



TREBILCOCK
CONSULTING SOLUTIONS

Traffic Impact Statement

NCH Heart Vascular & Stroke Institute Expansion

City of Naples, Florida
4/28/2023

Prepared for:

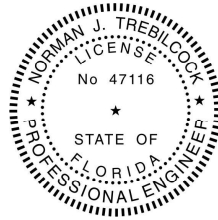
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Prepared by:

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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.



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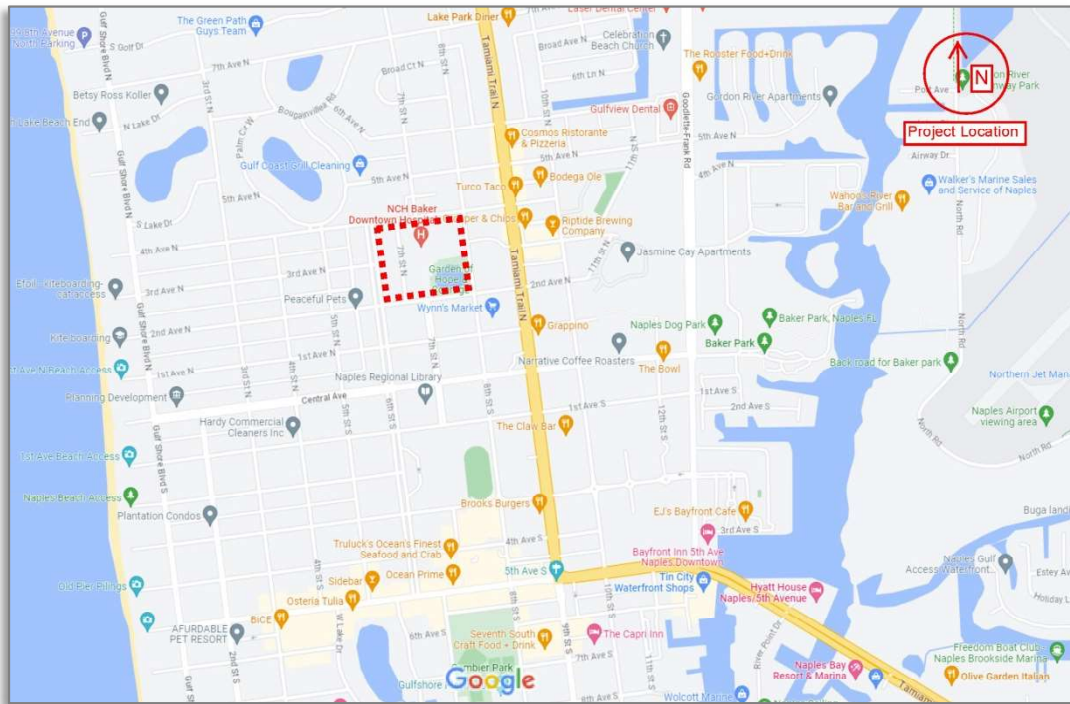
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Project Description

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 is currently occupied by NCH Baker Hospital which is a multi-story building with a total area of 273,898 square feet (sf) which includes the Emergency Room (ER) Department (49,772 sf) per data illustrated in the Traffic Impact Statement (TIS) prepared for NCH Emergency Department Addition, dated November 19, 2018.

The project proposes to demolish the existing Telford Education Building (also known as Briggs Pavilion) and to construct an 189,467 sf hospital expansion. Consistent with the data approved in the November 2018 TIS, the Telford Education Building was not included in the hospital building area. In addition, the subject application proposes to reconfigure the west Parking Lot to allow for a new Parking Garage.

It is noted that the subject site currently provides dedicated traffic accesses on 4th Avenue N associated with the ER Department: dedicated ambulance entrance and ER Department patient parking. As such, for the purposes of this report, the traffic generated by the ER Department is not considered.

The developer proposes to close the existing west Parking Lot access to 6th Street N and the existing access on 2nd Avenue N which currently services the Telford Education Building.

The existing and proposed site conditions are illustrated in **Appendix A**.

The purpose of this TIS is to document the transportation impacts associated with the proposed development.

The traffic report is in agreement with the latest adopted City of Naples Traffic Impact Study Requirements.

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.

The development program is illustrated in **Table 1**.

Table 1
Development Program

Development	Land Use	ITE Land Use Code	Total Size
Existing ⁽¹⁾	Hospital	#610 – Hospital	224,126 square feet
Proposed Expansion	Hospital	#610 – Hospital	189,467 square feet
Total			413,593 square feet

Note(s): (1) Excludes ER Department – 49,772 square feet.

For the purposes of this evaluation, the project build-out year is assumed to be consistent with the City of Naples 2025 planning horizon.

A methodology meeting was held with the City of Naples Transportation Planning staff on April 22, 2023. Refer to **Appendix B: Initial Meeting Checklist (Methodology Meeting)**.

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.

The site access operational analysis reflects weekday AM and PM peak hour traffic associated with the proposed hospital build-out parameters impacting the subject access (refer to **Table 2B**).

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	413,593 sf	4,454	227	112	339	125	231	356

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

Trip Distribution and Assignment

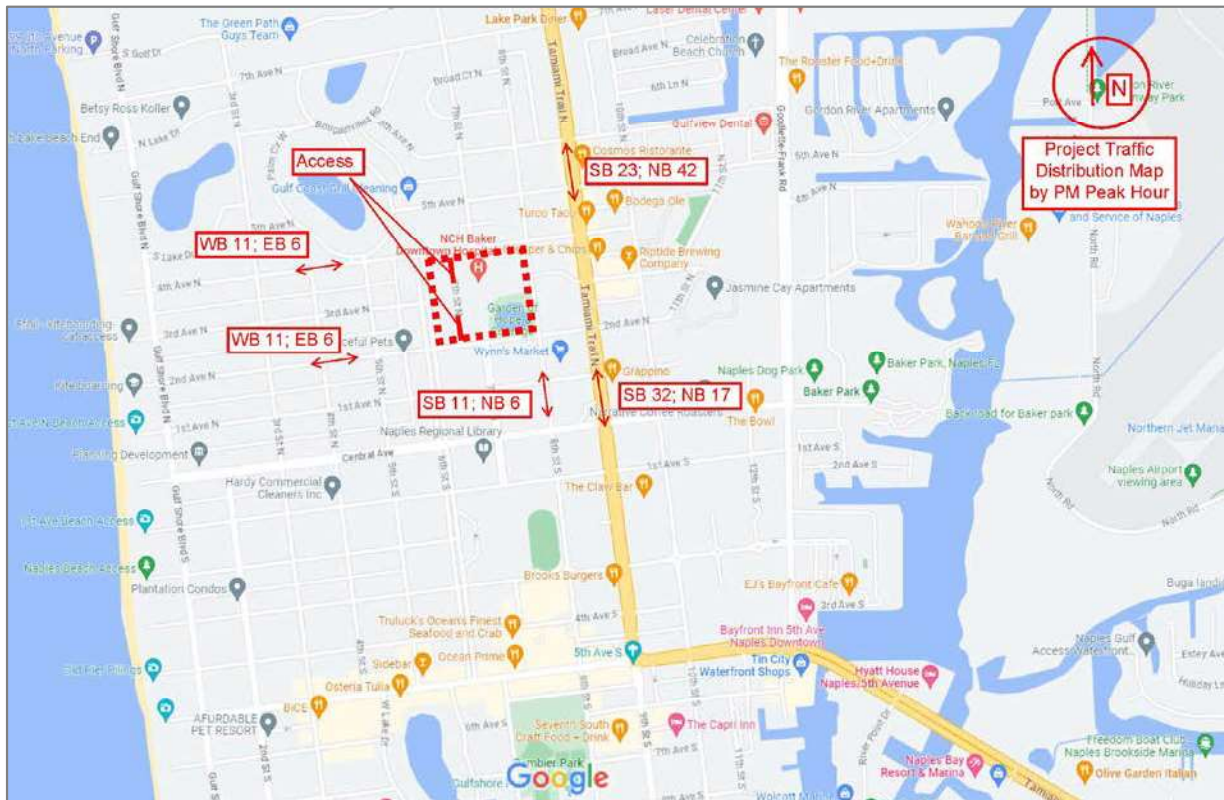
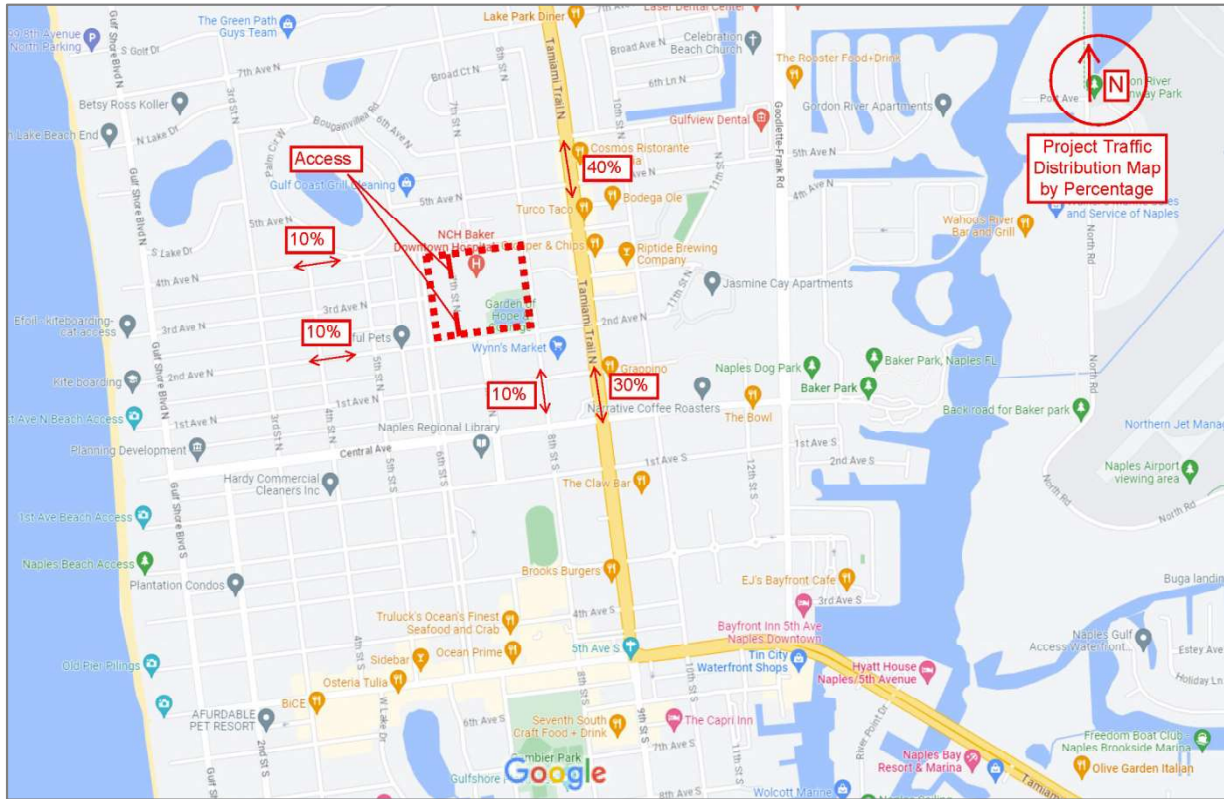
The traffic generated by the development is assigned to the adjacent roadways using the knowledge of the area and consistent with the transportation methodology meeting notes.

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	40%	23	42	65
US 41	South of 2 th Ave N	30%	17	32	49
4th Ave N	US 41 to Project	40%	23	42	65
4th Ave N	West of Project	10%	6	11	17
2nd Ave N	US 41 to Project	30%	17	32	49
2nd Ave N	West of Project	10%	6	11	17
8th St N	South of 2 nd Ave N	10%	6	11	17

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 particular 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 2% minimum.

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%	2.0%
US 41	South of 2 th Ave N	23	(2012)/3,737	(2023)/3,849	0.3%	2.0%

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

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

Year 2025 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 2025.

Table 4B
Background Traffic without Project (2023 - 2025)

Roadway Link	Roadway Link Location	2023 Pk Hr, Two-Way Background Traffic Volume ⁽¹⁾	Projected Traffic Annual Growth Rate	Growth Factor ⁽²⁾	2025 Projected Pk Hr, Two-Way Background Traffic Volume w/out Project ⁽³⁾
US 41	North of 4 th Ave N	3,849	2.0%	1.0404	4,005
US 41	South of 2 th Ave N	3,849	2.0%	1.0404	4,005
4 th Ave N	US 41 to Project	593	1.0%	1.0201	605
4 th Ave N	West of Project	352 ⁽⁴⁾	1.0%	1.0201	359
2 nd Ave N	US 41 to Project	352 ⁽⁴⁾	1.0%	1.0201	359
2 nd Ave N	West of Project	352 ⁽⁴⁾	1.0%	1.0201	359
8 th St N	South of 2 nd Ave N	340	1.0%	1.0201	347

Note(s): (1) City of Naples Traffic Counts – Year 2023.

(2) Growth Factor = (1+Annual Growth Rate)².

(3) 2025 Projected Volume = 2023 Peak Hour Background Traffic Volume x Growth Factor.

(4) 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 E**).

Roadway improvements that are currently under construction or are scheduled to be constructed within the five-year Capital Improvement Program (CIP) are considered to be 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	2025 Roadway Conditions	2025 LOS Capacity Standard	2025 Peak Hour Capacity Vol
US 41 ⁽¹⁾	North of 4 th Ave N	6D	D ⁽¹⁾	5,660	6D	D ⁽¹⁾	5,660
US 41 ⁽¹⁾	South of 2 th Ave N	6D	D ⁽¹⁾	5,660	6D	D ⁽¹⁾	5,660
4 th Ave N	US 41 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 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⁾
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; 6D = 6-lane divided roadway; LOS = Level of Service.

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

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

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 2025.

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 2025

Roadway Link	Roadway Link Location	2025 Peak Hour Capacity Volume	Project Peak Hour Two-Way (Volume Added) ⁽¹⁾	2025 Peak Hour Volume w/Project ⁽²⁾	% 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	65	4,070	1.1%	1,590	No	No
US 41	South of 2 th Ave N	5,660	49	4,054	0.9%	1,606	No	No
4 th Ave N	US 41 to Project	1,570	65	670	4.1%	900	No	No
4 th Ave N ⁽³⁾	West of Project	1,080	17	376	1.6%	704	No	No
2 nd Ave N ⁽³⁾	US 41 to Project	1,080	49	408	4.5%	672	No	No
2 nd Ave N ⁽³⁾	West of Project	1,080	17	376	1.6%	704	No	No
8 th St N	South of 2 nd Ave N	1,080	17	364	1.6%	716	No	No

Note(s): (1) Refer to **Figure 3** from this report.

(2) 2025 Projected Volume = 2025 Background Traffic (refer to **Table 4B**) + Project Volume added.

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

None of the analyzed roadway links are projected to operate below the adopted LOS standard with or without the project under future 2025 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 was performed at the two main access points at the west Parking Lot during weekday AM and PM peak hour traffic conditions associated with the proposed hospital build-out parameters, as depicted in **Table 2B** and **Appendix C**.

The estimated project trips at the site access locations are depicted in **Appendix F: 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 F**, the estimated turn volumes coincident with the project build-out conditions are as follows:

- 4th Avenue N Access: 91 left turns; 23 right turns.
- 2nd Avenue N Access: 23 left turns; 91 right turns.

4th Avenue N Access

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 min/60 min) x 25 ft/veh x 91 veh = 76 feet (ft) use 75 ft

The existing westbound left-turn lane at this location is approximately 100 ft in length. 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. Although warranted based on County's criteria, turn lanes are not recommended based on engineering judgement.

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.

The right turn traffic operates under free flow conditions. Per FDOT Design Manual Section 214.5 (Driveways – Right turn lanes), “exclusive right-turn lanes at unsignalized driveways can be used to reduce rear-end collisions, increase capacity, and reduce differentials in speed. Consider right-turn lanes into driveways with high peak hour right-turn volumes on high-speed roadways.” 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. In addition, based on its current functional classification and geometry, increased traffic capacity is not projected for this roadway. Congestion on the roadway may also be a good reason to use an exclusive right-turn lane. Based on our knowledge of the existing traffic characteristics on 2nd Avenue N, the traffic is not congested at the project access location and not having the turn lane will help pace travel speeds in compliance with the roadway posted speed of 25 mph.

The turn lanes would also require additional roadway dedication which would impact the implementation of the proposed NCH Heart Vascular & Stroke Institute expansion along with a new Parking Garage to service the community.

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.

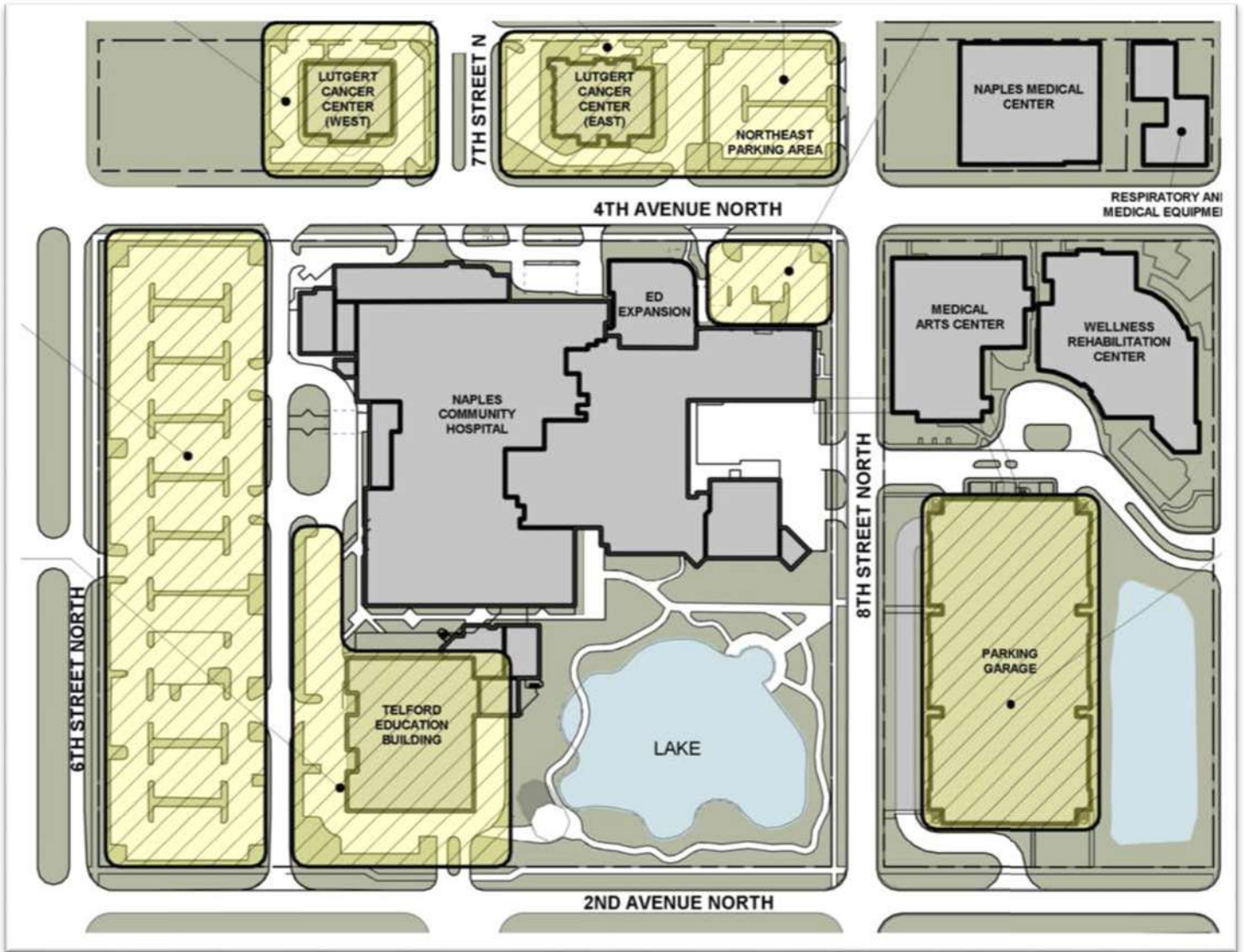
Based upon the results of the turn lane analysis performed within this report, turn lane improvements are not recommended at the project access locations.

Mitigation of Impact

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

Appendix A:
Project Site Plan

Site Existing 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 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.

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

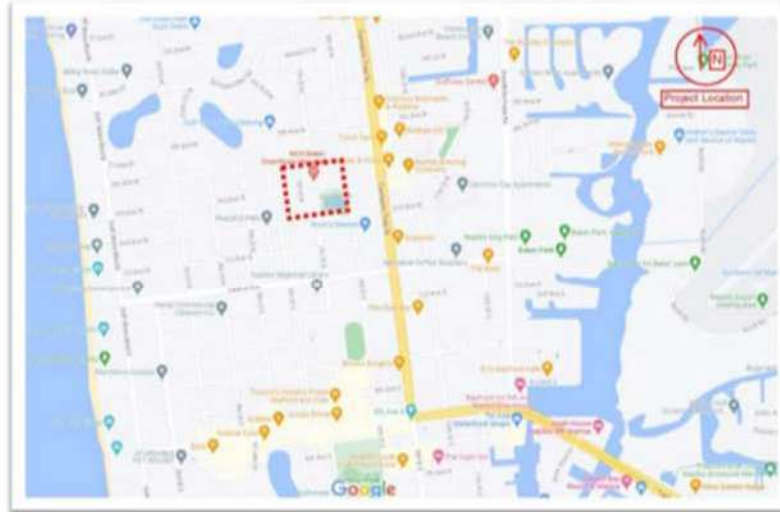
ITE Code #: 610 – Hospital

Description:

Existing Development– Baker Hospital – 273,898 square feet (sf) which includes ER Department – 49,722 sf; areas are consistent with data provided in the Traffic Impact Statement (TIS) prepared for NCH Emergency department Addition SDP, dated 11/19/2018.

Proposed Development – Hospital Expansion – 180,000 sf to replace the Telford Education Building (Briggs Pavilion); Reconfigure West Parking Lot to allow a new parking garage; 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.

Comprehensive plan recommendation: No Change

Requested: approval for new development

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 180,000 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: Existing 224,126 sf (excludes ER) + New Hospital Expansion 180,000 sf = 404,126 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: TBD.

Build Out Year: 2025

Horizon Year(s): 2025

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 2025

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

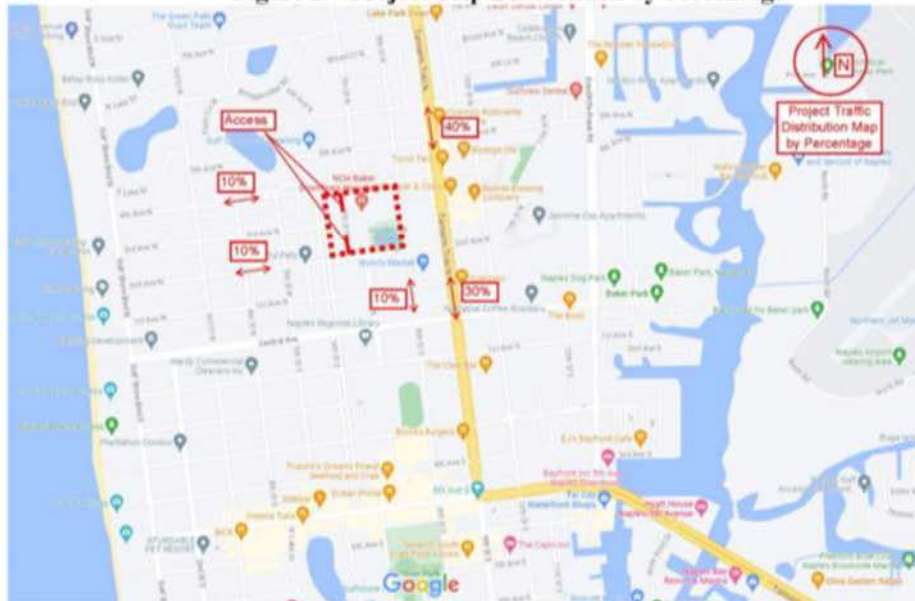
Trip distribution method: Engineer’s Estimate – refer to Figure 2

Traffic assignment method: project trip generation with background growth

Traffic growth rate: 1% for City streets, 2% minimum for Collier County or FDOT streets.

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

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

Reviewer(s)

Applicant

Appendix C:
ITE Trip Generation Calculations

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

Proposed Hospital Buildout

Project Information	
Project Name:	Total NCH Downtown - ER Excluded
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)	413.59 1000 Sq. Ft. GFA	2227	2227	227	112	125	231
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		2227	2227	227	112	125	231
Total		2227	2227	227	112	125	231
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		2227	2227	227	112	125	231

PERIOD SETTING																							
Analysis Name :	Weekday																						
Project Name :	Total NCH Downtown - ER Excluded	No :																					
Date:	4/27/2023	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>413.59</td> <td>Weekday</td> <td>Average 10.77</td> <td style="text-align: right;">2227 50%</td> <td style="text-align: right;">2227 50%</td> <td style="text-align: right;">4454</td> </tr> </tbody> </table>								Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total	610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	413.59	Weekday	Average 10.77	2227 50%	2227 50%	4454
Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total																
610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	413.59	Weekday	Average 10.77	2227 50%	2227 50%	4454																

PERIOD SETTING																							
Analysis Name :	AM Peak Hour																						
Project Name :	Total NCH Downtown - ER Excluded	No :																					
Date:	4/27/2023	City:																					
State/Province:		Zip/Postal Code:																					
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610 - Hospital (General Urban/Suburban)	1000 Sq. Ft. GFA	413.59	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.82	227 67%	112 33%	339																

PERIOD SETTING							
Analysis Name :	PM Peak Hour						
Project Name :	Total NCH Downtown - ER Excluded			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	413.59	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.86	125 35%	231 65%	356

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 2012	JUN. 2012	2ND QTR PEAK HOUR 2012	SEPT. 2012	3RD QTR PEAK HOUR 2012	DEC. 2012	4TH QTR PEAK HOUR 2012	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	5,880	0.58	C
15	US 41 (N OF CR 886)	48,424	3,864	31,705	2,631	27,681	2,339	39,498	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	1,780	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	6,488	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	6,840	622	4,259	374	1,417	165	5,378	497	6,840	622	1,080	0.58	C
77	3RD STREET	5,758	493	3,843	303	3,836	312	4,983	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:

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 LOS Std.	City LOS Std.	Thru Lanes	Year 2021			Deficiency Determination
										Capacity	Peak Hour Volume	Two-Way LOS	
US 41	Gulf 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 F:
Project Traffic Turning Movements

