

DRAFT NOISE STUDY REPORT

Florida Department of Transportation

District One

S.R. 789 (Longboat Key) PD&E Study

Limits of Project: From North Shore Road to Coquina Park Entrance

Manatee County, Florida

Financial Management Number: 436676-1-22-01

ETDM Number: 14382

Date: February 2026

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 (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

# EXECUTIVE SUMMARY

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The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate options for the replacement of the State Road (S.R.) 789 bridge over Longboat Pass in Manatee County. The bridge connects Longboat Key on the south end to Anna Maria Island to the north. The limits of the project are from North Shore Road on Longboat Key to the Coquina Park entrance on Anna Maria Island.

The traffic noise study was prepared in accordance with Title 23 Code of Federal Regulations (CFR) Part 772, “Procedures for Abatement of Highway Traffic Noise and Construction Noise” and the FDOT Traffic Noise Policy documented in the “Highway Traffic Noise” chapter of the PD&E Manual. Additional guidance was obtained from the FDOT document “Traffic Noise Modeling and Analysis Practitioners Handbook”.

The prediction of existing and future traffic noise levels, with and without the roadway improvements, was performed using Version 2.5 of the Federal Highway Administration’s (FHWA’s) computer model for highway traffic noise prediction and analysis – the Traffic Noise Model (TNM). The predicted noise levels presented in this report are expressed in decibels (dB) on the A-weighted scale dB(A) and are reported as hourly equivalent level values, which is the equivalent steady-state sound level for a one-hour period that contains the same acoustic energy as the time-varying sound level during the same time period.

Within the project limits, 56 receptors were modeled with the TNM to evaluate traffic noise levels at 31 residences and eight recreation uses.

Under the existing condition (2022), exterior traffic noise levels at the residential receptors are predicted to range from 49.3 to 59.7 dB(A) and from 51.0 to 61.3 dB(A) with the future no-build condition. In the future design year (2051) with the preferred alternative, traffic noise levels are predicted to range from 51.5 to 60.2 dB(A). Traffic noise levels are not predicted to approach, meet, or exceed the NAC for Activity Category B. When compared to the existing condition, the largest increase in traffic noise is predicted to be 3.3 dB(A), a level that does not constitute a substantial increase.

For the recreation uses, existing traffic noise levels are predicted to range from 49.6 to 60.5 dB(A) and from 51.3 to 62.1 dB(A) with the future no-build condition. In the future build condition with the preferred alternative, traffic noise levels are predicted to range from 46.6 to 60.3 dB(A). Traffic noise levels are not predicted to approach, meet, or exceed the NAC for Activity Category C at any of the recreation uses evaluated. When compared to existing levels, the largest increase in traffic noise with the preferred alternative is predicted to be 3.5 dB(A), which is not considered a substantial increase.

Since traffic noise levels for the future build condition with the preferred alternative are not predicted to approach, meet or exceed the NAC at any of the noise sensitive land uses evaluated within the project limits, nor are they predicted to increase substantially when compared to existing levels, the consideration of noise

abatement measures is not warranted. Based on the noise analysis performed to date, there appear to be no impacted areas within the project that require abatement consideration.

Noise contours are used to establish noise buffer zones and provide appropriate setback distances for noise sensitive development. These contours have been prepared for the future improved roadway facility and are discussed in this report.

Residences and recreation uses within the project limits are identified in the FDOT listing of sites sensitive to construction noise and vibration. Construction of the proposed roadway improvements is not expected to have any significant noise or vibration impact, and it is anticipated that the application of the FDOT “Standard Specifications for Road and Bridge Construction” will minimize or eliminate potential construction noise and vibration impacts.

Both in person and live online alternatives public workshops were conducted in March 2024 to give interested persons an opportunity to learn more about the alternatives being considered and ask questions of the project team. No traffic noise concerns were received during the live online meeting, while several traffic noise concerns were raised during the in-person meeting, primarily from residents on the south side of Longboat Pass.

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# SECTION 1.0

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## Introduction

### 1.1 Project Description

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate options for the replacement of the State Road (S.R.) 789 bridge over Longboat Pass in Manatee County. The bridge connects Longboat Key on the south end to Anna Maria Island on the north end. The limits of the project are from North Shore Road on Longboat Key to the Coquina Park entrance on Anna Maria Island (**Figure 1-1**).

The objectives of this Noise Study Report (NSR) are to identify noise sensitive land uses within the project limits, to evaluate existing and future traffic noise levels at the sites with and without the proposed improvements, and to evaluate the need for and effectiveness of noise abatement measures. Additional objectives include the evaluation of construction noise and vibration impacts and the identification of noise impact contours adjacent to the corridor.

### 1.2 Proposed Improvements

The preferred alternative for the bridge replacement includes a 78-foot High-Level fixed bridge. The reduced-width typical section generally consists of a two-lane undivided roadway with two 11-foot travel lanes (one in each direction), two eight-foot wide shoulders (one on the outside of each travel lane), an eight-foot wide barrier protected sidewalk on the northbound side, and a 12-foot wide shared use path (SUP) on the southbound side.



Figure 1-1: Project Location

# SECTION 2.0

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## Methodology

This traffic noise study was prepared in accordance with Title 23 Code of Federal Regulations (CFR) Part 772, “Procedures for Abatement of Highway Traffic Noise and Construction Noise.”<sup>1</sup> The evaluation uses methodology established by the FDOT Traffic Noise Policy documented in the “Highway Traffic Noise” chapter of the PD&E Manual.<sup>2</sup> Additional guidance was obtained from the FDOT document “Traffic Noise Modeling and Analysis Practitioners Handbook”.<sup>3</sup>

The proposed project will result in the substantial horizontal alteration of the S.R. 789 roadway alignment and qualifies as a “Type I” project for which a traffic noise study is required.

