



TREBILCOCK
CONSULTING SOLUTIONS

Traffic Impact Statement

NCH Heart Vascular & Stroke Institute Expansion Attachment C-12

City of Naples, Florida
11/27/2023

Prepared for:

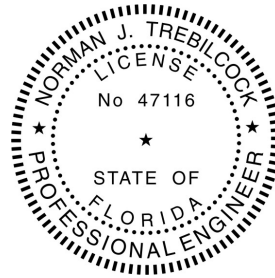
Hole Montes, Inc.
950 Encore Way
Naples, FL 34110
Phone: 239.254.2026

Prepared by:

Trebilcock Consulting Solutions, PA
2800 Davis Boulevard, Suite 200
Naples, FL 34104
Phone: 239-566-9551
Email: ntrebilcock@trebilcock.biz

Statement of Certification

I certify that this Traffic Impact Statement has been prepared by me or under my immediate supervision and that I have experience and training in the field of Traffic and Transportation Engineering.



Norman J. Trebilcock, AICP, PTOE, PE
FL Registration No. 47116
Trebilcock Consulting Solutions, PA
2800 Davis Boulevard, Suite 200
Naples, FL 34104
Company Cert. of Auth. No. 27796

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED
SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED
ON ANY ELECTRONIC COPIES.

Table of Contents

Project Description	4
Trip Generation.....	6
Trip Distribution and Assignment.....	7
Background Traffic.....	10
Existing and Future Roadway Network.....	13
Project Traffic Impacts – Roadway Link Analysis.....	14
Site Access Turn Lane Analysis.....	15
Improvement Analysis	16
Mitigation of Impact	16

Appendices

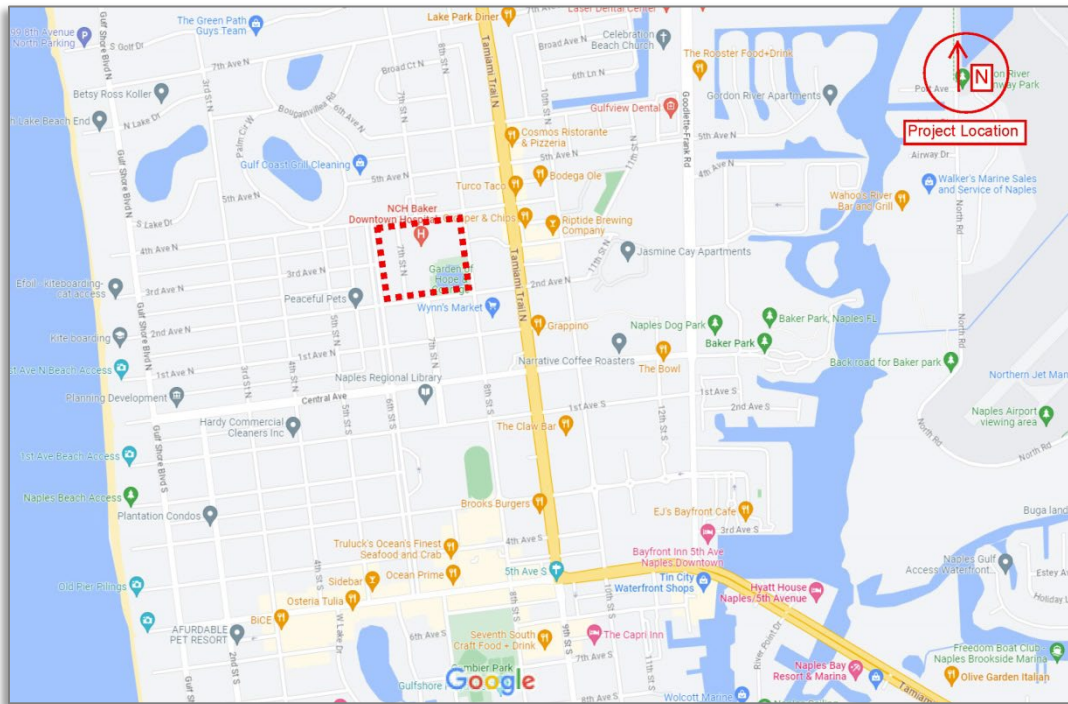
Appendix A: Project Site Plans (Existing and Proposed).....	17
Appendix B: Initial Meeting Checklist (Methodology Meeting)	20
Appendix C: ITE Trip Generation Calculations	25
Appendix D: City of Naples – Peak Season Traffic Counts.....	32
Appendix E: April 2023 Collected Traffic Counts	35
Appendix F: 2021 FDOT District One – US 41 LOS	43
Appendix G: Project Traffic Turning Movements	45

Project Description

The NCH Heart Vascular & Stroke Institute Expansion development is located on the northeast corner of 2nd Avenue N and 6th Street N, in Naples, Collier County, Florida.

The approximate location of the subject site is illustrated in **Figure 1**.

Figure 1 – Project Location Map



The property contains the NCH Baker Hospital which is a multi-story building and has a total occupied area of 445,607 square feet (sf) and includes the Emergency Room (ER) Department (also known as ED) per NCH’s Architect, Studio+. The Hospital square footage does not include the collocated Telford Education Building (also known as the Briggs Pavilion). The Telford Education Building consists of a garage with adjacent surface parking and 48,000 sf +/- of occupiable space.

The project proposes demolishing the adjacent existing Telford Education Building and constructing a 189,467-sf hospital expansion. In addition, the subject application proposes reconfiguring the west Parking Lot to allow for a new Parking Garage and reconfigured surface parking (488 parking spaces proposed). The proposed expansion represents nearly a 30% increase in the hospital occupied area (including Telford Education Building).

It is noted that the subject site currently provides separate dedicated vehicular accesses on 4th Avenue N associated with the ER Department: dedicated ambulance entrance and ER Department patient parking, which will not be impacted by the proposed project improvements. The hospital also has an existing parking garage (1,352 spaces) due east of NCH Baker Hospital located between 8th Street N and US 41

where most of the staff parking occurs (excluding physicians/clergy/and other senior medical professionals that use the Telford garage), which will not be modified either. The improvement area reconfigured west parking lot and new parking garage accounts for less than 25% of the available hospital parking (488/1,970 parking spaces). This TIS and the associated Vehicular Circulation Study (Attachment C-1) analyzes the operational traffic impacts to the two 7th Street N accesses in the expansion area with over 70% of the total hospital traffic using this area (463,365sf/635,074sf), though this area provides less than 25% of the available parking. In this TIS, the net new traffic impacts to the surrounding roadway network for the hospital expansion do not include a deduction of the Telford Education Building occupiable space that is being demolished (48ksf +/-), representing over 25% of the expansion area) as another conservative assumption.

The hospital proposes to close the existing west Parking Lot access at 6th Street N/3rd Ave N and the existing east access on 2nd Avenue N which currently services the exclusive Telford Education Building Physician parking access. There is a separate circulation study that analyzes the impact of reducing the number of access points and the addition of the new garage. The hospital eliminated the 6th Street N access point to discourage hospital traffic on this street in support of the nearby residences. The exclusive entrance to the Physicians parking garage on 2nd Avenue N was eliminated to simplify the accessibility of the hospital expansion by having a single access point on 2nd Avenue N west of 8th Street N. The idea is to have 7th Avenue N within the west part of the hospital campus serving as an efficient interconnect for the hospital. The existing and proposed site conditions are illustrated in **Appendix A: Project Site Plans (Existing and Proposed)**.

The purpose of this TIS is to document the transportation impacts associated with the proposed development improvements. The TIS agrees with the City of Naples Traffic Impact Study Requirements. Consistent with the City's TIS requirements, a methodology was developed and initiated for the project in April 2023 and provided to qualified city staff to review the project as a reasonable approach to creating the project TIS. Refer to **Appendix B: Initial Meeting Checklist (Methodology Meeting)**.

The project traffic generation is evaluated based on the methodologies and traffic data illustrated in the Institute of Transportation Engineers (ITE) Trip Generation Manual (TGM), 11th Edition and ITE Trip Generation Handbook, 3rd Edition. A hospital is any institution where medical or surgical care and overnight accommodations are provided to non-ambulatory and ambulatory patients. The ITE Trip Generation manual has provisions for three different independent variables associated with a hospital to determine the trip generation. These variables are building square footage, beds, and employees. The proposed hospital expansion will not increase the number of licensed beds for the hospital (391), where part of the expansion will be to create private rooms where there are currently shared rooms. The increase in employees has not been fully vetted, but based on the improvement in the facilities, an increase would be anticipated in the long term. There are 2,422 assigned downtown hospital employees, 598 daily peak season/visitors/patients and 412 daily vendors/contractors per hospital human resources and operations staff. The use of square footage for the trip generation is consistent with prior traffic studies reviewed and approved for the hospital by the city. The use of square footage is also consistent with how Traffic Impact Fees are calculated and collected for the hospital in the city. Based on these factors, we believe the use of square footage is the appropriate means of assessing the trip generation for the project development and is in line with the empirical employment, patient/visitor and vendor data provided by the hospital. The development program is illustrated in **Table 1**.

Table 1
Development Program

Development	Land Use	ITE Land Use Code	Total Size
Existing Main ⁽¹⁾	Hospital	#610 – Hospital	445,607 sf
Proposed Expansion	Hospital	#610 – Hospital	189,467 sf
Total			635,074, sf

Note(s): (1) Excludes Existing Telford Education Building – 48ksf (+/-). Includes the ER Department.

For the purposes of this evaluation, the project build-out year is 2025 and the extended 20-year horizon is assumed to be consistent with the City of Naples 2045 planning horizon. This extended analysis will better account for long-term traffic growth.

Trip Generation

The software program OTISS (Online Traffic Impact Study Software, most current version) is used to evaluate the projected trip generation for the project. The ITE equations and/or rates are used for the trip generation calculations, as applicable. The ITE – OTISS trip generation calculation worksheets are provided in **Appendix C: ITE Trip Generation Calculations**.

The internal capture accounts for a reduction in external traffic because of the interaction between the multiple land uses in a site. The pass-by trips account for traffic that is already on the external roadway network and stops at the project on the way to a primary trip destination. Per ITE recommendations, no internal capture or pass-by traffic reductions are considered for this analysis.

The estimated trip generation associated with the proposed hospital expansion is illustrated in **Table 2A**.

Table 2A
Proposed Hospital Expansion – Trip Generation – Average Weekday

Development		Weekday	AM Peak Hour			PM Peak Hour		
ITE Land Use	Size ⁽¹⁾	(2-way)	Enter	Exit	Total	Enter	Exit	Total
Hospital	189,467 sf	2,041	104	51	155	57	106	163

Note(s): (1) Refer to **Table 1**; sf = square feet.

Impacts to the adopted Level of Service (LOS) for the roadway network are evaluated based on the project weekday AM and PM peak hour net external traffic. Consistent with the traffic data illustrated in **Table 2A**, the estimated PM peak hour project trips (163 trips) are more intensive than the AM peak hour project traffic (155 trips) and are conservatively utilized for the roadway network LOS impact determinations.

For informational purposes only, **Table 2B** outlines the anticipated weekday trip generation of the development as currently proposed.

Table 2B
Proposed Hospital Buildout – Trip Generation – Average Weekday

Development		Weekday	AM Peak Hour			PM Peak Hour		
ITE Land Use	Size ⁽¹⁾	(2-way)	Enter	Exit	Total	Enter	Exit	Total
Hospital	635,074 sf	6,840	349	172	521	191	355	546

Note(s): (1) Refer to **Table 1**; sf = square feet.

The site access operational analysis reflects weekday AM and PM peak hour traffic associated with over 70% (463,365 sf) of the proposed hospital buildout parameters impacting the subject accesses being modified and most impacted by the proposed project (refer to **Table 2C**).

Table 2C
Access Operational Analysis – Trip Generation – Average Weekday

Development		Weekday	AM Peak Hour			PM Peak Hour		
ITE Land Use	Size ⁽¹⁾	(2-way)	Enter	Exit	Total	Enter	Exit	Total
Hospital	463,365 sf	4,990	255	125	380	139	259	398

Note(s): (1) sf = square feet.

Trip Distribution and Assignment

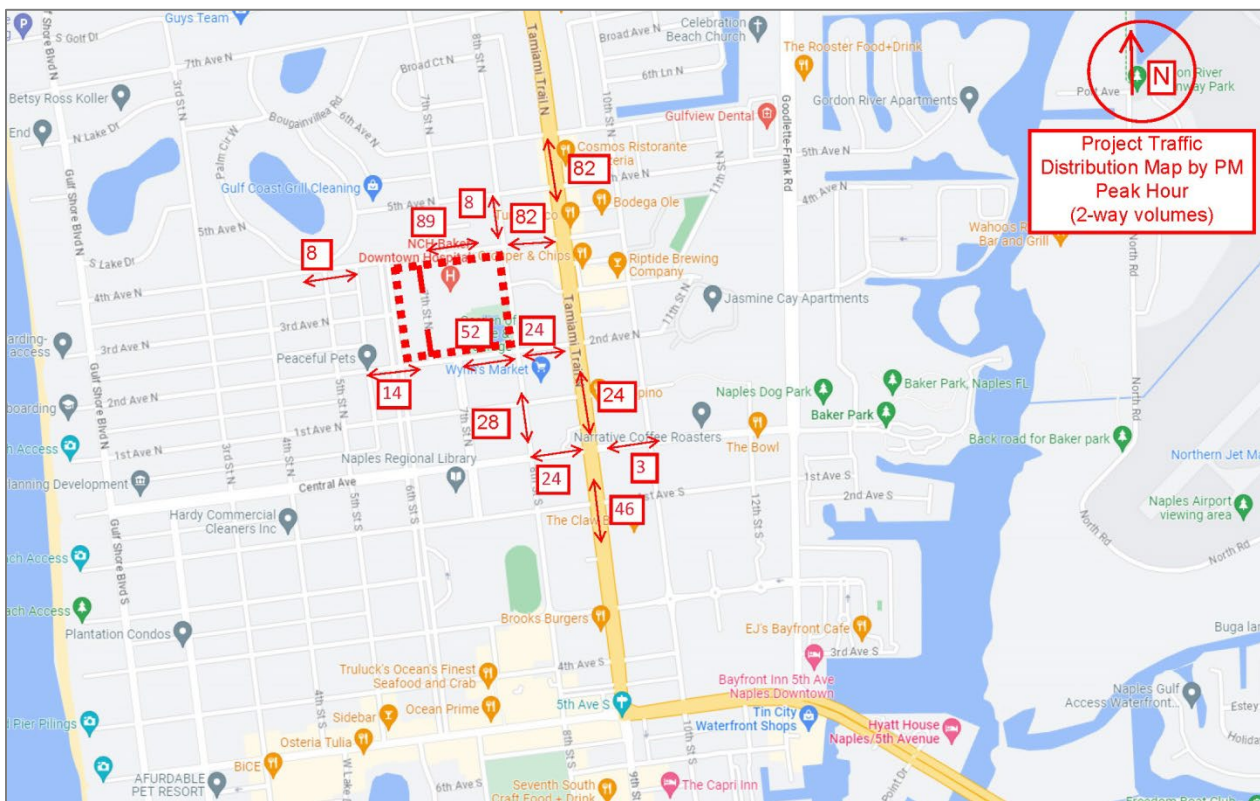
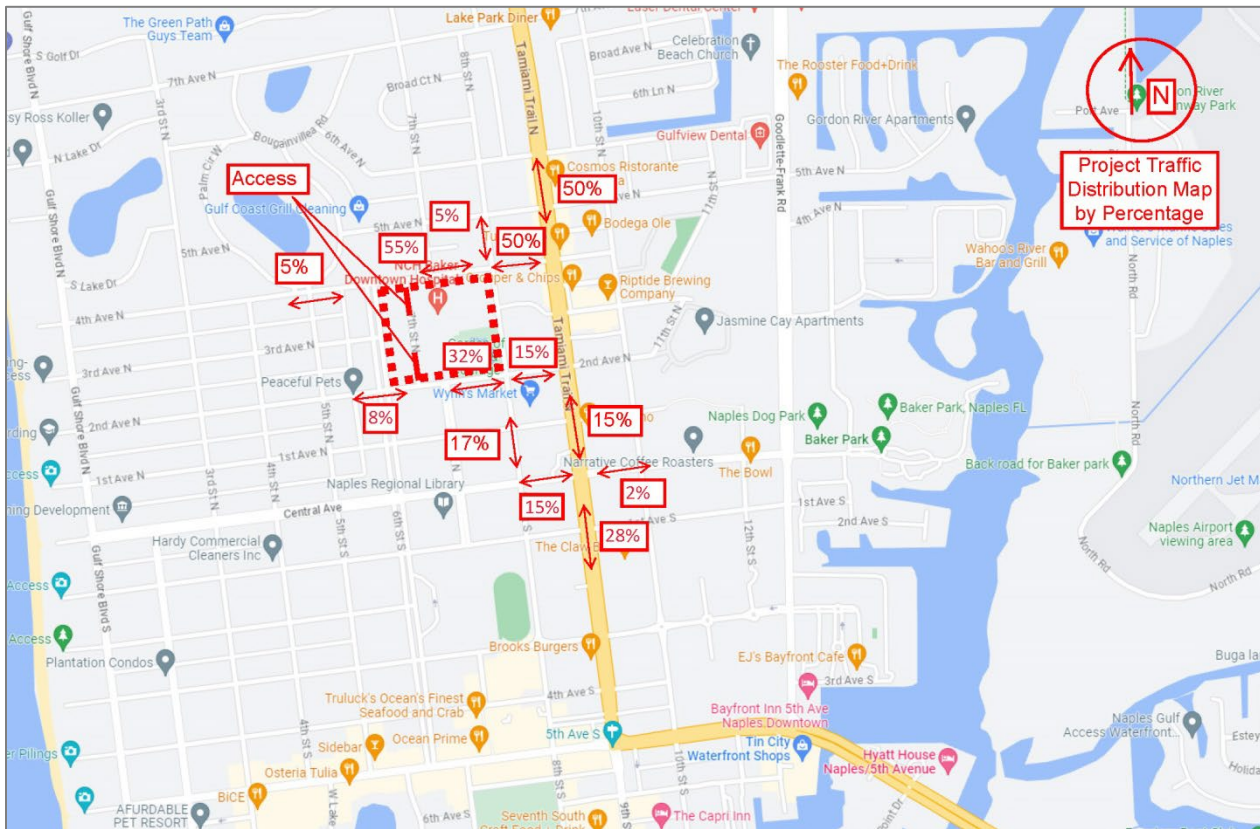
The traffic generated by the development is assigned to the adjacent roadways using knowledge of the area, input from staff/planning board, evaluation of the FSUTMS generated distribution and consistent with the transportation methodology meeting notes.

The assignment of the net new proposed site-generated trip distribution is shown in **Table 3, Project Traffic Distribution for PM Peak Hour**, and is graphically depicted in **Figure 2 – Project Distribution by Percentage and by PM Peak Hour**.

Table 3
Project Traffic Distribution for PM Peak Hour

Roadway Link	Roadway Link Location	Distribution of Project Traffic	PM Peak Hour Project Traffic Volume		
			Enter	Exit	Total
US 41	North of 4 th Ave N	50%	29	53	82
US 41	2 nd Ave N to Central Ave	15%	8	16	24
US 41	South of Central Ave	28%	16	30	46
4th Ave N	US 41 to 8 th St N	50%	29	53	82
4th Ave N	8 th St N to Project	55%	31	58	89
4th Ave N	West of Project	5%	3	5	8
2nd Ave N	US 41 to 8 th St N	15%	8	16	24
2nd Ave N	8 th St N to Project	32%	18	34	52
2nd Ave N	West of Project	8%	5	9	14
Central Ave	East of US 41	2%	1	2	3
Central Ave	West of US 41	15%	8	16	24
8th St N	North of 4 th Ave N	5%	3	5	8
8th St N	South of 2 nd Ave N	17%	10	18	28

Figure 2 – Project Distribution by Percentage and by PM Peak Hour



Background Traffic

The adopted Level of Service (LOS) standards for roads within the City limits are provided in the City of Naples Comprehensive Plan – Transportation Element – Policy 1 – 3.

As illustrated in Policy 1 – 3, “maintain LOS C peak hour volume for all roadways based on the 100th hourly volumes design, except: Fifth Avenue South between U.S. 41 and Gulf Shore Boulevard which has been defined as a constrained facility. For County maintained roads (Goodlette-Frank Road and Golden Gate Parkway) within the City limits, the City shall adopt LOS E. For State roads within City limits, (U.S. 41 [S.R. 45 & S.R. 90]), the City shall adopt LOS E.”

For Collier County maintained roads within the City of Naples (Goodlette-Frank Road and Golden Gate Parkway), the City of Naples has adopted the Collier County’s Level of Service. For State Roads #45 (US 41) and #90 (US 41) within the City’s corporate limits, the City is consistent with the State’s policies for LOS.

It is noted that the 100th highest hour approximates the typical peak hour during the peak season traffic conditions.

For current road segments LOS determination, the 100th highest-hour traffic volume determined based upon traffic counts is compared to the maximum peak hour service volume at the adopted LOS standard.

If traffic volume exceeds the maximum service volume at the adopted LOS standard, then the road segment is considered an existing “transportation deficiency”. As used in the Florida Statute 163.3180 – (5)(h)4, the term “transportation deficiency” means a facility or facilities on which the adopted level-of-service standard is exceeded by the existing, committed, and vested trips, plus additional projected background trips from any source other than the development project under review, and trips that are forecast by established traffic standards, including traffic modeling, consistent with the University of Florida’s Bureau of Economic and Business Research medium population projections. Additional projected background trips are to be coincident with the stage or phase of development under review.

Peak hour LOS “F” is accepted on designated constrained road segments.

Traffic Growth Rate

The City has a low growth rate, restricted geographic boundaries, limited undeveloped land and minimal future infrastructure needs. Even though the city population trend is expected to level off, the traffic volume trends can be estimated to increase as the result of the influence of Collier County growth. Future background traffic for City streets is estimated for the segments of the roadway network in the study area using a 1% annual growth rate.

For County and State streets the traffic growth rate is established based on the historical growth rate or 1% minimum (with the extended growth horizon). Due to the size (> 10 acres) and significance of this project, the growth rate is evaluated 20 years beyond the buildout of the project.

The City of Naples peak hour, peak season traffic counts are illustrated in **Appendix D**.

Projected annual growth rates for State roadway segments are calculated based on historical peak hour volumes for an 11-year period (2012 – 2023) as illustrated in **Table 4A**.

Table 4A
Annual Growth Rate Determination

Roadway	Roadway Segment Location	City Station Number	Historic Traffic Count (Year)\Volume ⁽¹⁾		Growth Rate Calculated ⁽²⁾	Growth Rate Applied
			From	To		
US 41	North of 4 th Ave N	23	(2012)/3,737	(2023)/3,849	0.3%	1.0%
US 41	South of 2 th Ave N	23	(2012)/3,737	(2023)/3,849	0.3%	1.0%

Note(s): (1) Refer to **Appendix D**.

(2) Growth Rate R = (2023 Vol/2012 Vol) ^ (1/11) – 1

Year 2045 Background Traffic

Table 4B illustrates the application of projected growth rates to generate the projected background (without project) peak hour traffic volume for the future horizon year 2045. The project buildout is 2025 and a 20-year period of additional growth has been evaluated for this project.

Conservative Assumptions for Specific Analyzed Roadway Segments

The City of Naples Traffic Count Report does not provide traffic volumes for all the analyzed roadway segments. Available traffic counts for a similar type roadway facility are utilized for the analyzed non-monitored roadway segments.

To support this traffic analysis, traffic counts were conducted on April 2023 to capture road segment traffic volumes for 4th Ave N segment between 8th St N and 7th St N, and 2nd Ave N segment between 8th St N and 7th St N. In addition, AM and PM peak hour turning movements were collected for two intersections: 4th Ave N at 7th St N and 2nd Ave N at 7th St N. For details refer to **Appendix E: April 2023 Collected Traffic Counts**.

Traffic count volumes collected are adjusted for peak season conditions by using the peak season conversion factor (PSCF) for the week of the count as illustrated in the latest FDOT Peak Season Factor Category Report (reference **Appendix E**). A PSCF value of 1.07 is utilized in this report.

4th Ave N segment from 8th St N to Project access

2023 Traffic Counts – peak hour = 381 vehicles per hour (vph) – **Appendix E**. 2023 Peak Season – peak hour = 1.07 x 381 = **408 vph**. Conservatively, this report utilizes the 2023 City traffic data presented for the 4th Ave N segment from US 41 to 8th ST N = **593 vph (Appendix D)**.

2nd Ave N segment from 8th St N to Project access

2023 Traffic Counts – peak hour = 135 vph – **Appendix E**. 2023 Peak Season – peak hour = 1.07 x 135 = **144 vph**. Conservatively, this report utilizes the 2023 City traffic data presented for 5th Ave N, a similar type facility = **352 vph (Appendix D)**.

4th Ave N segment west of Project access

2023 Traffic Counts – peak hour = 254 vph (**Appendix E**; Intersection of 4th Ave N and 7th St N). 2023 Peak Season – peak hour = 1.07 x 254 = **272 vph**. Conservatively, this report utilizes the 2023 City traffic data presented for 5th Ave N, a similar type facility = **352 vph (Appendix D)**.

2nd Ave N segment west of Project access

2023 Traffic Counts – peak hour = 76 vph (**Appendix E**; Intersection of 2nd Ave N and 7th St N). 2023 Peak Season – peak hour = 1.07 x 76 = **81 vph**. Conservatively, this report utilizes the 2023 City traffic data presented for 5th Ave N, a similar type facility = **352 vph (Appendix D)**.

**Table 4B
Background Traffic without Project (2023 - 2045)**

Roadway Link	Roadway Link Location	2023 Pk Hr., Two-Way Background Traffic Volume ⁽¹⁾	Projected Traffic Annual Growth Rate	Growth Factor ⁽²⁾	2045 Projected Pk Hr., Two-Way Background Traffic Volume w/out Project ⁽³⁾
US 41	North of 4 th Ave N	3,849	1.0%	1.2447	4,791
US 41	2 nd Ave N to Central Ave	3,849	1.0%	1.2447	4,791
US 41	South of Central Ave	3,849	1.0%	1.2447	4,791
4th Ave N	US 41 to 8 th St N	593	1.0%	1.2447	738
4th Ave N	8 th St N to Project	593 ⁽⁴⁾	1.0%	1.2447	738
4th Ave N	West of Project	352 ⁽⁵⁾	1.0%	1.2447	438
2nd Ave N	US 41 to 8 th St N	352 ⁽⁵⁾	1.0%	1.2447	438
2nd Ave N	8 th St N to Project	352 ⁽⁵⁾	1.0%	1.2447	438
2nd Ave N	West of Project	352 ⁽⁵⁾	1.0%	1.2447	438
Central Ave	East of US 41	662	1.0%	1.2447	824
Central Ave	West of US 41	662	1.0%	1.2447	824
8th St N	North of 4 th Ave N	340	1.0%	1.2447	423
8th St N	South of 2 nd Ave N	340	1.0%	1.2447	423

Note(s): (1) City of Naples Traffic Counts – Year 2023; vehicles per hour.
 (2) Growth Factor = (1+Annual Growth Rate)²².
 (3) 2045 Projected Volume = 2023 Peak Hour Background Traffic Volume x Growth Factor.
 (4) Not a City monitored roadway segment; City traffic counts for the 4th Ave N segment from US 41 to 8th St N.
 (5) Not a City monitored facility; a similar type facility is considered – 5th Ave N.

Existing and Future Roadway Network

As previously mentioned in this report, the adopted LOS standards for roads within the City limits are provided in the City of Naples Comprehensive Plan – Transportation Element – Policy 1 – 3.

The traffic volumes associated with the capacity standards reflect peak hour, peak season traffic conditions and are available in **Appendix D**.

For State roads within City limits (U.S. 41), the City’s LOS standard is LOS E. Consistent with the 2021 Florida Department of Transportation (FDOT) District One, LOS Spreadsheet, the standard LOS for US 41 is LOS D (refer to **Appendix F**).

Roadway improvements that are currently under construction or are scheduled to be constructed within the five-year Capital Improvement Program (CIP) are committed improvements. Based on our review of the most current Five-Year Work Program available for City of Naples, Collier County and Florida Department of Transportation (FDOT), no roadway improvements were identified for the analyzed roadway network. As such, the existing roadway segment capacities are anticipated to remain unchanged through project build-out.

The existing and projected future roadway conditions are illustrated in **Table 5**.

Table 5
Existing and Future Roadway Conditions

Roadway Link	Roadway Link Location	2023 Roadway Conditions	2023 LOS Capacity Standard	2023 Peak Hour Capacity Vol (vph)	2045 Roadway Conditions	2045 LOS Capacity Standard	2045 Peak Hour Capacity Vol (vph)
US 41 ⁽¹⁾	North of 4 th Ave N	6D	D ⁽¹⁾	5,660	6D	D ⁽¹⁾	5,660
US 41 ⁽¹⁾	2 th Ave N to Central Ave	6D	D ⁽¹⁾	5,660	6D	D ⁽¹⁾	5,660
US 41 ⁽¹⁾	South of Central Ave	6D	D ⁽¹⁾	5,660	6D	D ⁽¹⁾	5,660
4 th Ave N	US 41 to 8 th St N	4U	C	1,570	4U	C	1,570
4 th Ave N	8 th St N to Project	4U	C	1,570	4U	C	1,570
4 th Ave N ⁽²⁾	West of Project	2U	C	1,080 ⁽²⁾	2U	C	1,080 ⁽²⁾
2 nd Ave N ⁽²⁾	US 41 to 8 th St N	2U	C	1,080 ⁽²⁾	2U	C	1,080 ⁽²⁾
2 nd Ave N ⁽²⁾	8 th St N to Project	2U	C	1,080 ⁽²⁾	2U	C	1,080 ⁽²⁾
2 nd Ave N ⁽²⁾	West of Project	2U	C	1,080 ⁽²⁾	2U	C	1,080 ⁽²⁾
Central Ave ⁽³⁾	East of US 41	2D	C	1,570 ⁽³⁾	4U	C	1,570 ⁽³⁾
Central Ave ⁽³⁾	West of US 41	2D	C	1,570 ⁽³⁾	4U	C	1,570 ⁽³⁾
8 th St N	North of 4 th Ave N	2U	C	1,080	2U	C	1,080
8 th St N	South of 2 nd Ave N	2U	C	1,080	2U	C	1,080

Note(s): 2U, 4U = 2-lane, 4-lane undivided roadway, respectively; 2D, 6D = 2-lane, 6-lane divided roadway, respectively;

LOS = Level of Service; vph = vehicles per hour.

(1) Per FDOT District One traffic data and FDOT LOS criteria – refer to **Appendix F**.

(2) Not a City monitored facility; a similar type facility is considered – 5th Ave N.

(3) Per City traffic data, LOS C = 1,960 vph; LOS volume reduced to match a similar type facility – Banyan Blvd (**Appendix D**).

Project Traffic Impacts – Roadway Link Analysis

Based on the adopted LOS traffic volumes, the area roadway network is evaluated to determine project impacts to the LOS capacity in the future 2045.

Table 6, Roadway Link Level of Service illustrates the LOS impacts of the project to the area roadway network.

Table 6
Roadway Link Level of Service (LOS) – With Project in the Year 2045

Roadway Link	Roadway Link Location	2045 Peak Hour Capacity Volume ⁽¹⁾	Project Peak Hour Two-Way (Volume Added) ⁽²⁾	2045 Peak Hour Volume w/Project ⁽³⁾	% Volume Capacity Impact By Project	Remaining Volume Capacity	LOS Standard Exceeded Without Project? Yes/No	LOS Standard Exceeded With Project? Yes/No
US 41	North of 4 th Ave N	5,660	82	4,873	1.4%	787	No	No
US 41	2 th Ave N to Central Ave	5,660	24	4,815	0.4%	845	No	No
US 41	South of Central Ave	5,660	46	4,837	0.8%	823	No	No
4th Ave N	US 41 to 8 th St N	1,570	82	820	5.2%	750	No	No
4th Ave N	8 th St N to Project	1,570	89	827	5.7%	743	No	No
4th Ave N	West of Project	1,080	8	446	0.7%	634	No	No
2nd Ave N	US 41 to 8 th St N	1,080	24	462	2.2%	618	No	No
2nd Ave N	8 th St N to Project	1,080	52	490	4.8%	590	No	No
2nd Ave N	West of Project	1,080	14	452	1.3%	628	No	No
Central Ave	East of US 41	1,570	3	827	0.2%	743	No	No
Central Ave	West of US 41	1,570	24	848	1.5%	722	No	No
8th St N	North of 4 th Ave N	1,080	8	431	0.7%	649	No	No
8th St N	South of 2 nd Ave N	1,080	28	451	2.6%	629	No	No

Note(s): (1) Refer to **Figure 5**.

(2) Refer to **Figure 3**.

(3) 2045 Projected Volume = 2045 Background Traffic (refer to **Table 4B**) + Project Volume added.

None of the analyzed roadway links are projected to operate below the adopted LOS standard with or without the project under future 2045 conditions. Based on this criterion, this project does not create any significant and adverse impacts to the area roadway network.

Site Access Turn Lane Analysis

The site access is proposed via one existing full movement connection onto 4th Avenue N and one existing full movement connection onto 2nd Avenue N (refer to **Appendix A**).

A turn lane analysis is performed at the two main access points at the west Parking Lot during weekday AM and PM peak hour traffic conditions associated with the development access operational; analysis parameters, as depicted in **Table 2C** and **Appendix C**. The estimated project trips at the site access locations are depicted in **Appendix G: Project Traffic Turning Movements**.

The subject accesses are evaluated for turn lane warrants based on the turn lane requirements adopted in the Collier County Construction Standards Handbook, Section III: (a) two-lane roadways - 40 vehicles for right-turn lane/20 vehicles for left-turn lane; (b) multi-lane divided roadways - right-turn lanes shall always be provided; when new median openings are permitted, they shall always include left-turn lanes.

As illustrated in **Appendix G**, the estimated maximum turn volumes coincident with the project build-out conditions are as follows: 4th Avenue N Access: 140 left turns; 13 right turns; 2nd Avenue N Access: 20 left turns; 82 right turns.

4th Avenue N Access

Right-turn lane

Based on the estimated project turn volumes, an eastbound right-turn lane is not warranted at this location.

Left-turn lane

Based on the estimated project turn volumes, a westbound left-turn lane is warranted at this location.

Queue length – As illustrated in the AASHTO 2011 A Policy on Geometric Design of Highways and Streets – Section 9.7.2 – Storage Length - pg. 9-127, at unsignalized intersections the storage length, exclusive of taper, may be based on the number of turning vehicles likely to arrive in an average two-minute period within the peak hour.

For the purposes of this report, the minimum queue length considered is 25 feet and the queue per vehicle is 25 feet. Queue lengths are rounded to the nearest 25-foot interval.

Left-turn Lane – Queue (peak hour) = $(2 \text{ min}/60 \text{ min}) \times 25 \text{ ft/veh} \times 140 \text{ veh} = 117 \text{ feet (ft)}$ use 125 ft

The existing westbound left-turn lane is divided by a mid-block crosswalk in two vehicular queuing areas with a total vehicular stacking length of 125 feet: 25 feet (west of the crossing) and 100 feet (east of the crossing to the nearest intersection). It is noted that the project access road provides an additional vehicular stacking length of 125 feet to accommodate the ingress traffic within the development boundaries. 4th Avenue N is a low volume, low speed roadway in the vicinity of the access.

As such, the existing left-turn stacking lane is adequate to accommodate the project traffic.

2nd Avenue N Access

Based on the estimated project turn volumes, left and right turn lanes are warranted at this location.

Left-turn lane

2nd Avenue N is a two-lane, low volume and low speed roadway in the vicinity of this access. Therefore left-turn vehicles should find sufficient gaps to turn. Although warranted based on the County's criteria, a dedicated left-turn lane is not recommended based on engineering judgement.

Right-turn Lane

2nd Avenue N is a 2-lane undivided roadway under City of Naples jurisdiction and has a posted speed of 25 mph in the vicinity of the project.

Minimum deceleration lengths (including taper) for left-turn lanes are illustrated in FDOT Design Manual (FDM) Chapter 212, Exh 212-1. Right turn lane tapers and deceleration lengths are identical to left turn lanes under stop control conditions. Right turn lane tapers and lengths are site-specific for free-flow or yield conditions.

Per FDM Chapter 212, the minimum deceleration length is 145 feet for a roadway with a design speed of 35 mph.

The right turn traffic operates under free flow conditions. In addition, for a low traffic volume roadway facility with low operating travel speeds, the vehicular speed differential is not a safety factor for considering a dedicated turn lane at this location. As such, turn lane stacking is not required. For safety purposes, the minimum queue length considered for the right-turn lane is 25 feet

Consistent with FDOT criteria, the right-turn lane length should be 170 ft (145 ft deceleration lane with taper and 25 ft of storage) to accommodate projected traffic.

As illustrated in the site plan, additional vehicular stacking is available on site.

Improvement Analysis

Based on the traffic evaluation presented in this report, the proposed project is not an adverse traffic generator for the surrounding roadway network. There is adequate and sufficient roadway capacity to accommodate the proposed development.

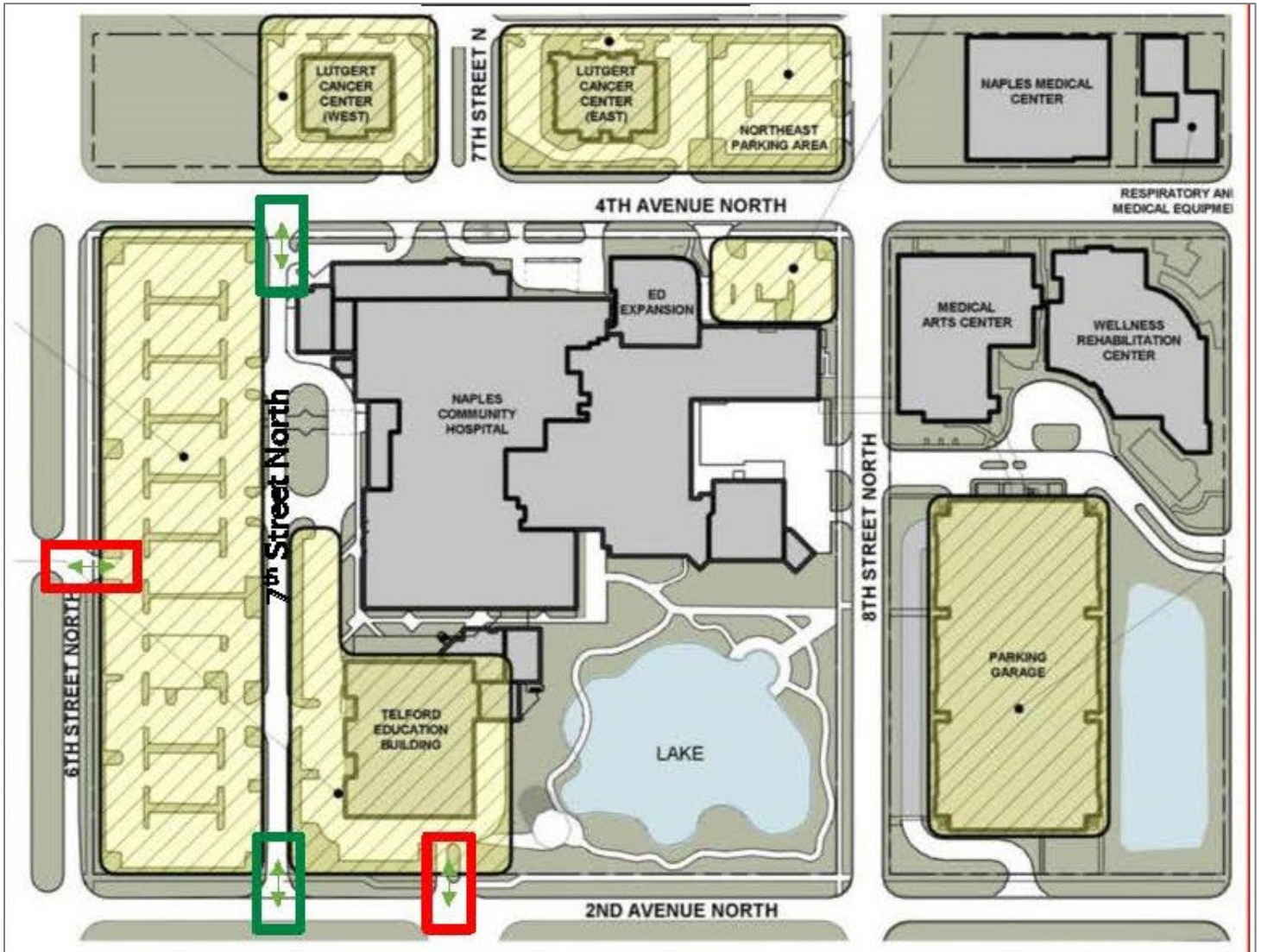
Turn lane improvements are recommended at the project access located on 2nd Avenue N. Additionally, an associated Circulation study is provided to evaluate intersection levels of service (LOS).

Mitigation of Impact

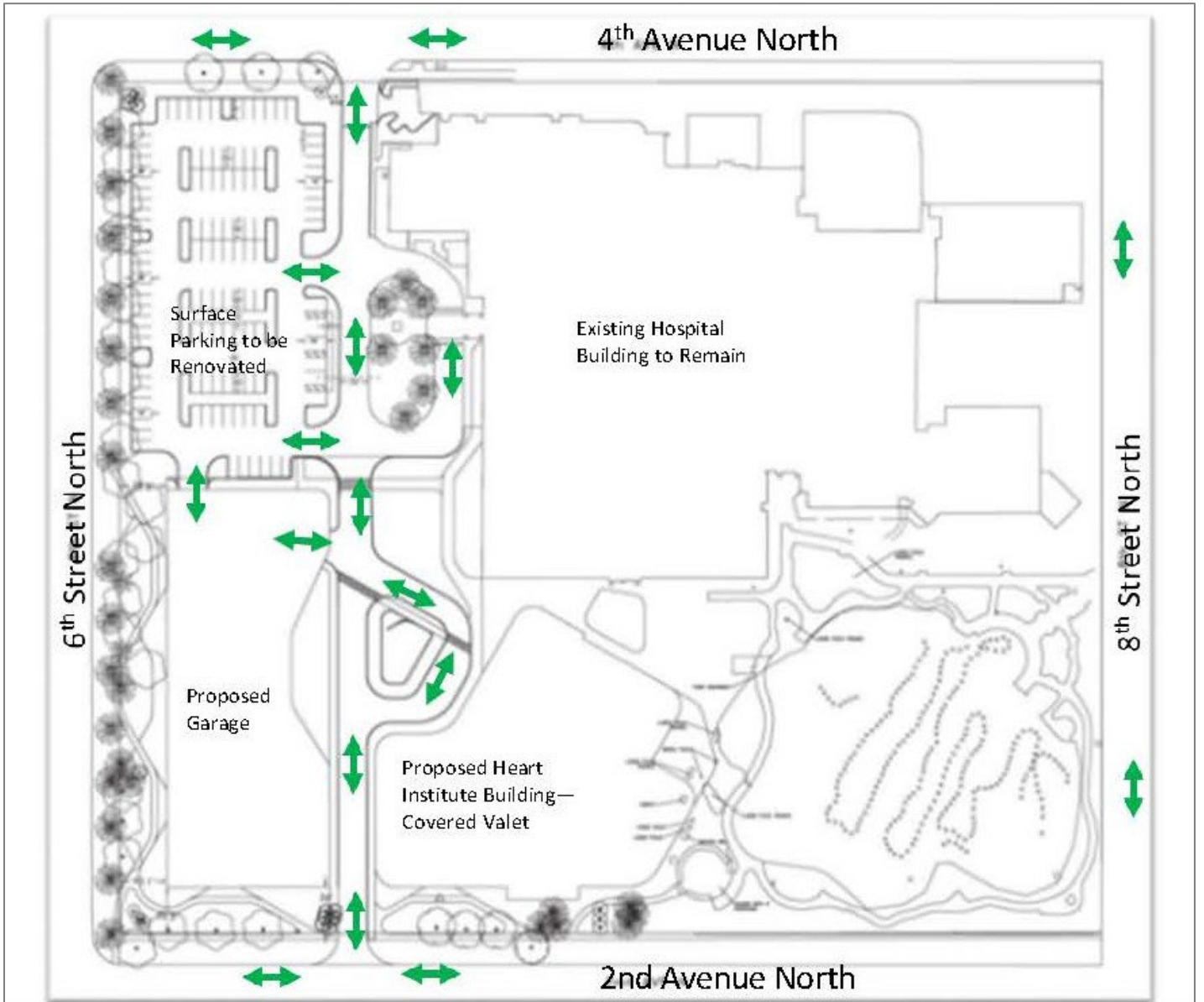
The hospital proposes to pay the appropriate City of Naples Impact Fees as building permits are issued for the project, as applicable.

Appendix A:
Project Site Plans (Existing and Proposed)

Site Existing Conditions



Site Proposed Conditions



Appendix B:

Initial Meeting Checklist (Methodology Meeting)

INITIAL MEETING CHECKLIST

Suggestion: Use this Appendix as a worksheet to ensure that no important elements are overlooked. Cross out the items that do not apply, or N/A (not applicable).

Date: April 22, 2023 (updated November 24, 2023) Time: N/A

Location: N/A – Via Email

People Attending:

Name, Organization, and Telephone Numbers

- 1) Alison Bickett, City of Naples
- 2) Norman Trebilcock, TCS
- 3) Ciprian Malaescu, TCS

Study Preparer:

Preparer's Name and Title: Norman Trebilcock, AICP, PTOE, PE

Organization: Trebilcock Consulting Solutions, PA

Address & Telephone Number: 2800 Davis Boulevard, Suite 200, Naples, FL 34104; phone 239-566-9551

Reviewer(s):

Reviewer's Name & Title: Alison Bickett, PE

Organization: City of Naples – Streets and Stormwater

Address & Telephone Number: 295 Riverside Circle, Naples, FL 34102; phone 239-213-5014

Applicant:

Applicant's Name: Hole Montes, Inc. (Terry Cole, PE)

Address: 950 Encore Way, Naples, FL 34110

Telephone Number: 239-254-2026

Proposed Development:

Name: NCH Heart Vascular & Stroke Institute Expansion

Location: On the southwest corner of 8th Street N and 4th Avenue N (refer to **Figure 1**).

