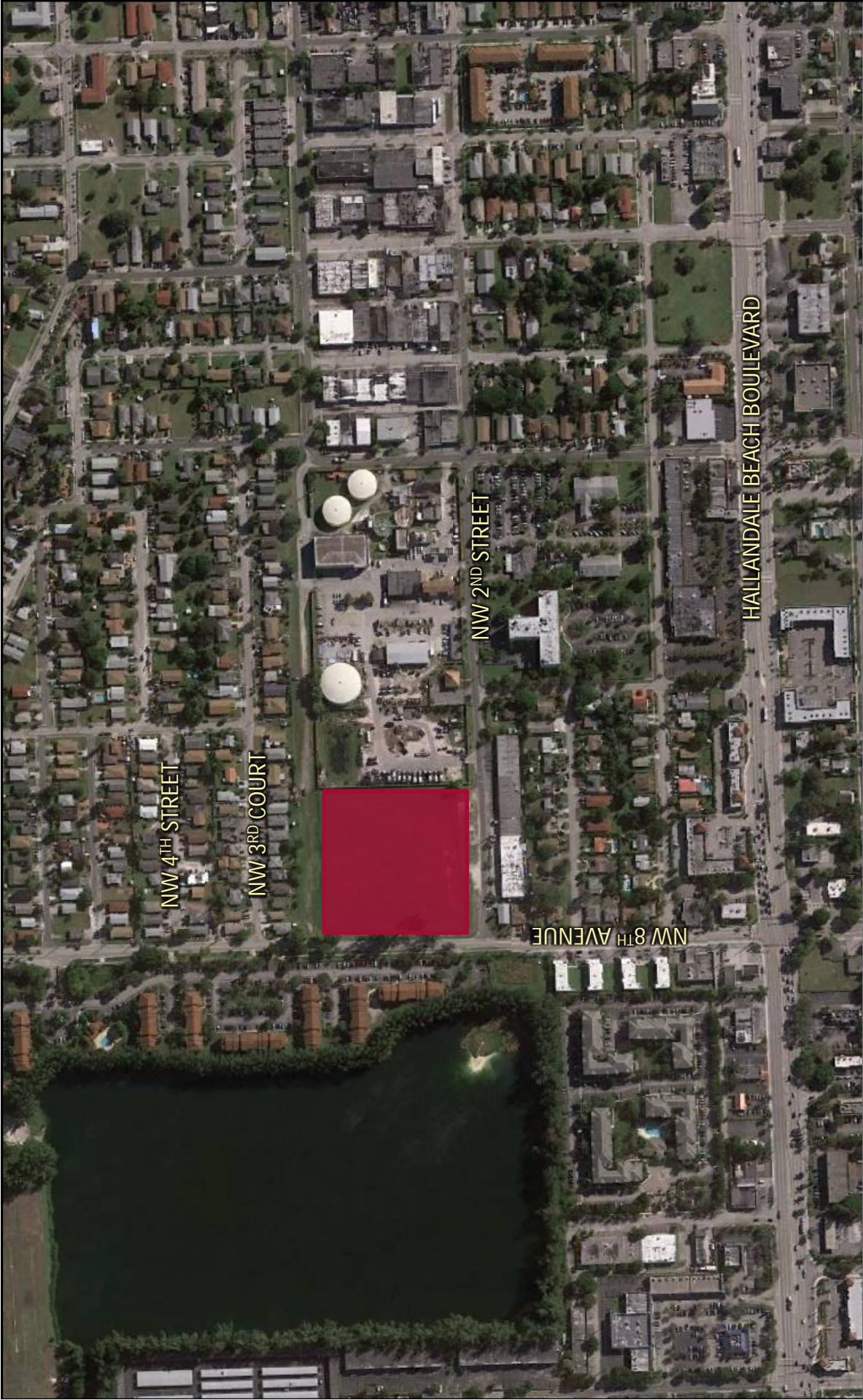


INTRODUCTION

Eighth Avenue Commons is a proposed five-story apartment building located at 200 NW 8th Avenue in Hallandale Beach, Florida. *Figure 1* illustrates the location of the proposed development. A proposed site plan is included in *Appendix A*.

