

I-75 (SR 93) at US 301 (SR 43) Interchange Design-Build Project

MANATEE COUNTY, FLORIDA

Financial Project ID Nos.: 201032-5-52-01,
201032-5-56-01, and 201032-5-56-02

Federal Aid Project No.: D118 127 B
Contract No. E1R87
AEP No.: 104-0084-101



Final Noise Study Report Addendum Number 2

Prepared for:

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT ONE**

September 2021

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated December 14, 2016 and executed by the Federal Highway Administration (FHWA) and FDOT.

Table of Contents

1.0	Introduction.....	1-1
2.0	Methodology.....	2-1
3.0	Predicted Noise Levels and Abatement Analysis	3-1
4.0	References	4-1

List of Figures

Figure 3-1	Noise Analysis Map for Tidewater Preserve Subdivision	3-3
------------	---	-----

List of Tables

Table 2-1	Noise Abatement Criteria [Hourly A-Weighted Sound Level-decibels (dB(A))]	2-2
Table 3-1	Summary of Predicted Noise Levels for Common Noise Environment 5 (Tidewater Preserve Subdivision)	3-4
Table 3-2	Noise Barrier Analysis Results for Tidewater Preserve Subdivision - CNE 5 (South of the Manatee River and North of Lake Overlook Avenue)	3-5

Appendices

Appendix A	2018 Design Phase (RFP) Concept (Sheet 1 of 2) and 2021 Design Build Design Concept (Sheet 2 of 2)
Appendix B	Referenced Pages from 2018 Noise Study Report Addendum
Appendix C	Traffic Data for Noise Study
Appendix D	TNM Files (Provided Separately in Electronic Format)

1.0 Introduction

As part of Florida Department of Transportation's (FDOT) I-75 at US 301 Interchange Design-Build Project in Manatee County, a supplemental traffic noise analysis was performed. During the Design-Build Phase, an Alternative Technical Concept (ATC) to modify the design of the northbound off-ramp and southbound on-ramp was submitted by the Design Build Firm (Ajax-Leware-RS&H, Inc.) and subsequently approved by FDOT. Compared to the preliminary design concept (see Appendix A Sheet 1), the revised alignment of the northbound off-ramp (Ramp A1) in the vicinity of the Manatee River will shift towards the east ~30 to 40 feet and result in some traffic being closer to an adjacent residential community, Tidewater Preserve located east of I-75 and south of the Manatee River (see Appendix A Sheet 2). The purpose of this supplemental noise analysis was to determine if the proposed modifications to Ramp A1 by the Design-Build Firm (i.e., Ajax-Leware-RS&H, Inc.) would result in additional traffic noise impacts or changes to the previous noise barrier recommendations at the Tidewater Preserve subdivision presented in the project's Final Noise Study Report Addendum (NSRA) dated September 2018. The 2018 NSRA summarizes results and recommendations of the design phase noise analysis for the Interstate 75 (I-75) / State Road (SR) 93 project from University Parkway to north of Moccasin Wallow Road Project Development and Environment (PD&E) Study that was approved by the Federal Highway Administration (FHWA) on December 8, 2011. Figure 1-1, located at the end of Section 1, depicts the project location map from the 2018 NSRA. Appendix B includes select pages and figures from the 2018 NSRA. The following summarizes the results and recommendations of the 2018 NSRA for the Tidewater Preserve subdivision. The methodology utilized in the latest noise analysis is described in Section 2, and the results of the latest analysis of potential traffic noise impacts and abatement considerations associated with the proposed design changes are presented in Section 3.

The location of Tidewater Preserve subdivision and the general location of the representative noise sensitive receptors (i.e., Receptors 1 through 14) used to represent the residences in this community are shown in the Project Aerial Maps on Sheets 6 and 7 from the 2018 NSRA that have been included in Appendix B. The 14 receptors shown on Sheets 6 and 7 actually represent 21 representative noise sensitive receptors (i.e., 1 through 14b) that were used to represent 35 residences within the Tidewater Preserve subdivision potentially impacted by traffic noise associated with the project. Receptors 1 through 6 represent 1 residence each and receptors 8a through 14b represent 2 residences each. The noise sensitive receptors associated with Tidewater Preserve represented Common Noise Environment (CNE) 5 in the 2018 NSRA. Common Noise Environments represent a group of receptors within the same activity category found in Table 2-1 (see page 2-2) that are exposed to similar noise sources and levels; traffic volumes, traffic mix, speed, and topographic features. The predicted design year (2038) noise levels, the number of residential units represented, and whether these sites approach, meet, or exceed the Noise Abatement Criteria (NAC) are presented in Appendix B in the Predicted Traffic Noise Level Table for CNE 5 Tidewater Preserve Subdivision from Appendix D of the 2018 NSRA. Table 3-4 in Appendix B from the 2018 NSRA indicates that the predicted design year (2038) noise levels with the preliminary design concept ranged from 60.5 to 68.2 dB(A) and that six of the 21 receptors representing 11 residences were impacted (i.e., Receptors 1, 12b, 13a, 13b, 14a, and 14b). Subscripts "a" and "b" represent first floor and second floor receptors, respectively. The general locations of the impacted receptors are shown as red dots on Sheets 6 and 7 in Appendix B. Receptors 1, 12, 13, and 14 are shown as impacted by design year noise levels. As stated in Section 4.1.4 Tidewater Preserve of the 2018 NSRA, (see Appendix B) only those residences that received

building permits prior to the project's Date of Public Knowledge (December 8, 2011) were included in the 2018 noise analysis (see page 18 Appendix B). In accordance with FDOT's traffic noise policies and procedures, only residences receiving a building permit prior to the project's Date of Public Knowledge are considered for traffic noise abatement. Noise barriers were evaluated as a noise abatement measure for 10 impacted residences represented by Receptors 12b, 13a, 13b, 14a, and 14b located within the northern portion of Tidewater Preserve subdivision. A noise barrier was not evaluated for the impacted residence represented by Receptor 1 because it would not be feasible in accordance with the FDOT Noise Policy. The policy requires a benefit of 5 dB(A) reduction to a minimum of 2 impacted receptors. Since Receptor 1 is a single receptor, it would not meet the feasibility requirements of the policy. Noise barriers ranging in height between 8 and 22 feet within 10 feet of the eastern right-of-way line and a shoulder noise barrier ranging in height from 8 to 14 feet along the proposed outside shoulder of northbound off ramp to US 301, were evaluated as a noise abatement measure for these impacted residences. None of the conceptual noise barrier designs evaluated met FDOT's noise reduction design goal of 7 dB(A) due in part to the limited height of the shoulder barrier, the distance of the barrier from the impacted residences, and because the existing berm/wall combination limits the insertion loss provided by the noise barriers evaluated at this location. Based on the results of the barrier analysis, neither a right-of-way nor shoulder barrier was considered a reasonable noise abatement measure for the impacted residences in Tidewater Preserve. Therefore, a noise barrier for the residences in Tidewater Preserve was not recommended to be included in the design plans or planned to be constructed with the project.

Figure 1-1 Project Location Map



2.0 Methodology

The methodology used in this supplemental noise study is consistent with the 2018 Design Phase Noise Study and the requirements of the latest version of FDOT's PD&E Manual, Part 2, Chapter 18, *Highway Traffic Noise* (July 1, 2020), the FDOT's *Traffic Noise Modeling and Analysis Practitioners Handbook* (December 31, 2018), and in accordance with Title 23 of the Code of Federal Regulations, Part 772 (23 CFR 772), *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (July 13, 2010). The analysis involved: a) confirming noise sensitive receptor sites used in the 2018 Design Phase Noise Study for Tidewater Preserve Communities; b) the prediction of future design year noise levels with the proposed design changes; and c) the assessment of traffic noise impacts and re-evaluation of the reasonableness and feasibility of potential noise barrier(s) at the Tidewater Preserve subdivision. Consistent with the 2018 Design Phase Noise Study, the predicted noise levels represent the hourly equivalent sound level [Leq(h)]. Leq(h) is the steady-state sound level, which contains the same amount of acoustic energy as the actual time-varying sound level over a 1-hour period. Leq(h) is measured in A-weighted decibels [dB(A)], which closely approximate the human frequency response.

FHWA's most recent Traffic Noise Model (TNM), Version 2.5, (February 2004) was used to predict traffic noise levels. The TNM file from the 2018 Design Noise Study for the future build conditions in the vicinity of Tidewater Preserve subdivision was updated to reflect the latest project design concept/plans related to the northbound off-ramp (Ramp A1) to US 301 as reflected in Sheet 2 in Appendix A. The traffic data used in the 2018 Design Noise Study was also used in the current noise study and included in Appendix C. The TNM was previously validated as part of the I-75 Manatee County PD&E Study from north of University Parkway to north of Moccasin Wallow Road that was approved by the Federal Highway Administration (FHWA) on December 8, 2011. Therefore, no additional validation was warranted.