The prediction of existing and future traffic noise levels, with and without the roadway improvements, was performed using Version 2.5 of the Federal Highway Administration’s (FHWA’s) computer model for highway traffic noise prediction and analysis – the Traffic Noise Model (TNM). The TNM predicts sound energy, in one-third octave bands, between highways and nearby receptors taking the intervening ground’s acoustical characteristics, topography, and rows of buildings into account.

The predicted noise levels presented in this report are expressed in decibels (dB) on the A-weighted scale dB(A). This scale most closely approximates the response characteristics of the human ear to traffic noise. All noise levels are reported as hourly equivalent level Leq(h) values, which is the equivalent steady-state sound level for a one-hour period that contains the same acoustic energy as the time-varying sound level during the same time period. The use of the Leq metric and dB(A) as the unit of measurement is specified by 23 CFR Part 772.

### 2.1 Traffic Data

The traffic data approved for use in the analysis is provided in **Appendix A**. For this project, demand volumes were used in the modeling and analysis of existing (2022), future no-build (2051), and future build (2051) traffic noise levels, as they are predicted to be lower than Level of Service (LOS) C volumes. The year 2051 is the design year for the project. The lesser of the two volumes is used since traffic noise is a combination of volume and speed, not necessarily one or the other. If the traffic analysis shows that demand volumes exceed roadway capacity (i.e., LOS C volumes), there would be a decrease in speed and as a result, a decrease in predicted traffic noise levels. Conversely, if demand traffic volumes are predicted to be less than LOS C/roadway capacity, it’s determined that maximum capacity volumes would not be achieved, and the demand volumes are appropriate for use. This approach ensures that the worst-case traffic noise levels are predicted at noise sensitive land uses.

Vehicle speeds are based on the posted speed limit for the existing and future no-build conditions, and the proposed posted speed limit for the future build condition. The speed limit used for S.R. 789 was 35 miles per hour (mph) for the existing, future no-build, and future build conditions.



## 2.2 Noise Abatement Criteria

To evaluate traffic noise, the FHWA has established Noise Abatement Criteria (NAC), provided in **Table 2-1**. As shown, the criteria vary according to a property’s activity category. As a means of comparison, typical sound levels are provided in **Table 2-2**.

**TABLE 2-1**  
**FHWA NOISE ABATEMENT CRITERIA**

Activity Category	Activity Leq(h) <sup>1</sup> FHWA	Activity Leq(h) <sup>1</sup> FDOT	Evaluation Location	Description of Activity Category
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 <sup>2</sup>	67	66	Exterior	Residential
C <sup>2</sup>	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 <sup>2</sup>	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.

SOURCE: Table 1, 23 CFR Part 772

<sup>1</sup> The Leq(h) Activity Criteria values are for impact determination only and are not design standards for noise abatement measures.

<sup>2</sup> 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.

**TABLE 2-2  
TYPICAL SOUND LEVELS**

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL dB(A)	COMMON INDOOR ACTIVITIES
Jet Fly-over at 1000 ft.	---110---	Rock Band
Gas Lawn Mower at 3 ft.	---100---	
Diesel Truck at 50 ft., at 50 mph	---90---	
Noise Urban Area (Daytime)	---80---	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Gas Lawn Mower at 100 ft. Commercial Area	---70---	Vacuum Cleaner at 10 ft. Normal Speech at 3 ft.
Heavy Traffic at 300 ft.	---60---	
Quiet Urban Daytime	---50---	Large Business Office Dishwasher Next Room
Quiet Urban Nighttime	---40---	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	---30---	Library
Quiet Rural Nighttime	---20---	Bedroom at Night, Concert Hall (Background)
	---10---	
Lowest Threshold of Human Hearing	---0---	Lowest Threshold of Human Hearing

Source: California Dept. of Transportation Technical Noise Supplement, September 2013.

## 2.3 Noise Abatement Measures

The FDOT requires the consideration of noise abatement under two conditions: when predicted traffic noise levels “approach” or exceed the NAC with the future build condition, or when predicted future noise levels increase substantially from existing levels. The word “approach” is defined by the FDOT to mean within one dB(A) of the NAC (i.e., one dB(A) less than the NAC value) and states that a substantial increase will occur if future traffic noise levels are predicted to increase 15 dB(A) or more when compared to existing noise levels as a direct result of a transportation improvement project.

### 2.3.1 Traffic Management

Traffic management measures that limit motor vehicle speeds and/or reduce traffic volumes can be effective mitigation measures. However, they also negate the ability of the project to accommodate the forecast future travel demand. For example, if the posted speed were reduced, the ability of S.R. 789 to accommodate the forecast motor vehicle demand would also be reduced. The existing posted speed of 35 mph will remain with the proposed project.

## 2.3.2 Alignment Modifications

Modifications to the proposed horizontal alignment and/or vertical profile of the roadway and bridge may influence traffic noise levels. The proposed horizontal alignment of the preferred alternative uses existing FDOT right-of-way (ROW) without the need to acquire additional ROW which would result in increased project costs. The proposed vertical profile is set according to navigation requirements for vessels using Longboat Pass. Altering the horizontal alignment may not provide a positive benefit since noise sensitive land uses are located both east and west of S.R. 789, while altering the vertical profile may create conflicts with marine traffic using Longboat Pass.

