

Traffic Impact Study

200 Third

Fort Lauderdale, Florida

March, 2022

Prepared for:

National Realty Investment Advisors

Updated May 2022

200 Third
NE 3 Street
Fort Lauderdale, Florida

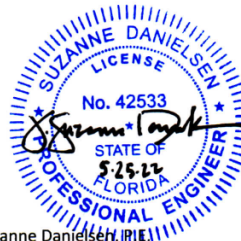
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Prepared for:
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INTRODUCTION

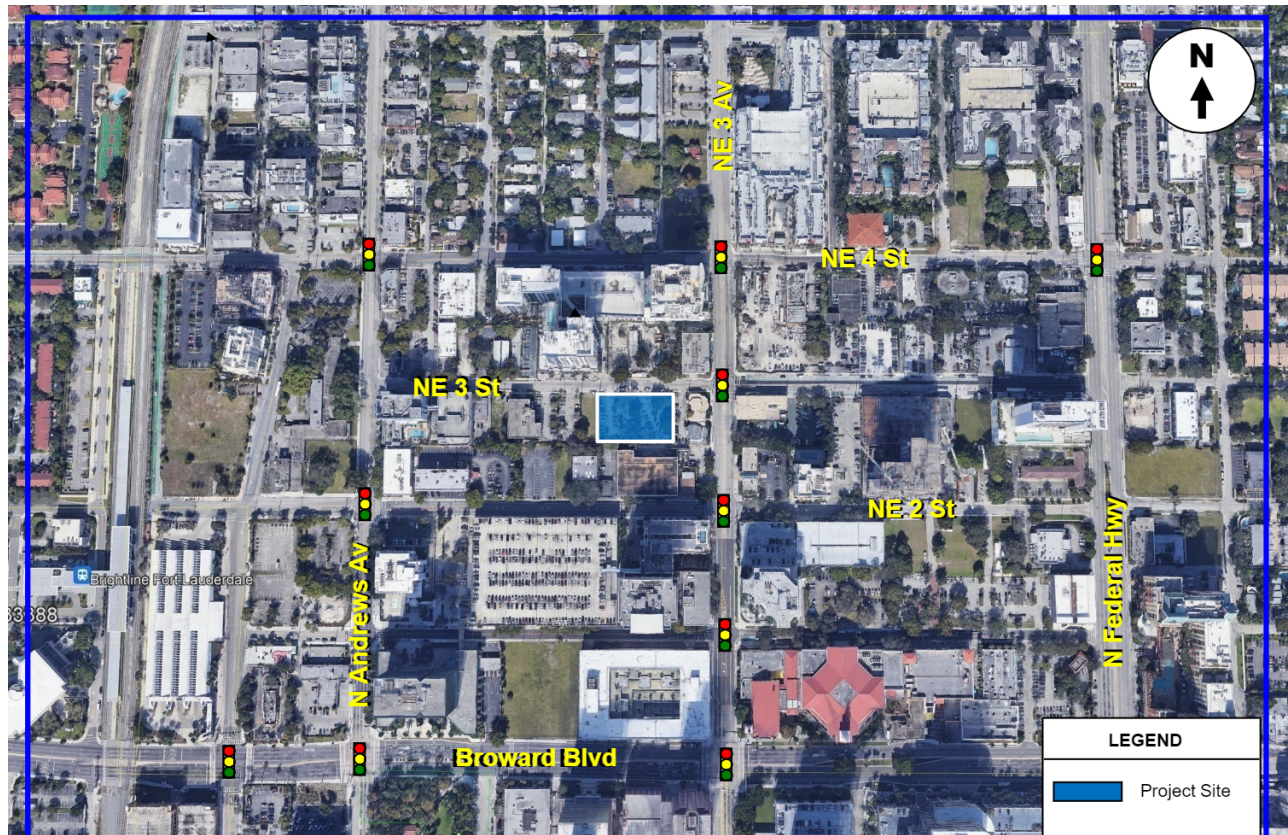
National Realty Investment Advisors (NRIA) proposes to construct 388 multifamily dwelling units and 2,300 square feet of retail space along the south side of NE 3 Street west of NE 3 Avenue within municipal limits of the City of Fort Lauderdale, Florida. Figure 1 on the following page shows the location of the project site as well as the transportation network in the immediate vicinity.

Danielsen Consulting Engineers, Inc. has been retained by National Realty Investment Advisors to conduct a traffic study in connection with the proposed development¹. This 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.

This study is divided into seven (7) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Analysis
7. Conclusions

¹ A traffic study methodology meeting was held on Monday January 10, 2022 with City staff and the City's traffic engineering review consultant. The agreed upon methodology is included as Appendix A.



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Project Location Map

FIGURE 1
200 Third
Fort Lauderdale, Florida

INVENTORY

Existing Land Use and Access

The subject 0.66 acre site is currently vacant but has most recently been used for off-street parking. Vehicular access to the site is provided at two (2) locations along NE 3 Street. Access to the east-west alleyway spanning the south property line is currently prohibited by a chain link fence.

Proposed Land Uses and Access

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

- 388 multifamily dwelling units, and
- 2,300 square feet of retail space.

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

- One (1) two-way, two-lane driveway on NE 3 Street, and
- One (1) two-way, two-lane service driveway along the east-west alley.

A security gate will be located at the top of the vehicular speed ramp on the second floor of the garage as shown in the Garage 2nd Floor Plan included as Appendix B. Due to its location within the property, it is unlikely vehicles will queue into the public right-of-way. As a result, a queuing analysis is not included herein.

The project is anticipated to be built and occupied by first quarter 2025. The proposed site plan for 200 Third is included in Appendix B.

On-Street Parking

Informal on-street parking is proposed to be replaced with five (5) on-street striped spaces as demonstrated within the current site plan. It is understood these spaces may be used by any member of the public and do not count toward the project's parking requirement.

EXISTING CONDITIONS

This section addresses the roadway system adjacent to and surrounding the project site.

Roadway System

The transportation network within the study area includes one (1) state principal arterial (Broward Boulevard), two (2) county minor arterials (Andrews Avenue and NE 3 Avenue), two (2) city minor collectors (NE 2 Street and NE 4 Street) and NE 3 Street, a local roadway.

Broward Boulevard is a six (6) lane state maintained facility near the project site. This arterial has a posted speed limit of 35 miles per hour (mph) and a current (2019) AADT of 37,000 vpd.

Andrews Avenue is a four (4) lane county maintained facility with a two (2)-way left turn lane near the project site. This arterial has a posted speed limit of 35 miles per hour (mph) and a current (2019) AADT of 16,800 vpd.

NE 3 Avenue is a four (4) lane county maintained facility with a two (2)-way left turn lane and on-street parking. This arterial has a posted speed limit of 30 miles per hour (mph) and a current (2019) AADT of 24,500 vpd.

NE 4 Street is a two (2) lane facility within the project study area. The collector has a posted speed limit of 30 miles per hour (mph) and a current (2019) AADT of 3,500 vpd.

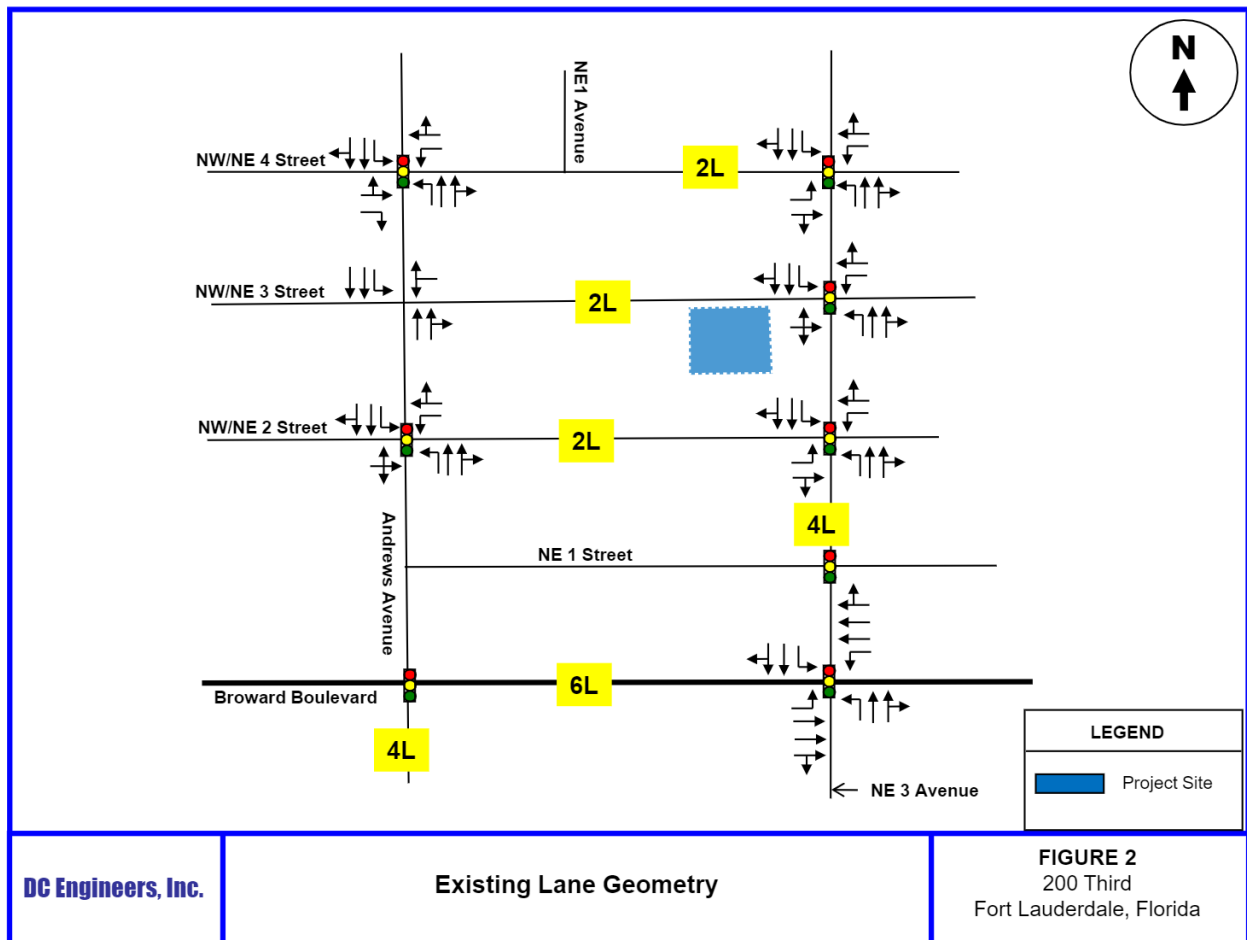
Due to abnormal conditions 2019 (rather than 2020) volumes are referenced. The Florida Department of Transportation (FDOT) is the source of all AADT volumes.

Study Intersections

For purposes of this study, the following seven (7) intersections were selected for detailed analysis.

-
- Broward Boulevard at NE 3 Avenue,
 - NW/NE 2 Street at Andrews Avenue,
 - NE 2 Street at NE 3 Avenue,
 - NW/NE 3 Street at Andrews Avenue (unsignalized),
 - NE 3 Street at NE 3 Avenue,
 - NW/NE 4 Street at Andrews Avenue, and
 - NE 4 Street at NE 3 Avenue.

Figure 2 shows approach lanes at each intersection under study and the number of through lanes on corresponding roadway segments.



DC Engineers, Inc.

Existing Lane Geometry

FIGURE 2
200 Third
Fort Lauderdale, Florida

Transit Service and Facilities

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

- **Route 40** traverses central Broward County from the Lauderhill Mall on SR 441 to the Galleria Mall on Sunrise Boulevard via NW 19 Street, Sistrunk Boulevard, the 17th Street Causeway, SR A1A and Andrews Avenue near the project site.
- **Route 50** traverses eastern Broward County between the Broward Central Terminal and Hillsboro Boulevard along NE 3 Avenue near the project site, Wilton Drive and Dixie Highway.
- **Route 60** traverses Broward County from west to east between US 441 and the Broward Central Terminal (Broward Boulevard) via Coconut Creek Parkway, Martin Luther King Jr. Boulevard, and Andrews Avenue.

Fixed route schedules are included as Appendix C.

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.

TRAFFIC COUNTS

Danielsen Consulting Engineers, Inc., in association with Traffic Survey Specialists, Inc., collected turning movement count data at the following locations:

- NW/NE 2 Street at Andrews Avenue,
- NE 2 Street at NE 3 Avenue,
- NW/NE 3 Street at Andrews Avenue (unsignalized), and
- NW/NE 4 Street at Andrews Avenue.

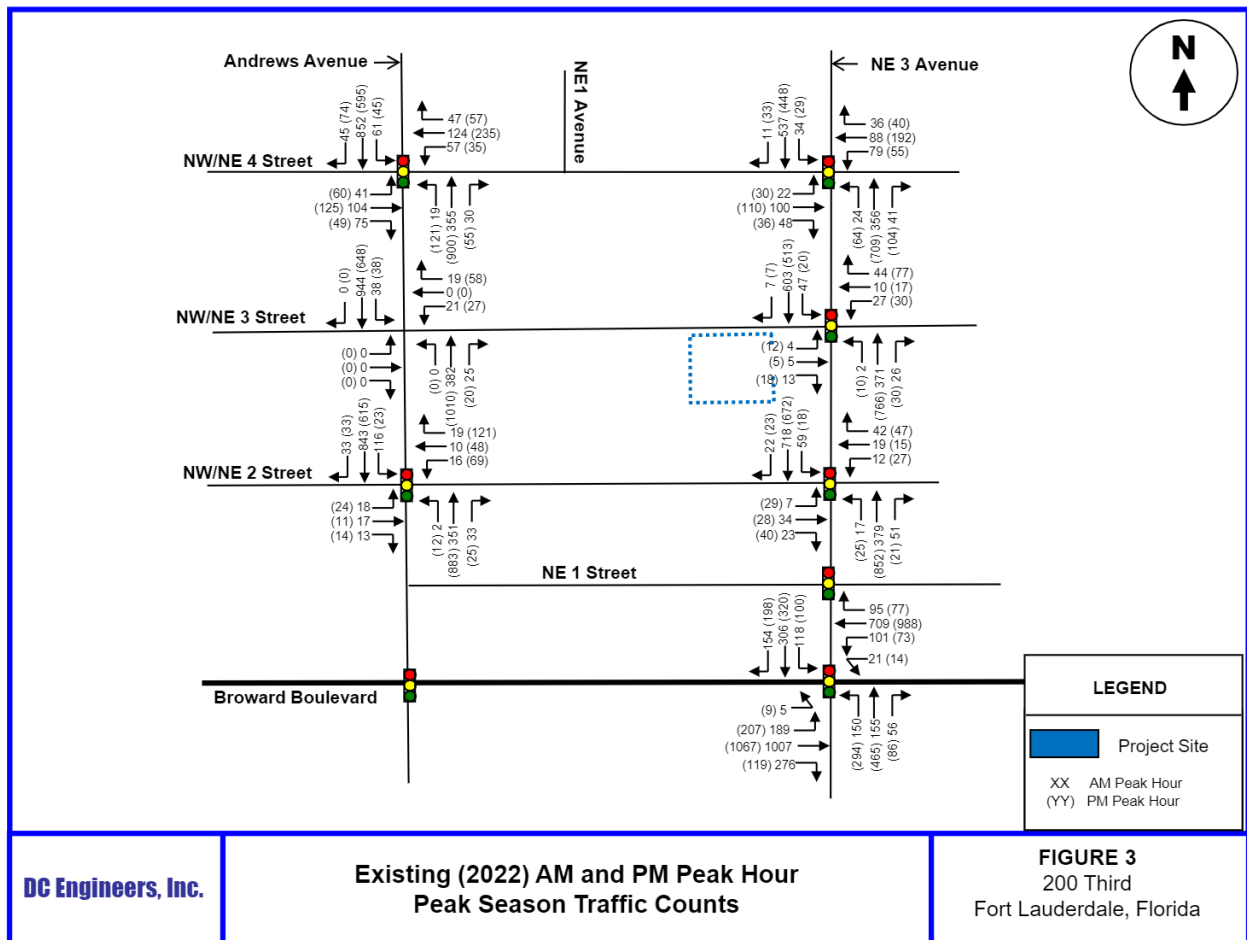
Intersection turning movements including bicycles and pedestrians were documented on Thursday February 3, 2022. Data was collected during both AM (7:00 to 9:00) and PM (4:00 to 6:00) peak periods. Traffic data collected on Thursday February 3, 2022 was reviewed with respect to average peak season conditions. According to the Florida Department of Transportation's (FDOT) Peak Season Factor Category (PSFC) report (reference Appendix D), an adjustment factor of 1.01 is required to convert traffic counts collected during this time period to average peak season conditions.

In addition, intersection turning movements (including bicyclists and pedestrians) collected for a prior study were incorporated for the following locations:

- Broward Boulevard at NE 3 Avenue,
- NE 3 Street at NE 3 Avenue,
- NE 4 Street at NE 3 Avenue.

This historic data, collected Tuesday March 2, 2021 during both AM (7:00 to 9:00) and PM (4:00 to 6:00) peak periods, was projected into future year 2022 to be consistent with current counts. According to the FDOT Peak Season Factor Category report, this data does not require further adjustment as it was collected during the peak season.

Existing peak hour traffic volumes adjusted to peak season are shown in Figure 3 and are included within Appendix D. Signal timing plans obtained from Broward County Traffic Engineering Division (BCTED) are also contained within Appendix D.



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)'. Trip generation equations for the proposed land uses as published by ITE, are as follows:

Multifamily Housing (High-Rise) – ITE Land Use #222

- Weekday: $T = 3.76(X) + 377.04$
where T = number of trips and X = dwelling units
- AM Peak Hour: $T = 0.22(X) + 18.85$ (34% in / 66% out)
- PM Peak Hour: $T = 0.26(X) + 23.12$ (56% in / 44% out)

Strip Retail Plaza (<40k) – ITE Land Use #822*

- Weekday: $T = 54.45(X)$
where T = number of trips and X = gross leasable area (GLA)
- AM Peak Hour: $T = 2.36(X)$ (60% in / 40% out)
- PM Peak Hour: $T = 6.59(X)$ (50% in / 50% out)

* As the amount of retail space proposed is very small compared to the average (18,000 - 21,000 sf) of the 25 studies compiled by ITE, the average rate was used rather than the regression equation. In addition, pass-by capture has not been considered.

Using the above trip generation formulae from the ITE document, a trip generation analysis was undertaken for the proposed development. The results of this effort are documented in report Table 1. As shown in Table 1, the proposed development is expected to produce 1,961 gross vehicle trips per day, approximately 109 gross AM peak hour trips (38 inbound and 71 outbound), and approximately 139 gross PM peak hour trips (77 inbound and 62 outbound).

Internal Capture

Internal capture is expected between complementary land uses within a multi-use project and are those vehicle trip ends that can be satisfied onsite without impact to the adjacent roadway network. Peak hour internal capture trips are determined through application of methodologies contained within ITE's *Trip Generation Handbook*, 3rd Edition. Daily internal capture trips are determined through use of information provided within ITE's *Trip Generation Handbook*, 2nd Edition. Internalization summary sheets are included as Appendix E.

Multimodal Reduction

The multimodal reduction factor acknowledges that a portion of residents and retail patrons or employees may arrive or leave through an alternative mode of travel. That is, rather than a private vehicle, some may choose to use a transit alternative (bus, for example), ride a bicycle, scooter, or walk. Although recent census data indicate the multimodal factor may be as high as 17 percent within this census tract (Table B08301 - Means of Transportation to Work (Tract 425): 0.8% use public transportation, 3.7% walk and 12.7% work from home), a five (5) percent multimodal factor has been incorporated to provide a conservative analysis. A census summary for the 0.8 square mile Tract 425 is included within Appendix E.

