STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TECHNICAL REPORT COVERSHEET

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DRAFT NOISE STUDY REPORT

Florida Department of Transportation

District 5

S.R. 60 Project Development and Environment (PD&E) Study

Limits of Project: Prairie Lake Road to Florida's Turnpike

Osceola County, Florida

Financial Management Number: 452574-1

ETDM Number: 14563

Date: August 2025

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.

Authorized Signature

Rachel Cabrera
Print/Type Name

Environmental Scientist
Title

1110 Montlimar Dr., Suite 1050
Address

Mobile, AL 36609
Address

Seal

NOISE STUDY REPORT

SR-60 from Prairie Lakes Road to Florida's Turnpike PD&E Study

Prepared for:

Florida Department of Transportation
District Five
Osceola County, Florida

FPID: 452574-1

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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District Five is conducting a Project Development and Environment (PD&E) Study for improvements to State Route (SR) 60 in Osceola County, Florida. The proposed project corridor is located along SR 60 from Prairie Lakes Road to Florida's Turnpike, a distance of approximately 20 miles (**Figure 1-1**). The PD&E will evaluate one Build Alternative and a No Build Alternative.

This Noise Study Report (NSR) was prepared in accordance with *Title 23 Code of Federal Regulations Part 772 (23 CFR 772)*, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (effective July 13, 2011), FDOT's *PD&E Manual*, *Part 2, Chapter 18 Highway Traffic Noise* (updated July 31, 2024) and FDOT's *Traffic Noise Modeling and Analysis Practitioners Handbook* (December 31, 2018).

The objectives of this NSR are to identify noise sensitive sites adjacent to the project limits, to evaluate the significance of existing and future traffic noise levels at the sites with 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 "contours" to estimate noise levels at different distances from the roadway. These noise contours will be provided to local officials with land use planning/zoning responsibility to aid in promoting land use compatibility to protect future land development from becoming incompatible with anticipated traffic noise levels. Included in this NSR are the modeled 2025 Existing, the 2050 Design Year No Build Alternative, and the 2050 Design Year Build Alternative traffic noise results.

The prediction of future traffic noise levels with the proposed roadway improvements was performed using the Federal Highway Administration's (FHWA) currently-approved version of the Traffic Noise Model (TNM – Version 2.5).

Noise levels were modeled at a total of four receptor sites within the project study area. Of those four total receptors, three noise receptors represented single-family residences, and one noise receptor represented eight residential units. All residential sites were modeled as Activity Category B. The results of the NSR indicate that the predicted noise levels for the 2025 Existing and 2050 No Build conditions ranged from 61.5 dBA to 69.1 dBA. The predicted noise levels for the proposed 2050 Build Alternative condition ranged from 70.2 dBA to 71.2 dBA.

The analysis concluded that the traffic noise levels under the design year 2050 Build Alternative condition will meet or exceed the Noise Abatement Criteria (NAC) at four receptor sites representing 11 total residential units and will have no substantial increases of 15 dBA or more. The locations of the modeled receptors and the location of the impacted receptors for the Build Alternative are shown in the figures included in **Appendix C**. Two noise barriers were evaluated for the impacted receptor sites. One noise barrier was considered not feasible because it could not achieve the FDOT feasibility criteria of a minimum of five-dBA or greater reduction at two receptor sites. The other noise barrier was able to meet the FDOT feasibility criteria, however, it was not considered cost reasonable; therefore, it is not recommended for further consideration. Based on the noise analysis performed to date, there are no feasible or reasonable traffic noise abatement solutions available to mitigate the four noise impacts that would occur as a result of this proposed project; therefore, no traffic noise abatement is proposed for this project.

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1. Introduction

1.1 Project Description

The purpose of this Project Development and Environment (PD&E) study is to evaluate the proposed widening of State Route (SR) 60 in Osceola County Florida from Prairie Lakes Road to Florida's Turnpike (**Figure 1-1**) along with the associated drainage features. The study includes traffic analysis, engineering alternatives analysis, environmental impacts evaluation, and agency coordination.

The purpose of this *Noise Study Report* (NSR) is to identify noise sensitive sites within and adjacent to the project limits, evaluate the existing and future traffic noise levels at the sites with and without the proposed improvements, and 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 "contours" to estimate noise levels at different distances from the proposed roadway improvements. These noise contours will be provided to local officials with land use planning/zoning responsibility to aid in promoting land use compatibility to protect future land development from becoming incompatible with anticipated traffic noise levels.

This NSR was prepared in accordance with *Title 23 Code of Federal Regulations Part 772 (23 CFR 772)*, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (effective July 13, 2011), *FDOT's PD&E Manual, Part 2, Chapter 18 Highway Traffic Noise* (updated July 31, 2024) and *FDOT's Traffic Noise Modeling and Analysis Practitioners Handbook* (December 31, 2018).

Figure 1-1: Project Location Map

1.2 Existing Facility and Proposed Improvements

Within the project study area, SR 60 is predominantly a two-lane undivided rural principal arterial that runs in an east and west direction with a posted speed of 60 miles per hour (MPH). Other roadways in the project study area consist mostly of rural two-lane undivided roadways.

The proposed improvements consist of widening SR 60 from the existing rural two-lane roadway to a four-lane rural roadway with paved shoulders and roadside ditches from Prairie Lakes Road to Florida's Turnpike, for a distance of approximately 20 miles.

1.3 Project Purpose and Need

The purpose of the proposed project is to provide additional capacity and safety improvements to SR 60 from Prairie Lakes Road to Florida's Turnpike. The primary needs for this project are to meet existing and future capacity and travel demands and improve safety. Additionally, SR 60 is designated by the Florida Department of Emergency Management as an evacuation route.

1.4 Project Alternatives

Two alternatives are being evaluated for the project: the No Build Alternative and the proposed Build Alternative. The No Build Alternative will leave SR 60 as it currently exists, other than the continuation of routine maintenance as needed. The No Build Alternative will not increase capacity or improve safety for SR 60. The No Build Alternative constitutes a baseline condition from which to measure impacts.

The proposed Build Alternative will widen SR 60 from the existing rural two-lane roadway to a four-lane rural roadway with paved shoulders and roadside ditches. The proposed project begins at Prairie Lakes Road and extends approximately 20 miles to its endpoint at Florida's Turnpike. The proposed project is divided into two project segments: Segment 1 and Segment 2.

Segment 1 is located from Prairie Lakes Road to US 411 (Kenansville Road) and includes widening SR 60 from the existing two-lane rural roadway to a four-lane rural divided highway with paved shoulders, a grassed median, and roadside swales. The posted speed limit for Segment 1 will be 65 MPH. Within this segment is a bridge over Blanket Bay Slough that will be replaced. There are three typical sections associated with Segment 1. Typical Section 1 begins west of Prairie Lake Road and ends after Curve 1. It has two 12-foot travel lanes in each direction, 12-foot (five-foot paved) outside shoulders, eight-foot (four-foot paved) inside shoulders, a 40-foot depressed grassed median, and five-foot-wide open ditches for stormwater conveyance to a proposed pond. Typical Section 2 begins at the end of Curve 1 and ends west of the Kenansville Road intersection. It has the same roadway elements as Typical Section 1 with the exception of the ditch, which has been replaced with a 15-foot-wide swale to provide stormwater treatment and conveyance. Typical Section 3 consists of the new bridge structures at Blanket Bay Slough. Each structure has two 12-foot travel lanes, six-foot inside shoulders, 10-foot outside shoulders, and 36-inch single slope traffic railing on the inside and outside shoulder points.

Segment 2 is located from US 411 (Kenansville Road) to Florida's Turnpike and includes widening SR 60 from the exiting two-lane rural roadway to four-lane urban divided roadway with curb and gutter, buffered bicycle lanes, sidewalks, and a closed drainage conveyance system. The posted speed limit for Segment 2 will be 45 MPH. There is one typical section associated with Segment 2, which includes two 12-foot travel lanes in each direction, seven-foot buffered bike lanes, curb and gutter, and a 22-foot raised grassed median. A portion of Segment 2 also includes six-foot sidewalk adjacent to curb. Illustrations of the proposed typical sections for Segment 1 and Segment 2 are included in **Appendix A**.

2 Methodology

This NSR was prepared in accordance with *Title 23 CFR 772*, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (effective July 13, 2011), FDOT's *PD&E Manual, Part 2, Chapter 18 Highway Traffic Noise* (updated July 31, 2024) and FDOT's *Traffic Noise Modeling and Analysis Practitioners Handbook* (December 31, 2018). This NSR utilized the current 2025 preliminary design for the proposed project.

2.1 Noise Metrics

The noise analysis conducted for this project consists of a comparison of computer modeled noise levels for 2025 Existing, 2050 No Build Alternative, and 2050 Build Alternative conditions. The design year is the future year used to estimate the forecast traffic volume for which a highway is designed. The computer software used for the noise analysis was the Federal Highway Administration's (FHWA) approved Traffic Noise Model (TNM) Version 2.5 model. FDOT criteria requires the use of TNM for the analysis of Traffic Highway Noise. Traffic data, roadway geometry, and receptor site locations were entered into the computer model.

The TNM model represents noise levels as Leq(h). Leq is defined as the equivalent steady-state sound level which, in a stated period of time, contains the same acoustic energy as the time-varying sound level during the same period. Leq(h) is the hourly value of Leq. Leq(h) is based on the more commonly known decibel (dB) and "A-weighted" decibel (dBA) units. Noise is composed of different frequencies, each of which is perceived differently by the human ear. Human hearing is not sensitive to low and very high frequencies. To compensate for low and high-end frequency insensitivity and render noise levels readings

more meaningful, an "A-weighting" scale is used to approximate the response of the human ear. The dBA unit measures perceptible sound energy and factors out the fringe frequencies. Sound levels of typical noise sources and environments are provided in **Table 2-1** as a frame of reference.

Table 2-1: Typical Noise Levels

Common Outdoor Activities	Noise Level dB(A)	Common Indoor Activities
	---110---	Rock Band
Jet Fly-over at 1000 ft.		
	---100---	
Gas Lawn Mower at 3 ft.		
	---90---	
Diesel Truck at 50 ft., at 50 mph.		Food Blender at 1 m. (3 ft.)
	---80---	Garbage Disposal at 1 m. (3 ft.)
Noise Urban Area (Daytime)		
Gas Lawn Mower at 100 ft.	---70---	Vacuum Cleaner at 10 ft.
Commercial Area		Normal Speech at 3 ft.
Heavy Traffic at 300 ft.	---60---	
		Large Business Office
Quiet Urban Daytime	---50---	Dishwasher Next Room
Quiet Urban Nighttime	---40---	Theater, Large Conference Room Background
	---30---	Library
Quiet Rural Nighttime		
	---20---	Bedroom at Night, Concert Hall
	---10---	
	---0---	
Lowest Threshold of Human Hearing		Lowest Threshold of Human Hearing
Source: California Dept. of Transportation Technical Noise Supplement, Oct. 1996, Page 18.		

2.2 Traffic Data

The traffic data used in the TNM modeling is from a report entitled *Project Traffic Analysis Report* prepared for the project in June 2025. The FDOT traffic noise data sheets, along with the traffic data used in the prediction of traffic noise levels by vehicle type (cars, medium trucks, heavy trucks, buses, and motorcycles) for the 2025 Existing, the 2050 No Build Alternative, and the 2050 Build Alternative conditions are included in **Appendix B**. For TNM modeling, the traffic volumes that will yield the highest traffic noise impact for the design year shall be used. Maximum peak-hourly traffic representing Level of Service (LOS) “C” will be used unless traffic analyses show that LOS C will not be reached. If LOS C is not

reached, demand volumes shall be used. Roadways for this project were modeled using LOS C for the 2025 Existing and 2050 No Build, and projected demand traffic volumes for the 2050 Build Alternative.

2.3 Noise Abatement Criteria

The FHWA policies and procedures, as promulgated in the *Title 23 CFR Part 772*, served as the procedural guidelines for this analysis. Incorporated into *Title 23 Part CFR 772* are Noise Abatement Criteria (NAC) that are based on the type of land use and activities performed at receptors (**Table 2-2**). In accordance with the FHWA *Title 23 CFR Part 772* guidelines, noise impacts occur under the following circumstances:

- when noise levels approach, meet, or exceed the values defined by the NAC. FDOT has determined that the NAC is approached when it is within one dBA of the appropriate NAC, or
- when noise levels increase over the existing condition by 15 dBA (substantial increase), regardless of the NAC.

The FHWA defines seven NAC based on land uses. Each land use has its own NAC. If the project would result in Leq(h) levels that approach, meet or exceed the NAC, abatement measures must be evaluated. For example, at residences, places of worship (exterior), and schools (exterior), noise abatement measures must be considered if an equivalent steady state sound level for the “worst-case” hourly period approaches or exceeds 66 dBA.

Table 2-2: Noise Abatement Criteria Hourly "A-weighted" Sound Level – Decibels (dBA)

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 sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, recreation 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 structure, 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 design standards 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.

2.4 Noise Sensitive Receptors

A noise sensitive receptor is defined as a discrete or representative location of a noise sensitive area(s) for any of the land use categories listed in **Table 2-2**. In determining traffic noise impacts for properties with Activity Category A, B, C or E land uses, areas of frequent exterior human use should be identified. For those properties with Activity Category D land uses, interior areas of frequent human use should be identified. Unless the area of exterior frequent human use is identified elsewhere, residential receptor sites should be placed at the edge of the dwelling unit closest to the major traffic noise source. Receptor heights for first (ground) floor receptors are always assumed to be five feet above ground elevation. Receptors located on the second and subsequent floors of a building should be modeled 10 feet above

the "height above ground" for each additional floor evaluated above the ground floor. The maximum horizontal distance from the edge of pavement that a receptor site will be modeled will vary based on topography and traffic conditions and will be determined on a case-by-case basis. At a minimum, the horizontal distance should be sufficient to identify all potential impacts consistent with the requirements of *Title 23 CFR 772*.

Activity Category F land uses include developed lands that are not sensitive to highway traffic noise such as 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. There is no NAC level for this activity category since these land uses are not sensitive to highway traffic noise and therefore no noise analysis is required for these locations.

Activity Category G land uses include undeveloped lands that are not permitted. There is no NAC level for this activity category. Although consideration of mitigation is not required, FDOT must determine and document highway traffic noise levels and provide this information to local governments. Results from the Undeveloped Land Analysis are included in **Table 6-1**.

2.5 Noise Abatement Measures

Noise abatement measures are evaluated at locations where impacts are predicted to occur under the Build Alternative scenario according to *Title 23 CFR 772*. Abatement measures may include traffic management measures, the alteration of horizontal and vertical alignments, the acquisition of real property or interests therein as a buffer zone, and construction of noise barriers. These abatement measures are described in the following sections.

2.5.1 Traffic Management

Some types of traffic management may reduce noise levels by limiting motor vehicle speeds or reducing volume of vehicles. However, these techniques may also negate a project's ability to meet its stated purpose and need. Traffic management measures are not considered reasonable mitigation for the proposed project as it will not allow the project to meet its described purpose and need.

2.5.2 Alignment Modifications

Modifying the horizontal and/or vertical alignment of a roadway can be an effective traffic noise mitigation measure. The proposed project will correct existing deficient roadway curve geometry in order to meet the purpose and need. Further alignment modification as noise abatement is not feasible.

2.5.3 Buffer Zones

Providing a buffer between the roadway and noise sensitive land use can reduce noise impacts. This measure requires acquisition of property between the roadway and the noise sensitive land use. As this NSR applies to existing noise sensitive land uses, buffer zones are not an applicable abatement measure at this time. However, for any new development occurring in the future, local planning authorities can use the noise contour information provided in **Table 6-1** to establish buffer zones.

2.5.4 Noise Barriers

The most common and effective noise abatement measure is the construction of a noise barrier. A noise barrier is a physical obstruction that is constructed between the highway noise source and the noise sensitive receptor(s) for the purpose of lowering the noise level, including stand-alone barrier structures, berms (earth or other materials), and combination berm/barrier structure systems. For a noise barrier to effectively shield receptors, the barrier design must be relatively continuous and have sufficient height to block the path between the noise source and the receptor site. Gaps incorporated into the barrier design to accommodate access roads, subdivision entrance roads, or driveways lesson the effectiveness of a barrier.

Typically, on transportation projects, noise barriers are placed near the source (roadway) which in most cases is near the Right-of-Way (ROW) boundary. Locating barriers near the ROW boundary also helps maintain clear zones and alleviates drainage concerns. However, in some instances, placement along the edge of shoulder may be required to adequately break the line of sight.

When modeling noise barriers as abatement features, the unadjusted barrier length is subdivided, typically into 20-foot to 100-foot increments (with the 20-foot segments at the ends and the 100-foot segments in the middle of a barrier), so that small portions of the noise barrier at either end can be raised

or lowered as needed during the optimization process. During PD&E and unless there are significant increases/decreases in ground elevation, noise barriers are typically modeled at constant heights from eight feet in two-foot increments to the maximum height of 22 feet. If, at these heights, the cost of a noise barrier is close to, but exceeds the cost reasonableness criteria, the incremental height of the barrier is reduced by one foot.

In order to be constructed, noise barriers must be evaluated for both feasibility and reasonableness under the procedures within the FDOT *PD&E Manual, Part 2, Chapter 18: Highway Traffic Noise* (updated July 31, 2024).

2.5.1.1 Noise Barrier Feasibility

The feasibility evaluation is a combination of acoustical and engineering factors considered in the evaluation of a noise abatement measure. The feasibility of providing noise abatement is focused on the ability of the noise barrier to provide a reduction of at least five-dBA to impacted receptors. The more reduction that can be achieved, the better the barrier, as long as the cost, visual impact, and other factors of the barrier are not unreasonable. If a minimum of five-dBA reduction cannot be achieved at a particular receptor, that receptor is not considered benefited. The number of impacted receptors required to achieve a five-dBA reduction or greater in order for a noise barrier to be considered feasible is two or greater.

Factors including but not limited to safety, barrier height, topography, drainage, utilities, maintenance, and access issues are also considered during the feasibility evaluation. These factors are evaluated during the engineering review and a noise barrier would not be constructed unless it is cleared of these potential issues.

2.5.1.2 Noise Barrier Reasonableness

The following reasonableness factors must collectively be achieved for the noise abatement measure to be deemed reasonable:

- The barrier must achieve the noise reduction design goal by providing at least a seven-dBA reduction for at least one receptor;

- The barrier should not cost more than $64,000 per benefited receptor (a benefited receptor is a site that receives at least a five-dBA reduction in noise from the barrier). The current estimated cost to construct a noise barrier (materials and labor) is $40.00 per square foot; and
- Consideration of the viewpoints of the benefited receptors (property owners and residents) if all other criteria are achieved. During the PD&E phase, the viewpoints of potentially benefited receptors will be gathered during workshops, public hearing or through other public information mediums, such as project websites. During the design phase of the project, FDOT will use either a noise abatement workshop and/or a public survey to determine the wishes of the benefited receptors. The survey effort may include a mailing of information related to the abatement measure along with a survey form to be signed and returned to FDOT. It is the desire of FDOT to obtain a response for or against the noise barrier from a numerical majority (greater than 50 percent) of the benefited receptors (owners and residents) that provide a response to the survey.

2.5.1.3 Special Land Uses

The term "Special Land Use" applies to land uses that are not residential as defined by *Title 23 CFR Part 772*. Activity Category D would only be evaluated if unusual land uses occur. Some examples of special land uses include places of worship, schools, parks, and amphitheaters. If noise impacts occur at Special land uses, FDOT's research publication, *Methodology to Evaluate Highway Traffic Noise at Special Land Uses*, dated December 2023, should be used to determine if a noise barrier could be feasible and reasonable. There are no special land uses identified within the project study area.

3 Traffic Noise Analysis

3.1 Existing Land Use and Noise Sensitive Receptor Sites

Existing land uses were initially reviewed in GIS and then subsequently verified in the field. Current land use for the area surrounding this project is predominantly undeveloped land or farmland, with a few residential (Activity Category B) areas.

3.2 Model Validation

The primary purpose of field measuring existing traffic noise levels along an existing roadway alignment is to ensure that traffic noise is the primary source of noise and to validate the TNM input values in order to verify that the model accurately predicts the existing traffic noise based on the current conditions. Multiple field measurements for the purpose of model validation were collected at two sites along the project corridor. Validation Site V-1 was located near the beginning of the project on the north side of SR 60, east of Prairie Lakes Road. Validation Site V-2 was located near the end of the project on the south side of SR 60, west of Florida's Turnpike. The measurement sites are illustrated on the figures included in **Appendix C**.