The FHWA has established Noise Abatement Criteria (NAC) for land use activity categories which are presented in Table 2-1. Maximum threshold levels, or criteria levels, have been established for five of the seven activity categories. These criteria determine when an impact occurs and when consideration of noise abatement is required. Noise abatement measures must be considered when predicted noise levels approach or exceed the NAC levels or when a substantial noise increase occurs. A substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 dB(A) or more as a result of the transportation improvement project. The FDOT defines "approach" as within 1.0 dB(A) of the FHWA criteria.

Determinations of whether or not a project substantially increases highway traffic noise typically occur in a project's PD&E phase. During the I-75 PD&E study for the ultimate improvement such a determination was made for the noise sensitive activities adjacent to I-75. For these uses, the PD&E analysis demonstrated that traffic noise levels would not increase substantially. Similar to the PD&E phase conceptual design for the ultimate improvement, the interim improvement will follow the existing alignment of I-75. Therefore, based on the highway traffic noise results from the project's PD&E phase for the ultimate improvements, the current design (i.e., the interim improvements) would not cause a substantial increase in traffic noise at any of the noise sensitive activities along I-75.

Table 2-1 Noise Abatement Criteria [Hourly A-Weighted Sound Level-decibels (dB(A))]

Activity Category	Activity Leq(h) ¹		Evaluation Location	Description of Activity Category
	FHWA	FDOT		
A	57	56	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ²	67	66	Exterior	Residential
C ²	67	66	Exterior	Active sports areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	51	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E ²	72	71	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-	-	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	-	-	-	Undeveloped lands that are not permitted.

(Based on Table 1 of 23 CFR Part 772)

¹ The Leq(h) Activity Criteria values are for impact determination only, and are not a design standard for noise abatement measures.

² Includes undeveloped lands permitted for this activity category.

Note: FDOT defines that a substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 decibels or more as a result of the transportation improvement project. When this occurs, the requirement for abatement consideration will be followed.

3.0 Predicted Noise Levels and Abatement Analysis

For consistency and to facilitate comparisons, the 14 representative receptor sites (i.e., 8a through 14b) for the residences within the Tidewater Preserve subdivision that were used in the 2018 Design Phase Noise Study/NSRA were also used in the current noise study. As summarized in Table 3-1 located at the end of **Section 3.0**, each of these representative receptors represent two residences. The locations of 14 representative receptors (i.e., 8a through 14b) are shown in Figure 3-1 located at the end of Section 3.0. Since the completion of the 2018 Design Phase Noise Study there have been new homes constructed within the Tidewater Preserve subdivision. Since none of the homes received a building permit before the Date of Public Knowledge (December 8, 2011), they were not analyzed per FDOT's noise policy.

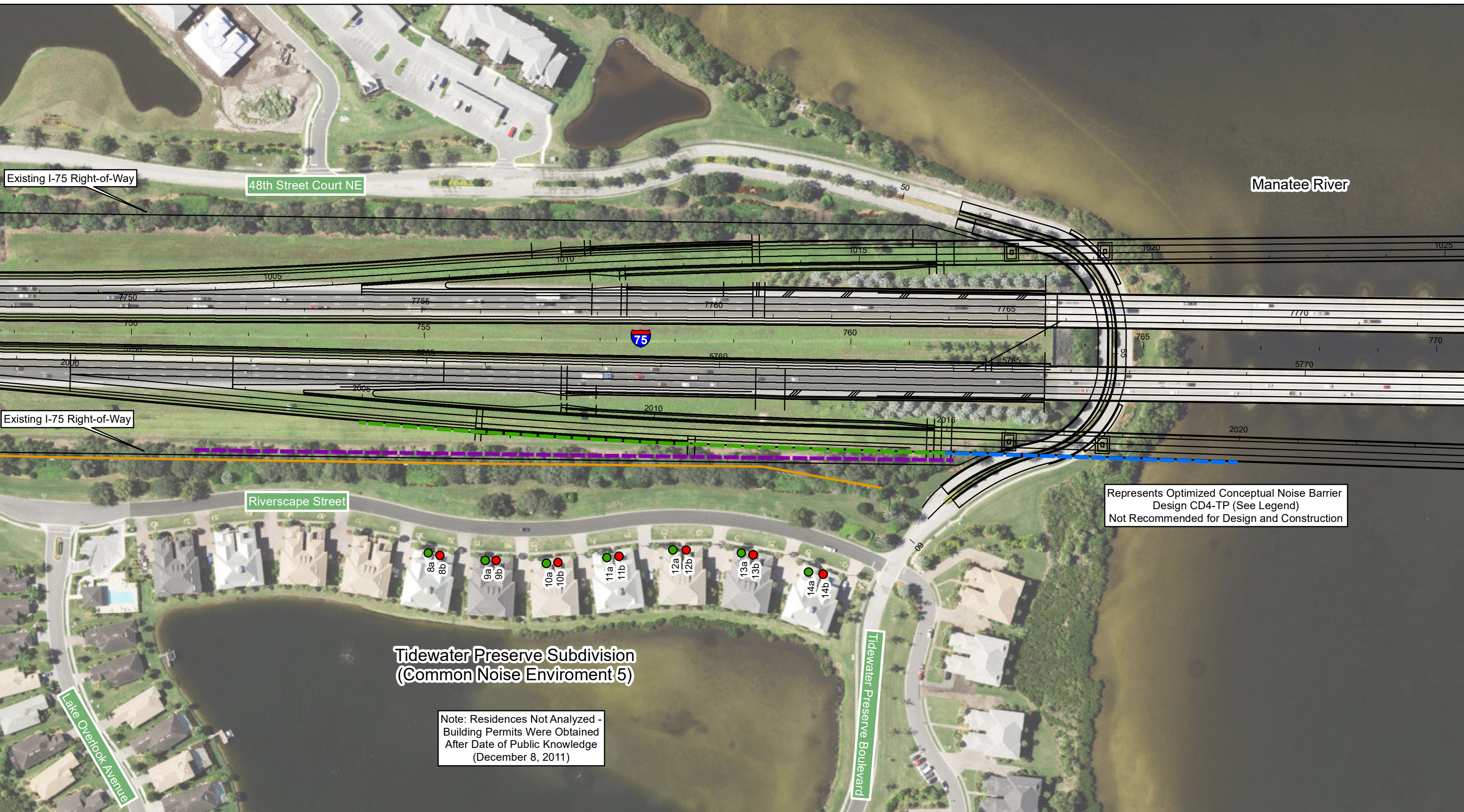
The predicted design year (2038) noise levels with the proposed re-design of the northbound off ramp to US 301 at the 14 Tidewater Preserve subdivision receptors are summarized in Table 3-1 and represent those for the 2021 Design Build Concept. For comparison purposes, Table 3-1 also includes the predicted noise levels from the 2018 Build Concept. For the 2021 Design Build Concept, the predicted design year noise levels at these receptors ranged from 63.7 dB(A) to 67.4 dB(A) with an average of 65.5 dB(A). This represents an average increase of 0.2 dB(A) from the 2018 Build Alternative that had a range of 62.6 dB(A) to 68.2 dB(A) with an average of 65.3 dB(A).

For the 2021 Design Build Concept, the predicted design year traffic noise levels at 14 of the residences (i.e., 11b through 14b) representing the second-floor balconies within the Tidewater Preserve subdivision approach [i.e., within 1 dB(A)], meet, or exceed the NAC of 67 dB(A) for residential land uses (i.e., Activity Categories B). This represents an increase of four impacted residences as compared to the 2018 Noise Study, that had 10 impacted sites at this location. Results differed between the 2018 Noise Study and this study. The differences are attributed to design changes in the horizontal and vertical geometry of the northbound off ramp to US 301, the location and the use of the 3-foot-tall concrete barrier walls versus guardrail, and the use of design survey of the existing berm/privacy wall.

Since there are still impacted residences within the Tidewater Preserve subdivision with the 2021 Design Build Concept, noise barriers were re-evaluated as a noise abatement measure at this location. Shoulder mounted and ground mounted, and a combination of shoulder mounted and ground mounted noise barriers were evaluated. Both types of noise barriers were evaluated to account for the elevational differences between the elevated segments of I-75 and the off-ramp to US 301. The results of the noise barrier analysis for this area (i.e., CNE 5) are summarized in Table 3-2 at the end of Section 3.0. Five conceptual noise barrier designs were evaluated to reduce traffic noise levels at the 14 impacted residences. None of the five conceptual noise barrier designs meet the minimum noise reduction design goal of 7 dB(A) for at least one impacted residence and the reasonable cost criteria of equal to or less than \$42,000 per benefited receptor site, consistent with the 2018 Noise Study.

Of the conceptual noise barrier designs evaluated, CD4-TP represents the optimal noise barrier design at this location. However, the conceptual design only benefits two impacted residences. Conceptual barrier design CD4-TP represents a combination of a 22-foot-tall ground mounted noise barrier, which extends 1,300 feet, from Station 2002+00 to 2015+00, a 14-foot-tall shoulder mounted noise barrier along the northbound off-ramp to US 301, which extends 1,000 feet from Station 2005+00 to 2015+00, and an 8-foot-tall structure mounted shoulder barrier along the off-ramp bridge, which extends 500 feet from Station 2015+00 to 2020+00. Per the FDOT Noise Policy, noise barriers on structures are limited to a height of 8 feet. For shoulder mounted noise barriers, the maximum height is 14 feet. For ground mounted barriers the height is limited to 22 feet. These requirements restricted the maximum heights evaluated to 8 feet, 14 feet and 22 feet at these locations. The estimated cost for CD4-TP is \$992,000 or \$496,000 per benefited receptor (see Figure 3-1). This substantially exceeds the reasonable cost criteria of \$42,000 per benefited receptor.

Consistent with the 2018 NSRA, noise barriers are not recommended at this location since the noise reduction design goal of 7 dB(A) was not met and the cost reasonable criteria was exceeded. The effectiveness of noise barriers at this location is minimized by the existing combination berm/privacy wall along I-75 located outside the FDOT right-of-way. The wall/berm combination will not be removed during construction and will remain in place, but the front slope of the berm will be slightly impacted by grading work necessary for construction of the project. A temporary construction easement (already obtained) will be required from the Tidewater property. The FDOT has acquired the right-of-way necessary for this project.



Existing I-75 Right-of-Way

48th Street Court NE

Manatee River

Existing I-75 Right-of-Way

Riverscape Street

Represents Optimized Conceptual Noise Barrier Design CD4-TP (See Legend) Not Recommended for Design and Construction


Tidewater Preserve Subdivision
(Common Noise Environment 5)

Note: Residences Not Analyzed - Building Permits Were Obtained After Date of Public Knowledge (December 8, 2011)

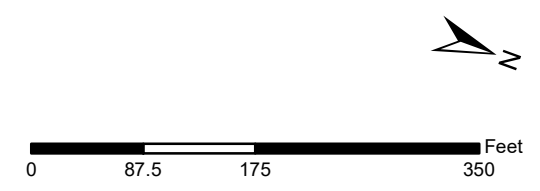
Lake Overlook Avenue

Tidewater Preserve Boulevard

I-75 / US 301 (SR 43) From North of SR 64 to North of US 301 (SR 43) Design Build Project
Noise Study Report Addendum No. 2
Manatee County, Florida
FPIDs: 201032-5-52-01, 201032-5-56-01 & 201032-5-56-02



- | | |
|------------------------------|---|
| Receptor Sites | Non Recommended Noise Barriers |
| ● < Noise Abatement Criteria | — 8-Foot Tall Shoulder Mounted |
| ● ≥ Noise Abatement Criteria | — 14-Foot Tall Shoulder Mounted |
| | — 22-Foot Tall Ground Mounted |
| | — Privacy Wall |
| | — Proposed Design Build Roadway Concept |



**FIGURE 3-1
NOISE ANALYSIS MAP
FOR TIDEWATER PRESERVE
SUBDIVISION**

July 2021

Table 3-1 Summary of Predicted Noise Levels for Common Noise Environment 5 (Tidewater Preserve Subdivision)

Location	Representative Noise Receptor Sites			2018 Design Noise Study - Predicted Noise Level for Build Alternative (Design Year 2038) [dB(A)]	2021 Design Build Noise Study - Predicted Noise Level for Build Alternative (Design Year 2038) [dB(A)]	Noise Abatement Criteria Status for Design Build Concept (Design Year 2038)	Difference (2018 Design Noise Study & 2021 Design Build Noise Study) dB(A)	Optimal Conceptual Barrier Design (CD4-TP) / Not Recommended for Design and Construction	
	Representative Noise Receptor Site Identification Number	Noise Abatement Activity Category (Description)	Number of Sites Represented					Design Build Concept Predicted Design Year (2038) Noise Level - With Noise Barrier [dB(A)]	Predicted Noise Reduction dB(A)
Common Noise Environment 5 (Tidewater Preserve Subdivision / East of I-75 and South of Manatee River	8a	B (Multi-Family Residential)	2	62.6	63.7	Below	1.1	60.6	3.1
	8b ¹	B (Multi-Family Residential)	2	65.2	66.9	Approaches	1.7	62.7	4.3
	9a	B (Multi-Family Residential)	2	62.9	63.7	Below	0.8	60.4	3.4
	9b ¹	B (Multi-Family Residential)	2	65.2	66.8	Approaches	1.6	62.5	4.7
	10a	B (Multi-Family Residential)	2	63.4	63.7	Below	0.3	60.5	3.4
	10b ¹	B (Multi-Family Residential)	2	65.4	66.9	Approaches	1.5	62.5	4.6
	11a	B (Multi-Family Residential)	2	63.8	63.8	Below	0.0	60.6	3.5
	11b ¹	B (Multi-Family Residential)	2	65.7	67.1	Exceeds	1.4	62.5	4.8
	12a	B (Multi-Family Residential)	2	64.7	63.9	Below	-0.8	60.8	3.6
	12b ¹	B (Multi-Family Residential)	2	66.2	67.2	Exceeds	1.0	62.6	5.1
	13a	B (Multi-Family Residential)	2	66.0	64.3	Below	-1.7	61.9	2.9
	13b ¹	B (Multi-Family Residential)	2	67.1	66.8	Approaches	-0.3	63.4	3.9
	14a	B (Multi-Family Residential)	2	67.3	65.2	Below	-2.1	63.6	2.2
	14b ¹	B (Multi-Family Residential)	2	68.2	67.4	Exceeds	-0.8	65.2	2.9
Minimum			62.6	63.7	---	-2.1	60.4	2.2	
Maximum			68.2	67.4	---	1.7	65.2	5.1	
Average			65.3	65.5	---	0.3	62.1	3.7	
Total Number of Sites Equal to or Greater than 66.0 dB(A)			10	14	---	---	0	---	
Total Number of Residential Dwelling Units Benefited			---	---	---	---	---	2	

X:\PI\20103255201 I-75 at US 301 D-B\emo\Noise Study\NSRA\Tables\Table_3-1_I-75@US_301_PNL_7-22-2021.xlsx\PNLs NSA A

Notes:

Blue Highlighted Cells Represent Predicted Noise Levels that Equal or Exceed 66 dB(A); Green Highlighted Cells Represent Noise Receptor Sites Benefited [i.e. will receive a noise reduction of at least 5.0 dB(A)].

¹ Second floor receptors, 15 feet above ground level

Table 3-2 Noise Barrier Analysis Results for Tidewater Preserve Subdivision - CNE 5 (South of the Manatee River and North of Lake Overlook Avenue)

Noise Barrier Descriptions						Noise Reduction at Impacted Receptors ¹			Number of Benefited Receptors ²			Average Reduction for Benefited Receptors dB(A)	Total Estimated Cost ³	Cost per Benefited Receptor ⁴	Meets FDOT's Reasonable Cost Criterion and Noise Reduction Design Goal	
Conceptual Barrier Design Number	Barrier Type	Height (Feet)	Length (Feet)	Begin Station	End Station	5 - 5.9 dB(A)	6 - 6.9 dB(A)	> 7 dB(A)	Impacted	Not Impacted	Total					
Number of Impacted Receptors = 14																
CD1-TP	Shoulder Mounted (Ramp/Bridge)	8	2,400	2002+00	2026+00	0	0	0	0	0	0	1.3	\$576,000	---	No ⁵	
CD2-TP	Shoulder Mounted (Ramp/Bridge)	8	1,300	2002+00	2015+00	0	0	0	0	0	0	3.2	\$774,000	---	No ⁵	
	Shoulder Mounted (Ramp/Bridge)	14	1,100	2015+00	2026+00											
CD3-TP	Ground Mounted	22	1,300	2002+00	2015+00	0	0	0	0	0	0	3.4	\$858,000	---	No ⁵	
CD4-TP ⁷	Shoulder Mounted (Ramp/Bridge)	8	500	2015+00	2020+00	2	0	0	0	0	2	5.1	\$992,000	\$496,000	No ⁶	
	Shoulder Mounted (Ramp/Bridge)	14	1,000	2005+00	2015+00											
	Ground Mounted	22	1,300	2002+00	2015+00											
CD5-TP	Shoulder Mounted (Ramp/Bridge)	8	1,100	2015+00	2026+00	2	0	0	0	0	2	5.1	\$1,140,200	\$570,100	No ⁶	
	Shoulder Mounted (Ramp/Bridge)	14	1,300	2002+00	2015+00											
	Ground Mounted	22	1,300	2002+00	2015+00											

X:\P20103255201 1-75 at US 301 D-BiemoNoise Study\NSRA\Tables\Table_3-2_CNE 5_1-75@US_301_InsertionLossSummary_9-1-2021 Revised per FDOT Comments.xlsx\CNE 5

Notes:

- ¹ Noise sensitive receptor sites with a predicted design year noise level of 66 dB(A) or greater.
- ² Noise sensitive receptor sites with a predicted reduction of five dB(A) or more are considered benefited.
- ³ Based on a unit cost of \$30 per square foot.
- ⁴ FDOT cost reasonable criterion is \$42,000 per benefited receptor.
- ⁵ Five dB(A) reduction and/or seven dB(A) reduction not achieved at any noise sensitive receptor site.
- ⁶ Receptors for these two options were able to achieve a five decibel reduction, but no the required 7 dB(A) design goal.
- ⁷ CD4-TP represents optimal conceptual barrier design; not recommended for design and construction.