Land Use Type: Hospital

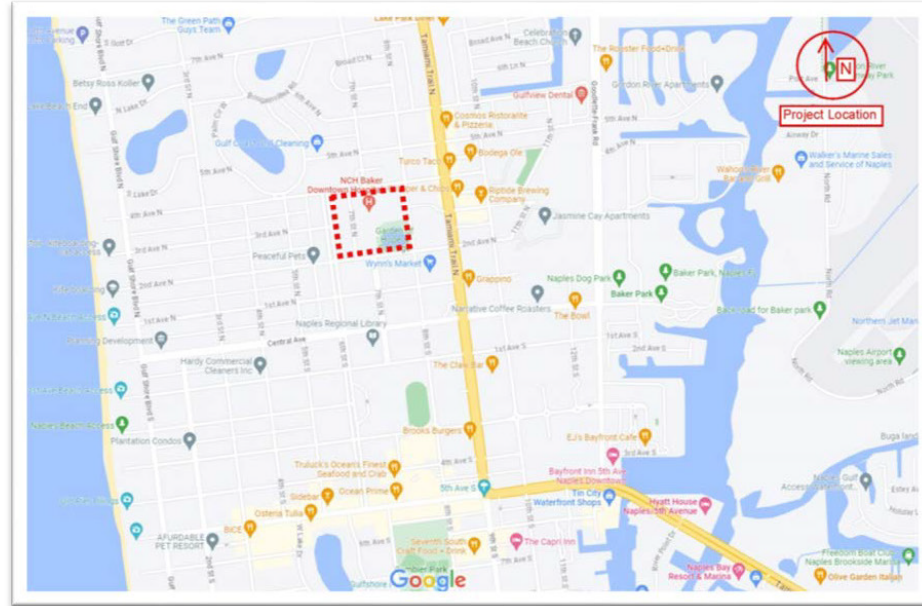
ITE Code #: 610 – Hospital

Description:

Existing Development– Baker Hospital – 445,607 square feet (sf) which includes ER Department (aka ED).

Proposed Development – Hospital Expansion – 189,467 sf to replace the Telford Education Building (Briggs Pavilion) (48ksf—excluded from calcs); Reconfigure West Parking Lot to allow a new parking garage (new parking 488 spaces—total new hospital parking 1,970 spaces); Remove access to 6th St N and close the eastern access on 2nd Ave N which is currently servicing the Telford Education Building.

Figure 1 – Project Location Map



Zoning:

Existing: No change proposed (medical changed to public service—hospital).

Comprehensive plan recommendation: No Change

Requested: approval for hospital heart institute

Findings of the Preliminary Study:

Study type: Since estimated project site area is greater than 10 acres, this study qualifies for a Major TIS.

The TIS will include weekday AM-PM peak hour trip generation, traffic distribution and assignments, level of service analysis and site access points turn lane analysis.

Trip generation – ITE Trip Generation Manual (TGM), 11th Edition; internal capture and pass-by rates are not considered consistent with ITE guidelines.

Roadway Concurrency – Hospital Expansion 189,467 sf – PM peak hour traffic (more intense than the AM peak hour traffic).

Level of Service (LOS) is “C” for all City of Naples roadways in this analysis except as follows: 5th Avenue S, between US 41 and Gulf Shore Boulevard, which is defined as a constrained facility and is exempt from level of service requirements; US 41 from Central Avenue to Four Corners is LOS “D”; US 41 from Four Corners to Davis Boulevard is LOS“E”; and Goodlette-Frank Road from Central Avenue to US 41 is LOS“E”.

Site access: one full connection on 4th Ave N and one full connection on 2nd Ave N. Access turn lane warrant evaluation is based on the Collier County criteria. Operational evaluation reflects project AM and PM peak hour traffic for the buildout conditions: Part of Existing (273,898 sf of 445,607 sf) + New Hospital Expansion 189,467 sf (exist. Telford 48ksf not deducted) = 463,365 sf will be analyzed at the two accesses to be modified (>70% of total—635,074 sf).

Study Type:

Minor TIS

Major TIS

Study Area:

Boundaries: North 4th Ave N; South 2th Ave N; East 8th St N, West – 6th St N,

Additional intersections to be analyzed: 4th Ave N/7th St N & 2nd Ave N/7th St N (two intersections being modified), 3rd Ave N/6th St N and 2nd Ave N/Telford Dr Entrance intersections to be closed and impacts of closures to be assessed on the other 2 intersections.

Build Out Year: 2025

Horizon Year(s): 2045 (extended 20-year period to account for more growth)

Analysis Time Period(s): AM- PM Peak Hour

Future Off-Site Developments: To be determined.

Source of Trip Generation Rates: ITE Trip Generation Manual 11th Edition

Reductions in Trip Generation Rates:

None: N/A

Pass-by trips: as described in the Findings of Preliminary Study

Internal trips: as described in the Findings of Preliminary Study

Transit use: N/A

Other: N/A

Horizon Year Roadway Network Improvements: Year 2045

Methodology & Assumptions:

Non-site traffic estimates: City of Naples 2023 traffic counts, Collier County and FDOT traffic data, as applicable.

Site-trip generation: OTISS – ITE 11th Edition

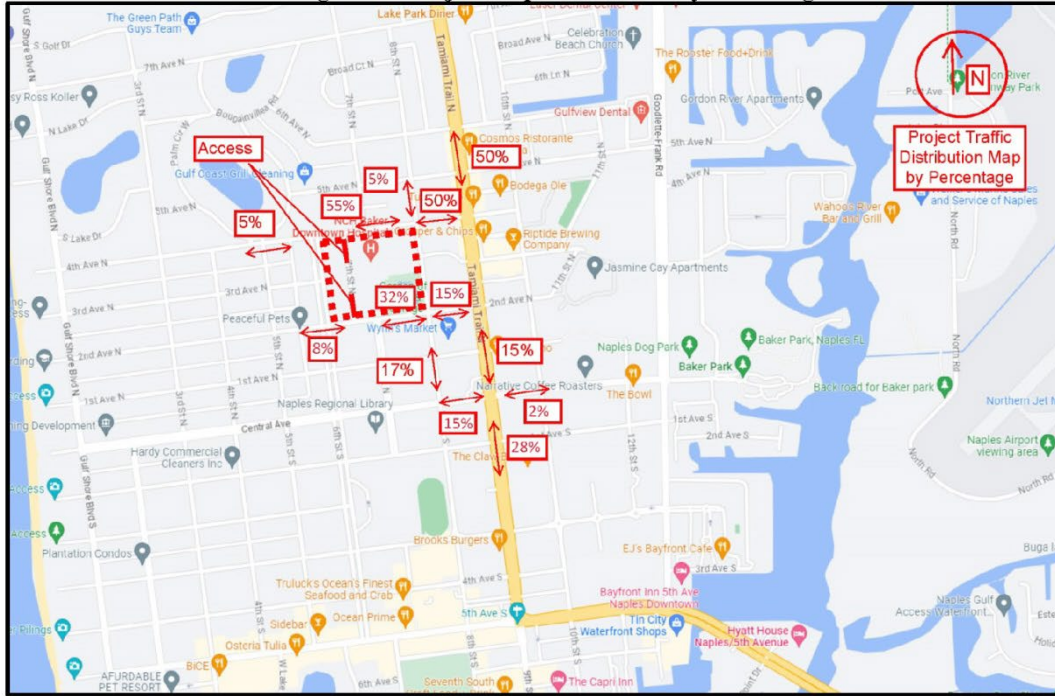
Trip distribution method: Engineer's Estimate – refer to **Figure 2** (updated per PAB input, FSUTMS, additional staff consideration)

Traffic assignment method: project trip generation with background growth

Traffic growth rate: 1% for City streets, 1% minimum for Collier County or FDOT streets (for 20-year extended period).

Turning movements: West Parking Lot – Site Access – Consistent with the trip distribution.

Figure 2 – Project Trip Distribution by Percentage



Special Features: (from preliminary study or prior experience)

Accidents locations: N/A

Sight distance: N/A

Queuing: N/A

Access location & configuration: N/A

Traffic control: MUTCD

Signal system location & progression needs: N/A

On-site parking needs: N/A

Data Sources: City of Naples and FDOT traffic counts, as applicable; OC counts at intersections.

Base maps: N/A

Prior study reports: N/A

Access policy and jurisdiction: N/A

Review process: N/A

Requirements: N/A

Miscellaneous: N/A

SIGNATURES

Norman Trebilcock

Study Preparer—Norman Trebilcock

Appendix C:
ITE Trip Generation Calculations

Proposed Hospital Expansion + Existing

Project Information							
Project Name:	NCH Heart Institute Total--Exist and Proposed						
No:							
Date:	11/23/2023						
City:	Naples						
State/Province:	FL						
Zip/Postal Code:	34102						
Country:	United States						
Client Name:	Naples Community Hospital						
Analyst's Name:	NJT						
Edition:	Trip Generation Manual, 11th Ed						

Land Use	Size	Weekday		AM Peak Hour		PM Peak Hour	
		Entry	Exit	Entry	Exit	Entry	Exit
610 - Hospital (General Urban/Suburban)	635.07 1000 Sq. Ft. GFA	3420	3420	349	172	191	355
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		0	0	0	0	0	0
Non-pass-by		3420	3420	349	172	191	355
Total		3420	3420	349	172	191	355
Total Reduction		0	0	0	0	0	0
Total Internal		0	0	0	0	0	0
Total Pass-by		0	0	0	0	0	0
Total Non-pass-by		3420	3420	349	172	191	355

Proposed Hospital Expansion

Project Information	
Project Name:	NCH Heart Institute Expansion
No:	
Date:	4/27/2023
City:	
State/Province:	
Zip/Postal Code:	
Country:	
Client Name:	
Analyst's Name:	
Edition:	Trip Generation Manual, 11th Ed

Land Use	Size	Weekday		AM Peak Hour		PM Peak Hour	
		Entry	Exit	Entry	Exit	Entry	Exit
610 - Hospital (General Urban/Suburban)	189.47 1000 Sq. Ft. GFA	1021	1020	104	51	57	106
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		0	0	0	0	0	0
Non-pass-by		1021	1020	104	51	57	106
Total		1021	1020	104	51	57	106
Total Reduction		0	0	0	0	0	0
Total Internal		0	0	0	0	0	0
Total Pass-by		0	0	0	0	0	0
Total Non-pass-by		1021	1020	104	51	57	106

PERIOD SETTING							
Analysis Name :	Weekday						
Project Name :	NCH Heart Institute Expansion		No :				
Date:	4/27/2023		City:				
State/Province:			Zip/Postal Code:				
Country:			Client Name:				
Analyst's Name:			Edition:	Trip Generation Manual, 11th Ed			
Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	189.47	Weekday	Average 10.77	1021 50%	1020 50%	2041

PERIOD SETTING							
Analysis Name :	AM Peak Hour						
Project Name :	NCH Heart Institute Expansion		No :				
Date:	4/27/2023		City:				
State/Province:			Zip/Postal Code:				
Country:			Client Name:				
Analyst's Name:			Edition:	Trip Generation Manual, 11th Ed			
Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	189.47	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.82	104 67%	51 33%	155

PERIOD SETTING

Analysis Name : PM Peak Hour
Project Name : NCH Heart Institute Expansion
Date: 4/27/2023
State/Province:
Country:
Analyst's Name:
No :
City:
Zip/Postal Code:
Client Name:
Edition: Trip Generation Manual, 11th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	189.47	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.86	57 35%	106 65%	163

Hospital Operations/Circulation Area Analysis Evaluated at Impacted Intersections (463,365 sf>70% of buildout—635,074 sf)

Project Name:	Total NCH Downtown	No:	
Date:	11/21/2023	City:	
State/Province:		Zip/Postal Code:	
Country:		Client Name:	
Analyst's Name:		Edition:	Trip Generation Manual, 11th Ed

LAND USE	SIZE	WEEKDAY		AM PEAK HOUR		PM PEAK HOUR	
		Entry	Exit	Entry	Exit	Entry	Exit
610 - Hospital (General Urban/Suburban)	463.37 ⁽¹⁾	2495	2495	255	125	139	259
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		0	0	0	0	0	0
Non-pass-by		2495	2495	255	125	139	259
Total		2495	2495	255	125	139	259
Total Reduction		0	0	0	0	0	0
Total Internal		0	0	0	0	0	0
Total Pass-by		0	0	0	0	0	0
Total Non-pass-by		2495	2495	255	125	139	259

(1) 1000 Sq. Ft. GFA

PERIOD SETTING							
Analysis Name :	Weekday		No :				
Project Name :	Total NCH Downtown		City:				
Date:	11/21/2023		Zip/Postal Code:				
State/Province:			Client Name:				
Country:			Edition:	Trip Generation Manual, 11th Ed			
Analyst's Name:							

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	463.37	Weekday	Average 10.77	2495 50%	2495 50%	4990

PERIOD SETTING																							
Analysis Name :	AM Peak Hour																						
Project Name :	Total NCH Downtown	No :																					
Date:	11/21/2023	City:																					
State/Province:		Zip/Postal Code:																					
Country:		Client Name:																					
Analyst's Name:		Edition:	Trip Generation Manual, 11th Ed																				
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Land Use</th> <th style="text-align: left;">Independent Variable</th> <th style="text-align: left;">Size</th> <th style="text-align: left;">Time Period</th> <th style="text-align: left;">Method</th> <th style="text-align: right;">Entry</th> <th style="text-align: right;">Exit</th> <th style="text-align: right;">Total</th> </tr> </thead> <tbody> <tr> <td>610 - Hospital (General Urban/Suburban)</td> <td>1000 Sq. Ft. GFA</td> <td>463.37</td> <td>Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.</td> <td>Average 0.82</td> <td style="text-align: right;">255 67%</td> <td style="text-align: right;">125 33%</td> <td style="text-align: right;">380</td> </tr> </tbody> </table>								Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total	610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	463.37	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.82	255 67%	125 33%	380
Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total																
610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	463.37	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.82	255 67%	125 33%	380																

PERIOD SETTING																							
Analysis Name :	PM Peak Hour																						
Project Name :	Total NCH Downtown	No :																					
Date:	11/21/2023	City:																					
State/Province:		Zip/Postal Code:																					
Country:		Client Name:																					
Analyst's Name:		Edition:	Trip Generation Manual, 11th Ed																				
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Land Use</th> <th style="text-align: left;">Independent Variable</th> <th style="text-align: left;">Size</th> <th style="text-align: left;">Time Period</th> <th style="text-align: left;">Method</th> <th style="text-align: right;">Entry</th> <th style="text-align: right;">Exit</th> <th style="text-align: right;">Total</th> </tr> </thead> <tbody> <tr> <td>610 - Hospital (General Urban/Suburban)</td> <td>1000 Sq. Ft. GFA</td> <td>463.37</td> <td>Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.</td> <td>Average 0.86</td> <td style="text-align: right;">139 35%</td> <td style="text-align: right;">259 65%</td> <td style="text-align: right;">398</td> </tr> </tbody> </table>								Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total	610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	463.37	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.86	139 35%	259 65%	398
Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total																
610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	463.37	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.86	139 35%	259 65%	398																

Appendix D:

City of Naples – Peak Season Traffic Counts

Two-way Volumes (Vehicles Per Day) For collector streets Arterials. In the City Of Naples

TRAFFIC COUNT STATION NUMBER	ARTERIAL OR COLLECTOR STREET	MAR. 2012	1ST QTR PEAK HOUR	JUN. 2012	2ND QTR PEAK HOUR	SEPT. 2012	3RD QTR PEAK HOUR	DEC. 2012	4TH QTR PEAK HOUR	MAXIMUM 2012	2012 PEAK HOUR	LOS C PEAK HOUR	VOL/CAP RATIO	LOS
8	GOLDEN GATE PKWY (CR 886)	23,669	1,958	15,954	1,306	16,394	1,419	23,633	1,951	23,669	1,958	4,870	0.40	C
10	GOODLETTE ROAD (CR 851)	32,618	3,305	21,170	2,239	21,106	2,149	30,217	3,052	32,618	3,305	5,680	0.58	C
15	US 41 (N OF CR 886)	46,424	3,864	31,705	2,631	27,681	2,339	39,488	3,557	46,424	3,864	5,190	0.74	C
16	US 41 (S OF CR 886)	46,040	3,741	30,741	2,450	30,026	2,552	38,323	3,285	46,040	3,741	5,190	0.72	C
19	US 41 (6 AV N7 AV N)	42,593	3,476	28,009	2,274	26,055	2,072	34,980	2,989	42,593	3,476	5,420	0.64	C
23	US 41 (W OF CR 851)	46,956	3,737	30,500	2,449	28,978	2,431	34,752	3,070	46,956	3,737	5,420	0.69	C
24	US 41 (E OF CR 851)	65,711	5,523	43,560	3,508	42,345	3,476	49,961	4,397	65,711	5,523	6,300	0.88	C
30	PARKSHORE DRIVE	16,397	1,447	7,445	673	7,164	751	9,738	943	16,397	1,447	1,660	0.87	C
34	GULFSHORE BLVD N	5,902	546	2,360	216	2,233	236	3,126	338	5,902	546	1,760	0.31	B
37	HARBOUR DRIVE	6,161	578	3,583	431	3,615	328	4,760	404	6,161	578	1,660	0.35	B
38	CREECH ROAD	1,039	117	921	86	950	92	1,021	95	1,039	117	1,570	0.07	A
39	MOORING LINE DRIVE	8,381	783	3,838	338	3,302	300	6,875	618	8,381	783	1,660	0.47	C
40	CRAYTON ROAD	8,718	821	3,562	338	3,441	334	5,922	576	8,718	821	1,320	0.62	C
43	22ND AVENUE NORTH	3,503	393	2,319	216	2,319	216	3,259	331	3,503	393	1,570	0.25	B
44	ORCHID DRIVE	4,034	367	2,281	206	2,478	235	3,457	324	4,034	367	1,570	0.23	B
45	FLEISCHMANN BLVD	5,873	614	3,792	394	3,655	389	5,480	594	5,873	614	1,240	0.50	C
48	GULFSHORE BLVD	7,716	782	3,473	313	2,241	288	4,762	453	7,716	782	1,960	0.40	C
49	BANYAN BLVD	3,594	353	2,054	222	1,508	162	1,837	198	3,594	353	1,570	0.22	A
55	7TH AVENUE NORTH	4,298	439	3,616	345	3,594	341	4,323	412	4,323	412	1,080	0.38	B
56	10TH STREET	3,113	372	2,294	257	2,274	272	3,050	352	3,113	372	1,320	0.28	B
57	5TH AVENUE NORTH	3,886	375	3,058	291	2,892	268	3,310	315	3,886	375	1,080	0.35	B
62	CENTRAL AVENUE	7,040	750	4,849	515	4,683	494	5,454	542	7,040	750	1,960	0.38	B
63	8TH STREET	4,652	461	3,026	337	2,887	272	3,889	406	4,652	461	1,080	0.43	C
64	3RD AVENUE SOUTH	8,141	1,004	4,201	465	3,893	459	5,726	614	8,141	1,004	1,570	0.64	C
70	5TH AVENUE SOUTH	11,021	881	7,123	603	6,468	550	8,780	678	11,021	881	1,090	0.81	C
72	9TH STREET	9,219	827	5,890	515	6,766	548	7,390	697	9,219	827	1,570	0.53	C
76	BROAD AVENUE SOUTH	6,640	622	4,259	374	1,417	165	5,378	497	6,640	622	1,080	0.58	C
77	3RD STREET	5,758	493	3,843	303	3,836	312	4,963	420	5,758	493	1,320	0.37	B
79	GORDON DRIVE	8,402	801	6,015	609	5,786	543	7,400	720	8,402	801	1,570	0.51	C
83	SANDPIPER ST	6,806	580	4,863	409	10,010	1,140	5,787	488	6,806	580	1,570	0.37	B
85	GULFSHORE BLVD SO	5,477	567	2,627	263	2,337	208	3,208	326	5,477	567	1,420	0.40	C
86	4TH AVENUE NORTH	6,833	630	4,858	446	5,007	446	5,958	561	6,833	630	1,570	0.40	C
89	NEAPOLITAN WAY	7,558	731	4,880	429	4,837	435	5,818	556	7,558	731	1,960	0.37	B
91	WEST RD	4,491	481	2,114	200	2,143	233	3,190	366	4,491	481	1,570	0.31	B

Two-way Volumes (Vehicles Per Day) For collector streets Arterials. In the City Of Naples

TRAFFIC COUNT STATION NUMBER	ARTERIAL OR COLLECTOR STREET	MAR. 2023	1ST QTR PEAK HOUR	JUN. 2023	2ND QTR PEAK HOUR	SEPT. 2023	3RD QTR PEAK HOUR	DEC. 2023	4TH QTR PEAK HOUR	MAXIMUM 2023	2023 PEAK HOUR
8	GOLDEN GATE PKWY (CR 886)	23,087	1,885								
10	GOODLETTE ROAD (CR 851)	43,068	3,524								
11	Goodlette & Central Ave	32,858	2,670								
14	US 41 & Neapolitan Way	54,828	4,055								
15	US 41 (N OF CR 886)	43,162	3,519								
16	US 41 (S OF CR 886)	42,040	3,336								
19	US 41 (6 AV N/7 AV N)	37,599	3,207								
23	US 41 (W OF CR 851)	46,537	3,849								
24	US 41 (E OF CR 851)	64,911	5,456								
30	PARKSHORE DRIVE	15,104	1,325								
34	GULFSHORE BLVD N	4,524	448								
37	HARBOUR DRIVE	5,912	519								
38	CREECH ROAD	1,064	106								
39	MOORING LINE DRIVE	6,006	623								
40	CRAYTON ROAD	7,230	743								
43	22ND AVENUE NORTH	3,219	313								
44	ORCHID DRIVE	4,242	421								
45	FLEISCHMANN BLVD	5,052	612								
47	Anchor Rode Dr west of US41	NA	NA								
48	GULFSHORE BLVD	5,717	576								
49	BANYAN BLVD	2,774	275								
53	South Golf Dr west of US41	NA	NA								
54	7th Ave N / US41 & 8th St	NA	NA								
55	7TH AVENUE NORTH	4,452	465								
56	10TH STREET	3,048	306								
57	5TH AVENUE NORTH	3,736	352								
62	CENTRAL AVENUE	3,454	662								
63	8TH STREET	3,510	340								
64	3RD AVENUE SOUTH	8,945	857								
70	5TH AVENUE SOUTH	9,311	720								
71	10th St S, south of 5th Ave S.	13,486	1,051								
72	9TH STREET	8,964	792								
76	BROAD AVENUE SOUTH	7,822	618								

Two-way Volumes (Vehicles Per Day) For collector streets Arterials. In the City Of Naples

77	3RD STREET	5,321	472								
78	2nd St S btw 1st & 2nd Ave S.	3,522	345								
79	GORDON DRIVE	11,223	1,377								
83	SANDPIPER ST	24,788	1,849								
85	GULFSHORE BLVD SO	4,797	529								
86	4TH AVENUE NORTH	6,880	593								
87	Old Trail Dr. west of US41	4,756	497								
89	NEAPOLITAN WAY	8,140	777								
90	Crayton Rd, S of Seagate Dr	10,137	1,467								
91	WEST BLVD	3,829	444								