The validation measurements were collected using a RION NL-42 Type 2 sound level meter in accordance with procedures outlined in FHWA's *Measurement of Highway Related Noise* document. The A-weighted frequency scale was used, and the sound level meter was calibrated in the field to 94 dBA using a RION NC-74 acoustic calibrator. Meteorological data, such as wind, temperature, and general weather conditions were recorded during each sampling event at each measurement location. Winds were observed to be negligible, and no precipitation occurred during the noise level monitoring periods. Three 10-minute noise level measurements were made at each of the noise monitoring sites with the microphone approximately five feet above the land surface.

Community noises and traffic information, such as number of passenger cars, trucks, buses, and motorcycles and the average speeds were also collected during the noise level measurements. Since all noise levels in this report are based on a one-hour period, the field recorded traffic volumes were adjusted upward to reflect hourly volumes. The data collected in the field was then used as input into TNM. The dates, times, and the field measured and TNM predicted noise levels are presented in **Table 3-1**.

Traffic noise was observed to be the dominant noise source at each of the noise measurement sites. To verify the computer noise model, the TNM predicted noise levels for the validation sites were compared to measured noise levels. When measured noise levels are within +/-3.0 dBA of the computer predicted levels, the noise model is considered validated. All the measured noise levels were within +/-3.0 dBA of the modeled noise levels; therefore, it was determined that the model had been validated and is

considered acceptable for predicting existing and future traffic noise levels along SR 60. The model validation data is included in **Appendix D.**

Table 3-1: Noise Measurement Data and TNM Verification Results

Location and Figure Reference	Date	Validation Site Number	Begin Time	End Time	Measured Traffic Noise Level (dBA)	Modeled Traffic Noise Level (dBA)	Difference (dBA)
V1 (Figure A-2)	7/10/25	V1-1	10:27AM	10:37AM	66.3	68.3	2.0
	7/10/25	V1-2	10:38AM	10:48AM	64.3	67.0	2.7
	7/10/25	V1-3	10:49AM	10:59AM	64.3	67.5	2.8
V2 (Figure A-30)	7/10/25	V2-1	12:44PM	12:54PM	57.5	60.5	3.0
	7/10/25	V2-2	12:55PM	1:05PM	57.8	60.7	2.9
	7/10/25	V2-3	1:06PM	1:16PM	57.0	*	*

*Discarded due to anomaly in results

3.3 Predicted Noise Levels and Abatement Analysis

Noise levels were modeled at four receptor sites within the project study area. The TNM predicted results at each receptor are included in **Table 3-2.** The locations of the noise receptors are illustrated on the figures included in **Appendix C**.

The predicted noise levels for the existing 2025 condition ranged from 61.5 dBA to 69.1 dBA and from 61.5 dBA to 69.1 dBA for the 2050 No Build Alternative condition due to both conditions using LOS C traffic. The predicted noise levels for the 2050 Build Alternative condition ranged from 70.2 dBA to 71.2 dBA.

Table 3-2: Traffic Noise Levels

			Existing Alignment				Build Alternative			
Site	**Number of Receivers Represented**	**Action Category**	**Distance From Existing Roadways (feet)**	**2025 Noise Level (dBA)**	**2050 No-Build Noise Level (dBA)**	**Noise Impact?**	**Distance From Build Alternative (feet)**	**2050 Build Noise Level (dBA)**	**Difference Between Existing and Build**	**Noise Impact?**
SR60-01	8	B	258	61.5	61.5	No	131	**70.3**	8.8	**Yes**
SR60-02	1	B	82	**69.1**	**69.1**	**Yes**	131	**70.3**	1.2	**Yes**
SR60-03	1	B	78	**68.9**	**68.9**	**Yes**	132	**70.2**	1.3	**Yes**
SR60-04	1	B	231	62.0	62.0	No	115	**71.2**	9.2	**Yes**

3.3.1 Noise Impact Analysis

The analysis concluded that the traffic noise levels under the design year 2050 Build Alternative condition will meet or exceed the NAC at four receptor sites (SR60-01, SR60-02, SR60-03, SR60-04) and will have no substantial increases of 15 dBA or more. Under the 2050 No Build Alternative, conditions will meet or exceed the NAC at two receptor sites (SR60-02, SR60-03) and will have no substantial increases of 15 dBA or more. The locations of the modeled receptors and the location of the impacted receptors are shown in the figures included in **Appendix C**. Abatement must be considered for all noise impacted sites under the 2050 Build Alternative condition.

3.3.2 Noise Barrier Analysis

As previously stated, noise levels are predicted to meet or exceed the NAC at four receptor sites under the Build Alternative condition (SR60-01, SR60-02, SR60-03, SR60-04). According to the *PD&E Manual, Part 2, Chapter 18* (July 31, 2024), a minimum of two impacted sites must achieve a five-dBA reduction or greater for a noise barrier to be considered feasible. Noise barriers were not evaluated at one of the impacted receptor sites (SR60-04) as this site is an isolated receptor and noise barriers would not meet the feasibility requirement to provide abatement for at least two impacted sites. The following presents the results of the noise barrier analyses performed to determine if noise barriers would be feasible and reasonable for the remaining impacted sites that meet the minimum of at least two impacted sites.

Noise Barrier 1: North Barrier

One impacted noise receptor site representing a multi-family residence (SR60-01) was further divided to represent the eight separate residential units within the building. Noise Barrier 1 was evaluated for these eight impacted residences. Noise Barrier 1 was placed on the north side of the proposed Build Alternative within the proposed ROW. The barrier was evaluated at a total length of approximately 573 feet with a 65-foot gap in the structure to allow for a driveway. The height of the barrier was evaluated in two-foot increments from eight to 22 feet. The results of the barrier are shown in **Table 3-3**. Results of this analysis indicated that the barrier could provide a five-dBA noise level reduction for at least two impacted receptors with heights between 14 and 22 feet. Additionally, barriers with heights of 20 to 22 feet are able to meet FDOT reasonableness noise reduction design goal of seven-dBA at one residence. However, none of the barrier heights were able to achieve the FDOT criteria of $64,000 cost per benefitted receptor; therefore, Noise Barrier 1 is not considered cost reasonable and is not recommended for further consideration.

Table 3-3: Barrier Analysis – Noise Barrier 1 (North Barrier)

Height (feet)	Length (feet)	Number of Impacted Residences	Noise Reduction at Impacted Residences			Number of Benefitted Residences			Average Noise Reduction	Total Barrier Cost ($40 per square foot)	Cost Per Benefitted Receptor
			5-5.9 dBA	6-6.9 dBA	≥7 dBA	Impacted	Not Impacted	Total			
8	573	8	0	0	0	0	0	0	1.8	N/A	N/A
10	573	8	0	0	0	0	0	0	3.0	N/A	N/A
12	573	8	1	0	0	1	0	1	4.2	N/A	N/A
14	573	8	2	1	0	3	0	3	4.7	$320,880	$106,960
16	573	8	3	1	0	4	0	4	5.0	$366,720	$91,680
18	573	8	2	2	0	4	0	4	5.2	$412,560	$103,140
20	573	8	2	1	1	4	0	4	5.3	$458,400	$114,600
22	573	8	2	1	1	4	0	4	5.4	$504,240	$126,000

Noise Barrier 2: South Barrier

Noise Barrier 2 was evaluated for two impacted receptors (SR60-02, SR60-03) on the south side of the proposed Build Alternative within the proposed ROW. The barrier was evaluated at a total length of approximately 2,196 feet with three gaps to allow for roadway and driveway access. The height of the barrier was evaluated in two-foot increments from eight to 22 feet. Results of this analysis indicated that

the barrier could not provide a five-dBA noise level reduction for at least two impacted receptors at any height; therefore, Noise Barrier 2 is considered not feasible and is not recommended for further consideration.

4 Conclusions

This NSR was prepared for the proposed project in accordance with FHWA's *Title 23 CFR 772* using methodologies established by FDOT in the *PD&E Manual, Part 2, Chapter 18* (July 31, 2024). The results of the NSR indicate that the predicted noise levels for the existing 2025 condition ranged from 61.5 dBA to 69.1 dBA and from 61.5 dBA to 69.1 dBA for the 2050 No Build Alternative condition. The predicted noise levels for the 2050 Build Alternative condition ranged from 70.2 dBA to 71.2 dBA. Under the design year 2050 Build Alternative, conditions will meet or exceed the NAC at four receptor sites representing 11 residential units (SR60-01, SR60-02, SR60-03, SR60-04) and will have no substantial increases of 15 dBA or more.

According to the *PD&E Manual, Part 2, Chapter 18* (July 31, 2024), a minimum of two impacted sites must achieve a five-dBA reduction or greater in order for a noise barrier to be considered feasible. Noise barriers were not evaluated at one of the impacted receptor sites for the Build Alternative (SR60-04) because it is an isolated receptor and noise barriers would not meet the feasibility requirement to provide abatement for at least two impacted sites. Two noise barriers were evaluated for the other impacted receptor sites. One noise barrier was considered not feasible because it could not achieve the FDOT feasibility criteria of a minimum of five-dBA or greater reduction at two receptor sites. The other noise barrier was able to achieve the FDOT feasibility criteria and met the noise reduction design goal by providing a seven-dBA reduction for at least one receptor, however, it was not considered cost reasonable; therefore, it is not recommended for further consideration. Based on the noise analysis performed to date, there are no feasible or reasonable traffic noise abatement solutions available to mitigate the 11 noise impacts that would occur as a result of this proposed project; therefore, no traffic noise abatement is proposed for this project.

Statement of Likelihood

Based on the noise analyses performed to date, there are no feasible or reasonable traffic noise abatement solutions available to mitigate the noise impacts that would occur as a result of this proposed project; therefore, no traffic noise abatement is proposed for this project. Noise impact locations can be found on Figure A-2 and Figure A-3 included in Appendix B.

Under FDOT policy, the approval date of the PD&E study (Type 2 Categorical Exclusion) for this project will constitute the "Date of Public Knowledge." Any noise sensitive receptor that is issued a building permit between August 1, 2025, and the Date of Public Knowledge, will be analyzed during the design phase of the project for traffic noise impacts and, if impacts are predicted, abatement will be considered during that phase of the project.

5 Construction Noise and Vibration

Some of the developed lands adjacent to the project limits including single family residences are classified by FDOT as being sensitive to construction noise and vibration. Construction of the proposed roadway improvements may cause temporary noise, or vibration impacts to these noise and vibration sensitive sites. If additional sensitive land uses develop 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* 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 District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

6 Community Coordination

Local agencies and local and community officials will have the opportunity to comment on the proposed project at a public meeting. This section will be updated after the public meeting is held.

