

DESIGN NOISE STUDY REPORT

**Florida Department of Transportation
District 6**

SR 860/Miami Gardens Drive Re-evaluation

**Limits of Project: East of Interstate I-75 Ramps (MP 0.438) to SR 823/NW
57th Avenue/Red Road (MP 3.664)**

Miami-Dade County, Florida

Financial Management Number: 438864-2-22-01 (Formerly 407736-3-22-01)

ETDM Numbers: 11581 and 11582

DRAFT

Date: March 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.

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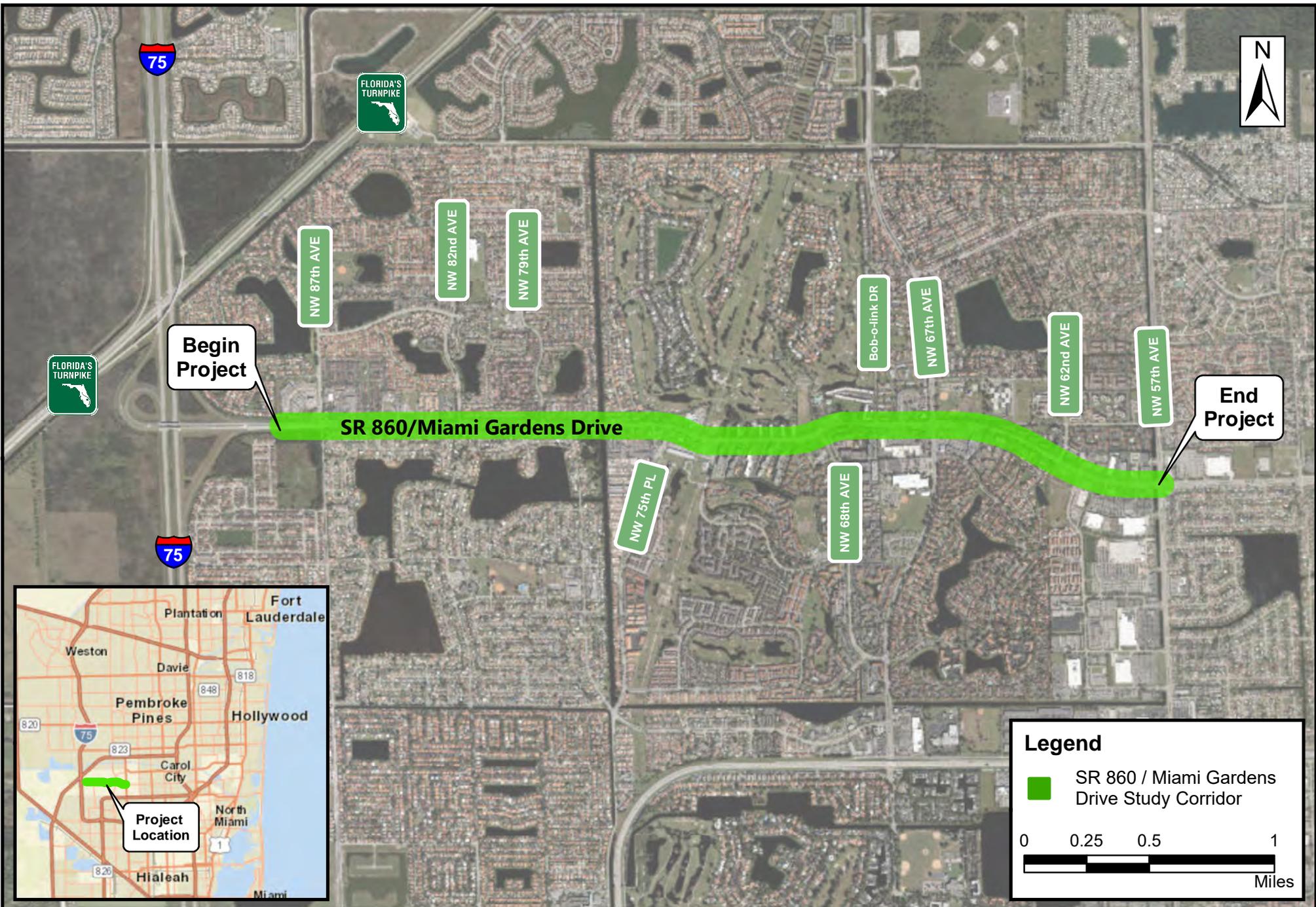
1.0 Introduction/Project Description

The Florida Department of Transportation (FDOT), District 6, conducted a Project Development & Environment (PD&E) Study to widen 3.2 miles of SR 860/Miami Gardens Drive (hereinafter called Miami Gardens Drive) from east of I-75 to SR 823/NW 57th Avenue/Red Road (see **Figure 1-1**). Miami Gardens Drive represents an east-west arterial located in northern unincorporated Miami-Dade County, Florida. On September 15, 2006, the FHWA granted Location and Design Concept Acceptance (LDCA) for this PD&E Study, Financial Management (FM) Number 407736-3-22-01 and Efficient Transportation Decision Making (ETDM) Numbers 11581 and 11582. The preferred alternative, the Full Six-Lane Build Alternative (Alternative 4) included widening and reconstructing the arterial road from a four-lane to a six-lane facility including median modifications for access management, drainage improvements, signalization, sidewalk and landscaping improvements, intersection improvements, and the installation of noise abatement barriers. As part of the PD&E Study, FDOT committed to re-evaluate the feasibility and reasonableness of the recommended noise abatement measures for the nine noise impacted locations identified in the March 2006 Noise Study Report (NSR) during the Final Design Phase.

A Design Change/Construction Advertisement Re-evaluation of SR 860/Miami Gardens Drive/NW 186th Street/NW 183rd Street from east of I-75 to SR 823/NW 57th Avenue/Red Road, FM No. 407736-3-22-01 was approved by the FHWA July 29, 2009. The two project segments included in the Design Change/Construction Advertisement Re-evaluation, proposed greatly reduced scopes of work and a reduction in project limits from the preferred alternative that was included in the September 15, 2006, Type 2 CE due to funding. Because of the reduced scope of work (i.e., no capacity improvements), noise abatement measures were re-evaluated and determined to no longer be necessary along the project corridor. Both segments began construction March 8, 2010, and ended construction December 23, 2010.

Following the July 29, 2009 Re-evaluation, the limits of the Miami Gardens Drive PD&E Study were divided into three segments as shown in **Figure 1-2** to reflect design phase funding of this project. The three segments include:

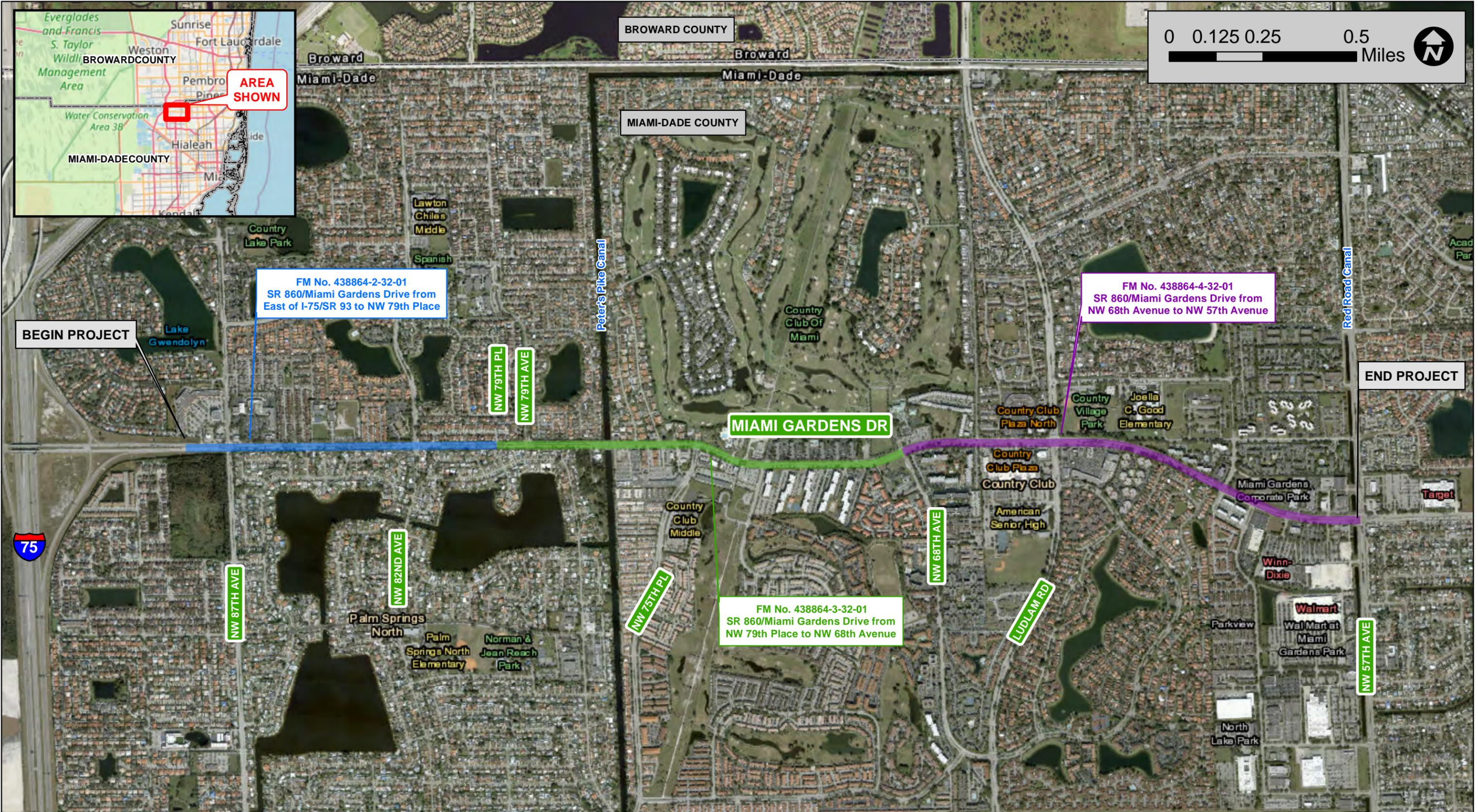
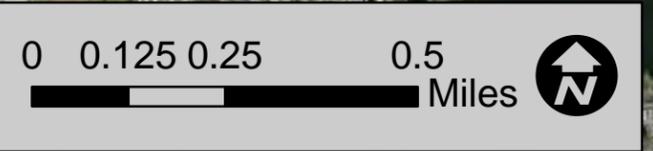
- Segment 1: FM 438864-2-52-01 Miami Gardens Drive/NW 183rd Street/186th Street from East of I-75/State Road 93 to NW 79th Place,
- Segment 2: FM 438864-3-52-01 Miami Gardens Drive/NW 183rd Street/186th Street from NW 79th Place to NW 68th Avenue, and
- Segment 3: FM 438864-4-52-01 Miami Gardens Drive/NW 183rd Street/186th Street from NW 68th Avenue to NW 57th Avenue.



SR 860 / Miami Gardens Drive
 From East of I-75 to SR 823 / NW 57th Avenue
 FM No.: 438864-1-22-01
 FDOT - District 6 / Miami-Dade County

Project Location Map

Figure 1-1



BEGIN PROJECT

END PROJECT

FM No. 438864-2-32-01
SR 860/Miami Gardens Drive from
East of I-75/SR 93 to NW 79th Place

FM No. 438864-4-32-01
SR 860/Miami Gardens Drive from
NW 68th Avenue to NW 57th Avenue

FM No. 438864-3-32-01
SR 860/Miami Gardens Drive from
NW 79th Place to NW 68th Avenue



SR 860 / Miami Gardens Drive
From East of I-75 to SR 823 / NW 57th Avenue
FM No.: 438864-1-22-01
FDOT - District 6 / Miami-Dade County

Final Design Project Segments

- FM No.: 438864-2-32-01
- FM No.: 438864-3-32-01
- FM No.: 438864-4-32-01

**Figure 1-2
Miami Gardens Drive
Final Design Segment Map**

March 2025

For Segment 1, a Right-of-way Re-evaluation was approved by the Office of Environmental Management (OEM) on April 27, 2023, for FM 438864-2-52-01 Miami Gardens Drive/NW 183rd Street/186th Street from East of I-75/State Road 93 to NW 79th Place. The Re-evaluation concluded that, based on the right-of-way requirements, highway noise impacts remained consistent with the September 2006 Type 2 CE.

Currently, the roadway design for Miami Gardens Drive within Segment 1 is on-going. Segment 1 is also being re-evaluated due to the design changes made since the completion of the 2006 PD&E Study. The purpose of this report is to present the findings of the highway traffic noise analysis to reflect the proposed design changes since the completion of the PD&E Study in 2006 (see **Section 1.3**); and to re-evaluate the feasibility and reasonableness of noise barriers previously recommended for further consideration during the project's design phase in accordance with the PD&E Study Noise Commitments (see **Section 1.2**). The information within this report is also intended to provide technical support for the findings presented in the Design Change/Construction Advertisement Re-evaluation for FM Number 438864-3-32-01. Separate design noise studies and Re-evaluations will be prepared for FM Number 438864-3-32-01 and FM Number 438864-4-32-01 following their respective 90% design plans and finalized prior to plans production.

Within the noise study limits of Segment 1 (FM 438864-2-32-01), the March 2006 NSR recommended noise barriers to be further evaluated at two residential locations (Ibis Villas and the Palm Springs North subdivisions) during the design phase. The Ibis Villas community is a multi-family residential community located north of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue. The Palm Springs North community is a single-family residential community located south of Miami Gardens Drive between NW 87th Avenue and the Peter's Pike Canal. In accordance with the 2006 PD&E Study Noise Abatement Commitment, the feasibility and reasonableness of noise barriers as an abatement measure at the impacted residences in the Palm Springs North and Ibis Villas communities were re-evaluated during the project's final design phase.

Pages including figures from the 2006 PD&E NSR referenced in this report are included in Appendix E. It should be noted that the 2006 PD&E NSR states that the noise study was developed in accordance with Federal regulations (23 CFR 772) and policies contained in Part 2, Chapter 17 Noise of the FDOT's PD&E Manual. Since the completion of the 2006 PD&E NSR, the FDOT's noise policies have been updated to accommodate the July 13, 2010 changes to 23 CFR 772 and FHWA's National Environmental Policy Act (NEPA) delegation to FDOT. Part 2 Chapter 17 Noise of the PD&E Manual was renumbered to Chapter 18 and titled Highway Traffic Noise. As described in Section 2.0 Methodology, the current noise study is based on the Part 2, Chapter 18, Highway Traffic Noise of the FDOT's PD&E Manual (July 31, 2024).

1.1 Summary of PD&E Results and Commitments

The 2006 PD&E Study phase NSR indicated that design year (2028) noise levels were predicted to exceed the FHWA's Noise Abatement Criteria (NAC) of 67 dB(A) at 324 receptor sites under the preferred Build Alternative and that noise barriers were evaluated for all impacted receptors.

An estimated 331 receptor sites including 135 of the impacted sites would be benefited by the recommended noise barriers (see **Section 5** and **Table 34** in **Appendix E**). Noise barriers were recommended for further consideration during the design phase at nine locations: Palm Springs North, Coral Gate, Country Club Towers, Mediterranean Village, Ibis Villas, Esplanade, Las Brisas, Country Club of Miami Condominiums, and Villa Esperanza. Noise barriers were not recommended at two locations including San Mateo and Country Club of Miami Estates.

The FDOT committed to the construction of feasible noise abatement measures at the noise-impacted locations identified in the 2006 NSR contingent upon the following:

- Detailed noise analyses during the design process continues to support the need for abatement;
- Reasonable cost analyses indicate that the economic cost of the noise barriers will not exceed the FDOT cost guideline of \$35,000 per benefited receiver site (*Note: The current cost effectiveness or reasonableness criteria and used in the current noise study is \$64,000 per benefited site*);
- Community input regarding desires, types, heights, and locations of barriers has been solicited by the District Office;
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses has been noted;
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed; and,
- Any other mitigating circumstances found in Section 17-4.6.1 of Chapter 17 of the FDOT PD&E Manual have been analyzed (*Note: The latest guidelines for noise abatement evaluations are found in Section 18.2.3 of Part 2, Chapter 18 Highway Traffic Noise of the FDOT PD&E Manual (July 31, 2024)*).

As described in Section 1.0, two impacted residential locations (Ibis Villas and the Palm Springs North subdivisions) are located within the noise study limits of Segment 1 (FM 438864-2-32-01) and were recommended in the March 2006 NSR to be further evaluated during the Final Design Phase. In accordance with the 2006 PD&E Study Noise Abatement Commitment, the feasibility and reasonableness of noise barriers as an abatement measure at the impacted residences in the Palm Springs North and Ibis Villas communities were re-evaluated during the project's Final Design Phase. Although not recommended for further consideration in the 2006 NSR, the

feasibility and reasonableness of noise barriers were also re-evaluated for the impacted residences within the San Mateo community that is also located north of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue.

1.2 Design Improvements

Based on the proposed improvements in the design phase (i.e., Phase IV plans dated March 2024), the project improvements along Miami Gardens Drive include reconstruction and widening from two to three 11-foot general purpose lanes in each direction, widening the existing sidewalk on the north side of Miami Gardens Drive to an 11-foot shared use path, the addition of turn lanes and replacement of traffic mast arms at the major intersections (NW 87th Avenue and NW 82nd Avenue) and milling and resurfacing. Proposed drainage improvements consist of closed collection and conveyance drainage systems interconnected by storm drains and French drains to collect, convey, treat, and attenuate stormwater runoff. Additionally, signalization, signing and pavement marking, and lighting improvements are proposed.

The design changes for FM No. 438864-2-52-01 Miami Gardens Drive are a result of changes in design standards, input during public involvement, and accommodation of traffic signals and include the addition of a shared use path, new traffic signal mast arms, minor realignment and reduced widening of the NW 87th Avenue intersection, a new median opening, and new tie-ins for the proposed Palm Springs Plaza.

The current design typical sections, roadway profiles, roadway plan sheets, and cross sections from the final design phase plans submittal (March 2024) for FM No. 438864-2-52-01 are included in the project file under the Re-evaluation folder in the Statewide Environmental Project Tracker (SWEPT). Notes have been added to the Final Design Roadway and Signalization plans in this folder that identify where these design changes are occurring within the project area.

The current design will require right-of-way acquisition but will not require any residential relocations. Right-of-way acquisition was not required in the 2006 PD&E Study.

2.0 Methodology

This traffic noise analysis 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 in accordance with 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2010).

The FHWA's Traffic Noise Model (TNM) Version 2.5, dated February 2004, was used to predict traffic noise levels with the planned improvements 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 into the TNM 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.

The following sections describe the noise metrics, traffic data, and noise abatement criteria used in this study.

2.1 Noise Metrics

Noise levels documented in this report represent the hourly equivalent sound level [Leq(h)]. Leq(h) is the steady-state sound level, which contains the same amount of acoustic energy as the actual time-varying sound level over a 1-hour period. Leq(h) is measured in A-weighted decibels [dB(A)], which closely approximate the human frequency response. Sound levels of typical noise sources and environments are provided in **Table 2.1-1** as a frame of reference.

Table 2.1-1: Sound Levels of Typical Noise Sources and Environments

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

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

2.2 Traffic Data

The traffic data used in the noise analysis is from the *Project Traffic Analysis Report (PTAR)* dated October 2019. The design year (2040) traffic data used in the noise modeling to predict traffic noise levels for the Build Alternative is presented in **Table 2.2-1** in **Appendix A**. The traffic data table includes peak hour traffic volumes, Level of Service (LOS) C volumes, speeds, and the traffic volumes by vehicle type (cars, medium trucks, heavy trucks, buses, and motorcycles) used to predict traffic noise levels. According to Chapter 18 of the PD&E Manual, "Maximum peak-hourly traffic representing LOS "C", or demand LOS of "A", "B", or "C" will be used (unless analysis shows that other conditions create a "worst-case" level)". In cases where traffic volumes on project roadways were predicted to operate at worse than LOS C, the LOS C project data were used. In overcapacity situations, this represents the highest traffic volume

traveling at the highest average speed, which typically generates the highest noise levels at a given site during a normal day.

2.3 Noise Abatement Criteria

The FHWA has established NAC for land use activity categories, which are presented in **Table 2.3-1**. Maximum noise threshold levels, or criteria levels, have been established for five of the seven activity categories. These criteria determine when an impact occurs and when consideration of noise abatement is required. Noise abatement measures must be considered when predicted noise levels approach, meet, or exceed the NAC levels or when a substantial noise increase occurs. A substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 dB(A) or more as a result of the transportation improvement project. The FDOT defines “approach” as within 1.0 dB(A) of the FHWA criteria.

Noise sensitive receptor sites include properties where frequent exterior human use occurs and where a lowered noise level would be of benefit. This includes residential land use (Activity Category B); a variety of non-residential land uses not specifically covered in Category A (i.e., lands on which serenity and quiet are of extraordinary significance) or B, including parks and recreational areas, medical facilities, schools, and places of worship (Activity Category C); and commercial and developed properties including offices, hotels, and restaurants with exterior areas of use (Activity Category E). Noise sensitive sites also include interior use areas where no exterior activities occur for facilities such as auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, recording studios, schools, and television studios (Activity Category D). Categories F and G, which include commercial and developed properties without exterior areas of use, do not have noise abatement criteria levels. Category F includes land uses such as industrial and retail facilities that are not considered noise sensitive. Category G includes undeveloped lands that are not permitted for development.

Table 2.3-1: Noise Abatement Criteria [Hourly A-Weighted Sound Level 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 *Analysis and Abatement Guidance* (January 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.

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 location, can the minimum noise reduction [5 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 benefited 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 measure, 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.

The evaluation of noise barriers for impacted residential (Activity Category B) and non-residential areas (Activity Categories A, C, D, and E) is based on different methods. When determining the cost reasonableness of a conceptual noise barrier design for a residential area, an estimated

cost of \$64,000 per benefited receptor is now considered the upper limit, using the FDOT's current average statewide 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 2024)".

If the noise abatement measure has been determined to be reasonable and feasible, the viewpoint of the impacted and benefited property owners must be considered. During a PD&E Study, the viewpoint of the potentially benefited receptors (property owners/tenants) regarding noise abatement is gathered during workshops and at the Public Hearing. During the design phase of the project, a more detailed process is implemented to include noise abatement workshops and/or public surveys, to determine the wishes of the benefited property owners and tenants, as applicable. Both the property owners and tenants are given the opportunity to provide input regarding their desires to have the recommended noise abatement measure constructed. The goal of this process is to obtain a response for or against the noise barrier from a majority of property owners and tenants that respond to the survey. If not supported by a majority of the survey respondents, a noise barrier or abatement measure will not be deemed reasonable.

For this project, ground mounted noise barriers were evaluated to determine their effectiveness in providing noise abatement to the impacted noise sensitive receptor sites. Ground mounted noise barriers, which are also referred to as concrete post-and-panel noise barriers, are usually constructed in the vicinity of the right-of-way line. Ground mounted noise barriers are typically evaluated in heights ranging from 8 to 22 feet. Only the noise barrier heights and conceptual noise barrier designs that would likely be effective were analyzed.

To facilitate the evaluation of noise barriers at the impacted receptor sites along the project corridor, contiguous noise study areas were grouped together into common noise environments (CNEs). A CNE represents a group of receptor sites of the same Activity Category that are exposed to similar noise sources and levels, traffic volumes, traffic mix, speeds, and topographic features, that would benefit from the same noise barrier or noise barrier system (i.e., overlapping/continuous noise barriers) if impacted. Generally, CNEs occur between two secondary noise sources, such as interchanges, intersections, and/or cross-roads, or where defined by ground features such as canals or rivers. In addition, the primary method for determining the reasonable cost of a noise barrier involves a review of the cost per benefited receptor site for the construction of a noise barrier benefiting a single location or CNE (e.g., a subdivision or contiguous impact area).

3.0 Traffic Noise Analysis

3.1 Predicted Noise Levels and Abatement

As described in the 2006 PD&E Noise Study, the project area includes noise sensitive land uses that will be potentially impacted by traffic noise associated with the widening of Miami Gardens Drive. To determine the changes in land uses since the 2006 PD&E Study and to re-evaluate the potential for traffic noise impacts between NW 87th Avenue and NW 82nd Avenue existing land uses were reviewed and mapped by FHWA's Noise Activity Categories (see **Figure 3-1**). The noise sensitive land uses within this segment of Miami Gardens Drive include single and multi-family residences, places of worship, and a school. Since the 2006 NSR, no new noise sensitive land uses have been developed within this segment of Miami Gardens Drive.

The representative noise sensitive receptor sites used in assessment of impacts are presented in **Table 3.1-1** and depicted in **Figure 3-1**. **Table 3.1-1** in **Appendix C** lists and describes the general area, approximate location, and number of sites represented. **Table 3.1-1** also includes the predicted noise levels for the Build Alternative. Each of the representative receptor sites were given a unique designation, for example, PS-1. The alphanumeric character(s) represents the name and location of the noise sensitive receptor site (e.g., "PS" for Palm Springs North). The numerical value represents the unique/sequential receptor site number for that location (e.g., for Palm Springs North, Receptors Sites PS-1 through PS-51 were used to represent the noise sensitive sites within this residential community).

To facilitate comparisons to the 2006 PD&E Noise Study and the noise impact analysis, the same noise study areas were used. The names of the noise study areas were associated with the names of the residential communities (e.g., Palm Springs North) or to the non-residential uses (e.g., The Church of Jesus Christ of Latter Day Saints) versus a using a numbering system (e.g., PS-1 and LDS-1D, respectively). In addition, each of the noise study areas was assigned a CNE identification number (i.e., E1 through E22). Of these, CNE E1, CNE E10, and CNE E12 are located between NW 87th Avenue and NW 82nd Avenue.

Predicted design year (2040) noise levels for the Build Alternative were compared to the NAC to assess potential noise impacts associated with the project. As identified in Table 3.1-1, and summarized in **Table 3.1-2**, traffic noise impacts occur. With the design phase concept, design year (2040) traffic noise levels will approach, meet, or exceed the NAC at 37 residences (NAC B) and at none of the non-residential/special land use receptor sites. Twenty-seven of the 37 impacted residential receptor sites are located in the Palm Springs North community (CNE E1). Twelve of the impacted residences are located between NW 87th Avenue and NW 84th Court

Table 3.1-2: Summary of Traffic Noise Impacts by Common Noise Environments

Common Noise Environment (CNE) ID / General Location	Name of Noise Sensitive Site/Area	Noise Abatement Activity Category - Criteria	TNM Predicted Design Year (2040) Noise Levels dB(A)		Traffic Noise Impacts		Consideration of Noise Barriers? Yes or No	Noise Barrier Analysis Section
			Minimum	Maximum	Number of Residential Sites	Number of Special Land Uses		
E1 / South of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue	Palm Springs North	Residential NAC B - 66 dB(A)	49.9	74.2	27	---	YES	Section 3.1.2
E10 / North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue	Ibis Villas	Residential NAC B - 66 dB(A)	64.7	72.1	5	---	YES	Section 3.1.3
E11 / North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue	Mother of Our Redeemer Catholic Church & School	Place of Worship Interior Use NAC D - 51 dB(A)	34.2	34.2	---	---	NO	---
E12 / North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue	San Mateo Condominiums	Residential NAC B - 66 dB(A)	59.5	70.9	5	---	YES	Section 3.1.4
E13 / North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue	The Church of Jesus Christ of Latter Day Saints	Place of Worship Interior Use NAC D - 51 dB(A)	43.4	43.4	---	---	NO	---
Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)					37	---	---	---
Total Number of Non-Residential / Special Land Use Sites Equal to or Greater than the Noise Abatement Criteria (NAC)					---	0	---	---

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and 15 residences are located between NW 84th Court and NW 82nd Avenue. In comparison to the 2006 PD&E NSR, the number of noise sensitive sites impacted residences are similar (i.e., 27 versus 26). Five of the 37 impacted residential receptor sites are located in the Ibis Villas community (CNE E10) and five are located in the San Mateo community (CNE E12). In comparison to the 2006 PD&E NSR, the number of noise sensitive sites impacted residences are similar (i.e., 5 versus 4) at these two residential areas. In accordance with the 2006 PD&E Study Noise Abatement commitments and with FHWA regulation and FDOT policy, the feasibility and reasonableness of noise barriers were considered for these 37 impacted residences.

For the three residential CNEs impacted by design year (2040) traffic noise levels, the analysis of noise barriers and recommendations are summarized by CNE in **Section 3.1.1** through **Section 3.1.3**. The locations and limits of the noise barriers evaluated are depicted on **Figure 3-1**. No other noise sensitive sites, including Activity Categories C, D, and E sites, were predicted to experience traffic noise levels that will approach, meet, or exceed the NAC. It should be noted that some developed areas were not evaluated since they do not represent noise sensitive areas or were located beyond the expected area of traffic noise impacts. Other types of noise sensitive commercial land uses such as hotel pools and office buildings with exterior areas of use such as picnic tables do not occur along this segment of Miami Gardens Drive being evaluated for noise impacts. Also, no noise sensitive developments have occurred or received construction permits prior to the project's date of public knowledge (i.e., September 15, 2006). As indicated in Part 2, Chapter 18 of FDOT's PD&E Manual (Figure 18-8), FDOT is not responsible for providing noise abatement for noise sensitive land uses that are permitted for construction after that date.

3.1.1 Palm Springs North (Common Noise Environment E1)

Within FM 438864-1-22-01, CNE E1 represents the 27 impacted single family residences within the Palm Springs North community located south of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue (see **Figure 3-1**). NW 84th Court and NW 82nd Avenue are used to access this residential community. The western side of the community is adjacent to NW 87th Avenue. The eastern side of the community is adjacent to a parcel that includes an access road to an AT&T utility building and other facilities. Currently, a 10-foot-wide planting screen easement is located between the residences and Miami Gardens Drive. In addition, there are utilities located along the Miami Gardens Drive southern right-of-way line including overhead electric, telephone, and cable TV.

The results of the noise barrier analysis for this area are summarized in **Table 3.1.1-1** in **Appendix D**. Seven conceptual noise barrier designs were evaluated to reduce traffic noise levels at the 27 impacted residences. Each of the conceptual designs evaluated include two ground mounted noise barrier segments. All seven conceptual noise barrier designs meet both

the minimum noise reduction design goal of 7 dB(A) for at least one benefited residence and the reasonable cost criteria of equal to or less than \$64,000 per benefited receptor site. The estimated construction cost of the conceptual noise barrier designs ranges from \$768,000 (i.e., CD1-E1) to \$1,920,000 (i.e., CD7-E1) or \$24,774 to \$49,231 per benefitted residence. However, FDOT does not own enough right-of-way along the Palm Springs North Community to construct and maintain the noise barriers at this location. Therefore, the cost to acquire the additional right-of-way also needs to be included in the overall cost reasonableness calculations per Section 18.2.3.2.5 of Part 2, Chapter 18 of FDOT's PD&E Manual.

To construct and maintain the noise barriers under consideration for the Palms Springs North community will require additional six feet right-of-way to be acquired from each of the 26 adjacent parcels along the south side of Miami Gardens Drive. The noise barriers would be constructed behind the sidewalk and would be about 2 feet wide. To maintain the wall, FDOT will also need to acquire a 4-foot-wide strip of land along the back edge of each property next to Miami Gardens Drive. The estimated cost to acquire the permanent easements from the 11 adjacent property owners located between NW 87th Avenue and NW 84th Court is \$410,300 and from the 15 adjacent property owners located between NW 85th Court and 82nd Avenue is \$610,350.

The results of the noise barrier analysis for the Palms Springs North community including the cost to acquire permanent easements are also summarized in **Table 3.1.1-1** in **Appendix D**. Three of the seven conceptual noise barrier designs meet both the minimum noise reduction design goal of 7 dB(A) for at least one benefited residence and the reasonable cost criteria of equal to or less than \$64,000 per benefited receptor site (i.e., CD1-E1, CD2-E1, and CD4-E1). Of the conceptual noise barrier designs evaluated, CD4-E1 represents the optimal noise barrier design at this location since it maximizes the amount of noise reduction without exceeding FDOT's reasonable cost criteria of equal to or less than \$64,000 per benefited receptor site. Conceptual Noise Barrier Design CD4-E1 represents a noise barrier system with two 14-foot-tall ground mounted segments located along the south side of Miami Gardens Drive right-of-way line. The first segment would have a length of 980 feet and extend from NW 87th Avenue to NW 84th Court. The second segment would have a length of 1,420 feet and extend from NW 84th Court and NW 82nd Avenue. This conceptual noise barrier design would benefit 37 residences, including 26 of the 27 impacted residences, and would provide an average noise reduction of 10.5 dB(A) at benefited receptor sites with a maximum noise reduction of 13.7 dB(A). The estimated cost of this conceptual noise barrier design is \$2,364,650 or \$63,909 per benefited residence.

Based on the noise barrier analysis performed, noise barriers are considered preliminarily feasible and reasonable at this location since they do meet both FDOT's required noise abatement design goal and the reasonable cost criteria. Therefore, noise barriers are recommended for further consideration and public input. It should be noted that the final decisions on noise barrier dimensions are based on input from adjacent residential properties benefitted by a noise barrier(s) and FDOT's ability to acquire the necessary land to construct and maintain the noise wall at this location.

3.1.2 Ibis Villas (Common Noise Environment E10)

Common Noise Environment E10 represents the five impacted multi-family residences within the Ibis Villas community located north of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue (see **Figure 3-1**). NW 84th Avenue is used to access this residential community. The western side of the community is adjacent to a parcel that includes an entrance road to McDonald's and the Garden Square Shopping Center. The eastern side of the community is adjacent to a parcel that includes an entrance road to Mother of Our Redeemer Catholic Church and School. The multi-family residential buildings associated with the community have patios exposed to traffic noise from Miami Gardens Drive.

The results of the noise barrier analysis for this area are summarized in **Table 3.1.2-1** in **Appendix D**. Eight conceptual noise barrier designs were evaluated to reduce traffic noise levels at the five impacted residences. Each of the conceptual designs evaluated include two ground mounted noise barrier segments. With a maximum noise reduction of 4.3 dB(A) for CD7-E10 and CD8-E10, none of the eight conceptual noise barrier designs benefit any of the impacted receptors or meet the minimum noise reduction design goal of 7 dB(A) for at least one benefitted residence.

Based on the noise barrier analysis performed, noise barriers are not considered feasible or reasonable at this location since they do not meet FDOT's required noise abatement design goal or provide a benefit to any of the impacted residences. The effectiveness of noise barriers at this location is reduced since a continuous noise barrier is not possible due to the entrance road to the community, the entrance road to the shopping center to the west, and the entrance road to the Mother of Our Redeemer Catholic Church and School to the east. Therefore, noise barriers at this location are not recommended for design and construction.

3.1.3 San Mateo (Common Noise Environment E12)

Common Noise Environment E12 represents the five impacted multi-family residences within the San Mateo community located north of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue (see **Figure 3-1**). NW 83rd Court and NW 83rd Avenue are used to access this residential community. The western side of the community is adjacent to a parcel that includes an entrance road to the Mother of Our Redeemer Catholic Church and School. The eastern side of the community is adjacent to a parcel that includes an entrance to The Church of Jesus Christ of Latter Day Saints. The multi-family residential buildings associated with the community have patios exposed to traffic noise from Miami Gardens Drive. Currently, a 5-foot-tall concrete block privacy wall is located between the residences and Miami Gardens Drive.

The results of the noise barrier analysis for this area are summarized in **Table 3.1.3-1** in **Appendix D**. Eight conceptual noise barrier designs were evaluated to reduce traffic noise levels at the five impacted residences. Each of the conceptual designs evaluated include three ground mounted noise barrier segments. Five of the eight conceptual noise barrier designs meet the minimum noise reduction design goal of 7 dB(A) for at least one benefited residence. Of these five conceptual designs, CD4-E12 has the lowest cost per benefited receptor site of \$78,400. Therefore, none of conceptual noise barrier designs evaluated meet the reasonable cost criteria of equal to or less than \$64,000 per benefited receptor site.

Based on the noise barrier analysis performed, noise barriers are not considered reasonable at this location since they do not meet FDOT's reasonable cost criteria. The effectiveness of noise barriers at this location is reduced since a continuous noise barrier is not possible due to the entrance road to the community, the entrance road to the Mother of Our Redeemer Catholic Church and School to the west, and the entrance road to The Church of Jesus Christ of Latter Day Saints to the east. Therefore, noise barriers at this location are not recommended for further consideration at this location.

4.0 Conclusions

A design noise study was performed as part of the noise commitments made during the 2006 PD&E Study for Miami Gardens Drive from East of I-75 Ramps to NW 57th Avenue. Within the noise study limits of Segment 1 (FM 438864-2-32-01), the March 2006 NSR recommended noise barriers to be further evaluated at two residential locations (Palm Springs North and Ibis Villas communities) during the design phase. The Palm Springs North community is a single-family residential community located south of Miami Gardens Drive between NW 87th Avenue and the Peter's Pike Canal. The Ibis Villas community is a multi-family residential community located north of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue. In accordance with the 2006 PD&E Study Noise Abatement Commitment, the feasibility and reasonableness of noise barriers as an abatement measure at the impacted residences in the Palm Springs North and Ibis Villas communities were re-evaluated. Although not recommended for further consideration in the 2006 NSR, the feasibility and reasonableness of noise barriers were also re-evaluated for the impacted residences within the San Mateo community that is also located north of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue. The design traffic noise study was performed in accordance with 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2010), and the FDOT's PD&E Manual, Part 2, Chapter 18, Highway Traffic Noise (July 31, 2024).

The purpose of this design noise study was to update the noise analysis to reflect the design changes since the approved 2006 PD&E Study. With the design phase concept, design year (2040) traffic noise levels will approach, meet, or exceed the NAC at 37 residences (NAC B) and at none of the non-residential/special land use receptor sites. Twenty-seven of the 37 impacted residential receptor sites are located in the Palm Springs North community (CNE E1). Twelve of the impacted residences are located between NW 87th Avenue and NW 84th Court and 15 residences are located between NW 84th Court and NW 82nd Avenue. In comparison to the 2006 PD&E NSR, the number of noise sensitive sites impacted residences are similar (i.e., 27 versus 26). Five of the 37 impacted residential receptor sites are located in the Ibis Villas community (CNE E10) and five are located in the San Mateo community (CNE E12). In comparison to the 2006 PD&E NSR, the number of noise sensitive sites impacted residences are similar (i.e., 5 versus 4) at these two residential areas. In accordance with the 2006 PD&E Study Noise Abatement commitments, the feasibility and reasonableness of noise barriers were considered for these 37 impacted residences.

Noise barriers were not found to be feasible or cost reasonable at either Ibis Villas (CNE E10) and San Mateo (CNE E12) for the five impacted residences at each of these communities (see **Table 4-1**). The cost to construct noise barriers at these two locations exceeds FDOT's

Table 4-1: Noise Barrier Analysis Summary

Common Noise Environment Area Identification Number	General Location	Relative Location	Type of Noise Sensitive Site (Noise Abatement Criteria Activity Category)	Conceptual Noise Barrier Design Number	Ground Mounted Noise Barrier		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)	Estimated Cost (\$40.00 per square foot)	Estimated Right-of-Way Acquisition Cost	Estimated Noise Barrier Construction & Right-of-Way Acquisition Cost	Average Cost/Site Benefited	Conceptual Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of \$64,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal	Conceptual Noise Barrier Design Recommended for further Consideration and Public Input during the Project's Design Phase?	Comments
					Height (feet)	Length (feet)															
Common Noise Environment E1 - Palm Springs North (Single Family Residences)																					
E1	Palm Springs North	South of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue	Residential (Activity Category B)	CD4-E1 Segment 1 - NW 87th Avenue to NW 84th Court	14	980	79+40	89+20	12	11	4	15	11	13.7	\$548,800	\$410,300	\$959,100	\$63,940	YES	YES	Represents the optimal conceptual noise barrier design and is recommended for further consideration and public input.
				CD4-E1 Segment 2 - NW 84th Court to NW 82nd Avenue	14	1,420	90+20	104+40	15	15	7	22	10.1	13.4	\$795,200	\$610,350	\$1,405,550	\$63,889			
				CD4-E1 Segments 1 & 2 - NW 87th Avenue to NW 82nd Avenue	14	2,400	79+20/90+20	89+20/104+40	27	26	11	37	10.5	13.8	\$1,344,000	\$1,020,650	\$2,364,650	\$63,909			
Common Noise Environment E10 - Ibis Villas (Townhomes)																					
E10	Ibis Villas	North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue	Residential (Activity Category B)	CD7-E10	20	180	85+80	87+60	5	0	0	0	---	4.3	\$288,000	---	\$216,000	---	NO	NO	Represents optimal conceptual noise barrier design. Not recommended for further consideration or public input since the minimum noise reduction design goal of 7 dB(A) for at least one impacted residence and reasonableness cost criteria are not met.
					20	180	88+40	90+20													
Common Noise Environment E12 - San Mateo (Townhomes)																					
E12	San Mateo	North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue	Residential (Activity Category B)	CD4-E12	14	120	97+00	98+20	5	1	2	3	6.2	7.2	\$235,200	---	\$176,400	\$78,400	NO	NO	Represents optimal conceptual noise barrier design. Not recommended for further consideration or public input since FDOT's Noise Abatement Cost Criteria of \$64,000 per Benefited Receptor Site is exceeded.
					14	140	98+60	100+00													
					14	160	100+40	102+00													

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reasonable cost criteria of equal to or less than \$64,000 per benefited receptor site and/or the optimal/lowest cost conceptual noise barrier design did not meet the minimum noise reduction design goal of 7 dB(A) for at least one benefited residence. For these two residential areas, the adjacent cross streets limit the ability to construct a longer and continuous noise barrier at these locations that would be more effective. Therefore, noise barriers at these two locations are not recommended for design and construction. The impacts to these 10 residences would be an unavoidable consequence of the project.

The noise barrier system recommended for further consideration for the Palm Springs North community represents two 14-foot-tall ground mounted segments located along the south side of Miami Gardens Drive right-of-way line. The first segment would have a length of 980 feet and extend from NW 87th Avenue to NW 84th Court. The second segment would have a length of 1,420 feet and extend from NW 84th Court and NW 82nd Avenue. This conceptual noise barrier design would benefit 37 residences, including 26 of the 27 impacted residences, and would provide an average noise reduction of 10.5 dB(A) at benefited receptor sites with a maximum noise reduction of 13.7 dB(A). The estimated cost of this conceptual noise barrier design is \$2,364,650 or \$63,909 per benefited residence.

For the 27 impacted residences in Palm Springs North community, noise barriers are considered preliminarily feasible and reasonable at this location since they do meet both FDOT's required noise abatement design goal and the reasonable cost criteria. Therefore, noise barriers are recommended for further consideration and public input. The final decisions on noise barrier dimensions are based on input from adjacent residential properties benefitted by a noise barrier(s) and FDOT's ability to acquire the necessary land to construct and maintain the noise wall at this location. To construct and maintain the noise barriers under consideration for the Palms Springs North community will require additional six feet right-of-way to be acquired from each of the 26 adjacent parcels along the south side of Miami Gardens Drive. The noise barriers would be constructed behind the sidewalk and would be about 2 feet wide. To maintain the wall, FDOT will also need to acquire a 4-foot-wide strip of land along the back edge of each property next to Miami Gardens Drive.

FDOT remains committed to the construction of reasonable and feasible noise abatement measures for the noise impacted residences associated with the Palms Springs community contingent upon the following conditions:

- Final recommendations on the construction of abatement measures is determined during the project's 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(s) will not exceed the cost reasonable criterion;
- Community input supporting types, heights, and locations of the noise barrier(s) is provided to the District Office; 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.

It is likely that the noise abatement measures for the identified locations will be constructed if found feasible based on the conditions listed above. If, during the project's design phase, any of the contingency conditions listed above cause abatement to no longer be considered reasonable or feasible for a given location(s), such determination(s) will be made prior to requesting approval for construction advertisement. Commitments regarding the exact abatement measure locations, heights, and type (or approved alternatives) will be made during project re-evaluation and at a time before the construction advertisement is approved.

5.0 Construction Noise and Vibration

During construction of the project, there is the potential for noise impacts to be substantially 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 additional sites particularly sensitive to construction noise and/or vibration will be performed during the project's final design phase to ensure that impacts to such sites are minimized.

6.0 Community Coordination

During the Final Design Phase, FDOT has been and continues to solicit the viewpoint of the benefited receptors including both owners and residents in the Palms Springs North community regarding the 14-foot-tall noise barriers under consideration at this location. The process of obtaining input from the benefited receptors and adjacent property owners in the Palms Springs North community is still ongoing. This includes holding a noise wall survey workshop with the Palm Springs Civic Association on February 18, 2025 to inform the public and property owners prior to the distribution of latest survey and to address their concerns. This section will be updated following the completion of the latest public involvement activities.

As noted in Section 3.1.1, a final decision to design and construct a noise barrier at this location is still pending additional input from the adjacent residential properties and FDOT's ability to acquire the necessary right-of-way to construct and maintain the noise barrier. To construct and maintain the noise barriers under consideration for the Palms Springs North community will require additional six feet right-of-way to be acquired from each of the 26 adjacent parcels along the south side of Miami Gardens Drive. The noise barriers would be constructed behind the sidewalk and would be about 2 feet wide. To maintain the barrier, FDOT will also need to acquire a 4-foot-wide strip of property along the back edge of each property next to Miami Gardens Drive. Noise barrier surveys are planned to be mailed to the property owners where additional right-of-way is required to obtain their input regarding whether they support the barrier and, if so, their willingness to sell a 6-foot strip of property at fair market value to allow for construction and maintenance of the barrier. Following the survey, FDOT will make a decision regarding moving forward with the design and construction of a noise wall at this location.

Earlier in the Final Design Phase, three public meetings were held including a Public Information Meeting, an Access Management Public Hearing, and a Public Meeting. The Public Information Meeting was held on Tuesday, December 4, 2018 from 6:00 pm to 8:00 pm at the Dade Christian School located at 6601 NW 167th Street, Miami, FL 33015. The Access Management Public Hearing was held on December 12, 2019 from 6:00 pm to 8:00 pm at the Country Club of Miami located at 6801 NW 186th Street, Miami FL 33015. A Public Meeting was also held on March 14, 2023, at 6:00 pm at the Miami Country Club at 6801 NW 186th Street.

At the December 12, 2019 Management Public Hearing, the public (i.e., property owners and residents) was supportive of the locations where noise barriers were recommended for further consideration. Specifically, they were interested in the potential noise barrier locations, noise barrier heights, and when they would be constructed. The public was informed that additional noise barrier analysis will be performed during the project's design phase when more detailed project design information is available. In addition, they were informed that the final decisions regarding noise barrier locations, length, and height are made during the project's design phase

after engineering constructability reviews has been completed and support for noise barriers from the benefited noise sensitive sites has been determined.

Also, to obtain input from the property owners and residents benefited by a noise barrier at this location, Noise Barrier Survey Packages were mailed in May 2022. One of the purposes of the survey was to obtain input from property owners regarding their support of noise barriers recommended for further consideration (i.e., CD-4-E1; 14-foot-tall noise barrier). The Survey Packages also explained that right-of-way will be required to build a noise barrier and that when the cost to acquire right-of-way is added to the cost of the barrier, the FDOT noise barrier cost reasonable criteria will be exceeded. In addition, adjacent, benefited property owners from the Palm Springs North community had the opportunity to attend one-on-one meetings with FDOT staff (Project Manager, District Noise Specialist, and Community Outreach Specialist) to ask questions regarding the noise barrier recommended for further consideration and as a follow up to noise barrier survey letters. Although a majority of the residents surveyed supported construction of a noise barrier at this location, a majority were not willing to provide the right-of-way to construct and maintain the noise barrier.

At the Public Meeting held on March 14, 2023, at 6:00 pm at the Miami Country Club at 6801 NW 186 Street, some of the residents expressed concerns with the survey and asked if the survey could be redone. FDOT agreed to relook at the survey, reformat it and resend it to all the benefited receptors.

New survey packages were sent on July 5, 2023 that provided an opportunity for the property owners adjacent to the right-of-way line to request a one-on-one meeting with FDOT. Similar to the first survey results, a majority of the residents surveyed supported construction of a noise barrier but none of those responding indicated they were willing to provide the right-of-way to construct and maintain the noise barrier at this location.

On October 17 and 23, 2023, benefited property owners from Palm Springs North had the opportunity to attend one-on-one meetings at their respective residences, with FDOT staff to ask questions regarding noise barriers recommended for further consideration and as a follow up to noise barrier survey letters. Six property owners and their attorney attended. Key items discussed during the meetings included support for construction of a noise barrier along their property line; right-of-way required for maintenance and construction of the noise barrier; and current and predicted noise levels at noise sensitive sites. In order to ensure the maximum response is received from the property owners, FDOT staff committed to conduct door-to-door visits to hand out additional Noise Barrier Survey packages.

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.

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

Federal Highway Administration Report Number FHWA-PD-96-046, "Measurement of Highway-Related Noise", Cynthia S.Y. Lee and Gregg Fleming; May, 1996.

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

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

Florida Department of Transportation. "Methodology to Evaluate Highway Traffic Noise at Special Land Uses", January 2024.

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

Florida Department of Transportation "Standard Specifications for Road and Bridge Construction", 2025-26.

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

APPENDIX A

Table 2.2-1: Traffic Data for Design Year (2040)

Build Alternative Noise Modeling

Table 2.2-1: Traffic Data for Design Year (2040) Build Alternative Noise Modeling (SR 860 - Miami Gardens Drive) FPIDs: 438864-1-22-01 / 407736-3-22-01 (Sheet 1 of 2)

Roadway Segment	Speed Limit	2040 Build Traffic (vph)		Number of Lanes	LOS C Volume*	Highest Peak Volume	Volume used in TNM	Percent Heavy Trucks ¹	Percent Medium Trucks ¹	Percent Buses ¹	Percent Motorcycles ¹	Volume used in TNM	Total Cars	Total Heavy Trucks	Total Medium Trucks	Total Buses	Total Motorcycles	Cars per lane	Heavy Trucks per lane	Medium Trucks per Lane	Buses per lane	Motorcycles per lane	
		AM	PM																				
Eastbound / Northbound																							
Eastbound Miami Gardens Drive (SR 860)	West of NW 87th Ave to NW 87th Ave	35	1,677	4,126	2	767	4,126	767	0.45%	1.29%	0.26%	0.23%	767	750	3	10	2	2	376	2	5	1	1
	NW 87th Ave to NW 82nd Ave	40	1,359	3,041	3	2,940	3,041	2,940	0.45%	1.29%	0.26%	0.23%	2,940	2,874	13	38	8	7	963	4	13	3	2
	NW 82nd Ave to NW 79th Ave	40	1,467	2,807	3	2,940	2,807	2,807	0.45%	1.29%	0.26%	0.23%	2,807	2,745	13	36	7	6	920	4	12	2	2
	NW 79th Ave to W Oakmont Dr	40	1,870	2,734	3	2,940	2,734	2,734	0.45%	1.29%	0.26%	0.23%	2,734	2,674	12	35	7	6	895	4	12	2	2
	W Oakmont Dr to NW 75th Pl	40	1,741	2,465	3	2,940	2,465	2,465	0.45%	1.29%	0.26%	0.23%	2,465	2,410	11	32	6	6	807	4	11	2	2
	NW 75th Pl to NW 73rd Ave	40	1,778	2,577	3	2,940	2,577	2,577	0.45%	1.29%	0.26%	0.23%	2,577	2,519	12	33	7	6	844	4	11	2	2
	NW 73rd Ave to NW 68th Ave	40	1,799	2,268	3	2,940	2,268	2,268	0.45%	1.29%	0.26%	0.23%	2,268	2,218	10	29	6	5	743	3	10	2	2
	NW 68th Ave to Bob O Link Dr	40	2,125	2,243	3	2,940	2,243	2,243	0.45%	1.29%	0.26%	0.23%	2,243	2,193	10	29	6	5	735	3	10	2	2
	Bob O Link Dr to NW 67th Ave (Ludlam Rd)	40	2,582	2,243	3	2,940	2,582	2,582	0.45%	1.29%	0.26%	0.23%	2,582	2,524	12	33	7	6	846	4	11	2	2
	NW 67th Ave (Ludlam Rd) to NW 62nd Ave	40	2,503	2,070	3	2,940	2,503	2,503	0.45%	1.29%	0.26%	0.23%	2,503	2,448	11	32	6	6	819	4	11	2	2
	NW 62nd Ave to NW 57th Ave (Red Rd)	40	2,600	1,804	3	3,087	2,600	2,600	0.45%	1.29%	0.26%	0.23%	2,600	2,541	12	34	7	6	852	4	11	2	2
NW 57th Ave (Red Rd) to East of NW 57th Ave (Red Rd)	45	2,145	1,833	3	2,940	2,145	2,145	0.45%	1.29%	0.26%	0.23%	2,145	2,097	10	28	5	5	703	3	9	2	2	
Northbound NW 87th Ave	South of Miami Gardens Drive to Miami Gardens Drive	35	1,478	1,603	2	657	1,603	657	0.41%	1.48%	0.11%	0.23%	657	641	3	10	1	2	322	2	5	1	1
Northbound NW 82nd Ave	South of Miami Gardens Drive to Miami Gardens Drive	30	680	539	1	333	680	333	0.41%	1.48%	0.11%	0.23%	333	326	1	5	0	1	327	1	5	0	1
Northbound NW 67th Ave (Ludlam Rd)	South of Miami Gardens Drive to Miami Gardens Drive	40	1,664	1,964	3	2,646	1,964	1,964	1.17%	0.60%	0.23%	0.37%	1,964	1,918	23	12	4	7	643	8	4	1	2
Northbound NW 57th Ave (Red Rd)	South of Miami Gardens Drive to Miami Gardens Drive	45	2,238	3,000	3	2,940	3,000	2,940	0.41%	0.86%	0.30%	1.00%	2,940	2,865	12	25	9	29	968	4	8	3	10
Westbound / Southbound																							
Southbound NW 57th Ave (Red Rd)	North of Miami Gardens Drive to Miami Gardens Drive	45	3,024	2,144	3	2,940	3,024	2,940	0.41%	0.86%	0.30%	1.00%	2,940	2,865	12	25	9	29	968	4	8	3	10
Southbound NW 67th Ave (Ludlam Rd)	North of Miami Gardens Drive to Miami Gardens Drive	40	2,113	2,168	3	2,646	2,168	2,168	1.17%	0.60%	0.23%	0.37%	2,168	2,117	25	13	5	8	711	8	4	2	3
Southbound NW 82nd Ave	North of Miami Gardens Drive to Miami Gardens Drive	30	586	407	2	690	586	586	0.41%	1.48%	0.11%	0.23%	586	573	2	9	1	1	287	1	5	1	1

Table 2.2-1: Traffic Data for Design Year (2040) Build Alternative Noise Modeling (SR 860 - Miami Gardens Drive) FPIDs: 438864-1-22-01 / 407736-3-22-01 (Sheet 2 of 2)

Roadway Segment	Speed Limit	2040 Build Traffic (vph)		Number of Lanes	LOS C Volume*	Highest Peak Volume	Volume used in TNM	Percent Heavy Trucks ¹	Percent Medium Trucks ¹	Percent Buses ¹	Percent Motorcycles ¹	Volume used in TNM	Total Cars	Total Heavy Trucks	Total Medium Trucks	Total Buses	Total Motorcycles	Cars per lane	Heavy Trucks per lane	Medium Trucks per Lane	Buses per lane	Motorcycles per lane	
		AM	PM																				
Southbound NW 87th Ave	North of Miami Gardens Drive to Miami Gardens Drive	35	1,371	905	2	657	1,371	657	0.41%	1.48%	0.11%	0.23%	657	641	3	10	1	2	322	2	5	1	1
Westbound Miami Gardens Drive (SR 860)	East of NW 57th Ave (Red Rd) to NW 57th Ave (Red Rd)	45	1,837	1,971	3	3,087	1,971	1,971	0.45%	1.29%	0.26%	0.23%	1,971	1,927	9	26	5	4	645	3	9	2	1
	NW 57th Ave (Red Rd) to NW 62nd Ave	40	1,844	2,097	3	2,940	2,097	2,097	0.45%	1.29%	0.26%	0.23%	2,097	2,051	9	27	5	5	687	3	9	2	2
	NW 62nd Ave to NW 67th Ave (Ludlam Rd)	40	2,075	2,341	3	2,940	2,341	2,341	0.45%	1.29%	0.26%	0.23%	2,341	2,289	11	30	6	5	766	4	10	2	2
	NW 67th Ave (Ludlam Rd) to Bob O Link Dr	40	2,258	2,633	3	2,940	2,633	2,633	0.45%	1.29%	0.26%	0.23%	2,633	2,574	12	34	7	6	863	4	11	2	2
	Bob O Link Dr to NW 68th Ave	40	2,317	2,230	3	2,940	2,317	2,317	0.45%	1.29%	0.26%	0.23%	2,317	2,266	10	30	6	5	759	3	10	2	2
	NW 68th Ave to NW 73rd Ave	40	2,515	2,296	3	2,940	2,515	2,515	0.45%	1.29%	0.26%	0.23%	2,515	2,459	11	33	6	6	823	4	11	2	2
	NW 73rd Ave to NW 75th Pl	40	2,487	2,288	3	2,940	2,487	2,487	0.45%	1.29%	0.26%	0.23%	2,487	2,432	11	32	6	6	814	4	11	2	2
	NW 75th Pl to W Oakmont Dr	40	2,369	2,379	3	2,940	2,379	2,379	0.45%	1.29%	0.26%	0.23%	2,379	2,326	11	31	6	5	779	4	10	2	2
	W Oakmont Dr to NW 79th Ave	40	2,873	2,416	3	2,940	2,873	2,873	0.45%	1.29%	0.26%	0.23%	2,873	2,810	13	37	7	6	942	4	12	2	2
	NW 79th Ave to NW 82nd Ave	40	2,579	2,107	3	2,940	2,579	2,579	0.45%	1.29%	0.26%	0.23%	2,579	2,521	12	33	7	6	845	4	11	2	2
	NW 82nd Ave to NW 87th Ave	40	2,972	2,136	3	2,940	2,972	2,940	0.45%	1.29%	0.26%	0.23%	2,940	2,874	13	38	8	7	963	4	13	3	2
NW 87th Ave to West of NW 87th Ave	40	4,317	2,903	3	2,940	4,317	2,940	0.45%	1.29%	0.26%	0.23%	2,940	2,874	13	38	8	7	963	4	13	3	2	

* LOS "C" volumes obtained from Table 7 of FDOT's Level of Service Handbook (2013) and HCM 2000 (Volume adjustments have been applied as appropriate)

¹ Vehicle split percentages based on Annual Vehicle Classification Counts from FDOT count stations: 872518, 871233, 878112, 877036, and 870038

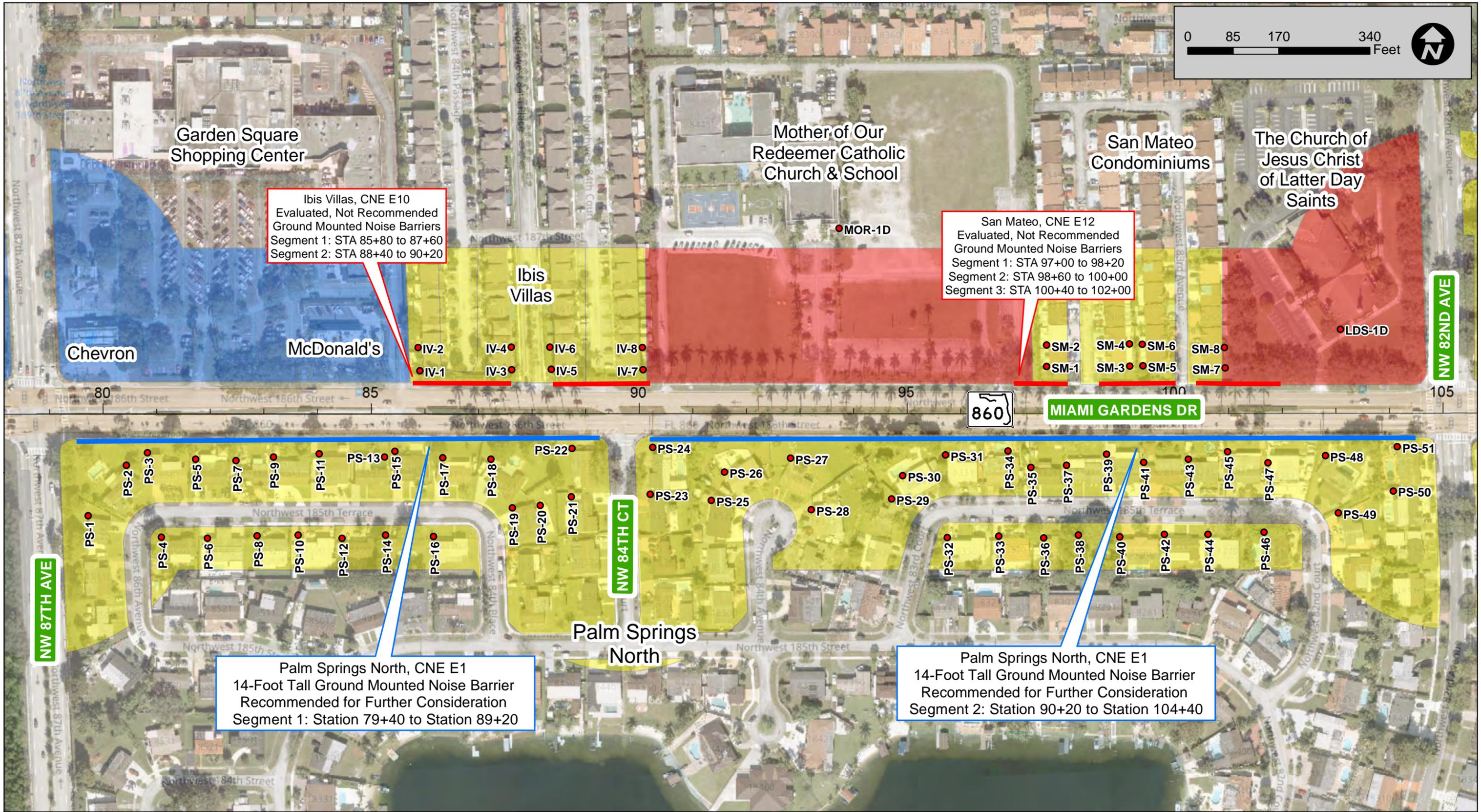
I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: Brian Kirkpatrick, P.E.
Print Name

Date: 11/4/2019

APPENDIX B

Figure 3-1 Noise Analysis Map



FDOT

SR 860 / Miami Gardens Drive
 From East of I-75 to SR 823 / NW 57th Avenue
 FM No.: FM 438864-1-22-01
 Re-evaluation (FM No.: 438864-2-32-01)
 East of I-75 / SR 93 to NW 79th Place
 FDOT - District 6 / Miami-Dade County

Legend

Land Uses by Noise Activity Category

- B: Residential
- D: Institutional (Interior)
- F: Non-Sensitive Developed
- G: Vacant

- Noise Sensitive Receptor Site
- Noise Barrier Evaluated, Not Recommended
- Recommended Noise Barrier

Figure 3-1
Noise Analysis
Map

March 2025

APPENDIX C

Table 3.1-1: Location and Description of Representative Noise Receptor Sites and Noise Impact Analysis Results

Table 3.1-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Impact Analysis Results (Sheet 1 of 3)

Name of Noise Sensitive Site/Area [Noise Abatement Activity Category - FDOT's Noise Abatement Criteria Category dB(A)]	Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Nearest Proposed Travel Lane (feet)	TNM Predicted Design Year (2040) Noise Levels dB(A) with Proposed Roadway Design Concept	Noise Abatement Criteria Status / Consideration of Noise Abatement Warranted? Yes or No
South of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue (Palm Springs North Community)							
NW 87th Avenue to NW 84th Court - Palm Springs North - Segment 1 [NAC B - 66 dB(A)]	PS-1	Single Family Residence - Second Row	1	79+71	150	66.6	Approaches / Yes
	PS-2	Single Family Residence - First Row	1	80+42	56	71.4	Exceeds / Yes
	PS-3	Single Family Residence - First Row	1	80+82	32	73.5	Exceeds / Yes
	PS-4	Single Family Residence - Second Row	1	81+08	190	58.0	Below / No
	PS-5	Single Family Residence - First Row	1	81+72	45	72.2	Exceeds / Yes
	PS-6	Single Family Residence - Second Row	1	81+93	192	57.2	Below / No
	PS-7	Single Family Residence - First Row	1	82+47	47	71.9	Exceeds / Yes
	PS-8	Single Family Residence - Second Row	1	82+87	187	52.0	Below / No
	PS-9	Single Family Residence - First Row	1	83+17	41	72.5	Exceeds / Yes
	PS-10	Single Family Residence - Second Row	1	83+63	186	51.4	Below / No
	PS-11	Single Family Residence - First Row	1	84+03	35	72.7	Exceeds / Yes
	PS-12	Single Family Residence - Second Row	1	84+45	192	51.1	Below / No
	PS-13	Single Family Residence - First Row	1	85+25	41	71.5	Exceeds / Yes
	PS-14	Single Family Residence - Second Row	1	85+26	186	51.5	Below / No
	PS-15	Single Family Residence - First Row	1	85+44	30	72.4	Exceeds / Yes
	PS-16	Single Family Residence - Second Row	1	86+16	189	53.8	Below / No
	PS-17	Single Family Residence - First Row	1	86+33	43	71.2	Exceeds / Yes
	PS-18	Single Family Residence - First Row	1	87+23	45	70.8	Exceeds / Yes
	PS-19	Single Family Residence - Second Row (Front Yard)	1	87+63	136	57.3	Below / No
	PS-20	Single Family Residence - Second Row (Back Yard)		88+15	131	61.6	Below / No
	PS-21	Single Family Residence - Second Row	1	88+73	115	62.8	Below / No
	PS-22	Single Family Residence - First Row	1	88+74	25	72.7	Exceeds / Yes
Minimum						51.1	---
Maximum						73.5	---
Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)						12	---
NW 84th Court to 82nd Avenue - Palm Springs North - Segment 2 [NAC B - 66 dB(A)]	PS-23	Single Family Residence - Second Row	1	90+20	110	61.8	Below / No
	PS-24	Single Family Residence - First Row	1	90+25	23	72.7	Exceeds / Yes
	PS-25	Single Family Residence - Second Row	1	91+34	122	62.7	Below / No
	PS-26	Single Family Residence - First Row	1	91+59	69	68.0	Exceeds / Yes
	PS-27	Single Family Residence - First Row	1	92+82	43	70.9	Exceeds / Yes
	PS-28	Single Family Residence - Second Row	1	93+21	139	60.9	Below / No
	PS-29	Single Family Residence - Second Row	1	94+71	120	63.9	Below / No
	PS-30	Single Family Residence - First Row	1	94+92	76	67.6	Exceeds / Yes
	PS-31	Single Family Residence - First Row	1	95+72	37	71.4	Exceeds / Yes
	PS-32	Single Family Residence - Second Row	1	95+75	192	56.5	Below / No
	PS-33	Single Family Residence - Second Row	1	96+71	189	53.7	Below / No
	PS-34	Single Family Residence - First Row	1	96+88	30	72.0	Exceeds / Yes
	PS-35	Single Family Residence - First Row	1	97+31	61	68.4	Exceeds / Yes
	PS-36	Single Family Residence - Second Row	1	97+55	192	52.2	Below / No
	PS-37	Single Family Residence - First Row	1	97+97	57	69.3	Exceeds / Yes
	PS-38	Single Family Residence - Second Row	1	98+19	187	51.1	Below / No

Table 3.1-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Impact Analysis Results (Sheet 2 of 3)

Name of Noise Sensitive Site/Area [Noise Abatement Activity Category - FDOT's Noise Abatement Criteria Category dB(A)]	Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Nearest Proposed Travel Lane (feet)	TNM Predicted Design Year (2040) Noise Levels dB(A) with Proposed Roadway Design Concept	Noise Abatement Criteria Status / Consideration of Noise Abatement Warranted? Yes or No
NW 84th Court to 82nd Avenue - Palm Springs North - Segment 2 [NAC B - 66 dB(A)]	PS-39	Single Family Residence - First Row	1	98+72	37	71.6	Exceeds / Yes
	PS-40	Single Family Residence - Second Row	1	98+97	190	50.2	Below / No
	PS-41	Single Family Residence - First Row	1	99+41	51	68.9	Exceeds / Yes
	PS-42	Single Family Residence - Second Row	1	99+80	185	49.9	Below / No
	PS-43	Single Family Residence - First Row	1	100+25	46	71.0	Exceeds / Yes
	PS-44	Single Family Residence - Second Row	1	100+62	186	52.2	Below / No
	PS-45	Single Family Residence - First Row	1	100+98	32	72.4	Exceeds / Yes
	PS-46	Single Family Residence - Second Row	1	101+66	182	55.3	Below / No
	PS-47	Single Family Residence - First Row	1	101+73	53	69.8	Exceeds / Yes
	PS-48	Single Family Residence - First Row	1	102+80	39	72.0	Exceeds / Yes
	PS-49	Single Family Residence - Second Row	1	103+05	146	57.6	Below / No
	PS-50	Single Family Residence - Second Row	1	104+07	105	64.0	Below / No
PS-51	Single Family Residence - First Row	1	104+15	23	74.2	Exceeds / Yes	
Minimum						49.9	---
Maximum						74.2	---
Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)						15	---
Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A) (Segment 1 & 2)						27	---
Common Noise Environment (CNE) Identification Number - Palm Springs North						---	E1
North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue (Ibis Villas)							
Ibis Villas [NAC B - 66 dB(A)]	IV-1	Multi-Family Residence - Patio	1	85+91	35	72.1	Exceeds / Yes
	IV-2	Multi-Family Residence - Patio	1	85+87	78	66.7	Approaches / Yes
	IV-3	Multi-Family Residence - Patio	1	87+62	37	71.2	Exceeds / Yes
	IV-4	Multi-Family Residence - Patio	1	87+61	79	64.7	Below / No
	IV-5	Multi-Family Residence - Patio	1	88+36	37	71.1	Exceeds / Yes
	IV-6	Multi-Family Residence - Patio	1	88+33	78	65.0	Below / No
	IV-7	Multi-Family Residence - Patio	1	90+07	36	71.8	Exceeds / Yes
	IV-8	Multi-Family Residence - Patio	1	90+06	78	65.9	Below / No
Minimum						64.7	---
Maximum						72.1	---
Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)						5	---
Common Noise Environment (CNE) Identification Number - Ibis Villas						---	E10
North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue (Mother of Our Redeemer Catholic Church & School)							
Mother of Our Redeemer Catholic Church & School [NAC D - 51 dB(A)]	MOR-1D	Place of Worship - Interior Use	1 (Special Land Use)	93+73	299	34.2	Below / No
Minimum						34.2	---
Maximum						34.2	---
Total Number of Non-Residential / Special Land Use Receptor Sites Equal to or Greater than the Noise Abatement Criteria (NAC)						0	---
Common Noise Environment (CNE) Identification Number - Mother of Our Redeemer Catholic Church & School						---	E11

Table 3.1-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Impact Analysis Results (Sheet 3 of 3)

Name of Noise Sensitive Site/Area [Noise Abatement Activity Category - FDOT's Noise Abatement Criteria Category dB(A)]	Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Nearest Proposed Travel Lane (feet)	TNM Predicted Design Year (2040) Noise Levels dB(A) with Proposed Roadway Design Concept	Noise Abatement Criteria Status / Consideration of Noise Abatement Warranted? Yes or No
North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue (San Mateo Condominiums)							
San Mateo Condominiums [NAC B - 66 dB(A)]	SM-1	Multi-Family Residence - Patio	1	97+60	42	69.5	Exceeds / Yes
	SM-2	Multi-Family Residence - Patio	1	97+60	82	65.3	Below / No
	SM-3	Multi-Family Residence - Patio	1	99+15	43	68.7	Exceeds / Yes
	SM-4	Multi-Family Residence - Patio	1	99+15	84	59.5	Below / No
	SM-5	Multi-Family Residence - Patio	1	99+40	43	68.8	Exceeds / Yes
	SM-6	Multi-Family Residence - Patio	1	99+39	83	59.7	Below / No
	SM-7	Multi-Family Residence - Patio	1	100+93	39	70.9	Exceeds / Yes
	SM-8	Multi-Family Residence - Patio	1	100+92	77	66.9	Approaches / Yes
Minimum						59.5	---
Maximum						70.9	---
Total Number of Residential Sites Equal to or Greater than the Noise Abatement Criteria (NAC) of 66 dB(A)						5	---
Common Noise Environment (CNE) Identification Number - San Mateo Condominiums						---	E12
North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue (The Church of Jesus Christ of Latter Day Saints)							
The Church of Jesus Christ of Latter Day Saints [NAC D - 51 dB(A)]	LDS-1D	Place of Worship - Interior Use	1 (Special Land Use)	103+09	111	43.4	Below / No
Minimum						43.4	---
Maximum						43.4	---
Total Number of Non-Residential / Special Land Use Receptor Sites Equal to or Greater than the Noise Abatement Criteria (NAC)						0	---
Common Noise Environment (CNE) Identification Number - The Church of Jesus Christ of Latter Day Saints						---	E13

APPENDIX D

Noise Barrier Analyses Tables

(3.1.1-1 through 3.1.3-1)

Table 3.1.1-1: Palm Springs North (Common Noise Environment E1) Noise Barrier Analysis Summary

Noise Sensitive Area (General Location)	Conceptual Barrier Design Number	Noise Barrier Segment	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)	Estimated Cost (\$40 per square foot)	Average Cost/Site Benefited	Number of Adjacent Parcels Requiring Right-of-Way Acquisition	Estimated Right-of-Way Acquisition Cost	Estimated Noise Barrier Construction & Right-of-Way Acquisition Cost	Noise Barrier Construction & Right-of-Way Acquisition Average Cost / Site Benefited	Does Barrier Design Meet FDOT's Noise Cost Reasonableness Criteria (\$64,000 / Site Benefited)? - Comments
Common Noise Environment E1 / Palm Springs North (South of Miami Gardens Drive between NW 87th Avenue and NW 84th Court -Segment 1 and NW 84th Court to NW 82nd Avenue - Segment 2)	CD1-E1	Segment 1	8	980	79+40	89+20	12	11	2	13	7.9	9.4	\$313,600	\$24,123	11	\$410,300	\$723,900	\$55,685	YES
		Segment 2	8	1,420	90+20	104+40	15	14	4	18	7.4	8.9	\$454,400	\$25,244	15	\$610,350	\$1,064,750	\$59,153	
		Segments 1 and 2	8	2,400	79+20	104+40	27	25	6	31	7.6	9.4	\$768,000	\$24,774	26	\$1,020,650	\$1,788,650	\$57,698	
	CD2-E1	Segment 1	10	980	79+40	89+20	12	11	2	13	9.7	11.3	\$392,000	\$30,154	11	\$410,300	\$802,300	\$61,715	YES
		Segment 2	10	1,420	90+20	104+40	15	15	4	19	8.8	10.9	\$568,000	\$29,895	15	\$610,350	\$1,178,350	\$62,018	
		Segments 1 and 2	10	2,400	79+20	104+40	27	26	6	32	9.1	11.3	\$960,000	\$30,000	26	\$1,020,650	\$1,980,650	\$61,895	
	CD3-E1	Segment 1	12	980	79+40	89+20	12	11	2	13	10.9	12.7	\$470,400	\$36,185	11	\$410,300	\$880,700	\$67,746	NO
		Segment 2	12	1,420	90+20	104+40	15	15	5	20	9.8	12.3	\$681,600	\$34,080	15	\$610,350	\$1,291,950	\$64,598	
		Segments 1 and 2	12	2,400	79+20	104+40	27	26	7	33	10.2	12.7	\$1,152,000	\$34,909	26	\$1,020,650	\$2,172,650	\$65,838	
	CD4-E1	Segment 1	14	980	79+40	89+20	12	11	4	15	11.0	13.7	\$548,800	\$36,587	11	\$410,300	\$959,100	\$63,940	YES
		Segment 2	14	1,420	90+20	104+40	15	15	7	22	10.1	13.4	\$795,200	\$36,145	15	\$610,350	\$1,405,550	\$63,889	
		Segments 1 and 2	14	2,400	79+20	104+40	27	26	11	37	10.5	13.7	\$1,344,000	\$36,324	26	\$1,020,650	\$2,364,650	\$63,909	
	CD5-E1	Segment 1	16	980	79+40	89+20	12	11	4	15	11.7	14.8	\$627,200	\$41,813	11	\$410,300	\$1,037,500	\$69,167	NO
		Segment 2	16	1,420	90+20	104+40	15	15	7	22	10.8	14.6	\$908,800	\$41,309	15	\$610,350	\$1,519,150	\$69,052	
		Segments 1 and 2	16	2,400	79+20	104+40	27	26	11	37	11.2	14.8	\$1,536,000	\$41,514	26	\$1,020,650	\$2,556,650	\$69,099	
	CD6-E1	Segment 1	18	980	79+40	89+20	12	11	4	15	12.3	15.7	\$705,600	\$47,040	11	\$410,300	\$1,115,900	\$74,393	NO
		Segment 2	18	1,420	90+20	104+40	15	15	9	24	11.0	15.4	\$1,022,400	\$42,600	15	\$610,350	\$1,632,750	\$68,031	
		Segments 1 and 2	18	2,400	79+20	104+40	27	26	13	39	11.7	15.7	\$1,728,000	\$44,308	26	\$1,020,650	\$2,748,650	\$70,478	
	CD7-E1	Segment 1	20	980	79+40	89+20	12	11	4	15	12.9	16.3	\$784,000	\$52,267	11	\$410,300	\$1,194,300	\$79,620	NO
		Segment 2	20	1,420	90+20	104+40	15	15	9	24	11.4	16.1	\$1,136,000	\$47,333	15	\$610,350	\$1,746,350	\$72,765	
		Segments 1 and 2	20	2,400	79+20	104+40	27	26	13	39	12.1	16.3	\$1,920,000	\$49,231	26	\$1,020,650	\$2,940,650	\$75,401	
2006 PD&E Study - Palm Springs North Recommended Noise Barrier																			
---	Segment 1	12	1,037	79+20	89+40	11	9	11	20	8.4	---	---	\$311,100	\$15,555	---	---	---	---	YES - PD&E Study Recommended Noise Barrier/No Right-of-Way Acquisition Costs)
	Segment 2	12	1,496	90+00	104+60	15	13	15	28	8.5	---	---	\$448,800	\$16,029	---	---	---	---	
	Segments 1 and 2	12	2,533	79+20	104+60	26	22	26	48	8.4	---	---	\$655,800	\$13,663	---	---	---	---	

X:\P\Noise_Studies\Proposed\MGD_CorridorStudy\Re-eval\Noise Study Report Addendum\Design Phase April 2024\Tables\Table 3.1.1-1_MGDD_PalmSprings_NoiseBarrierDesign_Summary_DNSR_3-4-2025.xlsx[B] PSN Bar Analysis 10-30-24

 Conceptual noise barrier design that meets FDOT's reasonable cost criteria and noise reduction design goal of at least a 7.0 dB(A) reduction for at least one impacted receptor site and recommended for further consideration and public input.

Table 3.1.2-1: Ibis Villas (Common Noise Environment E10) Noise Barrier Analysis Summary

Noise Sensitive Area (General Location)	Conceptual Barrier Design Number	Noise Barrier Segment	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 Impacted Receptor Sites dB(A)	Estimated Cost (\$40 per square foot)	Average Cost/Site Benefited	Conceptual Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of \$64,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal	Comments
Common Noise Environment E10 / Ibis Villas (North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue)	CD1-E10	Segment 1 of 2	8	180	85+80	87+60	5	0	0	0	---	3.4	\$115,200	---	NO	---
		Segment 2 of 2	8	180	88+40	90+20										
	CD2-E10	Segment 1 of 2	10	180	85+80	87+60	5	0	0	0	---	3.8	\$144,000	---	NO	---
		Segment 2 of 2	10	180	88+40	90+20										
	CD3-E10	Segment 1 of 2	12	180	85+80	87+60	5	0	0	0	---	4.0	\$172,800	---	NO	---
		Segment 2 of 2	12	180	88+40	90+20										
	CD4-E10	Segment 1 of 2	14	180	85+80	87+60	5	0	0	0	---	4.1	\$201,600	---	NO	---
		Segment 2 of 2	14	180	88+40	90+20										
	CD5-E10	Segment 1 of 2	16	180	85+80	87+60	5	0	0	0	---	4.2	\$230,400	---	NO	---
		Segment 2 of 2	16	180	88+40	90+20										
	CD6-E10	Segment 1 of 2	18	180	85+80	87+60	5	0	0	0	---	4.2	\$259,200	---	NO	---
		Segment 2 of 2	18	180	88+40	90+20										
	CD7-E10	Segment 1 of 2	20	180	85+80	87+60	5	0	0	0	---	4.3	\$288,000	---	NO	Most effective conceptual noise barrier design. Not recommended for further consideration or public input during the project's design phase since the minimum noise reduction design goal of 7 dB(A) for at least one impacted residence and reasonableness cost criteria are not met.
		Segment 2 of 2	20	180	88+40	90+20										
	CD8-E10	Segment 1 of 2	22	180	85+80	87+60	5	0	0	0	---	4.3	\$316,800	---	NO	---
		Segment 2 of 2	22	180	88+40	90+20										
2006 PD&E Study - Recommended Noise Barrier - Ibis Villas																
---	Segment 1 of 2	12	165	85+70	87+35	4	4	0	4	6.3	---	\$105,000	\$26,250	---	PD&E Study Recommended Noise Barrier.	
	Segment 2 of 2	12	185	88+45	90+30											

X:\P\Noise_Studies\Proposed\MGD_CorridorStudy\Re-eval\Noise Study Report Addendum\Design Phase April 2024\Tables\Tables 3.1.2-1&2_MGD_IBIS&Mateo_NoiseBarrierDesigns_Summary_3-2-2025.xlsx\Tab 3.1.3-1 E12 San Mateo

Table 3.1.3-1: San Mateo (Common Noise Environment E12) Noise Barrier Analysis Summary

Noise Sensitive Area (General Location)	Conceptual Barrier Design Number	Noise Barrier Segment	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)	Estimated Cost (\$40 per square foot)	Average Cost/Site Benefited	Conceptual Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of \$64,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal	Comments
Common Noise Environment E12 / San Mateo (North of Miami Gardens Drive between NW 87th Avenue and NW 82nd Avenue)	CD1-E12	Segment 1 of 3	8	120	97+00	98+20	5	0	0	0	---	---	\$134,400	---	NO	---
		Segment 2 of 3	8	140	98+60	100+00										
		Segment 3 of 3	8	160	100+40	102+00										
	CD2-E12	Segment 1 of 3	10	120	97+00	98+20	5	0	0	0	---	---	\$168,000	---	NO	---
		Segment 2 of 3	10	140	98+60	100+00										
		Segment 3 of 3	10	160	100+40	102+00										
	CD3-E12	Segment 1 of 3	12	120	97+00	98+20	5	1	2	3	5.6	6.2	\$201,600	\$67,200	NO	---
		Segment 2 of 3	12	140	98+60	100+00										
		Segment 3 of 3	12	160	100+40	102+00										
	CD4-E12	Segment 1 of 3	14	120	97+00	98+20	5	1	2	3	6.2	7.2	\$235,200	\$78,400	NO	Most effective conceptual noise barrier design. Not recommended for further consideration or public input during the project's design phase since the reasonableness cost criteria is not met.
		Segment 2 of 3	14	140	98+60	100+00										
		Segment 3 of 3	14	160	100+40	102+00										
	CD5-E12	Segment 1 of 3	16	120	97+00	98+20	5	1	2	3	6.8	8.1	\$268,800	\$89,600	NO	---
		Segment 2 of 3	16	140	98+60	100+00										
		Segment 3 of 3	16	160	100+40	102+00										
	CD6-E12	Segment 1 of 3	18	120	97+00	98+20	5	1	2	3	7.2	8.9	\$302,400	\$100,800	NO	---
		Segment 2 of 3	18	140	98+60	100+00										
		Segment 3 of 3	18	160	100+40	102+00										
	CD7-E12	Segment 1 of 3	20	120	97+00	98+20	5	2	2	4	7.4	9.5	\$336,000	\$84,000	NO	---
		Segment 2 of 3	20	140	98+60	100+00										
		Segment 3 of 3	20	160	100+40	102+00										
CD8-E12	Segment 1 of 3	22	120	97+00	98+20	5	2	2	4	7.7	9.9	\$369,600	\$92,400	NO	---	
	Segment 2 of 3	22	140	98+60	100+00											
	Segment 3 of 3	22	160	100+40	102+00											
2006 PD&E Study - Noise Barrier Not Recommended - San Mateo																
---	---	Segment 1 of 3	12	75	97+40	98+15	4	2	0	2	5.0	---	\$84,000	\$42,000	---	Noise Barrier Not Recommended at this Location in PD&E Study.
		Segment 2 of 3	12	140	98+55	99+95										
		Segment 3 of 3	12	65	100+40	101+05										

X:\P\Noise_Studies\Proposed\MGD_CorridorStudy\Re-eval\Noise Study Report Addendum\Design Phase April 2024\Tables\Tables 3.1.2-1&2_MGD_IBIS&Mateo_NoiseBarrierDesigns_Summary_3-2-2025.xlsx\Tab 3.1.3-1 E12 San Mateo

APPENDIX E

Referenced Pages from 2006 PD&E Noise Study Report

NOISE STUDY REPORT

SR 860/Miami Gardens Drive/NW 186th Street/NW 183rd Street

From: East of Interstate (I)-75

To: SR-823/NW 57th Avenue/Red Road

Miami-Dade County, Florida

Financial Management Number: 407736-3-22-01

Federal Aid Project Number: Not Assigned

Prepared For:

Florida Department of Transportation

District Six

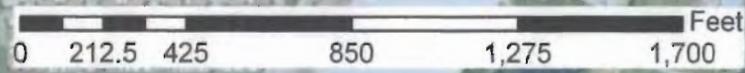
Miami-Dade , Florida

March 2006



N

- ◆ First-Row Model Receiver
- Second-Row Model Receiver
- Major Roads



**SR 860 / Miami Gardens Drive
Project Development & Environmental Study**

Measured & Modeled Noise Receiver Locations; Map 1 of 2

Figure 3A

Scale: As Shown
Drawn by; GMJ
Checked by: TO

MATCHLINE A

MATCHLINE A

MATCHLINE B

TABLE 3

MODELED NOISE RECEIVER DESCRIPTIONS

LOCATION	MODEL RECEIVER NUMBER	NUMBER OF NOISE SENSITIVE SITES	STATION	DISTANCE TO NEAREST TRAFFIC LANE* (Existing/No Build/ Alternative 3/ Alternative 4) (Feet)	LOCATION	MODEL RECEIVER NUMBER	NUMBER OF NOISE SENSITIVE SITES	STATION	DISTANCE TO NEAREST TRAFFIC LANE* (Existing/No Build/ Alternative 3/ Alternative 4) (Feet)
First Row					Second Row				
South Side									
Palm Springs North	PS-1	1	80+60	75/75/75/65	Palm Springs North	SPS-1	1	79+60	160/160/160/150
	PS-2	9	83+80	55/55/55/45		SPS-2	7	83+80	200/200/200/190
	PS-3	1	89+80	40/40/40/30		SPS-3	2	89+20	125/125/125/115
	PS-4	1	90+40	45/45/45/35		SPS-4	1	90+20	125/125/125/115
	PS-5	7	95+40	60/60/60/50		SPS-5	3	94+30	135/135/135/125
	PS-6	6	101+20	50/50/50/40		SPS-6	9	99+20	205/205/205/195
	PS-7	1	104+20	50/50/50/40		SPS-7	1	104+60	110/110/110/100
	PS-8	1	105+80	45/45/45/35		SPS-8	1	105+80	120/120/120/115
	PS-9	7	110+00	55/55/55/45		SPS-9	8	111+40	205/205/205/195
	PS-10	4	114+40	55/55/55/45		SPS-10	3	115+00	160/160/160/150
	PS-11	6	119+40	70/70/70/60		SPS-11	9	122+40	220/220/220/210
	PS-12	5	124+00	55/55/55/50		SPS-12	1	127+00	145/145/145/140
	PS-13	1	126+60	55/55/55/50					
Coral Gate	CG-1 (a,b,c,d,e)	3,3,3,3,3	155+40	60/60/60/55	Coral Gate	SCG-1 (a,b,c,d,e)	3,3,3,3,3	154+80	100/100/100/95
	CG-2 (a,b,c,d,e)	6,6,6,6,6	161+20	80/80/80/75		SCG-2 (a,b,c,d,e)	6,6,6,6,6	160+60	100/100/100/95
	CG-3 (a,b,c,d,e)	2,2,2,2,2	167+00	180/180/180/175		SCG-3 (a,b,c,d,e)	2,2,2,2,2	166+60	250/250/250/195
Gate House	GH-1 (a,b)	1,1	169+60	125/120/120/120	Gate House	SGH-1 (a,b)	1,1	168+60	150/150/150/145
Sunrise Presbyterian Church	SPC	N/A	172+00	185/185/185/180					
Country Club Towers	CCT-1 (a,b,c,d,e)	3,3,3,3,3	176+20	125/125/125/120	Country Club Towers	SCCT-1 (a,b,c,d,e)	10,10,10,10,10	178+00	225/225/225/220
	CCT-2 (a,b,c,d,e)	8,8,8,8,8	180+00	135/135/135/130		SCCT-2 (a,b,c,d,e)	2,2,2,2,2	183+60	185/185/185/180
	CCT-3 (a,b,c,d,e)	2,2,2,2,2	184+50	115/115/110/110					
Mediterranean Village	MV-1 (a,b)	2,2	206+60	40/40/35/35	Mediterranean Village	SMV-1 (a,b)	2,2	206+00	115/115/110/110
	MV-2 (a,b,c)	2,2,2	207+60	45/45/40/40		SMV-2 (a,b,c)	4,4,4	208+00	115/115/110/110
	MV-3 (a,b,c)	2,2,2	208+00	40/40/35/35					
The Moors	TM-1	2	211+60	50/50/50/50	The Moors	STM-1	1	211+00	140/140/135/135
	TM-2	7	214+20	55/55/50/50		STM-2	7	214+60	185/185/175/175
	TM-3	6	217+00	60/60/50/50		STM-3	2	217+40	135/135/125/125
	TM-4	1	220+00	60/60/50/50		STM-4	1	220+00	145/145/135/135

TABLE 3 (continued)
MODELED NOISE RECEIVER DESCRIPTIONS

LOCATION	MODEL RECEIVER NUMBER	NUMBER OF NOISE SENSITIVE SITES	STATION	DISTANCE TO NEAREST TRAFFIC LANE* (Existing/No Build/ Alternative 3/ Alternative 4) (Feet)	LOCATION	MODEL RECEIVER NUMBER	NUMBER OF NOISE SENSITIVE SITES	STATION	DISTANCE TO NEAREST TRAFFIC LANE* (Existing/No Build/ Alternative 3/ Alternative 4) (Feet)
First Row					Second Row				
North Side									
Ibis Villas	IV-1	1	86+00	50/50/50/45	Ibis Villas	SIV-1	1	86+00	90/90/90/85
	IV-2	1	87+00	50/50/50/45		SIV-2	1	87+00	90/90/90/85
	IV-3	1	88+80	40/40/40/35		SIV-3	1	88+80	90/90/90/85
	IV-4	1	90+00	40/40/40/35		SIV-4	1	90+00	80/80/80/75
Church of Mother Redemption Catholic Church	CMR	N/A	93+20	315/315/315/310					
San Mateo	SM-1	1	97+80	45/45/45/40	San Mateo	SSM-1	1	97+80	85/85/85/80
	SM-2	2	99+20	40/40/40/35		SSM-2	2	99+20	80/80/80/75
	SM-3	1	101+00	40/40/40/35		SSM-3	1	101+00	80/80/80/75
Church of Latter Day Saints	LDS	N/A	103+20	110/105					
Hunters Point	HP-1	3	106+40	25/25/25/20	Hunters Point	SHP-1	2	105+60	205/205/205/200
	HP-2	2	108+00	40/40/40/35		SHP-2	18	111+60	210/210/210/205
	HP-3	10	111+80	40/40/40/35		SHP-3	5	118+00	200/200/200/195
	HP-4	2	116+00	45/45/45/40					
	HP-5	2	117+60	40/40/40/35					
Esplanade	ESP-1	2	119+60	55/55/55/50	Esplanade	SESP-1	1	118+40	105/105/105/100
	ESP-2	1	121+60	75/75/75/70		SESP-2	1	121+60	125/125/125/120
	ESP-3	8	125+60	75/75/75/65		SESP-3	8	125+80	125/125/125/115
	ESP-4	1	131+20	55/55/55/50		SESP-4	1	131+20	105/105/105/100
Country Club of Miami Estates	CCME-1	3	133+70	45/45/45/40	Country Club of Miami Estates	SCCME-1	3	134+00	150/150/150/145
	CCME-2	2	138+00	35/35/35/30		SCCME-2	2	138+00	160/160/160/155
	CCME-3	2	141+40	185/185/185/180					
	CCME-4	3	144+00	75/75/75/70					
Las Brisas	LB-1 (a,b,c,d,e)	2,2,2,2,2	151+40	40/40/40/35	Las Brisas	SLB-1 (a,b,c,d,e)	2,2,2,2,2	151+40	80/80/80/75
	LB-2 (a,b,c,d,e)	6,6,6,6,6	160+60	45/45/45/40		SLB-2 (a,b,c,d,e)	6,6,6,6,6	160+60	85/85/85/80
	LB-3 (a,b,c,d,e)	2,2,2,2,2	165+00	45/45/45/40		SLB-3 (a,b,c,d,e)	2,2,2,2,2	165+00	85/85/85/80
	LB-4 (a,b,c,d,e)	2,2,2,2,2	167+20	45/45/45/40		SLB-4 (a,b,c,d,e)	2,2,2,2,2	167+20	85/85/85/80
Country Club of Miami	CCM-1 (a,b)	3,3	182+60	55/55/50/50	Country Club of Miami	SCCM-1 (a,b)	1,1	182+60	105/105/100/100
Country Village Park	CVP	N/A	204+40	130/130/125/125					
Joella C. Good Elementary School	JCGS	N/A	207+60	120/120/115/115					
Villa Esperanza	VE-1 (a,b,c,d)	6,6,6,6	212+00	65/65/65/65	Villa Esperanza	SVE-1 (a,b,c,d)	6,6,6,6	211+60	140/140/140/140
	VE-2 (a,b,c,d)	6,6,6,6	214+00	70/70/70/70		SVE-2 (a,b,c,d)	6,6,6,6	214+60	160/160/160/160
	VE-3 (a,b,c,d)	4,4,4,4	216+95	35/35/35/35		SVE-3 (a,b,c,d)	4,4,4,4	216+00	125/125/125/125
	VE-4 (a,b,c,d)	2,2,2,2	217+90	95/95/95/95		SVE-4 (a,b,c,d)	2,2,2,2	217+60	125/125/125/125

Notes: * = distances rounded to nearest five foot increment from the near edge-of-pavement. a = 1st floor receivers at multi-story complexes, b = 2nd floor receivers, c = 3rd floor receivers, d = 4th floor receivers, e = 5th floor receivers

**TABLE 4
PREDICTED NOISE LEVELS
SOUTH OF MIAMI GARDENS DRIVE**

Number of Dwellings	Range of Existing Noise Levels (dBA)	Design Year No Build Alternative			Design Year Build Alternative 3			Design Year Build Alternative 4			
		Range of Predicted Noise Levels (dBA)	Change from Existing Noise Levels (dBA)	Range of Predicted Noise Levels (dBA)	Change from Existing Noise Levels (dBA)	Change from No Build Noise Levels (dBA)	Number of Dwellings With Noise Levels > 66 dBA	Range of Predicted Noise Levels (dBA)	Change from Existing Noise Levels (dBA)	Change from No Build Noise Levels (dBA)	Number of Dwellings With Noise Levels > 66 dBA
Palm Springs North											
First Row											
50	63.2 - 66.5	64.5 - 69.0	0.3 - 2.5	64.5 - 69.0	0.3 - 2.5	0.0 - 0.1	30	67.0 - 70.3	3.2 - 4.2	1.3 - 3.2	50
Second Row											
46	55.0 - 62.7	55.9 - 65.0	-0.1 - 3.5	55.9 - 65.0	-0.1 - 3.5	0.0 - 0.0	0	58.2 - 65.9	1.0 - 4.4	0.9 - 3.2	0
Coral Gate Apartments											
First Row											
55	57.2 - 67.6	57.2 - 67.7	0.0 - 0.2	57.2 - 67.7	0.0 - 0.2	0.0 - 0.1	36	59.2 - 69.3	1.1 - 2.2	1.1 - 2.1	39
Second Row											
55	53.4 - 64.3	53.4 - 64.9	0.0 - 1.2	53.4 - 64.9	0.0 - 1.2	0.0 - 0.0	0	55.3 - 66.3	1.1 - 3.0	1.1 - 2.3	9
Gate House Townhomes											
First Row											
2	59.8 - 64.3	59.8 - 64.3	0.0 - 0.0	59.8 - 64.3	0.0 - 0.0	0.0 - 0.0	0	62.6 - 65.8	1.5 - 2.8	1.5 - 2.8	0
Second Row											
2	57.0 - 61.3	57.0 - 61.3	0.0 - 0.0	57.0 - 61.4	0.0 - 0.1	0.0 - 0.1	0	59.8 - 63.3	2.0 - 2.8	2.0 - 2.8	0
Sunrise Presbyterian Church											
First Row											
1	58.1 - 58.1	58.1 - 58.1	0.0 - 0.0	58.1 - 58.1	0.0 - 0.0	0.0 - 0.0	0	60.6 - 60.6	2.5 - 2.5	2.5 - 2.5	0
Country Club Towers											
First Row											
65	60.0 - 65.8	60.0 - 65.8	0.0 - 0.0	61.3 - 67.1	0.2 - 3.4	0.2 - 3.4	27	63.3 - 67.5	1.7 - 3.5	1.7 - 3.5	52
Second Row											
60	48.6 - 61.2	48.7 - 61.1	-0.1 - 0.1	48.6 - 62.6	-0.1 - 2.5	-0.1 - 2.5	0	49.8 - 62.9	0.9 - 2.9	0.9 - 2.9	0
Mediterranean Village											
First Row											
16	55.7 - 65.1	57.4 - 66.8	1.6 - 1.8	60.7 - 70.5	4.7 - 5.5	3.0 - 3.8	10	60.7 - 70.5	4.7 - 5.5	3.0 - 3.8	10
Second Row											
16	43.3 - 57.8	44.9 - 59.4	1.6 - 1.9	46.4 - 63.1	3.1 - 5.3	1.4 - 3.7	0	46.4 - 63.1	3.1 - 5.3	1.4 - 3.7	0
The Moors											
First Row											
16	55.4 - 56.9	57.2 - 58.5	1.6 - 1.8	59.8 - 60.7	3.5 - 4.7	1.9 - 3.0	0	59.8 - 60.7	3.5 - 4.7	1.9 - 3.0	0
Second Row											
11	49.7 - 52.0	51.7 - 53.9	1.9 - 2.0	53.8 - 55.0	3.0 - 4.4	1.1 - 2.5	0	53.8 - 55.0	3.0 - 4.4	1.1 - 2.5	0

**TABLE 5
PREDICTED NOISE LEVELS
NORTH OF MIAMI GARDENS DRIVE**

Number of Dwellings	Range of Existing Noise Levels (dBA)	Design Year No Build Alternative		Design Year Build Alternative 3			Design Year Build Alternative 4				
		Range of Predicted Noise Levels (dBA)	Change from Existing Noise Levels (dBA)	Range of Predicted Noise Levels (dBA)	Change from Existing Noise Levels (dBA)	Change from No Build Noise Levels (dBA)	Number of Dwellings With Noise Levels > 66 dBA	Range of Predicted Noise Levels (dBA)	Change from Existing Noise Levels (dBA)	Change from No Build Noise Levels (dBA)	Number of Dwellings With Noise Levels > 66 dBA
Ibis Villas											
First Row											
4	66.2 - 67.0	66.8 - 67.5	0.5 - 0.6	66.8 - 67.5	0.5 - 0.6	0.0 - 0.0	4	68.8 - 69.4	2.4 - 2.6	1.9 - 2.0	4
Second Row											
4	61.7 - 62.2	62.5 - 63.0	0.8 - 0.9	62.5 - 63.0	0.8 - 0.9	0.0 - 0.1	0	65.0 - 65.4	3.2 - 3.3	2.4 - 2.5	0
Church of Mother Redemption Catholic Church											
1	52.4 - 52.4	53.9 - 53.9	1.5 - 1.5	53.9 - 53.9	1.5 - 1.5	0.0 - 0.0	0	55.7 - 55.7	3.3 - 3.3	1.8 - 1.8	0
San Mateo Condominiums											
First Row											
4	64.0 - 66.1	64.7 - 66.7	0.6 - 0.7	64.7 - 66.7	0.6 - 0.7	0.0 - 0.0	1	66.1 - 68.2	2.1 - 2.3	1.4 - 1.7	4
Second Row											
4	60.8 - 61.8	61.7 - 62.7	0.9 - 0.9	61.7 - 62.7	0.9 - 0.9	0.0 - 0.0	0	63.4 - 64.7	2.6 - 2.9	1.7 - 2.0	0
Church of Latter Day Saints											
1	59.9 - 59.9	61.2 - 61.2	1.3 - 1.3	61.2 - 61.2	1.3 - 1.3	0.0 - 0.0	0	63.6 - 63.6	3.7 - 3.7	2.4 - 2.4	0
Hunters Point											
First Row											
19	61.4 - 62.8	62.0 - 63.4	0.4 - 0.6	62.0 - 63.4	0.4 - 0.6	0.0 - 0.0	0	63.3 - 64.7	1.7 - 2.0	1.2 - 1.6	0
Second Row											
25	53.2 - 55.3	54.0 - 57.7	0.6 - 2.4	54.0 - 57.7	0.6 - 2.4	0.0 - 0.0	0	55.1 - 58.4	1.9 - 3.1	0.7 - 1.6	0
Esplanade											
First Row											
12	63.2 - 66.4	63.5 - 66.6	0.2 - 0.3	63.5 - 66.6	0.2 - 0.3	0.0 - 0.0	1	66.8 - 69.6	2.9 - 3.6	2.6 - 3.3	12
Second Row											
11	57.3 - 61.6	57.7 - 61.8	0.2 - 0.4	57.7 - 61.8	0.2 - 0.4	0.0 - 0.0	0	59.7 - 64.3	2.2 - 3.6	2.0 - 3.4	0
Country Club of Miami Estates											
First Row											
10	57.5 - 68.6	57.5 - 68.6	0.0 - 0.2	57.5 - 68.6	0.0 - 0.2	0.0 - 0.0	5	60.4 - 71.1	2.5 - 3.1	2.5 - 2.9	8
Second Row											
5	57.3 - 59.2	57.5 - 59.5	0.2 - 0.3	57.5 - 59.5	0.2 - 0.3	0.0 - 0.0	0	60.5 - 61.6	2.4 - 3.2	2.1 - 3.0	0
Las Brisas Condominiums											
First Row											
60	66.3 - 68.6	66.3 - 68.6	0.0 - 0.1	66.3 - 68.6	0.0 - 0.1	0.0 - 0.1	60	69.1 - 70.4	1.7 - 2.8	1.7 - 2.8	60
Second Row											
60	59.8 - 64.3	59.8 - 64.3	0.0 - 0.1	59.8 - 64.3	0.0 - 0.1	0.0 - 0.1	0	62.8 - 65.9	1.5 - 3.0	1.5 - 3.0	0
Country Club Of Miami Condominiums											
First Row											
6	65.9 - 67.9	65.7 - 67.8	-0.2 - -0.1	68.3 - 69.5	1.6 - 2.4	1.7 - 2.6	6	68.6 - 69.7	1.8 - 2.7	1.9 - 2.9	6
Second Row											
2	57.7 - 61.6	57.5 - 61.5	-0.2 - -0.1	59.8 - 62.8	1.2 - 2.1	1.3 - 2.3	0	60.6 - 63.3	1.7 - 2.9	1.8 - 3.1	0
Park and School											
First Row											
1	00 - 59.7	57.5 - 58.0	2.2 - 2.3	62.4 - 62.9	7.1 - 7.2	4.9 - 4.9	0	62.4 - 62.9	7.1 - 7.2	4.9 - 4.9	0
Villa Esperanza Apartments											
First Row											
72	57.9 - 66.0	60.3 - 67.3	2.1 - 2.7	64.4 - 70.9	4.8 - 7.3	2.6 - 4.8	70	64.4 - 70.9	4.8 - 7.3	2.6 - 4.8	70
Second Row											
72	35.5 - 55.4	37.6 - 57.6	2.0 - 2.3	40.2 - 61.0	4.4 - 7.3	2.3 - 5.0	0	40.2 - 61.0	4.4 - 7.3	2.3 - 5.0	0



MATCHLINE A

MATCHLINE A

MATCHLINE B



**SR 860 / Miami Gardens Drive
Project Development and Environmental Study**

Noise Barriers Under Consideration: Map 1 of 2

Figure 4A

Scale: As Shown
 Drawn by: GMJ
 Checked by: TO

MATCHLINE C

MATCHLINE C



MATCHLINE C



**SR 860 / Miami Gardens Drive
Project Development & Environmental Study**

Noise Barriers Under Consideration: Map 2 of 2

Figure 4B

**Scale: As Shown
Drawn By: GMJ
Checked by: TO**

4.9.3.1 Palm Springs North

Noise abatement was considered along the south side of Miami Gardens Drive adjacent to the Palm Springs North single-family home community to mitigate noise impacts predicted to occur with Build Alternative 4. Traffic noise levels at 50 first-row single-family homes between NW 87th Avenue and the Peters Pike Canal are predicted to exceed the FDOT NAAC (66.0 dBA) with Build Alternative 4. Since there are no nearby roadway modifications proposed with Build Alternative 3, there are no new impacts associated with this alternative.

Access to this community is provided at NW 87th Avenue, NW 84th Court and NW 82nd Avenue. In order to maintain these access points, three noise barrier segments were evaluated along the southern right-of-way line between NW 87th Avenue and the Peters Pike Canal. The alignments considered for these noise barrier segments are shown in *Figure 4*. The limits of the noise barrier segments are as follows:

- Segment-1 - NW 87th Avenue to NW 84th Court, Station 79+20 to 89+40, 1,037 feet long;
- Segment-2 - NW 84th Court to NW 82nd Avenue, Station 90+00 to 104+70, 1,496 feet long; and,
- Segment-3 - NW 82nd Avenue to Peters Pike Canal, Station 105+70 to 127+25, 2,186 feet long.

These noise barrier segments would be located approximately 10 feet south of the edge-of-pavement of the nearest eastbound through-lane and approximately 20 to 50 feet from the nearby homes. Each noise barrier segment provides noise abatement for a distinct neighborhood between the access roads and as such, each noise barrier was evaluated individually for reasonableness and feasibility.

Table 6 provides design and performance details for Segment-1 of this noise barrier. The results of this evaluation indicate that a noise barrier at least 8 feet tall will provide a minimum insertion loss of at least 5.0 dBA at all 11 residences where impacts were identified along this segment of the project while meeting the \$35,000 cost guideline. The average insertion loss with this configuration is predicted to 7.0 dBA. A minimum height of 12 feet is recommended for this noise barrier in order to better meet the FDOT's design insertion loss goal of 10 dBA and to more completely block the line-of-sight between the nearby ground-level noise sensitive sites and the tops of trucks and truck exhausts. With a 12-foot tall noise barrier, the average insertion loss is predicted to be 10.4 dBA at the impacted sites. When factoring in the additional 9 residences that are not impacted but are benefitted by this noise barrier, the average insertion loss is predicted to be 8.4 dBA overall. Increasing the height to 22 feet does not benefit any additional sites identified as impacted and only increases the overall average insertion loss by 2.4 dBA. *Table 7* provides details of the reasonableness and feasibility analysis for this noise barrier segment. The twenty-one considerations shown in this table are found in Chapter 17 of the PD&E Manual.

TABLE 6
PALM SPRINGS NORTH NOISE BARRIER SEGMENT-1 SPECIFICATIONS
BUILD ALTERNATIVE 4

HEIGHT (Feet)	TOTAL LENGTH (Feet)	RANGE OF PREDICTED UNABATED NOISE LEVELS (dBA)	RANGE OF PREDICTED NOISE LEVELS WITH NOISE BARRIER (dBA)	RANGE OF PREDICTED INSERTION LOSSES (dBA)	AVERAGE PREDICTED INSERTION LOSS (dBA)	NUMBER OF BENEFITTED RECEIVERS			ESTIMATED COST	ESTIMATED COST PER BENEFITTED RECEIVER
						Receivers Predicted to be Impacted	Receivers Predicted to not be Impacted	Total		
8	1,037	67.3 - 70.3	61.1 - 62.0	5.7 - 8.3	7.0	11	0	11	\$207,400	\$18,855
9	1,037	67.3 - 70.3	59.9 - 61.1	6.2 - 9.8	8.1	11	0	11	\$233,325	\$21,211
10	1,037	67.3 - 70.3	58.5 - 60.3	7.0 - 10.6	9.1	11	0	11	\$259,250	\$23,568
11	1,037	67.3 - 70.3	57.7 - 59.4	7.9 - 11.3	9.9	11	0	11	\$285,175	\$25,925
12	1,037	58.4 - 70.3	52.9 - 59.0	5.0 - 11.9	8.4	11	9	20	\$311,100	\$15,555
13	1,037	58.4 - 70.3	52.5 - 58.7	5.3 - 12.3	8.7	11	9	20	\$337,025	\$16,851
14	1,037	58.4 - 70.3	52.2 - 58.5	5.5 - 12.8	9.1	11	9	20	\$362,950	\$18,148
15	1,037	58.4 - 70.3	51.9 - 58.2	5.7 - 13.2	9.4	11	9	20	\$388,875	\$19,444
16	1,037	58.4 - 70.3	51.7 - 58.1	5.9 - 13.6	9.7	11	9	20	\$414,800	\$20,740
17	1,037	58.4 - 70.3	51.5 - 57.9	6.0 - 13.9	10.1	11	9	20	\$440,725	\$22,036
18	1,037	58.4 - 70.3	51.3 - 57.8	6.1 - 14.1	10.1	11	9	20	\$466,650	\$23,333
19	1,037	58.4 - 70.3	51.2 - 57.6	6.2 - 14.3	10.3	11	9	20	\$492,575	\$24,629
20	1,037	58.4 - 70.3	51.1 - 57.5	6.3 - 14.6	10.5	11	9	20	\$518,500	\$25,925
21	1,037	58.4 - 70.3	51.2 - 57.4	6.4 - 14.9	10.6	11	9	20	\$544,425	\$27,221
22	1,037	58.4 - 70.3	51.2 - 57.3	6.5 - 15.2	10.8	11	9	20	\$570,350	\$28,518

Note: * = Noise levels presented for benefitted receiver sites only.

TABLE 7
PALM SPRINGS NORTH NOISE BARRIER SEGMENT-1
REASONABLENESS AND FEASIBILITY ANALYSIS
BUILD ALTERNATIVE 4

CRITERIA	COMMENTS
Relationship of Future Traffic Noise Levels to the Noise Abatement Criterion	Design year traffic noise levels are predicted to exceed the abatement criterion at 11 nearby residences.
Insertion Loss	Varies with height, minimum of 5 dBA predicted at all noise sensitive sites where noise levels are predicted to be at least 66.0 dBA for a height of at least 8 feet. Increasing the height to 22 feet does not benefit any additional sites and only increases the average insertion loss by 3.8 dBA.
Safety	Noise barrier to be located adjacent to right-of-way line, outside of the clear recovery zone.
Community Desires	Public involvement will be addressed during the PD&E and design phases.
Accessibility	Entranceway access maintained. No apparent conflicts.
Land Use Stability	Land use stable according to future land use projections by Miami-Dade County.
Land Use Controls	Local municipalities and Miami-Dade County do not have any known land use controls affecting development adjacent to this project corridor.
Views of Officials with Jurisdiction in the Area	Not known at this time. Coordination will occur during public involvement and design.
Noise Level Increase from Existing to Future Build Conditions	Up to 4.2 dBA
Noise Level Changes from Design Year No-build and Build Alternatives.	Up to 2.3 dBA
Antiquity	Homes in this neighborhood were built circa 1968.
Constructability	Noise barrier to be located along right-of-way line and should only require routine construction methods and techniques.
Maintainability	Sufficient right-of-way exists, no difficulties anticipated in maintaining the noise barrier.
Aesthetics	Coordination with nearby property owners regarding aesthetics will occur during design.
Right of Way Needs	Noise barrier to be constructed within available right-of-way.
Cost	Cost is less than FDOT guidelines for all noise barrier heights assessed.
Utilities	No apparent conflicts.
Drainage	No apparent conflicts.
Special Land Use Considerations	Not Applicable
Other Environmental Impacts	None
Additional Considerations	None

Table 8 provides design and performance details for Segment-2 of this noise barrier. The results of this evaluation indicate that a noise barrier at least 8 feet tall will provide a minimum insertion loss of at least 5.0 dBA at all 15 residences where impacts were identified along this segment of the project while meeting the \$35,000 cost guideline. The average insertion loss with this configuration is predicted to 7.0 dBA. A minimum height of 12 feet is recommended for this noise barrier in order to better meet the FDOT's design insertion loss goal of 10 dBA and to more completely block the line-of-sight between the nearby ground-level noise sensitive sites and the tops of trucks and truck exhausts. With a 12-foot tall noise barrier, the average insertion loss is predicted to be 10.3 dBA at the impacted sites. When factoring in the additional 13 residences that are not impacted but are benefitted by this noise barrier, the average insertion loss is predicted to be 8.5 dBA overall. Increasing the height to 22 feet does not benefit any additional sites identified as impacted and only increases the overall average insertion loss by 2.8 dBA. *Table 9* provides details of the reasonableness and feasibility analysis for this noise barrier segment.

Table 10 provides design and performance details for Segment-3 of this noise barrier. The results of this evaluation indicate that a noise barrier at least 8 feet tall will provide a minimum insertion loss of at least 5.0 dBA at all 24 residences along this segment of the project where impacts were identified while meeting the \$35,000 cost guideline. The average insertion loss with this configuration is predicted to 6.4 dBA. A minimum height of 12 feet is recommended for this noise barrier in order to better meet the FDOT's design insertion loss goal of 10 dBA and to more completely block the line-of-sight between the nearby ground-level noise sensitive sites and the tops of trucks and truck exhausts. With a 12-foot tall noise barrier, the average insertion loss is predicted to be 9.4 dBA at the impacted sites. When factoring in the additional 20 residences that are not impacted but are benefitted by this noise barrier, the average insertion loss is predicted to be 8.4 dBA overall. Increasing the height to 22 feet does not benefit any additional sites identified as impacted and only increases the overall average insertion loss by 2.6 dBA. *Table 11* provides details of the reasonableness and feasibility analysis for this noise barrier segment.

Based on the results of this PD&E phase traffic noise analysis, it appears that all three noise barrier segments evaluated for the Palm Springs North neighborhood could provide a noise level reduction of at least 5.0 dBA within the \$35,000 cost guideline and therefore will be further evaluated during the design phase of this project.

**TABLE 8
PALM SPRINGS NORTH NOISE BARRIER SEGMENT-2 SPECIFICATIONS
BUILD ALTERNATIVE 4**

HEIGHT (Feet)	TOTAL LENGTH (Feet)	RANGE OF PREDICTED UNABATED NOISE LEVELS (dBA)	RANGE OF PREDICTED NOISE LEVELS WITH NOISE BARRIER (dBA)	RANGE OF PREDICTED INSERTION LOSSES (dBA)	AVERAGE PREDICTED INSERTION LOSS (dBA)	NUMBER OF BENEFITTED RECEIVERS			ESTIMATED COST	ESTIMATED COST PER BENEFITTED RECEIVER
						Receivers Predicted to be Impacted	Receivers Predicted to not be Impacted	Total		
8	1,496	68.7 - 69.8	61.3 - 62.8	6.2 - 7.4	7.0	15	0	15	\$299,200	\$19,947
9	1,496	68.7 - 69.8	60.2 - 62.2	6.8 - 8.5	7.9	15	0	15	\$336,600	\$22,440
10	1,496	68.7 - 69.8	58.6 - 61.2	7.8 - 10.1	9.2	15	0	15	\$374,000	\$24,933
11	1,496	60.0 - 69.8	54.6 - 60.8	5.4 - 10.8	8.9	15	3	18	\$411,400	\$22,856
12	1,496	58.2 - 69.8	52.0 - 60.5	5.2 - 11.5	8.5	15	13	28	\$448,800	\$16,029
13	1,496	58.2 - 69.8	51.4 - 60.2	5.5 - 12.0	9.0	15	13	28	\$486,200	\$17,364
14	1,496	58.2 - 69.8	51.0 - 60.0	5.7 - 12.6	9.3	15	13	28	\$523,600	\$18,700
15	1,496	58.2 - 69.8	50.7 - 59.8	5.9 - 13.1	9.7	15	13	28	\$561,000	\$20,036
16	1,496	58.2 - 69.8	50.3 - 59.7	6.1 - 13.5	10.0	15	13	28	\$598,400	\$21,371
17	1,496	58.2 - 69.8	50.0 - 59.5	6.2 - 14.0	10.3	15	13	28	\$635,800	\$22,707
18	1,496	58.2 - 69.8	49.7 - 59.4	6.3 - 14.4	10.5	15	13	28	\$673,200	\$24,043
19	1,496	58.2 - 69.8	49.5 - 59.3	6.5 - 14.8	10.8	15	13	28	\$710,600	\$25,379
20	1,496	58.2 - 69.8	50.1 - 59.2	6.6 - 15.2	10.9	15	13	28	\$748,000	\$26,714
21	1,496	58.2 - 69.8	49.8 - 59.1	6.7 - 15.6	11.1	15	13	28	\$785,400	\$28,050
22	1,496	58.2 - 69.8	49.6 - 59.0	6.8 - 15.9	11.3	15	13	28	\$822,800	\$29,386

Note: * = Noise levels presented for benefitted receiver sites only.

**TABLE 9
PALM SPRINGS NORTH NOISE BARRIER SEGMENT-2
REASONABLENESS AND FEASIBILITY ANALYSIS
BUILD ALTERNATIVE 4**

CRITERIA	COMMENTS
Relationship of Future Traffic Noise Levels to the Noise Abatement Criterion	Design year traffic noise levels are predicted to exceed the abatement criterion at 15 nearby residences.
Insertion Loss	Varies with height, minimum of 5 dBA predicted at all noise sensitive sites where noise levels are predicted to be at least 66.0 dBA for a height of at least 8 feet. Increasing the height to 22 feet does not benefit any additional sites and only increases the average insertion loss by 4.3 dBA.
Safety	Noise barrier to be located adjacent to right-of-way line, outside of the clear recovery zone.
Community Desires	Public involvement will be addressed during the PD&E and design phases.
Accessibility	Entranceway access maintained. No apparent conflicts.
Land Use Stability	Land use stable according to future land use projections by Miami-Dade County.
Land Use Controls	Local municipalities and Miami-Dade County do not have any known land use controls affecting development adjacent to this project corridor.
Views of Officials with Jurisdiction in the Area	Not known at this time. Coordination will occur during public involvement and design.
Noise Level Increase from Existing to Future Build Conditions	Up to 4.2 dBA
Noise Level Changes from Design Year No-build and Build Alternatives.	Up to 1.8 dBA
Antiquity	Homes in this neighborhood were built circa 1968.
Constructability	Noise barrier to be located along right-of-way line and should only require routine construction methods and techniques.
Maintainability	Sufficient right-of-way exists, no difficulties anticipated in maintaining the noise barrier.
Aesthetics	Coordination with nearby property owners regarding aesthetics will occur during design.
Right of Way Needs	Noise barrier to be constructed within available right-of-way.
Cost	Cost is less than FDOT guidelines for all noise barrier heights assessed.
Utilities	No apparent conflicts.
Drainage	No apparent conflicts.
Special Land Use Considerations	Not Applicable
Other Environmental Impacts	None
Additional Considerations	None

**TABLE 10
PALM SPRINGS NORTH NOISE BARRIER SEGMENT-3 SPECIFICATIONS
BUILD ALTERNATIVE 4**

HEIGHT (Feet)	TOTAL LENGTH (Feet)	RANGE OF PREDICTED UNABATED NOISE LEVELS (dBA)	RANGE OF PREDICTED NOISE LEVELS WITH NOISE BARRIER (dBA)	RANGE OF PREDICTED INSERTION LOSSES (dBA)	AVERAGE PREDICTED INSERTION LOSS (dBA)	NUMBER OF BENEFITTED RECEIVERS			ESTIMATED COST	ESTIMATED COST PER BENEFITTED RECEIVER
						Receivers Predicted to be Impacted	Receivers Predicted to not be Impacted	Total		
8	2,186	67.0 - 69.7	60.4 - 64.3	5.1 - 7.1	6.4	24	0	24	\$437,200	\$18,217
9	2,186	67.0 - 69.7	59.7 - 63.8	5.7 - 8.4	7.2	24	0	24	\$491,850	\$20,494
10	2,186	67.0 - 69.7	58.0 - 63.3	6.3 - 9.8	8.4	24	0	24	\$546,500	\$22,771
11	2,186	58.2 - 69.7	52.7 - 63.0	5.5 - 10.6	8.2	24	12	36	\$601,150	\$16,699
12	2,186	58.2 - 69.7	51.8 - 62.9	6.0 - 11.2	8.4	24	20	44	\$655,800	\$14,905
13	2,186	58.2 - 69.7	51.4 - 62.7	6.3 - 11.6	8.8	24	20	44	\$710,450	\$16,147
14	2,186	58.2 - 69.7	51.0 - 62.6	6.7 - 12.2	9.2	24	20	44	\$765,100	\$17,389
15	2,186	58.2 - 69.7	50.6 - 62.5	7.0 - 12.6	9.5	24	20	44	\$819,750	\$18,631
16	2,186	58.2 - 69.7	50.3 - 62.4	7.2 - 13.1	9.8	24	20	44	\$874,400	\$19,873
17	2,186	58.2 - 69.7	50.0 - 62.3	7.3 - 13.5	10.1	24	20	44	\$929,050	\$21,115
18	2,186	58.2 - 69.7	49.7 - 62.2	7.3 - 13.9	10.3	24	20	44	\$983,700	\$22,357
19	2,186	58.2 - 69.7	49.7 - 62.2	7.3 - 13.9	10.3	24	20	44	\$1,038,350	\$23,599
20	2,186	58.2 - 69.7	49.5 - 62.1	7.5 - 14.7	10.7	24	20	44	\$1,093,000	\$24,841
21	2,186	58.2 - 69.7	49.7 - 62.1	7.5 - 15.0	10.8	24	20	44	\$1,147,650	\$26,083
22	2,186	58.2 - 69.7	49.5 - 62.0	7.6 - 15.4	11.0	24	20	44	\$1,202,300	\$27,325

Note: * = Noise levels presented for benefitted receiver sites only.

**TABLE 11
PALM SPRINGS NORTH NOISE BARRIER SEGMENT-3
REASONABLENESS AND FEASIBILITY ANALYSIS
BUILD ALTERNATIVE 4**

CRITERIA	COMMENTS
Relationship of Future Traffic Noise Levels to the Noise Abatement Criterion	Design year traffic noise levels are predicted to exceed the abatement criterion at 24 nearby residences.
Insertion Loss	Varies with height, minimum of 5 dBA predicted at all noise sensitive sites where noise levels are predicted to be at least 66.0 dBA for a height of at least 8 feet. Increasing the height to 22 feet does not benefit any additional sites and only increases the average insertion loss by 4.6 dBA.
Safety	Noise barrier to be located adjacent to right-of-way line, outside of the clear recovery zone.
Community Desires	Public involvement will be addressed during the PD&E and design phases.
Accessibility	Entranceway access maintained. No apparent conflicts.
Land Use Stability	Land use stable according to future land use projections by Miami-Dade County.
Land Use Controls	Local municipalities and Miami-Dade County do not have any known land use controls affecting development adjacent to this project corridor.
Views of Officials with Jurisdiction in the Area	Not known at this time. Coordination will occur during public involvement and design.
Noise Level Increase from Existing to Future Build Conditions	Up to 3.5 dBA
Noise Level Changes from Design Year No-build and Build Alternatives.	Up to 3.2 dBA
Antiquity	Homes in this neighborhood were built circa 1968.
Constructability	Noise barrier to be located along right-of-way line and should only require routine construction methods and techniques.
Maintainability	Sufficient right-of-way exists, no difficulties anticipated in maintaining the noise barrier.
Aesthetics	Coordination with nearby property owners regarding aesthetics will occur during design.
Right of Way Needs	Noise barrier to be constructed within available right-of-way.
Cost	Cost is less than FDOT guidelines for all noise barrier heights assessed.
Utilities	No apparent conflicts.
Drainage	No apparent conflicts.
Special Land Use Considerations	Not Applicable
Other Environmental Impacts	None
Additional Considerations	None

4.9.3.5 Ibis Villas

Noise abatement was considered along the north side of Miami Gardens Drive adjacent to the Ibis Villas townhomes to mitigate noise impacts predicted to occur with Build Alternative 4. Traffic noise levels at 4 first-row townhomes are predicted to exceed the FDOT NAAC Build Alternative 4. No new noise impacts were identified with Build Alternative 3. Access to this community is provided via an entrance road along Miami Gardens Drive. In order to maintain access to these townhomes, two noise barrier segments were evaluated along the northern right-of-way line. The alignment considered for this noise barrier is shown in *Figure 4*. The limits of the noise barrier segments are as follows:

- Segment-1 - Station 85+70 to 87+35, 165 feet long; and,
- Segment-2 - Station 88+45 to 90+30, 185 feet long.

These noise barrier segments would be located approximately 10 feet north of the edge-of-pavement of the nearest westbound through-lane and approximately 20 feet from the nearby townhomes. Since these noise barrier segments protect a single townhome complex, they were evaluated for reasonableness and feasibility collectively as a system.

Table 20 provides design and performance details for this noise barrier. The results of this evaluation indicate that a noise barrier at least 8 feet tall will provide a minimum insertion loss of at least 5.0 dBA at all 4 of the townhomes where impacts were identified along this segment of the project while meeting the \$35,000 cost guideline. The average insertion loss with this configuration is predicted to 5.1 dBA. A minimum height of 12 feet is recommended for this noise barrier in order to better meet the FDOT's design insertion loss goal of 10 dBA and to more completely block the line-of-sight between the nearby ground-level noise sensitive sites and the tops of trucks and truck exhausts. With a 12-foot tall noise barrier, the average insertion loss is predicted to be 6.3 dBA at the impacted sites. Increasing the height to 22 feet does not benefit any additional sites identified as impacted and only increases the overall average insertion loss by 0.2 dBA. *Table 21* provides details of the reasonableness and feasibility analysis for this noise barrier.

Based on the results of this PD&E phase traffic noise analysis, it appears that the noise barrier evaluated for the Ibis Villas townhomes could provide a noise level reduction of at least 5.0 dBA within the \$35,000 cost guideline and therefore will be further evaluated during the design phase of this project.

TABLE 20
IBIS VILLAS NOISE BARRIER SPECIFICATIONS
BUILD ALTERNATIVE 4

HEIGHT (Feet)	TOTAL LENGTH (Feet)	RANGE OF PREDICTED UNABATED NOISE LEVELS (dBA)	RANGE OF PREDICTED NOISE LEVELS WITH NOISE BARRIER (dBA)	RANGE OF PREDICTED INSERTION LOSSES (dBA)	AVERAGE PREDICTED INSERTION LOSS (dBA)	NUMBER OF BENEFITTED RECEIVERS			ESTIMATED COST	ESTIMATED COST PER BENEFITTED RECEIVER
						Receivers Predicted to be Impacted	Receivers Predicted to not be Impacted	Total		
8	350	68.8 - 69.4	63.2 - 64.4	4.6 - 6.2	5.1	4	0	4	\$70,000	\$17,500
9	350	68.8 - 69.4	62.4 - 64.0	5.0 - 7.0	5.6	4	0	4	\$78,750	\$19,688
10	350	68.8 - 69.4	62.0 - 63.8	5.4 - 7.4	6.0	4	0	4	\$87,500	\$21,875
11	350	68.8 - 69.4	61.8 - 63.6	5.5 - 7.6	6.1	4	0	4	\$96,250	\$24,063
13	350	68.8 - 69.4	61.4 - 63.4	5.7 - 8.0	6.4	4	0	4	\$113,750	\$28,438
14	350	68.8 - 69.4	61.2 - 63.3	5.8 - 8.2	6.5	4	0	4	\$122,500	\$30,625
15	350	68.8 - 69.4	61.1 - 63.2	5.9 - 8.3	6.6	4	0	4	\$131,250	\$32,813
16	350	68.8 - 69.4	61.0 - 63.2	6.0 - 8.4	6.7	4	0	4	\$140,000	\$35,000
17	350	68.8 - 69.4	60.9 - 63.1	6.0 - 8.5	6.7	4	0	4	\$148,750	\$37,188
18	350	68.8 - 69.4	60.8 - 63.1	6.1 - 8.6	6.8	4	0	4	\$157,500	\$39,375
19	350	65.4 - 69.4	60.4 - 63.0	5.0 - 8.7	6.5	4	1	5	\$166,250	\$33,250
20	350	65.4 - 69.4	60.4 - 63.0	5.0 - 8.7	6.5	4	1	5	\$175,000	\$35,000
21	350	65.4 - 69.4	60.4 - 63.0	5.0 - 8.8	6.5	4	1	5	\$183,750	\$36,750
22	350	65.4 - 69.4	60.3 - 63.0	5.1 - 8.8	6.5	4	1	5	\$192,500	\$38,500

Note: * = Noise levels presented for benefitted receiver sites only.

TABLE 21
IBIS VILLAS NOISE BARRIER
REASONABLENESS AND FEASIBILITY ANALYSIS
BUILD ALTERNATIVE 4

CRITERIA	COMMENTS
Relationship of Future Traffic Noise Levels to the Noise Abatement Criterion	Design year traffic noise levels are predicted to exceed the abatement criterion at 4 nearby residences.
Insertion Loss	Varies with height, minimum of 5 dBA predicted at all noise sensitive sites where noise levels are predicted to be at least 66.0 dBA for a height of at least 8 feet. Increasing the height to 22 feet does not benefit any additional sites and only increases the average insertion loss by 1.4 dBA.
Safety	Noise barrier to be located adjacent to right-of-way line, outside of the clear recovery zone.
Community Desires	Public involvement will be addressed during the PD&E and design phases.
Accessibility	Entranceway access maintained. No apparent conflicts.
Land Use Stability	Land use stable according to future land use projections by Miami-Dade County.
Land Use Controls	Local municipalities and Miami-Dade County do not have any known land use controls affecting development adjacent to this project corridor.
Views of Officials with Jurisdiction in the Area	Not known at this time. Coordination will occur during public involvement and design.
Noise Level Increase from Existing to Future Build Conditions	Up to 3.3 dBA
Noise Level Changes from Design Year No-build and Build Alternatives.	Up to 2.5 dBA
Antiquity	These townhomes were built circa 2000.
Constructability	Noise barrier to be located along right-of-way line and should only require routine construction methods and techniques.
Maintainability	Sufficient right-of-way exists, no difficulties anticipated in maintaining the noise barrier.
Aesthetics	Coordination with nearby property owners regarding aesthetics will occur during design.
Right of Way Needs	Noise barrier to be constructed within available right-of-way.
Cost	Cost is less than FDOT guidelines for all noise barrier heights up to 16 feet.
Utilities	No apparent conflicts.
Drainage	No apparent conflicts.
Special Land Use Considerations	Not Applicable
Other Environmental Impacts	None
Additional Considerations	None

4.9.3.6 San Mateo

Noise abatement was considered along the north side of Miami Gardens Drive adjacent to the San Mateo condominiums to mitigate noise impacts predicted to occur with Build Alternative 4. Traffic noise levels at 4 first-row condominiums are predicted to exceed the FDOT NAAC Build Alternative 4. No new noise impacts were identified with Build Alternative 3. Access to this community is provided via two entrance roads along Miami Gardens Drive. In order to maintain access to these condominiums, three noise barrier segments were evaluated along the northern right-of-way line. The alignment considered for this noise barrier is shown in *Figure 4*. The limits of the noise barrier segments are as follows:

- Segment-1 - Station 97+40 to 98+15, 75 feet long;
- Segment-2 - Station 98+55 to 99+95, 140 feet long; and,
- Segment-3 - Station 100+40 to 101+05, 65 feet long.

These noise barrier segments would be located approximately 10 feet north of the edge-of-pavement of the nearest westbound through-lane and approximately 20 feet from the nearby condominiums. Since these noise barrier segments protect a single condominium complex, they were evaluated for reasonableness and feasibility collectively as a system.

Table 22 provides design and performance details for this noise barrier. The results of this evaluation indicate that it would only be possible to provide insertion losses of at least 5 dBA at two of the impacted condominiums due to the openings required in the noise barrier to maintain access to this community. Thus, the noise barrier considered for the San Mateo townhomes would exceed the \$35,000 cost guideline by at least \$7,000 per home. *Table 23* provides details of the reasonableness and feasibility analysis for this noise barrier.

Based on the results of this PD&E phase traffic noise analysis, it appears that the noise barrier evaluated for the San Mateo condominiums can not be constructed within the \$35,000 cost guideline and therefore will not be further evaluated during the design phase of this project.

**TABLE 22
SAN MATEO NOISE BARRIER SPECIFICATIONS
BUILD ALTERNATIVE 4**

HEIGHT (Feet)	TOTAL LENGTH (Feet)	RANGE OF PREDICTED UNABATED NOISE LEVELS (dBA)	RANGE OF PREDICTED NOISE LEVELS WITH NOISE BARRIER (dBA)	RANGE OF PREDICTED INSERTION LOSSES (dBA)	AVERAGE PREDICTED INSERTION LOSS (dBA)	NUMBER OF BENEFITTED RECEIVERS			ESTIMATED COST	ESTIMATED COST PER BENEFITTED RECEIVER
						Receivers Predicted to be Impacted	Receivers Predicted to not be Impacted	Total		
8	280	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0	0	0	0	\$56,000	N/A
9	280	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0	0	0	0	\$63,000	N/A
10	280	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0	0	0	0	\$70,000	N/A
11	280	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0	0	0	0	\$77,000	N/A
12	280	66.1 - 66.1	61.1 - 61.1	5.0 - 5.0	5.0	2	0	2	\$84,000	\$42,000
13	280	66.1 - 66.1	60.9 - 60.9	5.2 - 5.2	5.2	2	0	2	\$91,000	\$45,500
14	280	66.1 - 66.1	60.7 - 60.7	5.4 - 5.4	5.4	2	0	2	\$98,000	\$49,000
15	280	66.1 - 66.1	60.5 - 60.5	5.6 - 5.6	5.6	2	0	2	\$105,000	\$52,500
16	280	66.1 - 66.1	60.3 - 60.3	5.8 - 5.8	5.8	2	0	2	\$112,000	\$56,000
17	280	66.1 - 66.1	60.2 - 60.2	5.9 - 5.9	5.9	2	0	2	\$119,000	\$59,500
18	280	66.1 - 66.1	60.1 - 60.1	6.0 - 6.0	6.0	2	0	2	\$126,000	\$63,000
19	280	66.1 - 66.1	60.1 - 60.1	6.0 - 6.0	6.0	2	0	2	\$133,000	\$66,500
20	280	66.1 - 66.1	60.0 - 60.0	6.1 - 6.1	6.1	2	0	2	\$140,000	\$70,000
21	280	66.1 - 66.1	59.9 - 59.9	6.2 - 6.2	6.2	2	0	2	\$147,000	\$73,500
22	280	66.1 - 66.1	59.9 - 59.9	6.2 - 6.2	6.2	2	0	2	\$154,000	\$77,000

Note: * = Noise levels presented for benefitted receiver sites only.

**TABLE 23
SAN MATEO NOISE BARRIER
REASONABLENESS AND FEASIBILITY ANALYSIS
BUILD ALTERNATIVE 4**

CRITERIA	COMMENTS
Relationship of Future Traffic Noise Levels to the Noise Abatement Criterion	Design year traffic noise levels are predicted to exceed the abatement criterion at 4 nearby residences.
Insertion Loss	Varies with height, minimum of 5 dBA predicted at 2 noise sensitive sites where noise levels are predicted to be at least 66.0 dBA for a height of at least 12 feet. Increasing the height to 22 feet does not benefit any additional sites and only increases the average insertion loss by 1.2 dBA.
Safety	Noise barrier to be located adjacent to right-of-way line, outside of the clear recovery zone.
Community Desires	Public involvement will be addressed during the PD&E and design phases.
Accessibility	Entranceway access maintained. No apparent conflicts.
Land Use Stability	Land use stable according to future land use projections by Miami-Dade County.
Land Use Controls	Local municipalities and Miami-Dade County do not have any known land use controls affecting development adjacent to this project corridor.
Views of Officials with Jurisdiction in the Area	Not known at this time. Coordination will occur during public involvement and design..
Noise Level Increase from Existing to Future Build Conditions	Up to 2.9 dBA
Noise Level Changes from Design Year No-build and Build Alternatives.	Up to 2.0 dBA
Antiquity	These condominiums were built circa 1995.
Constructability	Noise barrier to be located along right-of-way line and should only require routine construction methods and techniques.
Maintainability	Sufficient right-of-way exists, no difficulties anticipated in maintaining the noise barrier.
Aesthetics	Coordination with nearby property owners regarding aesthetics will occur during design.
Right of Way Needs	Noise barrier to be constructed within available right-of-way.
Cost	Cost is greater than FDOT guidelines for all noise barrier heights assessed.
Utilities	No apparent conflicts.
Drainage	No apparent conflicts.
Special Land Use Considerations	Not Applicable
Other Environmental Impacts	None
Additional Considerations	None

4.9.4 Acquisition of Property Rights (either in fee or lesser interest) for Construction of Noise Barriers by Donation, by Purchase or by Condemnation

Sufficient right-of-way exists for potential construction of the noise barrier designs presented in this report. Therefore, acquisition of property rights for the construction of noise barriers is not necessary.

4.9.5 Acquisition (by purchase or by condemnation) of Right-of-way for Landscaping Adjacent to Noise Barriers and for Buffer Zones

Sufficient right-of-way exists for potential construction of the noise barrier designs presented in this report. Therefore, acquisition of property rights adjacent to noise barriers for landscaping or for buffer zones is not necessary.

4.9.6 Acquisition of the Balance of a Noise-sensitive Property from Which There Is a Taking, If Acquisition Is less Expensive and Disruptive than the Methods Shown Above

This noise abatement alternative is not applicable since partial acquisition of noise sensitive property is not proposed with this project.

5.0 SUMMARY

In summary, traffic noise levels were predicted for noise sensitive locations along the project corridor for the existing conditions and the design year (2028) No-Build and two build alternatives (Build Alternatives 3 and 4). Traffic noise impacts associated with construction of the project are predicted to occur by the project's design year.

Approximately 250 noise sensitive sites with Build Alternative 3 are predicted to experience traffic noise levels equal to, or exceeding, the FDOT NAAC for LUAC B (66.0 dBA). However, of these sites, only 113 are located near capacity improvements proposed with Build Alternative 3. The remaining sites are adjacent to sections of the corridor where improvements affecting noise levels are not planned with Build Alternative 3 and higher noise levels are expected to occur regardless of project construction. With Build Alternative 4, approximately 324 sites are predicted to experience traffic noise levels equal to, or exceeding, the 66.0 dBA. No other potentially noise sensitive sites, including outdoor areas at the park, school or any of the nearby religious facilities along the project corridor are predicted to experience traffic noise levels equal to, or exceeding the

FDOT NAAC, or experience noise levels at least 15.0 dBA greater than existing noise levels with the build alternatives.

Given the predicted noise impacts, roadway improvements proposed with this project were determined to affect traffic noise levels at nearby noise sensitive land use in several of the nearby neighborhoods and apartment/condominium/townhome complexes. In accordance with FHWA requirements, noise abatement was considered for all noise sensitive locations where design year traffic noise levels were predicted to equal or exceed the FDOT NAAC for residential land use, or where they were predicted to be at least 15.0 dBA greater than existing levels. Following analysis of predicted traffic noise levels, abatement alternatives, available right-of-way, safety criteria, constructability and maintenance issues associated with providing noise abatement along this project corridor, noise barriers were determined to be the most reasonable and feasible abatement alternative to reduce noise levels at all of these communities. Generally, the design goal was to provide a noise level reduction of 10 dBA at most of the nearby noise sensitive sites. At locations where this was not possible, a minimum acceptable noise level reduction of 5 dBA was used in adherence to FDOT criteria. The FDOT's current cost estimate for constructing noise barriers is \$25.00 per square foot, which is generally applicable to the noise barrier evaluated with this project since it will be located at-grade and sufficient right-of-way exists. The FDOT's cost guideline of \$35,000 per benefitted receiver site was also used to evaluate the noise barrier designs.

Based on the results of this PD&E phase traffic noise analysis, it appears that noise barriers could provide a minimum 5.0 dBA of noise reduction at 123 noise sensitive sites (48 of which are predicted to be impacted) with Build Alternative 3 for a cost of less than the FDOT cost guideline (\$35,000). With Build Alternative 4, 331 sites (135 of which are predicted to be impacted) can be benefitted for less than \$35,000 per site. A summary of the noise barriers proposed for further evaluation is presented in *Table 34*. The proposed noise barrier alignments are shown in *Figure 4*. These noise barriers will be further evaluated during the design phase of this project where specific dimensions and locations will be determined. During the design phase, the FDOT will also continue to coordinate with the owners of properties located adjacent to the noise barriers recommended in this PD&E analysis in order to evaluate their opinions regarding construction of noise barriers near their property. This coordination will include the following important components:

- Notifying the adjacent property owners of the noise barrier locations and heights selected for construction;

**TABLE 34
SUMMARY OF RECOMMENDED NOISE BARRIERS**

LOCATION	BUILD ALTERNATIVE	LIMITS (Station)		TOTAL LENGTH (Feet)	HEIGHT RECOMMENDED TO BENEFIT MAXIMUM NUMBER OF IMPACTED SITES (Feet)	NUMBER OF SITES PREDICTED TO EXPERIENCE A NOISE LEVEL REDUCTION OF AT LEAST 5 dBA				AVERAGE PREDICTED NOISE LEVEL REDUCTION (dBA)	ESTIMATED COST	ESTIMATED COST PER BENEFITTED SITE	
		Begin	End			Number of Impacted Receivers That Will be Benefitted ²	Percent of Total Impacted ³	Number of Receivers That Are Not Predicted to be Impacted That Will be Benefitted ⁴	Total Number of Receivers that will be Benefitted ⁵				
Palm Springs North	Seg.-1	4	79+20	89+40	1,037	12	11	100%	9	20	8.4	\$311,100	\$15,555
	Seg.-2	4	90+00	104+70	1,496	12	15	100%	13	28	8.5	\$448,800	\$16,029
	Seg.-3	4	105+70	127+25	2,186	12	24	100%	20	44	8.4	\$655,800	\$14,905
Coral Gate	4		154+90	159+50	460	19	15	31%	22	37	7.3	\$636,500	\$17,203
			159+85	165+65	580								
			166+20	169+20	300								
Country Club Towers	3		174+90	184+60	942	21	27	100%	32	59	8.8	\$494,550	\$8,382
	4		174+90	184+60	942	21	38	73%	21	59	8.8	\$494,550	\$8,382
Mediterranean Village	3 & 4		205+90	207+10	138	21	10	100%	6	16	7.2	\$217,875	\$13,617
	3 & 4		208+05	209+95	277								
Ibis Villas	4		85+70	87+35	165	12	4	100%	0	4	6.3	\$105,000	\$26,250
			88+45	90+30	185								
Esplanade	4		118+40	120+20	180	12	11	92%	8	19	7.3	\$360,000	\$18,947
			121+40	131+60	1,020								
Las Brisas	4		155+40	167+10	1,170	19	30	50%	26	56	11.8	\$555,750	\$9,924
Country Club of Miami Condominiums	3		180+60	184+70	410	12	6	100%	2	8	6.5	\$123,000	\$15,375
	4		180+40	184+70	430	12	6	100%	2	8	6.5	\$129,000	\$16,125
Villa Esperanza	3 & 4		210+60	219+05	857	22	32	46%	8	40	8.6	\$471,350	\$11,784
Summary	Build Alternative 3				2,624	12 -22	75	66%	48	123	6.5 -8.8	\$1,306,775	\$8,382- \$15,375
	Build Alternative 4				11,423	12 -22	196	63%	135	331	6.3 -11.8	\$4,385,725	\$8,382- \$26,250

Notes: 1 - Benefitted receivers are those that are predicted to experience noise level reductions of at least 5 decibels.
2 - Impacted and Benefitted refers to the number of impacted receivers (receivers predicted to experience noise levels greater than 66.0 dBA) that are predicted to be benefitted with this noise barrier.
3 - Percent of Total Impacted refers to the percentage of the total impacted receivers that are benefitted with this noise barrier.
4 - Not Impacted but Benefitted refers to the number of receivers that are not predicted to experience noise levels greater than 66.0 dBA that are predicted to be benefitted incidentally with this noise barrier.
5 - Total refers to the total number of impacted and not-impacted receivers that are predicted to benefit from this noise barrier.

- Property owner surveys to evaluate owner preferences for aesthetic attributes of the noise barriers; and,
- Noise barrier workshops conducted for the affected property owners in order to present the final noise barrier designs selected for construction and to discuss specific elements of the noise barriers and their construction.

Noise barriers were considered with Build Alternative 4 at two additional locations but were determined to be infeasible due to access requirements. These locations are presented in *Table 35*. A noise barrier considered adjacent to the San Mateo condominiums was determined to perform poorly due to openings required for two access driveways onto the property. It was not possible to provide insertion losses of at least 5 dBA at 2 of the 4 impacted sites and the estimated cost exceeded the FDOT's \$35,000 per benefitted site cost guideline. Also, it was not possible to provide effective noise abatement for 8 homes in the Country Club of Miami Estates predicted to be impacted with Build Alternative 4 given the numerous driveways and side streets (9 total) that provide access between this neighborhood and Miami Gardens Drive. Noise abatement will not be considered further for these neighborhoods as part of this roadway improvement project.

**TABLE 35
SUMMARY OF NOISE BARRIERS NOT RECOMMENDED**

LOCATION	BUILD ALTERNATIVE	NUMBER OF IMPACTED RECEIVERS	GENERAL LIMITS (Station)		APPROXIMATE TOTAL LENGTH (Feet)	REASON NOT RECOMMENDED
			Begin	End		
San Mateo	4	4	97+40	101+05	280	Numerous driveway openings resulting in noise barrier performance less than FDOT's criteria. Cost greater than FDOT's \$35,000 cost guideline.
Country Club of Miami Estates	4	8	132+50 (Peters Pike Canal)	145+00 (NW 75 th Place)	1,250	Numerous driveway openings resulting in noise barrier performance less than FDOT's criteria.

The Florida Department of Transportation is committed to the construction of feasible noise abatement measures at the noise-impacted locations identified in this report contingent upon the following:

- Detailed noise analyses during the final design process continues to support the need for abatement;
- Reasonable cost analyses indicates that the economic cost of the noise barriers will not exceed the FDOT cost guideline of \$35,000 per benefitted receiver site;
- Community input regarding desires, types, heights, and locations of barriers has been solicited by the District Office;
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses has been noted;

- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed; and,
- Any other mitigating circumstances found in Section 17-4.6.1 of Chapter 17 of the FDOT PD&E Manual have been analyzed.

6.0 CONSTRUCTION NOISE AND VIBRATION

There are no known County or local ordinances that set specific limitations on construction noise levels applicable to FDOT projects. The potential exists for noise impacts from equipment during the construction phase of this proposed project. To mitigate those impacts, the contractor will be required to adhere to the latest edition of FDOT *Standard Specifications for Road and Bridge Construction*. Specifications include noise screening guidelines for stationary equipment, exhaust noise, noise from loose equipment parts, and excessive tailgate banging.

No known businesses particularly sensitive to construction noise and/or vibration exist along the project corridor. A reassessment of the project corridor for such sites will be performed during design to ensure that impacts to such sites are minimized. Coordination between the FDOT and the owners of any other vibration sensitive businesses identified during design should occur and Technical Special Provisions should be developed for the project's contract package in order to ensure that impacts to such businesses are minimized.

7.0 COORDINATION WITH LOCAL AGENCIES

For the purposes of long range planning for land uses identified under LUAC B, 66 dBA L_{Aeq1h} noise level isopleths were estimated for the Build Alternative. The typical 66 dBA isopleth across flat ground that does not include any abatement measures for LUAC B properties extends approximately 70 feet from the edge of the near traffic lane along Miami Gardens Drive.

APPENDIX B
Modeled Traffic Noise Levels