Kimley-Horn and Associates, Inc. has prepared this traffic impact analysis for submittal to the City of Hallandale Beach. The purpose of the study is to assess the project's impact on the surrounding roadway network and to evaluate the capacity available to support future traffic volumes. This report summarizes the data collection, project trip generation, distribution and link analysis.

The methodology for the study was based upon the City of Hallandale Beach's Development Review Procedures – Impact Evaluation submission requirements (City Code Section 32-788(g)) and a methodology meeting held on September 2017 with the City's consultant. A copy of the methodology determined in that meeting is included in *Appendix B*.



LEGEND



SITE

FIGURE 1
SITE LOCATION
EIGHTH AVENUE COMMONS APARTMENT
HOMES

Kimley»Horn

DATA COLLECTION

To determine traffic conditions on the surrounding network, intersection turning movement counts were performed at the major intersections determined in the methodology meeting with the City's consultant. Below is a summary of the intersections included in this analysis.

Intersection Volume Data

Turning movement counts were collected for the a.m. (7:00 a.m. to 9:00 a.m.) and p.m. peak period (4:00 p.m. to 6:00 p.m.) at the following intersections:

- Hallandale Beach Boulevard & NW/SW 8th Avenue
- NW 2nd Street & NW 8th Avenue
- NW 5th Court & NW 8th Avenue
- Foster Road & NW 8th Avenue

The above turning movement counts were conducted during typical weekday conditions on January 31st, 2018. The volumes were collected in 15-minute intervals and the peak hour was determined for each intersection. Because the counts were conducted during the peak season, no adjustment was made to the existing counts for peak season conditions. The turning movement counts are included in *Appendix C*.

PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the project, and the distribution and assignment of that traffic over the study roadway network.

Existing and Proposed Land Uses

The project site is currently vacant and is proposed to be developed with 200 apartment units.

Trip Generation

The trip generation potential of this facility has been calculated using rates and equations published for Land Use 221 (Multifamily Housing Mid-Rise) by the Institute of Transportation Engineers (ITE) in the *Trip Generation Handbook, Tenth Edition*.

Table 1 summarizes the trip generation potential in the weekday a.m. and p.m. peak hours.

Table 1
Eighth Avenue Commons – Trip Generation Determination

LAND USE	INTENSITY	DAILY TRIPS	AM PEAK HOUR			PM PEAK HOUR		
			TOTAL	IN	OUT	TOTAL	IN	OUT
<u>Proposed</u> Apartment	200 DU <i>Total</i>	1,092	72	19	53	88	54	34
		1,092	72	19	53	88	54	34
<i>Net New External Trips</i>		1,092	72	19	53	88	54	34
Trip generation was calculated using the following data:								
Daily Trip Generation								
Apartment	ITE 221	=	T = 5.45(X) - 1.75					
AM Peak Hour Trip Generation								
Apartment	ITE 221	=	T=0.36(X) ; (26% in, 74% out)					
PM Peak Hour Trip Generation								
Apartment	ITE 221	=	T=0.44(X) ; (61% in, 39% out)					

*ITE 221 rates and equations were used because the proposed apartment complex is between 3 and 10 stories high. When the R^2 value was higher than 0.75, the fitted curve equation was used; Otherwise, the average rate was applied.

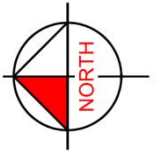
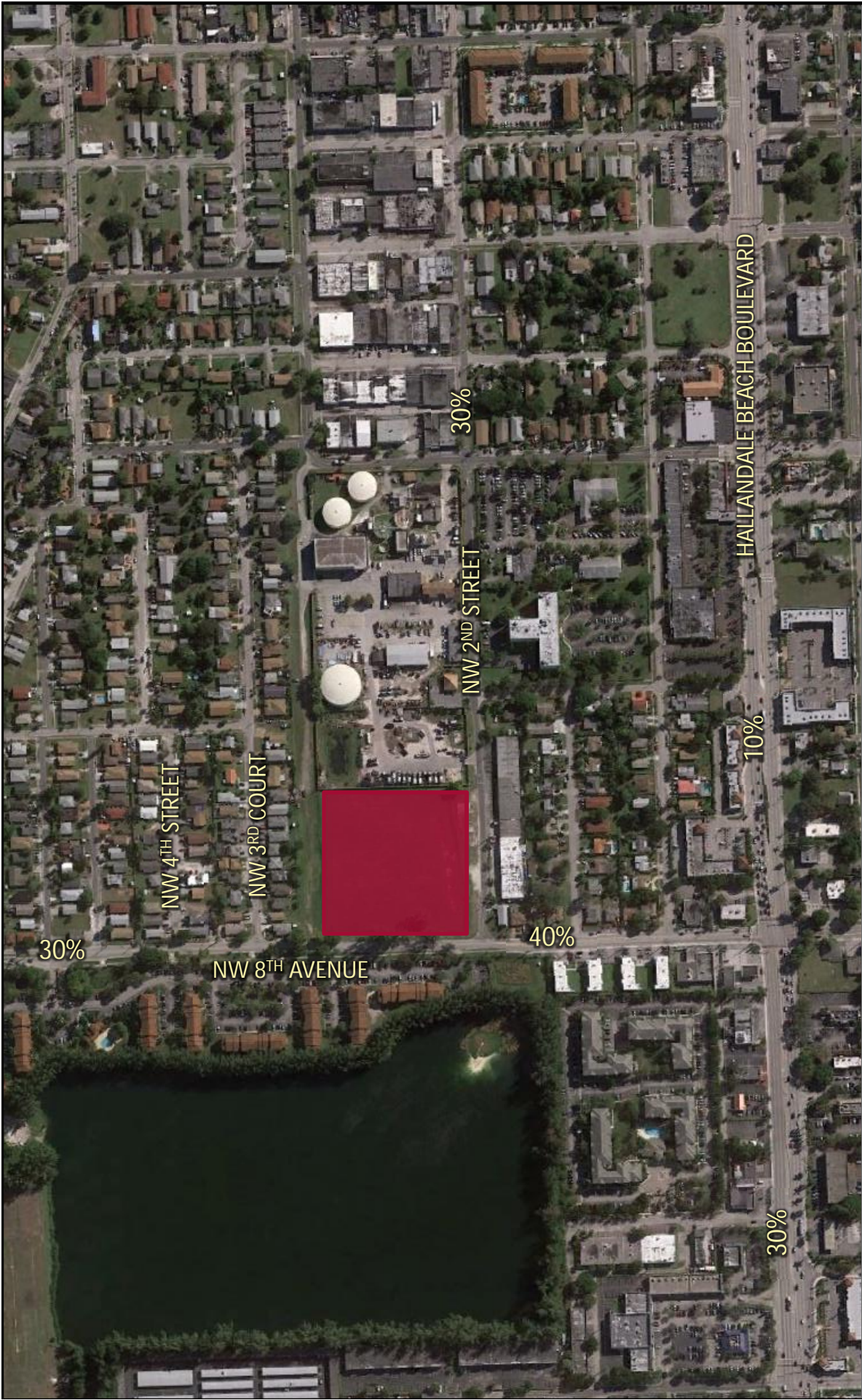
k:\wpb_tpto\montefusco\8th ave commons\2018-2-8-trip generation.xlsx\table 1 fri_tgen

Trip Distribution

Traffic distribution is the pairing of trip ends from the subject site with other land uses in the area. These trips were assigned to the surrounding roadways based upon a review of the roadway network proposed to be in place at the time of buildout and its travel time characteristics.

Traffic Assignment

The site traffic was assigned to the surrounding roadway network based upon existing travel patterns and the traffic distribution. *Figure 2* illustrates the project traffic assignment percentages to the surrounding roadway network.



LEGEND

 SITE

FIGURE 2
PROJECT DISTRIBUTION
EIGHTH AVENUE COMMONS APARTMENT
HOMES
Kimley»Horn

EXISTING TRAFFIC

Existing traffic conditions were determined based upon actual traffic volumes counted at the study intersections. Because the counts were conducted during the peak season, no adjustment was made to the existing counts for peak season conditions.

FUTURE TRAFFIC

Future background traffic volumes were calculated as the sum of the existing peak-season adjusted traffic volumes plus an additional amount of traffic to account for future growth in the study area. Future growth was calculated using an areawide historical growth rate. This historical growth rate was calculated based on counts provided by FDOT and was calculated to be 0.74%. Growth rate calculations are included in *Appendix D*. Total future traffic volumes considered in the analysis for this project are the sum of the 2021 background traffic volumes plus future project traffic volumes at site buildout.

LINK ANALYSIS

A roadway link analysis has been conducted for year 2021 traffic conditions on major roadway links in the City of Hallandale Beach within one mile of the site. *Table 2* summarizes the results of this analysis. The roadway link analysis indicates that the segments of I-95, Park Road, and Hallandale Beach Boulevard within the one-mile radius currently operate at Level of Service (LOS) F. The project is projected to have less than a 1% impact on the failing roadway links. Furthermore, project traffic will not result in a change in level of service on any roadway segment.

TABLE 2 EIGHTH AVENUE COMMONS APARTMENT HOMES PM TWO-WAY PEAK HOUR SIGNIFICANCE CALCULATIONS (2021)																	
Roadway	From	To	Roadway Class	Existing		Committed		2017 Base Peak Hour Volume/LOS	Growth Rate (1)	2021 Background Growth (from growth rate)	2021 Background Traffic	PM Peak Hour Project Traffic			Significant Impact ?	2021 Future Total PM Peak Hour Volume/LOS	
				Lanes	LOS D+ Service Volume	Lanes	LOS D+ Service Volume					% Assignment	Trips	% Impact			
PM TWO-WAY PEAK HOUR																	
Federal Highway	Pembroke Road	Hallandale Beach Blvd	Class I	4LD	3580	4LD	2920	3848	F	0.74%	115	3,963	2%	2	0.07%	No	3,965
	Hallandale Beach Blvd	South of Hallandale Beach Blvd	Class I	6LD	5390	6LD	4500	4560	E	0.74%	136	4,496	2%	2	0.04%	No	4,498
	Dixie Highway	Hallandale Beach Blvd	Class II	3LO	2700	3LO	3154	1197	C	0.74%	36	1,233	5%	4	0.13%	No	1,237
		Countyline Rd															
I-95	North of Hallandale Beach Blvd	Hallandale Beach Blvd	Uninterrupted	10LX	16,840	10LX	16,840	24,890	F	0.74%	745	25,635	7%	6	0.04%	No	25,641
	Hallandale Beach Blvd	South of Hallandale Beach Blvd	Uninterrupted	10LX	16,840	10LX	16,840	23,085	F	0.74%	691	23,776	8%	7	0.04%	No	23,783
Park Road	Pembroke Road	Hallandale Beach Blvd	Class II	2LU	1,330	2LU	1,197	732	D	0.74%	22	754	5%	4	0.33%	No	758
NW 8th Avenue	Foster Road	Project Driveway	Class II	2LU	1,330	2LU	1,197	912	D	0.74%	27	939	30%	26	2.17%	Yes	965
	Project Driveway	Hallandale Beach Blvd	Class II	2LU	1,330	2LU	1,197	912	D	0.74%	27	939	40%	35	2.92%	Yes	974
	Hallandale Beach Boulevard	Park Ln	Class I	4LD	5,390	4LD	3,580	2,660	C	0.74%	80	2,740	10%	9	0.25%	No	2,749
	SW 40th Ave	Park Ln	Class I	4LD	5,390	4LD	3,580	2,660	C	0.74%	80	2,740	13%	13	0.36%	No	2,753
Federal Highway	NW 8th Ave	Dixie Highway	Class I	6LD	5,390	6LD	5,390	4,902	F	0.74%	147	5,049	30%	26	0.48%	No	5,075
	Dixie Highway	E 1st Ave	Class I	5L	3,580	5L	5,390	4,902	F	0.74%	147	5,049	10%	9	0.17%	No	5,058
	Federal Highway	E 1st Ave	Class I	6LD	3,580	6LD	5,390	4,902	F	0.74%	147	5,049	5%	4	0.07%	No	5,053
	NE 14th Ave	NE 14th Ave	Class I	4LD	3,580	4LD	5,390	4,085	F	0.74%	122	4,207	1%	1	0.02%	No	4,208

* LOS D Capacity is based on 2017 generalized LOS D standards published by Broward County MPO.
(1) Growth Rates based on areawide growth rate calculated using AADT at FDOT count stations.

INTERSECTION ANALYSIS

The operating conditions for three conditions (existing, background and future total) were analyzed at the signalized and unsignalized study intersections during the AM peak hour and PM peak hour using Trafficware's Synchro 9.0 Software. These analyses use the methodologies outlined in the *Highway Capacity Manual, 2010 Edition* in order to determine overall intersection level of service and delay.

Intersection Level of Service and Delay

Tables 3, 4 and 5 summarize the existing, future background, and future total level of service (LOS) at the study intersections.

As shown in these tables, the study intersections are projected to operate at LOS D or better during future total conditions. Therefore, no additional mitigation is needed upon buildout of the project. The turning movement count data is included in *Appendix C*. Existing signal timing worksheets and volume development sheets are included in *Appendix D*. HCS and Synchro output worksheets are included in *Appendix E*.

Intersection Queuing

The projected intersection queues were determined from the Synchro output at study intersections. A summary of the existing, future background and future total queues are presented in Tables 6, 7 and 8, respectively. As shown, the projected future queues can be accommodated within the left-turn and right-turn storage provided, with the exception of NW 8th Avenue & Hallandale Beach Boulevard. The northbound and southbound left-turn queues exceed the existing storage area under existing, future background, and future total conditions.

As noted previously, the project will be required to contribute to the City's transportation mitigation fund, which may be used to implement capacity and/or queuing storage throughout the overall roadway network.

Table 3 2018 Existing Conditions							
Intersection	Traffic Control	Overall Delay / LOS		Approach LOS			
				NB	SB	EB	WB
AM Peak Hour							
Hallandale Beach Boulevard & NW 8th Avenue	Signalized	33.8	C	D	D	C	C
NW 8th Avenue & Foster Road	Signalized	14.0	B	B	B	B	B
NW 8th Avenue & NW 5th Court	Unsignalized	-	-	-	-	C	B
NW 8th Avenue & NW 2nd Street	Unsignalized	-	-	-	-	-	C
PM Peak Hour							
Hallandale Beach Boulevard & NW 8th Avenue	Signalized	36.0	D	E	D	C	D
NW 8th Avenue & Foster Road	Signalized	13.2	B	B	B	B	B
NW 8th Avenue & NW 5th Court	Unsignalized	-	-	-	-	C	C
NW 8th Avenue & NW 2nd Street	Unsignalized	-	-	-	-	-	B

Table 4 2021 Future Background Conditions							
Intersection	Traffic Control	Overall Delay / LOS		Approach LOS			
				NB	SB	EB	WB
AM Peak Hour							
Hallandale Beach Boulevard & NW 8th Avenue	Signalized	35.0	C	D	D	C	C
NW 8th Avenue & Foster Road	Signalized	14.1	B	B	B	B	B
NW 8th Avenue & NW 5th Court	Unsignalized	-	-	-	-	C	B
NW 8th Avenue & NW 2nd Street	Unsignalized	-	-	-	-	-	C
PM Peak Hour							
Hallandale Beach Boulevard & NW 8th Avenue	Signalized	37.5	D	E	D	C	D
NW 8th Avenue & Foster Road	Signalized	13.3	B	B	B	B	B
NW 8th Avenue & NW 5th Court	Signalized	-	-	-	-	C	C
NW 8th Avenue & NW 2nd Street	Signalized	-	-	-	-	-	B

Table 5 2021 Future Total Conditions							
Intersection	Traffic Control	Overall Delay / LOS		Approach LOS			
				NB	SB	EB	WB
AM Peak Hour							
Hallandale Beach Boulevard & NW 8th Avenue	Signalized	35.9	D	D	D	D	C
NW 8th Avenue & Foster Road	Signalized	14.1	B	B	B	B	B
NW 8th Avenue & NW 5th Court	Unsignalized	-	-	-	-	C	B
NW 8th Avenue & NW 2nd Street	Unsignalized	-	-	-	-	-	C
PM Peak Hour							
Hallandale Beach Boulevard & NW 8th Avenue	Signalized	38.7	D	E	D	C	D
NW 8th Avenue & Foster Road	Signalized	13.4	B	B	B	B	B
NW 8th Avenue & NW 5th Court	Signalized	-	-	-	-	C	C
NW 8th Avenue & NW 2nd Street	Signalized	-	-	-	-	-	C

Traffic Impact Analysis

AM PEAK HOUR	NORTHBOUND		SOUTHBOUND		EASTBOUND		WESTBOUND	
	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue
Hallandale Beach Boulevard & NW 8th Avenue	190	217	100	161	220	75	220	51
NW 8th Avenue & Foster Road	80	15	-	-	-	-	-	-
NW 8th Avenue & NW 5th Court	100*	25	75	0	95*	50	50*	25
NW 8th Avenue & NW 2nd Street	-	-	200*	25	-	-	450*	25
PM PEAK HOUR	NORTHBOUND		SOUTHBOUND		EASTBOUND		WESTBOUND	
	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue
Hallandale Beach Boulevard & NW 8th Avenue	190	303	100	68	220	151	220	47
NW 8th Avenue & Foster Road	80	14	-	-	-	-	-	-
NW 8th Avenue & NW 5th Court	100*	25	75	0	95*	25	50*	25
NW 8th Avenue & NW 2nd Street	-	-	200*	25	-	-	450*	50

*The unsignalized study intersections have 1 lane in each approach; therefore, queue storage bays do not exist and the storage length has been measured to the nearest access location.

AM PEAK HOUR	NORTHBOUND		SOUTHBOUND		EASTBOUND		WESTBOUND	
	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue
Hallandale Beach Boulevard & NW 8th Avenue	190	228	100	164	220	81	220	52
NW 8th Avenue & Foster Road	80	15	-	-	-	-	-	-
NW 8th Avenue & NW 5th Court	100*	25	75	0	95*	50	50*	25
NW 8th Avenue & NW 2nd Street	-	-	200*	25	-	-	450*	25
PM PEAK HOUR	NORTHBOUND		SOUTHBOUND		EASTBOUND		WESTBOUND	
	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue
Hallandale Beach Boulevard & NW 8th Avenue	190	316	100	68	220	155	220	48
NW 8th Avenue & Foster Road	80	14	-	-	-	-	-	-
NW 8th Avenue & NW 5th Court	100*	25	75	0	95*	25	50*	25
NW 8th Avenue & NW 2nd Street	-	-	200*	25	-	-	450*	50

*The unsignalized study intersections have 1 lane in each approach; therefore, queue storage bays do not exist and the storage length has been measured to the nearest access location.

AM PEAK HOUR	NORTHBOUND		SOUTHBOUND		EASTBOUND		WESTBOUND	
	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue
Hallandale Beach Boulevard & NW 8th Avenue	190	228	100	176	220	86	220	51
NW 8th Avenue & Foster Road	80	7	-	-	-	-	-	-
NW 8th Avenue & NW 5th Court	100*	25	75	0	95*	50	50*	25
NW 8th Avenue & NW 2nd Street	-	-	200*	25	-	-	450*	25
PM PEAK HOUR	NORTHBOUND		SOUTHBOUND		EASTBOUND		WESTBOUND	
	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue	Existing Storage	Queue
Hallandale Beach Boulevard & NW 8th Avenue	190	323	100	72	220	175	220	48
NW 8th Avenue & Foster Road	80	14	-	-	-	-	-	-
NW 8th Avenue & NW 5th Court	100*	25	75	0	95*	25	50*	25
NW 8th Avenue & NW 2nd Street	-	-	200*	25	-	-	450*	50

*The unsignalized study intersections have 1 lane in each approach; therefore, queue storage bays do not exist and the storage length has been measured to the nearest access location.

PROJECT DRIVEWAY ACCESS

Access to the site is provided via a full-access driveway on NW 8th Avenue and a full-access driveway on NW 2nd Street. Because direct access to the site is provided via low-speed, low-volume City streets, no inbound turn-lanes are anticipated to be required. *Figure 3* illustrates the project driveway volumes.

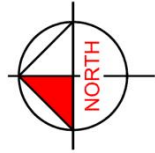
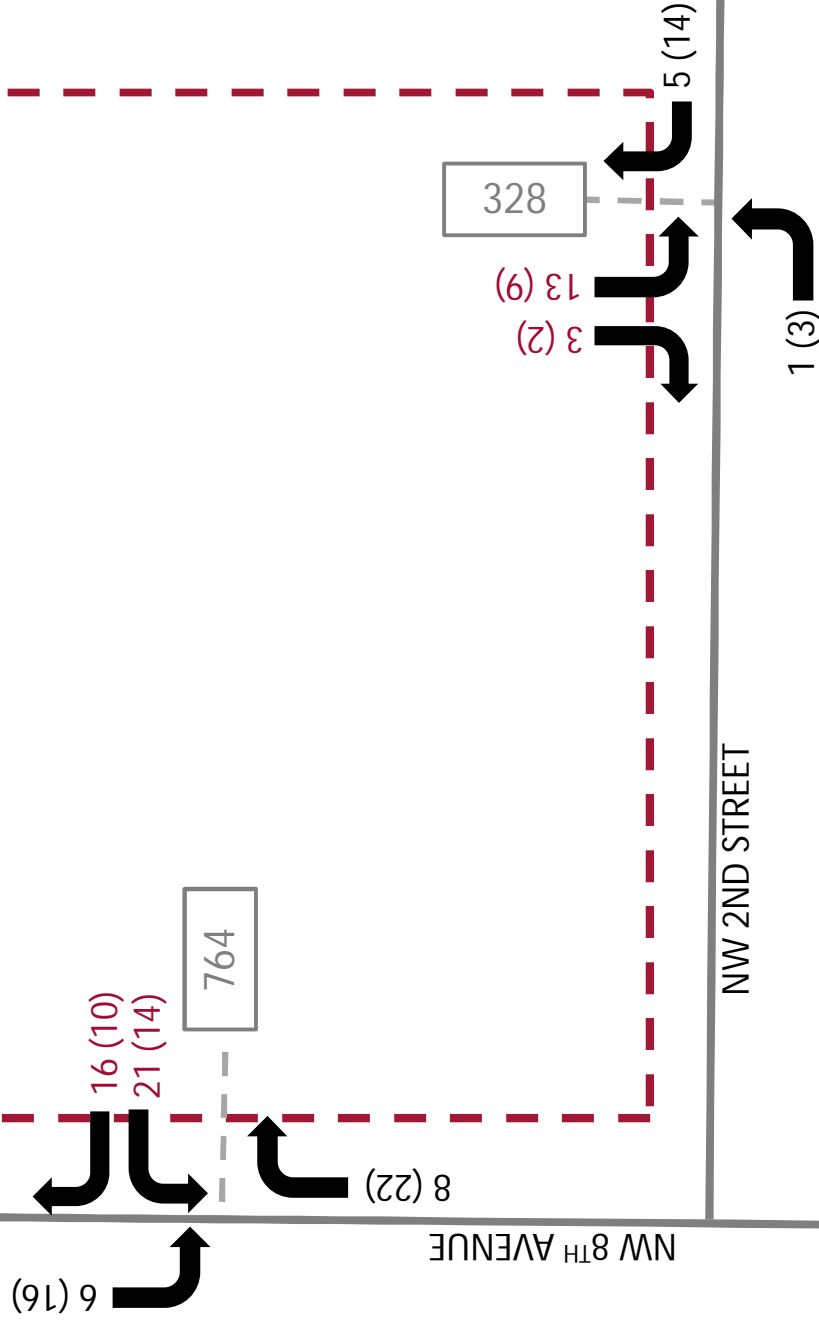


FIGURE 3
PROJECT DISTRIBUTION
EIGHTH AVENUE COMMONS APARTMENT
HOMES

Kimley»Horn

LEGEND

- | | | | |
|------|------------|------|-------------|
| XX | INBOUND AM | XX | OUTBOUND AM |
| (XX) | INBOUND PM | (XX) | OUTBOUND PM |
| XX | DAILY | | |



CONCLUSION

Eighth Avenue Commons is a proposed five-story apartment building located at 200 NW 8th Avenue in Hallandale Beach, Florida. The currently vacant site is proposed to be developed with 200 apartment units.

The analysis has been conducted to evaluate future level of service on the roadway segments and intersections identified in the study methodology. The analysis includes an assumption of background growth utilizing an area-wide growth rate. As shown in the analyses, some roadway segments currently operate at LOS F during weekday peak period conditions. These roadway segments have a project impact of less than 1% and the project is not anticipated to create any new LOS E or LOS F conditions on any roadway segments or intersections that are currently operating at LOS D or better. Additionally, it is noted that the project will be required to contribute to a transportation mitigation payment to the City per the City's transportation mitigation payment schedule.



July 10, 2018

Revised August 27, 2018

Christy Dominguez, Principal Planner
City of Hallandale Beach
400 South Federal Highway
Hallandale Beach, FL 33009

RE: *Eighth Avenue Commons Apartment Homes*
Alternate Parking Supply Determination
Hallandale Beach, Florida
140373000

Dear Ms. Dominguez:

Eighth Avenue Commons is a proposed six-story apartment building located at 200 NW 8th Avenue in Hallandale Beach, Florida. The site is proposed to contain 200 residential units with a mix of one-bedroom, two-bedroom, and three-bedroom units.

The City of Hallandale Beach Development Code required 1.75 spaces for each one-bedroom unit, 2 spaces for each two-bedroom unit, and 2.5 spaces for each three-bedroom unit. Based upon these requirements, the site parking requirements were calculated to be 446 spaces.

The current site plan proposes a total of 402 spaces with on-street parking.

This site has convenient access to the regional transit network, which is anticipated to decrease the demand for parking on site. The site boundary is approximately 0.3 miles away from the nearest bus stop for Route 06 (located at the corner of NW 1st Street & NW 6th Avenue) and 0.3 miles away from the nearest bus stop for Route 28 (located just west of NW 8th Avenue on Hallandale Beach Boulevard).

ITE Parking Demand

Additionally, a secondary calculation of parking demand was undertaken using data published by The Institute of Transportation Engineers (ITE) in Parking Generation, 4th Edition. For each land use, empirical parking demand data that has been collected on sites throughout the country is compiled to develop rates and/or equations that represent the typical parking demand expected for that category of use. The parking demand data published for ITE Land Use 221 (Low/Mid-Rise Apartment) for a suburban setting are attached to this memorandum for reference. As shown in the data, the 95th percentile confidence interval for anticipated parking demand for Low/Mid-Rise Apartments was within a range of 1.10 spaces per unit to 1.37 spaces per unit.

The data published by ITE represents parking demand. Using the rates published by ITE, the base parking demand for the site was calculated to be 296 spaces. For the purposes of determining a supply requirement, a buffer of 10% was applied to ensure that additional spaces will be available on site, resulting in a recommended parking supply of 326 spaces. In comparison to the ITE-recommended parking supply, the proposed on-site parking supply yields a surplus of 56 parking spaces. Table 1 provides a summary of this calculation.

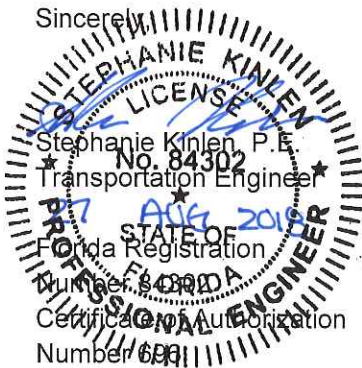
Table 1: ITE Parking Rates

Intensity	Local Parking Demand Rate	Parking Demand
200 units	1.48 Spaces/Unit	296
Demand + 10% Buffer		326
Proposed Total Parking		402

Conclusion

Therefore, as demonstrated in this summary, a reduced parking requirement is appropriate for consideration at this site. Based upon the alternate calculations presented herein, the appropriate parking supply for this site is 326 parking spaces, which is less than the 402 spaces provided. Should you have any questions, please contact me via e-mail at stephanie.kinlen@kimley-horn.com or via phone at (561) 840-0852.

Sincerely,



Attachments