

Executive Summary

501 NE 4 Street

Flagler Sky View

Fort Lauderdale, Florida

October 5, 2022

Prepared for:

Mainstreet NCC Development, LLC

EXECUTIVE SUMMARY

Mainstreet NCC Development, LLC proposes to construct 270 multifamily dwelling units and 2,680 square feet of retail space at 501 NE 4 Street (along the north side of NE 4 Street east of NE 5 Avenue) within municipal limits of the City of Fort Lauderdale. Figure 1 on the following page shows the location of the project site as well as the transportation network in the immediate vicinity.

Danielsen Consulting Engineers, Inc. has been retained by Mainstreet NCC Development, LLC to conduct a traffic study in connection with the proposed development. The traffic study addresses trip generation, site access, expected impacts to the adjacent roadway network, and potential improvements intended to mitigate new trips generated by the project as appropriate.

Existing Land Use and Access

The subject 0.70-acre site is currently vacant. Although no delineated driveways exist along NE 4 Street, vehicles can access the site along the entire NE 5 Avenue frontage.

Proposed Land Uses and Access

The project site is proposed to be redeveloped with the following:

- 270 multifamily dwelling units, and
- 2,680 square feet of retail space.

Access to the multifamily units and retail space is proposed as follows:

- One (1) two-way, two-lane driveway on NE 5 Avenue providing access to the onsite parking garage, and
- One (1) two-way, two-lane driveway on NE 4 Street providing access to nine (9) ground floor parking spaces and various back of house areas.

A security gate will be located on the second floor of the parking garage (accessed from the NE 5 Avenue driveway) as shown in plan page AR-102 included as Appendix B of the traffic study. Due to its location within the property (approximately 425 feet from the pedestrian crosswalk), it is unlikely vehicles will queue into the public right-of-way. In addition, a high speed gate, to be activated after hours exclusively, is proposed at the NE 4 Street driveway.

The project is expected to be built and occupied within year 2026.

Roadway System

The transportation network within the study area includes one (1) state principal arterial (N. Federal Highway (US 1/SR 5)), two (2) county minor arterials (N. Andrews Avenue and NE 3 Avenue), two (2) city minor collectors (NE 4 Street and NE 6 Street) and NE 5 Avenue, a local roadway.

N. Federal Highway (US 1/SR 5) is a state maintained six (6) lane facility north of the Henry E. Kinney tunnel. This arterial has a posted speed limit of 35 miles per hour (mph) and a current (2021) Average Annual Daily Traffic (AADT) volume of 42,000 vehicles per day (vpd) near the project site.

Andrews Avenue is a four (4) lane county maintained facility with a two (2)-way center left turn lane near the project site. This arterial has a posted speed limit of 35 miles per hour (mph) and a current (2021) AADT volume of 11,400 vpd.

NE 3 Avenue is a four (4) lane county maintained facility with a two (2)-way center left turn lane south of NE 4 Street. This arterial has a posted speed limit of 30 miles per hour (mph) and a current (2021) AADT volume of 23,500 vpd.

NE 4 Street is a two (2) lane city maintained facility within the project study area. The collector has a posted speed limit of 30 miles per hour (mph) and a current (2021) AADT volume of 2,800 vpd.

NE 6 Street is a two (2) lane city maintained facility east of Andrews Avenue. The collector has a posted speed limit of 30 miles per hour (mph) and a current (2021) AADT volume of 6,600 vpd.

The Florida Department of Transportation (FDOT) is the source of all AADT volumes.

Study Intersections

For purposes of this study, the following eight (8) intersections were selected for detailed analysis.

- NW/NE 4 Street at N. Andrews Avenue,
- NE 4 Street at NE 3 Avenue,
- NE 4 Street at NE 5 Avenue (unsignalized),
- NE 4 Street at N. Federal Highway (SR 5/US 1),
- NE 5 Street at NE 5 Avenue (unsignalized),
- NE 6 Street at NE 3 Avenue,
- NE 6 Street at NE 5 Avenue (unsignalized), and
- NE 6 Street at N. Federal Highway (US 1/SR 5).

Transit Service and Facilities

Three (3) traditional Broward County Transit routes serve the project site as follows:

- **Route 10** traverses Broward Boulevard, US 1 (N. Federal Highway) near the project site, and Sunrise Boulevard between the Broward Central Terminal (Broward Boulevard) and Mizner Park (NE 2 Street) in Boca Raton.
- **Route 20** traverses eastern Broward County (including NE 3 Avenue, NE 4 Street adjacent to the project site, US 1 (N. Federal Highway), NE 15 Avenue, Cypress Road, NW 6 Avenue and NW 3 Avenue) between the Broward Central Terminal (Broward Boulevard) and Broward Health North (Sample Road).
- **Route 50** traverses eastern Broward County between the Broward Central Terminal (Broward Boulevard) and Hillsboro Boulevard along NE 3 Avenue near the project site, Wilton Drive and Dixie Highway.

Broward County Transit's community shuttle service (LauderGO!) increases the number of destinations accessible to residents through public transit. The Downtown Link trolley traverses SE 17 Street, Andrews Avenue, SE 2 Street, NW 1 Avenue, NE 6 Street, and NE/SE 3 Avenue on a continuous loop and is active Monday through Friday between 9:00 AM and 5:00 PM. The Downtown Link trolley provides convenient connection to the Las Olas Link, the Beach Link, the Neighborhood Link and the NW Community Link.

The Fort Lauderdale Brightline\Virgin Trains USA (an express inter-city rail system) station is located along the west side of NW 2 Avenue north of Broward Boulevard. Brightline\Virgin Trains USA currently provides non-stop service to downtown West Palm Beach and downtown Miami with planned future service to Orlando. Trains generally run at one-hour headways with one-half hour headways during the AM peak.

Trip Generation

Trip generation for the proposed development is based upon rates and formulae published in the Institute of Transportation Engineer's (ITE) report *Trip Generation* (11th Edition). According to ITE, the most appropriate land use categories for the proposed residential units and retail space is Land Use Code (LUC) 222 'Multifamily Housing (High-Rise)' and LUC 822 'Strip Retail Plaza (<40k)'.

Net New Project Trips

Acknowledging the effect of internalization and the use of alternative modes of travel as described within the traffic study, yields 1,208 net new vehicle trips per day, approximately 74 net new AM peak hour trips (27 inbound and 47 outbound), and approximately 101 net new PM peak hour trips (55 inbound and 46 outbound). Reference Table 1, attached.

Trip Distribution and Traffic Assignment

The distribution and assignment of project-related vehicle trips are based on current travel patterns and knowledge of the immediate area. A global distribution of 40 percent (40.0%) to and from the north, 46 percent (46.0%) to and from the south, 10 percent (10.0%) to and from the west and 4 percent (4.0%) to and from the east was utilized.

Detailed Intersection and Driveway Level of Service Analyses

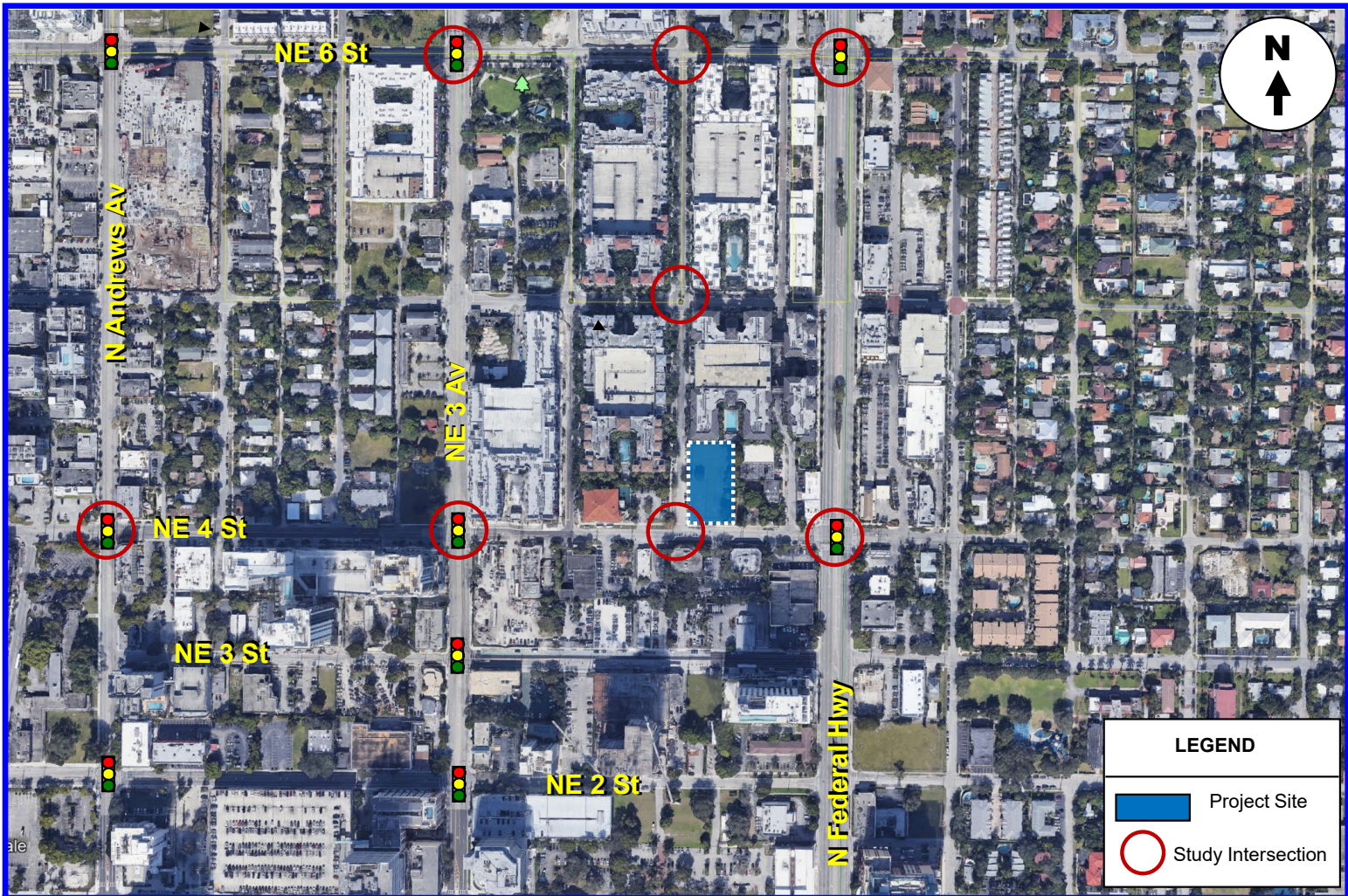
Intersection capacity analyses were performed for all study intersections and the project driveways. The analyses were undertaken following the capacity/level of service procedures outlined in the current (6th) edition of the Highway Capacity Manual using the SYNCHRO 11 software. The results of the intersection analyses are summarized in Table 2, attached.



According to the City of Fort Lauderdale Comprehensive Plan (Transportation Element), LOS 'D' is acceptable within the Near Downtown area and LOS 'E' is acceptable in the Downtown Core area. Both are applicable to the analysis contained herein. As shown in Table 2, all study intersections are expected to operate within these acceptable levels of service overall in future year 2026 with traffic from the project as proposed.

Conclusions and Recommendations

Conclusions and recommendations of the traffic study are as follows:

- As shown in Table 1, the project as proposed is expected to produce 1,208 net new vehicle trips per day, approximately 74 net new AM peak hour trips (27 inbound and 47 outbound), and approximately 101 net new PM peak hour trips (55 inbound and 46 outbound).
- Signalized and unsignalized intersections within the study area currently operate within acceptable levels of service overall and are expected to continue operating within acceptable levels upon buildout of the project as proposed.
- The unsignalized project driveways are expected to operate within acceptable levels of service upon buildout of the project as proposed.
- It is recommended that after the project is built and occupied, the development team contact BCTED to request the signal timing of area wide traffic signals be reviewed and optimized.



LEGEND	
	Project Site
	Study Intersection

DC Engineers, Inc.

Project Location Map

FIGURE 1
501 NE 4 Street
Fort Lauderdale, Florida

Table 1: Trip Generation Summary Proposed Uses

Land Use	Scale	Units	AM Peak Hour			PM Peak Hour			Daily
			Total Trips	Inbound	Outbound	Total Trips	Inbound	Outbound	Total Trips
Multi-Family Housing, High Rise (LUC 222)	270	du	78	27	51	93	52	41	1226
Retail (<40k) (LUC 822)	2.680	ksf	6	4	2	31	15	16	146
Subtotal			84	31	53	124	67	57	1,372
Internal (2%, 10%, 2%)			(2)	(1)	(1)	(12)	(6)	(6)	(30)
Subtotal			82	30	52	112	61	51	1342
Multi-Modal Reduction (10%)			(8)	(3)	(5)	(11)	(6)	(5)	(134)
Total			74	27	47	101	55	46	1,208

Source: ITE Trip Generation Manual (11th Edition)

* obtained from 2020 Census, Tract 425.01

Table 2: Intersection Levels of Service

Intersection/Approaches	Existing (2022)	Future Traffic Conditions	
		Year 2026 w/o Project (Background)	Year 2026 With Project (Total)
<i>NW/NE 4 St at N. Andrews Av</i>	B\14.2 (B\19.7)	B\16.5 (C\27.5)	B\16.7 (C\27.7)
- NB Approach	A (B)	A (B)	A (B)
- SB Approach	A (B)	B (B)	B (B)
- EB Approach	C (D)	C (F)	C (F)
- WB Approach	D (D)	D (D)	D (D)
<i>NE 4 St at NE 3 Av</i>	B\14.0 (B\13.8)	B\14.5 (B\15.7)	B\14.7 (B\15.9)
- NB Approach	A (A)	A (B)	A (B)
- SB Approach	A (A)	B (B)	B (B)
- EB Approach	C (C)	C (B)	C (B)
- WB Approach	C (C)	C (C)	C (C)
<i>NE 4 St at NE 5 Av</i>			
- SB Approach	A (B)	B (B)	B (B)
<i>NE 4 St at N. Federal Hwy (US 1)</i>	B\16.7 (B\19.0)	C\21.4 (C\21.2)	C\21.3 (C\21.9)
- NB Approach	A (B)	B (B)	B (B)
- SB Approach	A (B)	B (B)	B (B)
- EB Approach	E (E)	E (E)	E (E)
- WB Approach	E (E)	E (E)	E (E)
<i>NE 5 St at NE 5 Av</i>			
- NB Approach	A (A)	A (A)	A (A)
- SB Approach	A (A)	A (A)	A (A)
- EB Approach	A (A)	A (A)	A (A)
- WB Approach	A (A)	A (A)	A (A)
<i>NE 6 St at NE 3 Av</i>	B/16.0 (B/17.8)	B/16.3 (B/19.1)	B/16.5 (B/19.4)
- NB Approach	A (B)	A (B)	A (B)
- SB Approach	A (B)	A (B)	A (B)
- EB Approach	C (C)	C (C)	C (C)
- WB Approach	C (C)	C (C)	C (C)
<i>NE 6 St at NE 5 Av</i>			
- NB Approach	B (B)	B (B)	B (B)
- SB Approach	B (B)	B (B)	B (B)
<i>NE 6 St at N. Federal Hwy (US 1)</i>	C/21.7 (C/25.1)	C/22.9 (C/26.5)	C/26.9 (C/26.6)
- NB Approach	B (B)	B (B)	B (B)
- SB Approach	B (B)	B (C)	B (C)
- EB Approach	E (D)	E (D)	E (E)
- WB Approach	E (E)	E (E)	E (E)
<i>Project Dwy at NE 4 St</i>			
- SB Approach	NA	NA	B (B)
<i>Project Dwy at NE 5 Av</i>			
- WB Approach	NA	NA	A (A)

Source: HCM 6. LEGEND: AM Peak Hour (PM Peak Hour); vehicular delay (sec/veh)