DAVID PLUMMER & ASSOCIATES

TRAFFIC ENGINEERING • CIVIL ENGINEERING • TRANSPORTATION PLANNING

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September 21, 2018

Revised: December 5, 2018

Ms. Jessica A. Keller
Assistant Public Works Director
City of Coral Gables
Public Works Department

2800 SW 72 Ave

Miami, Florida 33155

RE: <u>Trip Generation 100 Miracle Mile</u> - #18116

Dear Ms. Keller,

David Plummer & Associates has performed a trip generation analysis for the 100 Miracle Mile development. The project is proposing to add 115 dwelling units, 4,236 SF of office, and 2,515 SF of retail to the existing 10,540 SF bank, and 15 residential dwelling units located at 100 Miracle Mile in Coral Gables, FL.

Trip generation calculations for the existing and proposed development were performed using *Institute of Transportation Engineers' (ITE) Trip Generation Manual*, *10th Edition*. ITE Land Use Codes (LUC) 221 (Multifamily Housing, Mid-rise), 222 (Multifamily Housing, High-rise), 820 (Shopping Center), 710 (General Office) and 911 (Walk-in bank) were utilized for the existing and proposed trip generation. It should be noted that ITE does not provide a daily rate for walk-in bank (LUC 911) but does provide a daily rate for drive-in bank (LUC 912). Therefore, a ratio of the pm peak hour of the adjacent street rates was applied to calculate a daily rate for walk-in bank (LUC 911).



As the proposed development plan will be mixed-use, incorporating retail, residential, and banking land uses an internalization matrix was used to establish the appropriate number of internal project trips. The ITE *Trip Generation Handbook*, 3rd Edition, provides internal capture rates for the am and pm peak hours.

ITE research shows that a certain percent of retail trips are "pass-by" trips. These are described as trips "attracted from the traffic passing the site on an adjacent street." These are not new trips, but trips already using the existing roadway network that stop at the proposed use and go back to their original path. Consistent with the guidelines established in the ITE <u>Trip Generation Handbook</u>, 3rd Edition a 34% deduction was applied to the retail trips to account for pass-by. Based on U.S. Census Bureau data a 6.7% deduction was applied for other modes of transportation. Internalization and transit rates are included in Attachment A.

Table 1: Trip Generation Summary											
Development Plan	Total Weekday	A.M. Peak Hour	P.M. Peak Hour								
Existing	667	5	126								
Proposed	1,449	53	172								
ΔTrips	782	48	46								

As shown in Table 1, the results of the trip generation analysis indicate that the proposed redevelopment represents an increase of 782 daily, 48 am peak hour, and 46 pm peak hour trips. Detailed trip generation calculations are provided in Attachment A.

We stand ready to provide any support needed for this project. Should you have any questions or comments, please call me at (305) 447-0900.

Sincerely,

Juan Espinosa, PE

Re: 100 Miracle Mile - # 18116 Page 2





100 Miracle Mile Proposed

Proposed ITE Land Use	Number	Daily Vehicle		I Peak He ehicle Tri			I Peak He chicle Tri	
Designation ¹	of Units	Trips	In	Out	Total	In	Out	Total
Walk-in Bank Land Use Code: 911	10,540 SF	587	-	ı	-	56	72	128
Multifamily Housing (High-Rise) Land Use Code: 222	130 DU	724	12	37	49	32	21	53
Retail Land Use Code: 820	2,515 SF	96	1	1	2	5	5	10
Office Land Use Code: 710	4,236 SF	42	4	1	5	1	4	5
Total Gross Trips		1,449	17	39	56	94	102	196
Internalization	AM PM	0% -5.1%	0	0	0	-5	-5	-10
Passby (Retail)		-34.0%	-	-	-	-1	-1	-2
Other Modes of Transporta	ation	-6.7%	-1	-2	-3	-6	-6	-12
Net Proposed T	rips		16	37	53	82	90	172