## 2.3.3 Buffer Zones

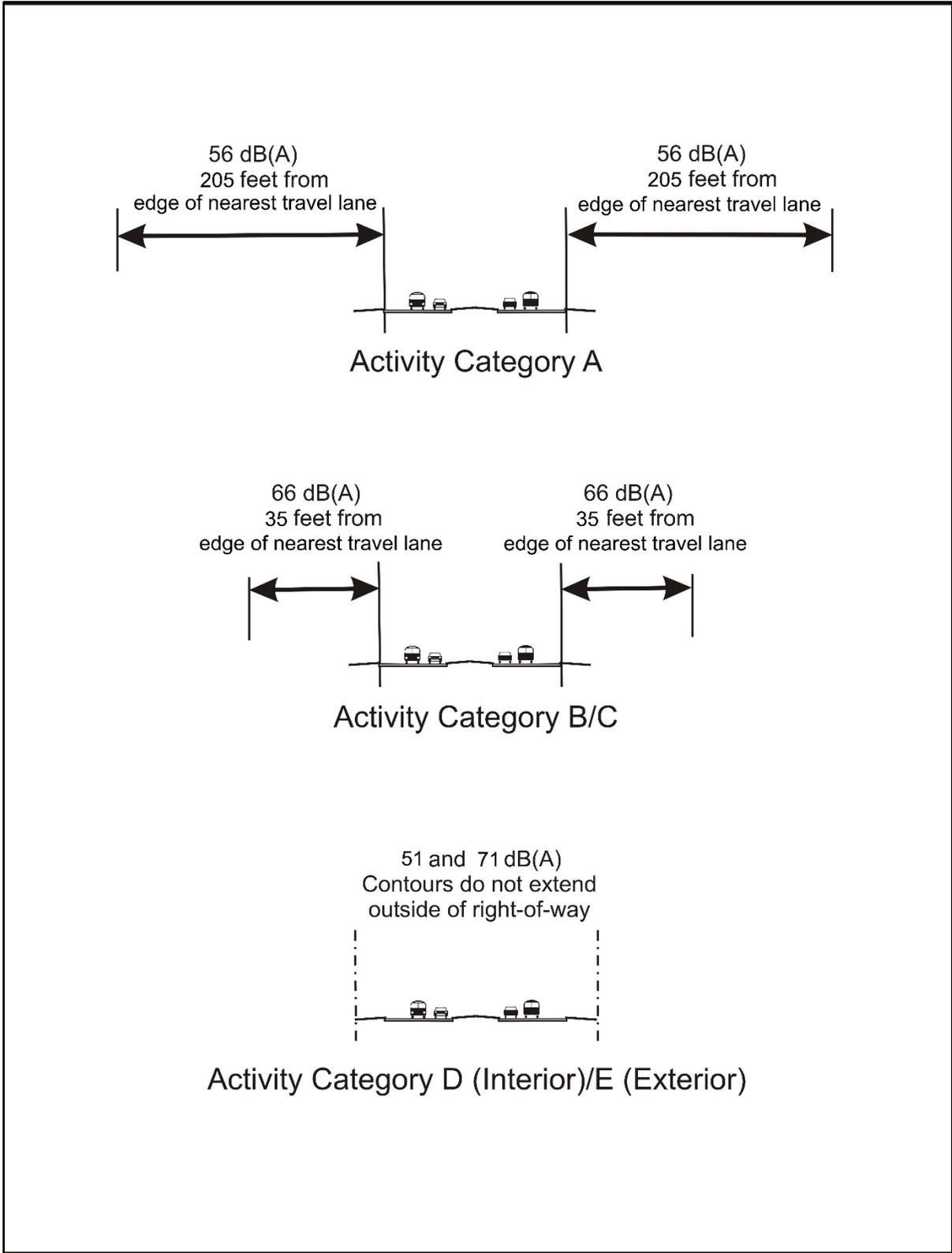
Land uses such as residences, hotels, schools, churches, and recreation areas are considered incompatible with highway traffic noise levels that exceed the NAC for their respective Activity Category as detailed previously in **Table 2-2**. To reduce the possibility of noise related impacts to future development, a noise level contour was developed for the future improved roadway. These noise contours estimates the distance from the outside edge of the nearest travel lane for the future build condition to the location where the NAC for each Activity Category (A through E) is expected to be approached (i.e. within one dB(A) of the NAC) in the design year (2051). Upon completion of this report, copies will be provided to Manatee County to promote compatibility between the proposed project and additional development that may occur in the future. Noise contour distances are provided in **Table 2-3** and shown in **Figure 2-1**.

**TABLE 2-3  
NOISE CONTOURS**

S.R. 789 Road Segment	Activity Category (NAC)	Distance to Approach (within 1 dB(A)) of NAC for Activity Category (feet) <sup>1</sup>
Project Limits: From North Shore Road to Coquina Park Entrance	A (57 dB(A))	205
	B/C (67 dB(A))	35
	D <sup>2</sup> (52 dB(A))	Inside Right-of-Way
	E (72 dB(A))	Inside Right-of-Way

<sup>1</sup> Distances are measured from the outside edge of the nearest travel lane for the improved roadway, do not account for any reduction in noise levels that may occur from shielding and/or terrain, and should be used for planning purposes only.

<sup>2</sup> The distance to the interior impact criteria for Activity Category D is based on a conservative reduction factor of 20 dB(A) due to the building envelope that is applied to the predicted exterior traffic noise level.



**Figure 2-1: Noise Contours – North Shore Road to Coquina Park Entrance**

## 2.3.4 Noise Barriers

Noise barriers reduce noise levels by altering the sound propagation path between the noise source (roadway) and the noise sensitive land use. To effectively reduce traffic noise, a noise barrier must be relatively long, continuous (without intermittent openings), and of sufficient height to provide a discernable reduction in traffic noise levels. Consistent with FDOT’s traffic noise policy, the minimum requirements for a noise barrier to be considered acoustically feasible and reasonable, and economically reasonable are:

- A noise barrier must provide at least a five dB(A) reduction in traffic noise for at least two impacted noise sensitive receptors to be considered an acoustically feasible abatement measure. A receptor that meets the minimum five dB(A) noise reduction requirement is considered “benefited”,
- To be considered acoustically reasonable, a noise barrier must provide at least a seven dB(A) reduction (i.e., the FDOT’s noise reduction design goal) for at least one benefited receptor and,
- A noise barrier should not cost more than \$64,000 per benefited noise sensitive receptor. The current statewide cost estimate for noise barrier construction, including materials and labor, is \$40 per square foot (ft<sup>2</sup>).

After considering the amount of reduction that may be provided and the cost effectiveness, additional factors must also be considered when evaluating a noise barrier. Additional feasibility factors include factors that relate to design and construction (i.e., site-specific constructability), safety, access to and from adjacent properties, ROW requirements, maintenance, and impacts on utilities and drainage. While a cursory review of these items can be conducted during the PD&E phase, a more detailed review is performed during the project design phase. In addition to the cost and noise reduction design goal requirement, the other reasonableness factor considered is the viewpoint of the benefited property owners and residents, if applicable, who may, or may not, desire a noise barrier as an abatement measure.

# SECTION 3.0

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## Traffic Noise Analysis

### 3.1 Measured Sound Levels and TNM Validation

Existing and future traffic noise levels were modeled using the TNM. To ensure accurate predictions, the computer model was validated using sound levels measured at a location adjacent to the project limits. Traffic data including motor vehicle volumes, fleet mix, and meteorological conditions were observed and recorded during each measurement period. The model validation was conducted in accordance with 23 CFR Part 772 and the FDOT's traffic noise policy.

The field measurements for this project were conducted in accordance with the FHWA's "Noise Measurement Handbook".<sup>4</sup> Each field measurement was obtained using a Larson Davis Model 720 Sound Level Meter (SLM). The SLM was calibrated before and after each monitoring period with a Larson Davis Model CAL150 Sound-Level Calibrator. Measurements were conducted at two locations within the project limits; one south of Longboat Pass and one north of Longboat Pass. The measurement locations are provided on the figures in **Appendix B**.

The vehicle data (volumes, fleet mix, and speeds) observed and recorded during each monitoring period were used as input for the TNM to determine if, along with the existing roadway geometry and area site conditions, the computer model could "re-create" the measured levels with the existing roadway. Consistent with the FDOT's traffic noise policy, a traffic noise prediction model is considered within the accepted level of accuracy if the measured and predicted noise levels are within a tolerance standard of plus or minus three dB(A). At each measurement location, three 10-minute periods were conducted. Observed traffic data for each 10-minute period was multiplied by six to determine hourly volumes for input to the TNM. Vehicle speeds were averaged for each of the five vehicle types (autos, medium trucks, heavy trucks, buses, and motorcycles) recorded during each measurement period.

**Table 3-1** presents the field measurements and the validation results for the project. As shown, the ability of the model to predict noise levels within the acceptable range of plus or minus three dB(A) for the project was confirmed. For periods where the measured levels are higher than those predicted by TNM, the difference can be attributed to various sounds that occurred that cannot be accounted for in the TNM, including birds, crickets, cicadas, a chainsaw, and leaves rustling with the wind. Documentation in support of the validation measurements is provided in **Appendix C** of this report.

**TABLE 3-1**  
**MODEL VALIDATION RESULTS**

Measurement Site ID / Location	Measurement Period (Time)	Leq(h) – dB(A) Measured	Leq(h) – dB(A) Modeled	Leq(h) – dB(A) Difference
1: Coquina Beach Park South	1 (10:56am – 11:06am)	59.6	59.2	0.4
	2 (11:08am – 11:18am)	59.5	57.4	2.1
	3 (11:20am – 11:30am)	59.0	57.3	1.7
2: Firehouse Court, South of N. Shore Road	1 (12:09pm – 12:19pm)	60.3	58.3	2.0
	2 (12:21pm – 12:31pm)	59.7	60.1	-0.4
	3 (12:33pm – 12:43pm)	59.8	57.5	2.3

<sup>1</sup> Measurements were obtained on July 18, 2025. Measurement locations are provided on the Figures in Appendix B.  
<sup>2</sup> A negative "Difference" value indicates computer modeled noise levels are higher than those measured in the field.

## 3.2 Noise Sensitive Land Uses

Within the project limits, 56 TNM receptors (i.e., a discrete or representative location of a noise sensitive area(s)) representing the various noise sensitive sites were modeled to represent 31 residences and eight recreation uses. The following provides a description of those evaluated within each Activity Category present within the project limits:

- Activity Category B: 31 residences located on Longboat Key. Of the 31 residences, there are nine residences at Northgate of Longboat Key Condos, four residences in unnamed multi-family buildings, and 18 single-family homes.
- Activity Category C: 20 receptors representing 13 recreation uses, including a tennis court and a pool at Northgate of Longboat Key Condos, Longboat Pass Fishing Beach, Coquina Beach, two pavilions, four groups of picnic tables, and one playground at Coquina Beach Park, and a trail and pavilion at Leffis Key Preserve.

Exterior traffic noise levels were predicted for the residences and recreation areas. All receptor heights were assumed to be five feet above ground level (AGL) for receptors at single-family residences and recreation areas. At the Northgate of Longboat Key Condominiums, each unit has a patio/balcony on either the second floor or both the second and third floors depending on the unit, as the ground floor is used for parking. An additional 10 feet was assumed for each subsequent level (i.e., a second-floor receptor is 15 feet above ground, 3<sup>rd</sup> floor receptor is 25 feet above ground, etc.). The letters B, and C following a receptor ID (i.e., 1B, 1C) indicate second, and third floor receptors, respectively.

The modeled receptor locations are provided on the figures in **Appendix B**. Noise sensitive land uses were verified during field reviews of the project area conducted in July 2025 and based on property records available online from the Manatee County Property Appraiser.



### 3.3 Results of the Noise Analysis

**Table 3-2** provides a summary of the predicted traffic noise levels for the project; a full list of predicted traffic noise levels for all receptors is provided in **Appendix D**. The TNM files in support of the analysis have been provided electronically as **Appendix E**.

Exterior traffic noise levels at the residential receptors are predicted to range from 49.3 to 59.7 dB(A) under existing conditions, and from 51.0 to 61.3 dB(A) with the future no-build condition. In the future with the preferred alternative, traffic noise levels are predicted to range from 51.5 to 60.2 dB(A). Traffic noise levels are not predicted to approach, meet, or exceed the NAC for Activity Category B. When compared to the existing condition, the largest increase in traffic noise is predicted to be 3.3 dB(A), a level that does not constitute a substantial increase. Some residences may experience a small decrease in traffic noise as a result of the proposed westward shift in the roadway and bridge alignment.

Existing exterior traffic noise levels at the recreation uses are predicted to range from 49.6 to 60.5 dB(A) and from 51.3 to 62.1 dB(A) with the future no-build condition. In the future build condition with the preferred alternative, traffic noise levels are predicted to range from 46.6 to 60.3 dB(A). Traffic noise levels are not predicted to approach, meet, or exceed the NAC for Activity Category C at any of the recreation uses evaluated. When compared to existing levels, the largest increase in traffic noise with the preferred alternative is predicted to be 3.5 dB(A), which is not considered a substantial increase. Some recreation uses will experience a decrease in traffic noise as a result of the proposed westward shift in the roadway and bridge alignment as well as the increase in the bridge profile, which creates a longer path length (distance) between the roadway and the receptors.

Since traffic noise levels for the future build condition with the preferred alternative are not predicted to approach, meet or exceed the NAC at any of the Activity Category B or C land uses evaluated within the project limits, nor are they predicted to increase substantially when compared to existing levels, the consideration of noise abatement measures is not warranted.

Based on the noise analysis performed to date, there appear to be no impacted areas within the project that require abatement consideration.



**TABLE 3-2  
SUMMARY OF PREDICTED TRAFFIC NOISE LEVELS<sup>1</sup>**

Receptor ID's <sup>2</sup>	Description	NAC Activity Category	Predicted Traffic Noise Levels- Leq (dB(A))				Number of Impacted Sites with Future Build, Preferred Alternative
			Existing (2022)	Future No-Build (2051)	Future Build (2051)	Change from Existing to Future Build	
1-5	6 Residences South of N. Shore Road, West of S.R. 789	B	50.8 – 56.0	52.5 – 57.7	53.4 – 58.4	2.4 – 3.3	0
6-8	Tennis Court and Pool at Northgate of Longboat Key Condos	C	53.0 – 58.5	54.7 – 60.1	55.1 – 60.3	1.6 – 3.5	0
9-17	9 Residences, Northgate of Longboat Key Condos	B	49.3 – 58.2	51.0 – 59.9	51.5 – 60.2	0.3 – 2.2	0
18-32	16 Residences, South of Longboat Pass, East of S.R. 789	B	50.4 – 59.7	52.1 – 61.3	51.7 – 59.1	-1.1 – 1.5	0
33-35	Longboat Pass Fishing Beach	C	55.0 – 60.5	56.7 – 62.1	46.6 – 49.9	-5.1 – -13.9	0
36-39	Coquina Beach	C	56.0 – 57.4	54.7 – 59.1	53.5 – 55.3	-3.9 – 1.8	0
40-43	Picnic Tables – Coquina Beach Park	C	49.8 – 54.6	51.5 – 56.2	52.6 – 55.1	0.5 – 2.8	0
44-45	Pavilions – Coquina Beach Park	C	49.6 – 55.3	51.3 – 57.0	52.5 – 55.3	0.0 – 2.9	0
46	Playground – Coquina Beach Park	C	54.6	56.3	54.8	0.2	0
47-49	Pavilion and Trail – Leffis Key Preserve	C	51.3 – 54.6	53.0 – 56.3	52.7 – 54.9	0.2 – 1.8	0

<sup>1</sup> A full list of predicted traffic noise levels for all receptors is provided in Appendix D.

<sup>2</sup> Please refer to the figures in Appendix B.



## SECTION 4.0

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### Construction Noise and Vibration

Land uses within the project limits are identified in the FDOT listing of noise and vibration-sensitive sites (e.g., residences and parks/recreation areas). Construction of the proposed roadway improvements is not expected to have any significant noise or vibration impact. If additional sensitive land uses are developed adjacent to the roadway prior to construction, increased potential for noise or vibration impacts could result. It is anticipated that the application of the FDOT “Standard Specifications for Road and Bridge Construction”<sup>5</sup> will minimize or eliminate potential construction noise and vibration impacts. However, should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in coordination with the Contractor and FDOT, will investigate additional methods of controlling these impacts.



## SECTION 5.0

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### Community Coordination

Public involvement and community coordination have been a vital component of the PD&E Study to ensure residents and stakeholders can provide input to the project development process.

A Live Online Alternatives Public Workshop was conducted online on Tuesday March 12, 2024, from 6:00 to 7:00 pm. The online meeting consisted of a presentation with various project information that was also available via display boards provided at the in-person meeting two days later. The virtual meeting concluded with a question-and-answer session. No traffic noise concerns were received during the virtual meeting, and the materials used in the meeting were posted to the project website located at: <https://www.swflroads.com/project/436676-1>.

An in-person Alternatives Public Workshop was held on Thursday March 14, 2024, from 5:00 pm to 7:00 pm at Christ Church, located at 6400 Gulf of Mexico Drive, Longboat Key, FL 34228. Various display boards were available showing the build alternatives under consideration at the time. A video presentation was also played on a continuous loop throughout the duration of the meeting. Members of the FDOT and project consultant team were available to answer questions and address concerns from meeting attendees. Several traffic noise concerns were raised during the meeting, primarily from residents on the south side of the bridge. No additional traffic noise-related concerns were received during the comment period that followed. All materials presented at the meeting are available at the project website linked above.

This section will be completed following the public hearing for the project, anticipated in March 2026.



## SECTION 6.0

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### References

1. 23 Code of Federal Regulations, Part 772: “Procedures for Abatement of Highway Traffic Noise and Construction Noise.” Federal Highway Administration; July 13, 2010.
2. Project Development and Environment Manual, Part 2, Chapter 18. Florida Department of Transportation. July 31, 2024.
3. Traffic Noise Modeling and Analysis Practitioners Handbook. Florida Department of Transportation. September 2025.
4. Noise Measurement Handbook. Federal Highway Administration. FHWA- HEP-18-065. June 2018.
5. Florida Department of Transportation Standard Specifications for Road and Bridge Construction. January 2026.

## **APPENDIX A**

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### Noise Study Traffic Data

**TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT  
FDOT DISTRICT 1**

Federal Aid Number(s):	0
FPID Number(s):	436676-1-22-01
State/Federal Route No.:	SR 789
Road Name:	SR 789 (Longboat Key)
Project Description:	SR 789 (Longboat Key)
Segment Description:	From North Shore Rd to Coquina Park South Entrance
Section Number:	130800000
Mile Post To/From:	4.467-5.177

<b>Existing Facility:</b>		D =	<b>54.40%</b>	%
		T24 =	<b>4.70%</b>	% of 24 Hour Volume
<b>Year:</b>	<b>2022</b>	Tpeak =	<b>2.40%</b>	% of Design Hour Volume
		MT =	<b>1.43%</b>	% of Design Hour Volume
<b>LOS C Peak Hour Directional Volume:</b>	<b>970</b>	HT =	<b>0.87%</b>	% of Design Hour Volume
<b>Demand Peak Hour Volume:</b>	<b>480</b>	B =	<b>0.10%</b>	% of Design Hour Volume
<b>Posted Speed:</b>	<b>35</b>	MC =	<b>0.81%</b>	% of Design Hour Volume

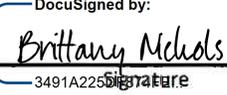
<b>No Build Alternative (Design Year):</b>		D =	<b>54.40%</b>	%
		T24 =	<b>4.70%</b>	% of 24 Hour Volume
<b>Year:</b>	<b>2051</b>	Tpeak =	<b>2.40%</b>	% of Design Hour Volume
		MT =	<b>1.43%</b>	% of Design Hour Volume
<b>LOS C Peak Hour Directional Volume:</b>	<b>970</b>	HT =	<b>0.87%</b>	% of Design Hour Volume
<b>Demand Peak Hour Volume:</b>	<b>710</b>	B =	<b>0.10%</b>	% of Design Hour Volume
<b>Posted Speed:</b>	<b>35</b>	MC =	<b>0.81%</b>	% of Design Hour Volume

<b>Build Alternative (Design Year):</b>		D =	<b>54.40%</b>	%
		T24 =	<b>4.70%</b>	% of 24 Hour Volume
<b>Year:</b>	<b>2051</b>	Tpeak =	<b>2.40%</b>	% of Design Hour Volume
		MT =	<b>1.43%</b>	% of Design Hour Volume
<b>LOS C Peak Hour Directional Volume:</b>	<b>970</b>	HT =	<b>0.87%</b>	% of Design Hour Volume
<b>Demand Peak Hour Volume:</b>	<b>710</b>	B =	<b>0.10%</b>	% of Design Hour Volume
<b>Posted Speed:</b>	<b>35</b>	MC =	<b>0.81%</b>	% of Design Hour Volume

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

Prepared By: Scalar Consulting Group, Inc            Date: 2/8/2024  
 Print Name      Signature

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

FDOT Reviewer: Brittany Nichols            Date: 02/12/2024 | 7:53 AM EST  
 Print Name      Signature      DocuSigned by: 3491A22558874058

**FDOT TRAFFIC DATA FOR NOISE STUDIES - DETAILED OUTPUT**

Prepared By: Scalar Consulting Group, Inc Date: 2/8/2024 Approved for Use By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Federal Aid Number(s): 0 Section Number: 130800000  
 FPID Number(s): 436676-1-22-01 Mile Post To/From: 4.467-5.177  
 State/Federal Route No.: SR 789  
 Road Name: SR 789 (Longboat Key)  
 Project Description: SR 789 (Longboat Key)  
 Segment Description: From North Shore Rd to Coquina Park South Entrance

Note: Data sheets are to be completed for each segment having a change in traffic parameters (i.e., volume posted speed, typical section)

Demand Peak Hour/LOS C	Peak or Off-Peak Direction	Vehicle Type	Existing		No Build (Design Year)		Build (Design Year)	
			Year: 2022	Year: 2051	Year: 2051	Year: 2051		
			Posted Speed: 35					
			Number of Travel Lanes: 2					
See Columns to Right > for Which Volumes To Use (Demand or LOS C)			Number of Vehicles					
			Use Demand Volumes					
Demand Peak Hour	Peak Direction	Autos	464	687	687	687	687	687
		Med Trucks	7	10	10	10	10	
		Heavy Trucks	4	6	6	6	6	
		Buses	1	1	1	1	1	
		Motorcycles	4	6	6	6	6	
	Total	480	710	710	710	710		
	Off-Peak Direction	Autos	389	575	575	575	575	
		Med Trucks	6	9	9	9	9	
		Heavy Trucks	3	5	5	5	5	
		Buses	1	1	1	1	1	
Motorcycles		3	5	5	5	5		
Total	402	595	595	595	595			
LOS C	Peak Direction	Autos	939	939	939	939	939	
		Med Trucks	14	14	14	14	14	
		Heavy Trucks	8	8	8	8	8	
		Buses	1	1	1	1	1	
		Motorcycles	8	8	8	8	8	
	Total	970	970	970	970	970		
	Off-Peak Direction	Autos	939	939	939	939	939	
		Med Trucks	14	14	14	14	14	
		Heavy Trucks	8	8	8	8	8	
		Buses	1	1	1	1	1	
Motorcycles		8	8	8	8	8		
Total	970	970	970	970	970			

## **APPENDIX B**

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### Project Aerials



- Preferred Alternative Alignment
- Evaluated Receptor, Not Impacted
- Validation Monitoring Site
- Manatee County Parcels

Gulf of Mexico

Sarasota Bay

Longboat Pass Inlet



All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

**Appendix B: Project Aerials**

S.R. 789 PD&E Study from N. Shore Road to Coquina Park Entrance  
 Manatee County, FL  
 FPID: 436676-1-22-01  
 Sheet 1 of 3



Data Source: ESRI Imagery, ESA, FDOT





- Preferred Alternative Alignment
- Evaluated Receptor, Not Impacted
- Validation Monitoring Site
- Manatee County Parcels

**Northgate of  
Longboat  
Key Condos**

Begin Project



**Appendix B: Project Aerials**  
 S.R. 789 PD&E Study from N. Shore Road to Coquina Park Entrance  
 Manatee County, FL  
 FPID: 436676-1-22-01  
 Sheet 2 of 3

Data Source: ESRI Imagery, ESA, FDOT



All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.



- Preferred Alternative Alignment
- Evaluated Receptor, Not Impacted
- Validation Monitoring Site
- Manatee County Parcels

End Project

Coquina Beach Park

Leffis Key Preserve

Coquina Beach Park

Longboat Pass Fishing Beach

**Appendix B: Project Aerials**  
 S.R. 789 PD&E Study from N. Shore Road to Coquina Park Entrance  
 Manatee County, FL  
 FPID: 436676-1-22-01  
 Sheet 3 of 3

Data Source: ESRI Imagery, ESA, FDOT



All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

## **APPENDIX C**

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### Validation Measurement Documentation

## Noise Measurement Data Sheet

**Date:** July 18, 2025

**Measurement Taken By:** MSM

**Project:** S.R. 789 (Longboat Key) PD&E Study from N. Shore Road to Coquina Park Entrance (436676-1)

**Site ID:** 1 - Coquina Beach Park

### Weather Conditions

**Cloud Cover:** Cloudy

**Temperature: Start: 87 End: 90 (°F)**

**Wind Direction: Start: Southeast End: Southeast**

**Wind Speed (Start): Min: 2 Max: 5 Average: 3 (mph)**

**Wind Speed (End): Min: 4 Max: 8 Average: 5 (mph)**

**Humidity (%): Start: 64 End: 62**

### Equipment Data

**Sound Level Meter:** Larson Davis 720 SLM **Serial Number:** 0410

**Date of Last Traceable Calibration:** 12/16/2024

**Calibration: Start: 114 End: 114**

**Battery: Start: 100% End: 98%**

**Weighting Scale: A Response: Slow**

**Calibrator:** Larson Davis CAL 150 **Serial Number: 2282**

### Results in dB(A)

Leq (Run 1 / Run 2 / Run 3): 59.6 / 59.5 / 59.0

Major Noise Sources: SR 789 traffic

Background Noise Sources: birds, cicadas, crickets, chainsaw, kids playing at playground

Other Notes/Observations:

## Observed Traffic Data: Site 1

### Run 1 10:56am - 11:06am

Vehicle Types	Northbound SR 789		Southbound SR 789	
	Volume	Speed (mph)	Volume	Speed (mph)
Auto	48	36	56	36
Medium Truck	5	33	5	33
Heavy Truck	2	32	2	32
Bus	0	-	0	-
Motorcycle	0	-	0	-

### Run 2 11:08am - 11:18am

Vehicle Types	Northbound SR 789		Southbound SR 789	
	Volume	Speed (mph)	Volume	Speed (mph)
Auto	49	35	48	35
Medium Truck	2	37	1	37
Heavy Truck	2	35	0	-
Bus	0	-	0	-
Motorcycle	0	-	0	-

### Run 3 11:20am - 11:30am

Vehicle Types	Northbound SR 789		Southbound SR 789	
	Volume	Speed (mph)	Volume	Speed (mph)
Auto	48	36	39	36
Medium Truck	4	32	2	32
Heavy Truck	1	35		
Bus	0	-	0	-
Motorcycle	0	-	0	-

## Site 1 Photos

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## Noise Measurement Data Sheet

**Date:** July 18, 2025

**Measurement Taken By:** MSM

**Project:** S.R. 789 (Longboat Key) PD&E Study from N. Shore Road to Coquina Park Entrance (436676-1)

**Site ID:** 2 - Firehouse Court, South of N. Shore Road

### Weather Conditions

**Cloud Cover:** Partly Cloudy

**Temperature: Start: 87 End: 88 (°F)**

**Wind Direction: Start: Southeast End: Southeast**

**Wind Speed (Start): Min: 3 Max: 7 Average: 5 (mph)**

**Wind Speed (End): Min: 2 Max: 6 Average: 4 (mph)**

**Humidity (%): Start: 60 End: 59**

### Equipment Data

**Sound Level Meter:** Larson Davis 720 SLM **Serial Number:** 0410

**Date of Last Traceable Calibration:** 12/16/2024

**Calibration: Start: 114 End: 114**

**Battery: Start: 99% End: 96%**

**Weighting Scale: A Response: Slow**

**Calibrator:** Larson Davis CAL 150 **Serial Number:** 2282

### Results in dB(A)

Leq (Run 1 / Run 2 / Run 3): 60.3 / 59.7 / 59.8

Major Noise Sources: SR 789 traffic

Background Noise Sources: Birds, leaves rustling with wind

Other Notes/Observations:

**Observed Traffic Data: Site 2**

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**Run 1** 12:09pm - 12:19pm

Vehicle Types	Northbound SR 789		Southbound SR 789	
	Volume	Speed (mph)	Volume	Speed (mph)
Auto	56	36	36	36
Medium Truck	4	33	1	33
Heavy Truck	0	-	0	-
Bus	0	-	0	-
Motorcycle	0	-	1	31