Net New Vehicle Trips

Acknowledging the effect of internalization and the use of alternative modes of travel as described above, yields 1,838 net new vehicle trips per day, approximately 102 net new AM peak hour trips (35 inbound and 67 outbound), and approximately 126 net new PM peak hour trips (70 inbound and 56 outbound).

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)	388	du	104	35	69	124	69	55	1836
Retail (LUC 820)	2,300	ksf	5	3	2	15	8	7	125
Subtotal			109	38	71	139	77	62	1,961
Internal (2%, 4%)			(2)	(1)	(1)	(6)	(3)	(3)	(26)
Subtotal			107	37	70	133	74	59	1,935
Multi-Modal Reduction (5%)			(5)	(2)	(3)	(7)	(4)	(3)	(97)
Total			102	35	67	126	70	56	1,838

Source: ITE Trip Generation Manual (11th Edition)

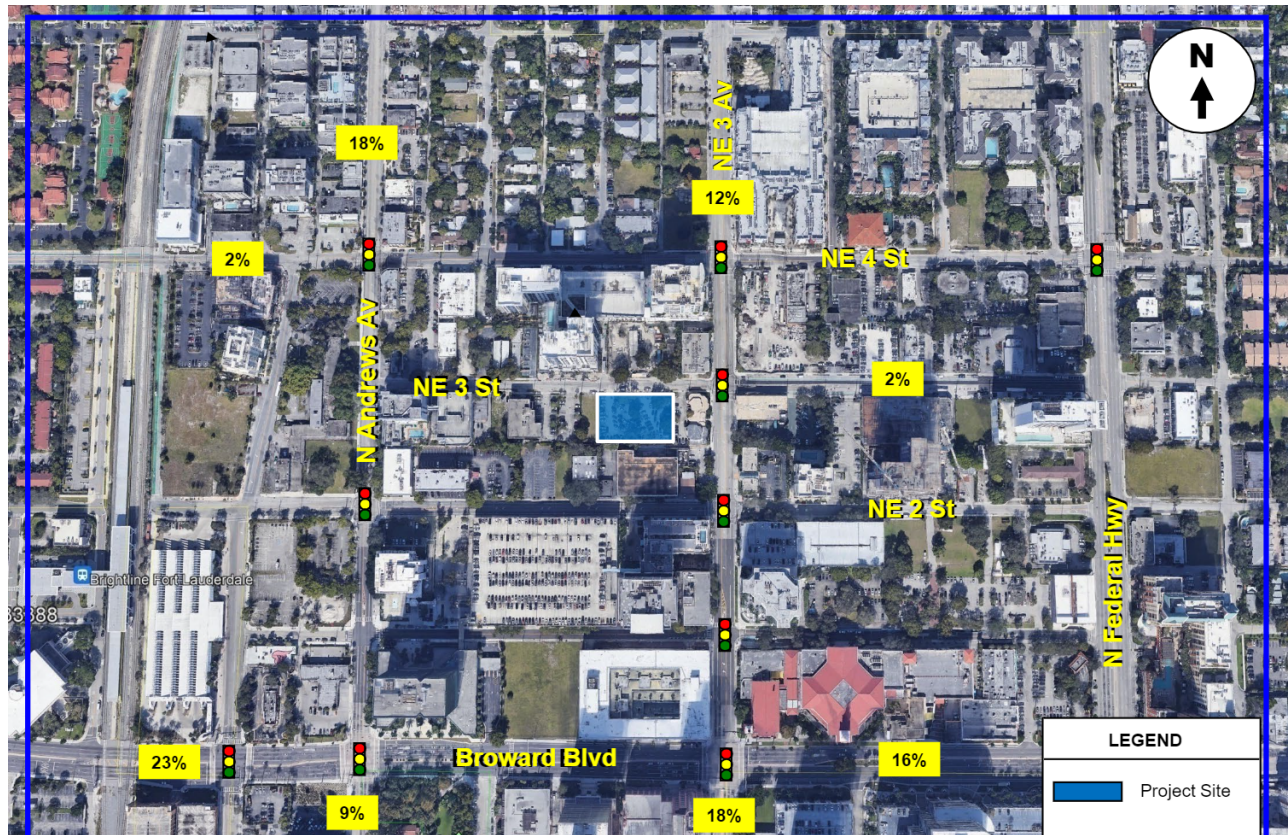
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TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

For purposes of this study, 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 18 percent to and from the north, 23 percent to and from the south, 33 percent to and from the west and 26 percent to and from the east was utilized as demonstrated below and shown in Figure 4.

- Broward Boulevard (west of Andrews Avenue) - 40,000 - 23%,
- Broward Boulevard (east of NE 3 Avenue) - 37,000 vpd - 20% (adjusted to 16%),
- NE 3 Street (east of NE 3 Avenue) - 2,400 vpd - 2%,
- NW 4 Street (west of Andrews Avenue) - 3,500 vpd - 2%,
- NW 6 Street (west of Andrews Avenue) - 15,000 vpd - 8%.
- NE 6 Street (east of NE 3 Avenue) - 6,800 vpd - 4%,
- Andrews Avenue (south of Broward Boulevard) - 16,800 vpd - 9%,
- Andrews Avenue (north of NW/NE 6 Street) - 18,300 vpd - 10%,
- NE 3 Avenue (south of Broward Boulevard) - 24,500 vpd - 14% (adjusted to 18%),
and
- NE 3 Avenue (north of NE 6 Street) - 13,900 vpd - 8%.

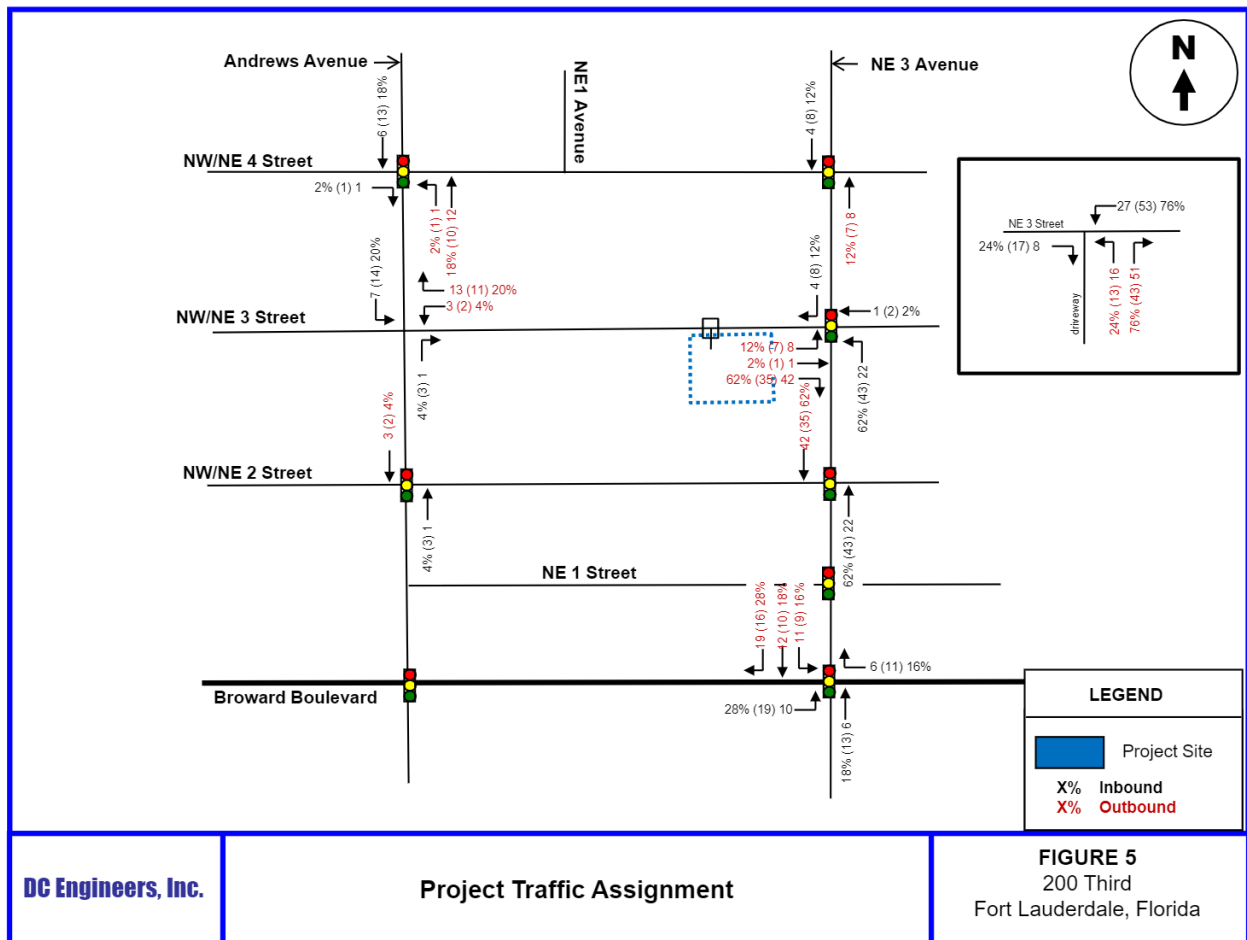
Peak hour trips generated by the proposed development were assigned to area roadways and intersections using the traffic assignment detailed above and gross project trips shown in Table 1. Project traffic assignment is summarized in Figure 5.



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Project Traffic Distribution

FIGURE 4
200 Third
Fort Lauderdale, Florida



TRAFFIC ANALYSIS

This section of the study is divided into two (2) distinct parts. The first part involves development of future (2025) traffic volumes for the study area. The second part includes level-of-service analyses for both existing and future year conditions.