Existing

Proposed ITE Land Use	Number	Daily Vehicle		I Peak He chicle Tri			I Peak Ho chicle Tri	
Designation ¹	of Units	Trips	In	Out	Total	In	Out	Total
Walk-in Bank Land Use Code: 911	10,540 SF	587	-	-	-	56	72	128
Multifamily Housing (Mid-Rise) Land Use Code: 221	15 DU	80	1	4	5	4	3	7
Total Gross Trips		667	1	4	5	60	75	135
Internalization	AM PM	0% 0%	0	0	0	0	0	0
Other Modes of Transport	ation	-6.7%	0	0	0	-4	-5	-9
Net Existing T	rips		1	4	5	56	70	126

	Daily Vehicle		I Peak H ehicle Tri			I Peak Ho ehicle Tri	
	Trips	In	Out	Total	In	Out	Total
Proposed	1,449	16	37	53	82	90	172
Existing	667	1	4	5	56	70	126
Difference	782	15	33	48	26	20	46

 $^{^{\}mathrm{1}}$ Based on ITE Trip Generation Manual, 10th Ed.

AM PEAK HOUR

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
Land Ose & Data Source	LOCALION	IV	3126		Rate/Equation	Split%	Split%	IOLAI
222 - Multifamily Housing (High-Rise)	General	Dwelling Units	130	Weekday, Peak Hour of	Best Fit (LIN)	12	37	49
Data Source: ITE-TGM 10th Edition	Urban/Suburban	Dwelling Offics	150	Adjacent Street Traffic,	T = 0.28(X) + 12.86	24%	76%	49
820 - Shopping Center	General	1000 Sg. Ft. GLA	2.52	Weekday, Peak Hour of	Average	1	1	2
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 3q. Ft. GLA	2.52	Adjacent Street Traffic,	0.94	62%	38%	2
221 - Multifamily Housing (Mid-Rise)	General	Dwelling Units	15	Weekday, Peak Hour of	Best Fit (LOG)	1	4	F
Data Source: ITE-TGM 10th Edition	Urban/Suburban	Dwelling Offics	15	Adjacent Street Traffic,	Ln(T) =0.98Ln(X) + -0.98	26%	74%	3
710 - General Office Building	General	1000 Sg. Ft. GFA	4.23	Weekday, Peak Hour of	Average	4	1	F
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 3q. rt. GrA	4.23	Adjacent Street Traffic,	1.16	86%	14%	3

PM PEAK HOUR

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
Land Ose & Data Source	LOCATION	IV	Size	Time Period	Rate/Equation	Split%	Split%	TOTAL
222 - Multifamily Housing (High-Rise)	General	Dwelling Units	130	Weekday, Peak Hour of	Best Fit (LIN)	32	21	53
Data Source: ITE-TGM 10th Edition	Urban/Suburban	Dwelling Offics	150	Adjacent Street Traffic,	T = 0.34(X) + 8.56	61%	39%	33
820 - Shopping Center	General	1000 Sq. Ft. GLA	2.52	Weekday, Peak Hour of	Average	5	5	10
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 3q. rt. GLA	2.52	Adjacent Street Traffic,	3.81	48%	52%	10
221 - Multifamily Housing (Mid-Rise)	General	Dwelling Units	15	Weekday, Peak Hour of	Best Fit (LOG)	4	3	7
Data Source: ITE-TGM 10th Edition	Urban/Suburban	Dwelling Offics	15	Adjacent Street Traffic,	Ln(T) =0.96Ln(X) + -0.63	61%	39%	,
911 - Walk-In Bank	General	1000 Sq. Ft. GFA	10.54	Weekday, Peak Hour of	Average	56	72	128
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 3q. Ft. GFA	10.54	Adjacent Street Traffic,	12.13	44%	56%	120
912 - Drive-in Bank	General	1000 Ca Ct CEA	10.54	Weekday, Peak Hour	Average	108	108	216
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 Sq. Ft. GFA	10.54	of Adjacent Street	20.45	50%	50%	210
710 - General Office Building	General	1000 Sq. Ft. GFA	4.23	Weekday, Peak Hour of	Average	1	4	-
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 Sq. Ft. GFA	4.23	Adjacent Street Traffic,	1.15	16%	84%	3

DAILY

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
Land Ose & Data Source	LOCALION	IV	3126	Time Periou	Rate/Equation	Split%	Split%	TOTAL
912 - Drive-in Bank	General	1000 Sg. Ft. GFA	10.54	Weekday	Best Fit (LIN)	495	495	990
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 3q. Ft. GFA	10.54	Weekuay	T = 82.87(X) + 117.10	50%	50%	990
222 - Multifamily Housing (High-Rise)	General	Dwelling Units	130	Weekday	Best Fit (LIN)	362	362	724
Data Source: ITE-TGM 10th Edition	Urban/Suburban	Dwelling Offics	130	Weekuay	T = 3.94(X) + 211.81	50%	50%	724
820 - Shopping Center	General	1000 Sg. Ft. GLA	2.52	Weekday	Average	48	48	96
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 3q. Ft. GLA	2.52	Weekuay	37.75	50%	50%	90
221 - Multifamily Housing (Mid-Rise)	General	Dwelling Units	15	Weekday	Best Fit (LIN)	40	40	80
Data Source: ITE-TGM 10th Edition	Urban/Suburban	Dwelling Offics	13	Weekuay	T = 5.45(X) + -1.75	50%	50%	80
710 - General Office Building	General	1000 Sg. Ft. GFA	4.23	Weekday	Average	21	21	42
Data Source: ITE-TGM 10th Edition	Urban/Suburban	1000 3q. Ft. GFA	4.23	vveekudy	9.74	50%	50%	42

PM Peak Hour Trip Generation and Internalization

100 Miracle Mile Existing

Lan	lk in Bank d Use 911				
	540 Sq Ft		15		
In	Out		In	Out	
56	72		4	3	135 ITE Trips
U	INBALANCED	INTE	RNALIZATI	ION	
	2% <u>1</u>	U	4% 0	<u> </u>	
57% 32		U		4% 0	
Wal	lk in Bank		Multifami	ly Mid-Rise	
In	Out		ln	Out	
56	72		4	3	135 Vehicle Trips
	BALANCED II	NTER	NALIZATIC)N	
	0		0	_	
0				0	
0	0		0	0	0 Internal
56	72		4	3	135 External Trips
	0.0%			0.0%	0.0% % Internal
					0 0% Passby
56	72		4	3	135
-4	-5		0	0	-9 -6.7% Transit/Pedestrian
52	67		4	3	126 Net New External Trips

AM Peak Hour Trip Generation and Internalization 100 Miracle Mile Proposed

Land	n Bank Use 911	Hous Land	Iltifamily sing (High- d Use 222	Land	Retail Use 820		Land	ffice Use 710				
10,54 In	0 Sq Ft Out	In	30 DU Out	2,51 In	5 Sq Ft Out		4,236 In	Sq Ft Out				
0	0	12	37	1	1		4	1		56		ITE Trips
3% 0	1% 0	0 0 0	<u></u>	ED INTERNAL	IZATION							
0	28%		'	32%								
4%	0	0		0	29%							
0	0%	0			0	-	0%					
0%	0			0			0	<u> </u>				
0			1%	17%				0				
		2%	0	0 0	 14%							
		0	00/	0	0		00/					
			2% 1	0			3% 0	_				
		0% 0		0				1% 0				
					29% 0	0	4% 0					
				32% 0		0		28% 0				
						U		U				
	ln Bank	Hous	Itifamily sing (High-	F	Retail		Of	ffice				
<u>In</u> 0	Out 0	In 12	Out 37	<u>In</u> 1	Out 1		<u>In</u> 4	Out 1		56		/ehicle Trips
0	0	0		O INTERNALIZ			<u> </u>	•		00		remote Tipe
0	0			0	-							
0	0				-		0	_ 0				
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0	0	0 12	0 37	0	0 1		0 4	0 1		0 56	Internal External	
	#DIV/0!	12	0.0%	1	0.0%		+	0.0%		30	Trips 0.0%	% Internal
0	#DIV/0!	12	37	1	1		4	1	L	56		
0	0	-1	-2	0	0		0	0		-3	6.7%	Transit/Pedestrian
0	0	11	35	1	1		4	1	ı	53	Net Ne	ew External Trips

PM Peak Hour Trip Generation and Internalization 100 Miracle Mile Proposed

Walk	In Bank			y Housing -Rise)	ı	Retail		Of	fice				
	Use 911		Land l	Jse 222		d Use 820			Jse 710				
	40 Sq Ft			DU		15 Sq Ft			Sq Ft				
In 56	Out 72		In 32	Out 21	In 5	Out 5		In 1	Out 4		196		ITE Trips
- 50	12			BALANCE	D INTERNAL			•	-		150		TTE TTIPS
	2%		4%										
F70/	1	1	1	- 40/									
57% 32		1		4% 1									
- 52	20%			'	8%								
	14		0		0								
31%			•			2%							
17	0%		0			0		0%					
	0%				0			0%					
0%					•				0%				
0					0				0				
				42%	10%								
			46%	9	1 1	26%							
			15		1	1							
				4%				57%					
				1	1			1	•				
			4%		0				2% 0				
			1		U	2%		31%	U	•			
						0	0	0					
					8%				20%				
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Walk	In Bank			y Housing		Retail		Of	fice				
	In Bank		(High	-Rise)		Retail			fice				
In	Out		(High In	-Rise) Out	In	Out		In	Out		106	V	ohicla Trins
			(High In 32	-Rise) Out 21	In 5	Out 5				-	196	V	ehicle Trips
In	Out		(High In 32	-Rise) Out 21	In	Out 5		In	Out		196	V	ehicle Trips
In	Out 72 -1		(High In 32 B	-Rise) Out 21	In 5 INTERNALIZ	Out 5		In	Out		196	V	ehicle Trips
In 56	Out 72		(High In 32 B	-Rise) Out 21 ALANCED	In 5	Out 5 ATION		In	Out		196	V	ehicle Trips
In 56	Out 72 -1 0		(High In 32 B	-Rise) Out 21 ALANCED	In 5 INTERNALIZ	Out 5		In 1	Out		196	V	ehicle Trips
In 56	Out 72 -1		(High In 32 B	-Rise) Out 21 ALANCED	In 5 INTERNALIZ	Out 5 ATION		In	Out		196	V	ehicle Trips
In 56	Out 72 -1 0		(High In 32 B -1	-Rise) Out 21 ALANCED	In 5 INTERNALIZ	Out 5 CATION		In 1	Out 4		196	V	ehicle Trips
In 56	Out 72 -1 0		(High In 32 B	-Rise) Out 21 -ALANCED1	In 5 INTERNALIZ 0	Out 5 ATION		In 1	Out 4		196	V	ehicle Trips
In 56	Out 72 -1 0		(High In 32 B -1	-Rise) Out 21 ALANCED1	In 5 INTERNALIZ 0	Out 5 CATION		In 1	Out 4	- - - !	196	V	ehicle Trips
In 56	Out 72 -1 0		(High In 32 B -1	-Rise) Out 21 -ALANCED1	In 5 INTERNALIZ 0	Out 5 CATION 0		In 1	Out 4	- - - !	196	V	ehicle Trips
In 56	Out 72 -1 0		(High In 32 B -1	-Rise) Out 21 -ALANCED1	In 5 INTERNALIZ 0	Out 5 CATION		In 1	Out 4		196	V	ehicle Trips
