NOISE STUDY REPORT

Florida Department of Transportation

District Seven

US 41 (SR 45) at SR 54 PD&E Study

From South of SR 54 Intersection to North of SR 54 Intersection

Pasco County, Florida

Work Program Item Segment No.: 419182-1

ETDM Number: 7883

Date: January 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 FDOT pursuant to 23 USC. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by FHWA and FDOT.

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Project Development and Environment (PD&E) Study

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Prepared by RS&H, Inc.

Tampa, Florida

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Executive Summary

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate capacity and operational improvements at the intersection of United State (US) Highway 41/State Road (SR) 45 and State Road (SR) 54 in Pasco County, Florida, under Work Program Item Segment (WPIS) Number 419182-1. The Preferred Alternative identified for this project is a Diverging Diamond Interchange (DDI) which features US 41 elevated over SR 54 and SR 597 (Dale Mabry Highway). This design configuration includes a new roadway connection between Carson Drive and SR 54 as well as necessary modifications to existing CSX rail crossings within the project limits.

This noise study was performed in accordance with Federal Highway Administration (FHWA) Noise Standards (23 CFR 772) and the FDOT PD&E Manual (Part 2, Chapter 18). The analysis utilized the FHWA Traffic Noise Model (TNM) to assess existing conditions and predicted design year (2045) noise levels for both No-Build and Preferred Alternatives. To validate the accuracy of the model, field noise measurements were collected at monitoring sites MS-1 and MS-2 on February 10, 2023. The study identified six Noise Sensitive Areas (NSAs) consisting of residential, educational, recreational, and religious land uses. While a 10-foot privacy wall currently exists at The Fountain at Paradise Lakes and Paradise Lakes RV Park in NSA 3, predicted impacts for the 2045 Preferred Alternative indicate that traffic noise levels will approach or exceed the Noise Abatement Criteria (NAC) at ten residential receptors (NAC B). No impacts were identified for non-residential or special land use sites (NAC C and D), and no substantial noise increases of more than 15 dB(A) over existing levels were predicted.

FDOT policy requires the evaluation of noise barriers where impacts are predicted to occur. In NSA 6, one isolated residential impact was identified; however, it was determined that a barrier at this location is not acoustically feasible because it does not benefit at least two impacted sites. Conversely, in NSA 5, which encompasses the Tropicana Mobile Home Park, three residences were predicted to be impacted. Consequently, Conceptual Barrier Design S1.1-CD1 is recommended for further consideration. This proposed ground-mounted barrier is 14 feet tall and approximately 580 feet long. It is expected to benefit seven residences, including two of the three impacted receptors, with an average noise reduction of 8.0 dB(A). The estimated construction cost for this barrier is $319,200, resulting in a cost of $46,400 per benefited receptor, which is well within the FDOT reasonableness limit of $64,000.

In conclusion, the recommended noise barrier satisfies FDOT's feasibility and reasonableness criteria for the PD&E phase. Final determinations regarding the barrier's dimensions and constructability, including potential conflicts with adjacent overhead electric lines, will be finalized during the project's design phase following continued public involvement. Coordination with local agencies and officials has been ongoing since 2015, and the community will have further opportunities to comment during a Virtual Project Update scheduled for early 2026.

1.0 Introduction

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate capacity and operational improvements at the intersection of US Highway 41 (US 41) (State Road [S.R.] 45) and State Road 54 (SR 54) in Pasco County, Florida, under Work Program Item Segment (WPIS) Number (No.) 419182-1. **Figure 1-1** shows the limits of the PD&E Study. US 41 (SR 45) is a major north-south arterial that provides access to Tampa, Lutz, Land O' Lakes, and Brooksville. SR 54 is a major east-west arterial that connects US 19 near New Port Richey to the west and US 301 in Zephyrhills to the east. This project was subjected to FDOT's Efficient Transportation Decision Making (ETDM) Programming Screening process (Project ID:7883) to accomplish early agency participation in project decision making and efficient environmental review.

As part of this PD&E Study, a traffic noise study was performed in accordance with the Federal Highway Administration's (FHWA) Noise Standard, Title 23 of the Code of Federal Regulations, Part 772 (23 CFR 772), *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (July 13, 2010), the Florida Department of Transportation (FDOT) PD&E Manual, Part 2, Chapter 18, *Highway Traffic Noise* (July 31, 2024), and the *FDOT's Traffic Noise Modeling and Analysis Practitioners Handbook* (December 31, 2018).

The primary objectives of this noise study is to:

- Describe the existing site conditions including noise sensitive land uses within the project limits;
- Document the methodology used to conduct the noise assessment;
- Assess the significance of traffic noise levels on noise sensitive sites for the No-Build and Preferred Alternatives; and
- Evaluate abatement measures for those noise sensitive sites that, under the Preferred Alternative, approach or exceed the Noise Abatement Criteria (NAC) set forth by the FDOT and FHWA or where a substantial increase occurs.

Secondary objectives of this study included the consideration of construction noise and vibration impacts as well as the development of noise contours, that can be used in the future by local municipal and county government agencies to identify compatible land uses along the project roadways.

The purpose of this Noise Study Report is to present the findings of the traffic noise analysis. This report also provides technical documentation for the findings described in the project's Preliminary Engineering Report (PER) and Type 2 Categorical Exclusion Environmental Document.

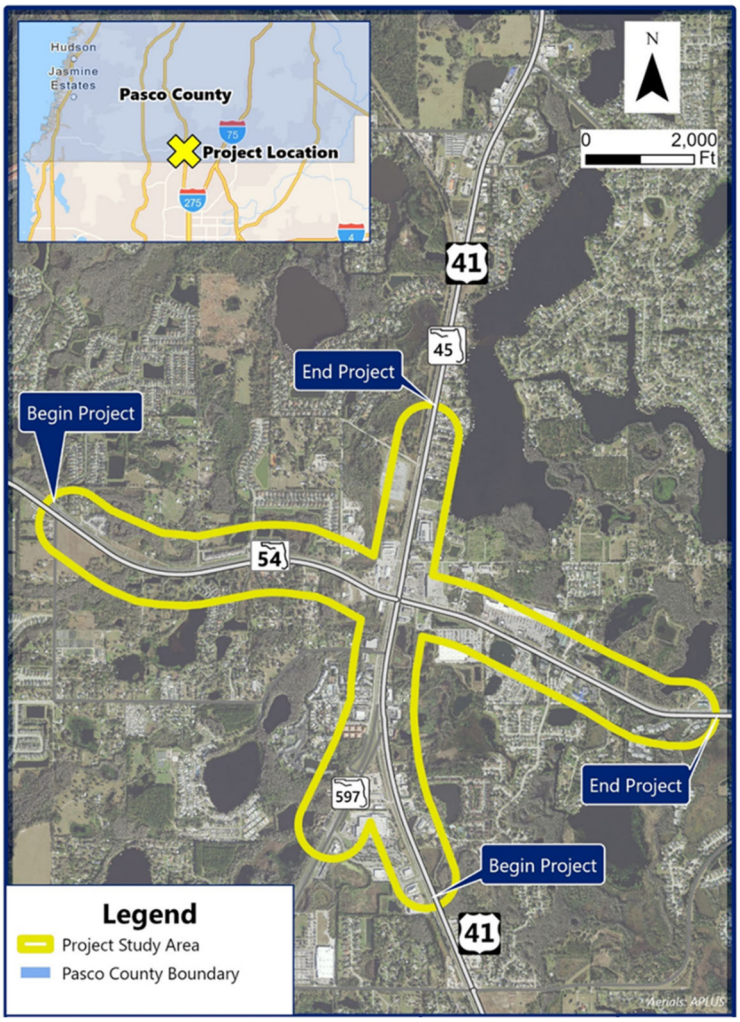


Figure 1-1: Project Location Map

1.1 Project Description

The Florida Department of Transportation (FDOT) is conducting a PD&E Study to evaluate capacity and operational improvements at the intersection of US 41 and SR 54 in Pasco County, Florida. Each roadway is a six-lane divided facility intersecting at-grade with a box span traffic signal. US 41 is a major north-south arterial that provides access to Tampa, Lutz, Land O' Lakes, and Brooksville. SR 54 is a major east-west arterial that connects US 19 near New Port Richey to the west and US 301 in Zephyrhills to the east. The Project Location Map is shown in **Figure 1-1**.

The length of the project is approximately 1.5 miles along US 41, including a 0.3-mile section of SR 597 (Dale Mabry Highway), with limits on SR 54 from approximately 1.2 miles east and 1.2 miles west of the intersection. This intersection is located in the Land O' Lakes area of unincorporated Pasco County, Florida. This intersection is under the jurisdiction of FDOT.

1.2 Purpose and Need

This study is being conducted to provide relief for the existing and future congestion at the intersection of US 41 and SR 54 and to accommodate future traffic demands due to growth within the project and surrounding areas. The need for the project is based on system linkage, capacity, transportation demand, social demand, economic development, safety, and enhancement of evacuation routes.

1.3 Existing Roadway Conditions

The typical sections of each of these roadways include: three through lanes, two left turn lanes, and one right turn lane in all directions approaching the US 41 at SR 54 intersection.

US 41 consists of two, 12-foot lanes and a single 14-foot lane in each direction separated by a grass raised median of varying width. The facility includes a six-foot sidewalk on the east side of the travel lanes, and a CSX railroad line on the west side of the travel lanes. The ROW width in this section of US 41 is a minimum of 156 feet. No bicycle lanes are provided (see **Figure 1-2**).

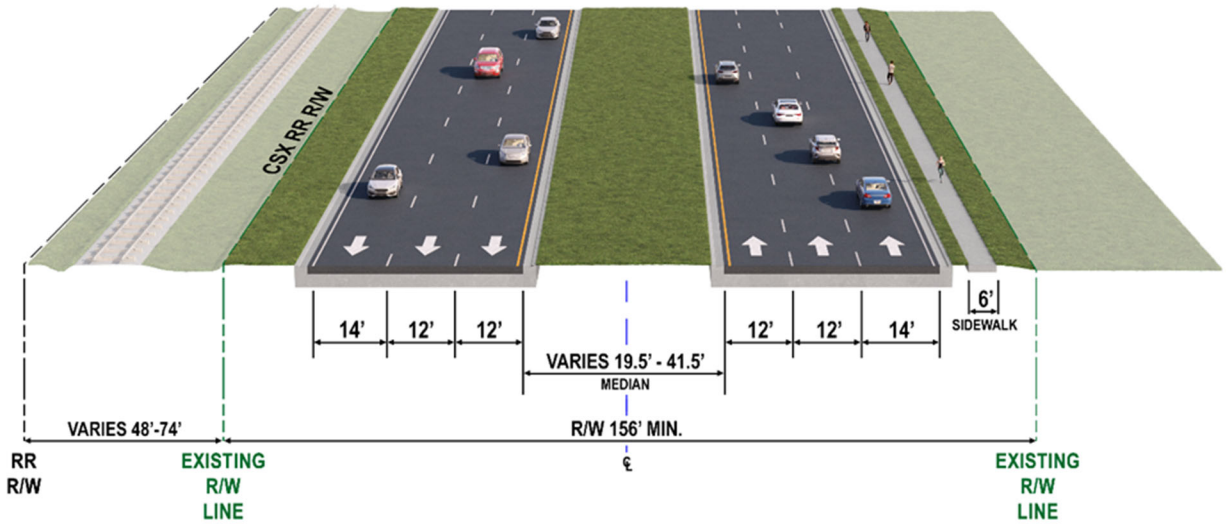


Figure 1-2: Existing Typical Section – US 41 South of SR 54

Near the intersection of US 41, SR 54 consists of three 12-foot lanes in each direction separated by a 37.5-foot raised grass median with a four-foot bicycle lane and a six to eight-foot sidewalk on both sides of the travel lanes immediately adjacent to the roadway. The ROW width for this section of SR 54 is approximately 141.5 feet (see **Figure 1-3**).

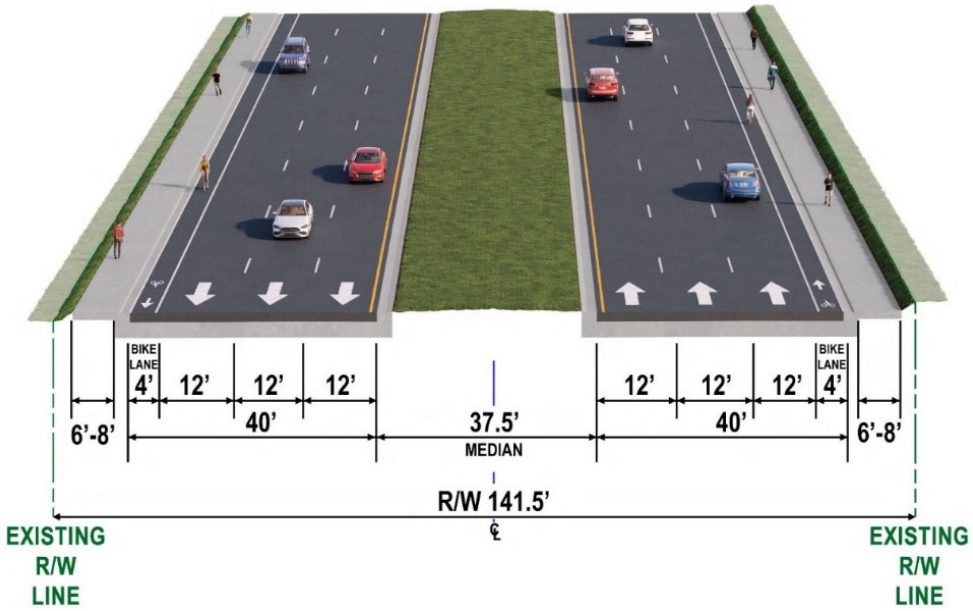


Figure 1-3: Existing Typical Section – SR 54 East and West of US 41 (Near Intersection)

Approximately one-half mile east of US 41, SR 54 consists of three 12-foot travel lanes, an eight-foot unpaved inside shoulder and an eight-foot paved outside shoulder with shoulder gutter, and a five-foot sidewalk in each direction separated by a 49-foot depressed grass median. The ROW width for this section of SR 54 is a minimum of 138 feet (see **Figure 1-4).**

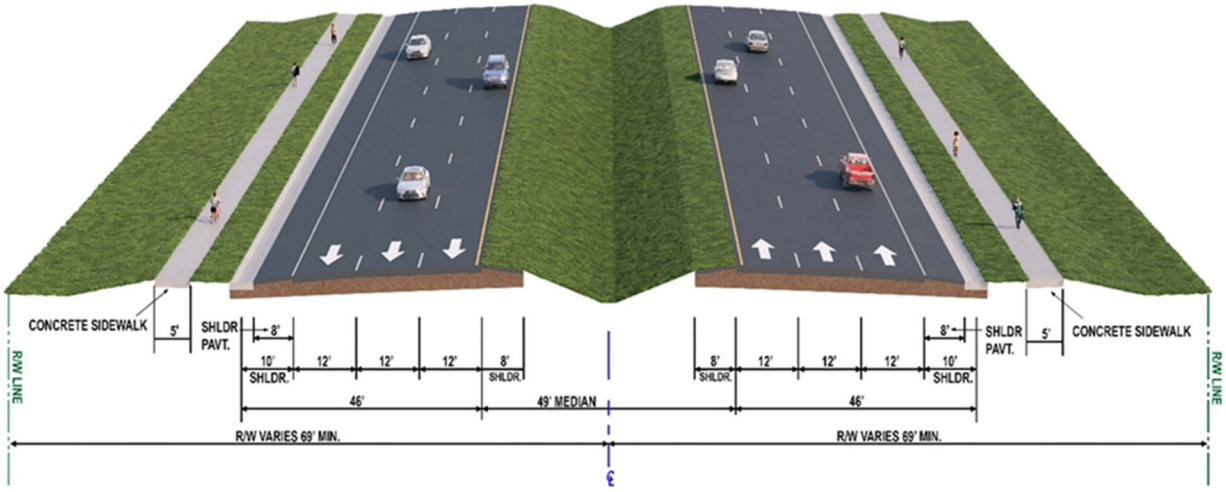


Figure 1-4: Existing Typical Section – SR 54 One-Half Mile East of 41

Approximately one-half mile west of US 41, SR 54 consists of three 12-foot travel lanes, an eight-foot unpaved inside shoulder and a 10-foot outside shoulder including a paved five-foot bicycle lane, and a five-foot sidewalk in each direction separated by an approximate 48-foot depressed grass median. The ROW width for this section of SR 54 is a minimum of 250 feet The existing typical section for SR 54 a half mile west of US 41 is shown in **Figure 1-5.**

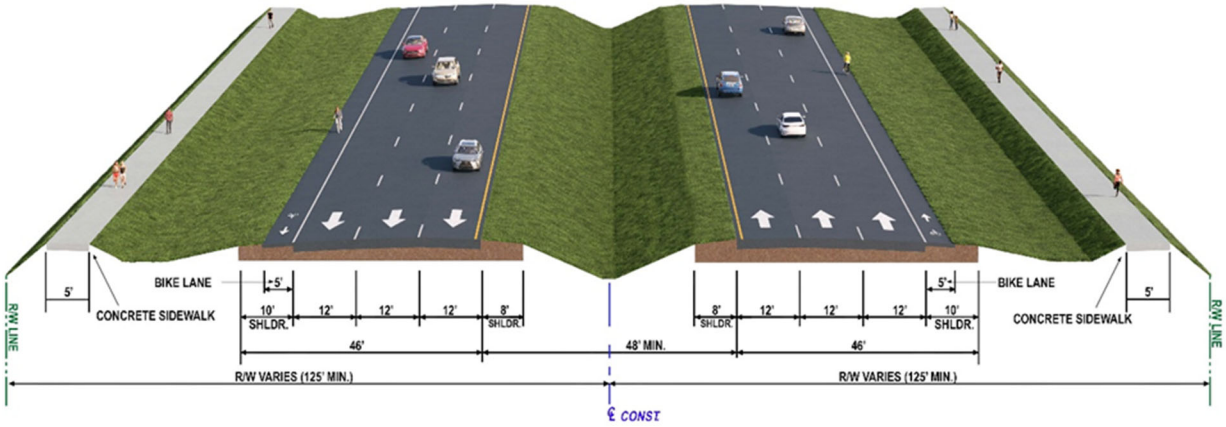


Figure 1-5: Existing Typical Section – SR 54 One-Half Mile West of US 41

1.4 No-Build Alternative

The No-Build Alternative keeps the existing at-grade intersection. This alternative would have no environmental or community impacts and would provide significant monetary savings. However, it would not improve future traffic conditions, system linkage, safety (vehicles, pedestrian, or bicyclists), or hurricane evacuation. It would not be consistent with the local transportation plans or meet the social and economic demands of the area. The No-Build alternative remains an alternative for consideration throughout of the PD&E Study.

1.5 Preferred Alternative

The Preferred Alternative is a Diverging Diamond Interchange (DDI) with US 41 elevated over SR 54 and SR 597 (Dale Mabry Highway).

At SR 54, US 41 will carry two lanes in each direction over SR 54 via a single bridge. The bridge will be expandable to three lanes in each direction for future traffic demand. Two lane exit ramps from US 41 in each direction will connect to SR 54. The northbound and southbound exit ramps will widen to two left turn lanes and two right turn lanes at the at-grade intersection with SR 54. Along SR 54, the westbound lanes will widen from three lanes to five lanes after the signalized intersection at the Village Lakes Shopping Plaza/Lowe's driveway. The five lanes will enter the first crossover intersection of the DDI. Prior to the first crossover intersection, a sixth lane will be developed for right turns only to northbound US 41. Of the five lanes entering the first crossover intersection, the inside lane will be a left turn only lane and the adjacent lane will be a shared left/through lane. The remaining three lanes will be through lanes. Four lanes will enter the 2nd crossover intersection. After the 2nd crossover intersection, the inside lane will merge and end. Three lanes will continue westbound to match existing conditions.

Similarly, the eastbound lanes will widen from three lanes to five lanes as they approach the interchange. The five lanes will enter the first crossover intersection of the DDI. Prior to the crossover intersection, a sixth lane will be developed for right turns only to southbound US 41. Of the five lanes entering the first crossover intersection, the inside lane will be a left turn only lane and the adjacent lane will be a shared left/through lane. The remaining three lanes will be through lanes. Four lanes will enter the 2nd crossover intersection. After the 2nd crossover intersection, the outside lane will become a right turn only lane at the signalized intersection at the Village Lakes Shopping Plaza/Lowe's driveway. Three lanes will continue eastbound to match existing conditions.

A new roadway connection will be provided between Carson Drive and SR 54, east of US 41. From Carson Drive, the new connection will use the existing Raden Drive alignment before turning east towards the Village Lakes Shopping Plaza. The roadway will then connect to the existing signalized intersection of SR 54 at the Village Lakes Shopping Plaza/Lowe's driveway. This new roadway connection will require ROW acquisition to make the roadway available for public use.

At SR 597 (N. Dale Mabry Highway), northbound US 41 will carry two lanes over SR 597 (N. Dale Mabry Highway) via a bridge. Southbound US 41 will carry three lanes over SR 597 (N. Dale Mabry Highway) via a separate bridge. The third lane will come from SR 54 via a single lane southbound slip ramp. For the southbound direction, ramps are provided from SR 54 to southbound US 41 and southbound SR 597 (N. Dale Mabry Highway). For the northbound direction of US 41, the two-lane exit ramp from US 41 to SR 54 will form a signalized intersection at SR 597 (N. Dale Mabry Highway). The signal will manage the traffic from northbound US 41 to SR 54 and northbound SR 597 (N. Dale Mabry Highway) to SR 54. This intersection will allow a northbound US 41 to southbound US 41 u-turn via a "Texas u-turn". Traffic from northbound SR 597 (N. Dale Mabry Highway) to northbound US 41 will utilize a free flow ramp and merge onto US 41 south of the bridge over SR 54.

The existing CSX rail crossings at SR 54 and SR 597 (N. Dale Mabry Highway) will be modified to accommodate roadway improvements.

Figure 1-6 shows the proposed US 41 typical section. US 41 provides three 12-foot through lanes in each direction, seven-foot bike lanes in each direction, and 10-foot sidewalks in each direction. A 22-foot-wide grass median separates the southbound and northbound lanes. The proposed ROW width is 171 feet. A CSX rail in a separate ROW corridor is located on the west side of US 41.

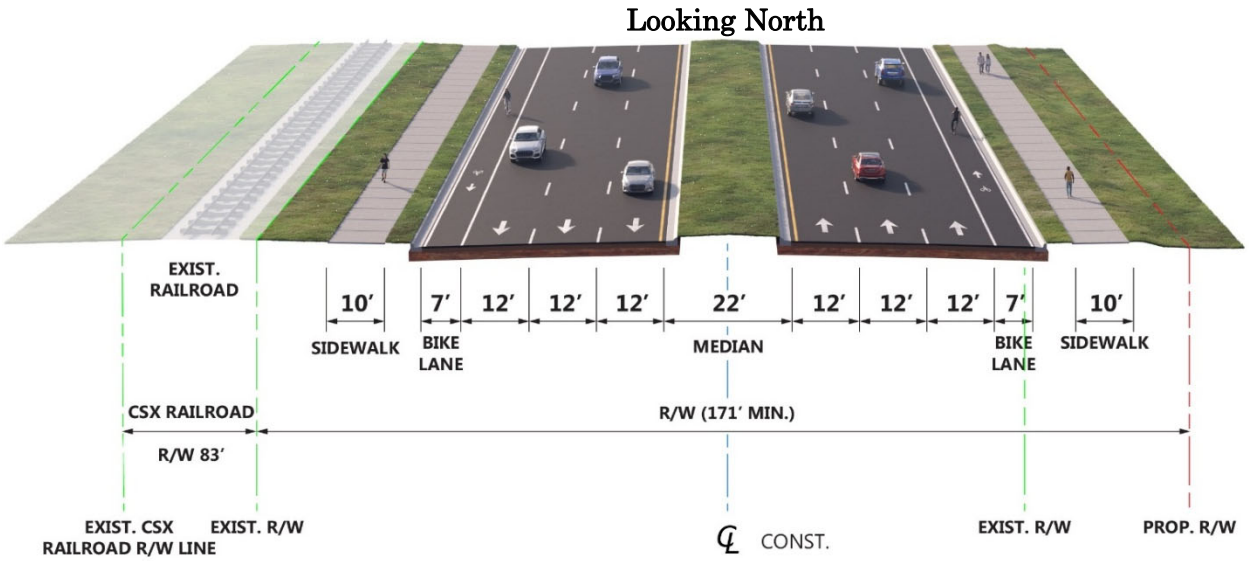


Figure 1-6: Proposed Typical Section - US 41

Figure 1-7 shows the proposed SR 54 typical section. SR 54 provides three 12-foot lanes with one 12-foot auxiliary lane in each direction, seven-foot bike lanes in each direction, and 10-foot sidewalks in each direction. A grass median of varying width separates the eastbound and westbound lanes. The maximum proposed ROW width is 286 feet.

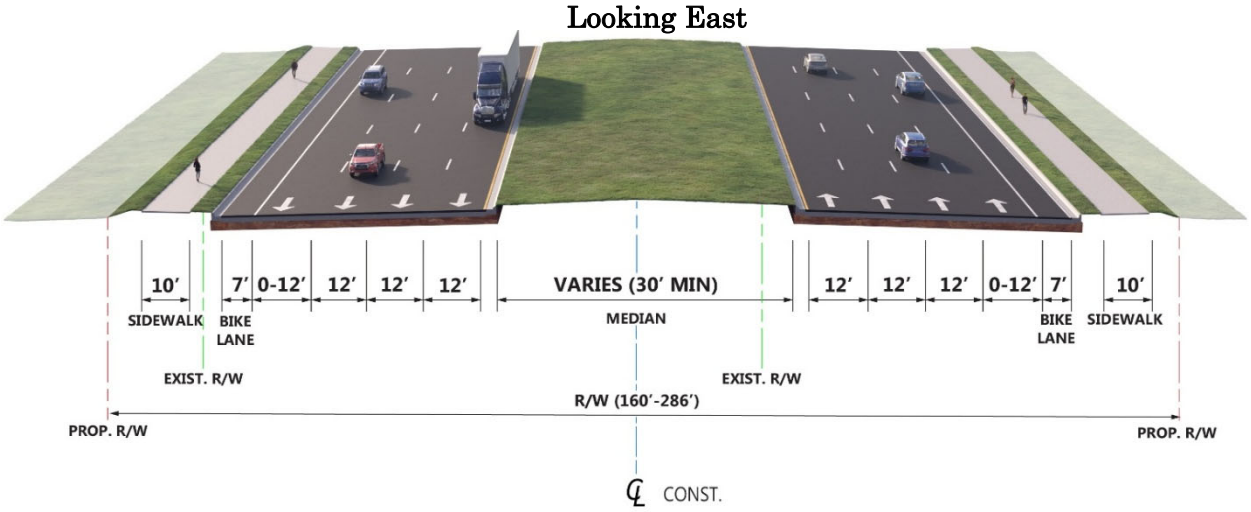


Figure 1-7: Proposed Typical Section - SR 54

Figure 1-8 shows the proposed typical section for the southbound US 41 bridge over SR 597 (N. Dale Mabry Highway). The bridge provides three 12-foot lanes, a 10-foot inside shoulder, and a 10-foot outside shoulder.

Looking North

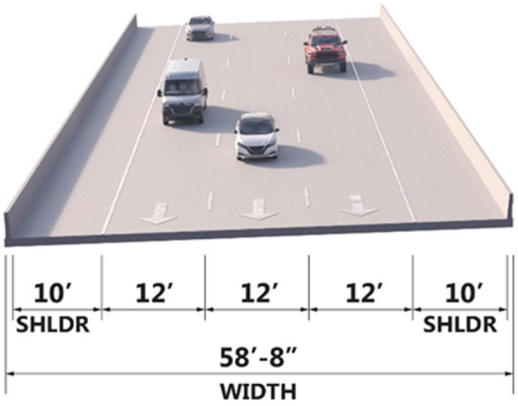


Figure 1-8: Proposed Southbound US 41 Bridge over SR 597 (N. Dale Mabry Highway) Typical Section

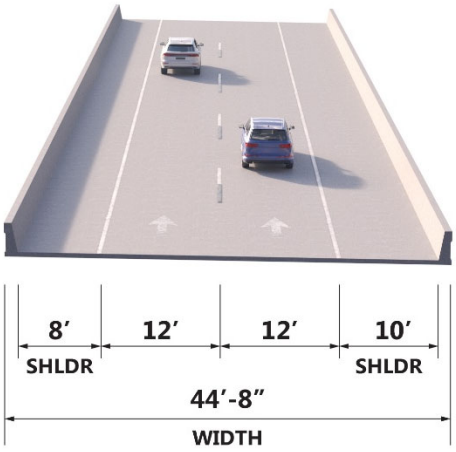


Figure 1-9 shows the proposed typical section for the northbound US 41 bridge over SR 597 (N. Dale Mabry Highway). The bridge provides two 12-foot lanes, an 8-foot inside shoulder, and a 10-foot outside shoulder.

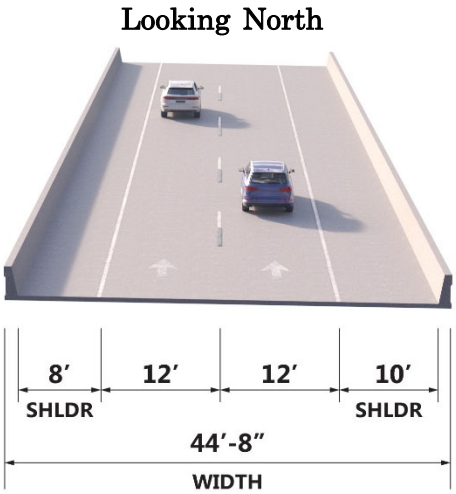


Figure 1-9: Proposed Northbound US 41 Bridge over SR 597 (N. Dale Mabry Highway) Typical Section

Figure 1-10 shows the proposed typical section for the US 41 bridge over the SR 54 intersection. The bridge provides two 12-foot lanes, a 10-foot outside shoulder and 14.5-foot inside shoulder in each direction, separated by a 17' wide raised median. The inside shoulders can be converted into 12-foot travel lanes in the future, so the bridge is expandable to three lanes in each direction.

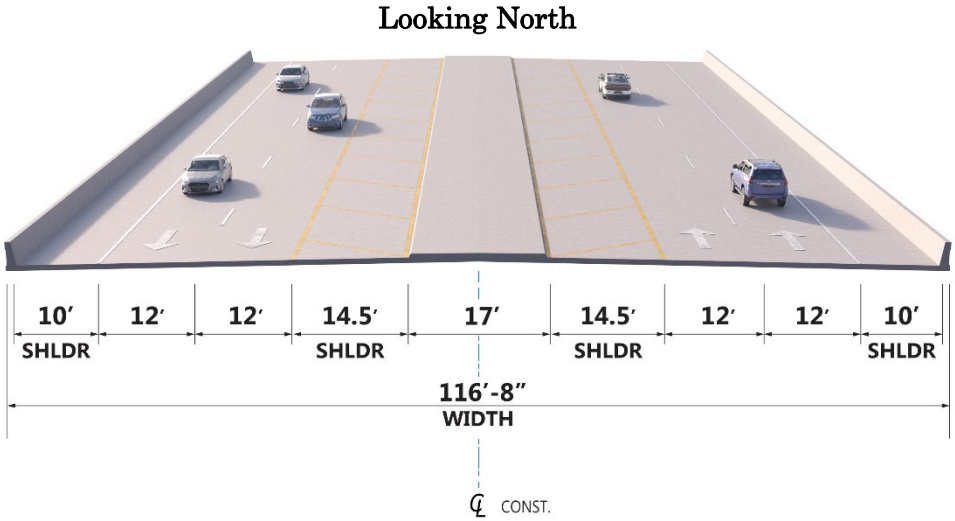


Figure 1-10: Proposed US 41 over SR 54 Bridge Typical Section

2.0 Methodology

This study was conducted based on the methodology described in the FDOT's PD&E Manual, Part 2, Chapter 18, *Highway Traffic Noise* (July 31, 2024) and *FDOT's Traffic Noise Modeling and Analysis Practitioners Handbook* (December 31, 2018) and performed in accordance with Title *23 CFR Part 772, Procedures for Abatement of Highway Traffic Noise CFR*

- Field Measurement of Noise Levels and Noise Model Validation (see Section 3.1);
- Identification of Noise Sensitive Receptor Sites (see Section 3.2);
- Prediction of Existing and Future Noise Levels (see Section 3.2); and
- Assessment of Traffic Noise Impacts and Consideration of Noise Abatement Measures (see Section 3.2).

The FHWA's Traffic Noise Model (TNM) Version 2.5 (February 2004) was used to predict existing and future traffic noise levels and to analyze the effectiveness of noise barriers, where warranted. This model estimates the acoustic intensity at noise sensitive receptor sites from a series of roadway segments (the source). Model-predicted noise levels are influenced by several factors, such as vehicle speed and distribution of vehicle types. Noise levels are also affected by characteristics of the source-to-receptor site path, including the effects of intervening barriers, structures (houses, trees, etc.), ground surface type (hard or soft), and topography.

Representative receptor sites were used as inputs to the TNM 2.5 to estimate noise levels associated with existing and future conditions within the project limits. These sites were chosen based on noise sensitivity, roadway proximity, anticipated impacts from the proposed project, and homogeneity (i.e., the site is representative of other nearby sites). For single-family residences, traffic noise levels were predicted at the edge of the dwelling unit closest to the nearest primary roadway. For other noise sensitive sites that may be impacted, traffic noise levels were predicted where the exterior activity occurs. For the prediction of interior noise levels, receptor sites were placed ten feet inside the building at the edge closest to the roadway. Building noise reduction factors identified in Figure 18-3 in Part 2, Chapter 18 of the PD&E Manual and window conditions were used to estimate noise reduction due to the physical structure.

The following sections describe the noise metrics, traffic data, and noise abatement criteria used in this study, as well as the existing and future land uses within the project area.

2.1 Noise Metric

Noise levels developed for this traffic noise study are expressed in decibels (dB) using an "A"-scale [dB(A)] weighting. This scale most closely approximates the response characteristics of the human ear to typical traffic noise levels. All reported noise levels are hourly equivalent noise levels [Leq(h)], unless otherwise specified. The Leq(h) is defined as the equivalent steady-state sound level that, in an hourly period, contains the same acoustic energy as the time-varying sound level for the same hourly period. Use of these metrics is consistent with the requirements of 23 CFR 772. Sound levels of typical noise sources and environments are provided in **Table 2.1** as a frame of reference.

Table 2.1: Sound Levels of Typical Noise Sources and Environments

Common Outdoor Activities	Noise Level DB(A)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-Over at 1,000 feet		
	--100--	
Gas Lawn Mover at 3 feet		
	--90--	
Diesel Truck at 50 feet, 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 feet	--70--	Vacuum Cleaner at 10 ft
Commercial Area		Normal Speech at 3 ft
Heavy Traffic at 300 feet	--60--	
		Large Business Office
Quiet Urban Daytime	--50--	Dishwasher Next Room
Quiet Urban Nighttime	--40--	Theater; Large Conference Room (background)
Quiet Suburban Nighttime		Library
	--30--	
Quiet Rural Nighttime		Bedroom at Night; Concert Hall (background)
	--20--	
	--10--	
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: California Dept. of Transportation Technical Noise Supplement, Oct. 1998, p. 18

2.2 Traffic Data

Predicted traffic noise levels are primarily dependent on traffic volumes, vehicle mix, and vehicle speeds. The traffic volumes used in this noise analysis are from the Project Traffic Analysis Report (PTAR) dated January 2026. The peak hour volumes for the Existing Conditions (2022) and design hour volumes for the future Design Year (2045) conditions for the No-Build Alternative and the Preferred Alternative from this report were used in the noise modeling. The Traffic Data for Noise Studies Tables for the Existing, No-Build, and Build conditions are included in **Appendix A**, respectively. These tables summarize the peak and off-peak hourly demand volumes, Level of Service (LOS) C volumes, vehicle speeds, and the percentage of heavy trucks, medium trucks, buses, and motorcycles in the Design Hour. The traffic volumes used to predict noise levels included the least of either LOS C or the peak hour traffic volumes.

2.3 Noise Abatement Criteria

Noise sensitive land uses are areas where there is frequent human use that may be impacted by traffic noise levels that approach, meet, or exceed the Noise Abatement Criteria (NAC) – levels established by the Federal Highway Administration (FHWA) at which abatement must be considered. Typical noise sensitive land uses include residences, schools, places of worship, commercial properties with outdoor areas of use, and recreational areas. As shown in **Error! Reference source not found.Error! Reference source not found.**, the NAC vary by activity category.

The FDOT criteria are defined as being within one dB(A) of the FHWA's NAC to reflect values that "approach" the FHWA criteria. For perspective on the decibel values listed in Error! Reference source not found.**Error! Reference source not found.**, Error! Reference source not found. provides typical noise levels of common indoor and outdoor activities. Noise abatement measures must also be considered when a substantial increase in traffic noise is predicted to occur as a direct result of a transportation project. FDOT defines a substantial increase as 15 dB(A) or more above existing conditions. A substantial increase typically occurs in areas where traffic noise is a minor component of the existing noise environment but would become a major component after the project is constructed (e.g., new alignment project).

Table 2.2: Noise Abatement Criteria [Hourly A-Weighted Sound Level-decibels (dB(A))]

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

(Based on Table 1 of 23 CFR Part 772)

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

[2] Includes undeveloped lands permitted for this activity category.

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

2.4 Noise Abatement Measures

When traffic noise associated with a proposed project is predicted to approach, meet, or exceed the NAC at a noise sensitive site, noise abatement measures must be considered in accordance with 23 CFR Part 772. The most common and effective noise abatement measure for projects such as this is the construction of noise barriers. Noise barriers reduce noise by blocking the sound path between a roadway and a noise sensitive area. To be effective, noise barriers must be long, continuous (i.e., no intermittent openings), and have sufficient height to block the path between the noise source and the receptor site. The FHWA's *Highway Traffic Noise: Analysis and Abatement Guidance* (December 2011) indicates the ends of the noise barriers should, in general, extend in each direction approximately four times as far as the distance from the receptor site to the noise barrier. Other abatement measures that can be considered include traffic management, alignment modification, and property acquisition.

For noise abatement measures to be recommended for further consideration in the design phase of the project, they must be determined to be both feasible and reasonable. A wide range of factors are used to evaluate the feasibility and reasonableness of noise abatement measures. Feasibility deals with engineering considerations, including the ability to construct a noise barrier using standard construction methods and techniques as well as with the ability to provide a reduction of at least 5 dB(A) to the impacted receptor sites. For example, given the topography of a particular location, can the minimum noise reduction [5.0 dB(A)] be achieved given certain access, drainage, utility, safety, and maintenance requirements? In addition, for a noise barrier to be considered acoustically feasible, at least two impacted receptor sites must achieve at least a 5 dB(A) reduction.

Reasonableness implies that common sense and good judgment were applied in a decision related to noise abatement. Reasonableness includes the consideration of the cost of abatement, the amount of noise abatement benefit, and the consideration of the viewpoints of the impacted and benefited property owners and tenants. To be deemed reasonable, the estimated cost of the noise barrier, or other noise abatement measures, needs to be equal to or below FDOT's reasonable cost criteria (described below), must attain FDOT's noise reduction design goal of 7 dB(A) at one or more benefited receptor sites, and it is the desire of FDOT to obtain a response for or against the noise barrier from a numerical majority (greater than 50%) of the benefited receptors (owners and residents) that provide a response to the noise barrier survey used to solicit their viewpoints. If not supported by a majority of the survey respondents, a noise barrier

or abatement measure will not be deemed reasonable. Noise barrier surveys are typically performed in the project's design phase.

The evaluation of noise barriers for impacted residential (Activity Category B) and non-residential areas (Activity Categories A, C, D, and E) are based on different methods and are evaluated separately. When determining the cost reasonableness of a conceptual noise barrier design for a residential area, $64,000 per benefited receptor is considered the upper limit, using FDOT's current standard construction cost of $40.00 per square foot. A benefited receptor site is defined as a noise sensitive site that will obtain a minimum of 5 dB(A) of noise reduction as a result of a specific noise abatement measure regardless of whether or not they are identified as impacted. Only benefited receptor sites are included in the calculation of reasonable cost for a particular noise abatement measure. Noise barriers for non-residential areas are assessed using FDOT's *Methodology to Evaluate Highway Traffic Noise at Special Land Uses* (December 2023).

If an abatement measure is determined to be feasible and reasonable, the viewpoints of impacted and benefited property owners and tenants must be considered. During the PD&E phase, this input is gathered via workshops and public hearings, while a more detailed survey or workshop process occurs during the design phase. For a noise barrier to be deemed reasonable, it must be supported by a majority of the benefited receptors who respond to the survey.

3.0 Traffic Noise Analysis

3.1 Model Validation

Noise measurements were collected at two sites across four representative locations (MS-1 and MS-2) within the project limits. This was done to verify that TNM-predicted existing noise levels are representative of actual levels along SR 54 and to confirm that traffic noise is the main, or dominant, noise source. Noise measurements at these sites were taken on February 10, 2023. The locations of these monitoring sites are described in **Table 3.1** and depicted in **Figure 3-1**.

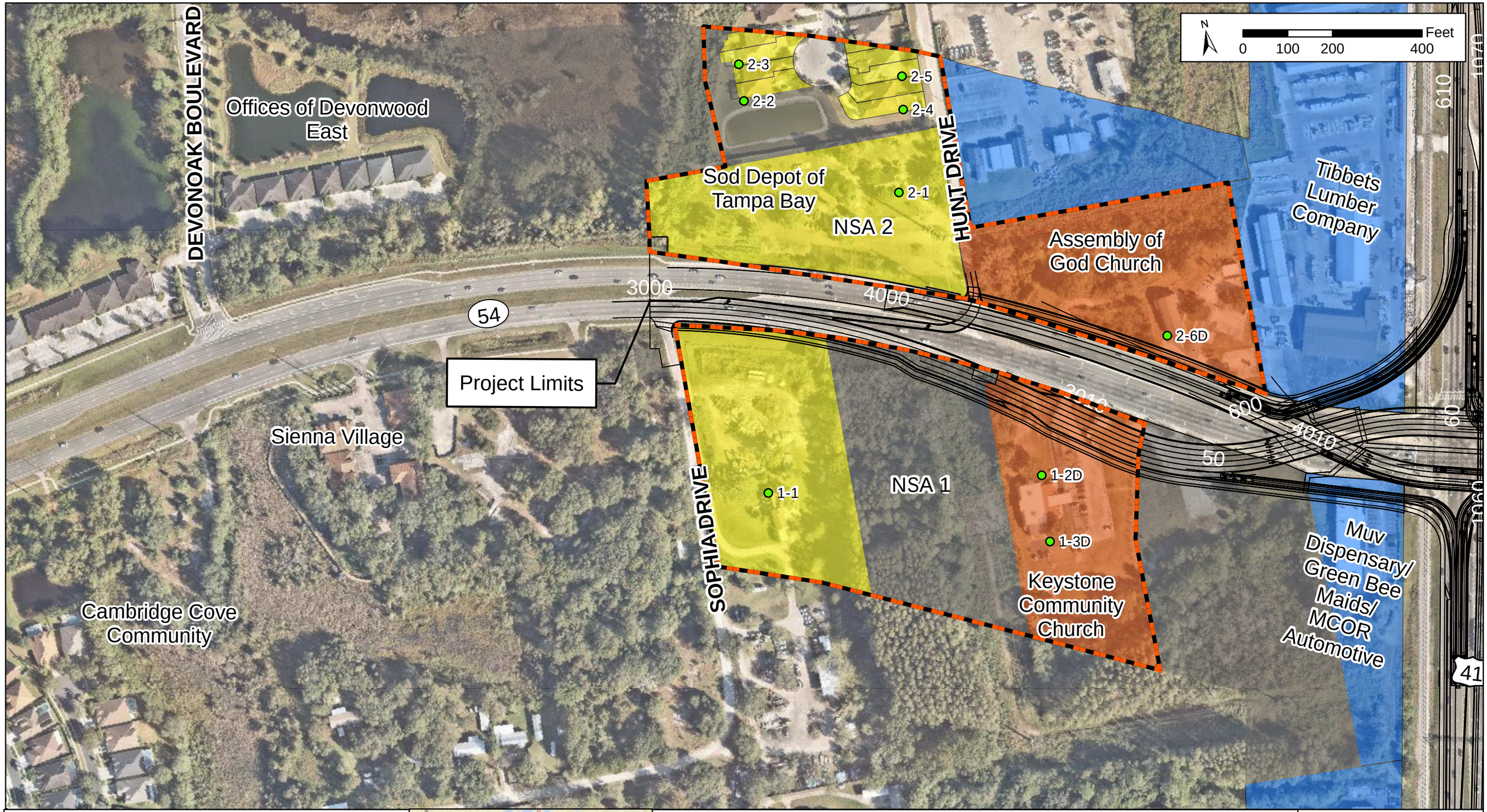
The noise monitoring was completed using Larson-Davis Model 870 sound-level analyzers, in accordance with the methodology established by the FHWA and documented in FHWA-HEP-18-065 *Noise Measurement Handbook - Final Report*, and *Noise Measurement Field Guide - Final Report* FHWA-HEP-18-066 (both June 1, 2018). The A-weighted frequency scale was used, and the sound meter was calibrated to 114 dB(A) using a Larson-Davis Model CA250 sound-level calibrator. Monitoring was conducted for three 10-minute intervals with the microphone approximately five feet above the land surface.

Traffic information, including the number of passenger cars and trucks, and average speeds, were collected at the time of noise monitoring. A K15-K Doppler Radar Gun was used to obtain average operating speeds for cars, medium trucks, heavy trucks, buses, and motorcycles. 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 dates, times, traffic data, and the measured noise levels are presented in **Table 3.1**.

Traffic noise was the dominant noise source at each of the monitoring sites. To verify the computer noise model, the TNM-predicted noise levels for Monitoring Sites MS-1 through MS-2 were compared to measured noise levels. When measured noise levels are within +/-3.0 dB(A) of the computer-predicted levels, the model is considered validated. All of the eight measured noise levels at the four measurement locations were within +/- 3.0 dB(A) of the TNM-predicted levels (see **Table 3.1**). Because the TNM-predicted noise levels are within +/- 3.0 dB(A) of the measured noise levels, the model has been validated and is considered acceptable for predicting existing and future traffic noise levels along SR 54. The average difference between TNM-predicted levels and the monitored levels was 0.9 dB(A).

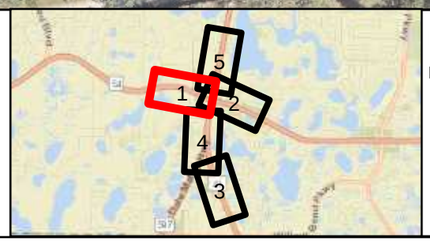
Table 3-1 Noise Monitoring Data and TNM 2.5 Validation Results

General Information							Cars		Medium Trucks		Heavy Trucks		Buses		Motorcycles		Monitored Leq (h) dB(A)	TNM Predicted Leq (h) dB(A)	TNM Difference Leq (h) dB(A)	Model Within +/- 3 dB(A) of Monitored Leq (h)?
Location	Date	Monitor Site Number	Monitoring Location	Begin Time	End Time	Direction of Travel	Vehicles per Hour	Speed (mph)	Vehicles per Hour	Speed (mph)	Vehicles per Hour	Speed (mph)	Vehicles per Hour	Speed (mph)	Vehicles per Hour	Speed (mph)				
US 41 and SR 54	2/10/2023	MS 1-1	Winter Quarters RV Resort 100 feet from Travel Lane on SR 54 East of US 41, south side of road.	2:05 PM	2:15 PM	Eastbound	1,794	49.3	30	40.5	24	44.0	30	41.0	12	46.0	64.2	66.0	1.8	Yes
						Westbound	1,278	49.3	12	40.5	24	44.0	0	---	0	---				
				2:20 PM	2:30 PM	Eastbound	1,680	49.8	66	47.3	48	44.0	12	41.0	24	46.0	64.7	67.1	2.4	Yes
						Westbound	1,554	49.8	12	47.3	60	44.0	36	41.0	12	46.0				
				2:40 PM	2:50 PM	Eastbound	1,842	47.5	66	40.5	42	47.3	0	---	6	43.3	64.5	66.3	1.8	Yes
						Westbound	1,608	47.5	6	40.5	36	47.3	0	---	6	43.3				
		MS-1-2	Winter Quarters RV Resort 50 feet from Travel Lane on SR 54 East of US 41, south side of road.	2:05 PM	2:15 PM	Eastbound	1,794	49.3	30	40.5	24	44.0	30	41.0	12	46.0	68.9	70.1	1.2	Yes
						Westbound	1,278	49.3	12	40.5	24	44.0	0	---	0	---				
				2:20 PM	2:30 PM	Eastbound	1,680	49.8	66	47.3	48	44.0	12	41.0	24	46.0	69.3	70.9	1.6	Yes
						Westbound	1,554	49.8	12	47.3	60	44.0	36	41.0	12	46.0				
				2:40 PM	2:50 PM	Eastbound	1,842	47.5	66	40.5	42	47.3	0	---	6	43.3	69.4	70.2	0.8	Yes
						Westbound	1,608	47.5	6	40.5	36	47.3	0	---	6	43.3				
		MS-2-1	Intersection of Morgan Road and US 41 North of SR 54 on the West side, 75 feet from the travel lane.	3:25 PM	3:35 PM	Northbound	2,076	51.9	42	52.0	6	48.0	12	44.0	0	---	66.2	68.2	2.0	Yes
						Southbound	1,542	51.9	0	---	42	48.0	6	44.0	12	53.0				
				3:39 PM	3:49 PM	Northbound	1,800	50.9	18	52.0	6	44.0	12	48.0	12	53.0	65.5	67.2	1.7	Yes
						Southbound	1,170	50.9	12	52.0	30	44.0	6	48.0	24	53.0				
				3:58 PM	4:08 PM	Northbound	2,034	51.3	12	49.0	24	48.0	0	---	36	53.0	66.6	67.5	0.9	Yes
						Southbound	1,266	51.3	18	49.0	0	---	6	48.0	24	53.0				
		MS-2-2	Intersection of Morgan Road and US 41 North of SR 54 on the West side, 100 feet from the travel lane.	3:25 PM	3:35 PM	Northbound	2,076	51.9	42	52.0	6	48.0	12	44.0	0	---	67.5	66.9	-0.6	Yes
						Southbound	1,542	51.9	0	---	42	48.0	6	44.0	12	53.0				
				3:39 PM	3:49 PM	Northbound	1,800	50.9	18	52.0	6	44.0	12	48.0	12	53.0	67.0	65.9	-1.1	Yes
						Southbound	1,170	50.9	12	52.0	30	44.0	6	48.0	24	53.0				
				3:58 PM	4:08 PM	Northbound	2,034	51.3	12	49.0	24	48.0	---	---	36	53.0	67.8	66.3	-1.5	Yes
						Southbound	1,266	51.3	18	49.0	0	---	6	48.0	24	53.0				
																		Average	0.9	



FDOT

US 41 at SR 54 PD&E Study
from South of SR 54 Intersection
to North of SR 54 Intersection
WPIS No.: 419182-1
Pasco County, Florida



Legend

Predicted Noise Levels
- Not Impacted
- Impacted
- Monitoring Sites

- Proposed Noise Barrier (Recommended)
- Privacy Wall
- Noise Study Area
- Proposed Improvements

Land Use by Noise Abatement Criteria
- NAC B: Residential
- NAC D: Institutional (Interior)
- NAC E: Sensitive Commercial
- NAC F: Non-Sensitive Commercial
- Vacant

December 2025

Figure 3-1
Noise Analysis Map
Sheet 1 of 5

N

Feet
0 100 200 400

CARSON LANE

RADEN DRIVE

Russel Adams Realty

Shopping Plaza

Tibbets Lumber Company

McDonald's

Big Lots/ Party Liquors/ Subway

Jiffy Lube

Wendy's

Vacant Commercial (Previously Pizza Villa)

Village Lakes Shopping Center

AYR Dispensary

KFC

7-Eleven

Muv Dispensary/ Green Bee Maids/ MCOR Automotive

CVS Pharmacy

Hungry Howies Pinch-A-Penny

Pasco County Fire Rescue No. 23

Lowe's

Winter Quarters Pasco RV Resort

MS 1-1

MS 1-2

Project Limits

54

41

4030

4020

4010

3020

3030

3040

3060

3070

3080

3090

3100

3110

610

700

20

07

08

FDOT

US 41 at SR 54 PD&E Study
from South of SR 54 Intersection
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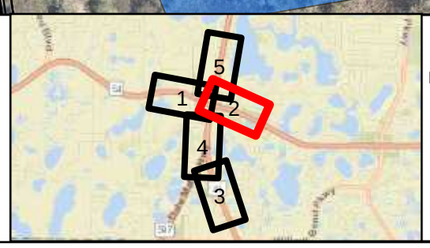
WPIS No.: 419182-1
Pasco County, Florida



Legend

Predicted Noise Levels
- Not Impacted
- Impacted
- Monitoring Sites

- Proposed Noise Barrier (Recommended)
- Privacy Wall
- Noise Study Area
- Proposed Improvements

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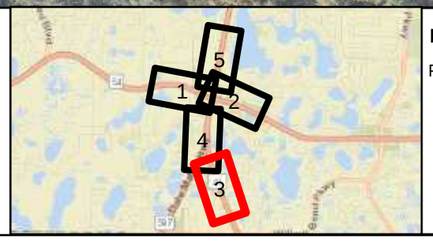
December 2025

Figure 3-1
Noise Analysis Map
Sheet 2 of 5

Tractor Supply
Walmart
Dry Cleaners
Legacy Coins
Tires Plus
VisionQuest/ Familia Upholstery
Vacant
LifeStorage
Culver's
Jammin Car Wash
Famous Tate Appliances & Mattresses
41
1000
2000
1010
2010
200
100
1020
2020
210
Land O' Lakes Sand and Gravel
UP Equipment
PestBear
Wholesale Transmissi
Beck Galler
Project Limits
NSA 3
Tropical Village
LAKE FLOYD DRIVE
3-1
3-2
3-3
3-4
3-5
3-6
3-7
3-8
3-9
3-10
3-11
3-12
3-13
3-14
3-15
3-16
3-17
3-18
3-19
3-20
3-21
3-22
3-23
3-24
3-25
3-26
3-27
3-28
3-29
3-30
3-31
N
Feet
0
100
200
400

FDOT

US 41 at SR 54 PD&E Study
from South of SR 54 Intersection
to North of SR 54 Intersection
WPIS No.: 419182-1
Pasco County, Florida



Legend

Predicted Noise Levels
- Not Impacted
- Impacted
- Monitoring Sites

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- Privacy Wall
- Noise Study Area
- Proposed Improvements

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- NAC F: Non-Sensitive Commercial
- Vacant

December 2025

Figure 3-1
Noise Analysis Map
Sheet 3 of 5

Paradise Lakes Condos
Paradise Square Shopping Center
DALE MABRY HWY
BRINSON ROAD
LEONARD RD
Terraces at Paradise Lakes
Calliber Collision
Paradise Lakes RV Park
The Fountains at Paradise Lakes
NSA 4
Car Wash
Tire Kingdom
City Electric Centre
Legacy Coins
Vacant
VisionQuest/ Familia Upholstery
St. Luke's Lakeside Plaza
Lake Francisco Plaza
Commercial Plaza
NSA 5
UP Equipment
PestBear
Wholesale Transmission
Beck Gallery
Tropicana Mobile Home Park, CNE S1.1
Recommended for Further Consideration
14' Tall Ground Mounted Noise Barrier
Paradise Lakes RV Park / The Fountains at Paradise Lakes Existing Privacy Wall (~10' Tall)
N
Feet
0 100 200 400

US 41 at SR 54 PD&E Study
from South of SR 54 Intersection
to North of SR 54 Intersection
WPIS No.: 419182-1
Pasco County, Florida

Legend

Predicted Noise Levels
- Not Impacted
- Impacted
- Monitoring Sites

- Proposed Noise Barrier (Recommended)
- Privacy Wall
- Noise Study Area
- Proposed Improvements

Land Use by Noise Abatement Criteria
- NAC B: Residential
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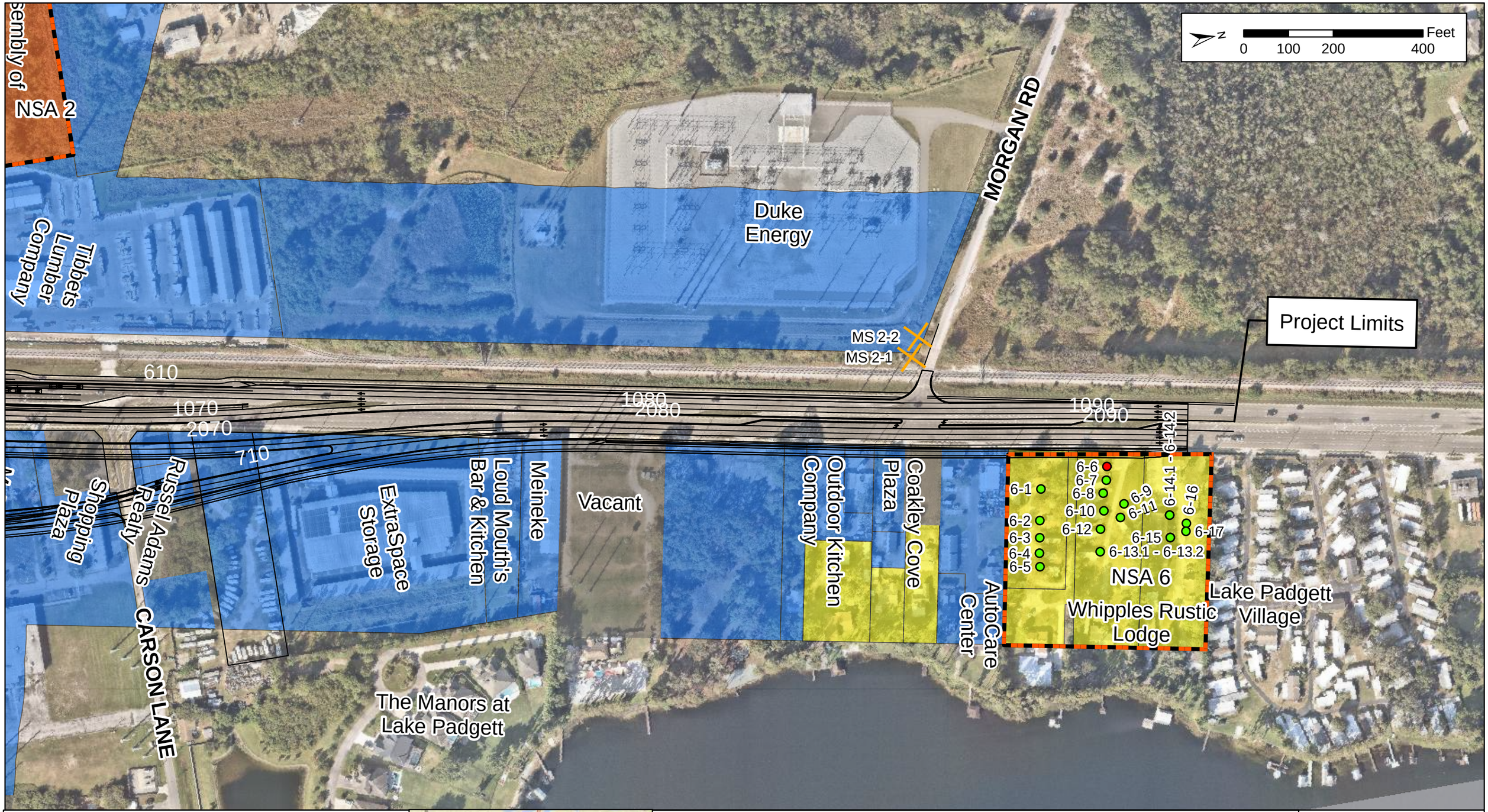
- NAC E: Sensitive Commercial
- NAC F: Non-Sensitive Commercial
- Vacant

December 2025

Figure 3-1
Noise Analysis Map
Sheet 4 of 5



FDOT

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from South of SR 54 Intersection
to North of SR 54 Intersection
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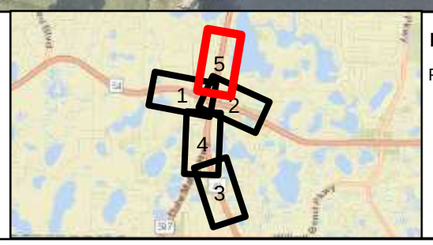
Pasco County, Florida



Legend

Predicted Noise Levels
- Not Impacted
- Impacted
- Monitoring Sites

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- Privacy Wall
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- NAC F: Non-Sensitive Commercial
- Vacant

December 2025

Figure 3-1
Noise Analysis Map
Sheet 5 of 5

3.2 Predicted Noise Levels and Abatement Analysis

To facilitate the noise impact analysis, six Noise Sensitive Areas (NSAs) were identified along the project corridor that can potentially be impacted by traffic noise associated with the project. These noise sensitive land uses were identified on December 8th 2025 and include existing single and multi-family residences, education/day care facilities and associated recreational areas, restaurants, and places of worship. Each of these areas was evaluated for traffic noise impacts.

The locations of six NSAs are depicted in **Figure 3-1**. The locations and description of the representative sites used in the noise analysis are also presented in **Figure 3-1** and are described in **Table 3.2**. A total of 108 receptor sites were modeled and 10 of those sites were impacted. Each of the representative receptor sites was given a unique designation (e.g., 1-1 and 1-2). The first numerical value represents the NSA the receptor site is located within, and the second value represents a unique/sequential receptor site number for that NSA.

The Fountain at Paradise Lakes and Paradise Lakes RV Park (NSA 3) along the project corridor have an existing 10-foot privacy wall shown in **Figure 3-1 Sheet 4**.

Table 3.2 also includes the predicted existing and future design year (2045) No-Build and Preferred Alternative noise levels. Predicted design year (2045) noise levels for the Preferred Alternative were compared to the NAC and to the predicted existing conditions noise levels to assess potential noise impacts associated with the project. As identified in **Table 3.2** and summarized in **Table 3.3**, traffic noise impacts occur at 10 residential receptors (NAC B) and will require consideration of noise abatement measures (i.e., noise barriers) at one of the six NSAs (i.e., NSA 5). None of the non-residential/special land use sites (NACs C and D) were impacted. The proposed improvements associated with the Preferred Alternative do not result in any substantial noise increases (i.e., greater than 15 dB(A) over existing levels). The predicted noise levels for the other NSAs were either not impacted or had isolated impacted residences (i.e. 6-6) and were therefore not evaluated for noise abatement. Within NSA 5, three residences (i.e., 5-1R. 5-2R, and 5-3R) are being relocated and were not evaluated for traffic noise impacts but were identified with NSA 5. Proposed roadway improvements including shifts in alignments in some areas (e.g. NSA 4) reduced the potential for design year (2045) noise impacts.

The FDOT noise policy requires that the reasonableness and feasibility of noise abatement be considered when the FHWA NAC is approached, met, or exceeded at a noise sensitive site (see

Section 2.4). The most common and effective noise abatement measure for projects such as this is the construction of noise barriers.

Common Noise Environments (CNEs) were used to facilitate the evaluation of noise barriers at the impacted receptor sites along the project corridor. A CNE represents a group of receptors that are exposed to similar noise sources and levels, traffic volumes, traffic mix, speeds, and topographic features. Receptors in a CNE would benefit from the same noise barrier or noise barrier system (i.e., overlapping/continuous noise barriers). In addition, determining the reasonable cost of a noise barrier involves a review of the cost per benefited receptor site of a noise barrier benefiting a single location or CNE (e.g., a subdivision or contiguous impact area). As presented in **Table 3.3**, one single CNE was used to assess noise barriers for the noise sensitive sites that approach, meet, or exceed the NAC. The single CNE was given a unique designation (S1.1) that corresponds to the noise study segment. The analysis of noise barrier and recommendations are summarized in **Section 3.2.1**. The noise barrier analysis table is included below in **Tables 3.4**. The locations and limits of the recommended noise barrier are depicted on **Figure 3-1.**

Table 3.2: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 1 of 5)

Name of Noise Sensitive Area/Site	Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Noise Abatement Activity Category - Criteria	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status / Consideration of Noise Abatement Warranted? Yes or No	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative	Common Noise Environment (CNE) Identification Number (Comments)
					Existing Conditions	Design Year (2045)					
						No-Build Alternative	Build Alternative				
US 41 (SR 45) at SR 54 PD&E Study											
Noise Study Area 1 - See Figure 3-1 Sheet 1											
Single Family Residence and Keystone Community Church	1-1	Single Family Residence	1	Residential NAC B - 66 dB(A)	59.3	59.3	58.8	Below / No	0.0	-0.5	---
	1-2D	Church (Interior)	1	Institutional Interior NAC D - 51 dB(A)	39.1	39.1	42.4	Below / No	0.0	3.3	---
	1-3D	Church (Interior)	1		32.1	32.1	31.8	Below / No	0.0	-0.3	---
				Minimum	32.1	32.1	31.8	---	0.0	-0.5	---
				Maximum	59.3	59.3	58.8	---	0.0	3.3	---
			Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)		0	0	0	---	---	---	---
Noise Study Area 2 - See Figure 3-1 Sheet 1											
Devonwood Community and Assemblies of God Church	2-1	Single Family Residence	1	Residential NAC B - 66 dB(A)	63.9	63.9	63.4	Below / No	0.0	-0.5	---
	2-2	Single Family Residence	1		58.2	58.2	57.5	Below / No	0.0	-0.7	---
	2-3	Single Family Residence	1		54.9	54.9	54.0	Below / No	0.0	-0.9	---
	2-4	Single Family Residence	1		54.4	54.4	53.8	Below / No	0.0	-0.6	---
	2-5	Single Family Residence	1		51.6	51.6	50.6	Below / No	0.0	-1.0	---
	2-6D	Church (Interior)	1	Institutional Interior NAC D - 51 dB(A)	45.4	45.4	45.5	Below / No	0.0	0.1	---
				Minimum	45.4	45.4	45.5	---	0.0	-1.0	---
				Maximum	63.9	63.9	63.4	---	0.0	0.1	---
			Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)		0	0	0	---	---	---	---
Noise Study Area 3 - See Figure 3-1 Sheet 3											
Lake Heron Community and The Breakfast Nook	3-1	Single Family Residence	1	Residential NAC B - 66 dB(A)	57.3	57.3	59.0	Below / No	0.0	1.7	---
	3-2	Single Family Residence	1		54.4	54.4	56.8	Below / No	0.0	2.4	---
	3-3	Single Family Residence	1		53.1	53.1	55.8	Below / No	0.0	2.7	---
	3-4	Single Family Residence	1		53.0	53.0	54.0	Below / No	0.0	1.0	---
	3-5	Single Family Residence	1		53.6	53.6	55.0	Below / No	0.0	1.4	---
	3-6	Single Family Residence	1		53.8	53.8	55.2	Below / No	0.0	1.4	---
	3-7	Single Family Residence	1		54.8	54.8	56.9	Below / No	0.0	2.1	---
	3-8	Single Family Residence	1		53.6	53.6	55.6	Below / No	0.0	2.0	---
	3-9	Single Family Residence	1		52.7	52.7	54.5	Below / No	0.0	1.8	---
	3-10	Restaurant (Outdoor Seating)	1	Sensitive Commerical NAC E - 71 dB(A)	65.0	65.0	67.4	Below / No	0.0	2.4	---
	3-11	Single Family Residence	1	Residential NAC B - 66 dB(A)	60.4	60.4	62.4	Below / No	0.0	2.0	---

Table 3.2: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 2 of 5)

Name of Noise Sensitive Area/Site	Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Noise Abatement Activity Category - Criteria	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status / Consideration of Noise Abatement Warranted? Yes or No	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative	Common Noise Environment (CNE) Identification Number (Comments)
					Existing Conditions	Design Year (2045)					
						No-Build Alternative	Build Alternative				
Lake Heron Community and The Breakfast Nook	3-12	Single Family Residence	1	Residential NAC B - 66 dB(A)	57.8	57.8	59.9	Below / No	0.0	2.1	---
	3-13	Single Family Residence	1		55.8	55.8	56.9	Below / No	0.0	1.1	---
	3-14	Single Family Residence	1		55.3	55.3	56.2	Below / No	0.0	0.9	---
	3-15	Single Family Residence	1		54.3	54.3	55.4	Below / No	0.0	1.1	---
	3-16	Single Family Residence	1		54.0	54.0	55.1	Below / No	0.0	1.1	---
	3-17	Single Family Residence	1		53.4	53.4	55.0	Below / No	0.0	1.6	---
	3-18	Single Family Residence	1		53.1	53.1	55.0	Below / No	0.0	1.9	---
	3-19	Single Family Residence	1		52.4	52.4	54.9	Below / No	0.0	2.5	---
	3-20	Single Family Residence	1		56.3	56.3	58.7	Below / No	0.0	2.4	---
	3-21	Single Family Residence	1		52.9	52.9	55.2	Below / No	0.0	2.3	---
	3-22	Single Family Residence	1		51.7	51.7	54.2	Below / No	0.0	2.5	---
	3-23	Single Family Residence	1		50.8	50.8	53.3	Below / No	0.0	2.5	---
	3-24	Single Family Residence	1		50.1	50.1	50.2	Below / No	0.0	0.1	---
	3-25	Single Family Residence	1		50.8	50.8	50.9	Below / No	0.0	0.1	---
	3-26	Single Family Residence	1		50.0	50.0	49.7	Below / No	0.0	-0.3	---
	3-27	Single Family Residence	1		49.3	49.3	50.5	Below / No	0.0	1.2	---
	3-28	Single Family Residence	1		53.6	53.6	57.9	Below / No	0.0	4.3	---
	3-29	Single Family Residence	1		49.5	49.5	55.0	Below / No	0.0	5.5	---
	3-30	Single Family Residence	1		49.5	49.5	54.7	Below / No	0.0	5.2	---
	3-31	Single Family Residence	1		49.7	49.7	54.2	Below / No	0.0	4.5	---
				Minimum	49.3	49.3	49.7	---	0.0	-0.3	---
				Maximum	65.0	65.0	67.4	---	0.0	5.5	---
				Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)	0	0	0	---	---	---	---
Noise Study Area 4 - See Figure 3-1 Sheet 4											
Paradise Lakes and Paradise Lakes RV Park	4-1	Single Family Residence	1	Residential NAC B - 66 dB(A)	54.0	54.0	51.4	Below / No	0.0	-2.6	---
	4-2	Single Family Residence	1		43.4	43.4	40.8	Below / No	0.0	-2.6	---
	4-3	Single Family Residence	1		52.7	52.7	51.8	Below / No	0.0	-0.9	---
	4-4	Single Family Residence	1		50.0	50.0	50.7	Below / No	0.0	0.7	---
	4-5	Single Family Residence	1		55.1	55.1	51.3	Below / No	0.0	-3.8	---
	4-6	Single Family Residence	1		56.4	56.4	53.3	Below / No	0.0	-3.1	---
	4-7	Single Family Residence	1		54.2	54.2	52.2	Below / No	0.0	-2.0	---

Table 3.2: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 3 of 5)

Name of Noise Sensitive Area/Site	Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Noise Abatement Activity Category - Criteria	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status / Consideration of Noise Abatement Warranted? Yes or No	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative	Common Noise Environment (CNE) Identification Number (Comments)
					Existing Conditions	Design Year (2045)					
						No-Build Alternative	Build Alternative				
Paradise Lakes and Paradise Lakes RV Park	4-8	Single Family Residence	1	Residential NAC B - 66 dB(A)	56.3	56.3	51.3	Below / No	0.0	-5.0	---
	4-9	Single Family Residence	1		56.6	56.6	51.8	Below / No	0.0	-4.8	---
	4-10	Single Family Residence	1		57.3	57.3	52.7	Below / No	0.0	-4.6	---
	4-11	Single Family Residence	1		50.5	50.5	50.8	Below / No	0.0	0.3	---
	4-12.1	Single Family Residence	1		57.5	57.5	53.4	Below / No	0.0	-4.1	---
	4-12.2	Single Family Residence	1		69.8	69.8	64.3	Below / No	0.0	-5.5	---
	4-12.3	Single Family Residence	1		70.3	70.3	65.6	Below / No	0.0	-4.7	---
	4-13.1	Single Family Residence	1		56.9	56.9	53.0	Below / No	0.0	-3.9	---
	4-13.2	Single Family Residence	1		67.4	67.4	62.3	Below / No	0.0	-5.1	---
	4-13.3	Single Family Residence	1		68.5	68.5	63.7	Below / No	0.0	-4.8	---
	4-14.1	Single Family Residence	1		53.3	53.3	49.9	Below / No	0.0	-3.4	---
	4-14.2	Single Family Residence	1		59.2	59.2	56.7	Below / No	0.0	-2.5	---
	4-14.3	Single Family Residence	1		63.9	63.9	59.3	Below / No	0.0	-4.6	---
	4-15.1	Single Family Residence	1		52.0	52.0	48.9	Below / No	0.0	-3.1	---
	4-15.2	Single Family Residence	1		57.0	57.0	54.8	Below / No	0.0	-2.2	---
	4-15.3	Single Family Residence	1		62.0	62.0	57.6	Below / No	0.0	-4.4	---
	4-16.1	Single Family Residence	1		53.8	53.8	51.1	Below / No	0.0	-2.7	---
	4-16.2	Single Family Residence	1		63.4	63.4	59.4	Below / No	0.0	-4.0	---
	4-16.3	Single Family Residence	1		65.1	65.1	60.8	Below / No	0.0	-4.3	---
	4-17.1	Single Family Residence	1		52.8	52.8	50.0	Below / No	0.0	-2.8	---
	4-17.2	Single Family Residence	1		60.8	60.8	57.4	Below / No	0.0	-3.4	---
	4-17.3	Single Family Residence	1		63.5	63.5	59.2	Below / No	0.0	-4.3	---
	4-18.1	Single Family Residence	1		49.9	49.9	47.6	Below / No	0.0	-2.3	---
	4-18.2	Single Family Residence	1		54.7	54.7	53.0	Below / No	0.0	-1.7	---
	4-18.3	Single Family Residence	1		59.6	59.6	55.5	Below / No	0.0	-4.1	---
				Minimum	43.4	43.4	40.8	---	0.0	-5.5	---
				Maximum	70.3	70.3	65.6	---	0.0	0.7	---
				Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)	4	4	0	---	---	---	---

Table 3.2: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 4 of 5)

Name of Noise Sensitive Area/Site	Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Noise Abatement Activity Category - Criteria	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status / Consideration of Noise Abatement Warranted? Yes or No	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative	Common Noise Environment (CNE) Identification Number (Comments)
					Existing Conditions	Design Year (2045)					
						No-Build Alternative	Build Alternative				
Noise Study Area 5 - See Figure 3-1 Sheet 4											
Tropicana Mobile Home Park	5-1R	Single Family Residence (Relocation)	1	Residential NAC B - 66 dB(A)	61.2	61.2	68.3	Exceeds / Yes	0.0	7.1	CNE S1.1
	5-2R	Single Family Residence (Relocation)	1		60.8	60.8	68.0	Exceeds / Yes	0.0	7.2	
	5-3R	Single Family Residence (Relocation)	1		56.9	56.9	69.7	Exceeds / Yes	0.0	12.8	
	5-4	Single Family Residence	1		58.3	58.3	68.2	Exceeds / Yes	0.0	9.9	
	5-5	Single Family Residence	1		58.5	58.5	69.8	Exceeds / Yes	0.0	11.3	
	5-6	Single Family Residence	1		57.9	57.9	68.4	Exceeds / Yes	0.0	10.5	
	5-7	Single Family Residence	1		55.6	55.6	63.4	Below / No	0.0	7.8	
	5-8	Single Family Residence	1		52.7	52.7	58.9	Below / No	0.0	6.2	
	5-9	Single Family Residence	1		55.6	55.6	61.5	Below / No	0.0	5.9	
	5-10	Single Family Residence	1		61.4	61.4	64.2	Below / No	0.0	2.8	
	5-11	Single Family Residence	1		51.5	51.5	52.5	Below / No	0.0	1.0	
	5-12	Single Family Residence	1		52.7	52.7	59.2	Below / No	0.0	6.5	
	5-13	Single Family Residence	1		51.5	51.5	58.8	Below / No	0.0	7.3	
	5-14	Single Family Residence	1		60.1	60.1	60.1	Below / No	0.0	0.0	
	5-15	Single Family Residence	1		51.7	51.7	58.5	Below / No	0.0	6.8	
	5-16	Single Family Residence	1		54.0	54.0	55.5	Below / No	0.0	1.5	
	5-17	Single Family Residence	1		55.9	55.9	55.9	Below / No	0.0	0.0	
				Minimum	51.5	51.5	52.5	---	0.0	0.0	---
				Maximum	61.4	61.4	69.8	---	0.0	12.8	---
				Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)	0	0	6	---	---	---	---
Noise Study Area 6 - See Figure 3-1 Sheet 5											
Lakeside Apartments, Whipples Rustic Lodge and McKaig Lane Mobile Homes	6-1	Single Family Residence	1	Residential NAC B - 66 dB(A)	66.1	66.1	65.8	Below / No	0.0	-0.3	---
	6-2	Single Family Residence	1		59.3	59.3	59.5	Below / No	0.0	0.2	---
	6-3	Single Family Residence	1		57.4	57.4	57.6	Below / No	0.0	0.2	---
	6-4	Single Family Residence	1		56.3	56.3	56.2	Below / No	0.0	-0.1	---
	6-5	Single Family Residence	1		55.5	55.5	55.4	Below / No	0.0	-0.1	---
	6-6	Single Family Residence	1		71.6	71.6	70.6	Exceeds / Yes	0.0	-1.0	Isolated Residence
	6-7	Single Family Residence	1		66.5	66.5	65.5	Below / No	0.0	-1.0	---
	6-8	Single Family Residence	1		60.0	60.0	59.1	Below / No	0.0	-0.9	---
	6-9	Single Family Residence	1		63.1	63.1	62.4	Below / No	0.0	-0.7	---

Table 3.2: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 5 of 5)

Name of Noise Sensitive Area/Site	Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Noise Abatement Activity Category - Criteria	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status / Consideration of Noise Abatement Warranted? Yes or No	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative	Common Noise Environment (CNE) Identification Number (Comments)
					Existing Conditions	Design Year (2045)					
						No-Build Alternative	Build Alternative				
Lakeside Apartments, Whipples Rustic Lodge and McKaig Lane Mobile Homes	6-10	Single Family Residence	1	Residential NAC B - 66 dB(A)	59.9	59.9	59.3	Below / No	0.0	-0.6	---
	6-11	Single Family Residence	1		59.7	59.7	59.1	Below / No	0.0	-0.6	---
	6-12	Single Family Residence	1		56.1	56.1	55.5	Below / No	0.0	-0.6	---
	6-13.1	Single Family Residence	1		55.4	55.4	54.9	Below / No	0.0	-0.5	---
	6-13.2	Single Family Residence	1		64.0	64.0	62.5	Below / No	0.0	-1.5	---
	6-14.1	Single Family Residence	1		60.4	60.4	59.9	Below / No	0.0	-0.5	---
	6-14.2	Single Family Residence	1		57.9	57.9	56.0	Below / No	0.0	-1.9	---
	6-15	Single Family Residence	1		50.1	50.1	49.4	Below / No	0.0	-0.7	---
	6-16	Single Family Residence	1		57.5	57.5	57.1	Below / No	0.0	-0.4	---
	6-17	Single Family Residence	1		56.4	56.4	56.1	Below / No	0.0	-0.3	---
Minimum					50.1	50.1	49.4	---	0.0	-1.9	---
Maximum					71.6	71.6	70.6	---	0.0	0.2	---
Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)					3	3	1	---	---	---	---

Table 3.3: Summary of Traffic Noise Impacts by Noise Study Area

Noise Study Area (NSA) Number	Representative Noise Receptor Site Designation	Noise Abatement Activity Category - Criteria	Impacted by Traffic Noise?	Number of Residential Sites Impacted	Number of Special Land Uses Impacted?	Noise Barriers Potentially Feasible?	Common Noise Environment (CNE) ID / Noise Barrier Analysis Section
US 41 (SR 45) at SR 54 PD&E Study							
NSA 1	Single Family Residence and Keystone Community Church	Residential NAC B - 66 dB(A)	NO	---	---	---	---
		Institutional Interior NAC D - 51 dB(A)	NO	---	---	---	---
NSA 2	Devonwood Community and Assemblies of God Church	Residential NAC B - 66 dB(A)	NO	---	---	---	---
		Institutional Interior NAC D - 51 dB(A)	NO	---	---	---	---
NSA 3	Lake Heron Community and The Breakfast Nook	Residential NAC B - 66 dB(A)	NO	---	---	---	---
		Sensitive Commerical NAC E - 71 dB(A)	NO	---	---	---	---
NSA 4	Paradise Lakes and Paradise Lakes RV Park	Residential NAC B - 66 dB(A)	NO	---	---	---	---
NSA 5	Tropicana Mobile Home Park	Recreational NAC B - 66 dB(A)	YES	6 (5-1R, 5-2R, 5-3R Residences being relocated)	NO	YES	CNE S1.1
NSA 6	Lakeside Apartments, Whipples Rustic Lodge and McKaig Lane Mobile Homes	Residential NAC B - 66 dB(A)	YES	1 (Isolated Residence - 6-6)	---	NO	---
Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)				7	---	---	---
Total Number of Non-Residential / Special Land Use Sites Equal to or Greater than the Noise Abatement Criteria (NAC)				---	0	---	---

X:\P\Noise_Studies\US 41 & SR 54\NSR\Draft NSR 2025\Tables\[Table_3-2&3_NoiseSites&PNLs_US41_SR54_12-20-25.xls]Table 3.3 Summary(Working)

Within the Noise Study Area, two of the six NSAs (5 and 6) have residential sites predicted to be impacted by design year (2045) traffic noise levels (see **Table 3.3**). The evaluation of the single noise barrier for NSA 5 (CNE S1.1) are presented in **Section 3.2.1**. Noise barriers were not evaluated for impacted receptor in NSA 6 (receptor 6-6) since noise barriers are not considered acoustically feasible for isolated residential impacts.

3.2.1 Common Noise Environment S1.1 (NSA 5)

Common Noise Environment S1.1 encompasses the impacted single-family residences within the Tropicana Mobile Home Park located along eastbound U.S 41 north of Dale Mabry Highway (see **Figure 3-1 Sheet 4**). Design year (2045) noise levels for the Preferred Alternative are predicted to approach, meet, or exceed the FHWA NAC of 66 dB(A) at three residences within this area; therefore, noise barriers were evaluated at this location as an abatement measure. It should be noted that the length of a noise barrier for the community is limited to the south by the main entrance to Tropicana Mobile Home Park. In addition to potential sight distance issues, overhead electric lines are located adjacent to the ROW line in this area. These electric lines may restrict the construction of a noise barrier or substantially increase the construction costs. Therefore, these power lines will have to be considered during the design phase evaluation of a noise barrier at this location. Currently, no existing, conforming and legally permitted outdoor advertising signs are located in this area.

The results of the noise barrier analysis for this area are summarized in **Table 3.4**. Five conceptual ROW ground mounted noise barrier designs (S1.1-CD1 through S1.1-CD5) were evaluated to reduce traffic noise levels at the three impacted receptors. Each of these conceptual noise barrier designs meet the minimum noise reduction design goal of 7 dB(A) for at least one benefited receptor and meet the reasonable cost criteria of equal to or less than $64,000 per benefited receptor site. Conceptual barrier design S1.1-CD1 was determined to be the most feasible and cost reasonable noise abatement measure for this location.

Conceptual Barrier Design S1.1-CD1 represents one 14-foot-tall ROW ground mounted noise barrier segment. The barrier segment extends approximately 580 feet, from Station 2041+20. to Station 2047+00. This conceptual noise barrier design would benefit two of the three impacted receptors and benefit five additional receptors and would provide an average noise reduction of 8.0 dB(A) at benefited receptor sites with a maximum reduction of 14.2 dB(A). The estimated construction cost of this conceptual barrier design is $319,200, or $46,400 per benefited receptor

site, which meets the reasonable cost criteria of equal to or less than $64,000 per benefited receptor site.

Conceptual Noise Barrier Design S1.1-CD1 is recommended for further consideration and public input during the project's design phase at this location (CNE S1.1). This conceptual noise barrier design satisfies the reasonableness and feasibility factors considered in the evaluation of noise abatement measures during a PD&E Study. The final decisions on noise barrier dimensions are made during the project's design phase. During the design phase, an engineering constructability review will be conducted to confirm that the noise barrier is feasible and support for noise barriers from the benefited receptors is determined.

Table 3.4: Noise Barrier Analyses for Common Noise Environment CNE S1.1 (NSA 5 Tropicana Mobile Home Park)

Noise Sensitive Area (General Location/Station Range/Road)	Conceptual Noise Barrier Design Number	Noise Barrier Type (Segment Name)	Noise Barrier Location	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Impacted Receptor Sites	Number of Impacted/ Benefited Receptor Sites	Number of Benefited Receptor Sites/ Not Impacted	Total Number of Benefited Receptor Sites	Average Noise Reduction for all Benefited Receptor Sites dB(A)	Maximum Noise Reduction for all Benefited Receptor Sites dB(A)	Cost ($40 per square foot)	Average Cost/Site Benefited	Does Optimal Barrier Design Meet FDOT's Reasonable Noise Abatement Criteria of $64,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal?	Comments
NSA 5 (Troppicana Mobile Home Park) / Station 2041+00 - 2047+00	S1.1-CD1	Ground Mounted	Eastbound US 41 North of Dale Mabry Highway	14	580	2041+20	2047+00	3	2	5	7	8.0	14.2	$324,800	$46,400	YES	Represents the conceptual noise barrier design and is recommended for further consideration and public input during the project's design phase.
	S1.1-CD2	Ground Mounted	Eastbound US 41 North of Dale Mabry Highway	16	580	2041+20	2047+00	3	2	5	7	8.7	14.8	$371,200	$53,029	YES	---
	S1.1-CD3	Ground Mounted	Eastbound US 41 North of Dale Mabry Highway	18	580	2041+20	2047+00	3	2	5	7	9.2	15.4	$417,600	$59,657	YES	---
	S1.1-CD4	Ground Mounted	Eastbound US 41 North of Dale Mabry Highway	20	580	2041+20	2047+00	3	2	6	8	9.0	15.8	$464,000	$58,000	YES	---
	S1.1-CD5	Ground Mounted	Eastbound US 41 North of Dale Mabry Highway	22	580	2041+20	2047+00	3	2	6	8	9.3	16.3	$510,400	$63,800	YES	---

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4.0 Conclusions

A traffic noise study was performed in accordance with *23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise* (July 13, 2010), the FDOT's PD&E Manual, Part 2, Chapter 18*, Highway Traffic Noise* (July 31, 2024), and *FDOT's Traffic Noise Modeling and Analysis Practitioners Handbook* (December 31, 2018). Design year (2045) traffic noise levels for the Preferred Alternative will approach or exceed the NAC at seven residences within the project limits. Therefore, the feasibility and reasonableness of noise barriers were considered for those noise sensitive sites predicted to be impacted by design year (2045) traffic noise. Noise barriers were not considered a feasible noise abatement option at one of the seven impacted residences because they represent isolated receptors. For a noise barrier to be considered an acoustically feasible abatement measure, it must benefit at least two impacted receptor sites.

Noise barriers were evaluated for the other six residences that approach or exceed the NAC. One CNE was used to assess noise barriers at the location. The results of the noise barrier analyses are summarized in **Table 4.1** as well as in **Sections 3.2.1**. A single noise barrier at the one CNE was determined to be feasible and cost reasonable and is recommended for further consideration during the design phase and public input. The cost per benefited site of the conceptual noise barrier designs is within FDOT's noise barrier cost criteria of equal to or less than $64,000 per benefited site and will meet FDOT's noise reduction reasonableness criteria of 7 dB(A) for one or more impacted sites. The noise barrier recommended for further consideration is expected to reduce traffic noise by at least 5 dB(A) at seven residences including two of the three impacted receptors within CNE S1.1. Additionally, three receptors (5-1R, 5-2R, and 5-3R) are impacted but are being relocated. The estimated cost of the recommended barrier is $319,200. The final decisions on noise barrier dimensions are made during the project's design phase. During the design phase, an engineering constructability review will be conducted to confirm that the noise barriers are feasible and support for noise barriers from the benefited noise sensitive sites is determined.

With the Preferred Alternative, seven of the impacted receptors would be benefited by the noise barrier recommended for further consideration in the project design phase. Noise barriers were not considered feasible or cost reasonable abatement options at the other impacted receptor along the project corridor because it represents an isolated receptor.

Statement of Likelihood

The FDOT is committed to the construction of a feasible noise abatement measure at the noise impacted location identified in **Table 4.1** and **Figure 3-1** contingent upon the following conditions:

- Final recommendations on the construction of abatement measures are determined during the project's final design and through the public involvement process;
- Detailed noise analyses during the final design process support the need, feasibility and reasonableness of providing abatement;
- Cost analysis indicates that the cost of the noise barrier will not exceed the cost reasonable criterion;
- Community input supporting types, heights, and locations of the noise barrier is provided to the District; and
- Safety and engineering aspects, as related to the roadway user and the adjacent property owner, have been reviewed, and any conflicts or issues resolved;
- An easement will need to be granted to the Department to maintain the barrier by all of the property owner that abuts the barrier.

Table 4.1: Noise Barrier Evaluation Summary and Recommendations (Sheet 1 of 1)

Noise Sensitive Area Name / Common Noise Environment (CNE) Identification Number	Conceptual Noise Barrier Design Number	Conceptual Noise Barrier Design Number (Type)	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Impacted Receptor Sites	Number of Impacted/ Benefited Receptor Sites	Number of Benefited Receptor Sites/ Not Impacted	Total Number of Benefited Receptor Sites	Average Noise Reduction for all Benefited Receptor Sites dB(A)	Maximum Noise Reduction for all Benefited Receptor Sites dB(A)	Cost ($40 per square foot)	Average Cost/Site Benefited	Does Optimal Barrier Design Meet FDOT's Reasonable Noise Abatement Criteria of $64,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal?	Noise Barrier Recommended for Further Consideration and Public Input?	Comments
US 41 (SR 45) at SR 54 PD&E Study																	
NSA 5 Tropicana Mobile Home Park / CNE S1.1	S1.1-CD1	Ground Mounted	14	580	2041+20	2047+00	3	2	5	7	9.5	13.6	$324,800	$46,400	YES	YES	Conceptual Barrier Design S1.1-CD1 recommended for further consideration and public input during the project's design phase at this location.

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5.0 Construction Noise and Vibration

During construction of the project, there is the potential for noise impacts to be greater than those resulting from normal traffic operations because heavy equipment is typically used to build roadways. In addition, construction activities may result in vibration impacts. Therefore, early identification of potential noise/vibration sensitive sites along the project corridor is important in minimizing noise and vibration impacts. The project area does include residential, commercial, and institutional land uses. Construction related noise and vibration impacts to these sites will be minimized by adherence to the controls listed in the latest edition of the FDOT's Standard Specifications for Road and Bridge Construction. A reassessment of the project corridor for sites particularly sensitive to construction noise and/or vibration will be performed during the final design phase to ensure that impacts to such sites are minimized.

6.0 Community Coordination

Coordination with local agencies and officials has been accomplished during the development of this project. In addition, local and community officials have had the opportunity to comment on the proposed project at the public hearings held on December 10, 2015, and September 16, 2021, March, 25, 2025 and will have the opportunity to comment during a Virtual Project Update (VPU) planned for January 28, 2026 to February 18, 2026.

To aid in promoting land use compatibility, a copy of the Noise Study Report, which provides information that can be used to protect future land development from becoming incompatible with anticipated traffic noise levels, will be provided to Pasco County. In addition, generalized future noise impact contours for the properties in the immediate vicinity of the project have been developed for Noise Abatement Activity Categories B/C and E (i.e., residential and other sensitive land uses, and sensitive commercial land uses, respectively). These contours represent the approximate distance from the edge of the nearest proposed travel lane of SR 54 and US 41 to the limits of the area predicted to approach [i.e., within 1 dB(A)] the NAC in the design year (2045). The contours do not consider any shielding of noise provided by structures between the receptor and the proposed travel lanes. Within the project corridor, the distance between the proposed edge of the outside travel lane and the contour at various locations are presented in **Table 6.1**. To minimize the potential for incompatible land use, noise sensitive land uses should be located beyond this distance.

Table 6-1: Design Year (2045) Noise Impact Contour Distances

US 41/SR 54 Segments	Distance from Proposed Nearest Travel Lane to Noise Contour (Feet)	
	66 dB(A) - Activity Category B/C	71 dB(A) - Activity Category E
SR 54 - West of US 41 West of Elevated portion	154	68
SR 54 - West of US 41 along Elevated portion	182	75
SR 54 - East of US 41 along Elevated portion	168	44
SR 54 - East of US 41 East of Elevated portion	116	49
US 41 - South of SR 54	149	44
US 41 - North of SR 54	139	53

7.0 References

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

Federal Highway Administration Report FHWA-HEP-10-025, “Highway Traffic Noise: Analysis and Abatement Guidance”, December 2011 (Original June 2010 and revised December 2010).

Federal Highway Administration Report FHWA-PD-96-009, “FHWA Traffic Noise Model, Version 1.0 User’s Guide”, January 1998 , (Version 2.5 Addendum), April 2004.

Federal Highway Administration Report FHWA-HEP-18-065, “Noise Measurement Handbook - Final Report”, June 2018

Federal Highway Administration Report FHWA-HEP-06-015, “FHWA Highway Construction Noise Handbook: Final Report”, August 2006.

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

Florida Department of Transportation. "Noise Analysis", Part 2, Chapter 18. Project Development and Environment Manual, Florida Department of Transportation, Tallahassee, July 31, 2024.

Florida Department of Transportation. "2024 Design Manual" (Topic No. 625-000-002, Part 2, Section 264, Noise Walls and Perimeter Walls).

Florida Department of Transportation "Standard Specifications for Road and Bridge Construction" FY 2024-25.

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

Appendix A: Noise Analysis Traffic Data Tables

Highway Traffic Noise: Exisiting Traffic Data

Project Name	US 41 (SR 45) at SR 54
Project Number	WPIS No. 419182-1
Condition	Existing
Year	2019

	Roadway Details					Traffic Details							
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)	% Automobiles	% Medium Trucks	% Heavy Trucks	% Buses	% Motorcycles	Posted Speed (mph)
1	SR 54 Eastbound (AM)	West of Wilson Road	US 41	Mainline	3	2,210	2,992	92.82%	1.97%	3.81%	0.62%	0.79%	45
2	SR 54 Eastbound (AM)	US 41	Village Lakes	Mainline	3	2,210	3,428	92.82%	1.97%	3.81%	0.62%	0.79%	45
3	SR 54 Eastbound (AM)	Village Lakes	East of Knight Road	Mainline	3	2,210	3,435	92.82%	1.97%	3.81%	0.62%	0.79%	45
4	SR 54 Westbound (PM)	East of Knight Road	Village Lakes	Mainline	3	2,210	2,426	92.82%	1.97%	3.81%	0.62%	0.79%	45
5	SR 54 Westbound (PM)	Village Lakes	US 41	Mainline	3	2,210	2,512	92.82%	1.97%	3.81%	0.62%	0.79%	45
6	SR 54 Westbound (PM)	US 41	West of Wilson Road	Mainline	3	2,210	2,953	92.82%	1.97%	3.81%	0.62%	0.79%	45
7	SR 41 Northbound (PM)	South of Entrance to Walmart	Dale Mabry Highway	Mainline	3	2,210	1,757	93.90%	3.01%	1.62%	0.46%	1.01%	50
8	SR 41 Northbound (PM)	Dale Mabry Highway	SR 54	Mainline	3	2,210	3,571	93.90%	3.01%	1.62%	0.46%	1.01%	50
9	SR 41 Northbound (PM)	SR 54	North of Morgan Road	Mainline	3	2,210	2,275	93.90%	3.01%	1.62%	0.46%	1.01%	50
10	SR 41 Southbound (AM)	North of Morgan Road	SR 54	Mainline	3	2,210	3,001	93.90%	3.01%	1.62%	0.46%	1.01%	50
11	SR 41 Southbound (AM)	SR 54	Dale Mabry Highway	Mainline	3	2,210	3,554	93.90%	3.01%	1.62%	0.46%	1.01%	50
12	SR 41 Southbound (AM)	Dale Mabry Highway	South of Entrance to Walmart	Mainline	3	2,210	1,665	93.90%	3.01%	1.62%	0.46%	1.01%	50
13	Dale Mabry Highway Northbound (PM)	South of Entrance to Walmart	US 41	Mainline	2	1,210	1,853	92.50%	6.00%	0.67%	0.24%	0.60%	50
14	Dale Mabry Highway Southbound (AM)	US 41	South of Entrance to Walmart	Mainline	2	1,210	1,927	92.50%	6.00%	0.67%	0.24%	0.60%	50

Notes:

Highway Traffic Noise: No Build Traffic Data

Project Name	US 41 (SR 45) at SR 54
Project Number	WPIS No. 419182-1
Condition	No-Build
Year	2045

	Roadway Details					Traffic Details							
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)	% Automobiles	% Medium Trucks	% Heavy Trucks	% Buses	% Motorcycles	Posted Speed (mph)
1	SR 54 Eastbound (AM)	West of Sofia Drive	Sofia Drive	Mainline	3	2,210	4,825	92.82%	1.97%	3.81%	0.62%	0.79%	45
2	SR 54 Eastbound (AM)	Sofia Drive	1st Driveway East of Sofia Drive	Mainline	3	2,210	4,820	92.82%	1.97%	3.81%	0.62%	0.79%	45
3	SR 54 Eastbound (AM)	1st Driveway East of Sofia Drive	2nd Driveway East of Sofia Drive	Mainline	3	2,210	4,820	92.82%	1.97%	3.81%	0.62%	0.79%	45
4	SR 54 Eastbound (AM)	2nd Driveway East of Sofia Drive	US 41	Mainline	3	2,210	4,810	92.82%	1.97%	3.81%	0.62%	0.79%	45
5	SR 54 Eastbound (AM)	US 41	1st Driveway East of US 41	Mainline	3	2,210	4,970	92.82%	1.97%	3.81%	0.62%	0.79%	45
6	SR 54 Eastbound (AM)	1st Driveway East of US 41	2nd Driveway East of US 41	Mainline	3	2,210	4,980	92.82%	1.97%	3.81%	0.62%	0.79%	45
7	SR 54 Eastbound (AM)	2nd Driveway East of US 41	Fire Station	Mainline	3	2,210	4,980	92.82%	1.97%	3.81%	0.62%	0.79%	45
8	SR 54 Eastbound (AM)	Fire Station	Lowe's Driveway	Mainline	3	2,210	4,960	92.82%	1.97%	3.81%	0.62%	0.79%	45
9	SR 54 Eastbound (AM)	Lowe's Driveway	East of Lowe's Driveway	Mainline	3	2,210	4,930	92.82%	1.97%	3.81%	0.62%	0.79%	45
10	SR 54 Westbound (PM)	West of Village Lakes Plaza	Village Lakes Plaza	Mainline	3	2,210	3,610	92.82%	1.97%	3.81%	0.62%	0.79%	45
11	SR 54 Westbound (PM)	Village Lakes Plaza	Raden Drive	Mainline	3	2,210	3,695	92.82%	1.97%	3.81%	0.62%	0.79%	45
12	SR 54 Westbound (PM)	Raden Drive	1st Driveway West of Raden Drive	Mainline	3	2,210	3,700	92.82%	1.97%	3.81%	0.62%	0.79%	45
13	SR 54 Westbound (PM)	1st Driveway West of Raden Drive	2nd Driveway West of Raden Drive	Mainline	3	2,210	3,705	92.82%	1.97%	3.81%	0.62%	0.79%	45
14	SR 54 Westbound (PM)	2nd Driveway West of Raden Drive	3rd Driveway West of Raden Drive	Mainline	3	2,210	3,710	92.82%	1.97%	3.81%	0.62%	0.79%	45
15	SR 54 Westbound (PM)	3rd Driveway West of Raden Drive	US 41	Mainline	3	2,210	3,695	92.82%	1.97%	3.81%	0.62%	0.79%	45
16	SR 54 Westbound (PM)	US 41	1st Driveway West of US 41	Mainline	3	2,210	4,015	92.82%	1.97%	3.81%	0.62%	0.79%	45
17	SR 54 Westbound (PM)	1st Driveway West of US 41	2nd Driveway West of US 41	Mainline	3	2,210	4,030	92.82%	1.97%	3.81%	0.62%	0.79%	45
18	SR 54 Westbound (PM)	2nd Driveway West of US 41	Hunt Road	Mainline	3	2,210	4,030	92.82%	1.97%	3.81%	0.62%	0.79%	45
19	SR 54 Westbound (PM)	Hunt Road	West of Hunt Road	Mainline	3	2,210	4,035	92.82%	1.97%	3.81%	0.62%	0.79%	45
20	US 41 Northbound (PM)	South of Lake Floyd Drive	Lake Floyd Drive	Mainline	3	2,210	2,190	93.90%	3.01%	1.62%	0.46%	1.01%	45
21	US 41 Northbound (PM)	Lake Floyd Drive	Dale Mabry Highway	Mainline	3	2,210	2,290	93.90%	3.01%	1.62%	0.46%	1.01%	45
22	US 41 Northbound (PM)	Dale Mabry Highway	1st Driveway North of Dale Mabry Highway	Mainline	3	2,210	4,575	93.90%	3.01%	1.62%	0.46%	1.01%	45
23	US 41 Northbound (PM)	1st Driveway North of Dale Mabry Highway	2nd Driveway North of Dale Mabry Highway	Mainline	3	2,210	4,530	93.90%	3.01%	1.62%	0.46%	1.01%	45
24	US 41 Northbound (PM)	2nd Driveway North of Dale Mabry Highway	CVS Entrance	Mainline	3	2,210	4,530	93.90%	3.01%	1.62%	0.46%	1.01%	45
25	US 41 Northbound (PM)	CVS Entrance	SR 54	Mainline	3	2,210	4,525	93.90%	3.01%	1.62%	0.46%	1.01%	45
26	US 41 Northbound (PM)	SR 54	1st Driveway North of SR 54	Mainline	3	2,210	3,120	93.90%	3.01%	1.62%	0.46%	1.01%	45

27	US 41 Northbound (PM)	1st Driveway North of SR 54	2nd Driveway North of SR 54	Mainline	3	2,210	3,120	93.90%	3.01%	1.62%	0.46%	1.01%	45
28	US 41 Northbound (PM)	2nd Driveway North of SR 54	Carson Drive	Mainline	3	2,210	3,120	93.90%	3.01%	1.62%	0.46%	1.01%	45
29	US 41 Northbound (PM)	Carson Drive	North of Carson Drive	Mainline	3	2,210	3,135	93.90%	3.01%	1.62%	0.46%	1.01%	45
30	US 41 Southbound (AM)	North of Carson Drive	Carson Drive	Mainline	3	2,210	3,505	93.90%	3.01%	1.62%	0.46%	1.01%	45
31	US 41 Southbound (AM)	Carson Drive	SR 54	Mainline	3	2,210	3,505	93.90%	3.01%	1.62%	0.46%	1.01%	45
32	US 41 Southbound (AM)	SR 54	Leonard Road	Mainline	3	2,210	4,495	93.90%	3.01%	1.62%	0.46%	1.01%	45
33	US 41 Southbound (AM)	Leonard Road	1st Driveway South of Leonard Road	Mainline	3	2,210	2,120	93.90%	3.01%	1.62%	0.46%	1.01%	45
34	US 41 Southbound (AM)	1st Driveway South of Leonard Road	Lake Floyd Drive	Mainline	3	2,210	2,060	93.90%	3.01%	1.62%	0.46%	1.01%	45
35	US 41 Southbound (AM)	Lake Floyd Drive	South of Lake Floyd Drive	Mainline	3	2,210	2,170	93.90%	3.01%	1.62%	0.46%	1.01%	45
36	Dale Mabry Highway Northbound (PM)	South of Entrance to Walmart	Entrance of Walmart	Mainline	2	1,210	2,325	92.50%	6.00%	0.67%	0.24%	0.60%	50
37	Dale Mabry Highway Northbound (PM)	Entrance of Walmart	Brinson Road	Mainline	2	1,210	2,280	92.50%	6.00%	0.67%	0.24%	0.60%	50
38	Dale Mabry Highway Northbound (PM)	Brinson Road	US 41	Mainline	2	1,210	2,335	92.50%	6.00%	0.67%	0.24%	0.60%	50
39	Dale Mabry Highway Southbound (AM)	US 41	Brinson Road	Mainline	2	1,210	2,380	92.50%	6.00%	0.67%	0.24%	0.60%	50
40	Dale Mabry Highway Southbound (AM)	Brinson Road	Entrance of Walmart	Mainline	2	1,210	2,380	92.50%	6.00%	0.67%	0.24%	0.60%	50
41	Dale Mabry Highway Southbound (AM)	Entrance of Walmart	South of Entrance to Walmart	Mainline	2	1,210	2,355	92.50%	6.00%	0.67%	0.24%	0.60%	50
	Notes:												

Highway Traffic Noise: Traffic Data

Project Name	US 41_SR 54_Final PTAR
Project Number	WPIS No. 419182-1
Condition	Build
Year	2045

	Roadway Details					Traffic Details							
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	Posted Speed (mph)
1	SR 54 Eastbound	West of Sofia Drive	Sofia Drive	Arterial	3	2,210	4,835	92.82%	1.97%	3.81%	0.62%	0.79%	45
2	SR 54 Eastbound	Sofia Drive	1st Driveway East of Sofia Drive	Arterial	3	2,210	4,835	92.82%	1.97%	3.81%	0.62%	0.79%	45
3	SR 54 Eastbound	1st Driveway East of Sofia Drive	2nd Driveway East of Sofia Drive	Arterial	3	2,210	4,830	92.82%	1.97%	3.81%	0.62%	0.79%	45
4	SR 54 Eastbound	2nd Driveway East of Sofia Drive	US 41	Arterial	2	1,210	4,830	92.82%	1.97%	3.81%	0.62%	0.79%	45
5	SR 54 Eastbound	US 41	1st Driveway East of US 41	Arterial	4	2,590	4,990	92.82%	1.97%	3.81%	0.62%	0.79%	45
6	SR 54 Eastbound	1st Driveway East of US 41	2nd Driveway East of US 41	Arterial	4	2,590	4,990	92.82%	1.97%	3.81%	0.62%	0.79%	45
7	SR 54 Eastbound	2nd Driveway East of US 41	Fire Station	Arterial	4	2,590	4,990	92.82%	1.97%	3.81%	0.62%	0.79%	45
8	SR 54 Eastbound	Fire Station	Lowe's Driveway	Arterial	4	2,590	4,990	92.82%	1.97%	3.81%	0.62%	0.79%	45
9	SR 54 Eastbound	Lowe's Driveway	East of Lowe's Driveway	Arterial	3	2,210	4,935	92.82%	1.97%	3.81%	0.62%	0.79%	45
10	SR 54 Westbound	East of Village Lakes Plaza	Village Lakes Plaza	Arterial	3	2,210	3,625	92.82%	1.97%	3.81%	0.62%	0.79%	45
11	SR 54 Westbound	Village Lakes Plaza	Raden Drive	Arterial	3	2,210	3,705	92.82%	1.97%	3.81%	0.62%	0.79%	45
12	SR 54 Westbound	Raden Drive	1st Driveway West of Raden Drive	Arterial	4	2,590	3,710	92.82%	1.97%	3.81%	0.62%	0.79%	45
13	SR 54 Westbound	1st Driveway West of Raden Drive	2nd Driveway West of Raden Drive	Arterial	4	2,590	3,715	92.82%	1.97%	3.81%	0.62%	0.79%	45
14	SR 54 Westbound	2nd Driveway West of Raden Drive	3rd Driveway West of Raden Drive	Arterial	4	2,590	3,720	92.82%	1.97%	3.81%	0.62%	0.79%	45
15	SR 54 Westbound	3rd Driveway West of Raden Drive	US 41	Arterial	4	2,590	3,715	92.82%	1.97%	3.81%	0.62%	0.79%	45
16	SR 54 Westbound	US 41	1st Driveway West of US 41	Arterial	3	2,210	4,035	92.82%	1.97%	3.81%	0.62%	0.79%	45
17	SR 54 Westbound	1st Driveway West of US 41	2nd Driveway West of US 41	Arterial	3	2,210	4,025	92.82%	1.97%	3.81%	0.62%	0.79%	45
18	SR 54 Westbound	2nd Driveway West of US 41	Hunt Road	Arterial	3	2,210	4,025	92.82%	1.97%	3.81%	0.62%	0.79%	45
19	SR 54 Westbound	Hunt Road	West of Hunt Road	Arterial	3	2,210	4,020	92.82%	1.97%	3.81%	0.62%	0.79%	45
20	US 41 Northbound	South of Lake Floyd Drive	Frontage Rd junction south of Lake Floyd Dr.	Arterial	3	2,210	2,190	93.90%	3.01%	1.62%	0.46%	1.01%	45
21	US 41 Northbound	Frontage Rd junction south of Lake Floyd Dr.	Dale Mabry Highway	Arterial	2	1,210	2,370	93.90%	3.01%	1.62%	0.46%	1.01%	45
22	Elevated US 41 Northbound	Dale Mabry Highway	On-ramp from SR 54	Arterial	2	1,210	2,030	93.90%	3.01%	1.62%	0.46%	1.01%	45
23	US 41 Northbound	On-ramp from SR 54	North of On-ramp from SR 54	Arterial	3	2,210	3,145	93.90%	3.01%	1.62%	0.46%	1.01%	45
24	US 41 Southbound	North of Off-ramp to SR 54	Off-ramp to SR 54	Arterial	3	2,210	3,540	93.90%	3.01%	1.62%	0.46%	1.01%	45
25	Elevated US 41 Southbound	Off-ramp to SR 54	On-ramp from SR 54	Arterial	2	1,210	2,500	93.90%	3.01%	1.62%	0.46%	1.01%	45
26	US 41 Southbound	On-ramp from SR 54	On-ramp from Dale Mabry Junction	Arterial	3	2,210	4,500	93.90%	3.01%	1.62%	0.46%	1.01%	45
27	US 41 Southbound	On-ramp from Dale Mabry Junction	Entrance to Walmart	Arterial	3	2,210	2,280	93.90%	3.01%	1.62%	0.46%	1.01%	45
28	US 41 Southbound	Entrance to Walmart	South of Walmart Entrance	Arterial	3	2,210	2,170	93.90%	3.01%	1.62%	0.46%	1.01%	45
29	Dale Mabry Highway Northbound	South of Entrance to Walmart	Entrance of Walmart	Mainline	2	1,210	2,350	92.50%	6.00%	0.67%	0.24%	0.60%	50
30	Dale Mabry Highway Northbound	Entrance of Walmart	US 41	Arterial	2	1,210	2,280	92.50%	6.00%	0.67%	0.24%	0.60%	50
31	Dale Mabry Highway Southbound (AM)	US 41	Brinson Road	Arterial	2	1,210	2,380	92.50%	6.00%	0.67%	0.24%	0.60%	50
32	Dale Mabry Highway Southbound (AM)	Brinson Road	Entrance of Walmart	Arterial	2	1,210	2,380	92.50%	6.00%	0.67%	0.24%	0.60%	50
33	Dale Mabry Highway Southbound (AM)	Entrance of Walmart	South of Entrance to Walmart	Arterial	2	1,210	2,365	92.50%	6.00%	0.67%	0.24%	0.60%	50

Notes: