TECHNICAL MEMORANDUM

TO: TAMPA CIVIL DESIGN, LLC
17937 HUNTING BOW CIRCLE, S-102
LUTZ, FLORIDA 33558

FROM: MICHAEL D. RAYSOR, P.E.
RAYSOR TRANSPORTATION CONSULTING, LLC

SUBJECT: CLEARWATER CRA APARTMENTS
TRAFFIC IMPACT STUDY

DATE: MARCH 30, 2021

MICHAEL DANIEL RAYSOR LICENSE No. 60919 STATE OF FLORIDA PROFESSIONAL ENGINEER
Michael Raysor
Digitally signed by Michael Raysor
Date: 2021.03.30 20:18:56 -04'00'

This item has been digitally signed and sealed by Michael Daniel Raysor P.E., on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

1.0 | INTRODUCTION

This technical memorandum documents a TRAFFIC IMPACT STUDY undertaken in association with development permitting for the **"CLEARWATER CRA APARTMENTS"** project, located between Dr. Martin Luther King Jr. Avenue and Washington Avenue, north of Gould Street, in the CRA district of the City of Clearwater, Florida; as shown in ***FIGURE 1.0***. The subject site is proposed for development consisting of 173 workforce housing apartment units, with site access to the external roadway network planned to be provided via a full-access site driveway connection to Washington Avenue; as shown on the project site concept plan (***FIGURE 2.0***). This TRAFFIC IMPACT STUDY was performed in general accordance with City of Clearwater traffic study requirements as detailed in the traffic study methodology statement and approval documents (refer to ***ATTACHMENT A***).

2.0 | PROJECT SITE TRIP GENERATION

The daily and peak hour trip generation of the project site was estimated using trip characteristic data in accordance with the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th edition), as summarized in ***TABLE 1.0***. The distribution of project generated traffic was estimated manually based on area development patterns and the area roadway network. Refer to ***FIGURE 3.0*** for the estimated distribution of project generated traffic, and ***FIGURES 4.1 and 4.2*** for the resulting assignment of AM and PM peak hour project generated traffic.

TABLE 1.0 | **PROJECT SITE TRIP GENERATION ESTIMATE**

ITE LUC	Land Use Description	Size	Weekday		AM Peak Hour				PM Peak Hour			
			Formula	Trips	Formula	Trips	Enter	Exit	Formula	Trips	Enter	Exit
220	Multi-Family Residential	173 units	T=7.56(X) -40.86	1,266	Ln(T)=0.95* Ln(X)-0.51	80	18	62	Ln(T)=0.89* Ln(X)-0.02	96	60	36

SOURCE: INSTITUTE OF TRANSPORTATION ENGINEERS (10th EDITION)