Appendix E:
April 2023 Collected Traffic Counts

Type of report: Tube Count - Volume Data											
QC JOB #: 16164309 DIRECTION: EB, WB DATE: Apr 18 2023 - Apr 20 2023											
LOCATION: 4th Ave N btwn 7th St N & 8th St N CITY/STATE: Naples, FL											
Start Time	Mon 18 Apr 23	Tue 19 Apr 23	Wed 20 Apr 23	Thu 20 Apr 23	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile	
12:00 AM	7	10	11			9			9		
01:00 AM	3	2	3			3			3		
02:00 AM	2	3	2			2			2		
03:00 AM	5	1	1			2			2		
04:00 AM	5	8	5			6			6		
05:00 AM	28	25	42			32			32		
06:00 AM	98	103	102			101			101		
07:00 AM	197	182	181			187			187		
08:00 AM	326	280	311			306			306		
09:00 AM	309	303	321			311			311		
10:00 AM	310	330	334			325			325		
11:00 AM	370	346	342			353			353		
12:00 PM	372	327	326			342			342		
01:00 PM	365	380	347			364			364		
02:00 PM	345	349	332			342			342		
03:00 PM	383	373	386			381			381		
04:00 PM	352	322	317			330			330		
05:00 PM	278	226	261			255			255		
06:00 PM	217	251	199			222			222		
07:00 PM	193	166	153			171			171		
08:00 PM	121	145	124			130			130		
09:00 PM	83	79	66			76			76		
10:00 PM	43	37	34			38			38		
11:00 PM	21	14	18			18			18		
Day Total	4433	4262	4218			4306			4306		
% Weekday Average	102.9%	99%	98%								
% Week Average	102.9%	99%	98%			100%					
AM Peak Volume	11:00 AM 370	11:00 AM 346	11:00 AM 342			11:00 AM 353			11:00 AM 353		
PM Peak Volume	3:00 PM 383	1:00 PM 380	3:00 PM 386			3:00 PM 381			3:00 PM 381		
Comments:											
Report generated on 4/24/2023 8:11 AM											
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)											

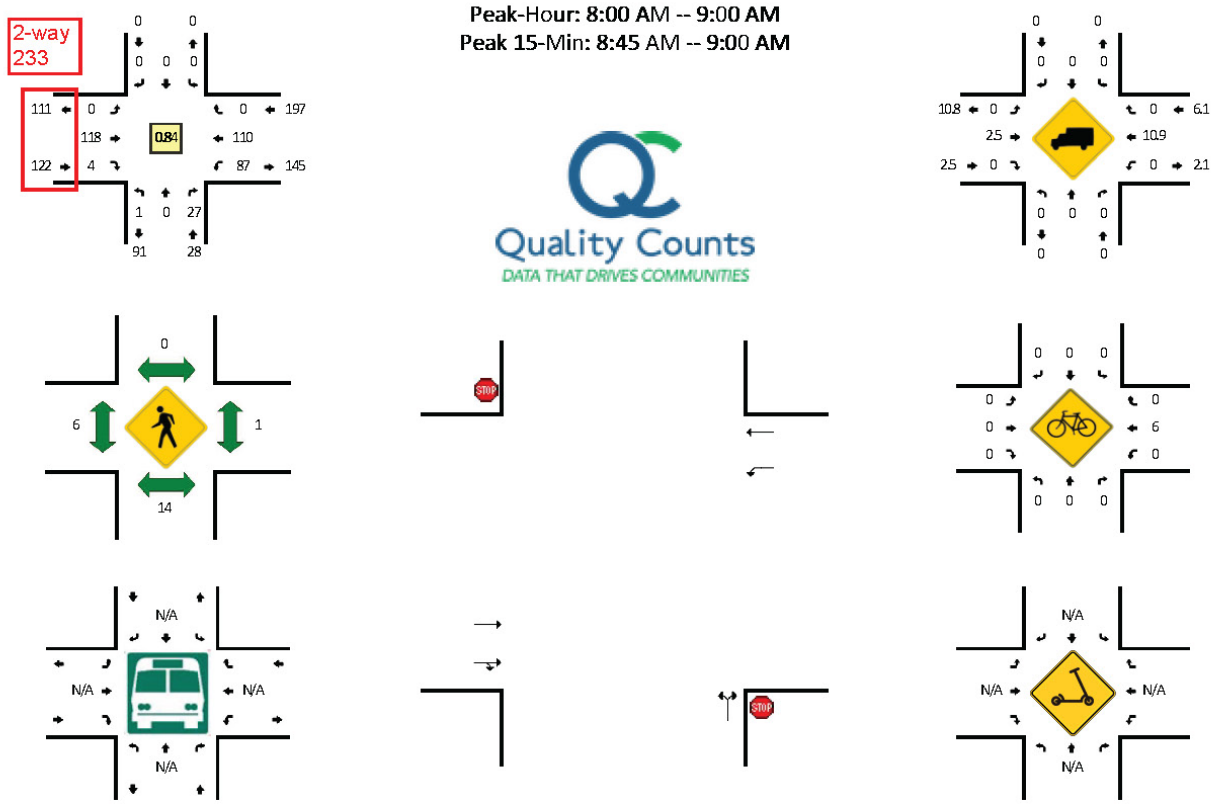
Type of report: Tube Count - Volume Data									
QC JOB #: 16164310 DIRECTION: EB, WB DATE: Apr 18 2023 - Apr 20 2023									
LOCATION: 2nd Ave N btwn 7th St N & 8th St N SPECIFIC LOCATION: CITY/STATE: Naples, FL									
Start Time	Mon 18 Apr 23	Tue 19 Apr 23	Wed 20 Apr 23	Thu 20 Apr 23	Fri	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	2	4	2	2	3			3	
01:00 AM	1	1	0	0	1			1	
02:00 AM	0	0	0	0	0			0	
03:00 AM	2	0	0	0	1			1	
04:00 AM	1	2	2	2	2			2	
05:00 AM	9	18	16	16	14			14	
06:00 AM	60	63	64	64	62			62	
07:00 AM	98	112	119	119	110			110	
08:00 AM	107	120	120	120	116			116	
09:00 AM	135	115	129	129	126			126	
10:00 AM	118	102	106	106	109			109	
11:00 AM	141	130	134	134	135			135	
12:00 PM	132	132	122	122	129			129	
01:00 PM	131	131	133	133	132			132	
02:00 PM	139	111	129	129	126			126	
03:00 PM	142	121	112	112	125			125	
04:00 PM	108	122	106	106	112			112	
05:00 PM	106	100	123	123	110			110	
06:00 PM	83	83	58	58	75			75	
07:00 PM	66	46	37	37	50			50	
08:00 PM	36	26	24	24	29			29	
09:00 PM	15	10	8	8	11			11	
10:00 PM	7	10	4	4	7			7	
11:00 PM	7	8	8	8	8			8	
Day Total	1646	1567	1556	1556	1593			1593	
% Weekday Average	103.3%	98.4%	97.7%	97.7%	100%				
% Week Average	103.3%	98.4%	97.7%	97.7%	100%				
AM Peak Volume	11:00 AM 141	11:00 AM 130	11:00 AM 134	11:00 AM 134	11:00 AM 135			11:00 AM 135	
PM Peak Volume	3:00 PM 142	12:00 PM 132	1:00 PM 133	1:00 PM 133	1:00 PM 132			1:00 PM 132	
<i>Comments:</i>									
Report generated on 4/24/2023 8:11 AM									
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)									

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 7th St N -- 4th Ave N
 CITY/STATE: Naples, FL

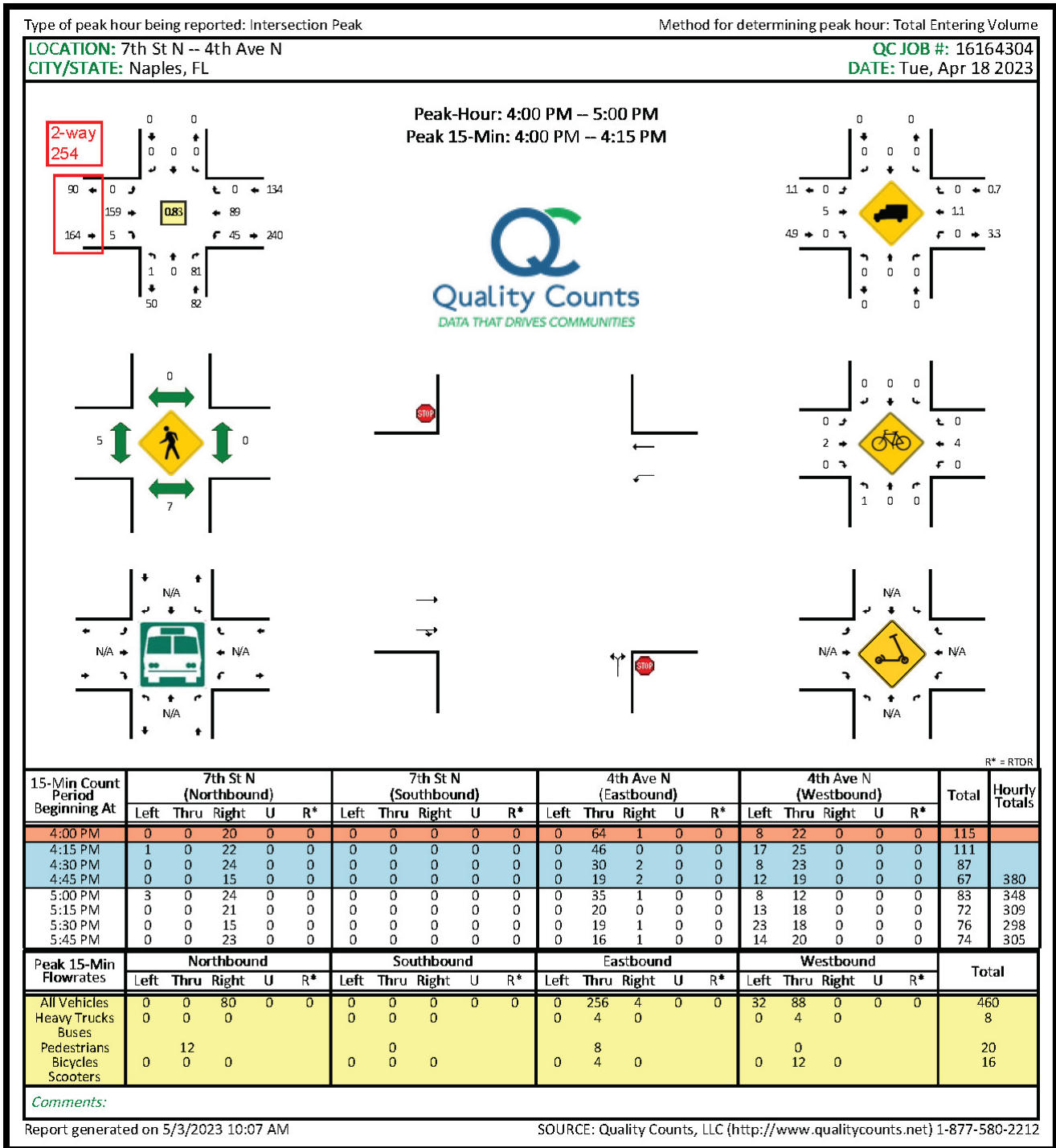
QC JOB #: 16164303
 DATE: Tue, Apr 18 2023