4.0 References

23 CFR Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", Federal Register, Vol. 75, No. 133, Tuesday, July 13, 2010; pages 39834-39839.

Federal Highway Administration Report FHWA-HEP-10-025, "Highway Traffic Noise: Analysis and Abatement Guidance", June 2010 (revised December 2010); 76 pages.

Federal Highway Administration Report FHWA-PD-96-009, "FHWA Traffic Noise Model, Version 1.0 User's Guide", January 1998; 192 pages + supplements.

Federal Highway Administration Report FHWA-HEP-06-015, "FHWA Highway Construction Noise Handbook: Final Report". August 2006; 185 pages.

Florida Department of Transportation. "Highway Traffic Noise", Part 2, Chapter 18. Project Development and Environment Manual, Florida Department of Transportation, Tallahassee, July 1, 2020.

Florida Department of Transportation. "Design Manual, Topic No. 625-000-002", Part 2, Section 264, Noise Walls and Perimeter Walls, 2020.

Florida Department of Transportation "Standard Specifications for Road and Bridge Construction," 2021.

APPENDIX A

2018 Design Phase (RFP) Concept (Sheet 1 of 2) and

2021 Design Build Design Concept (Sheet 2 of 2)



Tidewater Preserve Subdivision (CNE 5)

I-75 at US-301 Interchange
 Design-Build
 FDOT District 1
 FPID: 201032-5-52-01 | Manatee County

RFP CONCEPT





Tidewater Preserve Subdivision (CNE 5)

I-75 at US-301 Interchange
 Design-Build
 FDOT District 1
 FPID: 201032-5-52-01 | Manatee County

CURRENT DESIGN
 DEDICATED RAMP BRIDGES



APPENDIX B

Referenced Pages from 2018 Noise Study Report Addendum

**Interstate 75 (I-75)/US 301 (SR 53)
Interchange Design
Final Noise Study Report Addendum**

**From North of SR 64 to North of US 301 (SR 53)
Manatee County, Florida**

Financial Project ID No: 201032-5-32-01

Florida Department of Transportation
District One



The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation pursuant to Section 327 of Title 23 of the United States Code (23 U.S.C. § 327) and a Memorandum of Understanding dated December 14, 2016 and executed by the Federal Highway Administration and the Florida Department of Transportation.

September 2018

3.2 Results of the Noise Analysis

Table 3-4 summarizes the predicted traffic noise levels for the evaluated receptors along I-75 and US 301. Predicted results for each evaluated receptor are provided in **Appendix D** of this NSRA. As stated previously, existing traffic noise levels were only evaluated for the noise sensitive land uses along US 301 that were not evaluated in the PD&E study.

Table 3-4
Summary of Predicted Traffic Noise Levels

Roadway	CNE ID	Land Use Activity	Activity Category / FDOT NAC	Predicted Leq(h) ¹			Number of Impacted Noise Sensitive Land Use Activities
				Existing	No Build	Build	
I-75	1	Hotel pools in the vicinity of SR 64 (Best Western and Days Inn)	E / 71 (Exterior)	N/A ³	N/A ³	57.9-63.3	0
	2	Residences in Manatee Palms	B / 66 (Exterior)	N/A ³	N/A ³	63.8-77.7	46
	3	Tom Bennett Park	C / 66 (Exterior)	N/A ³	N/A ³	66.7-68.7	1
	4	Residences in Winter Quarters Manatee RV Resort	B / 66 (Exterior)	N/A ³	N/A ³	64.7-75.2	195
	5	Residences in Tidewater Preserve	B / 66 (Exterior)	N/A ³	N/A ³	60.5-68.2	11
	6	Residences in The Yacht Club at Heritage Harbor Apartments	B / 66 (Exterior)	N/A ³	N/A ³	48.5-67.7	13
US 301	7	Residences in Tamiami Shores	B / 66 (Exterior)	62.3-66.3	62.4-66.7	63.4-67.9	10
	8 ²	Residences in Rocky Bluff Trailer Park	B / 66 (Exterior)	69.1-70.4	69.4-70.6	71.2-72.1	10
	9	Palm Grove Mobile Home Park	B / 66 (Exterior)	60.9-61.9	61.0-61.9	62.7-66.3	1
	10	Checker's Outdoor Dining Area	E / 71 (Exterior)	64.2	64.4	65.9	0
	11	Outdoor dining area at Ruby Tuesday	E / 71 (Exterior)	62.8	62.3	64.1	0
	12	Pool at Super 8 Motel	E / 71 (Exterior)	62.3	62.6	63.5	0
	13	Outdoor dining area at Anna Maria Oyster Bar	E / 71 (Exterior)	59.4	59.8	60.2	0
Total							287

¹ Expressed as dB(A).

² Highway traffic noise levels were not evaluated at the Sleep Inn & Suites (CNE 8) because the hotel is assumed to be acquired with the interim improvements to I-75.

³ Similar to the PD&E phase conceptual design for the ultimate improvement, the interim improvement will follow the existing alignment of I-75. Considering the results determined in the PD&E phase, the current design would not cause a substantial increase in traffic noise at any of the noise sensitive activities along I-75.

As shown in Table 3-4, along I-75 the predicted traffic noise levels in the design year with the planned improvements range from 48.5 to 77.7 dB(A) depending on the CNE with levels predicted to impact 267

FDOT's ability to construct a barrier, a barrier is considered to be both a feasible and reasonable traffic noise abatement measure to reduce predicted traffic noise at the residences within the Winter Quarters Manatee RV Resort.

Because the recommended noise barrier "passed" an engineering review, the benefited receptors/residences were solicited to determine support for, or opposition to, the Winter Quarters Manatee RV Resort barrier. The results of the public survey are presented in Section 5 (Community Coordination) of this NSRA.

4.1.4 CNE 5: Tidewater Preserve

Tidewater Preserve is located between Station 725 and Station 760 along the east side of I-75 (see Sheets 6 and 7 in Appendix C). An existing berm/wall combination approximately 10 feet in height is located between the residences and I-75. A noise barrier was evaluated 10 feet inside the FDOT ROW for the six impacted receptors (Receptors 1, 12b, 13a, 13b, 14a, and 14b) in Tidewater Preserve at heights from 8 to 22 feet. The six receptors represent 11 residences. Only those residences that received building permits prior to the project's DOPK (December 8, 2011) were included in this analysis.

A noise barrier was evaluated 10 feet inside the ROW at heights from 8 to 22 feet. Because the existing berm/wall combination limits the insertion loss (reduction in traffic noise) provided by the noise barrier, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the evaluated ROW barrier is not considered a reasonable noise abatement measure to reduce predicted traffic noise. A shoulder barrier, ranging in height from 8 to 14 feet was also evaluated. Because of the limited height of the shoulder barrier, the distance of the barrier from the impacted residences, and because the existing berm/wall combination limits the insertion loss provided by the noise barrier, the noise reduction design goal of 7 dB(A) could not be achieved at any of the shoulder barrier heights. Of note, a shoulder barrier was predicted to be a potentially feasible and reasonable noise abatement measure in the PD&E phase at this location with the ultimate improvement. In the PD&E phase analysis, the existing berm/wall combination was predicted to be within the proposed ROW and would have been removed. Without the berm/wall combination, a shoulder barrier would have potentially provided sufficient traffic noise reduction to be considered feasible.

Based on the results of the analysis, neither a ROW or shoulder barrier is considered a reasonable noise abatement measure with the interim improvements to reduce predicted traffic noise for the impacted residences in Tidewater Preserve. Therefore, a noise barrier for residences in Tidewater Preserve will not be included in the design plans or constructed with the project.

4.1.5 CNE 6: The Yacht Club at Heritage Harbor Apartments

The Yacht Club at Heritage Harbor Apartments is located between Station 634 and Station 663 along the east side of I-75 (see Sheet 6 in Appendix C). A noise barrier was evaluated for the nine receptors (Receptors 1c, 2c, 5c, 10c, 12c, 16c, 20c, 22c, 23c) in The Yacht Club at Heritage Harbor Apartment complex that have predicted highway traffic noise levels of 66 dB(A) or greater with the planned improvements. The nine receptors, all located on the third level of the apartment complex, represent 13 residences.

APPENDIX C
Project Aerials
(From 2018 NSRA)





APPENDIX D
Predicted Traffic Noise Levels
(From 2018 NSRA)

Recept or ID*	Number of Noise Sensitive Sites	Activity Category	Description	Leq(h) (dB(A))			Approaches, Meets, or Exceeds the NAC?
				Existing (2012)	Build (2038)	Increase from Existing	
145	2	B	Residential	N/A ¹	68.6	N/A ¹	Yes
146	2	B	Residential	N/A ¹	69.4	N/A ¹	Yes
147	2	B	Residential	N/A ¹	69.8	N/A ¹	Yes
148	2	B	Residential	N/A ¹	70.1	N/A ¹	Yes
149	2	B	Residential	N/A ¹	69.6	N/A ¹	Yes
150	1	B	Residential	N/A ¹	69.2	N/A ¹	Yes
151	2	B	Residential	N/A ¹	69.5	N/A ¹	Yes
152	2	B	Residential	N/A ¹	69.5	N/A ¹	Yes
153	2	B	Residential	N/A ¹	69.2	N/A ¹	Yes
154	2	B	Residential	N/A ¹	69.3	N/A ¹	Yes
155	2	B	Residential	N/A ¹	69.5	N/A ¹	Yes
156	2	B	Residential	N/A ¹	69.4	N/A ¹	Yes
157	2	B	Residential	N/A ¹	69.1	N/A ¹	Yes
158	2	B	Residential	N/A ¹	69.0	N/A ¹	Yes
159	2	B	Residential	N/A ¹	68.0	N/A ¹	Yes
160	2	B	Residential	N/A ¹	66.5	N/A ¹	Yes
161	2	B	Residential	N/A ¹	64.9	N/A ¹	
162	1	B	Residential	N/A ¹	67.5	N/A ¹	Yes
163	2	B	Residential	N/A ¹	67.3	N/A ¹	Yes
164	2	B	Residential	N/A ¹	67.5	N/A ¹	Yes
165	2	B	Residential	N/A ¹	67.2	N/A ¹	Yes
166	2	B	Residential	N/A ¹	66.2	N/A ¹	Yes
167	2	B	Residential	N/A ¹	64.8	N/A ¹	
168	2	B	Residential	N/A ¹	64.7	N/A ¹	
169	2	B	Residential	N/A ¹	65.1	N/A ¹	
170	2	B	Residential	N/A ¹	65.8	N/A ¹	
171	2	B	Residential	N/A ¹	67.1	N/A ¹	Yes
172	1	B	Residential	N/A ¹	65.2	N/A ¹	
173	1	B	Residential	N/A ¹	65.0	N/A ¹	
174	1	B	Residential	N/A ¹	66.3	N/A ¹	Yes
175	1	B	Residential	N/A ¹	65.9	N/A ¹	
CNE 5 (Tidewater Preserve Subdivision)							
1	1	B	Residential	N/A ¹	66.7	N/A ¹	Yes
2	1	B	Residential	N/A ¹	65.3	N/A ¹	
3	1	B	Residential	N/A ¹	64.4	N/A ¹	
4	1	B	Residential	N/A ¹	62.7	N/A ¹	
5	1	B	Residential	N/A ¹	60.5	N/A ¹	
6	1	B	Residential	N/A ¹	60.7	N/A ¹	
7	1	B	Residential	N/A ¹	61.5	N/A ¹	
8a	2	B	Residential	N/A ¹	62.6	N/A ¹	
8b	2	B	Residential	N/A ¹	65.2	N/A ¹	
9a	2	B	Residential	N/A ¹	62.9	N/A ¹	
9b	2	B	Residential	N/A ¹	65.2	N/A ¹	
10a	2	B	Residential	N/A ¹	63.4	N/A ¹	
10b	2	B	Residential	N/A ¹	65.4	N/A ¹	
11a	2	B	Residential	N/A ¹	63.8	N/A ¹	
11b	2	B	Residential	N/A ¹	65.7	N/A ¹	
12a	2	B	Residential	N/A ¹	64.7	N/A ¹	
12b	2	B	Residential	N/A ¹	66.2	N/A ¹	Yes
13a	2	B	Residential	N/A ¹	66.0	N/A ¹	Yes
13b	2	B	Residential	N/A ¹	67.1	N/A ¹	Yes
14a	2	B	Residential	N/A ¹	67.3	N/A ¹	Yes
14b	2	B	Residential	N/A ¹	68.2	N/A ¹	Yes

APPENDIX C

Traffic Data for Noise Study

**Interstate 75 (I-75)/US 301 (SR 53)
Interchange Design
Final Noise Study Report Addendum**

**From North of SR 64 to North of US 301 (SR 53)
Manatee County, Florida**

Financial Project ID No: 201032-5-32-01

Florida Department of Transportation
District One



The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation pursuant to Section 327 of Title 23 of the United States Code (23 U.S.C. § 327) and a Memorandum of Understanding dated December 14, 2016 and executed by the Federal Highway Administration and the Florida Department of Transportation.

September 2018

2.0 METHODOLOGY

2.1 Evaluation Process

This traffic noise analysis was prepared in accordance with Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772), *Procedures for Abatement of Highway Traffic Noise and Construction Noise*. The evaluation used methodologies established by FDOT that are documented in the PD&E Manual, Part 2, Chapter 18 (June 2017) and the *Traffic Noise Modeling and Analysis Practitioners Handbook* (January 2016). The feasibility and reasonableness of providing noise barriers as an abatement measure for impacted non-residential land uses (e.g., parks and outdoor use areas of hotels and restaurants) was determined following the guidance in FDOT's publication, *A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations* (July 2009).

The predicted noise levels presented in this report are expressed in decibels on the "A"-weighted scale (dB(A)). This scale most closely approximates the response characteristics of the human ear to traffic noise. A traffic noise level is reported as an hourly equivalent level (Leq(h)), which is an equivalent steady-state sound level that contains the same acoustic energy as a time-varying sound level over a period of one hour.

The prediction of traffic noise levels was performed using the FHWA's computer model for highway traffic noise prediction and analysis – the Traffic Noise Model (TNM) Version 2.5. The TNM predicts sound energy, in one-third octave bands, between highways and noise sensitive properties taking the intervening ground's acoustical characteristics/topography and rows of buildings into account.

2.2 Traffic Data

Traffic noise levels are low when traffic volumes are low and motorists are traveling reasonably near or at a posted speed (level-of-service (LOS) "A" or "B"). Traffic noise levels are also low when the traffic volume is high and motorists are traveling at unstable flows (LOS "D", "E", or "F"). As such, with the exception of interchange ramps and for the purpose of traffic noise analysis, it is assumed that the maximum highway traffic noise level occurs between these two conditions (when the maximum number of vehicles traverses a segment of roadway at the posted speed (LOS "C")). Therefore, unless a roadway is forecast to operate better than LOS "C" at all times of the day and night (i.e., LOS "A" or "B"), a roadway's LOS "C" volume and speed are used to predict traffic noise levels. For interchange ramp traffic, demand traffic volumes/posted speeds are used, even if the volume is higher than the LOS "C" volume.

Table 2-1 provides the traffic data that was used to prepare the highway traffic noise analysis for the interim improvements to I-75. As shown, for the improved I-75 and US 301 roadways, the design year demand volumes are greater than the LOS “C” volumes. Therefore, the LOS “C” volumes were used to evaluate traffic noise with the improvements.

Table 2-1: Traffic Data for Noise Analysis

Roadway Segment	Existing or Improved	LOS C ADT ¹	Design Year 2038 Demand ADT	Traffic Volumes ⁴					Directional (D) Factor ⁴	Speed (mph)
				Cars	MT ²	HT ³	Buses	Motor-cycles		
I-75	Improved	6,080	10,090	5,685	88	240	38	29	55.5%	70
US 301	Existing	1,910	1,760	1,714	17	19	1	9	55.5%	45
	Improved	1,910	2,670	1,858	19	21	2	10	55.5%	45

Prepared by: Fathy Abdalla, P.E., Kisinger Campo & Associates, March 2014.

¹ ADT = Average daily traffic

² MT = Medium trucks

³ HT = Heavy trucks

⁴ Peak directional factors are not applicable if LOS C volumes are used.

Traffic volumes in bold represent volumes used in the analysis.

Notably, during a project’s design phase, only the planned improvements to a roadway are evaluated because the change in traffic noise levels from existing to future with and without roadway improvements are evaluated in the project’s PD&E phase. As such, for the land uses adjacent to I-75 this NSRA only provides predicted traffic noise levels with the planned improvements. Because some noise sensitive land uses along US 301 were not evaluated in the PD&E study, existing traffic noise levels without the roadway improvements are also provided in this NSRA. These land uses were not evaluated in the PD&E study because they were identified as being outside of the study area. The existing (year 2012) traffic data for US 301 are also provided in Table 2-1. Additional traffic data-related documentation is provided in **Appendix B**.

APPENDIX B
Traffic Data
(From 2018 NSRA)

TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT
FDOT DISTRICT 1

Federal Aid Number(s):	_____
FPID Number(s):	201032-5-32-01
State/Federal Route No.:	SR-93
Road Name:	I-75
Project Description:	I-75 Widening
Segment Description:	Interstate existing 6-lane divided
Section Number:	13075
Mile Post To/From:	MP 7.816 to PM 11.764

Existing Facility: Year: 2012 LOS C Peak Hour Directional Volume: 4,580 Demand Peak Hour Volume: 4,340 Posted Speed: 70	<table border="0"> <tr><td>D =</td><td style="border: 1px solid black; padding: 2px;">55.5%</td><td>%</td></tr> <tr><td>T24 =</td><td style="border: 1px solid black; padding: 2px;">11.9%</td><td>% of 24 Hour Volume</td></tr> <tr><td>Tpeak =</td><td style="border: 1px solid black; padding: 2px;">6.0%</td><td>% of Design Hour Volume</td></tr> <tr><td>MT =</td><td style="border: 1px solid black; padding: 2px;">1.4%</td><td>% of Design Hour Volume</td></tr> <tr><td>HT =</td><td style="border: 1px solid black; padding: 2px;">4.0%</td><td>% of Design Hour Volume</td></tr> <tr><td>B =</td><td style="border: 1px solid black; padding: 2px;">0.6%</td><td>% of Design Hour Volume</td></tr> <tr><td>MC =</td><td style="border: 1px solid black; padding: 2px;">0.5%</td><td>% of Design Hour Volume</td></tr> </table>	D =	55.5%	%	T24 =	11.9%	% of 24 Hour Volume	Tpeak =	6.0%	% of Design Hour Volume	MT =	1.4%	% of Design Hour Volume	HT =	4.0%	% of Design Hour Volume	B =	0.6%	% of Design Hour Volume	MC =	0.5%	% of Design Hour Volume
D =	55.5%	%																				
T24 =	11.9%	% of 24 Hour Volume																				
Tpeak =	6.0%	% of Design Hour Volume																				
MT =	1.4%	% of Design Hour Volume																				
HT =	4.0%	% of Design Hour Volume																				
B =	0.6%	% of Design Hour Volume																				
MC =	0.5%	% of Design Hour Volume																				

No Build Alternative (Design Year): Year: 2038 LOS C Peak Hour Directional Volume: 4,580 Demand Peak Hour Volume: 10,090 Posted Speed: 70	<table border="0"> <tr><td>D =</td><td style="border: 1px solid black; padding: 2px;">55.5%</td><td>%</td></tr> <tr><td>T24 =</td><td style="border: 1px solid black; padding: 2px;">11.9%</td><td>% of 24 Hour Volume</td></tr> <tr><td>Tpeak =</td><td style="border: 1px solid black; padding: 2px;">6.0%</td><td>% of Design Hour Volume</td></tr> <tr><td>MT =</td><td style="border: 1px solid black; padding: 2px;">1.4%</td><td>% of Design Hour Volume</td></tr> <tr><td>HT =</td><td style="border: 1px solid black; padding: 2px;">4.0%</td><td>% of Design Hour Volume</td></tr> <tr><td>B =</td><td style="border: 1px solid black; padding: 2px;">0.6%</td><td>% of Design Hour Volume</td></tr> <tr><td>MC =</td><td style="border: 1px solid black; padding: 2px;">0.5%</td><td>% of Design Hour Volume</td></tr> </table>	D =	55.5%	%	T24 =	11.9%	% of 24 Hour Volume	Tpeak =	6.0%	% of Design Hour Volume	MT =	1.4%	% of Design Hour Volume	HT =	4.0%	% of Design Hour Volume	B =	0.6%	% of Design Hour Volume	MC =	0.5%	% of Design Hour Volume
D =	55.5%	%																				
T24 =	11.9%	% of 24 Hour Volume																				
Tpeak =	6.0%	% of Design Hour Volume																				
MT =	1.4%	% of Design Hour Volume																				
HT =	4.0%	% of Design Hour Volume																				
B =	0.6%	% of Design Hour Volume																				
MC =	0.5%	% of Design Hour Volume																				

Build Alternative (Design Year): Year: 2038 LOS C Peak Hour Directional Volume: 6,080 Demand Peak Hour Volume: 10,090 Posted Speed: 70	<table border="0"> <tr><td>D =</td><td style="border: 1px solid black; padding: 2px;">55.5%</td><td>%</td></tr> <tr><td>T24 =</td><td style="border: 1px solid black; padding: 2px;">11.9%</td><td>% of 24 Hour Volume</td></tr> <tr><td>Tpeak =</td><td style="border: 1px solid black; padding: 2px;">6.0%</td><td>% of Design Hour Volume</td></tr> <tr><td>MT =</td><td style="border: 1px solid black; padding: 2px;">1.4%</td><td>% of Design Hour Volume</td></tr> <tr><td>HT =</td><td style="border: 1px solid black; padding: 2px;">4.0%</td><td>% of Design Hour Volume</td></tr> <tr><td>B =</td><td style="border: 1px solid black; padding: 2px;">0.6%</td><td>% of Design Hour Volume</td></tr> <tr><td>MC =</td><td style="border: 1px solid black; padding: 2px;">0.5%</td><td>% of Design Hour Volume</td></tr> </table>	D =	55.5%	%	T24 =	11.9%	% of 24 Hour Volume	Tpeak =	6.0%	% of Design Hour Volume	MT =	1.4%	% of Design Hour Volume	HT =	4.0%	% of Design Hour Volume	B =	0.6%	% of Design Hour Volume	MC =	0.5%	% of Design Hour Volume
D =	55.5%	%																				
T24 =	11.9%	% of 24 Hour Volume																				
Tpeak =	6.0%	% of Design Hour Volume																				
MT =	1.4%	% of Design Hour Volume																				
HT =	4.0%	% of Design Hour Volume																				
B =	0.6%	% of Design Hour Volume																				
MC =	0.5%	% of Design Hour Volume																				

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: Fathy Abdalla, P.E. (Kisinger Campo & Associates) *Fathy Abdalla* Date: 3/19/14
Print Name Signature

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: BOB CRAWLEY FDOT, DISTRICT ONE *Bob Crawley* Date: 3.19.14
Print Name Signature

TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT
FDOT DISTRICT 1

Federal Aid Number(s):	_____
FPID Number(s):	201032-5-32-01
State/Federal Route No.:	SR-93
Road Name:	I-75
Project Description:	I-75 Widening
Segment Description:	US-301 East of 18th St E
Section Number:	13-020000
Mile Post To/From:	MP 7.816 to PM 11.764

Existing Facility:		D =	55.5%	%
		T24 =	4.3%	% of 24 Hour Volume
Year:	2012	Tpeak =	2.2%	% of Design Hour Volume
		MT =	1.0%	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1,910	HT =	1.1%	% of Design Hour Volume
Demand Peak Hour Volume:	1,760	B =	0.1%	% of Design Hour Volume
Posted Speed:	45	MC =	0.5%	% of Design Hour Volume

No Build Alternative (Design Year):		D =	55.5%	%
		T24 =	4.3%	% of 24 Hour Volume
Year:	2038	Tpeak =	2.2%	% of Design Hour Volume
		MT =	1.0%	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1,910	HT =	1.1%	% of Design Hour Volume
Demand Peak Hour Volume:	2,670	B =	0.1%	% of Design Hour Volume
Posted Speed:	45	MC =	0.5%	% of Design Hour Volume

Build Alternative (Design Year):		D =	55.5%	%
		T24 =	4.3%	% of 24 Hour Volume
Year:	2038	Tpeak =	2.2%	% of Design Hour Volume
		MT =	1.0%	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1,910	HT =	1.1%	% of Design Hour Volume
Demand Peak Hour Volume:	2,670	B =	0.1%	% of Design Hour Volume
Posted Speed:	45	MC =	0.5%	% of Design Hour Volume

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: Fathy Abdalla, P.E. (Kisinger Campo & Associates) *Fathy Abdalla* Date: 3/19/14
 Print Name Signature

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: BOB CRAWLEY FDOT, DISTRICT ONE *Bob Crawley* Date: 3.19.14
 Print Name Signature

Existing and Future AADT and Turning Movements

Figure 4-1 - Existing 2012 AADT

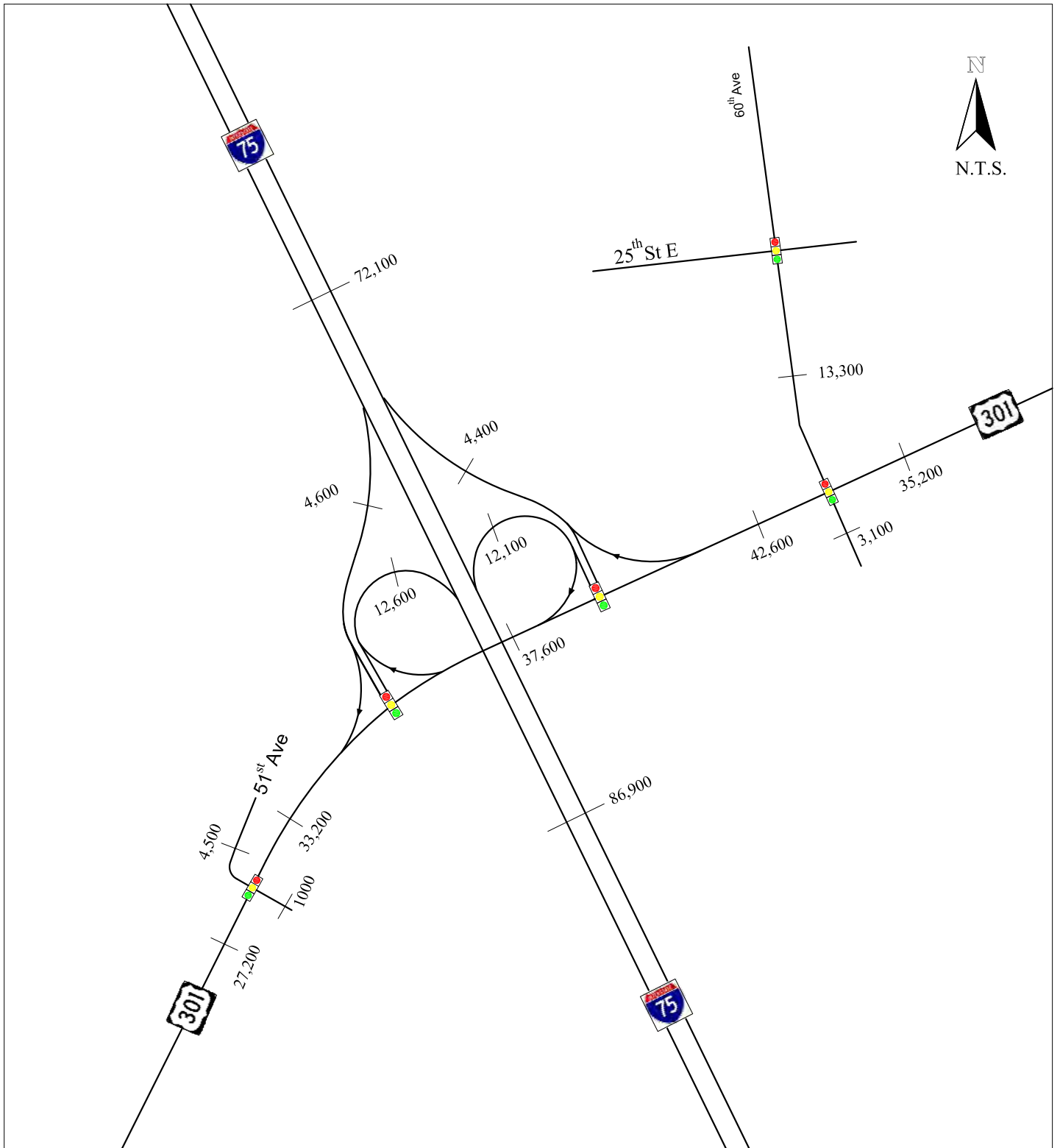


Figure 4-2 Existing 2012 Turning Movement Volumes

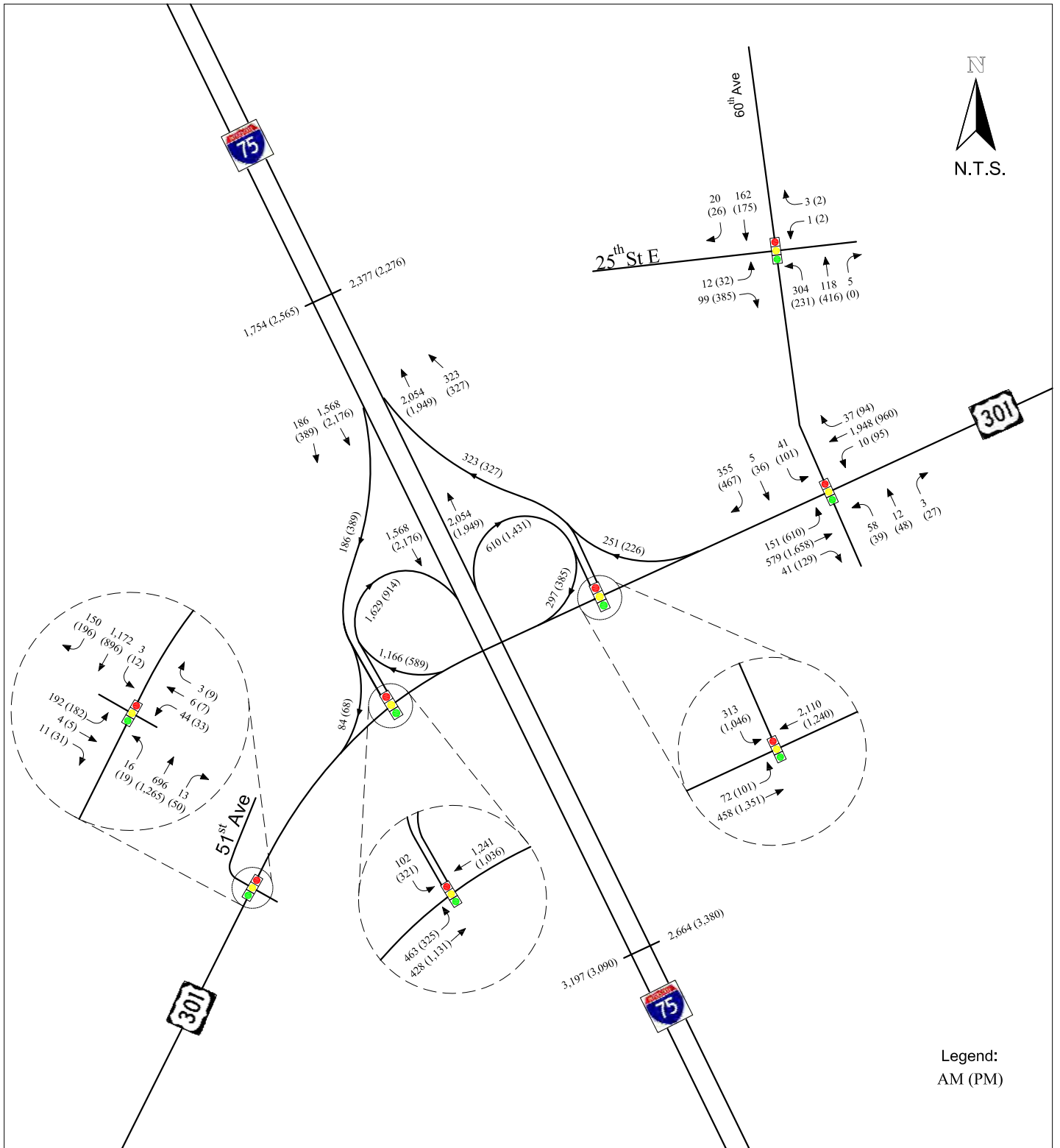


Figure 7-1 Future Year 2018 and 2038 AADT