FIGURE 1.0 | **PROJECT SITE LOCATION**

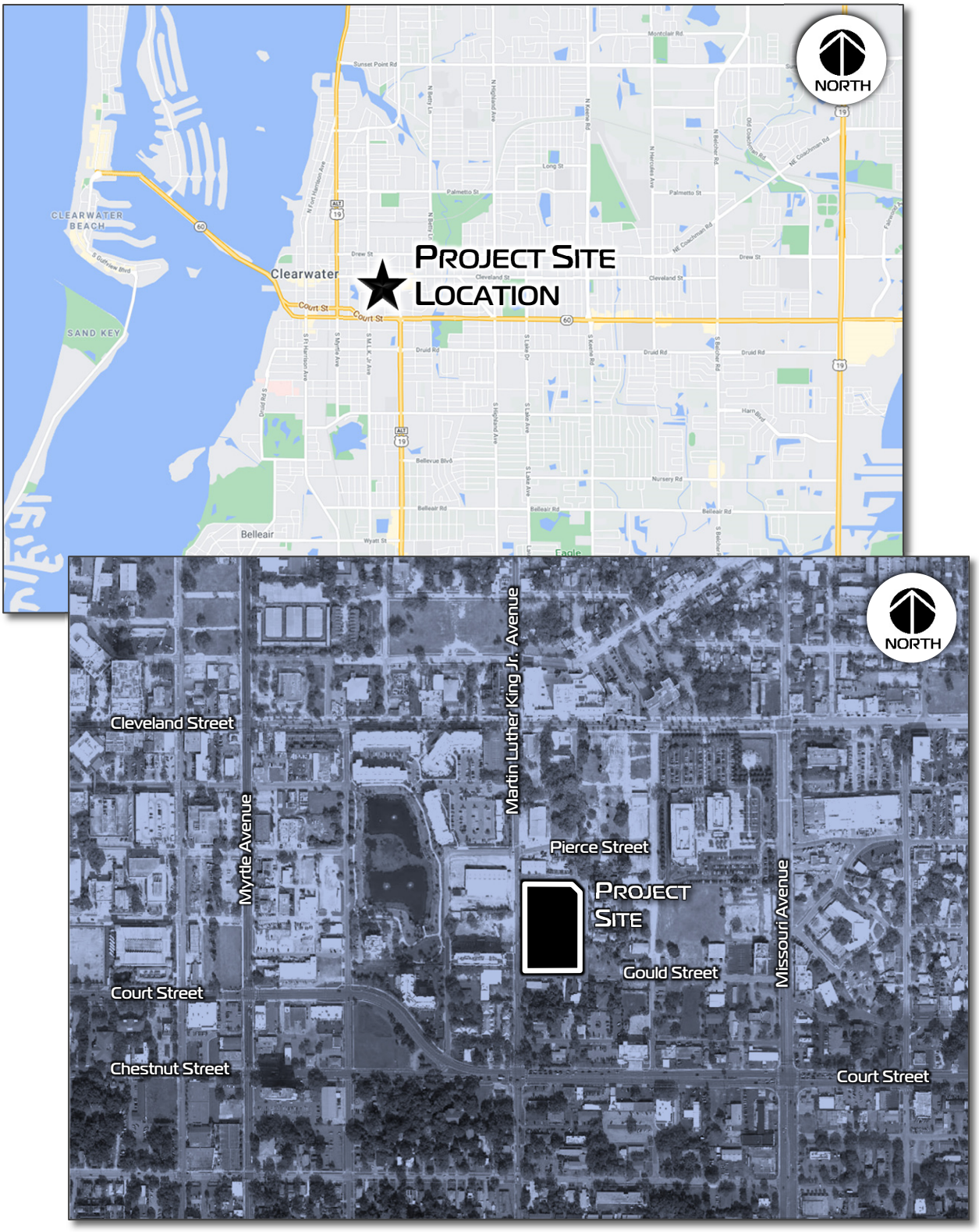


***FIGURE 2.0* | PROJECT SITE CONCEPT PLAN**

FIGURE 3.0 **| ESTIMATED PROJECT TRAFFIC DISTRIBUTION**

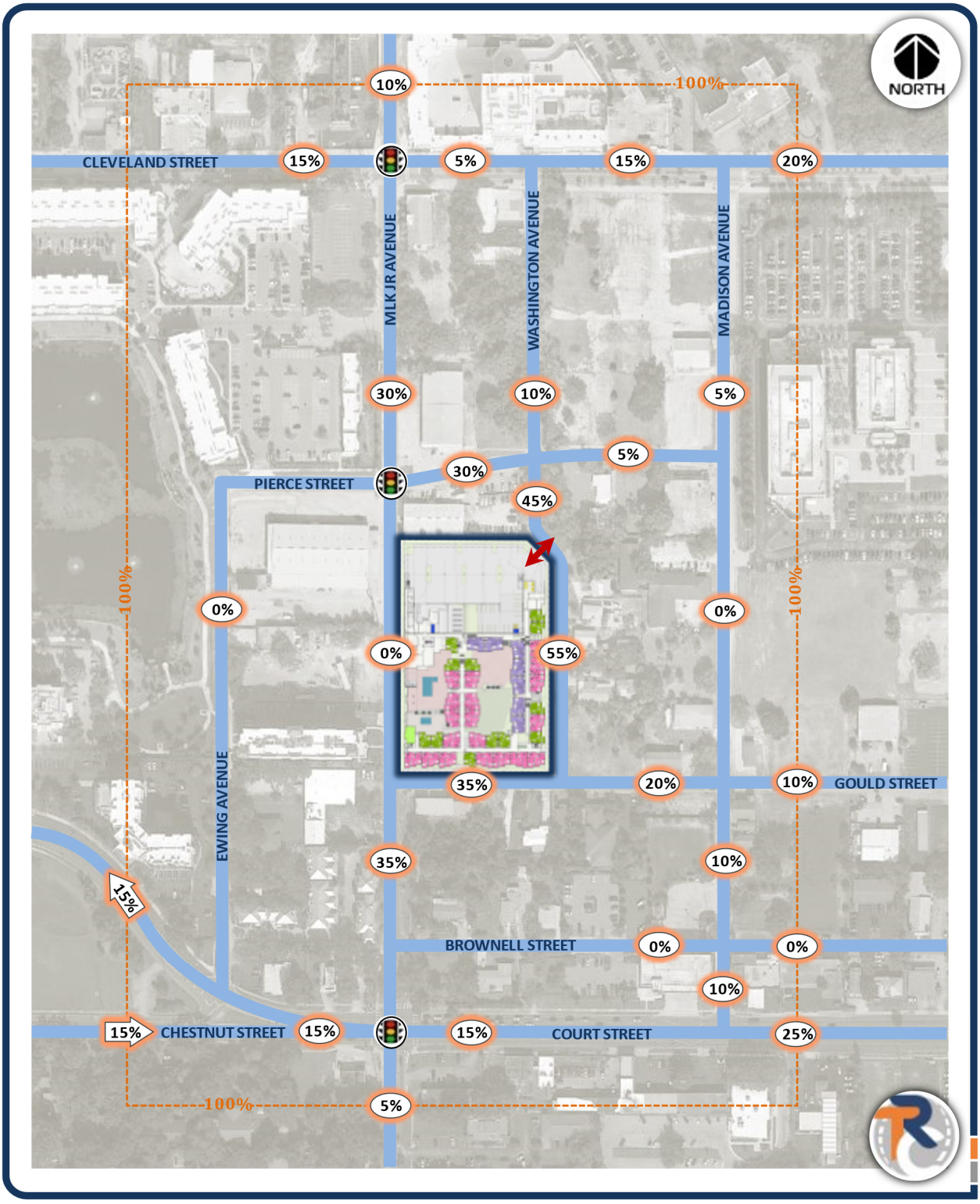


FIGURE 4.1 | **PROJECT GENERATED AM PEAK HOUR TRAFFIC VOLUMES**

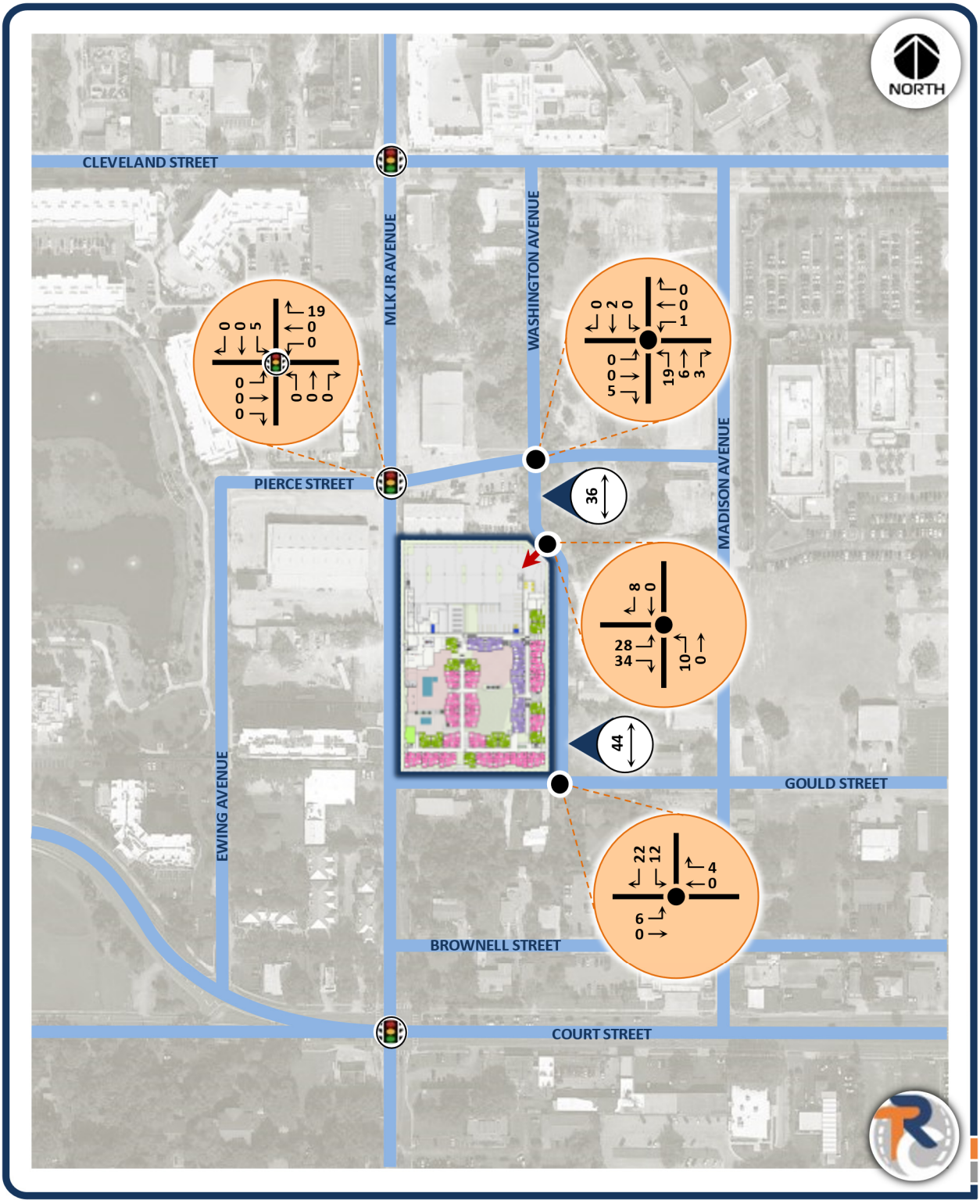
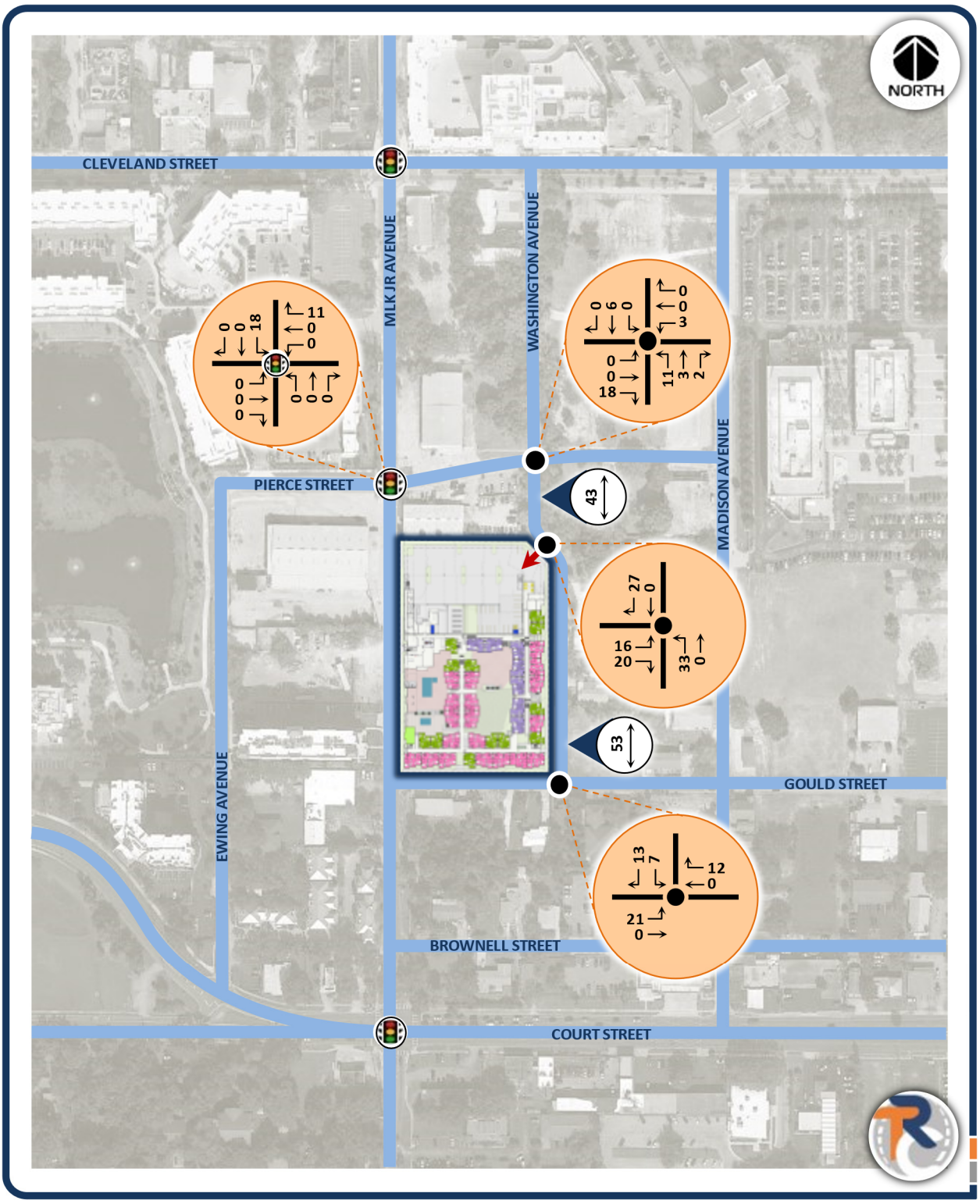


***FIGURE 4.2* | PROJECT GENERATED PM PEAK HOUR TRAFFIC VOLUMES**



3.0 | Study Area & Analysis Scenarios

The study area is required to consist of the roadway segments where peak hour project generated trips are estimated to consume 5% or more of the roadway segment's peak hour service volume; based on capacity values as documented in the 2020 FDOT generalized service volume tables. The study area screening, as documented in ***Attachment B***, identified the following study area roadway segment:

- **Washington Avenue** *from* Pierce Street *to* Gould Street

Intersections to be included in the study area consist of the locations listed below, which reflect (a) the intersections along the study area roadway segments, (b) the proximate signalized intersection of Pierce Street and Dr. Martin Luther King Jr. Avenue, and (c) the site access intersection:

- Washington Avenue & Pierce Street
- Washington Avenue & Gould Street
- Dr. Martin Luther King Jr. Avenue & Pierce Street
- Washington Avenue & Project Site Driveway

The traffic study was performed for a 2024 analysis-horizon, reflecting anticipated project buildout within three years or less; and evaluates background and post-development traffic conditions for AM and PM peak hour periods for the study roadway segments and study intersections for the 2024 analysis-horizon.

4.0 | Traffic Volumes

Current traffic volumes were obtained from traffic counts conducted proximate to the project site during AM peak period (7 am to 9 am) and PM peak period (4 pm to 6 pm) conditions, and were subsequently adjusted to reflect current & typical peak season conditions. The adjustment factors included FDOT seasonal factors and FDOT factors to correct for atypical traffic volumes due to the ongoing Public Health Emergency as a result of COVID-19. The traffic counts and adjustment factors are documented in ***Attachment C***. Future year background traffic volumes were calculated by adding a 2.0% per year annual growth rate to the current peak season traffic volumes through the 2024 analysis-horizon, where this growth rate is typically used for traffic studies within the City and was approved for use in this study as part of the methodology phase. Post-development traffic volumes were calculated by adding project generated trips to the background traffic volumes. ***Figures 5.1 and 5.2*** show AM and PM current peak hour traffic volumes. ***Figures 6.1 and 6.2*** show AM and PM background peak hour traffic volumes for the 2024 analysis-horizon. ***Figures 7.1 and 7.2*** show AM and PM post-development peak hour traffic volumes for the 2024 analysis-horizon.