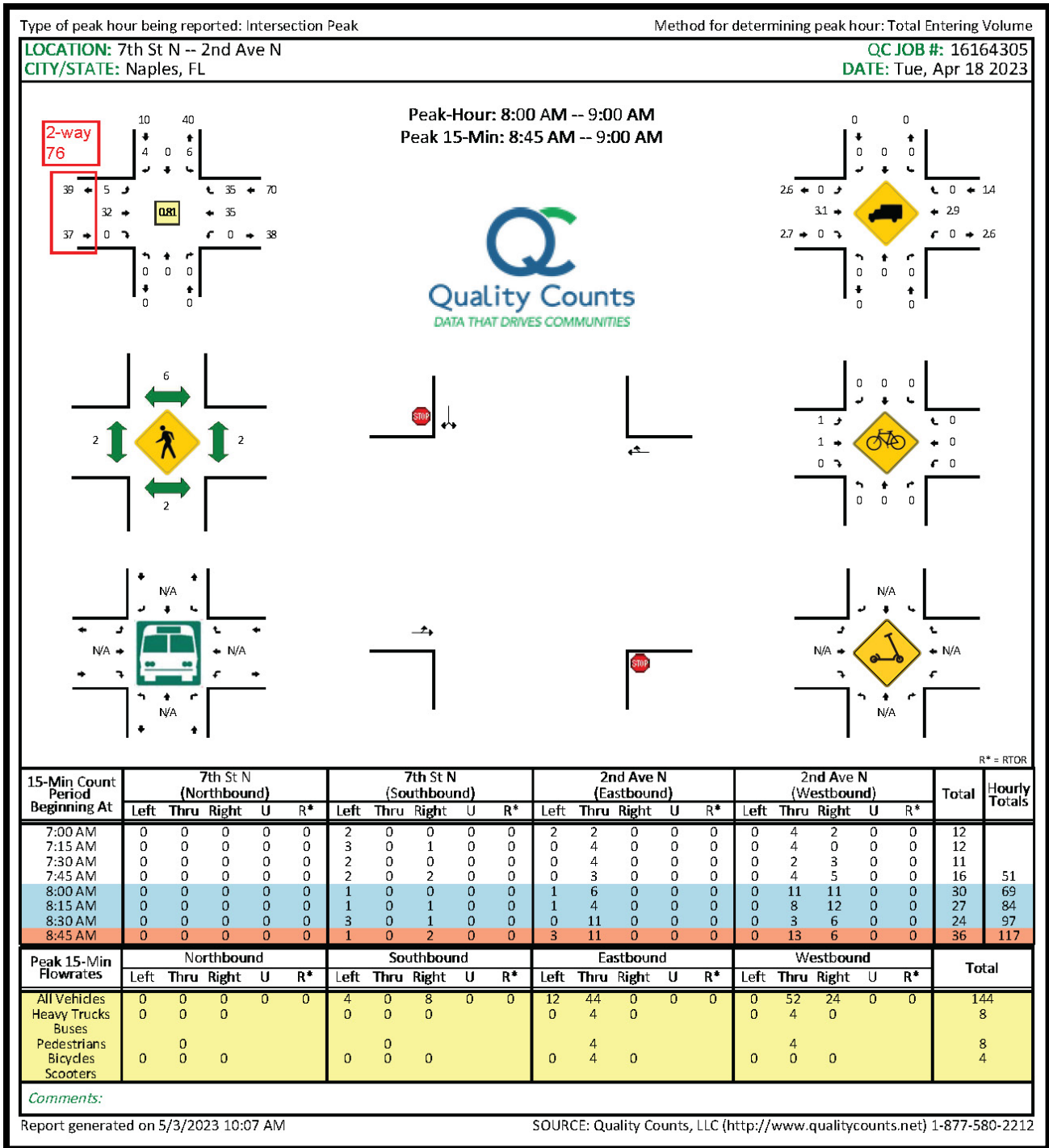


15-Min Count Period Beginning At	7th St N (Northbound)					7th St N (Southbound)					4th Ave N (Eastbound)					4th Ave N (Westbound)					Total	Hourly Totals	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*			
	7:00 AM	0	0	4	0	0	0	0	0	0	0	0	9	0	0	0	0	11	14	0			0
7:15 AM	0	0	6	0	0	0	0	0	0	0	0	6	2	0	0	0	16	25	0	0	0	55	
7:30 AM	0	0	4	0	0	0	0	0	0	0	0	17	0	0	0	0	20	23	0	0	0	64	
7:45 AM	0	0	5	0	0	0	0	0	0	0	0	19	1	0	0	0	20	16	0	0	0	61	218
8:00 AM	0	0	7	0	0	0	0	0	0	0	0	24	0	0	0	0	21	26	0	0	0	78	258
8:15 AM	0	0	9	0	0	0	0	0	0	0	0	21	1	0	0	0	17	33	0	0	0	81	284
8:30 AM	0	0	3	0	0	0	0	0	0	0	0	25	2	0	0	0	26	29	0	0	0	85	305
8:45 AM	1	0	8	0	0	0	0	0	0	0	0	48	1	0	0	0	23	22	0	0	0	103	347
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	0	32	0	0	0	0	0	0	0	0	192	4	0	0	0	92	88	0	0	0	412	
Heavy Trucks	0	0	0			0	0	0			0	8	0			0	12	0			20		
Buses																							
Pedestrians		28					0					0					0					28	
Bicycles	0	0	0			0	0	0			0	0	0			0	8	0			8		
Scoters																							

Comments:

Report generated on 5/3/2023 10:07 AM SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212



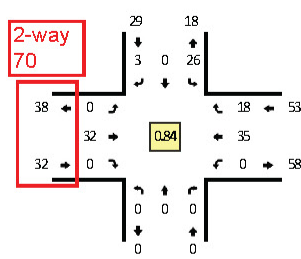


Type of peak hour being reported: Intersection Peak

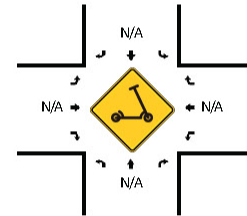
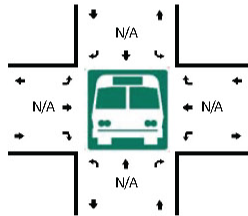
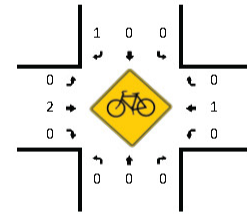
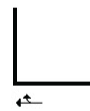
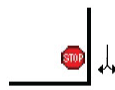
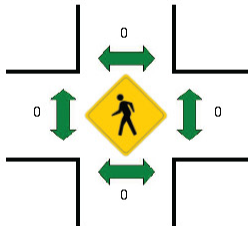
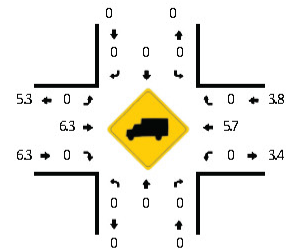
Method for determining peak hour: Total Entering Volume

LOCATION: 7th St N -- 2nd Ave N
 CITY/STATE: Naples, FL

QC JOB #: 16164306
 DATE: Tue, Apr 18 2023



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



R* = RTOR

15-Min Count Period Beginning At	7th St N (Northbound)					7th St N (Southbound)					2nd Ave N (Eastbound)					2nd Ave N (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	4	0	3	0	0	0	10	0	0	0	0	10	2	0	0	29	
4:15 PM	0	0	0	0	0	5	0	0	0	0	0	11	0	0	0	0	12	6	0	0	34	
4:30 PM	0	0	0	0	0	3	0	0	0	0	0	4	0	0	0	0	9	5	0	0	21	
4:45 PM	0	0	0	0	0	7	0	2	0	0	0	12	0	0	0	0	3	2	0	0	26	110
5:00 PM	0	0	0	0	0	11	0	1	0	0	0	5	0	0	0	0	11	5	0	0	33	114
5:15 PM	0	0	0	0	0	4	0	0	0	0	0	6	0	0	0	0	8	5	0	0	23	103
5:30 PM	0	0	0	0	0	8	0	1	0	0	1	4	0	0	0	0	4	5	0	0	23	105
5:45 PM	0	0	0	0	0	3	0	0	0	0	1	4	0	0	0	0	4	3	0	0	15	94
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	20	0	0	0	0	0	44	0	0	0	0	48	24	0	0	136	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	8	0	0	0	12	
Buses																						
Pedestrians			0					0					0					0			0	
Bicycles			0					0		4			0		0			0		0	4	
Scoters			0					0					0					0				

Comments:

Report generated on 5/3/2023 10:07 AM

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

2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 0300 COLLIER COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.90 PSCF
1	01/01/2022 - 01/01/2022	0.97	1.08
2	01/02/2022 - 01/08/2022	0.97	1.08
3	01/09/2022 - 01/15/2022	0.98	1.09
4	01/16/2022 - 01/22/2022	0.96	1.07
* 5	01/23/2022 - 01/29/2022	0.94	1.04
* 6	01/30/2022 - 02/05/2022	0.92	1.02
* 7	02/06/2022 - 02/12/2022	0.90	1.00
* 8	02/13/2022 - 02/19/2022	0.88	0.98
* 9	02/20/2022 - 02/26/2022	0.87	0.97
* 10	02/27/2022 - 03/05/2022	0.87	0.97
* 11	03/06/2022 - 03/12/2022	0.87	0.97
* 12	03/13/2022 - 03/19/2022	0.87	0.97
* 13	03/20/2022 - 03/26/2022	0.89	0.99
* 14	03/27/2022 - 04/02/2022	0.91	1.01
* 15	04/03/2022 - 04/09/2022	0.92	1.02
* 16	04/10/2022 - 04/16/2022	0.94	1.04
* 17	04/17/2022 - 04/23/2022	0.96	1.07
18	04/24/2022 - 04/30/2022	0.98	1.09
19	05/01/2022 - 05/07/2022	1.00	1.11
20	05/08/2022 - 05/14/2022	1.02	1.13
21	05/15/2022 - 05/21/2022	1.04	1.16
22	05/22/2022 - 05/28/2022	1.05	1.17
23	05/29/2022 - 06/04/2022	1.07	1.19
24	06/05/2022 - 06/11/2022	1.08	1.20
25	06/12/2022 - 06/18/2022	1.10	1.22
26	06/19/2022 - 06/25/2022	1.08	1.20
27	06/26/2022 - 07/02/2022	1.07	1.19
28	07/03/2022 - 07/09/2022	1.05	1.17
29	07/10/2022 - 07/16/2022	1.04	1.16
30	07/17/2022 - 07/23/2022	1.04	1.16
31	07/24/2022 - 07/30/2022	1.04	1.16
32	07/31/2022 - 08/06/2022	1.04	1.16
33	08/07/2022 - 08/13/2022	1.04	1.16
34	08/14/2022 - 08/20/2022	1.04	1.16
35	08/21/2022 - 08/27/2022	1.06	1.18
36	08/28/2022 - 09/03/2022	1.08	1.20
37	09/04/2022 - 09/10/2022	1.10	1.22
38	09/11/2022 - 09/17/2022	1.12	1.24
39	09/18/2022 - 09/24/2022	1.11	1.23
40	09/25/2022 - 10/01/2022	1.10	1.22
41	10/02/2022 - 10/08/2022	1.09	1.21
42	10/09/2022 - 10/15/2022	1.08	1.20
43	10/16/2022 - 10/22/2022	1.06	1.18
44	10/23/2022 - 10/29/2022	1.05	1.17
45	10/30/2022 - 11/05/2022	1.03	1.14
46	11/06/2022 - 11/12/2022	1.01	1.12
47	11/13/2022 - 11/19/2022	1.00	1.11
48	11/20/2022 - 11/26/2022	0.99	1.10
49	11/27/2022 - 12/03/2022	0.98	1.09
50	12/04/2022 - 12/10/2022	0.97	1.08
51	12/11/2022 - 12/17/2022	0.97	1.08
52	12/18/2022 - 12/24/2022	0.97	1.08
53	12/25/2022 - 12/31/2022	0.98	1.09

* PEAK SEASON

23-FEB-2023 09:11:17

830UPD

1_0300_PKSEASON.TXT

Appendix F:

2021 FDOT District One – US 41 LOS

YEAR 2021 COLLIER COUNTY LEVEL OF SERVICE SPREADSHEET -

FDOT D1 TRAFFIC DATA

State Road No.	From	To	Existing Context Class	Functional Classification	Posted Speed	FDOT LOS Std.	County		City LOS Std.	Thru Lanes	Year 2021			Deficiency Determination
							LOS	Std.			Capacity	Peak Hour Two-Way Volume	LOS	
US 41	Guif Park Dr	Park Shore Dr/Cypress Woods Dr	C3C	Principal Arterial-other	45	D	E	E		6	5,660	3,875	C	
US 41	Park Shore Dr	12th Ave	C3C	Principal Arterial-other	45	D	E	E		6	5,660	3,410	C	
US 41	12th Ave	CR 851 (Goodlette Rd South)	C5	Principal Arterial-other	40	D	E	E		6	5,660	3,023	C	

Appendix G:
Project Traffic Turning Movements