To aid in promoting land use compatibility, a copy of the NSR, which provides information that can be used to protect future land development from becoming incompatible with anticipated traffic noise levels,

will be provided to local officials with land use planning/zoning responsibility. In addition, generalized future traffic noise impact contours for the properties in the immediate vicinity of the project have been developed for NAC A, B, C, and E. These noise contours represent the approximate distances from the proposed edge-of-pavement to the limits of the area predicted to approach or exceed the NAC for the design year 2050 Build Alternative condition. The distances between the proposed edge-of-pavement and each contour level are shown in **Table 6-1**. To minimize the potential for incompatible land use, future noise sensitive land uses should be located beyond these distances.

Table 6-1: Design Year 2050 Build Alternative Noise Impact Contour Distances

Roadway Segment	56 dBA Contour Distance from Edge-of-Pavement (feet) – Activity Category A	66 dBA Contour Distance from Edge-of-Pavement (feet) – Activity Category B and C	71 dBA Contour Distance from Edge-of-Pavement (feet) – Activity Category E
SR 60	>500	215	105

7 References

Florida Department of Transportation, Methodology to Evaluate Highway Traffic Noise at Special Land Uses. December 2023.

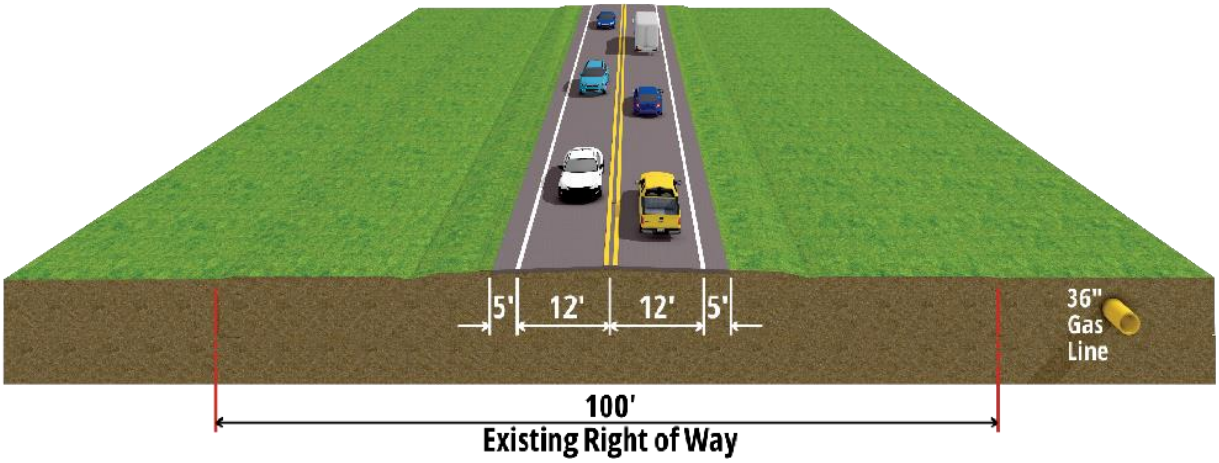
Florida Department of Transportation, Project Development and Environmental Manual, Chapter 18, Noise. July 31, 2024.

Florida Department of Transportation, Traffic Noise Modeling and Analysis Practitioners Handbook, December 31, 2018.

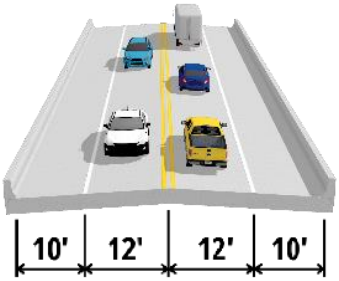
U.S. National Archives and Records Administration, Office of Federal Register. Title 23, Code of Federal Regulations, Part 772. Procedures for Abatement of Highway Traffic Noise and Construction Noise. 2010.

U.S. Department of Transportation, Federal Highway Administration. Highway Traffic Noise: Analysis and Abatement Guidance. December 2011.

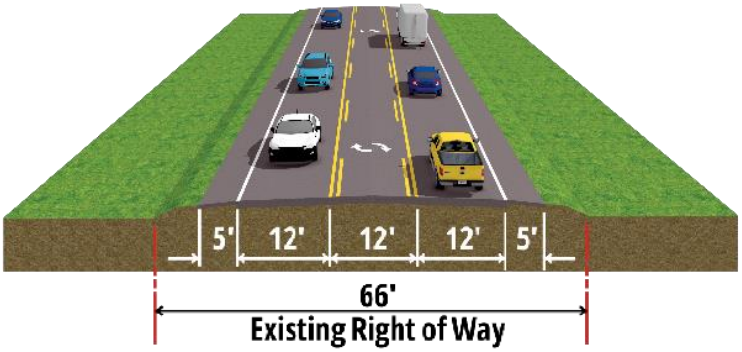
Appendix A: Typical Sections



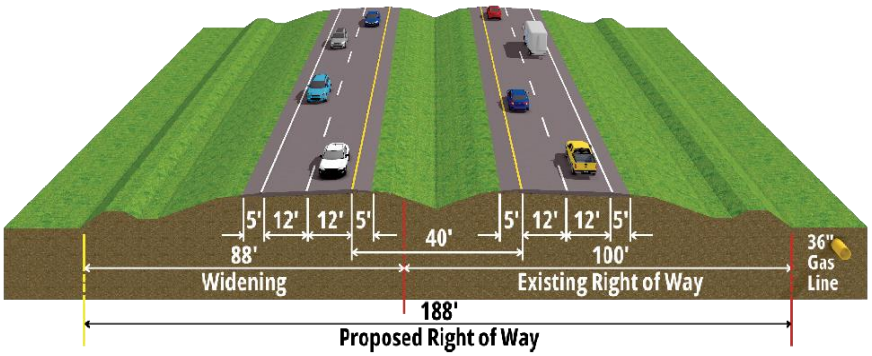
Existing Typical Section 1



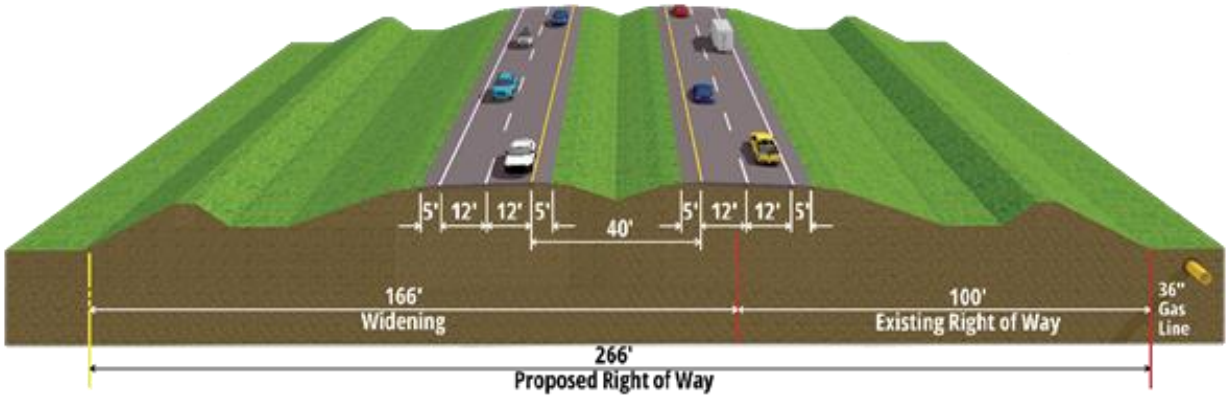
Existing Typical Section 2



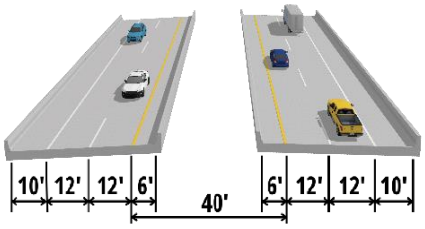
Existing Typical Section 3



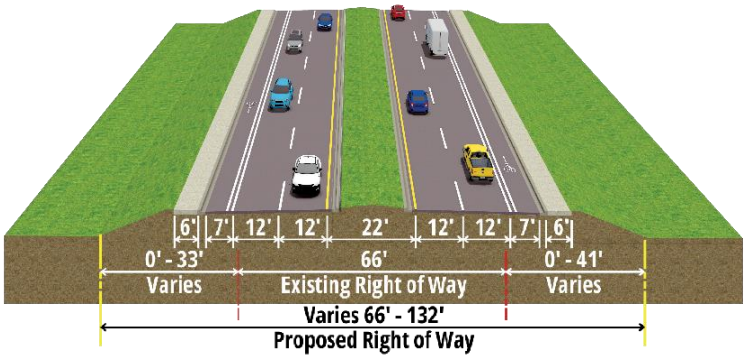
Segment 1 - Preferred Typical Section 1



Segment 1 - Preferred Typical Section 2



Segment 1 - Preferred Typical Section 3



Segment 2 - Preferred Typical Section 4

Appendix B: Noise Model Traffic Data

General Traffic Parameters

Traffic Parameters	
Directional Split (D)	57%
Peak Hour Percent Medium Trucks	5%
Peak Hour Percent Heavy Trucks	25%
Peak Hour Percent Buses	1%
Peak Hour Percent Motorcycles	1%

Traffic Data for Noise Modeling

Roadway Segment	Number of Lanes	Peak Hour Demand Volume (Veh/Hr)	Peak Hour Level-of-Service "C" Volume (Veh/Hr)	Volume used in TNM	Cars/ Medium Trucks/ Heavy Trucks/ Buses/ Motorcycles	Posted Speed (mph)
2025 Existing Conditions						
SR 60 from Prairie Lakes Road to Florida's Turnpike	2	569	430	430	293 / 22 / 108 / 5 / 5	60
2050 No Build Alternative Conditions						
SR 60 from Prairie Lakes Road to Florida's Turnpike	2	1,280	430	430	293 / 22 / 108 / 5 / 5	60
2050 Build Alternative Conditions						
SR 60 from Prairie Lakes Road to Florida's Turnpike	4	1,327	2,390	1,327	903 / 67 / 332 / 14 / 14	65

FDOT Traffic Sheets

These columns (A-U) below should be provided in the Noise Study Report as an Appendix.
If additional rowas are needed for additional traffic segments, **Traffic Segment Numbers** (Column A) should be provided for each roadway segment.

Highway Traffic Noise: Traffic Data

Project/Data Information

Project Name	SR 60 PDE from Prairie Lake Road to Florida's Turnpike
Project Number	FPID 452574-1
Condition	Existing
Year	2025
Source	VHB - PTAR
Preparer [Traffic Engineer]	David Graeber
Prepared Date	6/24/2025
Notes	

	Roadway Details					Traffic Details										Raw Traffic Data Selection & Off-Peak Calculation		
Traffic Segment Number	**Roadway Name**	**From**	**To**	**Roadway Type**	**Number of Lanes** *In 1 direction	**LOS C Peak Hour Peak Direction (PHPD)**	**Demand Hourly Volumes (DHV) Peak Hour Peak Direction (PHPD)**	**% Autos**	**% Medium Trucks**	**% Heavy Trucks**	**% Buses**	**% Motorcycles**	**Standard K-factor**	**D-factor**	**Posted Speed (mph)**	**LOS C vs. DHV Comparison**	**Peak Direction Volume*** *Used on both sides for LOS C	**Off-Peak Direction Volume*** *DHV only
1	SR 60	Prairie Lake Road	US 441	Mainline	1	430	569	68%	5%	25%	1%	1%	9.50%	55.00%	60	LOS C	430	N/A
2																LOS C	0	N/A
3																LOS C	0	N/A
4																LOS C	0	N/A
5																LOS C	0	N/A

These columns (A-U) below should be provided in the Noise Study Report as an Appendix.
If additional rowas are needed for additional traffic segments, **Traffic Segment Numbers** (Column A) should be provided for each roadway segment.

Highway Traffic Noise: Traffic Data

Project/Data Information

Project Name	SR 60 PDE from Prairie Lake Road to Florida's Turnpike
Project Number	FPID 452574-1
Condition	No-Build
Year	2050
Source	VHB - PTAR
Preparer [Traffic Engineer]	David Graeber
Prepared Date	6/24/2025
Notes	

	Roadway Details					Traffic Details										Raw Traffic Data Selection & Off-Peak Calculation		
Traffic Segment Number	**Roadway Name**	**From**	**To**	**Roadway Type**	**Number of Lanes** *In 1 direction	**LOS C Peak Hour Peak Direction (PHPD)**	**Demand Hourly Volumes (DHV) Peak Hour Peak Direction (PHPD)**	**% Autos**	**% Medium Trucks**	**% Heavy Trucks**	**% Buses**	**% Motorcycles**	**Standard K-factor**	**D-factor**	**Posted Speed (mph)**	**LOS C vs. DHV Comparison**	**Peak Direction Volume*** *Used on both sides for LOS C	**Off-Peak Direction Volume*** *DHV only
1	SR 60	Prairie Lake Road	US 441	Mainline	2	430	1,280	68%	5%	25%	1%	1%	9.50%	57.00%	60	LOS C	430	N/A
2																LOS C	0	N/A
3																LOS C	0	N/A
4																LOS C	0	N/A
5																LOS C	0	N/A

These columns (A-U) below should be provided in the Noise Study Report as an Appendix.
If additional rowas are needed for additional traffic segments, **Traffic Segment Numbers** (Column A) should be provided for each roadway segment.

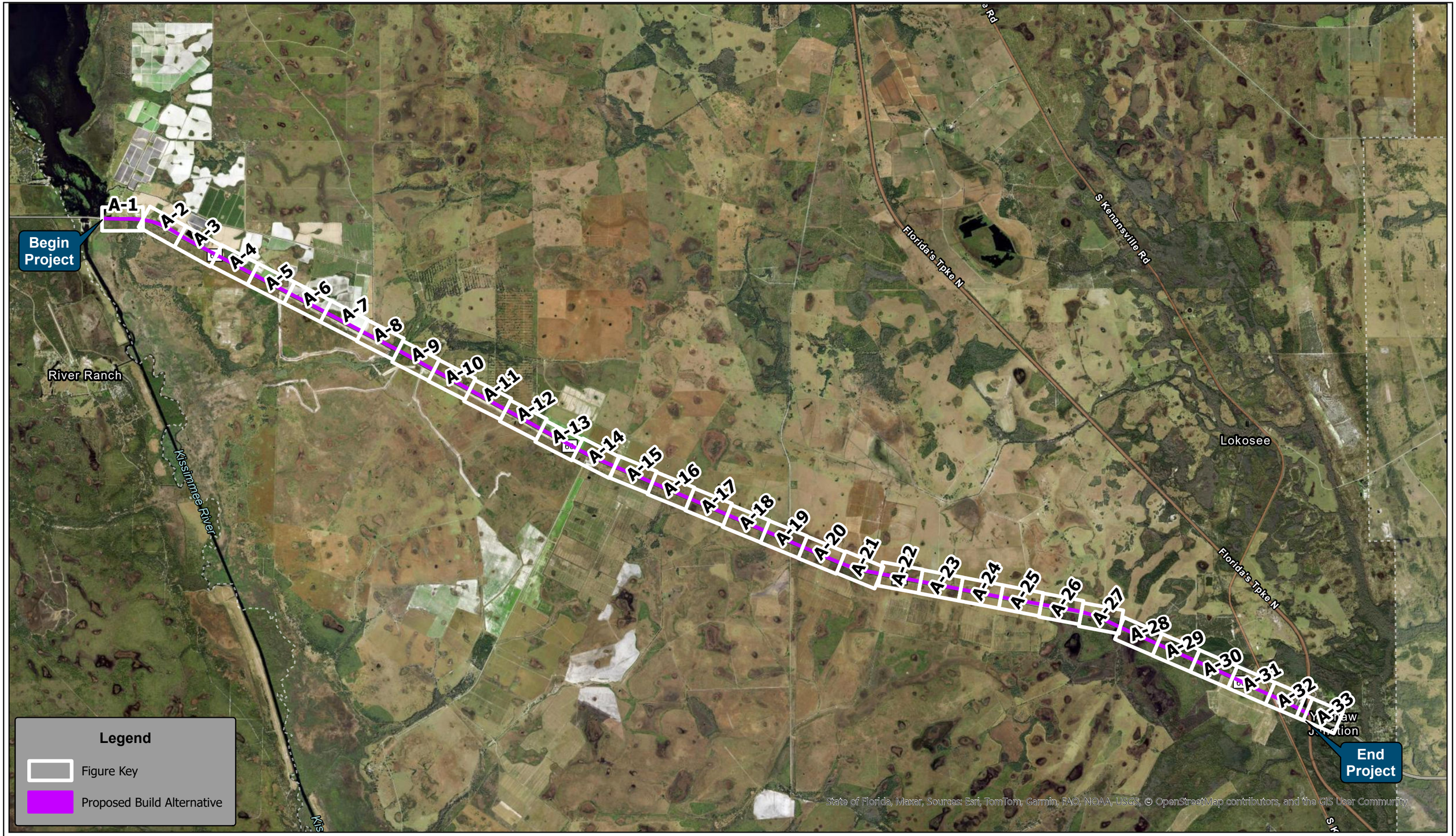
Highway Traffic Noise: Traffic Data

Project/Data Information

Project Name	SR 60 PDE from Prairie Lake Road to Florida's Turnpike
Project Number	FPID 452574-1
Condition	Build
Year	2050
Source	VHB - PTAR
Preparer [Traffic Engineer]	David Graeber
Prepared Date	6/24/2025
Notes	

	Roadway Details					Traffic Details										Raw Traffic Data Selection & Off-Peak Calculation		
Traffic Segment Number	**Roadway Name**	**From**	**To**	**Roadway Type**	**Number of Lanes** *in 1 direction	**LOS C Peak Hour Peak Direction (PHPD)**	**Demand Hourly Volumes (DHV) Peak Hour Peak Direction (PHPD)**	**% Autos**	**% Medium Trucks**	**% Heavy Trucks**	**% Buses**	**% Motorcycles**	**Standard K-factor**	**D-factor**	**Posted Speed (mph)**	**LOS C vs. DHV Comparison**	**Peak Direction Volume*** *Used on both sides for LOS C	**Off-Peak Direction Volume*** *DHV only
1	SR 60	Prairie Lake Road	US 441	Mainline	2	2,390	1,327	68%	5%	25%	1%	1%	9.50%	57.00%	65	DHV	1327	1001
2																LOS C	0	N/A
3																LOS C	0	N/A
4																LOS C	0	N/A
5																LOS C	0	N/A

Appendix C: Noise Sensitive Receptors Maps



FDOT

SR 60
Prairie Lake Rd to Florida Turnpike

0 7,000 14,000 Feet

1 inch = 7,000 feet

N

Figure Key
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT SR 60 Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-1
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-2
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-3
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-4
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-5
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-6
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT SR 60 Prairie Lakes Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-7
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-8
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-9
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-10
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

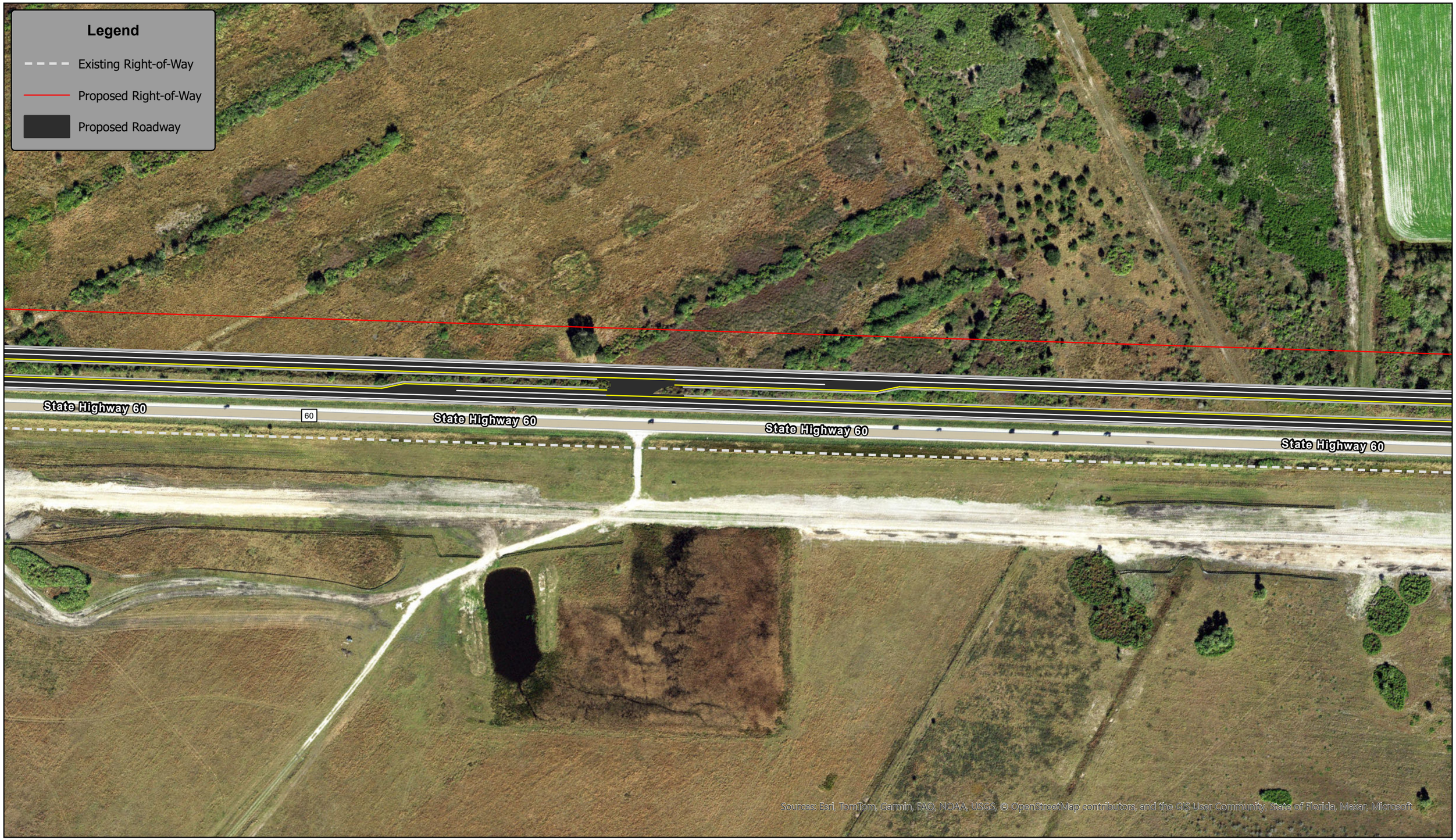
SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-11
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report



FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-12
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Roadway

60 State Highway 60

60 State Highway 60

State Highway 60

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, State of Florida, Maxar, Microsoft

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-13
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-14
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT SR 60 Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

Figure A-15
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-16
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

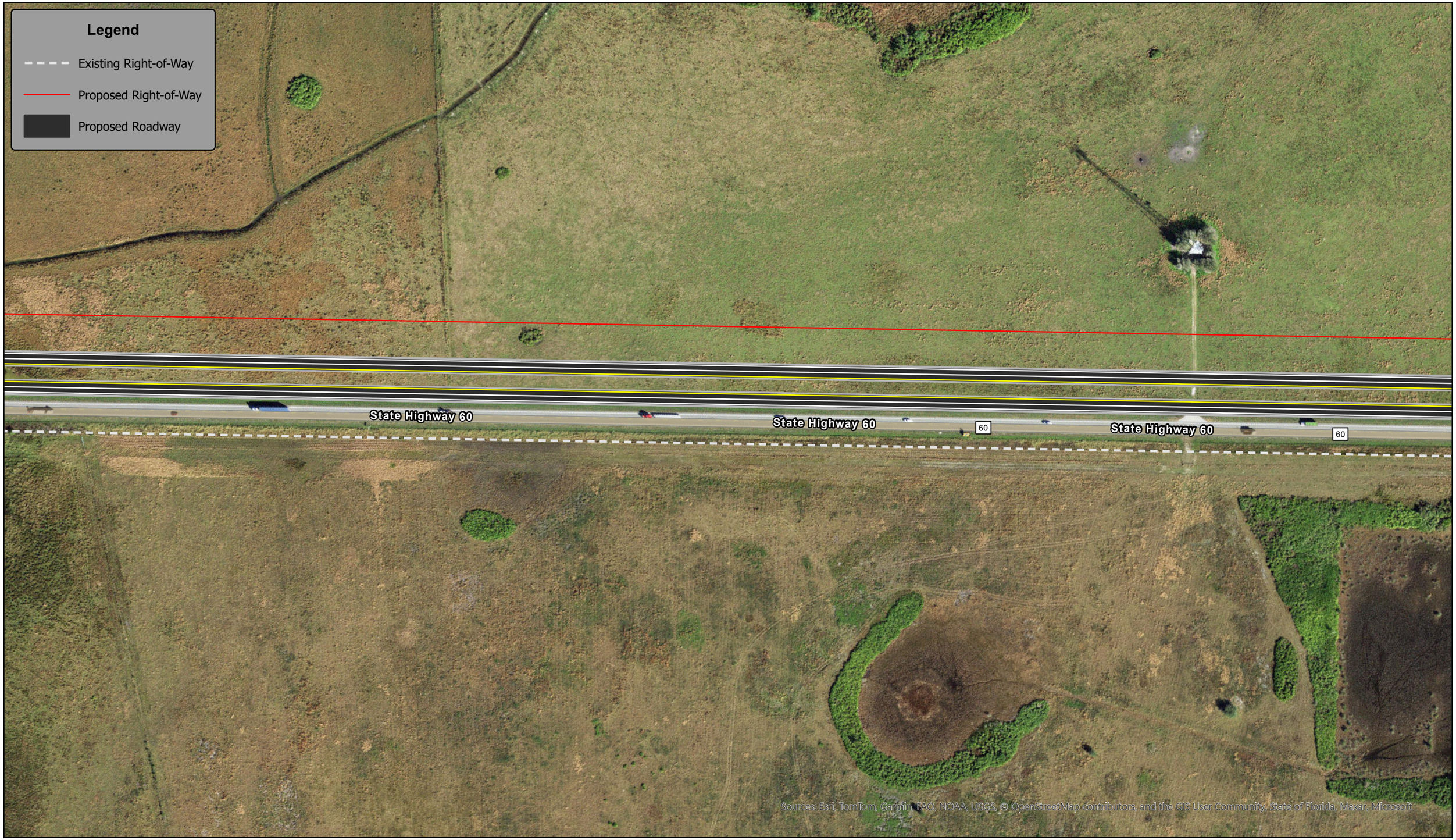
SR 60
Prairie Lake Rd to Florida Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-17
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report



FDOT

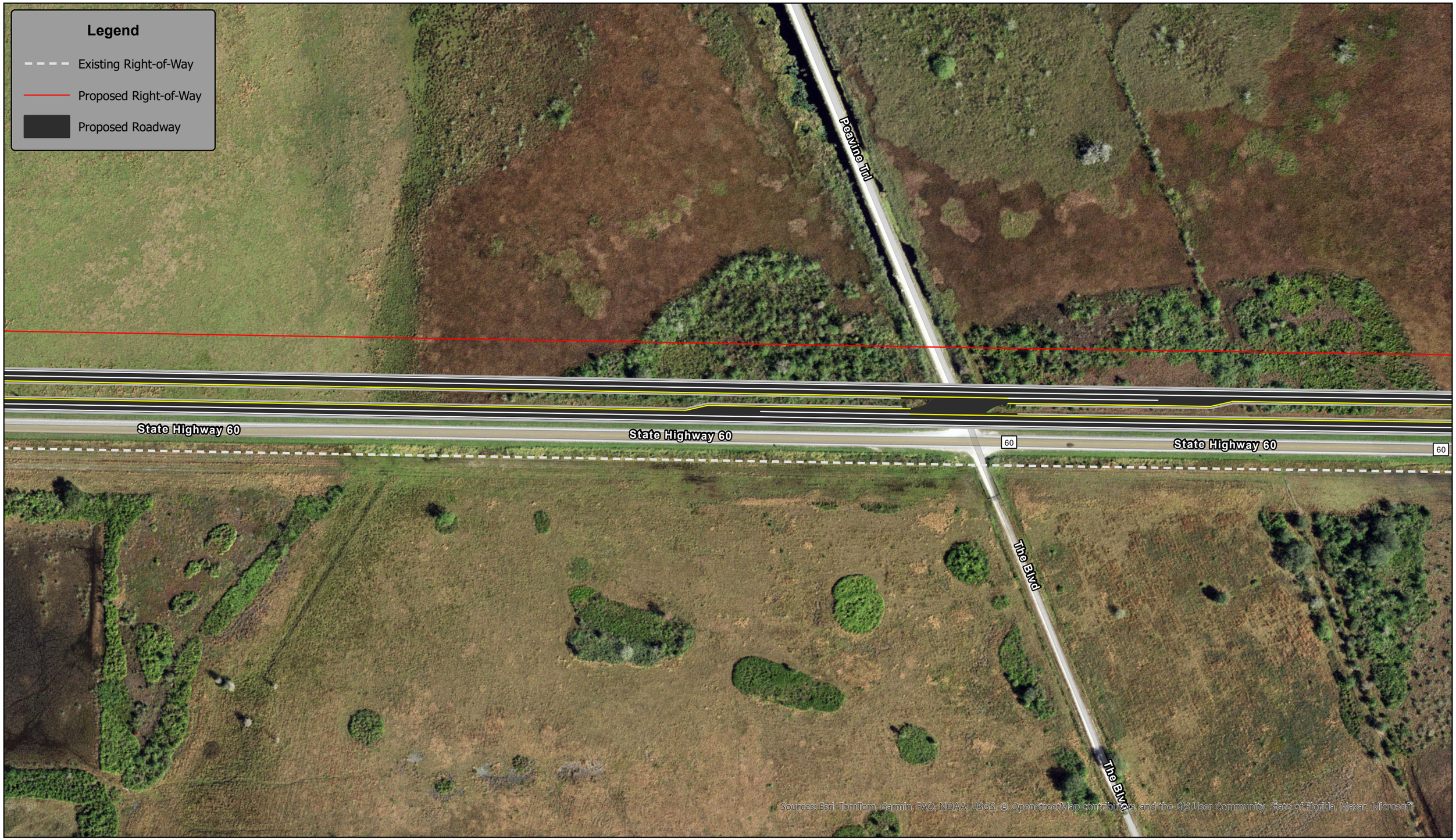
SR 60
Prairie Lake Rd to Florida Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-18
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report



FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-19
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Roadway

State Highway 60

State Highway 60

State Highway 60

State Highway 60

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, State of Florida, Maxar, Microsoft

FDOT

SR 60

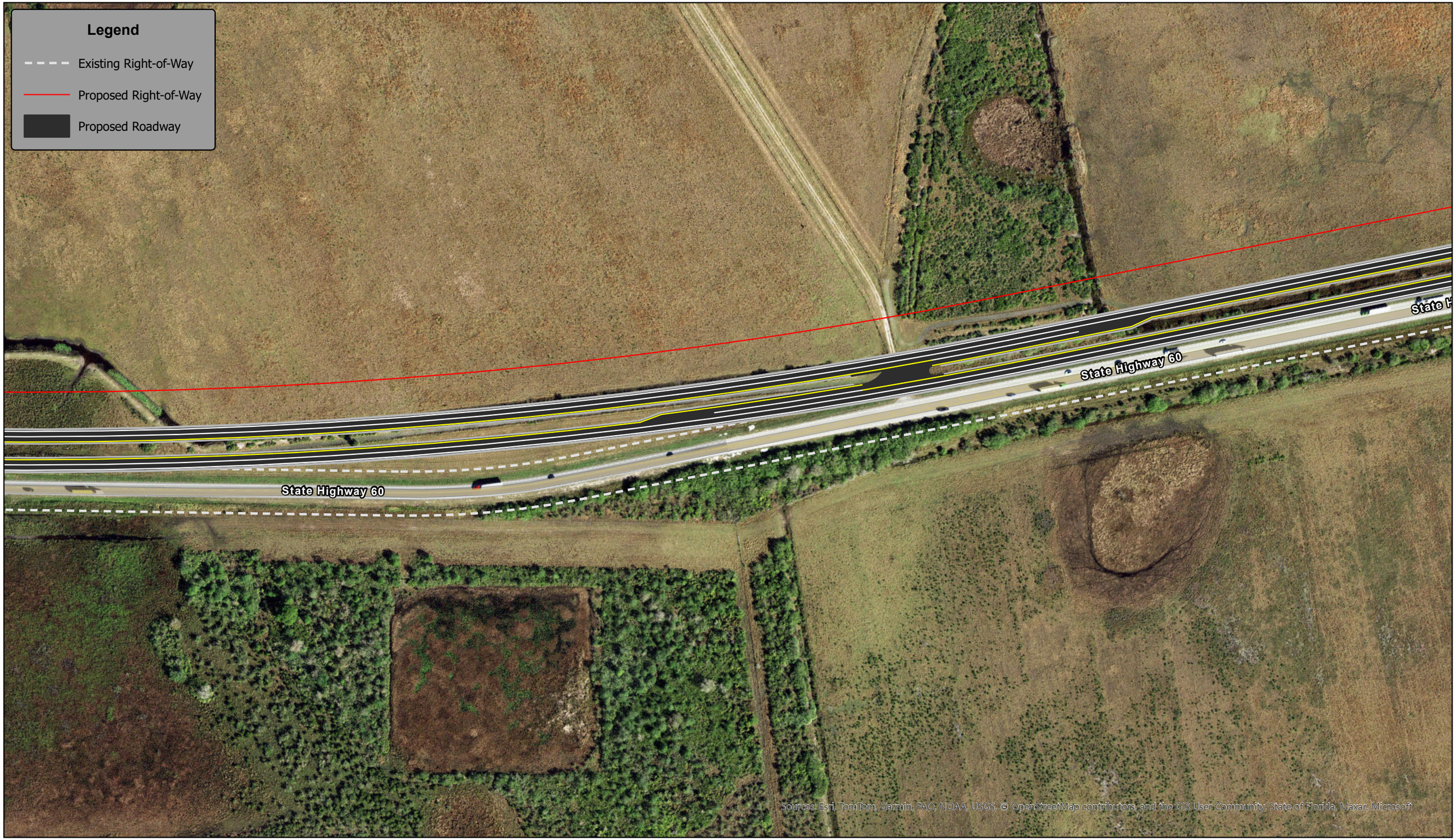
Prairie Lake Rd to Florida Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-20
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report



FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-21
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Roadway

Highway 60 | State Highway 60 | State Highway 60 | State Highway 60

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-22
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-23
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Roadway

State Highway 60 State Highway 60 State Highway 60 State Highway 60

60

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, State of Florida, Maxar, Microsoft

FDOT

SR 60

Prairie Lakes Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-24
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-25
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Roadway

State Road 60

State Road 60

State Road 60

60

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, State of Florida, Maxar, Microsoft

FDOT

SR 60

Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-26
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-27
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT SR 60 Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-28
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-29
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-30
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

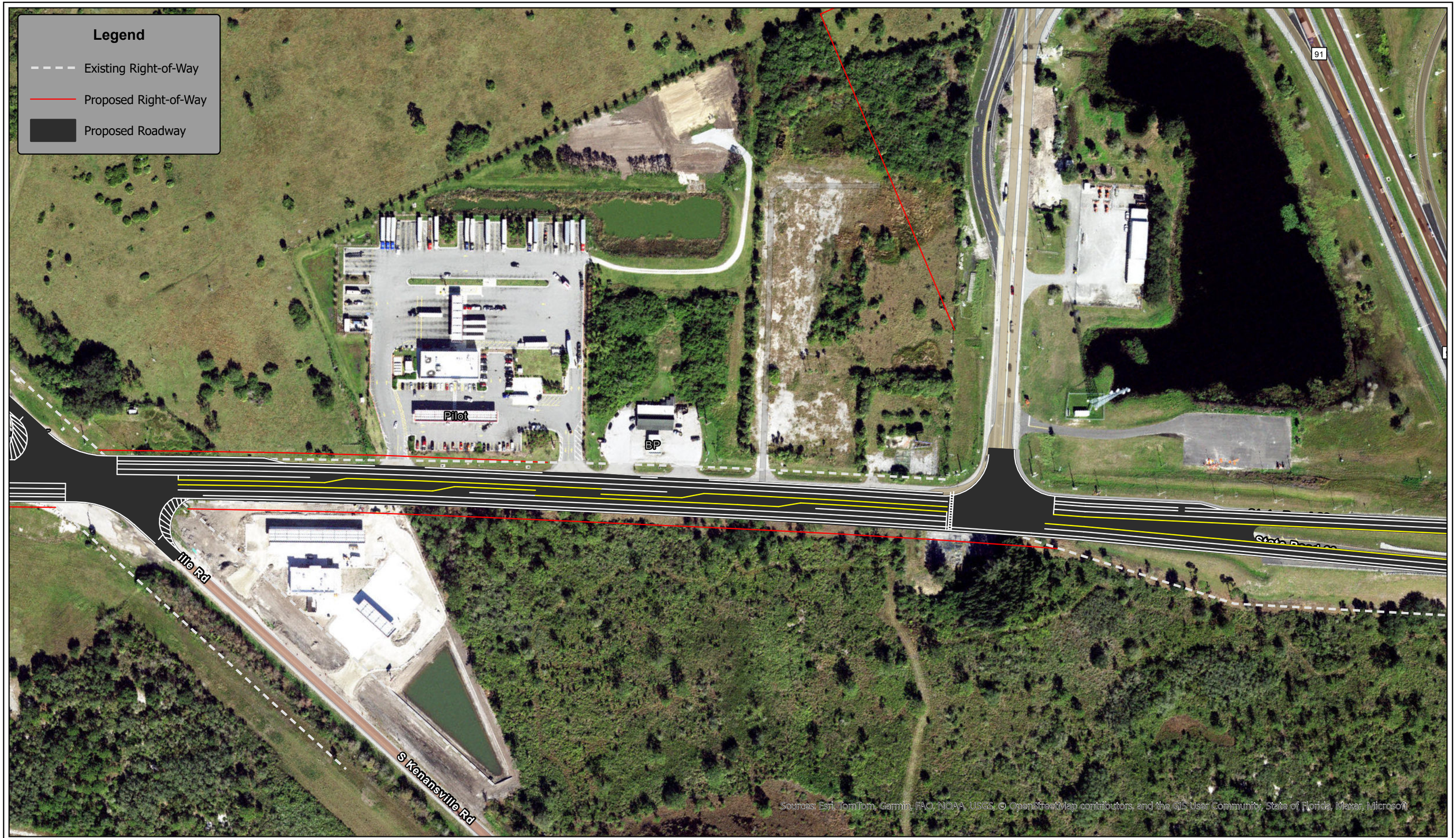
FDOT SR 60 Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-31
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report



FDOT

SR 60
Prairie Lake Rd to Florida Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-32
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

FDOT

SR 60
Prairie Lake Rd to Florida's Turnpike

0 100 200 400 Feet

1 inch = 200 feet

N

Figure A-33
SR 60 from Prairie Lakes Road to Florida's Turnpike PD&E Noise Study Report

Appendix D: Noise Model Validation Data

0001

Reading 1 of 3 at this receptor location.