FIGURE 5.1 **| AM PEAK HOUR CURRENT TRAFFIC VOLUMES**

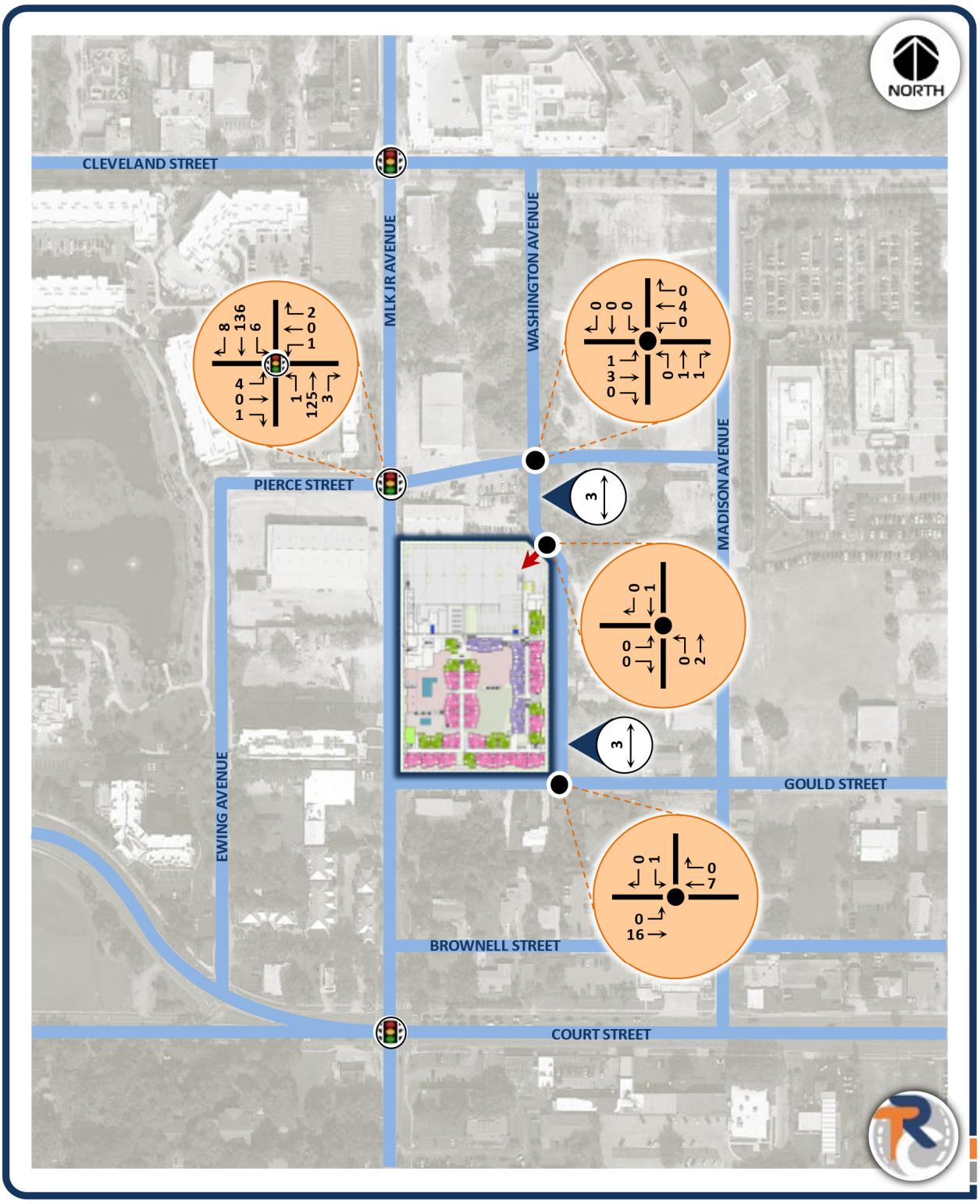


***FIGURE 5.2* | PM PEAK HOUR CURRENT TRAFFIC VOLUMES**

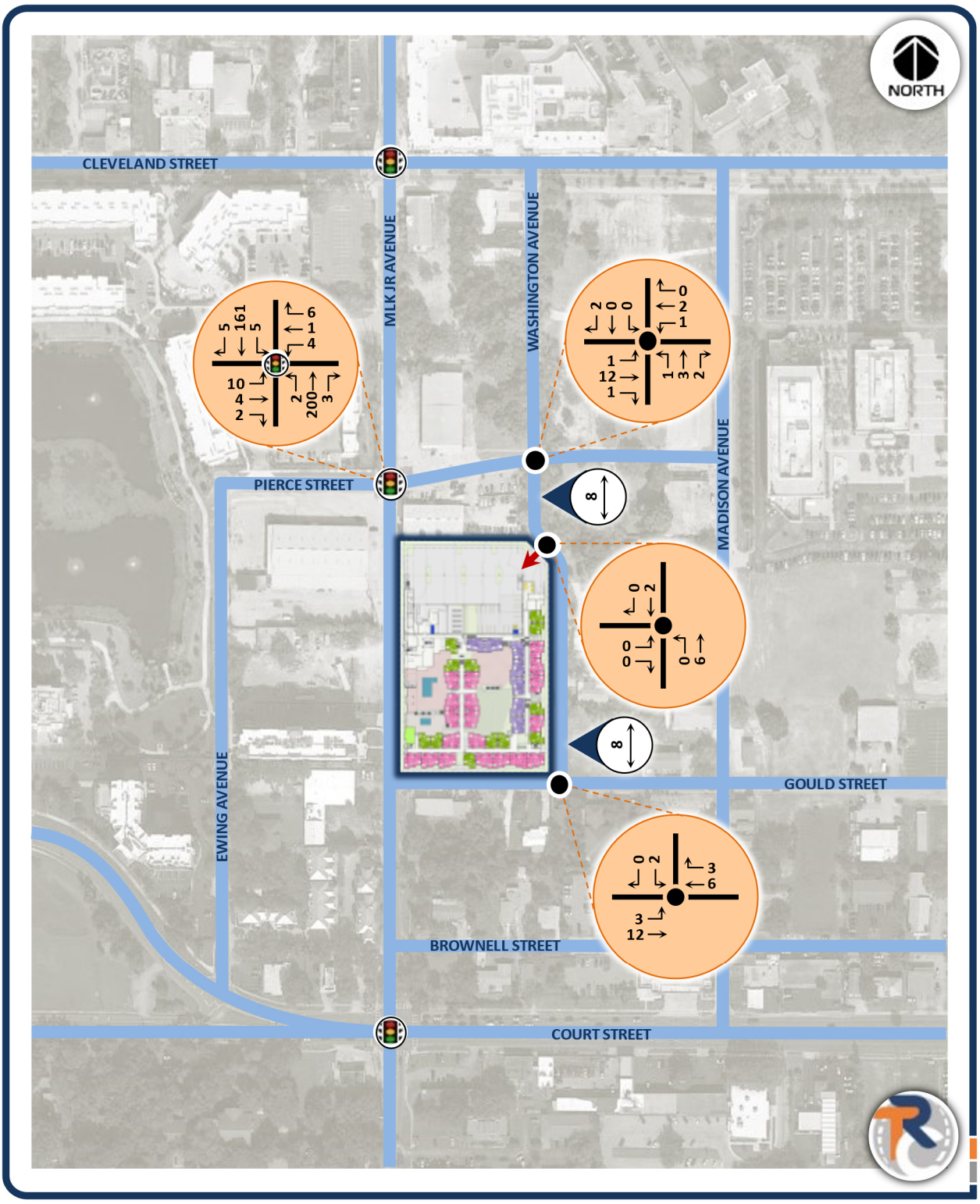


***FIGURE 6.1* | AM PEAK HOUR BACKGROUND TRAFFIC VOLUMES (2024)**

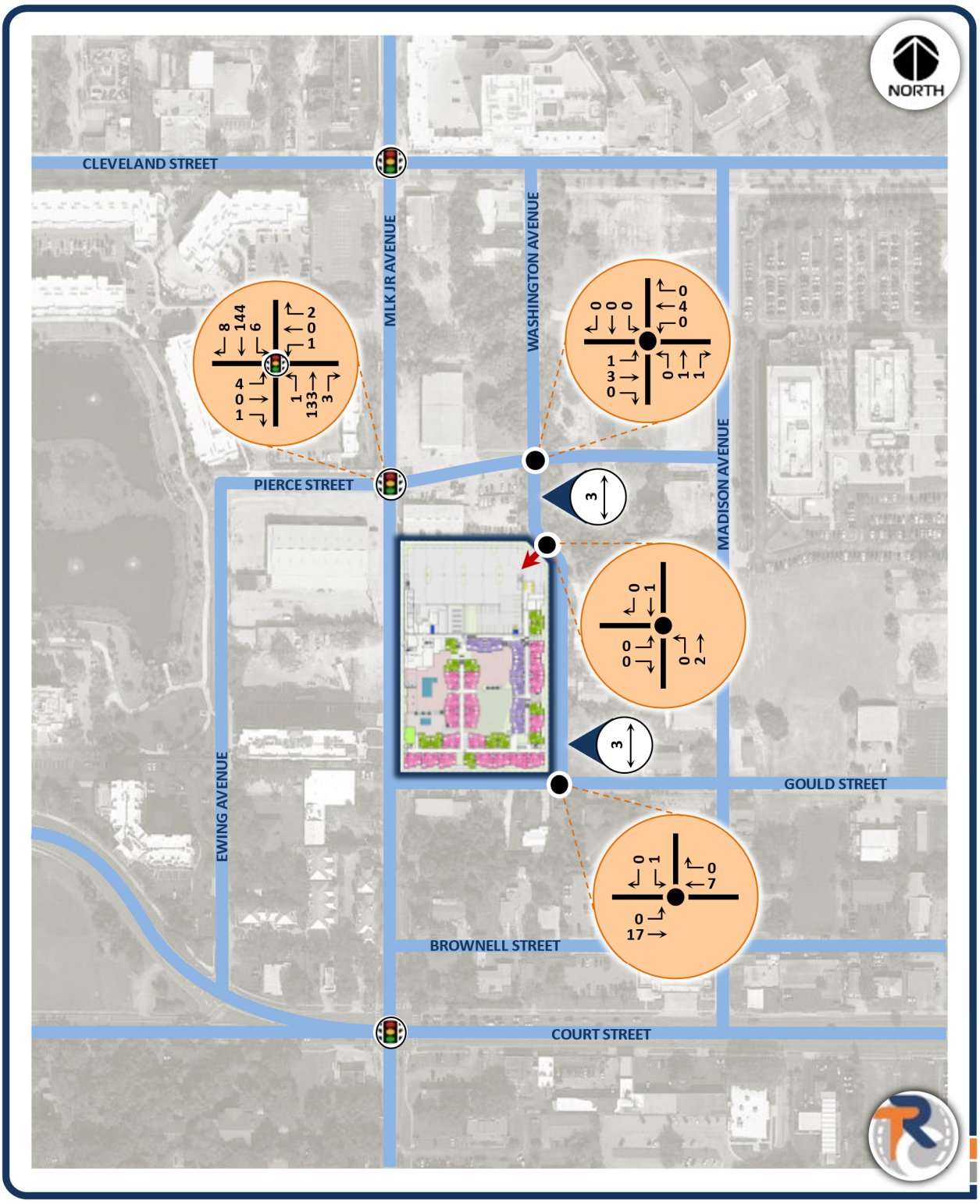


***FIGURE 6.2* | PM PEAK HOUR BACKGROUND TRAFFIC VOLUMES (2024)**

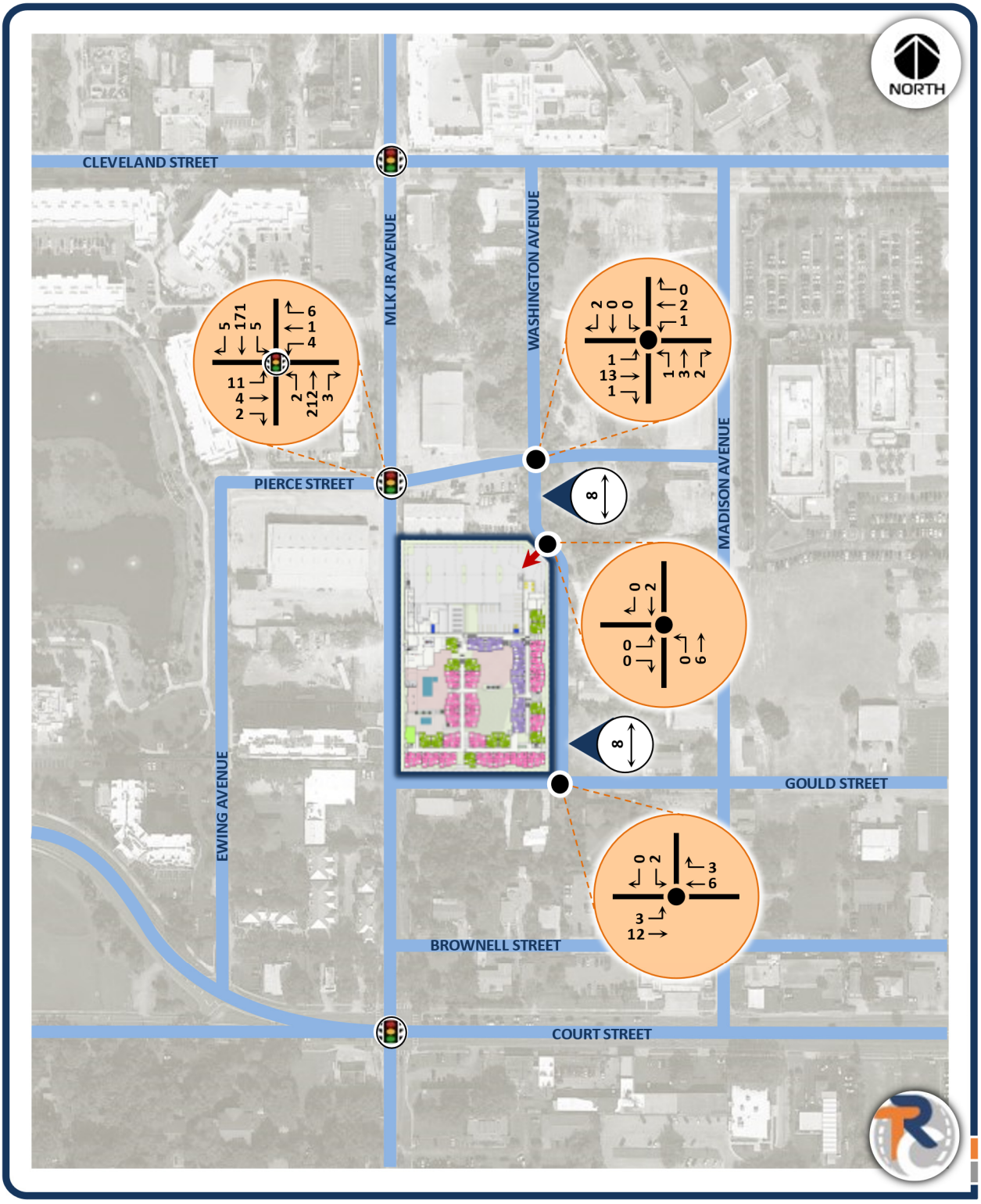


FIGURE 6.1 **| AM PEAK HOUR POST-DEVELOPMENT TRAFFIC VOLUMES (2024)**

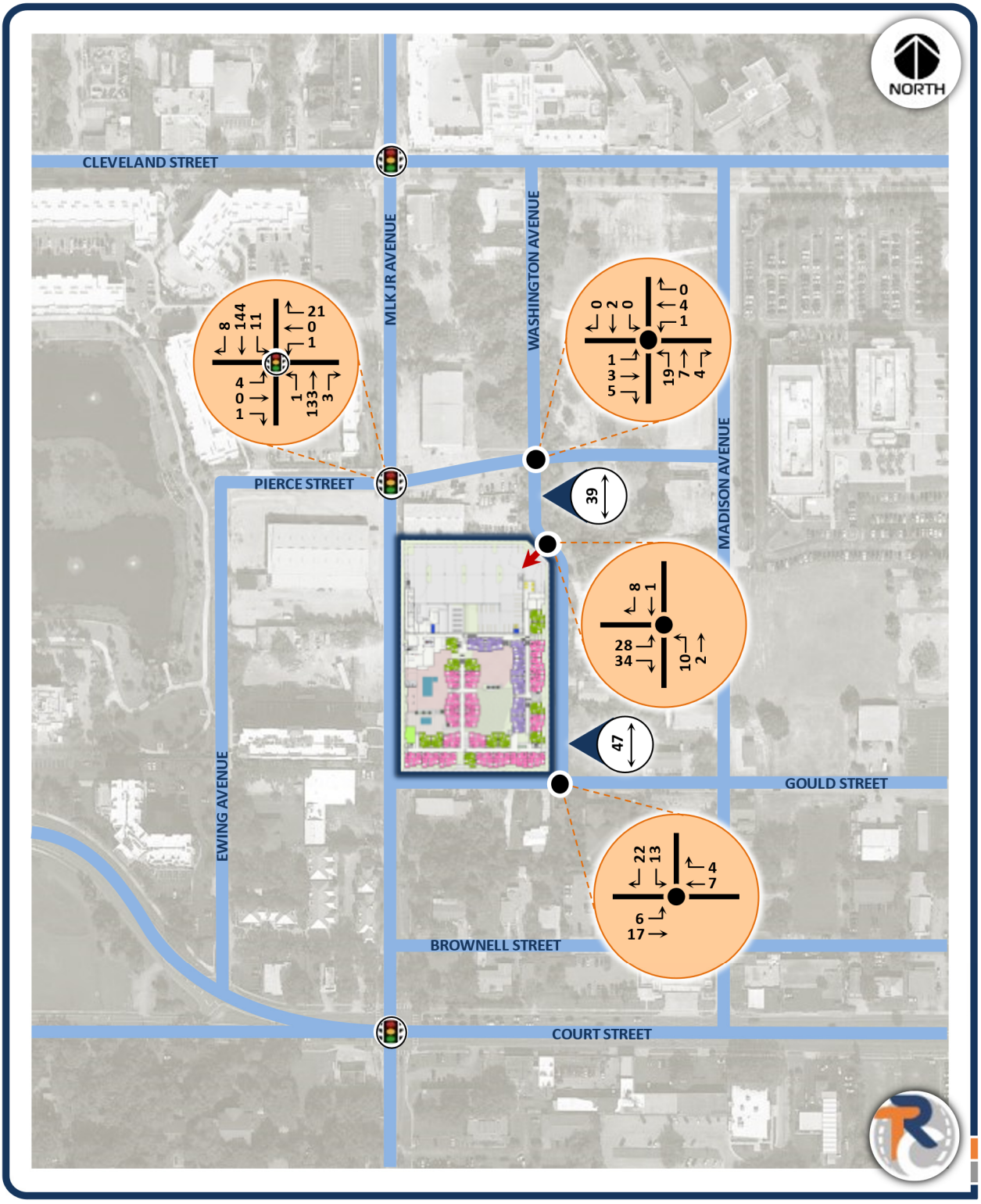
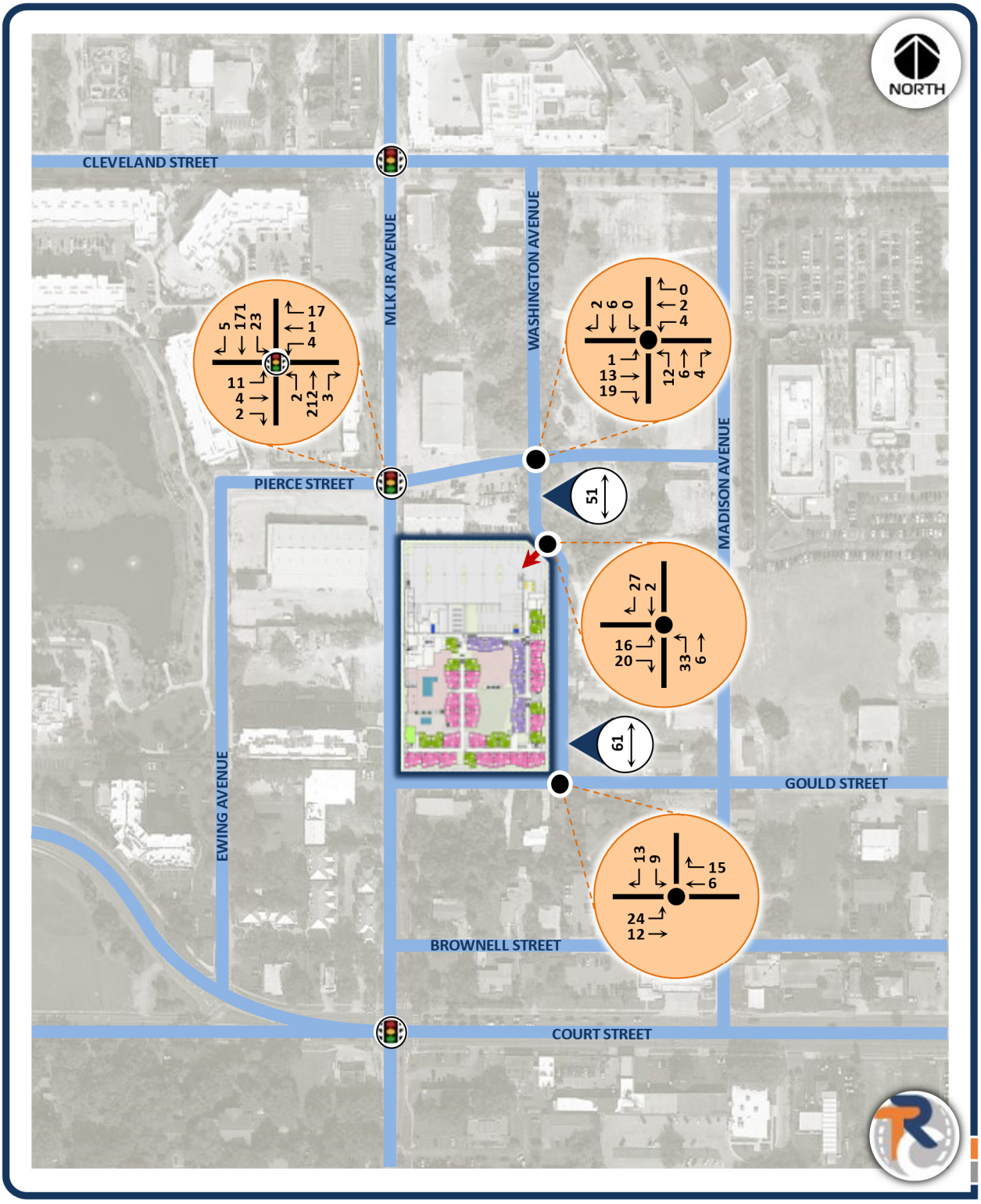


***FIGURE 6.2* | PM PEAK HOUR POST-DEVELOPMENT TRAFFIC VOLUMES (2024)**



5.0 | Roadway Segment Analysis

Roadway segment analyses were undertaken for AM and PM peak hour background and post-development traffic conditions using generalized analysis methods in consideration of two-way capacity values pursuant to FDOT's generalized service volumes. The analysis is summarized in ***Table 2.0***, as further documented in ***Attachment D***. The results of the analysis indicate that the study roadway segments are anticipated to operate acceptably for AM and PM peak hour background and post-development traffic conditions; at level-of-service "C", with volume-to-capacity ratios no greater than 0.05.

Table 2.0 | **Roadway Segment Analysis Summary**

Roadway Segment	Lanes	LOS Std	Service Volume	Peak Hour	Background Traffic			Total Traffic		
					Volume	LOS	V/C	Volume	LOS	V/C
Washington Avenue *Pierce Street to Project Site*	2U	D	930	AM	3	C	0.00	39	C	0.04
				PM	8	C	0.01	51	C	0.01
Washington Avenue *Gould Street to Project Site*	2U	D	930	AM	3	C	0.00	47	C	0.05
				PM	8	C	0.01	61	C	0.01

6.0 | Intersection Analysis

An operational analysis of the study intersections was conducted. The analysis was performed for AM and PM peak hour background and post-development traffic conditions using *Highway Capacity Manual* methodologies calculated by the *Synchro* software program; in consideration of existing traffic signal timings based on field observations (where applicable). The analysis is summarized in ***Tables 3.1 and 3.2***, as further documented and further documented in ***Attachment E***. The results of the analysis indicate that all traffic movements are anticipated to operate acceptably for AM and PM peak hour background and post-development traffic conditions; at level-of-service "B" or better, with volume-to-capacity ratios no greater than 0.10.

TABLE 3.1 **| INTERSECTION ANALYSIS SUMMARY (BACKGROUND TRAFFIC CONDITIONS)**

Location	Peak Hour	Metric	Eastbound			Westbound			Northbound			Southbound			Over all
			L	T	R	L	T	R	L	T	R	L	T	R	
Dr. MLK Jr. Avenue & Pierce Street	AM	LOS	[2]	B	[2]	[2]	B	[2]	[2]	A	[2]	[2]	A	[2]	A
		Delay	[2]	12.4	[2]	[2]	12.4	[2]	[2]	2.3	[2]	[2]	2.4	[2]	2.6
		V/C	[2]	--	[2]	[2]	--	[2]	[2]	--	[2]	[2]	--	[2]	--
	PM	LOS	[2]	B	[2]	[2]	B	[2]	[2]	A	[2]	[2]	A	[2]	A
		Delay	[2]	12.0	[2]	[2]	11.9	[2]	[2]	3.0	[2]	[2]	2.9	[2]	2.6
		V/C	[2]	--	[2]	[2]	--	[2]	[2]	--	[2]	[2]	--	[2]	--
Washington Avenue & Pierce Street	AM	LOS	[2]	A	[2]	[2]	A	[2]	[2]	A	[2]	[2]	A	[2]	[1]
		Delay	[2]	7.2	[2]	[2]	0.0	[2]	[2]	8.7	[2]	[2]	0.0	[2]	[1]
		V/C	[2]	0.00	[2]	[2]	0.00	[2]	[2]	0.00	[2]	[2]	0.00	[2]	[1]
	PM	LOS	[2]	A	[2]	[2]	A	[2]	[2]	A	[2]	[2]	A	[2]	[1]
		Delay	[2]	7.2	[2]	[2]	7.2	[2]	[2]	8.8	[2]	[2]	8.3	[2]	[1]
		V/C	[2]	0.00	[2]	[2]	0.00	[2]	[2]	0.01	[2]	[2]	0.00	[2]	[1]
Washington Avenue & Gould Street	AM	LOS	[2]	A	[1]	[1]	[3]	[2]	[1]	[1]	[1]	A	[1]	[2]	[1]
		Delay	[2]	0.0	[1]	[1]	[3]	[2]	[1]	[1]	[1]	8.7	[1]	[2]	[1]
		V/C	[2]	0.00	[1]	[1]	[3]	[2]	[1]	[1]	[1]	0.00	[1]	[2]	[1]
	PM	LOS	[2]	A	[1]	[1]	[3]	[2]	[1]	[1]	[1]	A	[1]	[2]	[1]
		Delay	[2]	7.2	[1]	[1]	[3]	[2]	[1]	[1]	[1]	8.7	[1]	[2]	[1]
		V/C	[2]	0.00	[1]	[1]	[3]	[2]	[1]	[1]	[1]	0.00	[1]	[2]	[1]
Washington Avenue & Project Site Driveway	AM	LOS	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[3]	[1]	[1]	[3]	[1]	[1]
		Delay	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[3]	[1]	[1]	[3]	[1]	[1]
		V/C	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[3]	[1]	[1]	[3]	[1]	[1]
	PM	LOS	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[3]	[1]	[1]	[3]	[1]	[1]
		Delay	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[3]	[1]	[1]	[3]	[1]	[1]
		V/C	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[3]	[1]	[1]	[3]	[1]	[1]

[1] NOT APPLICABLE [2] SHARED LANE [3] UNOPPOSED MOVEMENT

***TABLE 3.2* | INTERSECTION ANALYSIS SUMMARY (POST-DEVELOPMENT TRAFFIC CONDITIONS)**

Location	Peak Hour	Metric	Eastbound			Westbound			Northbound			Southbound			Over all
			L	T	R	L	T	R	L	T	R	L	T	R	
Dr. MLK Jr. Avenue & Pierce Street	AM	LOS	[2]	**B**	[2]	[2]	**B**	[2]	[2]	**A**	[2]	[2]	**A**	[2]	**A**
		Delay	[2]	**11.9**	[2]	[2]	**12.2**	[2]	[2]	**2.7**	[2]	[2]	**2.7**	[2]	**3.5**
		V/C	[2]	--	[2]	[2]	--	[2]	[2]	--	[2]	[2]	--	[2]	--
	PM	LOS	[2]	**B**	[2]	[2]	**B**	[2]	[2]	**A**	[2]	[2]	**A**	[2]	**A**
		Delay	[2]	**11.8**	[2]	[2]	**11.9**	[2]	[2]	**3.2**	[2]	[2]	**3.1**	[2]	**3.9**
		V/C	[2]	--	[2]	[2]	--	[2]	[2]	--	[2]	[2]	--	[2]	--
Washington Avenue & Pierce Street	AM	LOS	[2]	**A**	[2]	[2]	**A**	[2]	[2]	**A**	[2]	[2]	**A**	[2]	[1]
		Delay	[2]	**7.2**	[2]	[2]	**7.2**	[2]	[2]	**8.9**	[2]	[2]	**9.2**	[2]	[1]
		V/C	[2]	**0.00**	[2]	[2]	**0.00**	[2]	[2]	**0.05**	[2]	[2]	**0.00**	[2]	[1]
	PM	LOS	[2]	**A**	[2]	[2]	**A**	[2]	[2]	**A**	[2]	[2]	**A**	[2]	[1]
		Delay	[2]	**7.2**	[2]	[2]	**7.3**	[2]	[2]	**8.9**	[2]	[2]	**9.1**	[2]	[1]
		V/C	[2]	**0.00**	[2]	[2]	**0.00**	[2]	[2]	**0.03**	[2]	[2]	**0.01**	[2]	[1]
Washington Avenue & Gould Street	AM	LOS	[2]	**A**	[1]	[1]	[3]	[2]	[1]	[1]	[1]	**A**	[1]	[2]	[1]
		Delay	[2]	**7.2**	[1]	[1]	[3]	[2]	[1]	[1]	[1]	**8.7**	[1]	[2]	[1]
		V/C	[2]	**0.01**	[1]	[1]	[3]	[2]	[1]	[1]	[1]	**0.05**	[1]	[2]	[1]
	PM	LOS	[2]	**A**	[1]	[1]	[3]	[2]	[1]	[1]	[1]	**A**	[1]	[2]	[1]
		Delay	[2]	**7.3**	[1]	[1]	[3]	[2]	[1]	[1]	[1]	**8.8**	[1]	[2]	[1]
		V/C	[2]	**0.02**	[1]	[1]	[3]	[2]	[1]	[1]	[1]	**0.03**	[1]	[2]	[1]
Washington Avenue & Project Site Driveway	AM	LOS	**A**	[1]	[2]	[1]	[1]	[1]	[2]	**A**	[1]	[1]	[3]	[2]	[1]
		Delay	**8.9**	[1]	[2]	[1]	[1]	[1]	[2]	**7.2**	[1]	[1]	[3]	[2]	[1]
		V/C	**0.10**	[1]	[2]	[1]	[1]	[1]	[2]	**0.01**	[1]	[1]	[3]	[2]	[1]
	PM	LOS	**A**	[1]	[2]	[1]	[1]	[1]	[2]	**A**	[1]	[1]	[3]	[2]	[1]
		Delay	**8.9**	[1]	[2]	[1]	[1]	[1]	[2]	**7.3**	[1]	[1]	[3]	[2]	[1]
		V/C	**0.04**	[1]	[2]	[1]	[1]	[1]	[2]	**0.02**	[1]	[1]	[3]	[2]	[1]

[1] NOT APPLICABLE [2] SHARED LANE [3] UNOPPOSED MOVEMENT

7.0 | Site Access Turn Lane Warrant Evaluation

A turn lane warrant evaluation was performed for the project site driveway connection to Washington Avenue. The evaluation was performed using the turn lane warrant criteria pursuant to *National Cooperative Highway Research Program, Report No. 279*; as documented in ***Attachment F***. The results of the analysis identified that new site access turn lanes are not warranted on Washington Avenue at the project site driveway connection.

Sight distance requirements for the project site driveway connection to Washington Avenue will be addressed by the Site Civil Engineer of Record in association with the site plan permitting process.

8.0 | Transportation Management Plan

Pursuant to the City of Clearwater Community Development Code §4-904, the City has adopted a Mobility Management System to provide for a more flexible and efficient alternative to the traditional form of transportation concurrency management, which ties development approvals to maintaining adopted roadway level of service standards, while facilitating multi-modal transportation solutions. The subject project is considered a Tier 1 project (generating between 51 and 300 new peak hour trips). Developers of Tier 1 projects located within deficient road corridors are required to submit a Transportation Management Plan designed to address their impacts while increasing mobility and reducing the demand for single occupant vehicle travel. Based on the results of this study, the subject project has been found to not be located within a deficient roadway corridor. Therefore, pursuant to the City of Clearwater Community Development Code §4-904.C.6, a Transportation Management Plan is not required for the project in association with development permitting.

9.0 | Conclusion

Based on the data, analyses and findings presented within this Traffic Impact Study prepared in association with development permitting for the **"Clearwater CRA Apartments"** project, the following is concluded.

- **THE STUDY AREA ROADWAYS AND INTERSECTIONS ARE ANTICIPATED TO OPERATE ACCEPTABLY FOR AM AND PM PEAK HOUR BACKGROUND AND POST-DEVELOPMENT TRAFFIC CONDITIONS.**

- **NEW SITE ACCESS TURN LANES WERE FOUND TO NOT BE WARRANTED ON WASHINGTON AVENUE AT THE PROJECT SITE DRIVEWAY CONNECTION, IN CONSIDERATION OF PEAK HOUR POST-DEVELOPMENT TRAFFIC CONDITIONS.**

- **SINCE THE PROJECT SITE IS NOT LOCATED WITHIN A DEFICIENT ROADWAY CORRIDOR, A TRANSPORTATION MANAGEMENT PLAN IS NOT REQUIRED FOR THE PROJECT IN ASSOCIATION WITH DEVELOPMENT PERMITTING.**

Clearwater CRA Apartments
Traffic Impact Study

Attachment A

Methodology Documents

RAYSOR Transportation Consulting

TRAFFIC ENGINEERING
DEVELOPMENT SUPPORT

February 9, 2021

Mr. Bennett Elbo, PTP
City of Clearwater
100 South Myrtle Avenue
Clearwater, Florida 33756

SUBJECT: **CLEARWATER CRA WORKFORCE HOUSING**
Traffic Impact Study Methodology Statement

Dear Mr. Elbo,

This letter documents our proposed methodology for undertaking the TRAFFIC IMPACT STUDY required in association with development permitting for the **"CLEARWATER CRA WORKFORCE HOUSING"** project. The following methodology has been prepared in general accordance with City of Clearwater traffic study requirements.

PROJECT DESCRIPTION
The subject project site is located between Martin Luther King Jr. Avenue and Washington Avenue, north of Gould Street, in the CRA district of the City of Clearwater, Florida; as shown in ***ATTACHMENT A***. The subject project is proposed for development consisting of 173 workforce housing apartment units, with site access to the external roadway network planned to be provided via a full-access site driveway connection to Washington Avenue; as shown on the project site concept plan (refer to ***ATTACHMENT B***).

TRIP GENERATION & DISTRIBUTION
The daily and peak hour trip generation of the project site was estimated using trip characteristic data in accordance with the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th edition), as documented in ***ATTACHMENT C***. The distribution of project generated traffic was estimated manually based on area development patterns and the area roadway network. Refer to ***ATTACHMENT D*** for the distribution of project generated traffic for use in the traffic study.

STUDY AREA
The study area is required to consist of the roadway segments where peak hour project generated trips are estimated to consume 5% or more of the roadway segment's peak hour service volume; based on capacity values as documented in the 2020 FDOT generalized service volume tables. The study area screening, as documented in ***ATTACHMENT E***, identified the following study area roadway segment:

- **Washington Avenue** *from* Pierce Street *to* Gould Street

Intersections to be included in the study area will consist of the locations listed below, which reflect (a) the intersections along the study area roadway segments, and (B) the site access intersection:

- Washington Avenue & Pierce Street
- Washington Avenue & Gould Street
- Washington Avenue & Project Site Driveway

ANALYSIS SCENARIOS
The traffic study will consider a 2024 analysis-horizon (reflecting anticipated project buildout). The study will evaluate background and post-development traffic conditions for AM and PM peak hour periods for the study roadway segments and study intersections.

TRAFFIC VOLUMES
Existing traffic volumes will be determined from traffic counts to be conducted at the study intersections during AM & PM peak periods (7 am to 9 am & 4 pm to 6 pm), and adjusted to reflect peak season conditions using FDOT's seasonal adjustment factors. In addition, in consideration of the potential for atypical traffic volumes due to the current and ongoing Public Health Emergency as a result of COVID-19, the traffic counts will also be adjusted using FDOT factors to reflect typical volumes.

Background traffic volumes will be calculated to reflect the 2024 analysis-horizon using an annual growth rate of 2% where this growth rate is typically used for traffic studies within the City. Post-development traffic volumes for the 2024 analysis-horizon will be calculated by adding project generated traffic to the 2024 background traffic volumes.

ANALYSIS PROCEDURES
The analysis of study roadway segments will initially be undertaken using the service volumes as documented in the 2020 FDOT generalized service volume tables; where detailed analysis methods (HCM / ArtPlan) will be used if found to be necessary based on the results of the generalized analysis. The analysis of the study intersections will be undertaken using *Synchro* analysis software (version 10.0) using *Highway Capacity Manual* procedures. The analysis of signalized intersections (if any) will be performed in consideration of existing traffic signal timings based on field observations, where any revisions to those timings will be identified in the traffic study report.

TURN LANE ANALYSIS
A site access turn lane warrant and length analysis will be performed for the intersection of the site access driveway connection to Washington Avenue. The need for site access turn lanes will be evaluated against NCHRP/FDOT warranting criteria.

MITIGATION
If deficiencies are identified, mitigation for project impacts will be identified in coordination with City staff, in consideration of Florida State Statute (as limited thereunder in consideration of backlogged facilities).

DOCUMENTATION
A report documenting the traffic study will be prepared for submittal to the County. The report will be signed and sealed by a professional engineer registered in the State of Florida.

If you should have any questions or comments regarding the materials discussed herein, please feel free to contact me.

Sincerely,

RAYSOR Transportation Consulting, LLC

Michael D. Raysor, P.E.
President

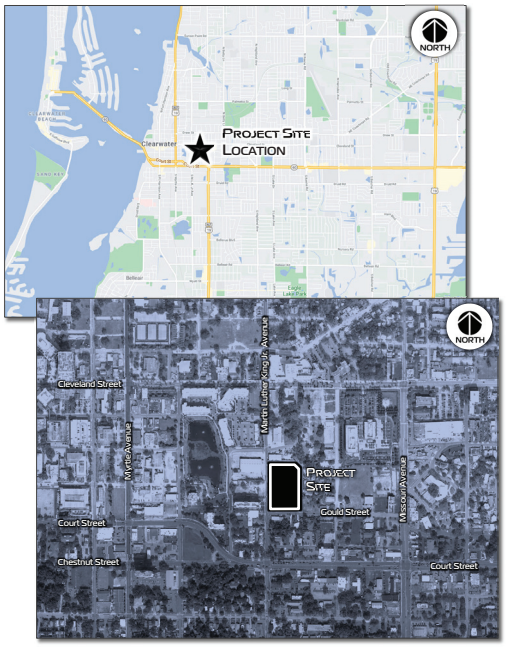
ATTACHMENTS
A: Project Site Location Map
B: Project Site Concept Plan
C: Project Site Trip Generation Estimate
D: Project Traffic Distribution
E: Study Area Screening

19046 BRUCE B. DOWNS BOULEVARD | SUITE 308 ■ TAMPA, FLORIDA | 33647 ■ (813) 625-1699 ■ WWW.RAYSOR-TRANSPORTATION.COM

ATTACHMENT A

RAYSOR Transportation Consulting

CLEARWATER CRA WORKFORCE HOUSING
Project Site Location Map



ATTACHMENT B

RAYSOR Transportation Consulting

CLEARWATER CRA WORKFORCE HOUSING
Project Site Concept Plan

ATTACHMENT C

RAYSOR Transportation Consulting

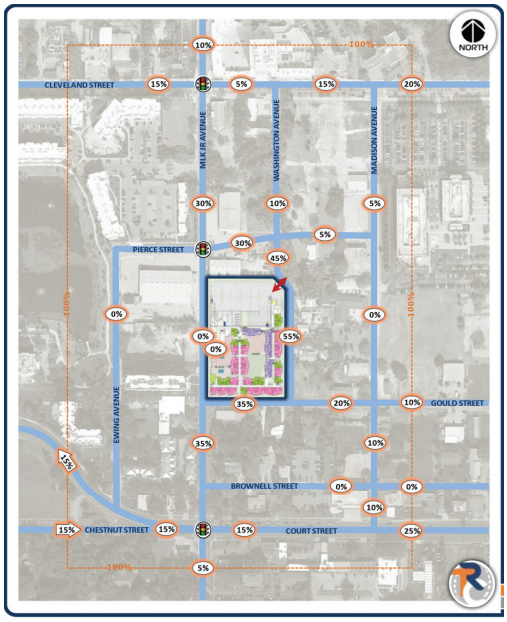
CLEARWATER CRA WORKFORCE HOUSING
Project Site Trip Generation Estimate

ITE LUC	Land Use Description	Size	Weekday		AM Peak Hour				PM Peak Hour			
			Formula	Trips	Formula	Trips	Enter	Exit	Formula	Trips	Enter	Exit
220	Multi-Family Residential	173 units	T=7.56(X) -40.86	1,266	Ln(T)=0.95* Ln(X)-0.51	80	18	62	Ln(T)=0.89* Ln(X)-0.02	96	60	36

ATTACHMENT D

RAYSOR Transportation Consulting

CLEARWATER CRA WORKFORCE HOUSING
Project Traffic Distribution



ATTACHMENT E

RAYSOR Transportation Consulting

CLEARWATER CRA WORKFORCE HOUSING
Study Area Screening (1 of 2)

Roadway Segment	LOS Std	Service Volume	PM Peak Hour Project Traffic		Percent Capacity	Study Area Road
			Percent	Volume		
Cleveland Street *west of MLK Jr Avenue*	D	1,260	15.0%	14	1.1%	No
Cleveland Street *MLK Jr Avenue to Washington Avenue*	D	1,260	5.0%	5	0.4%	No
Cleveland Street *Washington Avenue to Madison Avenue*	D	1,260	15.0%	14	1.1%	No
Cleveland Street *east of Madison Avenue*	D	1,260	20.0%	19	1.5%	No
Pierce Street *west of MLK Jr Avenue*	D	930	0.0%	0	0.0%	No
Pierce Street *MLK Jr Avenue to Washington Avenue*	D	930	30.0%	29	3.1%	No
Pierce Street *Washington Avenue to Madison Avenue*	D	930	5.0%	5	0.5%	No
Madison Avenue *Cleveland Street to Pierce Street*	D	1,260	5.0%	5	0.4%	No
Madison Avenue *Pierce Street to Gould Street*	D	930	0.0%	0	0.0%	No
Madison Avenue *Gould Street to Brownell Street*	D	930	10.0%	10	1.1%	No
Madison Avenue *Brownell Street to Court Street*	D	930	10.0%	10	1.1%	No
Court Street & Chestnut Street *west of Ewing Avenue*	D	4,450	15.0%	14	0.3%	No
Court Street & Chestnut Street *Ewing Avenue to MLK Jr Avenue*	D	2,920	15.0%	14	0.5%	No
Court Street *MLK Jr Avenue to Madison Avenue*	D	2,920	15.0%	14	0.5%	No
Court Street *Madison Avenue to Missouri Avenue*	D	2,920	25.0%	24	0.8%	No

ATTACHMENT E

RAYSOR Transportation Consulting

CLEARWATER CRA WORKFORCE HOUSING
Study Area Screening (2 of 2)

Roadway Segment	LOS Std	Service Volume	PM Peak Hour Project Traffic		Percent Capacity	Study Area Road
			Percent	Volume		
Ewing Avenue *Court Street to Pierce Street*	D	930	0.0%	0	0.0%	No
Martin Luther King Jr Ave *north of Cleveland Street*	D	1,200	10.0%	10	0.8%	No
Martin Luther King Jr Ave *Cleveland Street to Pierce Street*	D	1,200	30.0%	29	2.4%	No
Martin Luther King Jr Ave *Pierce Street to Gould Street*	D	1,200	0.0%	0	0.0%	No
Martin Luther King Jr Ave *Gould Street to Brownell Street*	D	1,200	35.0%	34	2.8%	No
Martin Luther King Jr Ave *Brownell Street to Court Street*	D	1,200	35.0%	34	2.8%	No
Martin Luther King Jr Ave *south of Court Street*	D	1,200	5.0%	5	0.4%	No
Washington Avenue *Cleveland Street to Pierce Street*	D	930	10.0%	10	1.1%	No
Washington Avenue *Pierce Street to Project Access*	D	930	45.0%	43	4.6%	No
Washington Avenue *Project Access to Gould Street*	D	930	55.0%	53	5.7%	Yes
Gould Street *MLK Jr Avenue to Washington Avenue*	D	930	35.0%	34	3.7%	No
Gould Street *Washington Avenue to Madison Avenue*	D	930	20.0%	19	2.0%	No
Gould Street *Madison Avenue to Missouri Avenue*	D	930	10.0%	10	1.1%	No
Brownell Street *MLK Jr Avenue to Madison Avenue*	D	930	0.0%	0	0.0%	No
Brownell Street *Madison Avenue to Missouri Avenue*	D	930	0.0%	0	0.0%	No

Michael Raysor

From: Elbo, Bennett <Bennett.Elbo@myClearwater.com>
Sent: Wednesday, February 10, 2021 5:34 PM
To: Michael Raysor
Subject: RE: Clearwater CRA Workforce Housing - Traffic Study Methodology

Taking care of this in the study is acceptable please include this e-mail as an appendix to the report.
Thanks,
-Ben

Bennett Elbo | Sr. Engineering Specialist
Traffic Operations Division
100 S Myrtle Av, Suite 220
Clearwater, Florida 33756
727.562.4775
Bennett.elbo@myclearwater.com

From: Michael Raysor <mdr@raysor-transportation.com>
Sent: Wednesday, February 10, 2021 4:40 PM
To: Elbo, Bennett <Bennett.Elbo@myClearwater.com>
Subject: RE: Clearwater CRA Workforce Housing - Traffic Study Methodology

Ben, no problem, I will incorporate those elements into the study. Do you need a revised methodology, or is taking care of this in the study acceptable?

Thanks, Mike

Michael D. Raysor, P.E.
RAYSOR Transportation Consulting
19046 Bruce B. Downs Boulevard | Suite 308
Tampa, Florida 33647
(813) 625-1699 | (813) 413-7432 fx

From: Elbo, Bennett <Bennett.Elbo@myClearwater.com>
Sent: Wednesday, February 10, 2021 3:27 PM
To: Michael Raysor <mdr@raysor-transportation.com>
Subject: RE: Clearwater CRA Workforce Housing - Traffic Study Methodology

Good Afternoon Mike – please include in your study area the signalized intersection of Pierce Street & MLK JR Ave. Also include in your report a TMP (transportation management plan) per city's Community Development Code, Section 4-

904. Please determine if the location of the proposed access driveway at the bend on Washington Avenue has any traffic operational issues (e.g. sight visibility).
Thanks,
-Ben

Bennett Elbo | Project Manager
Traffic Operations Division
100 S Myrtle Av, Suite 220
Clearwater, Florida 33756
727.562.4775
Bennett.elbo@myclearwater.com

From: Michael Raysor <mdr@raysor-transportation.com>
Sent: Tuesday, February 9, 2021 2:17 PM
To: Elbo, Bennett <Bennett.Elbo@myClearwater.com>
Subject: Clearwater CRA Workforce Housing - Traffic Study Methodology

Ben,

Please refer to the attached traffic study methodology statement for a proposed workforce housing site located in the CRA area of downtown.

I will be looking forward to your comments/methodology approval.

Thank you, Mike

Michael D. Raysor, P.E.
RAYSOR Transportation Consulting
19046 Bruce B. Downs Boulevard | Suite 308
Tampa, Florida 33647
(813) 625-1699 | (813) 413-7432 fx

Clearwater CRA Apartments
Traffic Impact Study

Attachment B

Study Area Screening

Roadway Segment	LOS Std	Service Volume	PM Peak Hour Project Traffic		Percent Capacity	Study Area Road
			Percent	Volume		
Cleveland Street *west of MLK Jr Avenue*	D	1,260	15.0%	14	1.1%	No
Cleveland Street *MLK Jr Avenue to Washington Avenue*	D	1,260	5.0%	5	0.4%	No
Cleveland Street *Washington Avenue to Madison Avenue*	D	1,260	15.0%	14	1.1%	No
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Pierce Street *MLK Jr Avenue to Washington Avenue*	D	930	30.0%	29	3.1%	No
Pierce Street *Washington Avenue to Madison Avenue*	D	930	5.0%	5	0.5%	No
Madison Avenue *Cleveland Street to Pierce Street*	D	1,260	5.0%	5	0.4%	No
Madison Avenue *Pierce Street to Gould Street*	D	930	0.0%	0	0.0%	No
Madison Avenue *Gould Street to Brownell Street*	D	930	10.0%	10	1.1%	No
Madison Avenue *Brownell Street to Court Street*	D	930	10.0%	10	1.1%	No
Court Street & Chestnut Street *west of Ewing Avenue*	D	4,450	15.0%	14	0.3%	No
Court Street & Chestnut Street *Ewing Avenue to MLK Jr Avenue*	D	2,920	15.0%	14	0.5%	No
Court Street *MLK Jr Avenue to Madison Avenue*	D	2,920	15.0%	14	0.5%	No
Court Street *Madison Avenue to Missouri Avenue*	D	2,920	25.0%	24	0.8%	No

Roadway Segment	LOS Std	Service Volume	PM Peak Hour Project Traffic		Percent Capacity	Study Area Road
			Percent	Volume		
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Martin Luther King Jr Ave *north of Cleveland Street*	D	1,200	10.0%	10	0.8%	No
Martin Luther King Jr Ave *Cleveland Street to Pierce Street*	D	1,200	30.0%	29	2.4%	No
Martin Luther King Jr Ave *Pierce Street to Gould Street*	D	1,200	0.0%	0	0.0%	No
Martin Luther King Jr Ave *Gould Street to Brownell Street*	D	1,200	35.0%	34	2.8%	No
Martin Luther King Jr Ave *Brownell Street to Court Street*	D	1,200	35.0%	34	2.8%	No
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Gould Street *Madison Avenue to Missouri Avenue*	D	930	10.0%	10	1.1%	No
Brownell Street *MLK Jr Avenue to Madison Avenue*	D	930	0.0%	0	0.0%	No
Brownell Street *Madison Avenue to Missouri Avenue*	D	930	0.0%	0	0.0%	No

Clearwater CRA Apartments
Traffic Impact Study

Attachment C

Traffic Volumes
& Adjustment Factors

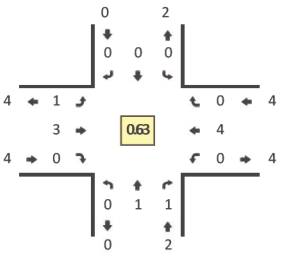
Type of peak hour being reported: Intersection Peak

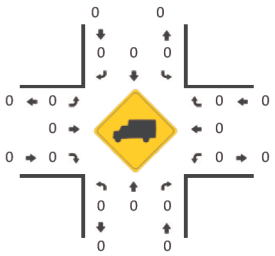
Method for determining peak hour: Total Entering Volume

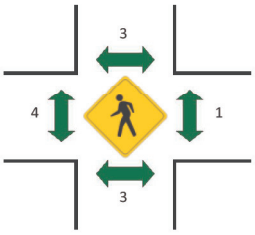
LOCATION: S Washington Ave -- Pierce St
CITY/STATE: Clearwater, FL

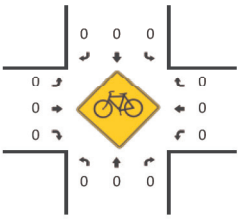
QC JOB #: 15364701
DATE: Tue, Feb 16 2021

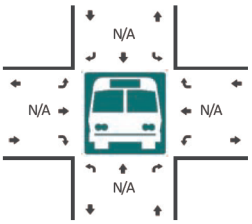
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

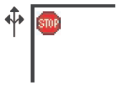


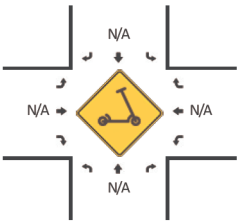












R* = RTOR

15-Min Count Period Beginning At	S Washington Ave (Northbound)					S Washington Ave (Southbound)					Pierce St (Eastbound)					Pierce St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	3	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	4	9
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	3	10
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	8
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	10
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	9

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	4	0	0	0	0	0	0	0	0	8	0	0	0	0	4	0	0	0	16
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		4					0					4					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 2/22/2021 11:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

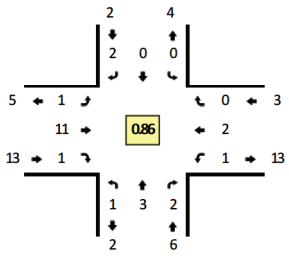
Type of peak hour being reported: Intersection Peak

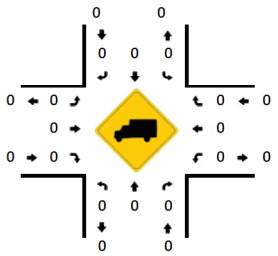
Method for determining peak hour: Total Entering Volume

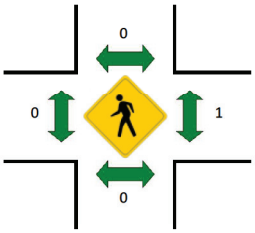
LOCATION: S Washington Ave -- Pierce St
CITY/STATE: Clearwater, FL

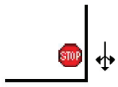
QC JOB #: 15364702
DATE: Tue, Feb 16 2021

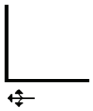
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

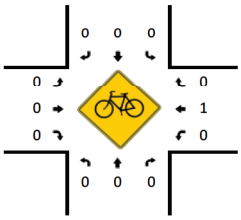


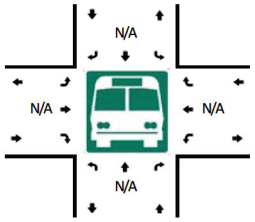


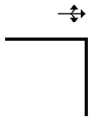


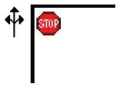


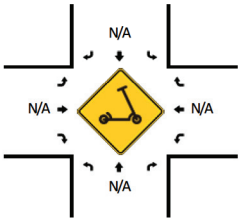












R* = RTOR

15-Min Count Period Beginning At	S Washington Ave (Northbound)					S Washington Ave (Southbound)					Pierce St (Eastbound)					Pierce St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	1	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	6	
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	5	
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	6	
4:45 PM	0	1	0	0	0	0	0	2	0	0	1	2	0	0	0	0	1	0	0	0	7	24
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	22
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	4	21
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	3	18
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	4	0	0	0	0	0	8	0	0	4	8	0	0	0	0	4	0	0	0	28
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 2/22/2021 11:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

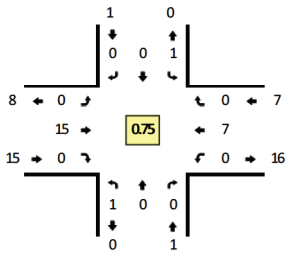
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

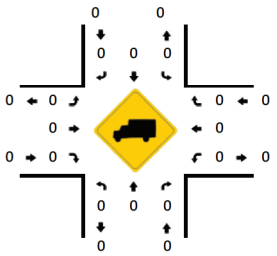
LOCATION: S Washington Ave -- Gould St
CITY/STATE: Clearwater, FL

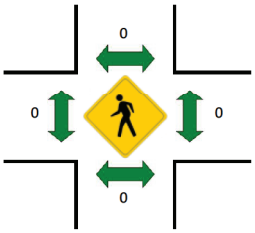
QC JOB #: 15364703
DATE: Tue, Feb 16 2021

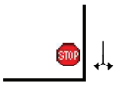
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

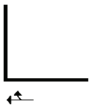


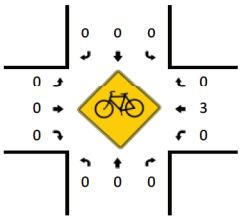
Quality Counts
DATA THAT DRIVES COMMUNITIES

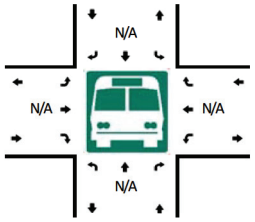


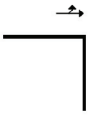


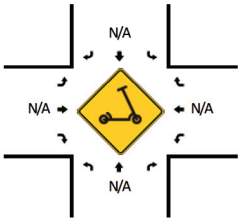












R* = RTOR

15-Min Count Period Beginning At	S Washington Ave (Northbound)					S Washington Ave (Southbound)					Gould St (Eastbound)					Gould St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	6	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	3	13
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	0	0	0	4	15
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	4	0	0	0	7	20
8:30 AM	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	5	19
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	1	0	0	0	8	24

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	4	0	0	0	32
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	12	0			12
Scooters																					

Comments:

Report generated on 2/22/2021 11:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

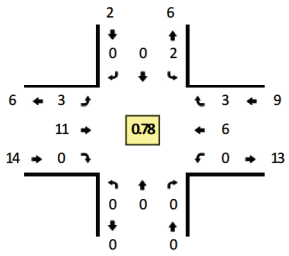
Type of peak hour being reported: Intersection Peak

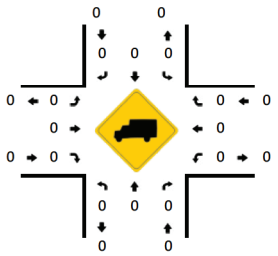
Method for determining peak hour: Total Entering Volume

LOCATION: S Washington Ave -- Gould St
CITY/STATE: Clearwater, FL

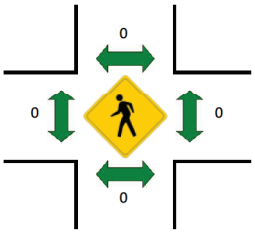
QC JOB #: 15364704
DATE: Tue, Feb 16 2021

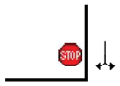
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

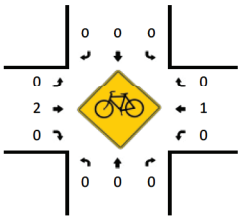


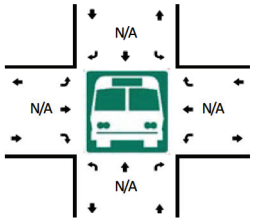


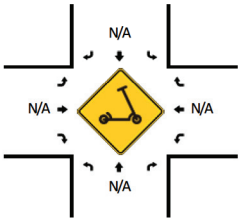
Quality Counts
DATA THAT DRIVES COMMUNITIES











R* = RTOR

15-Min Count Period Beginning At	S Washington Ave (Northbound)					S Washington Ave (Southbound)					Gould St (Eastbound)					Gould St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	1	1	0	0	6	
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	1	1	0	0	6	
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	1	1	0	0	5	
4:45 PM	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	0	0	0	8	25
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	1	0	0	0	5	24
5:15 PM	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	4	22
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	19
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	15

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	4	0	0	0	0	4	12	0	0	0	0	12	0	0	0	32
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	4	0			0	4	0			8
Scooters																					

Comments:

Report generated on 2/22/2021 11:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

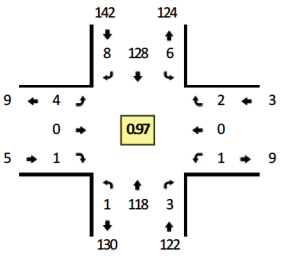
Type of peak hour being reported: Intersection Peak

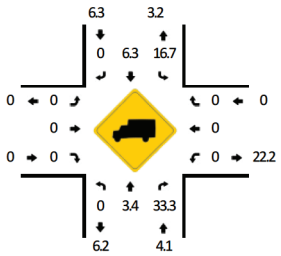
Method for determining peak hour: Total Entering Volume

LOCATION: S MLK Jr Ave -- Pierce St
CITY/STATE: Clearwater, FL

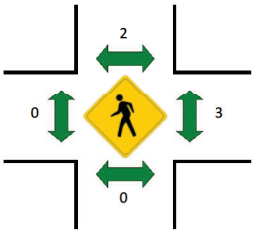
QC JOB #: 15364705
DATE: Tue, Feb 16 2021

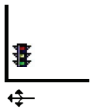
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

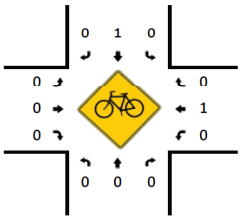


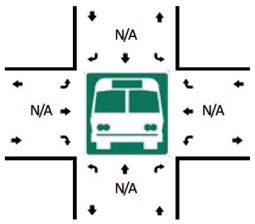


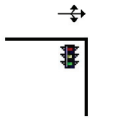
Quality Counts
DATA THAT DRIVES COMMUNITIES

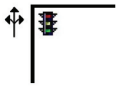


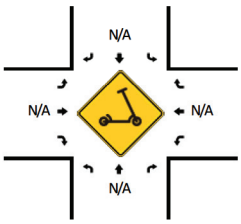












R* = RTOR

15-Min Count Period Beginning At	S MLK Jr Ave (Northbound)					S MLK Jr Ave (Southbound)					Pierce St (Eastbound)					Pierce St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	11	0	0	0	1	19	0	0	0	1	0	0	0	1	1	0	0	0	0	34	
7:15 AM	0	11	0	0	0	1	23	1	0	0	1	0	1	0	1	0	0	0	0	0	39	
7:30 AM	0	16	0	0	2	0	27	1	0	0	2	0	0	0	0	1	0	0	0	0	49	
7:45 AM	1	32	0	0	0	2	29	5	0	0	0	0	0	0	0	1	0	0	0	0	70	192
8:00 AM	0	27	2	0	0	0	36	1	0	0	2	0	0	0	0	0	0	0	0	0	68	226
8:15 AM	0	29	0	0	0	3	34	2	0	0	0	0	0	0	0	0	0	0	0	1	69	256
8:30 AM	0	30	1	0	0	1	29	0	0	0	2	0	1	0	0	0	0	1	0	0	65	272
8:45 AM	1	14	1	0	0	0	34	0	0	0	1	0	0	0	1	0	0	1	0	1	54	256

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	4	128	0	0	0	8	116	20	0	0	0	0	0	0	0	4	0	0	0	0	280
Heavy Trucks	0	8	0			0	8	0			0	0	0			0	0	0			16
Buses																					
Pedestrians		0					4					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	4	0			4
Scooters																					

Comments:

Report generated on 2/22/2021 11:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

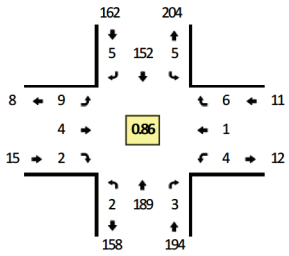
Type of peak hour being reported: Intersection Peak

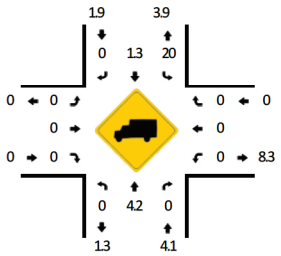
Method for determining peak hour: Total Entering Volume

LOCATION: S MLK Jr Ave -- Pierce St
CITY/STATE: Clearwater, FL

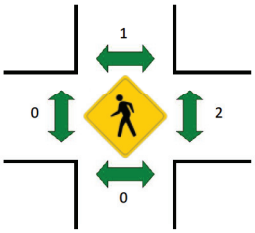
QC JOB #: 15364706
DATE: Tue, Feb 16 2021

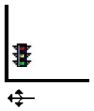
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

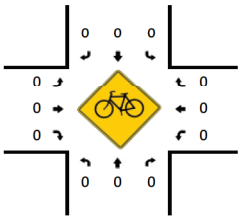


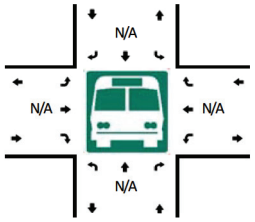


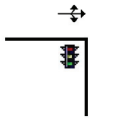
Quality Counts
DATA THAT DRIVES COMMUNITIES

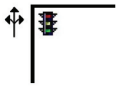


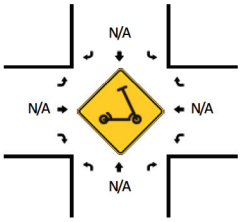












R* = RTOR

15-Min Count Period Beginning At	S MLK Jr Ave (Northbound)					S MLK Jr Ave (Southbound)					Pierce St (Eastbound)					Pierce St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	46	2	0	0	2	28	0	0	0	3	0	0	0	0	1	0	0	0	3	85	
4:15 PM	0	42	1	0	1	0	32	1	0	0	5	1	0	0	0	0	0	0	0	0	83	
4:30 PM	1	46	2	0	0	1	26	2	0	0	3	2	0	0	0	1	0	0	0	1	85	
4:45 PM	1	43	1	0	0	2	37	1	0	0	1	0	1	0	0	0	0	0	0	2	89	342
5:00 PM	0	57	0	0	0	1	43	2	0	0	2	0	1	0	0	3	0	0	0	2	111	368
5:15 PM	0	43	0	0	0	1	46	0	0	0	3	2	0	0	0	0	1	1	0	0	97	382
5:30 PM	0	36	1	0	0	0	35	2	0	0	6	0	1	0	1	0	0	1	0	0	83	380
5:45 PM	1	29	0	0	0	0	41	1	0	0	2	0	0	0	0	0	0	0	0	0	74	365

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	228	0	0	0	4	172	8	0	0	8	0	4	0	0	12	0	8	0	8	452
Heavy Trucks	0	8	0			0	4	0			0	0	0			0	0	0			12
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 2/22/2021 11:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 1500 PINELLAS COUNTYWIDE

MOCF: 0.93

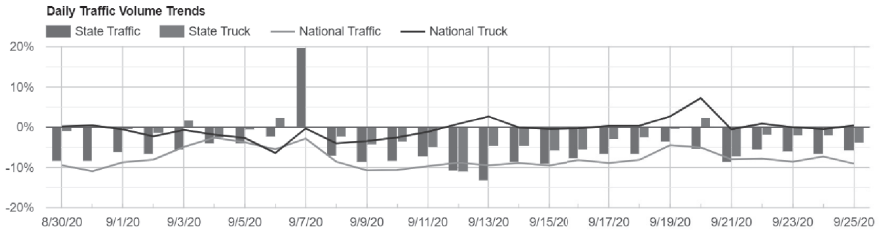
WEEK	DATES	SF	PSCF
1	01/01/2019 - 01/05/2019	1.04	1.12
2	01/06/2019 - 01/12/2019	1.03	1.11
3	01/13/2019 - 01/19/2019	1.02	1.10
4	01/20/2019 - 01/26/2019	1.00	1.08
5	01/27/2019 - 02/02/2019	0.98	1.05
* 6	02/03/2019 - 02/09/2019	0.96	1.03
* 7	02/10/2019 - 02/16/2019	0.93	1.00
* 8	02/17/2019 - 02/23/2019	0.93	1.00
* 9	02/24/2019 - 03/02/2019	0.92	0.99
*10	03/03/2019 - 03/09/2019	0.91	0.98
*11	03/10/2019 - 03/16/2019	0.91	0.98
*12	03/17/2019 - 03/23/2019	0.91	0.98
*13	03/24/2019 - 03/30/2019	0.92	0.99
*14	03/31/2019 - 04/06/2019	0.93	1.00
*15	04/07/2019 - 04/13/2019	0.94	1.01
*16	04/14/2019 - 04/20/2019	0.95	1.02
*17	04/21/2019 - 04/27/2019	0.96	1.03
*18	04/28/2019 - 05/04/2019	0.97	1.04
19	05/05/2019 - 05/11/2019	0.98	1.05
20	05/12/2019 - 05/18/2019	0.99	1.06
21	05/19/2019 - 05/25/2019	0.99	1.06
22	05/26/2019 - 06/01/2019	1.00	1.08
23	06/02/2019 - 06/08/2019	1.00	1.08
24	06/09/2019 - 06/15/2019	1.00	1.08
25	06/16/2019 - 06/22/2019	1.01	1.09
26	06/23/2019 - 06/29/2019	1.01	1.09
27	06/30/2019 - 07/06/2019	1.02	1.10
28	07/07/2019 - 07/13/2019	1.02	1.10
29	07/14/2019 - 07/20/2019	1.03	1.11
30	07/21/2019 - 07/27/2019	1.03	1.11
31	07/28/2019 - 08/03/2019	1.04	1.12
32	08/04/2019 - 08/10/2019	1.05	1.13
33	08/11/2019 - 08/17/2019	1.05	1.13
34	08/18/2019 - 08/24/2019	1.06	1.14
35	08/25/2019 - 08/31/2019	1.06	1.14
36	09/01/2019 - 09/07/2019	1.06	1.14
37	09/08/2019 - 09/14/2019	1.07	1.15
38	09/15/2019 - 09/21/2019	1.07	1.15
39	09/22/2019 - 09/28/2019	1.06	1.14
40	09/29/2019 - 10/05/2019	1.05	1.13
41	10/06/2019 - 10/12/2019	1.04	1.12
42	10/13/2019 - 10/19/2019	1.03	1.11
43	10/20/2019 - 10/26/2019	1.04	1.12
44	10/27/2019 - 11/02/2019	1.04	1.12
45	11/03/2019 - 11/09/2019	1.04	1.12
46	11/10/2019 - 11/16/2019	1.05	1.13
47	11/17/2019 - 11/23/2019	1.05	1.13
48	11/24/2019 - 11/30/2019	1.04	1.12
49	12/01/2019 - 12/07/2019	1.04	1.12
50	12/08/2019 - 12/14/2019	1.04	1.12
51	12/15/2019 - 12/21/2019	1.04	1.12
52	12/22/2019 - 12/28/2019	1.03	1.11
53	12/29/2019 - 12/31/2019	1.02	1.10

* PEAK SEASON

Statewide

http://www.ms2soft.com/traffic-dashboard/

Florida



LATEST AVAILABLE DATA

	State Traffic	State Truck	National Traffic	National Truck
Friday, Sep 25, 2020	-6.0%	-4.0%	-9.0%	0.4%
Thursday, Sep 24, 2020	-6.8%	-2.1%	-7.3%	-0.4%
Wednesday, Sep 23, 2020	-6.0%	-2.2%	-8.6%	0.0%
Tuesday, Sep 22, 2020	-5.6%	-2.0%	-7.8%	0.9%
Monday, Sep 21, 2020	-8.6%	-7.5%	-8.0%	-0.5%

+/- 6%

FDOT CIM
CIVIL INTEGRATED MANAGEMENT

COVID-19 ADJUSTMENT FACTOR CALCULATION

100% - 6% = 94%

1 / 94% = 1.06

Clearwater CRA Apartments
Traffic Impact Study

Attachment D

FDOT Generalized Capacity Values

TABLE 4

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

January 2020

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	*	1,510	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 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	1,700	>1,770	**

PEDESTRIAN MODE[2]

(Multiply 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

Core Urbanized

Lanes	B	C	D	E
4	4,050	5,640	6,800	7,420
6	5,960	8,310	10,220	11,150
8	7,840	10,960	13,620	14,850
10	9,800	13,510	17,040	18,580
12	11,600	16,350	20,930	23,200

Urbanized

Lanes	B	C	D	E
4	4,130	5,640	7,070	7,690
6	6,200	8,450	10,510	11,530
8	8,270	11,270	13,960	15,380
10	10,350	14,110	17,310	19,220

Freeway Adjustments

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

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	1,050	1,620	2,180	2,930
4	Divided	3,270	4,730	5,960	6,780
6	Divided	4,910	7,090	8,950	10,180

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 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 HCM 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 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.

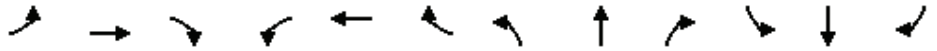
** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle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

Source:
Florida Department of Transportation
Systems Implementation Office
https://www.fdot.gov/planning/systems/

Clearwater CRA Apartments
Traffic Impact Study

Attachment E

Intersection Operational Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	1	1	0	2	1	133	3	6	144	8
Future Volume (veh/h)	4	0	1	1	0	2	1	133	3	6	144	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1856	1411	1648	1811	1900
Adj Flow Rate, veh/h	4	0	1	1	0	2	1	137	3	6	148	8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	3	33	17	6	0
Cap, veh/h	274	0	5	197	0	16	144	1067	23	157	995	52
Arrive On Green	0.02	0.00	0.02	0.02	0.00	0.02	0.59	0.59	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1205	0	301	537	0	1074	2	1806	39	16	1683	88
Grp Volume(v), veh/h	5	0	0	3	0	0	141	0	0	162	0	0
Grp Sat Flow(s),veh/h/ln	1506	0	0	1612	0	0	1847	0	0	1787	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	1.0	0.0	0.0
Prop In Lane	0.80		0.20	0.33		0.67	0.01		0.02	0.04		0.05
Lane Grp Cap(c), veh/h	278	0	0	213	0	0	1234	0	0	1203	0	0
V/C Ratio(X)	0.02	0.00	0.00	0.01	0.00	0.00	0.11	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	1703	0	0	1715	0	0	4137	0	0	3981	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	0.0	12.3	0.0	0.0	2.3	0.0	0.0	2.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.4	0.0	0.0	12.4	0.0	0.0	2.3	0.0	0.0	2.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		5			3			141			162	
Approach Delay, s/veh		12.4			12.4			2.3			2.4	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		5.4		20.0		5.4				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		55.0		25.0		55.0		25.0				
Max Q Clear Time (g_c+I1), s		2.9		2.1		3.0		2.0				
Green Ext Time (p_c), s		0.9		0.0		1.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			2.6									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	3	0	0	4	0	0	1	1	0	0	0
Future Vol, veh/h	1	3	0	0	4	0	0	1	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	5	0	0	6	0	0	2	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	6	0	0	5	0	0	15	15	5	17	15	6
Stage 1	-	-	-	-	-	-	9	9	-	6	6	-
Stage 2	-	-	-	-	-	-	6	6	-	11	9	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1628	-	-	1630	-	-	1006	883	1084	1003	883	1083
Stage 1	-	-	-	-	-	-	1017	892	-	1021	895	-
Stage 2	-	-	-	-	-	-	1021	895	-	1015	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1628	-	-	1630	-	-	1005	882	1084	999	882	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-	1005	882	-	999	882	-
Stage 1	-	-	-	-	-	-	1016	891	-	1020	895	-
Stage 2	-	-	-	-	-	-	1021	895	-	1011	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	8.7	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	973	1628	-	-	1630	-	-	-
HCM Lane V/C Ratio	0.003	0.001	-	-	-	-	-	-
HCM Control Delay (s)	8.7	7.2	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	7	0	1	0
Future Vol, veh/h	0	17	7	0	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	23	9	0	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	9	0	-	0	32	9
Stage 1	-	-	-	-	9	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1624	-	-	-	987	1079
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1005	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1624	-	-	-	987	1079
Mov Cap-2 Maneuver	-	-	-	-	987	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1005	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1624	-	-	-	987
HCM Lane V/C Ratio	-	-	-	-	0.001
HCM Control Delay (s)	0	-	-	-	8.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	2	1	0
Future Vol, veh/h	0	0	0	2	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	3	2	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	5	2	2	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1022	1088	1634	-	-	-
Stage 1	1026	-	-	-	-	-
Stage 2	1025	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1088	1634	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1026	-	-	-	-	-
Stage 2	1025	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1634	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	4	2	4	1	6	2	212	3	5	171	5
Future Volume (veh/h)	11	4	2	4	1	6	2	212	3	5	171	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1841	1900	1604	1885	1900
Adj Flow Rate, veh/h	13	5	2	5	1	7	2	247	3	6	199	6
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	4	0	20	1	0
Cap, veh/h	282	22	9	223	7	50	138	1024	12	147	1019	30
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1025	394	158	621	124	869	3	1811	22	13	1801	53
Grp Volume(v), veh/h	20	0	0	13	0	0	252	0	0	211	0	0
Grp Sat Flow(s),veh/h/ln	1577	0	0	1614	0	0	1835	0	0	1867	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.2	0.0	0.0	1.8	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.65		0.10	0.38		0.54	0.01		0.01	0.03		0.03
Lane Grp Cap(c), veh/h	314	0	0	280	0	0	1175	0	0	1196	0	0
V/C Ratio(X)	0.06	0.00	0.00	0.05	0.00	0.00	0.21	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	1681	0	0	1657	0	0	3934	0	0	3975	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	0.0	0.0	11.9	0.0	0.0	2.9	0.0	0.0	2.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	0.0	0.0	11.9	0.0	0.0	3.0	0.0	0.0	2.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		20			13			252			211	
Approach Delay, s/veh		12.0			11.9			3.0			2.9	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		6.5		20.0		6.5				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		55.0		25.0		55.0		25.0				
Max Q Clear Time (g_c+I1), s		3.8		2.3		3.5		2.2				
Green Ext Time (p_c), s		1.6		0.0		1.3		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			3.5									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	13	1	1	2	0	1	3	2	0	0	2
Future Vol, veh/h	1	13	1	1	2	0	1	3	2	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	15	1	1	2	0	1	3	2	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	16	0	0	23	22	16	24	22	2
Stage 1	-	-	-	-	-	-	18	18	-	4	4	-
Stage 2	-	-	-	-	-	-	5	4	-	20	18	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1634	-	-	1615	-	-	994	876	1069	993	876	1088
Stage 1	-	-	-	-	-	-	1006	884	-	1024	897	-
Stage 2	-	-	-	-	-	-	1022	897	-	1004	884	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1634	-	-	1615	-	-	990	874	1069	986	874	1088
Mov Cap-2 Maneuver	-	-	-	-	-	-	990	874	-	986	874	-
Stage 1	-	-	-	-	-	-	1005	883	-	1023	896	-
Stage 2	-	-	-	-	-	-	1019	896	-	997	883	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	2.4	8.8	8.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	950	1634	-	-	1615	-	-	1088
HCM Lane V/C Ratio	0.007	0.001	-	-	0.001	-	-	0.002
HCM Control Delay (s)	8.8	7.2	0	-	7.2	0	-	8.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	12	6	3	2	0
Future Vol, veh/h	3	12	6	3	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	15	8	4	3	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	12	0	-	0	33	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1620	-	-	-	986	1077
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1005	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1620	-	-	-	984	1077
Mov Cap-2 Maneuver	-	-	-	-	984	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1005	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1620	-	-	-	984
HCM Lane V/C Ratio	0.002	-	-	-	0.003
HCM Control Delay (s)	7.2	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

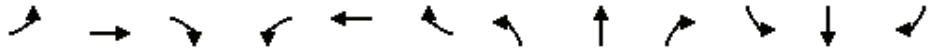
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	6	2	0
Future Vol, veh/h	0	0	0	6	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	7	2	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	9	2	2	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1017	1088	1634	-	-	-
Stage 1	1026	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1017	1088	1634	-	-	-
Mov Cap-2 Maneuver	1017	-	-	-	-	-
Stage 1	1026	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1634	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	1	1	0	21	1	133	3	11	144	8
Future Volume (veh/h)	4	0	1	1	0	21	1	133	3	11	144	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1856	1411	1648	1811	1900
Adj Flow Rate, veh/h	4	0	1	1	0	22	1	137	3	11	148	8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	3	33	17	6	0
Cap, veh/h	308	0	15	146	0	76	139	1030	22	165	947	49
Arrive On Green	0.05	0.00	0.05	0.05	0.00	0.05	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1240	0	310	70	0	1547	2	1806	39	34	1660	85
Grp Volume(v), veh/h	5	0	0	23	0	0	141	0	0	167	0	0
Grp Sat Flow(s),veh/h/ln	1550	0	0	1617	0	0	1847	0	0	1779	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.4	0.0	0.0	0.9	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.80		0.20	0.04		0.96	0.01		0.02	0.07		0.05
Lane Grp Cap(c), veh/h	323	0	0	223	0	0	1192	0	0	1161	0	0
V/C Ratio(X)	0.02	0.00	0.00	0.10	0.00	0.00	0.12	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	1628	0	0	1667	0	0	3993	0	0	3806	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	0.0	0.0	12.0	0.0	0.0	2.6	0.0	0.0	2.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	0.0	0.0	12.2	0.0	0.0	2.7	0.0	0.0	2.7	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		5			23			141			167	
Approach Delay, s/veh		11.9			12.2			2.7			2.7	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		6.3		20.0		6.3				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		55.0		25.0		55.0		25.0				
Max Q Clear Time (g_c+I1), s		2.9		2.1		3.2		2.4				
Green Ext Time (p_c), s		0.9		0.0		1.1		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			3.5									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	3	5	1	4	0	19	7	4	0	2	0
Future Vol, veh/h	1	3	5	1	4	0	19	7	4	0	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	5	8	2	6	0	30	11	6	0	3	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	6	0	0	13	0	0	25	23	9	32	27	6
Stage 1	-	-	-	-	-	-	13	13	-	10	10	-
Stage 2	-	-	-	-	-	-	12	10	-	22	17	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1628	-	-	1619	-	-	991	874	1079	981	870	1083
Stage 1	-	-	-	-	-	-	1013	889	-	1016	891	-
Stage 2	-	-	-	-	-	-	1014	891	-	1002	885	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1628	-	-	1619	-	-	987	872	1079	964	868	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-	987	872	-	964	868	-
Stage 1	-	-	-	-	-	-	1012	888	-	1015	890	-
Stage 2	-	-	-	-	-	-	1009	890	-	983	884	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	1.4	8.9	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	968	1628	-	-	1619	-	-	868
HCM Lane V/C Ratio	0.049	0.001	-	-	0.001	-	-	0.004
HCM Control Delay (s)	8.9	7.2	0	-	7.2	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	17	7	4	13	22
Future Vol, veh/h	6	17	7	4	13	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	8	23	9	5	17	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	14	0	-	0	51	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1617	-	-	-	963	1074
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	989	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1617	-	-	-	958	1074
Mov Cap-2 Maneuver	-	-	-	-	958	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	989	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1617	-	-	-	1028
HCM Lane V/C Ratio	0.005	-	-	-	0.045
HCM Control Delay (s)	7.2	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

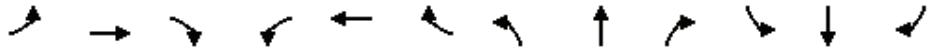
Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	34	10	2	1	8
Future Vol, veh/h	28	34	10	2	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	54	16	3	2	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	44	9	15	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	972	1079	1616	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	962	1079	1616	-	-	-
Mov Cap-2 Maneuver	962	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	993	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1616	-	1023	-	-
HCM Lane V/C Ratio	0.01	-	0.096	-	-
HCM Control Delay (s)	7.2	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	11	4	2	4	1	17	2	212	3	23	171	5
Future Volume (veh/h)	11	4	2	4	1	17	2	212	3	23	171	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1841	1900	1604	1885	1900
Adj Flow Rate, veh/h	13	5	2	5	1	20	2	247	3	27	199	6
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	4	0	20	1	0
Cap, veh/h	298	30	12	182	5	94	136	1004	12	194	939	26
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1030	396	159	312	62	1247	3	1810	22	82	1694	47
Grp Volume(v), veh/h	20	0	0	26	0	0	252	0	0	232	0	0
Grp Sat Flow(s),veh/h/ln	1585	0	0	1622	0	0	1835	0	0	1823	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.4	0.0	0.0	1.9	0.0	0.0	1.7	0.0	0.0
Prop In Lane	0.65		0.10	0.19		0.77	0.01		0.01	0.12		0.03
Lane Grp Cap(c), veh/h	340	0	0	281	0	0	1152	0	0	1160	0	0
V/C Ratio(X)	0.06	0.00	0.00	0.09	0.00	0.00	0.22	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	1638	0	0	1624	0	0	3856	0	0	3739	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	0.0	0.0	11.7	0.0	0.0	3.1	0.0	0.0	3.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	0.0	0.0	11.9	0.0	0.0	3.2	0.0	0.0	3.1	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		20			26			252			232	
Approach Delay, s/veh		11.8			11.9			3.2			3.1	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		7.0		20.0		7.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		55.0		25.0		55.0		25.0				
Max Q Clear Time (g_c+I1), s		3.9		2.3		3.7		2.4				
Green Ext Time (p_c), s		1.6		0.0		1.5		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			3.9									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	13	19	4	2	0	12	6	4	0	6	2
Future Vol, veh/h	1	13	19	4	2	0	12	6	4	0	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	15	22	5	2	0	14	7	5	0	7	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	37	0	0	45	40	26	46	51	2
Stage 1	-	-	-	-	-	-	28	28	-	12	12	-
Stage 2	-	-	-	-	-	-	17	12	-	34	39	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1634	-	-	1587	-	-	962	856	1056	961	844	1088
Stage 1	-	-	-	-	-	-	994	876	-	1014	890	-
Stage 2	-	-	-	-	-	-	1008	890	-	987	866	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1634	-	-	1587	-	-	951	853	1056	948	841	1088
Mov Cap-2 Maneuver	-	-	-	-	-	-	951	853	-	948	841	-
Stage 1	-	-	-	-	-	-	993	875	-	1013	887	-
Stage 2	-	-	-	-	-	-	995	887	-	974	865	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.9	8.9	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	939	1634	-	-	1587	-	-	892
HCM Lane V/C Ratio	0.027	0.001	-	-	0.003	-	-	0.01
HCM Control Delay (s)	8.9	7.2	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	12	6	15	9	13
Future Vol, veh/h	24	12	6	15	9	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	31	15	8	19	12	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	27	0	-	0	95	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	77	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1600	-	-	-	909	1066
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	951	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1600	-	-	-	891	1066
Mov Cap-2 Maneuver	-	-	-	-	891	-
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	951	-

Approach	EB	WB	SB
HCM Control Delay, s	4.9	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1600	-	-	-	987
HCM Lane V/C Ratio	0.019	-	-	-	0.029
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	20	33	6	2	27
Future Vol, veh/h	16	20	33	6	2	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	19	23	38	7	2	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	101	18	33	0	-	0
Stage 1	18	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	902	1066	1592	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	880	1066	1592	-	-	-
Mov Cap-2 Maneuver	880	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	6.2	0
HCM LOS	A		

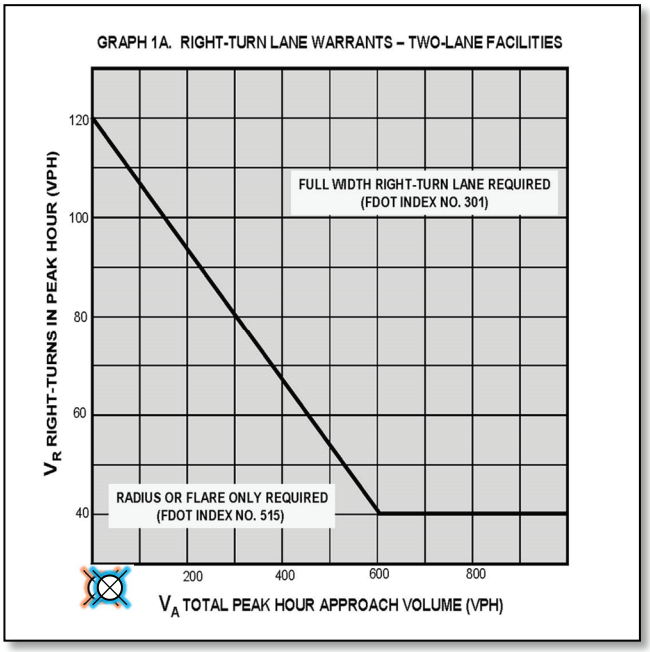
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1592	-	974	-	-
HCM Lane V/C Ratio	0.024	-	0.043	-	-
HCM Control Delay (s)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Clearwater CRA Apartments
Traffic Impact Study

Attachment F

Site Access Turn Lane Warrant Analysis

LOCATION: Washington Avenue & Project Site Driveway



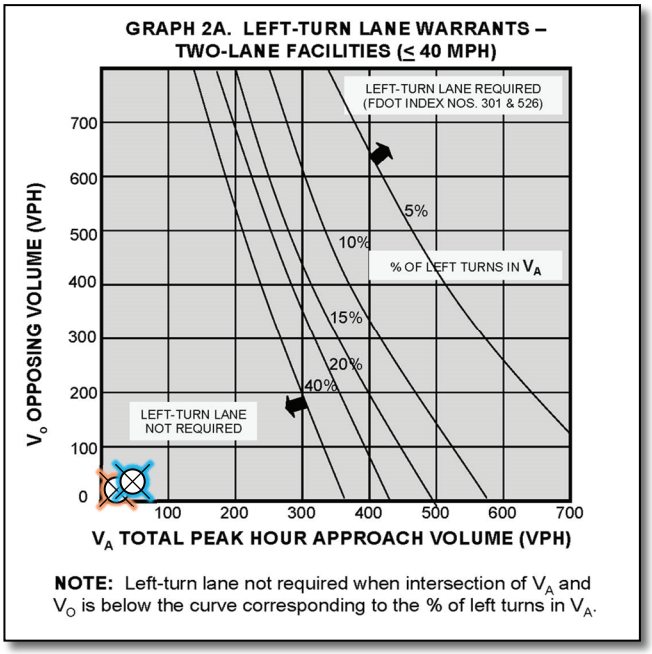
SOURCE: ADAPTED FROM NCHRP NO. 279

Right Turn Lane Warrant

SOUTHBOUND RIGHT TURN LANE

- **AM PEAK HOUR**
  Approach Volume: 9 vph
  Right Turn Volume: 8 vph
- **PM PEAK HOUR**
  Approach Volume: 29 vph
  Right Turn Volume: 27 vph

RESULT: NOT WARRANTED



SOURCE: ADAPTED FROM NCHRP NO. 279

Left Turn Lane Warrant

NORTHBOUND LEFT TURN LANE

- **AM PEAK HOUR**
  Left Turn Volume: 10
  Approach Volume: 12
  Opposing Volume: 9
- **PM PEAK HOUR**
  Left Turn Volume: 33
  Approach Volume: 39
  Opposing Volume: 29

RESULT: NOT WARRANTED

CLEARWATER CRA WORKFORCE HOUSING

TURN LANE WARRANT EVALUATION

RAYSOR Transportation Consulting