was administered during the **mid-day and PM peak** periods. This allowed the survey team to target the busiest periods that attracted the most number of visitors to the mall.
- During the survey data collection period, fieldworkers also performed **spot counts** of people entering and exiting the malls at each of the operating mall entrances. These counts enabled the surveys to be weighted by time period and entrance location.
- The average duration of the survey, as recorded by the survey software was **nine minutes**. Several respondents **did not complete the survey**, possibly because of their interest in entering the stores at the mall.

3.0 Data Analysis and Weighting

This section discusses the data collected as part of the MoA survey and identifies key findings and trends. In addition, a brief description of the weighting procedures is also included as part of this section.

3.1 DATA RETRIEVAL

A total of 330 surveys were completed with mall visitors and employees. Of these, 279 surveys of visitors were performed that provided adequate information for survey analysis. Since the surveys were completed online, data were compiled automatically and analyzed for completeness. Survey responses were aggregated by entrance/exit location and time of day to support detailed analyses.

3.2 SURVEY EXPANSION

As discussed in **Section 2.4**, fieldworkers performed spot counts of people entering and exiting the malls at each of the operating mall entrances. These counts served as the control totals that supported the survey expansion by time period and entrance location.

- The weights reflect the **differences in response rates** that occurred at the survey locations.
- These weights are important, because the mall entrance locations are related to the **trip making characteristics** including access mode, the activities within the mall, and the access trip origin location. For instance, because the light rail station is adjacent to the east entrance, collecting disproportionate numbers of surveys from the first floor east entrance would likely bias the representation of light rail riders in the survey sample.

The survey weights were calculated as the percentage of total observed foot traffic at a particular survey location divided by the percentage of total surveys taking place at the survey location. The normalized weights allow for weighted tabulations that sum to the completed cleaned survey sample size. Weighted survey results are included in the final survey spreadsheet appended to this memorandum.

Key steps in the expansion process are discussed below:

- **Step 1**. The 10 minute and 15 minute spot counts at specific locations were expanded to obtain hourly in and out traffic estimates;

- **Step 2**. Hourly spot count estimates were interpolated to obtain midday and PM peak estimates;
- **Step 3**. The counts were aggregated to develop count estimates by groups of locations. Counts on levels 1, 2, and 3 on the west ramp were combined because the level of foot traffic on the individual levels is a function of parking availability in the garage. The same was true for levels 2 and 3 of the east entrance. Counts from level 1 of the east entrance which houses the light rail station were kept separate;
- **Step 4.** Survey results were summarized by time period and location and compared against the counts to calculate normalized weights;
- **Step 5.** The normalized weights were assigned to survey records prior to performing detailed data analyses.

Table 3.1 presents the results from the survey expansion process. In general, the response rate was lower during the PM peak period than in the mid-day period and can be seen by the smaller normalization factors against the records from the mid-day period.

If total visitor count at each of the entrances can be obtained from the MoA, CS staff can develop a second round of adjustment weights that represents true visitor traffic at the MoA.

Table 3.1 Survey Expansion Procedure

Entrance/ Time Period	Surveys	Estimated Foot Traffic	Normalized Weight
East Entrance Level 1 MD	82	3,116	0.699
East Entrance Level 1 PM	24	1,919	1.471
East Entrance Levels 2-3	50	4,065	1.496
North Entrance Level 1 MD	51	2,340	0.844
North Entrance Level 1 PM	13	1,076	1.524
West Entrance All Levels MD	86	3,560	0.762
West Entrance All Levels PM	24	1,858	1.424
Total	**330**	**17,934**	

Source: CS Team Analysis of Survey Data and Entrance Counts

3.3 USE IN MODELING

A detailed modeling framework will be developed to maximize the utilization of the intercept surveys conducted at the Mall of America.

- Given the nature of information collected, only trip level models may be developed using these data.

- The most elaborate modeling effort would include a comprehensive stand-alone suite of models that include : mode choice, time-of-day choice and modeling of production (attraction) ends for trips made to (from) the Mall of America.
- These models may be segmented by resident vs. out-of-region visitors depending on the quality of the data.

Comprehensive data analyses will be implemented during the model estimation stage to determine the feasibility of developing the proposed models. The findings from that data analysis will be incorporated in the final report associated with this study.

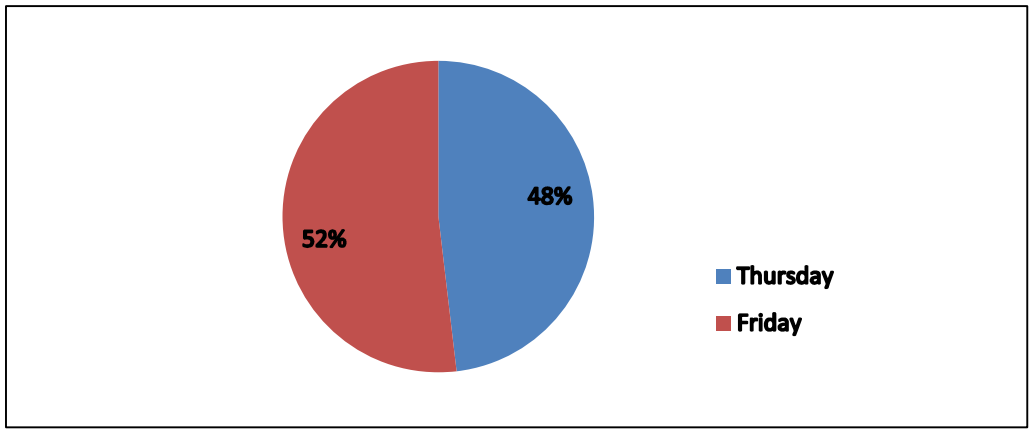
3.4 WEIGHTED DATA ANALYSIS

This section highlights some of the key statistics observed in the MoA survey.

Day of Week

Visitor traffic to the Mall of America was only four percent higher on Friday than on Thursday (**Figure 3.1**) suggesting that the MoA is frequented by respondents almost equally throughout the week.

Figure 3.1 Distribution of Survey Responses by Day of Week



Source: CS Team Analysis of Survey Data

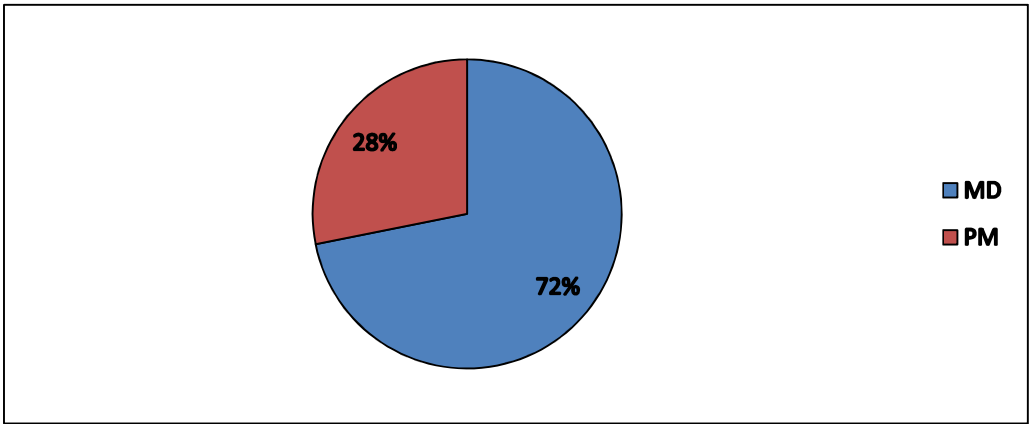
- However, Thursday visitors were significantly more likely to come to the MoA during the PM peak, rather than during the midday period. This is as expected given the work and school constraints that most households experience during the week.
- Two-thirds of all older visitors (aged 65 and above) came to the mall on Friday, while less than half of visitors in the other age groups came on Friday.

- Friday visitors were significantly more likely than Thursday visitors to be frequent mall visitors, and Friday visitors were also more likely to come to the Mall in larger travel parties.
- Thursday visitors were more likely to travel longer distances to the Mall than Friday visitors, and Thursday visitors were significantly more likely than Friday visitors to use a travel mode other than a private auto.

Time Period

Almost three quarters of the visitors to the Mall of America arrived during the midday period, before 4 PM.

Figure 3.2 Distribution of Survey Responses by Time of Day



Source: CS Team Analysis of Survey Data

- The percentage of visitors 65 years old or more that came during the midday period was significantly higher than visitors from the other time periods.
- Frequent mall visitors are significantly more likely than less frequent visitors to come to the Mall during the PM period.
- More than one-third of MSP region residents came to the mall during the PM peak, but less than 10 percent of MSP region visitors came to the mall after 4 pm.
- Similarly, more than one-third of the visitors who came to the mall by themselves came during the PM peak, but only about a quarter of those traveling with others came after 4 pm.
- Thirty percent of the private vehicle trips to the mall occurred after 4 pm, while only 24 percent of trips by other modes occurred after 4 pm.

Party Size

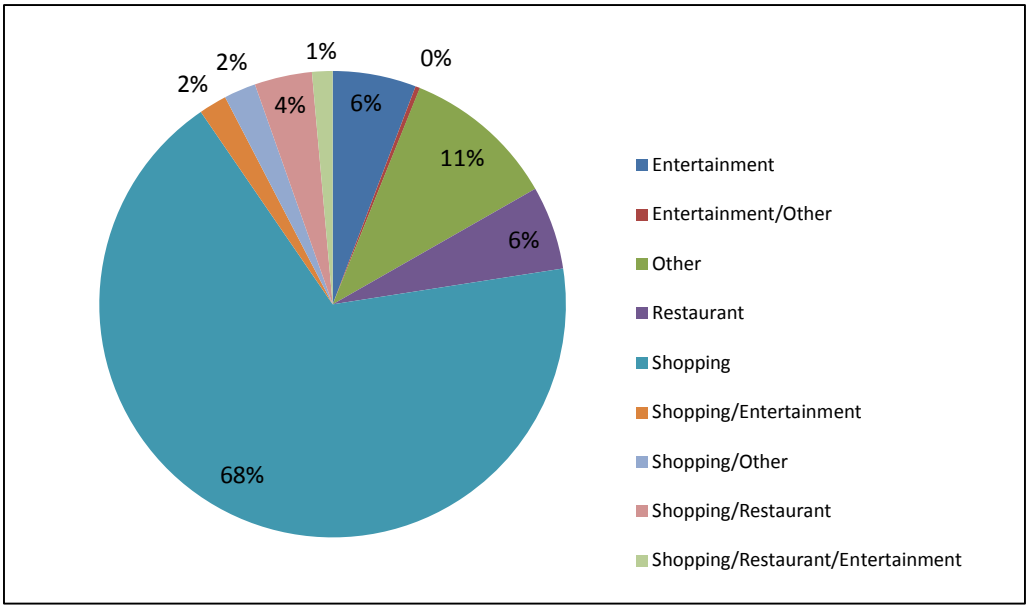
Forty-four percent of mall visits were made by people who had come to the mall by themselves. Twenty-one percent of the visits were made by people who had come to the mall with two or more other people.

- Sixteen percent of the visiting parties included a child or children.
- Larger party sizes and travel parties with children were more likely to have shorter trip durations.

Purpose of Mall Visit

Nearly 90 percent of all visitors came to the Mall of America for a single purpose. Not surprisingly, more than three-quarters of the visitors came to the mall to shop, either solely or in combination with other activities (**Figure 3.3**).