In 56	Out 72 -1 0		(High In 32 B -1	-Rise) Out 21 -ALANCED1	In 5 INTERNALIZ	Out 5 CATION 0		In 1	Out 4				ehicle Trips
In 56	Out 72 -1 0		(High In 32 B -1	-Rise) Out 21 ALANCED1 -1	In 5 INTERNALIZ	Out 5 CATION 0		0 -1	Out 4		Total Sum		ehicle Trips
In 56 -1 0 0	Out 72 -1 0 0		(High In 32 B -1 -1 0	-Rise) Out 21 -ALANCED1 -1 -1 -3	In 5 INTERNALIZ	Out 5 CATION 0 -1		0 -1 0	Out 4 - 0 - 0 - 0		Total Sum -10	Internal	ehicle Trips
In 56	Out 72 -1 0		(High In 32 B -1	-Rise) Out 21 ALANCED1 -1	In 5 INTERNALIZ	Out 5 CATION 0		0 -1	Out 4		Total Sum	Internal External	ehicle Trips
In 56 -1 0 0	Out 72 -1 0 0 -1 71 71		(High In 32 B -1 -1 0	-Rise) Out 21 -ALANCED1 -1 -1 -3 -18	In 5 INTERNALIZ	Out 5 EATION 0 -1 -1 4		0 -1 0	Out 4 - 0 - 0 - 0		Total Sum -10	Internal External Trips	
In 56 -1 0 0	Out 72 -1 0 0		(High In 32 B -1 -1 0	-Rise) Out 21 -ALANCED1 -1 -1 -3	In 5 INTERNALIZ	Out 5 CATION 0 -1		0 -1 0	Out 4 - 0 - 0 - 0 - 4		Total Sum -10	Internal External	ehicle Trips % Internal % Passby
In 56 -1 0 0	Out 72 -1 0 0 -1 71 71		(High In 32 B -1 -1 0	-Rise) Out 21 -ALANCED1 -1 -1 -3 -18	In 5 INTERNALIZ 0 -1 4	Out 5 EATION 0 -1 4 20.0%		0 -1 0	Out 4 - 0 - 0 - 0 - 4		Total Sum -10 186	Internal External Trips 5.1%	% Internal
-1 0 0	Out 72 -1 0 0 -1 1.6%		(High In 32 B -1 -1 0	-Rise) Out 21 -ALANCED1 -1 -1 -3 -18 9.4%	In 5 INTERNALIZ 0 -1 4 -1	Out 5 EATION 0 -1 4 20.0% -1		0 -1 0	Out 4 - 0 - 0 - 0 4 - 20.0%		Total Sum -10 186	Internal External Trips 5.1%	% Internal
-1 0 0 -1 55 -1 55	Out 72 -1 0 0 -1 1.6% 71 -5		(High In 32 B -1 -1 0 -2 30 30 -2	-Rise) Out 21 -ALANCED1 -1 -1 -3 18 9.4% 18 -1	In 5	Out 5 ZATION 0 -1 4 20.0% -1 3 0		0 -1 0 -1 0 0	Out 4 - 0 - 0 - 0 4 - 20.0% - 4 - 0		Total Sum -10 186 -2 184 -12	Internal External Trips 5.1% 34%	% Internal % Passby
-1 0 0 -1 55	Out 72 -1 0 0 -1 1.6% 71		(High In 32 B -1 -1 0	-Rise) Out 21 -ALANCED1 -1 -1 -3 18 9.4% 18	In 5 INTERNALIZ 0 -1 4 -1 3	Out 5 ZATION 0 -1 4 20.0% -1 3		0 -1 0 -1 0	Out 4 - 0 - 0 - 0 4 - 20.0% 4		Total Sum -10 186 -2 184	Internal External Trips 5.1% 34% 6.7%	% Internal % Passby

COMMUTING CHARACTERISTICS BY SEX2012-2016 American Community Survey 5-Year Estimates

Tell us what you think. Provide feedback to help make American Community Survey data more useful for you.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Versions of this table are available for the following years:

			ZCTA5	33134			
	To	otal	М	ale	Female		
Subject	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	
Workers 16 years and over	21,394	+/-1,171	11,014	+/-633	10,380	+/-873	
MEANS OF TRANSPORTATION TO WORK			,		,		
Car, truck, or van	88.8%	+/-1.9	90.1%	+/-1.9	87.3%	+/-2.8	
Drove alone	80.5%	+/-2.7	83.3%	+/-2.7	77.6%	+/-3.7	
Carpooled	8.2%	+/-1.7	6.8%	+/-1.7	9.7%	+/-2.3	
In 2-person carpool	6.6%	+/-1.5	5.5%	+/-1.6	7.8%	+/-2.0	
In 3-person carpool	1.5%	+/-1.0	1.3%	+/-0.8	1.8%	+/-1.4	
In 4-or-more person carpool	0.1%	+/-0.1	0.1%	+/-0.1	0.1%	+/-0.2	
Workers per car, truck, or van	1.05	+/-0.01	1.04	+/-0.01	1.06	+/-0.02	
Public transportation (excluding taxicab)	4.1%	+/-1.2	3.3%	+/-1.4	5.0%	+/-1.7	
Walked	2.1%	+/-0.7	1.5%	+/-0.8	2.8%	+/-1.2	
Bicycle	0.5%	+/-0.3	0.9%	+/-0.5	0.1%	+/-0.2	
Taxicab, motorcycle, or other means	1.2%	+/-0.5	0.9%	+/-0.6	1.4%	+/-0.9	
Worked at home	3.3%	+/-0.8	3.3%	+/-0.9	3.3%	+/-1.2	
PLACE OF WORK							
Worked in state of residence	99.3%	+/-0.4	99.2%	+/-0.6	99.4%	+/-0.5	
Worked in county of residence	96.7%	+/-0.9	95.4%	+/-1.5	98.1%	+/-0.9	
Worked outside county of residence	2.6%	+/-0.8	3.8%	+/-1.4	1.3%	+/-0.9	
Worked outside state of residence	0.7%	+/-0.4	0.8%	+/-0.6	0.6%	+/-0.5	
Living in a place	92.4%	+/-1.3	92.4%	+/-1.5	92.5%	+/-1.8	
Worked in place of residence	35.6%	+/-2.9	34.9%	+/-3.9	36.4%	+/-3.8	
Worked outside place of residence	56.8%	+/-3.0	57.5%	+/-4.1	56.1%	+/-3.7	
Not living in a place	7.6%	+/-1.3	7.6%	+/-1.5	7.5%	+/-1.8	
Living in 12 selected states	0.0%	+/-0.2	0.0%	+/-0.4	0.0%	+/-0.4	
Worked in minor civil division of residence	0.0%	+/-0.2	0.0%	+/-0.4	0.0%	+/-0.4	
Worked outside minor civil division of residence	0.0%	+/-0.2	0.0%	+/-0.4	0.0%	+/-0.4	
Not living in 12 selected states	100.0%	+/-0.2	100.0%	+/-0.4	100.0%	+/-0.4	
Workers 16 years and over who did not work at home	20,689	+/-1,170	10,656	+/-647	10,033	+/-835	
TIME LEAVING HOME TO GO TO WORK							
12:00 a.m. to 4:59 a.m.	1.2%	+/-0.5	1.4%	+/-0.7	0.9%	+/-0.7	
5:00 a.m. to 5:29 a.m.	1.3%	+/-0.6	2.1%	+/-1.1	0.6%	+/-0.5	
5:30 a.m. to 5:59 a.m.	0.9%	+/-0.5	1.3%	+/-0.9	0.4%	+/-0.3	