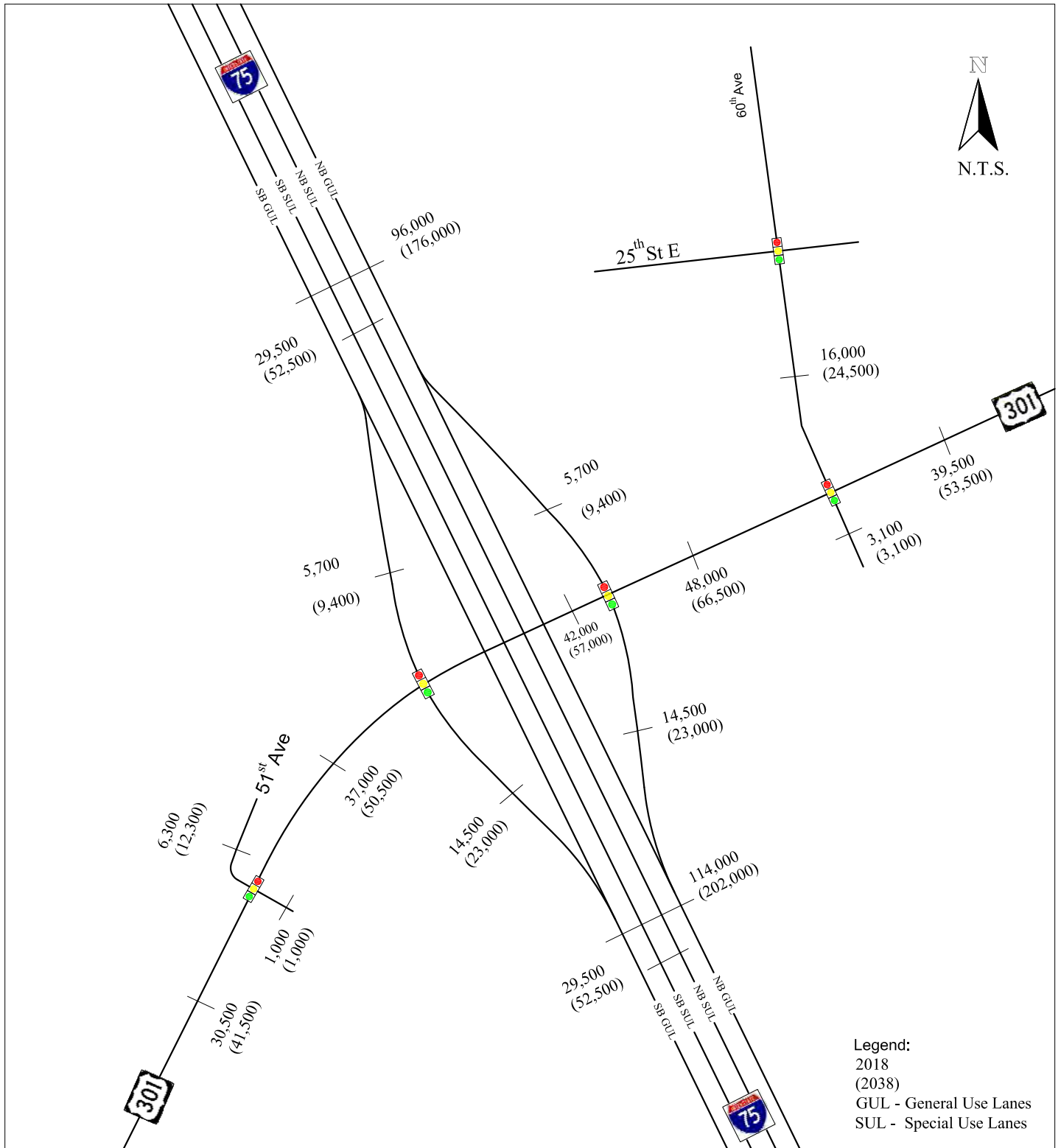


Figure 7-2 Future Year 2018 Turning Movement Volumes

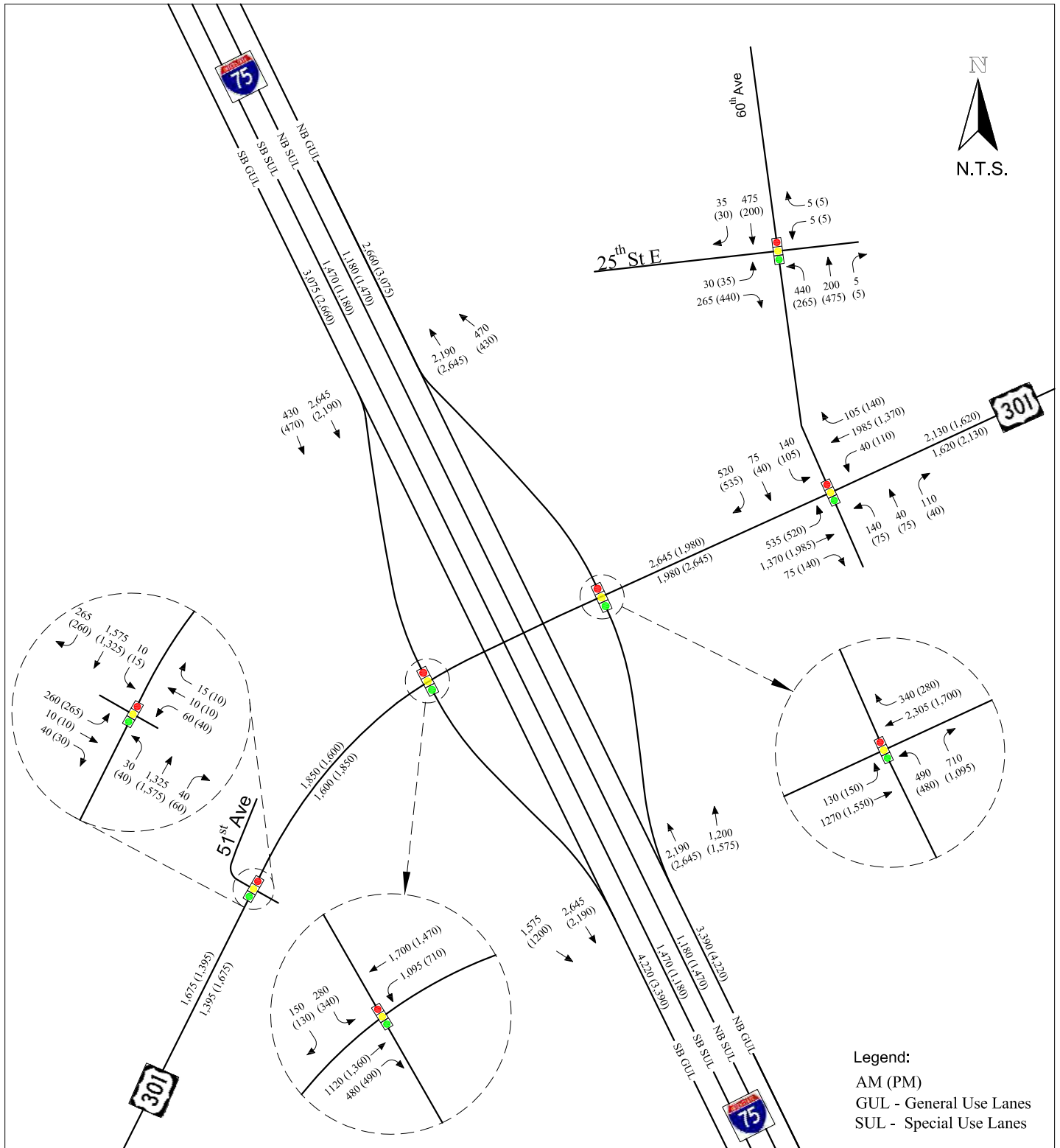
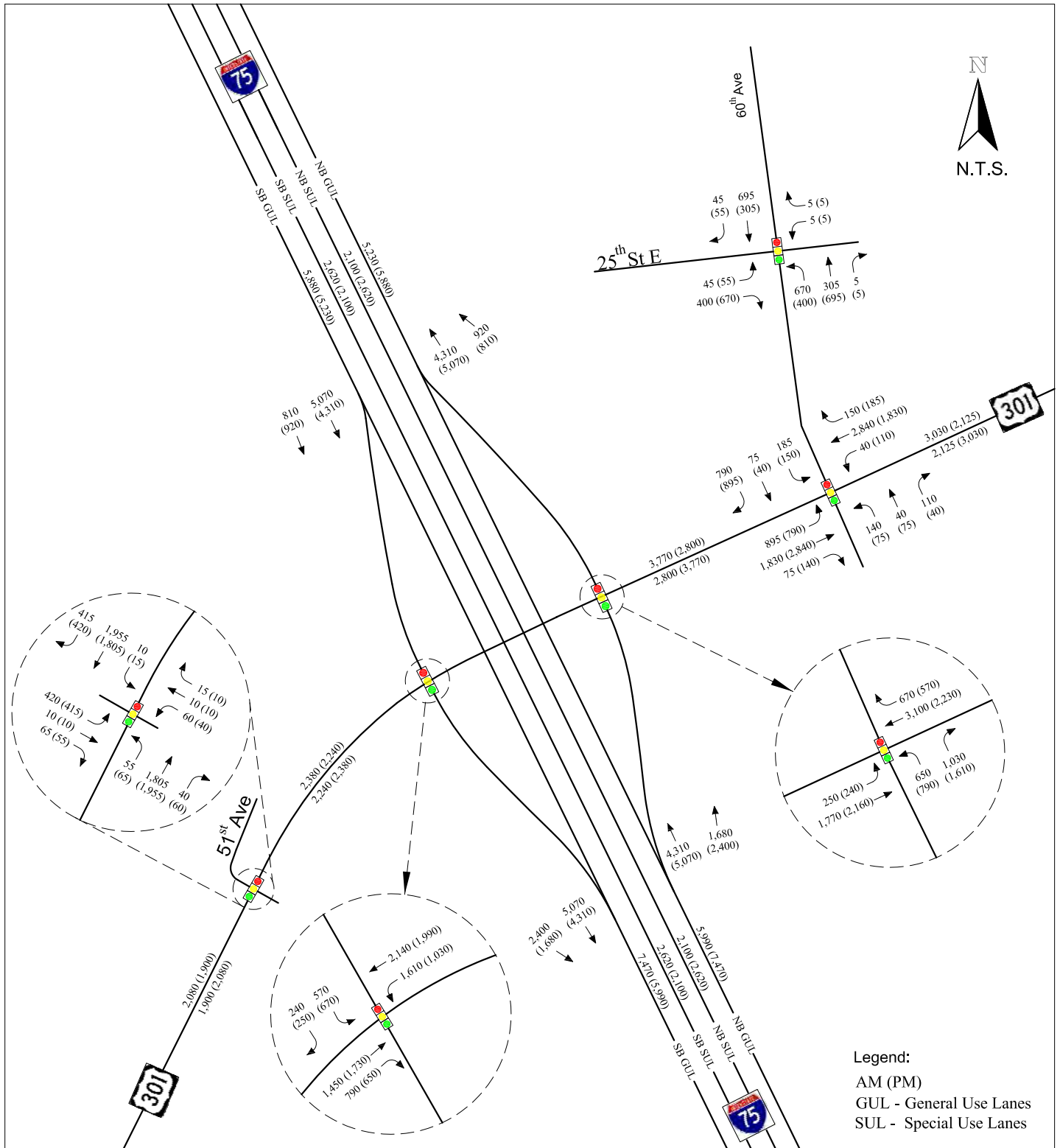


Figure 7-3 Future Year 2038 Turning Movement Volumes



APPENDIX D

TNM Files (Provided Separately in Electronic Format)