Figure 3.3 Primary Reason to Visit the Mall of America



Source: CS Team Analysis of Survey Data

- Residents from the Minneapolis – St. Paul region were more likely than visitors to come to the Mall of America for non-shopping purposes.
- Visitors traveling alone to the mall were more likely to come to the mall for shopping, and as party sizes increase, the percentage of visitors coming to the mall for non-shopping reasons increases.
- Almost ninety percent of the shopping-purpose visitors came to the mall with the expectation of visiting more than one store. Of the few visitors who came to the mall to go to a single store, only a small majority used

the mall entrance closest to that store. It appears the influence of the specific activities within the mall have only a small effect on mall access.

Residents vs. Out-of-Region Visitors

Seventy percent of Mall of America visits were made by residents of the Minneapolis-St. Paul region while the remaining thirty percent of the visits were made visitors to the region. There were some interesting observations of socio-demographics between visitors and residents.

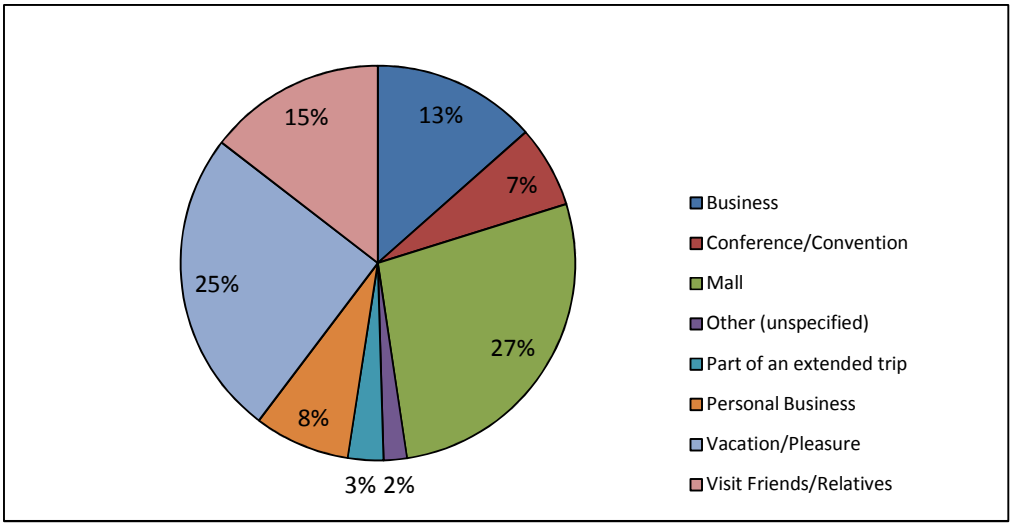
- Out-of-region visitors that came to the MoA were more likely to be male and to be between 31 and 45 years old.
- Of course, residents were far more likely than out-of-region visitors to be more frequent mall visitors, and residents were much more likely to travel by themselves to the mall.
- Residents had significantly longer trips to the MoA than out-of-region visitors. Further, residents had higher shares of private vehicle use to the MoA than visitors.

Out-of-Region Visitors

The MoA is a big attraction in the Metropolitan Council region. In fact, the most common reason that out-of-region visitors had come to the region was to visit the mall (27%).

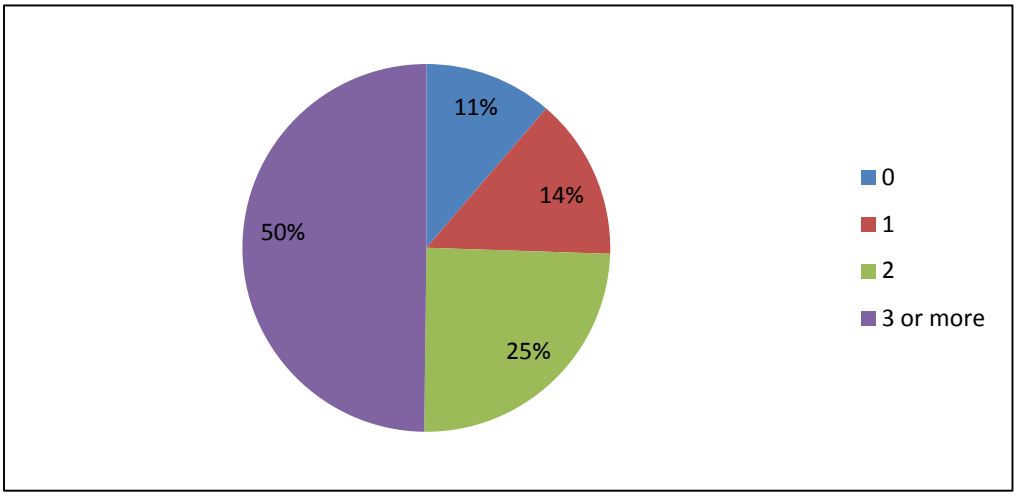
- Only 13 percent of MSP visitors that had come to the mall were in the region for business reasons (**Figure 3.4**). Another 7 percent had come for a convention or conference. The remainder of visitors had come for other non-business purposes.
- One-half of MSP visitors that came to the MoA stayed in the region for three or more nights (**Figure 3.5**). About 11 percent of visitors made day trips to the region.

Figure 3.4 Out-of-Region Visitors' Purpose for being in the Metropolitan Council Area



Source: CS Team Analysis of Survey Data

Figure 3.5 Duration of Stay of Out-of-Region Visitors



Source: CS Team Analysis of Survey Data

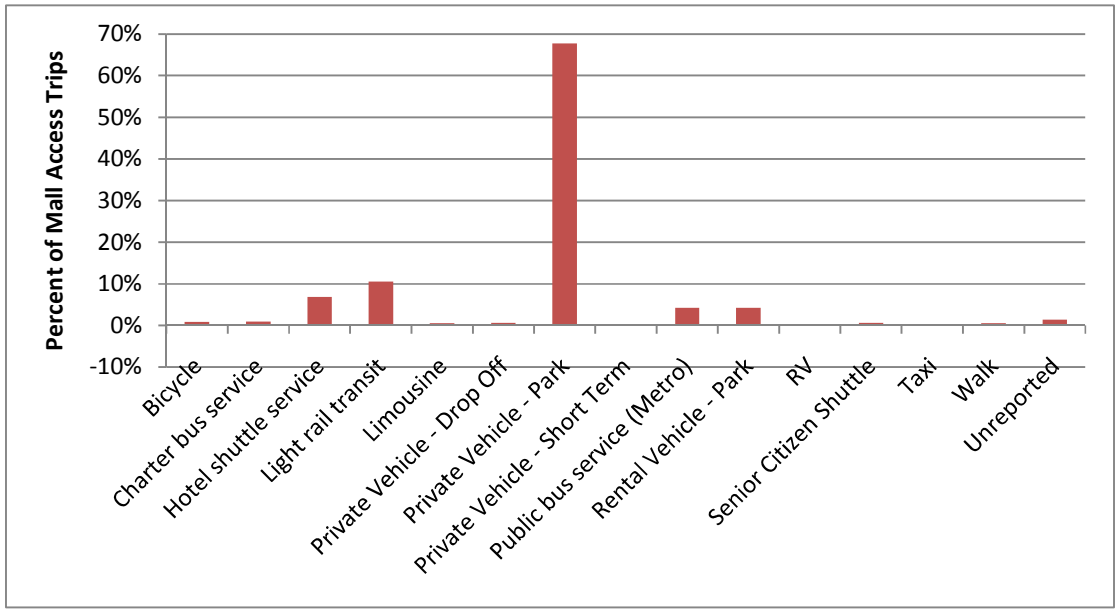
Mode of Transportation

Almost three-quarters of visitors to the Mall of America traveled by private vehicle. As we would expect, visitors from zero-vehicle households were much less likely to arrive by private vehicle.

Nearly a fourth of all visitors reported using transit or non-motorized modes of transportation to reach the MoA. Among these, light rail transit was the most

popular followed by hotel shuttle service catering almost exclusively to out-of-region visitors.

Figure 3.6 Access Mode for Mall of America Trips

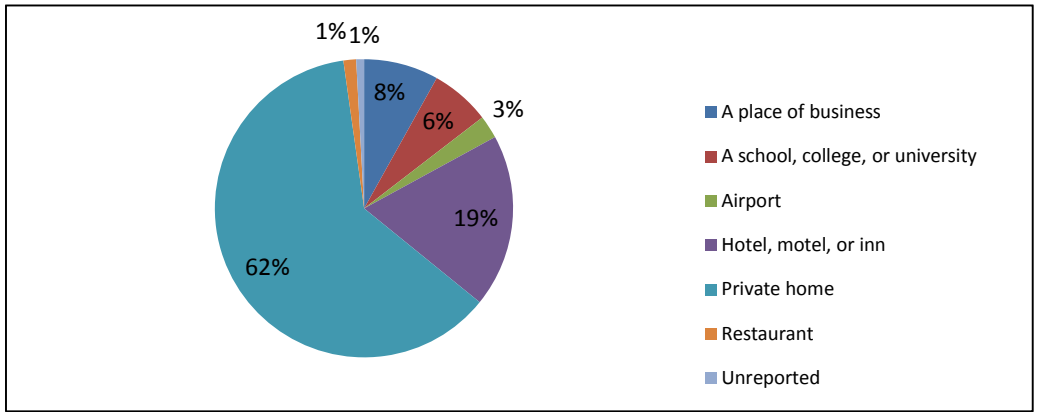


Source: CS Team Analysis of Survey Data

Origins for Mall of America Trips

As described in **Figure 3.7**, more than 60 percent of Mall visitors began their trips to the mall at private homes (70 percent of visitors are residents). An additional 19 percent of visitors began their trip to the mall at a hotel or motel (30 percent of visitors are from out-of-region).

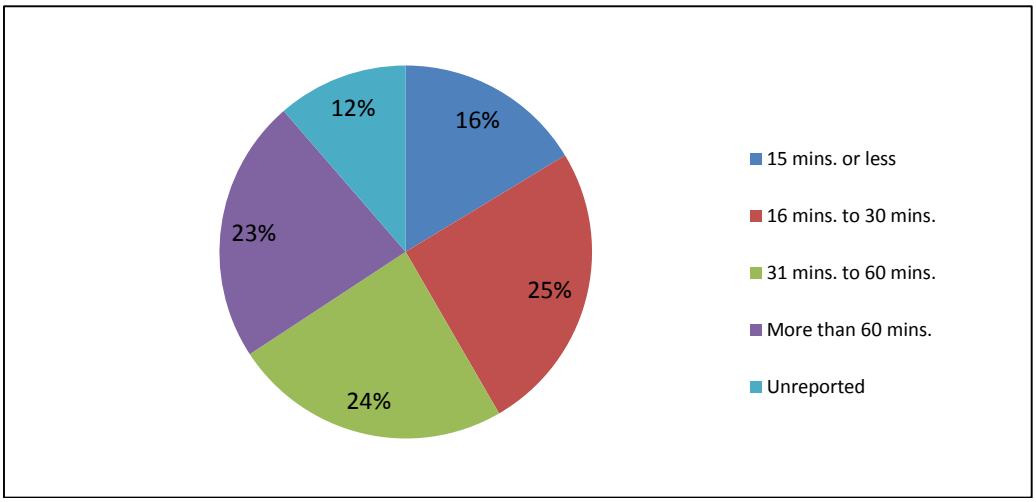
Figure 3.7 Trip Origin for Trips to the Mall of America



Source: CS Team Analysis of Survey Data

Just over a fourth of visitors estimated that their trip to the Mall of America took longer than one hour (**Figure 3.8**). Nineteen percent of visitors said that their trip to the mall took less than 15 minutes. Visitors less than 65 years old tended to have longer trips to the mall than those who were 65 or over.

Figure 3.8 Travel Time to Reach the Mall of America



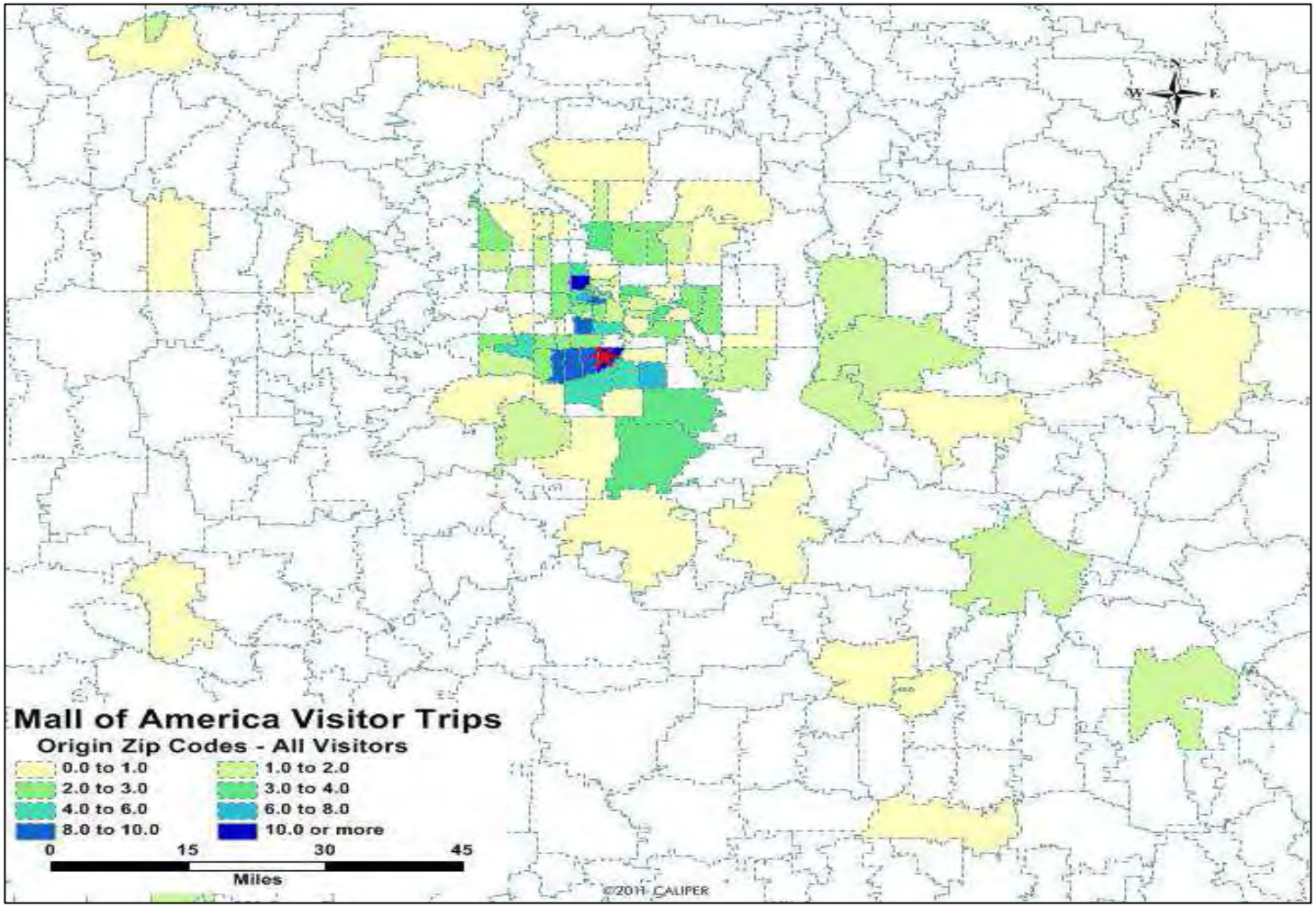
Source: CS Team Analysis of Survey Data

Visitors who traveled 15 minutes or less to the Mall of America were more likely to have more household vehicles and to have larger party sizes. In addition, these visitors were more likely to come to the mall more frequently and were more likely to travel to the mall by private vehicle.

F**igure 3.9** provide an snapshot of the zip codes for trip origins for all Mall of America survey respondents. **Figure 3.10** focuses only on residents, while **Figure 3.11** focuses on out-of-region visitors.

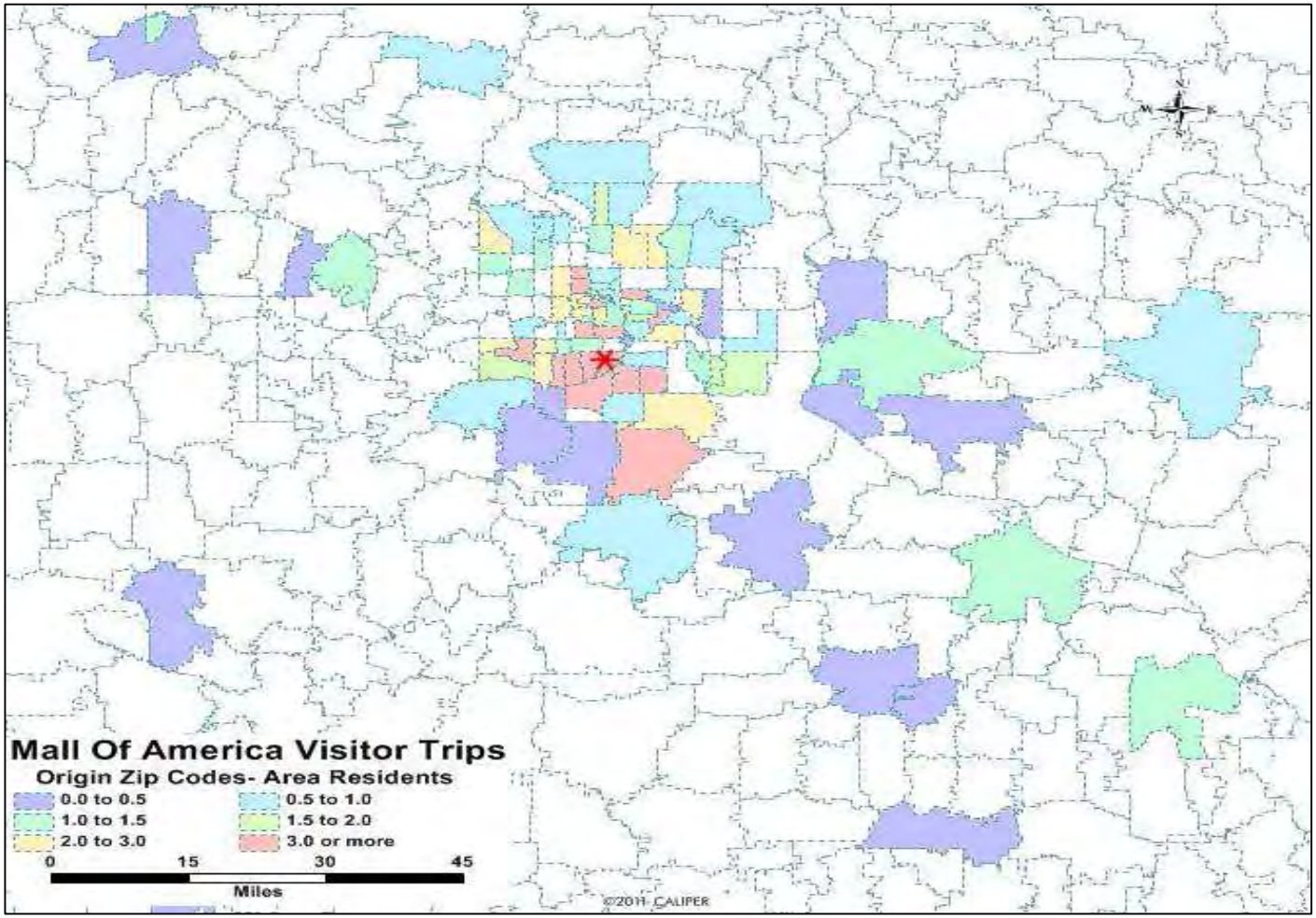
The maps indicate that MoA trips begin throughout the Twin Cities region, but the primary concentration of trip origins are in the zip code areas closest to the mall.

Figure 3.9 Origin Location of all Mall of America Visitors



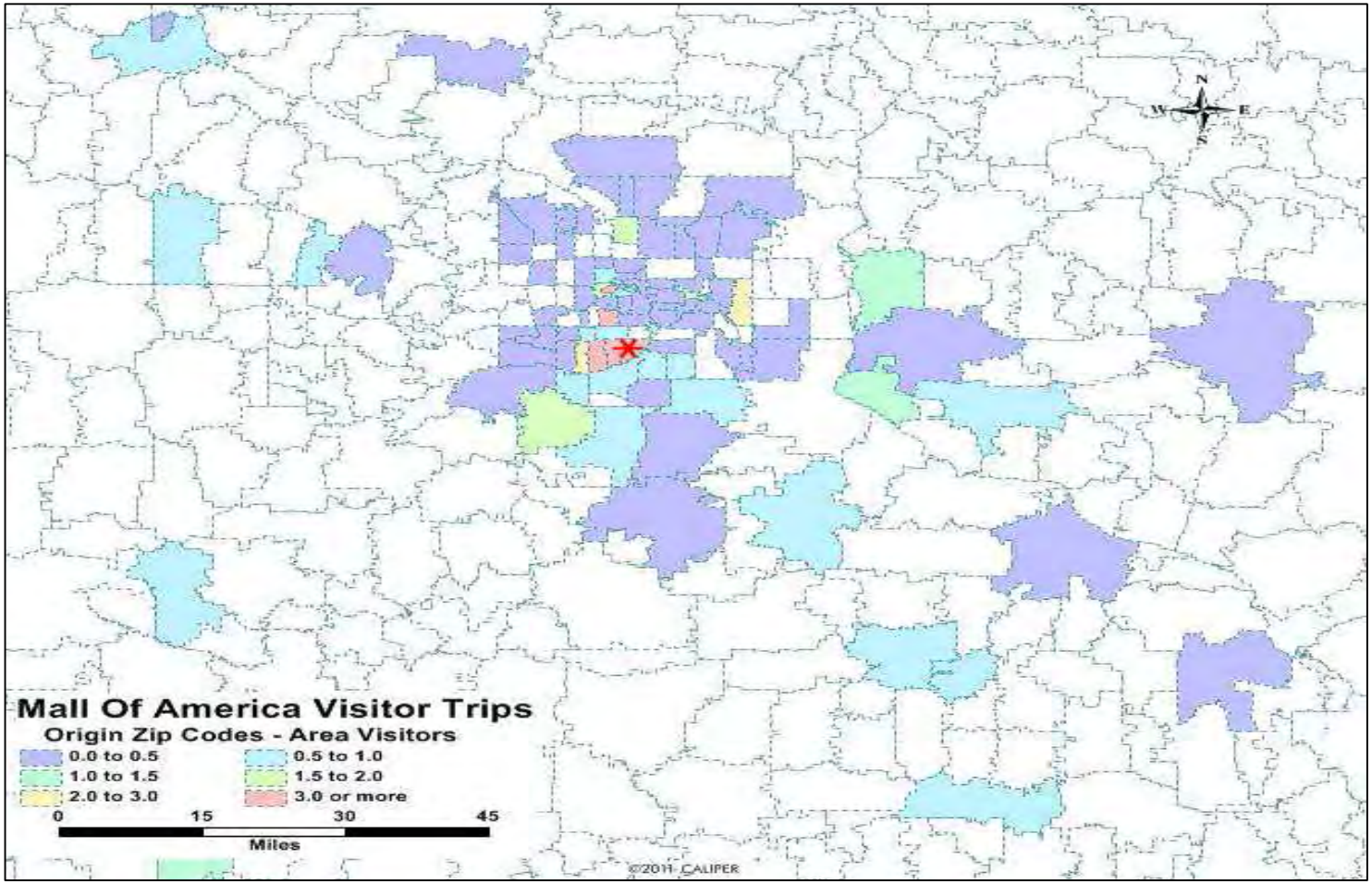
Source: CS Team Analysis of Survey Data

Figure 3.10 Origin Location of Resident Visitors at Mall of America



Source: CS Team Analysis of Survey Data

Figure 3.11 Origin Location of Out-of-Region Visitors at Mall of America



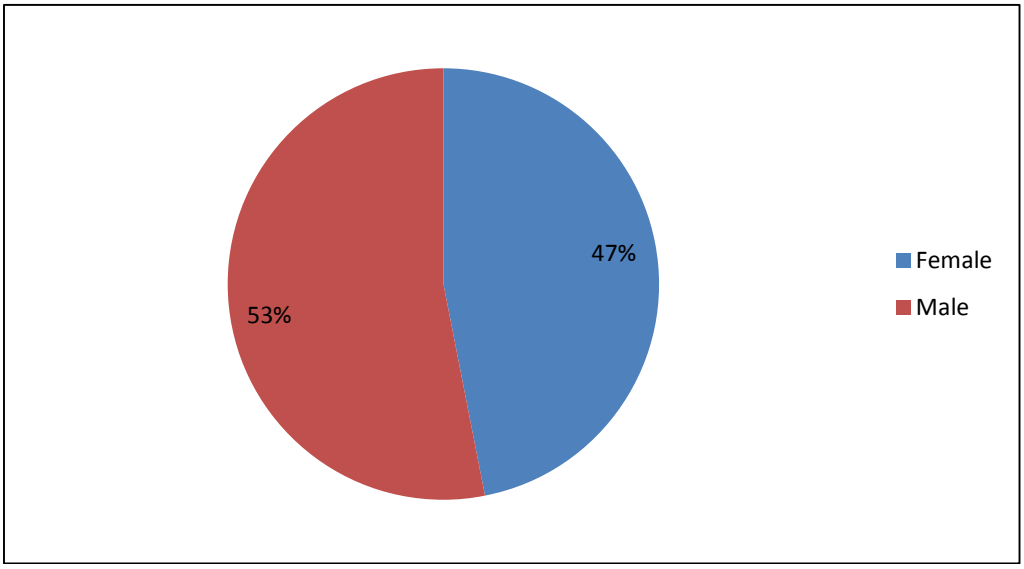
Source: CS Team Analysis of Survey Data

Demographics

The survey collected a range of demographic information about Mall of America visitors. Some key statistics are discussed below. A detailed frequency distribution of the survey data is available in the appendix of this report.

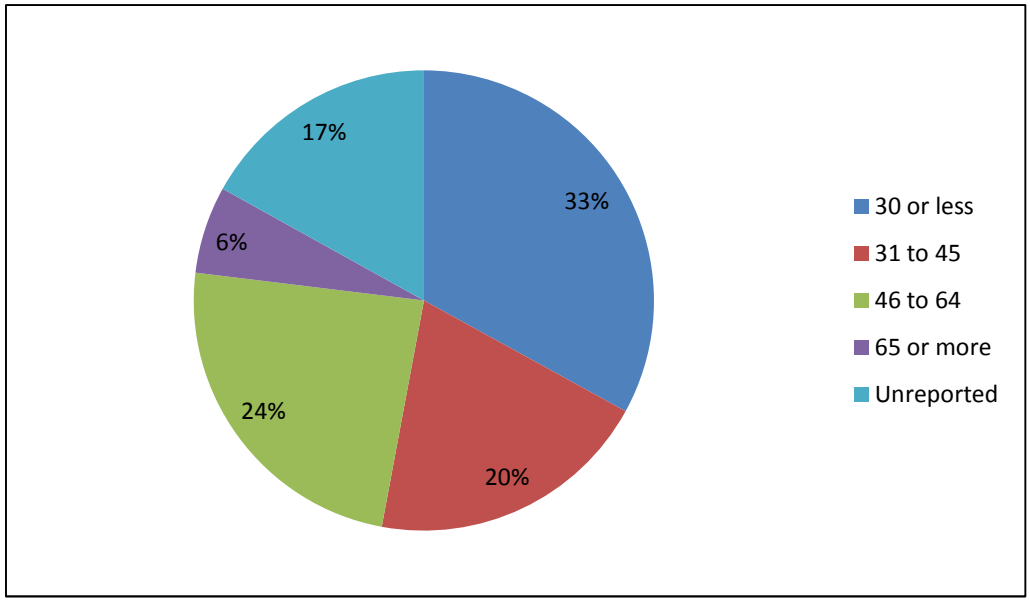
- There were slightly more men than women that visited the MoA during the survey period (**Figure 3.12**).
- Nearly a third of all visitors were under 30 years. Respondents between ages 30 and 64 comprised of almost 44 percent of all visitors (**Figure 3.13**).
- A significant proportion of visitors belonged to either one or two member households (47 percent). Households with three or four members were almost equally represented with about 14 percent each (**Figure 3.14**).
- Nearly 50 percent of all respondents belong to households with no children (**Figure 3.15**).
- Only 12 percent of respondents reported belonging to households with no workers. Of these, nearly 10 percent of respondents belong to retired households (**Figure 3.16 – 3.17**).
- Only 7 percent of all respondents reported owning no automobile. Over 50 percent of all respondents belong to household that own at least two automobiles (**Figure 3.18**)

Figure 3.12 Gender of Mall of America Visitors



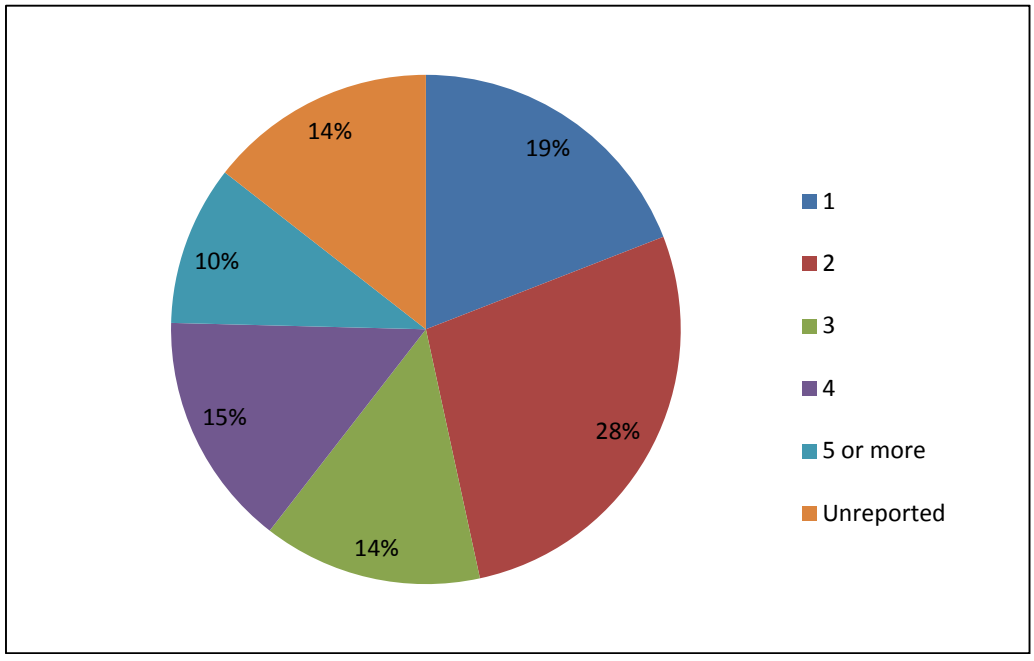
Source: CS Team Analysis of Survey Data

Figure 3.13 Age Distribution of Mall of America Visitors



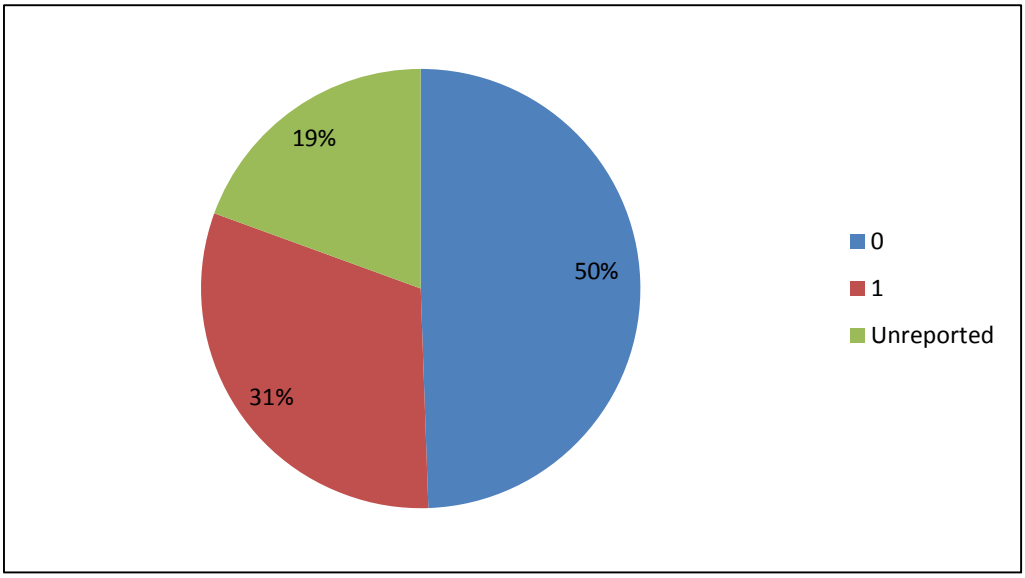
Source: CS Team Analysis of Survey Data

Figure 3.14 Household Size of Mall of America Visitors



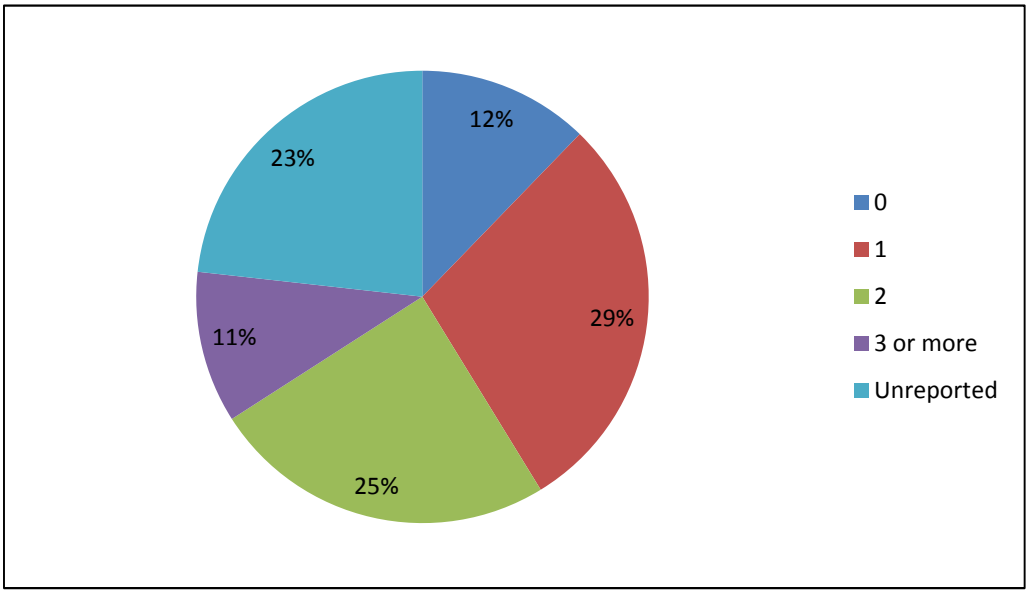
Source: CS Team Analysis of Survey Data

Figure 3.15 Number of Children in a Household for Mall of America Visitors



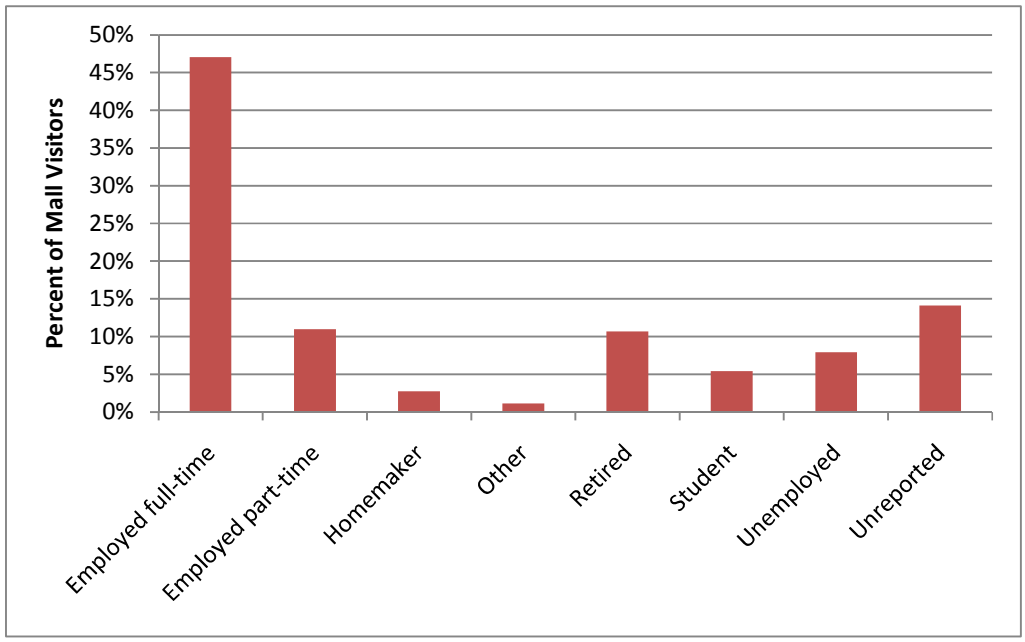
Source: CS Team Analysis of Survey Data

Figure 3.16 Number of Workers in a Household for Mall of America Visitors



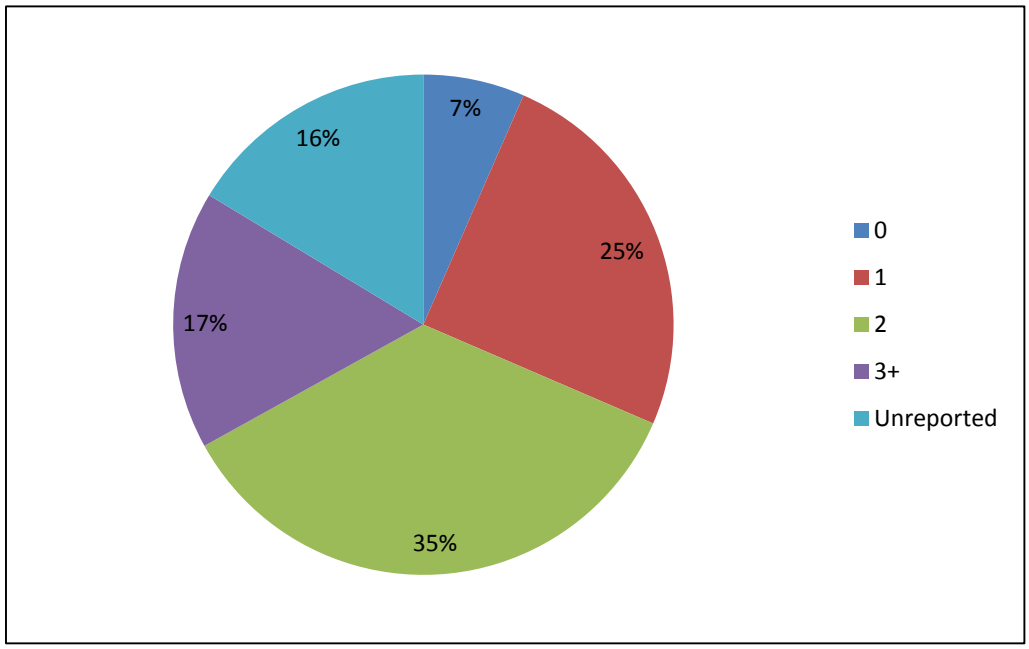
Source: CS Team Analysis of Survey Data

Figure 3.17 Employment Status of Mall of America Visitors



Source: CS Team Analysis of Survey Data

Figure 3.18 Auto Ownership of Mall of America Visitors



Source: CS Team Analysis of Survey Data

A. Survey Statistics

Table A.1 Purpose for Visiting Mall of America (Weighted)

Purpose	Frequency	Percentage
Shop	209	75%
Restaurant	30	11%
Entertainment	24	9%
Event	1	0%
Fitness	8	3%
Meeting	4	1%
Class	1	0%
Focus Group	0	0%
Mall Tour	5	2%

Source: CS Team Analysis of Survey Data

Table A.2 Number of Vehicles in the Household (Weighted)

Auto Ownership	Frequency	Percentage
0 vehicles	18	8%
1 vehicles	67	30%
2 vehicles	96	42%
3 vehicles	26	11%
4 vehicles	12	5%
5 vehicles	7	3%

Source: CS Team Analysis of Survey Data

Table A.3 Purpose of Trip (Weighted)

	Frequency	Percentage
Shop	209	78%
Restaurant	30	11%
Entertainment	24	9%
Event	1	0%
Fitness	8	3%
Meeting	4	1%
Class	1	0%
Focus Group	0	0%
Mall Tour	5	2%

Source: CS Team Analysis of Survey Data

Table A.4 Number of Vehicles in Household(Weighted)

	Frequency	Percentage

0 vehicles	18	7%
1 vehicles	67	25%
2 vehicles	96	35%
3 vehicles	26	9%
4 vehicles	12	4%
5 vehicles	7	3%
Did not report	44	16%

Source: CS Team Analysis of Survey Data

Table A.5 Day of Visit (Weighted)

	Frequency	Percentage
Friday	140	52%
Thursday	130	48%

Source: CS Team Analysis of Survey Data

Table A.6 Time of Day of Visit (Weighted)

	Frequency	Percentage
Mid-day	194	72%
Evening/Night	76	28%

Source: CS Team Analysis of Survey Data

Table A.7 Interview Location (Weighted)

	Frequency	Percentage
First floor east	82	30%
First floor north	52	19%
Second floor east	36	13%
Second floor west	74	27%
Third floor east	10	4%
Third floor west	16	6%

Source: CS Team Analysis of Survey Data

Table A.8 Interview Location and Time(Weighted)

	Frequency	Percentage
First floor east, mid-day	50	18%
First floor east, evening	32	12%
Second and third floor east	46	17%
First floor north, mid-day	38	14%
First floor north, evening	14	5%
West, mid-day	62	23%
West, evening	28	11%

Source: CS Team Analysis of Survey Data

Table A.9 Employment Status (Weighted)

	Frequency	Percentage
Employed full-time	127	47%
Employed part-time	30	11%
Homemaker	7	3%
Other (please specify)	3	1%
Retired	29	11%
Student	15	5%
Unemployed	21	8%

Source: CS Team Analysis of Survey Data

Table A.10 Mode of Transportation (Weighted)

	Frequency	Percentage
Bicycle	2	1%
Charter bus service	3	1%
Hotel shuttle service	18	7%
Light rail transit	29	11%
Limousine	2	1%
Private Vehicle - Drop Off	2	1%
Private Vehicle - Park	183	68%
Private Vehicle - Short Term	1	0%
Public bus service (Metro)	11	4%
RV	1	0%
Rental Vehicle - Park	11	4%
Senior Citizen Shuttle	2	1%
Taxi	1	0%
Walk	2	1%
Did not report	4	1%

Source: CS Team Analysis of Survey Data

Table A.11 Mode Type (Weighted)

	Frequency	Percentage
Private vehicle	198	73%
Public / Non-motorized	69	25%
Unknown	3	1%
Did not report	1	0%
Private vehicle	198	73%

Source: CS Team Analysis of Survey Data

Table A.12 Parking Lot (Weighted)

	Frequency	Percentage
East Ramp	77	29%
North Lot	16	6%
Other	2	1%
South Lot	1	0%

West Ramp	95	35%
Did not report/use	78	29%

Source: CS Team Analysis of Survey Data

Table A.13 Light Rail Station Used (Weighted)

	Frequency	Percentage
28th Avenue Station	1	3%
38th Street Station	2	8%
46th Street Station	4	13%
Cedar - Riverside Station	1	5%
Downtown East/Metrodome Station	4	16%
Franklin Avenue Station	1	5%
Government Plaza Station	1	5%
Lake Street/Midtown Station	1	3%
Nicollet Mall Station	5	19%
Target Field Station	4	16%
Warehouse District/Hennepin Avenue Station	2	8%
Did not respond	1	5%
Did not use LRT	242	

Source: CS Team Analysis of Survey Data

Table A.14 Light Rail Access Mode (Weighted)

	Frequency	Percentage
Bicycle	1	2%
Dropped off by a private automobile	1	2%
Other (please specify)	1	2%
Rode a bus	7	25%
Walked	19	68%
Did not use LRT	242	

Source: CS Team Analysis of Survey Data

Table A.15 Bus Access Mode (Weighted)

	Frequency	Percentage
Dropped off by a private automobile	1	10%
Other (please specify)	1	6%
Rode a different bus	1	5%
Walked	11	79%
Did not use	256	

Source: CS Team Analysis of Survey Data

Table A.16 Visits to Mall of America in Past 12 Months (Weighted)

	Frequency	Percentage
1 to 3	80	30%
4 to 10	65	24%

More than 10	79	29%
Did not report	46	17%

Source: CS Team Analysis of Survey Data

Table A.17 Age Distribution (Weighted)

	Frequency	Percentage
30 or less	89	33%
31 to 45	54	20%
46 to 64	65	24%
65 or more	17	6%
Unreported	46	17%

Source: CS Team Analysis of Survey Data

Table A.18 Gender Distribution (Weighted)

	Frequency	Percentage
Female	112	41%
Male	127	47%
Did not report	32	12%

Source: CS Team Analysis of Survey Data

Table A.19 Household Size (Weighted)

	Frequency	Percentage
1 person	52	19%
2 people	74	28%
3 people	38	14%
4 or more people	40	15%
Did not report	66	25%

Source: CS Team Analysis of Survey Data

Table A.20 People Who Visited More than One Store (Weighted)

	Frequency	Percentage
Multiple Stores	162	60%
One Store	21	8%
Did not report	87	32%

Source: CS Team Analysis of Survey Data

Table A.21 Residents and Visitors (Weighted)

	Frequency	Percentage
Resident	190	70%
Visitor	80	30%

Source: CS Team Analysis of Survey Data

Table A.22 Days Visiting Minneapolis/St. Paul (Weighted)

	Frequency	Percentage
0 to 1 day	20	8%
2 to 4 days	47	17%
5 or more days	13	5%
Did not respond	190	70%

Source: CS Team Analysis of Survey Data

Table A.23 Purpose for Visiting Minneapolis/St. Paul (Weighted)

	Frequency	Percentage
Business	11	13%
Conference/Convention	5	7%
Mall	22	28%
Other (unspecified)	2	2%
Part of an extended trip	2	3%
Personal Business	6	8%
Vacation/Pleasure	20	25%
Visit Friends/Relatives	12	15%

Source: CS Team Analysis of Survey Data

Table A.24 Size of Party at MoA (Weighted)

	Frequency	Percentage
1 person	119	44%
2 people	94	35%
3 or more people	58	21%

Source: CS Team Analysis of Survey Data

Table A.25 Number of Children in Party (Weighted)

	Frequency	Percentage
0 children	225	83%
1 child	26	10%
2 children	12	5%
3 or more children	5	2%
Did not report	1	1%

Source: CS Team Analysis of Survey Data

Table A.26 Origin Type of Location (Weighted)

	Frequency	Percentage
A place of business	22	8%
A school, college, or university	17	6%
Airport	7	2%
Hotel, motel, or inn	51	19%
Private home	167	62%

Restaurant	4	1%
Unreported	2	1%

Source: CS Team Analysis of Survey Data

Table A.27 Origin State(Weighted)

	Frequency	Percentage
IA	1	0%
IL	1	0%
MB	1	0%
MN	240	89%
ND	5	2%
SD	1	0%
VA	1	0%
WI	7	3%
Did not report	14	5%

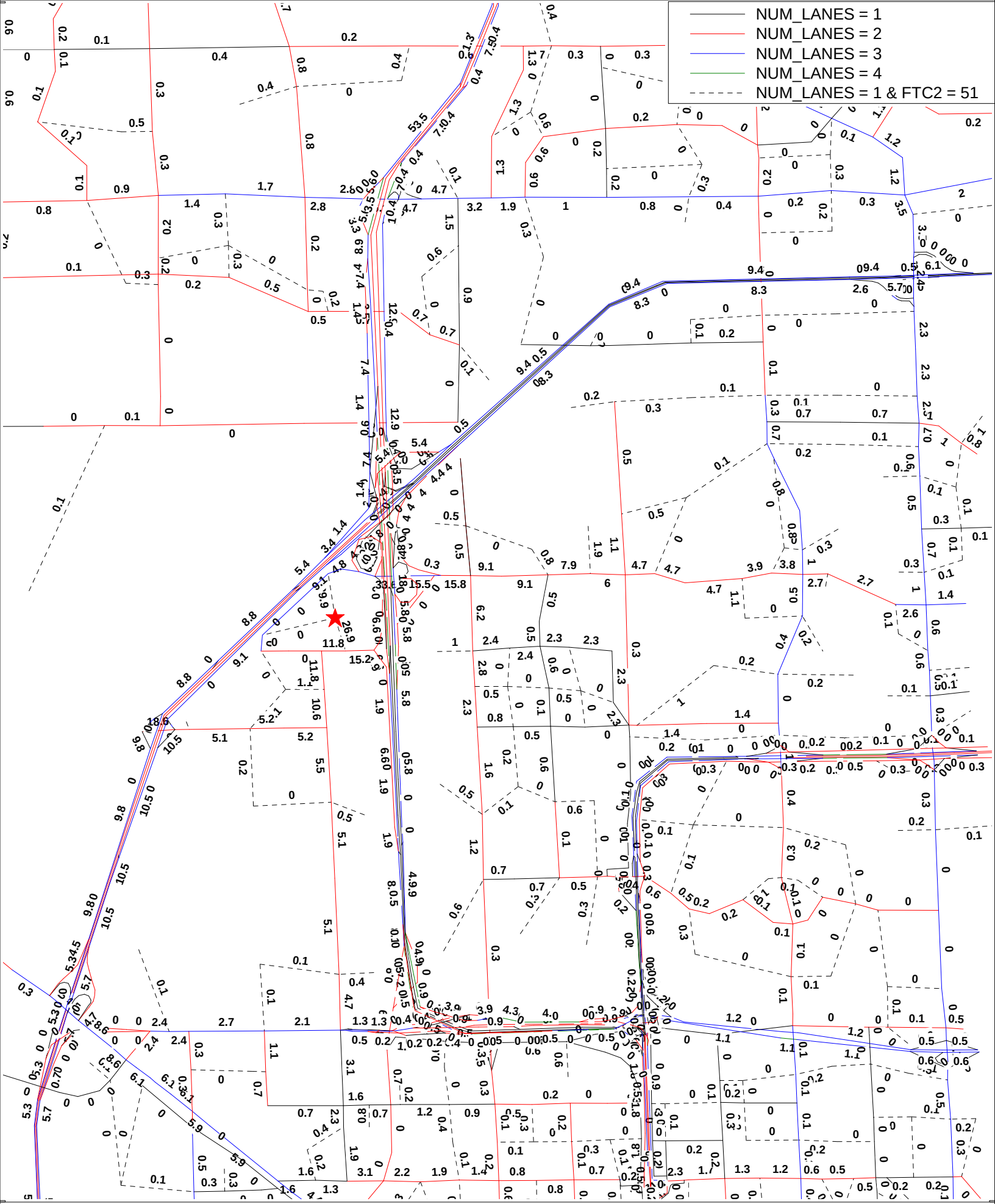
Source: CS Team Analysis of Survey Data

Table A.28 Duration of Trip to Mall of America (Weighted)

	Frequency	Percentage
15 mins. or less	44	16%
16 mins. to 30 mins.	68	25%
31 mins. to 60 mins.	65	24%
More than 60 mins.	62	23%
Did not report	31	11%

Source: CS Team Analysis of Survey Data

APPENDIX H1:
American Dream Miami 2020 Project Percentage Distribution



ADM % Project Distribution - Year 2020 ForceTP

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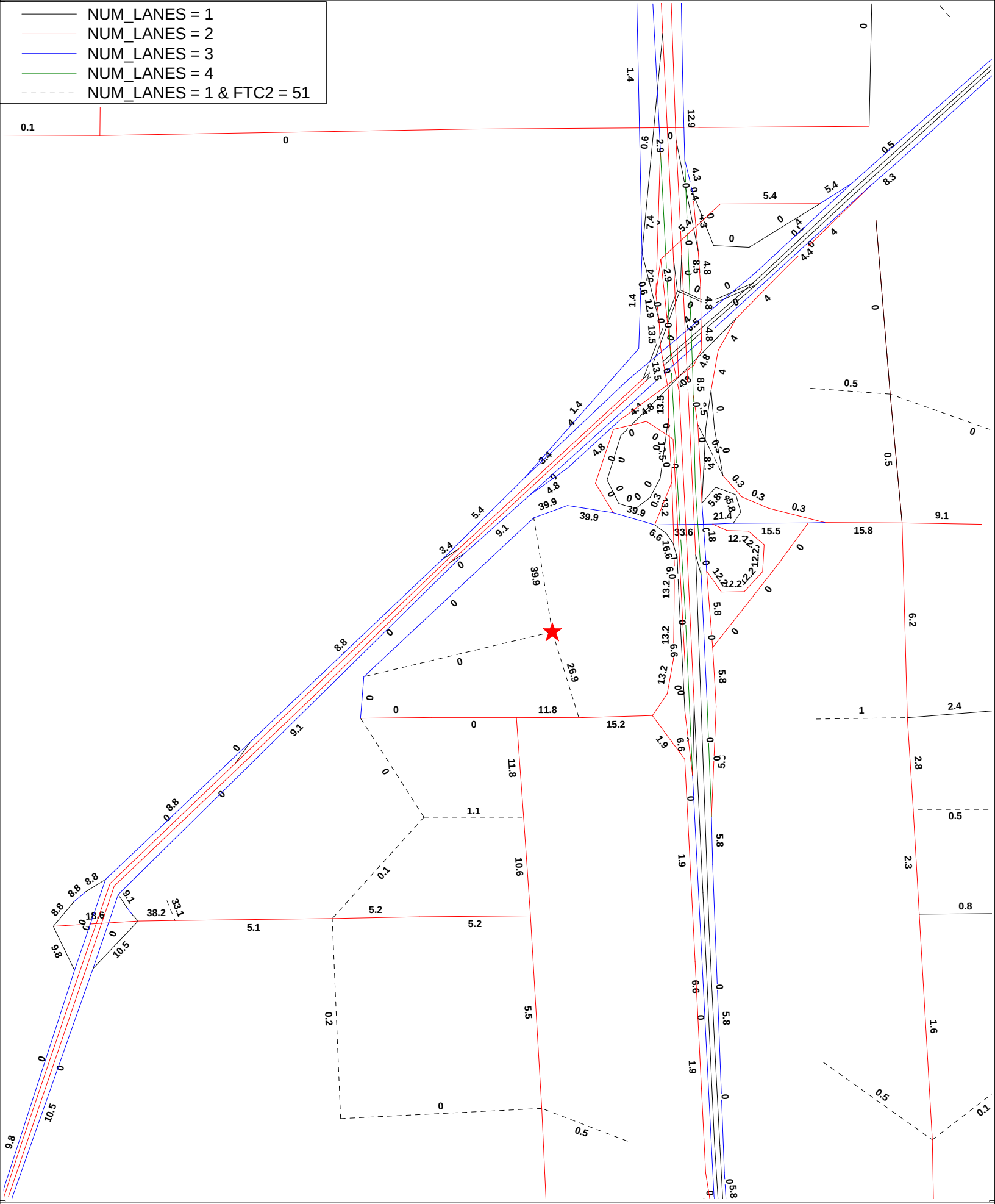
12/24/2015



ADM % Project Distribution - Year 2020 ForceTP

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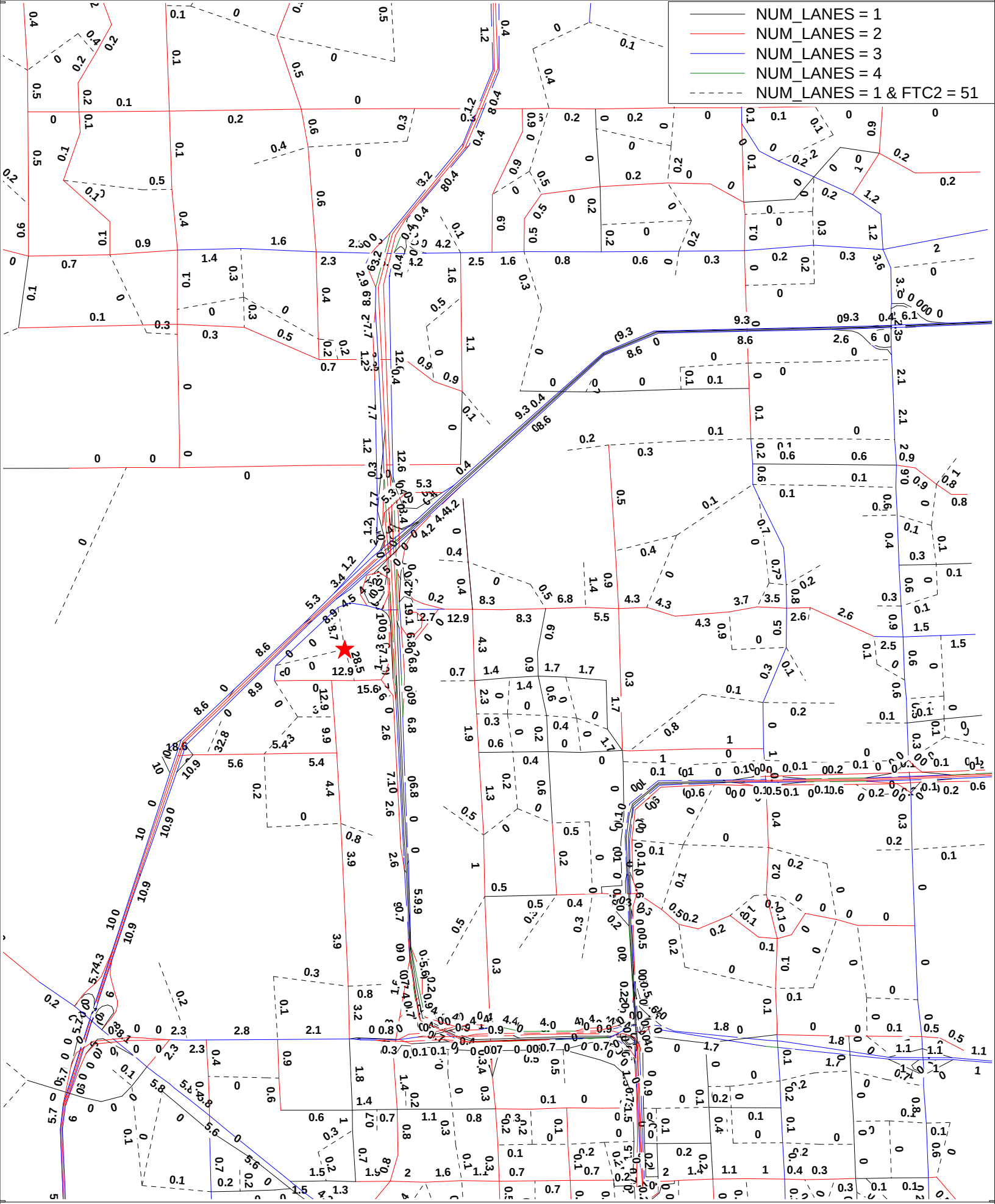
12/24/2015

APPENDIX H2:
American Dream Miami 2040 Project Percentage Distribution



ADM % Project Distribution - Year 2040 ForceTP

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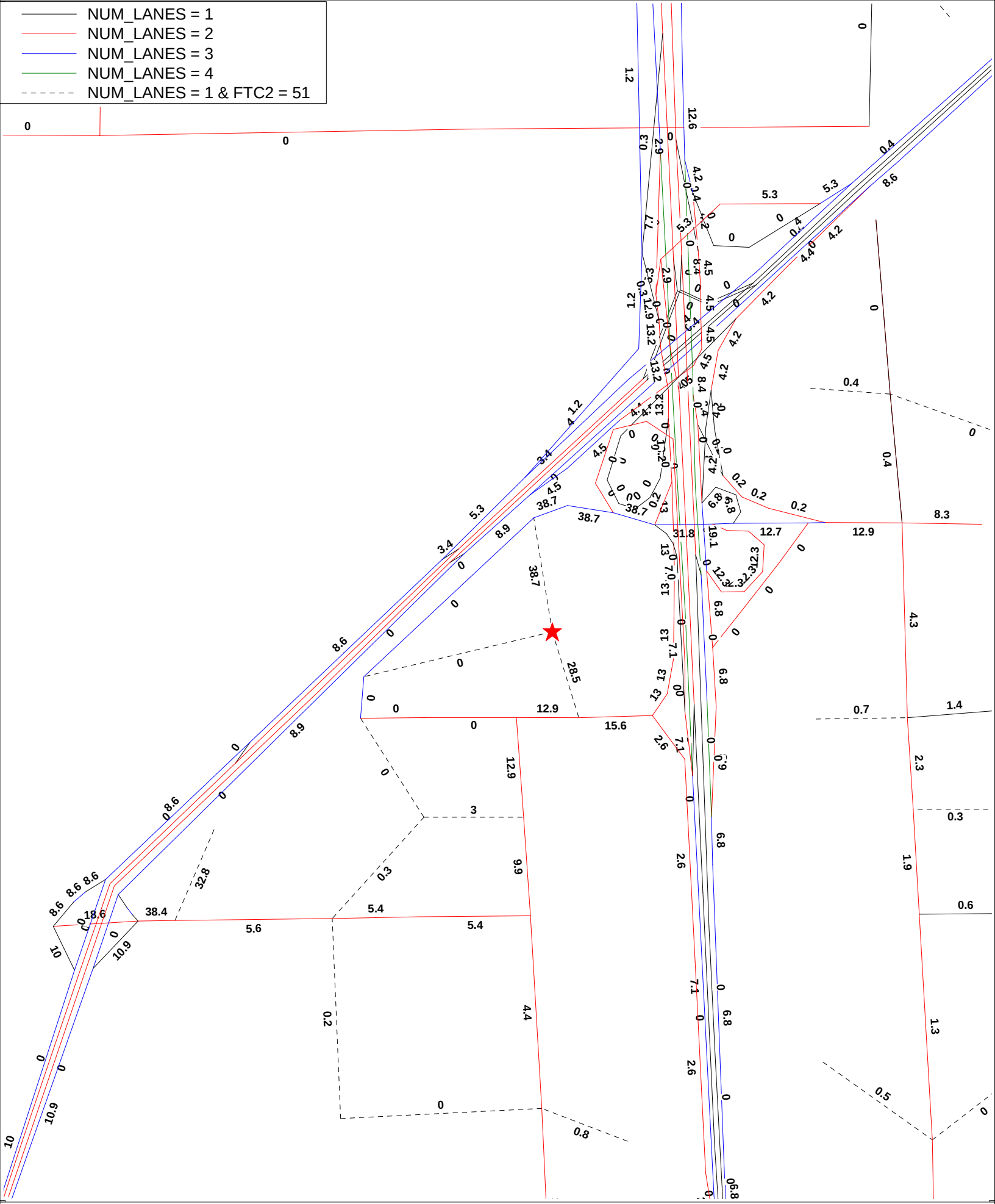
12/24/2015



ADM % Project Distribution - Year 2040 ForceTP

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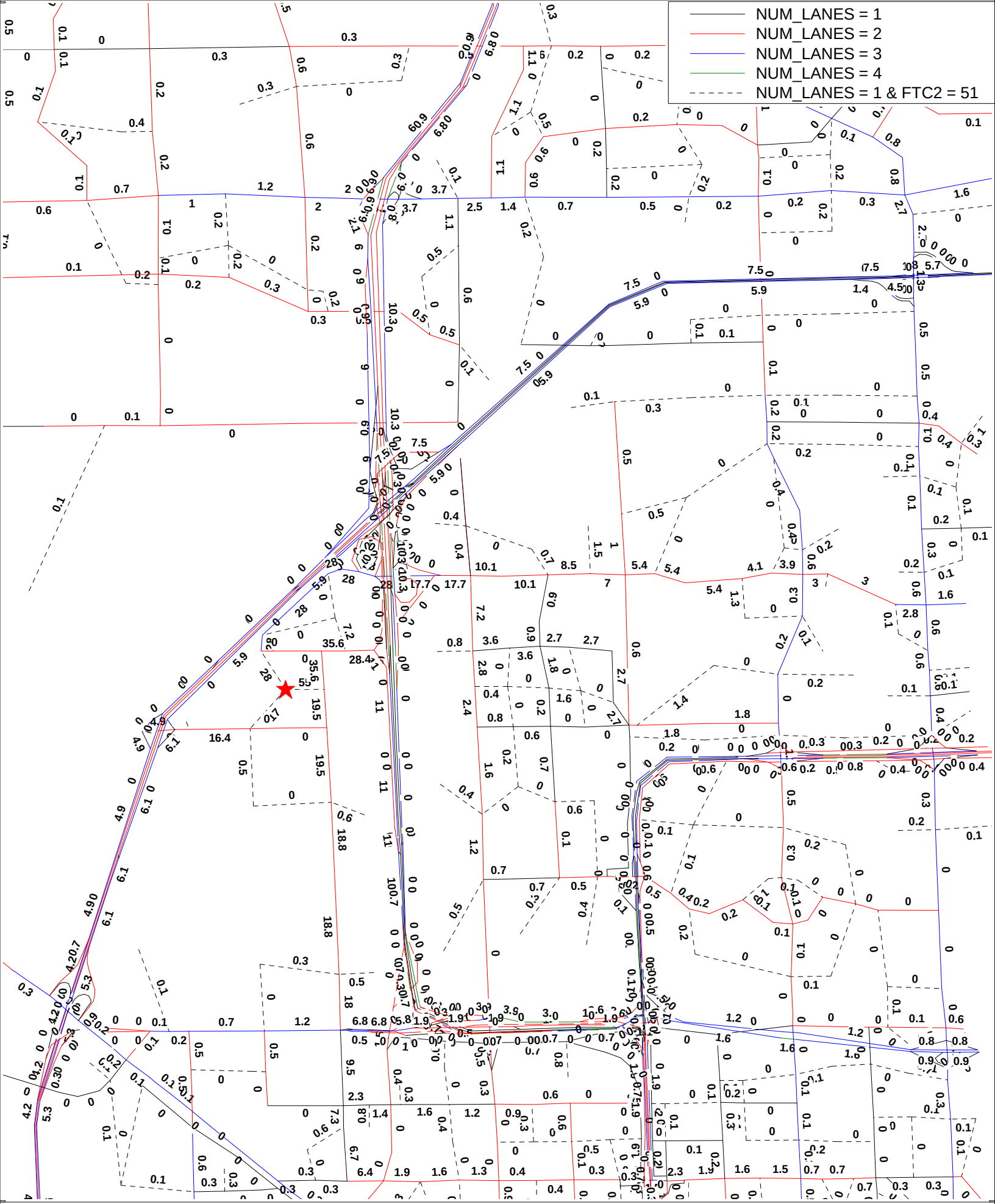
12/24/2015

APPENDIX H3:
Graham 2020 Project Percentage Distribution



Graham % Project Distribution - Year 2020 ForceTP

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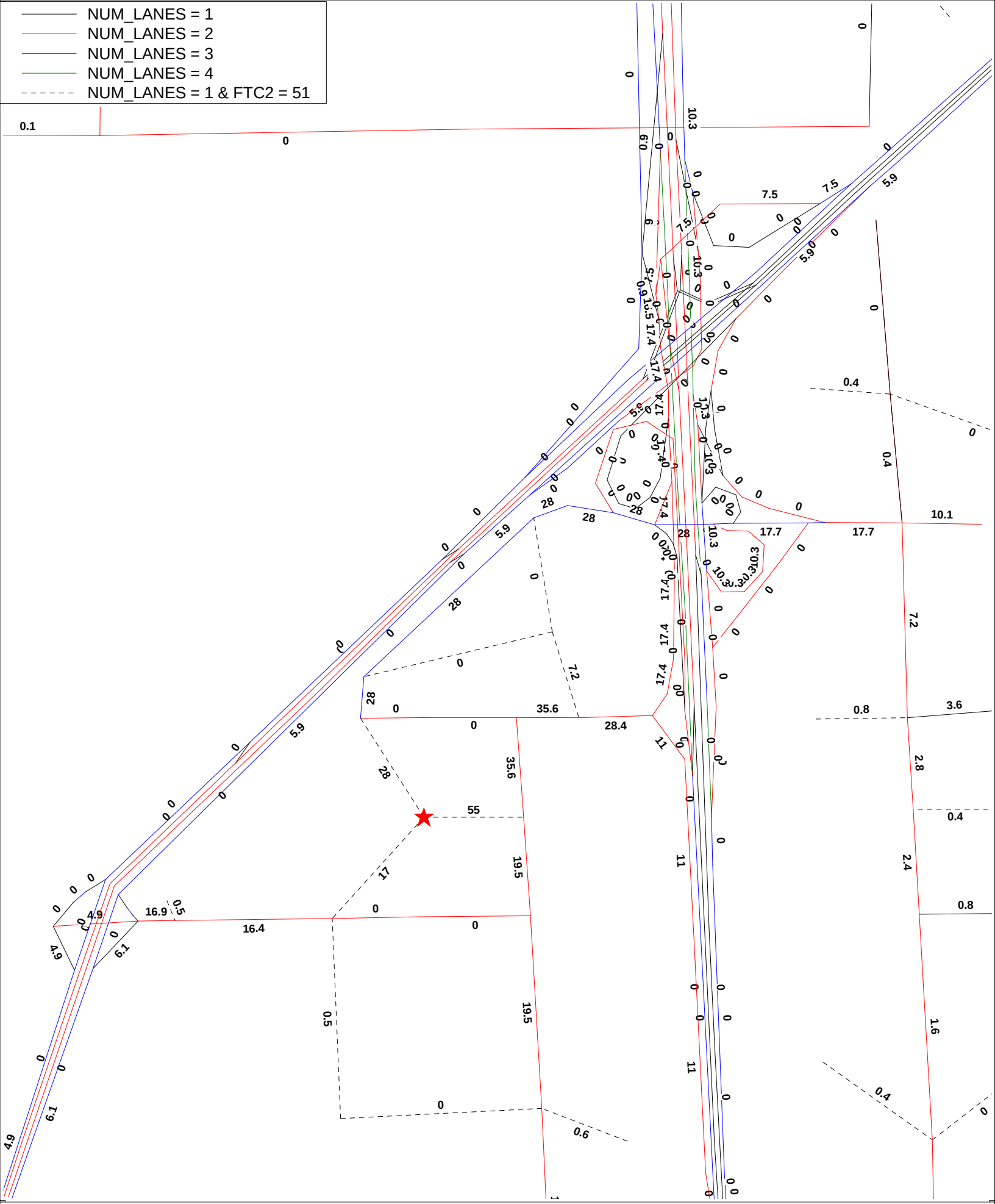
12/24/2015



Graham % Project Distribution - Year 2020 ForceTP

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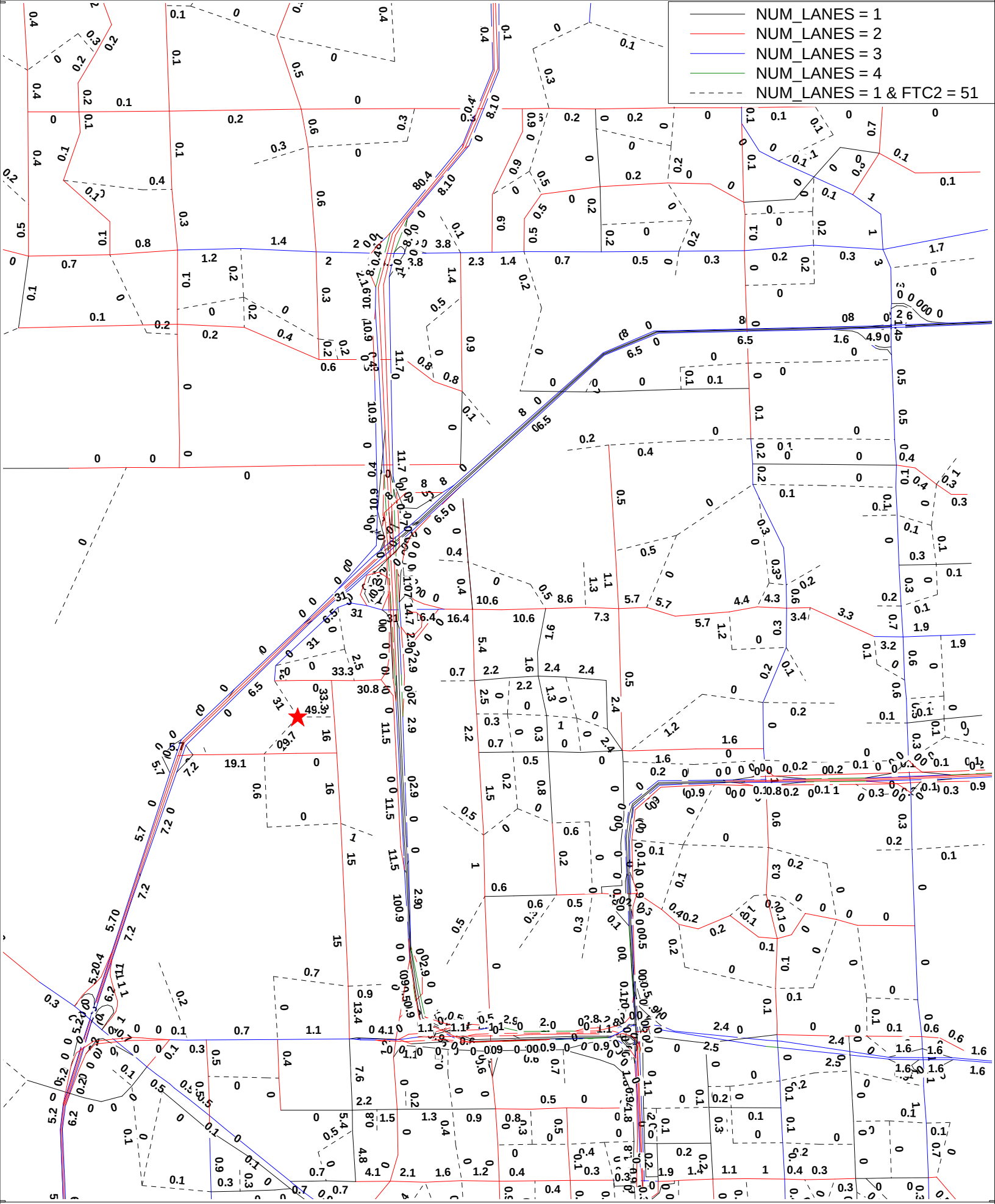
12/24/2015

APPENDIX H3:
Graham 2040 Project Percentage Distribution



Graham % Project Distribution - Year 2040 ForceTP

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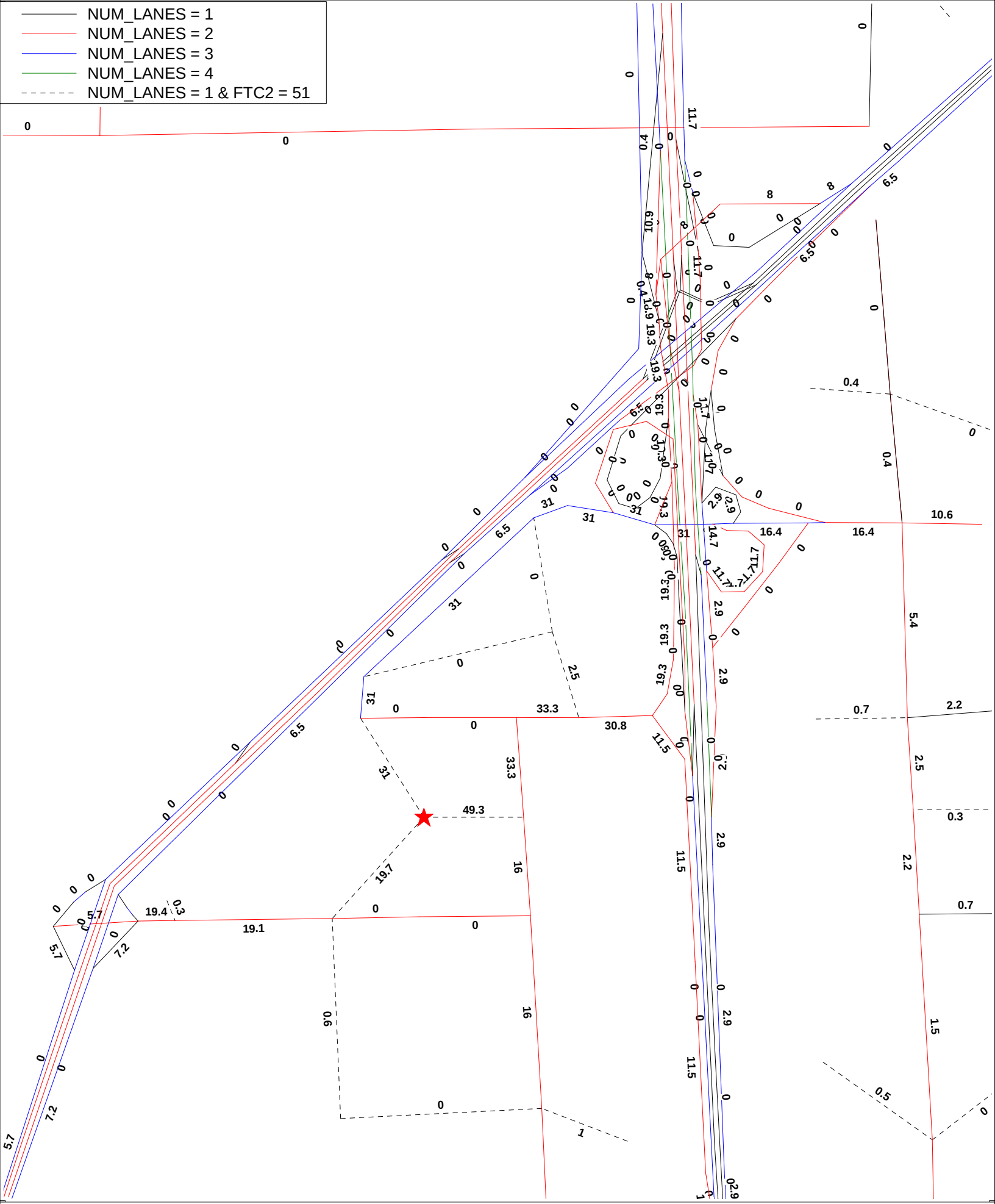
12/24/2015



Graham % Project Distribution - Year 2040 ForceTP

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12/24/2015