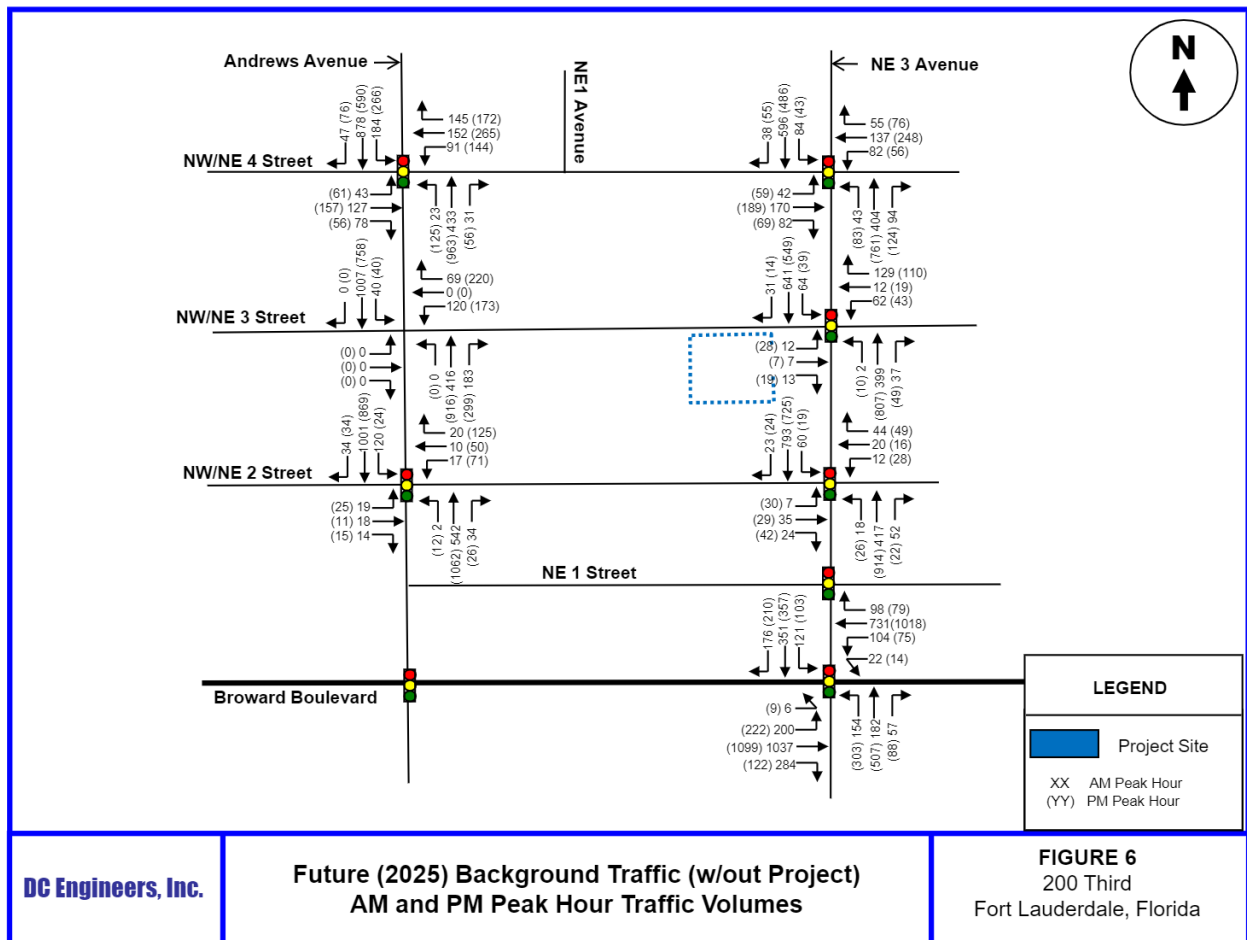
Future Conditions Traffic Volumes

Future, build-out year (2025) traffic volumes were developed for the project study area in the following manner:

- **Average Peak Season Conversion Factor:** Traffic data collected on Thursday February 3, 2022 was reviewed with respect to average peak season conditions. According to the Florida Department of Transportation's (FDOT) Peak Season Factor Category (PSFC) report (reference Appendix D), an adjustment factor of 1.01 is required to convert traffic counts collected during this time period to average peak season conditions. The data collected Tuesday March 2, 2021 does not require further adjustment as it was collected during the peak season.
- **Historic Growth:** FDOT maintains five (5) traffic count stations on roadways within the identified study area. Annual Average Daily Traffic Volumes at these count stations for the past five (5) years (2015-2019) yield a growth rate of 1.00 percent (1.00%) using the decaying exponential methodology requested. The data from FDOT and the growth rate analysis are included as Appendix F.
- **Committed Development:** Vehicle trips associated with approved projects including 317 N. Federal, FAT City, FAT Village West Residential, FAT Village E/W Non-Residential, FAT Village West as approved and URBN@flaglervillage were added to peak season volumes to produce 2025 background traffic volumes for the study area. Excerpts from these reports are included within Appendix F.

Volume development worksheets (detailing peak season adjustments, traffic growth, approved but unbuilt development and traffic associated with the proposed project for study intersections and the primary project driveway) are attached as Appendix G.

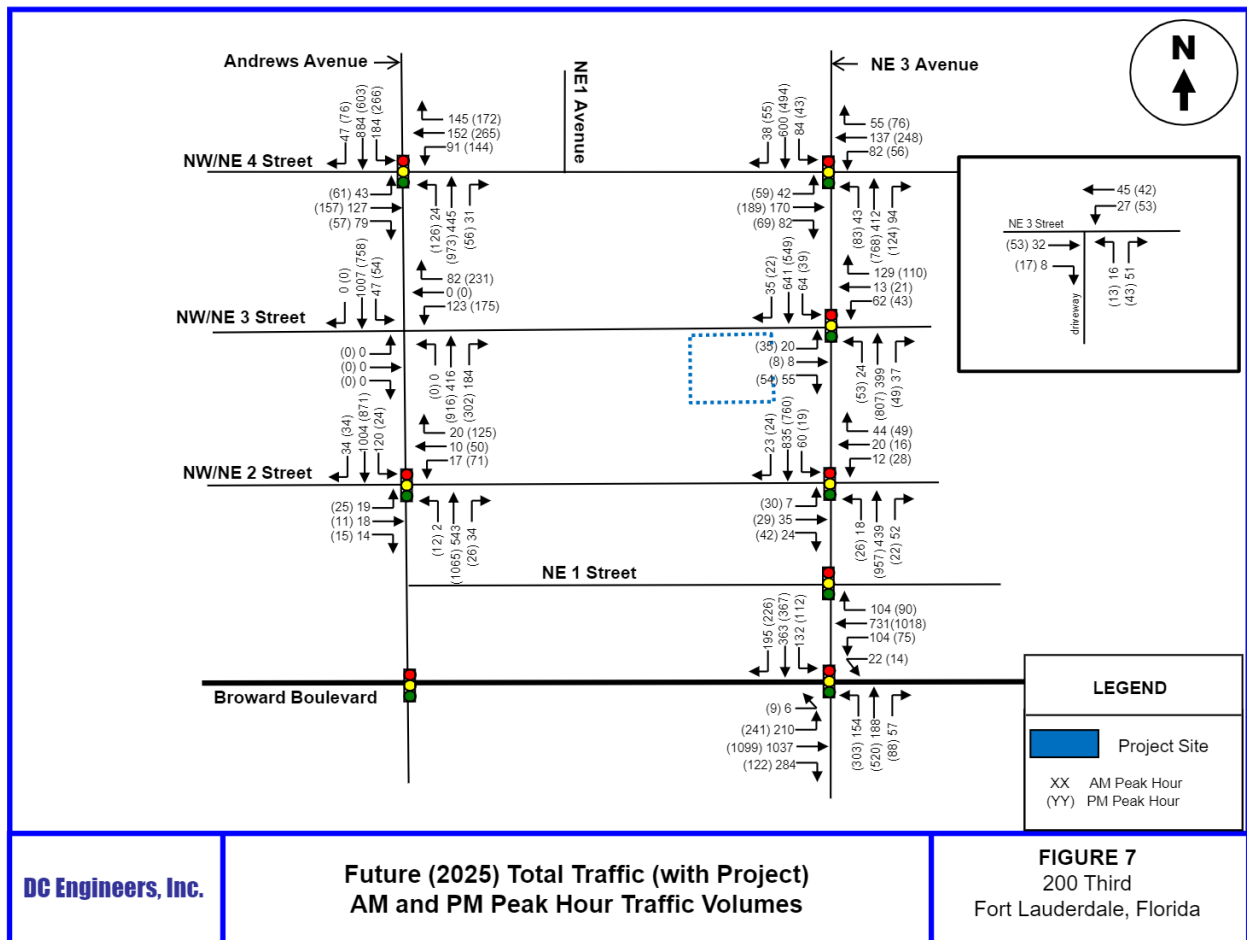
Figures 6 and 7 include future traffic volumes for the study area. Figure 6 provides projected background traffic (without the proposed project) and Figure 7 includes the additional traffic anticipated to be generated by 200 Third.



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Future (2025) Background Traffic (w/out Project) AM and PM Peak Hour Traffic Volumes

FIGURE 6
200 Third
Fort Lauderdale, Florida



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Future (2025) Total Traffic (with Project)
AM and PM Peak Hour Traffic Volumes

FIGURE 7
200 Third
Fort Lauderdale, Florida

Detailed Intersection and Driveway Level of Service Analyses

Intersection capacity analyses were performed for all study intersections and the primary project driveway. The driveway accessing the east-west alleyway has not been analyzed as daily use is expected to be minimal. 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 report Table 2.

According to the City of Fort Lauderdale Comprehensive Plan (Transportation Element), LOS 'E' is acceptable within the Downtown Core area and is thus applicable to the analysis contained herein. As shown in Table 2 all study intersections are expected to operate within this acceptable level of service in future year 2025 with traffic from the project as proposed. Appendix H includes Synchro summary sheets and a table examining queue lengths at each study intersection.