**Run 2** 12:21pm - 12:31pm

Vehicle Types	Northbound SR 789		Southbound SR 789	
	Volume	Speed (mph)	Volume	Speed (mph)
Auto	47	36	35	36
Medium Truck	7	36	5	36
Heavy Truck	1	35	1	35
Bus	0	-	0	-
Motorcycle	0	-	0	-

**Run 3** 12:33pm - 12:43pm

Vehicle Types	Northbound SR 789		Southbound SR 789	
	Volume	Speed (mph)	Volume	Speed (mph)
Auto	27	38	52	38
Medium Truck	2	33	1	33
Heavy Truck	0	-	0	-
Bus	0	-	0	-
Motorcycle	0	-	0	-

Site 2 Photos

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## **APPENDIX D**

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### Predicted Traffic Noise Levels

Appendix D: Predicted Traffic Noise Levels

Site ID	# of Units	Land Use / Activity	NAC Activity Category	Leq(h) dB(A)			Change From Existing	Does Future Build Approach, Meet, or Exceed NAC?
				Existing (2022)	Future No-Build (2051)	Future Build (2051)		
1	2	Residence	B	50.8	52.5	53.4	2.6	No
2	1	Residence	B	53.4	55.1	55.9	2.5	No
3	1	Residence	B	56.0	57.7	58.4	2.4	No
4	1	Residence	B	55.4	57.1	58.2	2.8	No
5	1	Residence	B	51.7	53.4	55.0	3.3	No
6	1	Tennis Court - Northgate of Longboat Key Condos	C	56.8	58.5	60.3	3.5	No
7				58.5	60.1	60.1	1.6	No
8	1	Pool - Northgate of Longboat Key Condos	C	53.0	54.7	55.1	2.1	No
9B	1	Residence	B	49.3	51.0	51.5	2.2	No
10B	1	Residence	B	50.2	51.9	52.2	2.0	No
11B	1	Residence	B	51.1	52.8	52.8	1.7	No
11C				53.0	54.7	54.1	1.1	No
12B	1	Residence	B	51.8	53.5	53.5	1.7	No
12C				53.5	55.1	54.6	1.1	No
13B	1	Residence	B	52.5	54.2	53.9	1.4	No
13C				53.9	55.6	55.0	1.1	No
14B	1	Residence	B	53.4	55.1	54.6	1.2	No
14C				54.4	56.1	55.6	1.2	No
15B	1	Residence	B	54.4	56.1	55.4	1.0	No
15C				55.1	56.8	56.4	1.3	No
16B	1	Residence	B	55.5	57.2	56.0	0.5	No
16C				55.9	57.6	57.2	1.3	No
17B	1	Residence	B	58.2	59.9	58.5	0.3	No
17C				58.2	59.9	60.2	2.0	No
18	1	Residence	B	56.8	58.5	58.1	1.3	No
19	1	Residence	B	56.1	57.7	57.4	1.3	No
20	1	Residence	B	54.9	56.6	56.2	1.3	No
21	1	Residence	B	53.5	55.2	54.9	1.4	No
22	1	Residence	B	52.8	54.5	54.3	1.5	No
23	1	Residence	B	51.9	53.6	53.4	1.5	No
24	1	Residence	B	50.9	52.5	52.4	1.5	No
25	1	Residence	B	50.4	52.1	51.7	1.3	No
26	1	Residence	B	59.7	61.3	59.1	-0.6	No
27	1	Residence	B	59.1	60.8	58.0	-1.1	No
28	1	Residence	B	56.6	58.3	56.0	-0.6	No
29	1	Residence	B	56.8	58.5	55.7	-1.1	No
30	1	Residence	B	55.7	57.4	54.9	-0.8	No
31	2	Residence	B	54.1	55.8	54.0	-0.1	No
32	1	Residence	B	54.6	56.3	54.0	-0.6	No
33	1	Longboat Pass Fishing Beach	C	60.5	62.1	46.6	-13.9	No
34				57.1	58.8	49.2	-7.9	No
35				55.0	56.7	49.9	-5.1	No
36	1	Coquina Beach	C	57.4	59.1	53.5	-3.9	No
37				55.4	57.1	54.8	-0.6	No
38				54.1	55.8	55.3	1.2	No
39				53.0	54.7	54.8	1.8	No
40	1	Picnic Tables - Coquina Beach Park	C	49.8	51.5	52.6	2.8	No
41	1	Picnic Tables - Coquina Beach Park	C	52.8	54.5	55.0	2.2	No
42	1	Picnic Tables - Coquina Beach Park	C	52.5	54.2	54.7	2.2	No
43	1	Picnic Tables - Coquina Beach Park	C	54.6	56.2	55.1	0.5	No
44	1	Pavilion - Coquina Beach Park	C	49.6	51.3	52.5	2.9	No
45	1	Pavilion - Coquina Beach Park	C	55.3	57.0	55.3	0.0	No

Appendix D: Predicted Traffic Noise Levels

Site ID	# of Units	Land Use / Activity	NAC Activity Category	Leq(h) dB(A)			Change From Existing	Does Future Build Approach, Meet, or Exceed NAC?
				Existing (2022)	Future No-Build (2051)	Future Build (2051)		
46	1	Playground - Coquina Beach Park	C	54.6	56.3	54.8	0.2	No
47	1	Pavilion - Leffis Key Preserve	C	53.1	54.8	54.9	1.8	No
48	1	Trail - Leffis Key Preserve	C	52.9	54.6	54.4	1.5	No
49	1			51.3	53.0	52.7	1.4	No

<sup>1</sup> The letters "B" and "C" following a Site ID refer to second and third floor patios/balconies, respectively for residences located in multi-family buildings.

## **APPENDIX E**

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TNM Files (Provided Electronically)