Project: FDOT Project No. 452574-1

Receptor Location (or #): Validation Site 1

Landuse Characteristics: Residential

Equipment:	Meter:	Rion NL-42	Calibrator:	Rion NC-74
Calibration:	Start Cal: (dB)	94	Finish Cal: (dB)	94
Response:	Fast:	NA	Slow:	YES
	A-Weighting?	YES	Battery Check?:	YES
Weather Data:	Date:	7/10/2025	Time:	10:27am
	Wind:	Slight	Temperature:	85°F
	Weather:	Sunny		

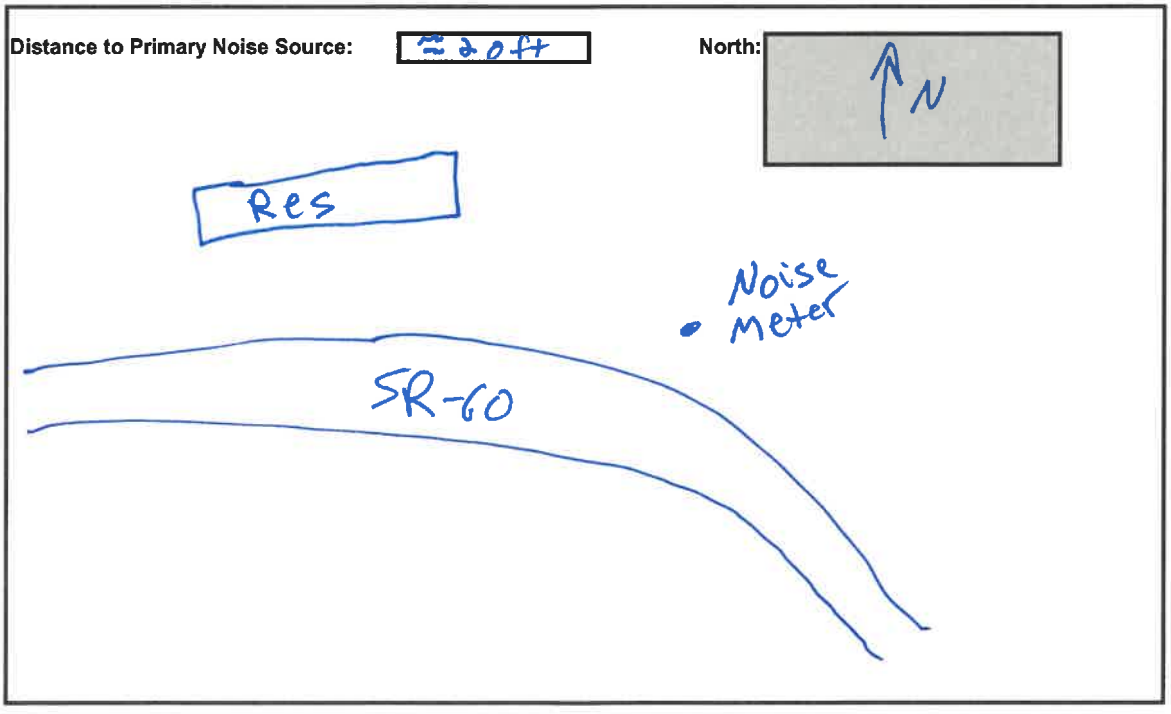
Start Time: 10:27am **End Time:** 10:37am

Traffic Count Data

Road:	East Bound SR-60	West Bound SR-60	Estimated Speed (mph)
Automobiles:	39	37	55
Medium Trucks:	1	0	55
Heavy Trucks:	17	16	55
Motorcycles	0	0	N/A
Buses	0	0	N/A

Distance to Primary Noise Source: ≈ 20ft

North: N



Background Noise:

Major Sources: SR 60

Unusual Events: 10:28am Helicopter

Other Notes:

Volkert, Inc.
31 July 2025
RC
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: FPID: 452574-1
RUN: V1-1
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SR60-01	1	1	66.3	68.3	66	2.0	15	Snd Lvl	68.3	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

0002

Reading 2 of 3 at this receptor location.

Project: FDOT Project No. 452574-1

Receptor Location (or #): Validation Site 1

Landuse Characteristics: Residential

Equipment:	Meter:	Rion NL-42	Calibrator:	Rion NC-74
Calibration:	Start Cal: (dB)	94	Finish Cal: (dB)	94
Response:	Fast:	NA	Slow:	YES
	A-Weighting?	YES	Battery Check?:	YES
Weather Data:	Date:	7/10/2025	Time:	10:38am
	Wind:	Slight	Temperature:	85°F
	Weather:	Sunny		

Start Time: 10:38am **End Time:** 10:48am

Traffic Count Data

Road:	East Bound SR-60	West Bound SR-60	Estimated Speed (mph)
Automobiles:	26	22	55
Medium Trucks:	1	1	55
Heavy Trucks:	10	13	55
Motorcycles	0	0	N/A
Buses	0	0	N/A

Distance to Primary Noise Source:

North:

See field sheet for reading 0001

Background Noise:

Major Sources: SR60

Unusual Events:

Other Notes:

Volkert, Inc.
31 July 2025
RC
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: FPID: 452574-1
RUN: V1-2
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SR60-01	1	1	64.3	67.0	66	2.7	15	Snd Lvl	67.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

0003

Reading 3 of 3 at this receptor location.

Project: FDOT Project No. 452574-1

Receptor Location (or #): Validation Site 1

Landuse Characteristics: Residential

Equipment:	Meter:	Rion NL-42	Calibrator:	Rion NC-74
Calibration:	Start Cal: (dB)	94	Finish Cal: (dB)	94
Response:	Fast:	NA	Slow:	YES
	A-Weighting?	YES	Battery Check?:	YES
	Date:	7/10/2025	Time:	10:49 AM
Weather Data:	Wind:	Slight	Temperature:	85°F
	Weather:	Sunny		

Start Time: 10:49 am **End Time:** 10:59am

Traffic Count Data

Road:	East Bound SR-60	West Bound SR-60	Estimated Speed (mph)
Automobiles:	36	33	55
Medium Trucks:	2	0	55
Heavy Trucks:	4	16	55
Motorcycles	0	0	N/A
Buses	0	0	N/A

Distance to Primary Noise Source:

North:

See field sheet for reading 0001

Background Noise:

Major Sources: SR 60

Unusual Events:

Other Notes:

Volkert, Inc.
31 July 2025
RC
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: FPID: 452574-1
RUN: V1-3
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SR60-01	1	1	64.7	67.5	66	2.8	15	Snd Lvl	67.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

0004

Reading 1 of 3 at this receptor location.

Project: FDOT Project No. 452574-1

Receptor Location (or #): Validation Site 2

Landuse Characteristics: Residential

Equipment:	Meter:	Rion NL-42	Calibrator:	Rion NC-74
Calibration:	Start Cal: (dB)	94	Finish Cal: (dB)	94
Response:	Fast:	NA	Slow:	YES
	A-Weighting?	YES	Battery Check?:	YES
Weather Data:	Date:	7/10/2025	Time:	12:44pm
	Wind:	Slight	Temperature:	85°F
	Weather:	Sunny		

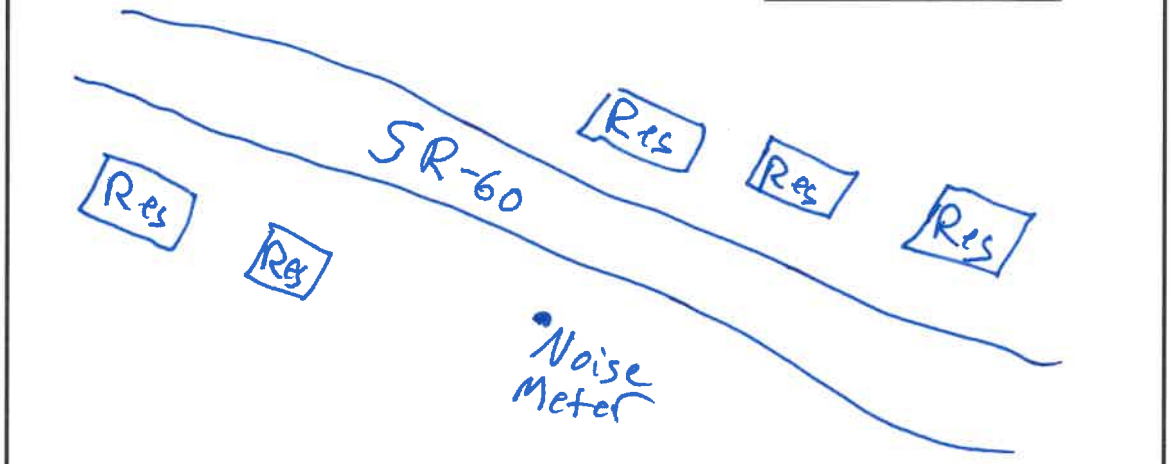
Start Time: 12:44pm **End Time:** 12:54pm

Traffic Count Data

Road:	East Bound SR-60	West Bound SR-60	Estimated Speed (mph)
Automobiles:	23	26	55
Medium Trucks:	0	1	55
Heavy Trucks:	2	13	55
Motorcycles	0	0	N/A
Buses	0	0	N/A

Distance to Primary Noise Source: ≈ 20ft

North:



Background Noise:

Major Sources: SR 60

Unusual Events:

Other Notes:

Volkert, Inc.
31 July 2025
RC
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: FPID: 452574-1
RUN: V2-1
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SR60-04	3	1	57.5	60.5	66	3.0	15	----	60.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

0005

Reading 2 of 3 at this receptor location.

Project:

FDOT Project No. 452574-1

Receptor Location (or #): Validation Site 2

Landuse Characteristics: Residential

Equipment:	Meter:	Rion NL-42	Calibrator:	Rion NC-74
Calibration:	Start Cal: (dB)	94	Finish Cal: (dB)	94
Response:	Fast:	NA	Slow:	YES
	A-Weighting?	YES	Battery Check?:	YES
	Date:	7/10/2025	Time:	12:55pm
Weather Data:	Wind:	Slight	Temperature:	90°F
	Weather:	Sunny		

Start Time: 12:55pm **End Time:** 1:05pm

Traffic Count Data

Road:	East Bound SR-60	West Bound SR-60	Estimated Speed (mph)
Automobiles:	5	71	55
Medium Trucks:	0	2	55
Heavy Trucks:	1	10	55
Motorcycles	0	0	N/A
Buses	0	0	N/A

Distance to Primary Noise Source:

North:

See fieldsheet for reading 0004

Background Noise:

Major Sources: SR60

Unusual Events:

Other Notes:

Volkert, Inc.
31 July 2025
RC
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: FPID: 452574-1
RUN: V2-2
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SR60-04	3	1	57.8	60.7	66	2.9	15	----	60.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

0006

Reading 3 of 3 at this receptor location.

Project: FDOT Project No. 452574-1

Receptor Location (or #): Validation Site 2

Landuse Characteristics: Residential

Equipment:	Meter:	Rion NL-42	Calibrator:	Rion NC-74
Calibration:	Start Cal: (dB)	94	Finish Cal: (dB)	94
Response:	Fast:	NA	Slow:	YES
	A-Weighting?	YES	Battery Check?:	YES
Weather Data:	Date:	7/10/2025	Time:	1:06pm
	Wind:	Slight	Temperature:	90°F
	Weather:	Sunny		

Start Time: 1:06pm **End Time:** 1:16pm

Traffic Count Data

Road:	East Bound SR-60	West Bound SR-60	Estimated Speed (mph)
Automobiles:	15	27	55
Medium Trucks:	0	1	55
Heavy Trucks:	1	1	55
Motorcycles	0	0	N/A
Buses	0	0	N/A

Distance to Primary Noise Source:

North:

See field sheet for reading 0004

Background Noise:

Major Sources: SR60

Unusual Events: Resident left @ 5:10 min

Other Notes: