Design
NOISE STUDY REPORT ADDENDUM

WIDEN SEMINOLE EXPRESSWAY (SR 417) FROM ALOMA AVENUE TO SR 434
Seminole County, Florida

Financial Project Identification (FPID) Number: 417545-1

Prepared for:

Florida's Turnpike Enterprise

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Prepared by:

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Executive Summary

The Florida Department of Transportation (FDOT), Florida's Turnpike Enterprise (FTE) is conducting a design-level study to determine the engineering and environmental effects of widening Seminole Expressway (State Road [SR] 417) from Aloma Avenue to SR 434. The Widen Seminole Expressway (SR 417) project, located north of the Orange County - Seminole County line (Milepost 38) to north of SR 434 (Milepost 44), is being conducted to improve overall safety, enhance mobility, and accommodate projected traffic needs. This project covers approximately 6.6 miles of the Seminole Expressway mainline. The primary roadway improvement being proposed for the Seminole Expressway mainline is to increase the number of travel lanes from four to eight. In addition to the improvements along the mainline, interchange improvements are being proposed at the three existing interchanges of Aloma Road, Red Bug Lake Road/W Mitchell Hammock Road, and SR 434.

This Design phase Noise Study includes a traffic noise analysis for residential and non-residential areas (i.e., special land uses) along the Preferred Alternative. The traffic noise study is completed in accordance with Title 23, Code of Federal Regulations, Part 772 (23 CFR 772), *Procedures for Abatement of Highway Traffic Noise and Construction Noise* following methodology and procedures established by the FDOT in the *PD&E Manual*, Part 2, Chapter 18 (*Highway Traffic Noise*). The purpose of this noise study is to identify noise sensitive sites that would be impacted by the proposed project, evaluate abatement measures at impacted noise sensitive sites, and determine where noise abatement (i.e., noise barriers) needs to be included in the Design plans.

Noise levels were predicted at 409 receptor points representing 661 residences and six special land uses (i.e., non-residential areas). For Design Year (2050) conditions, noise levels are predicted to approach, meet, or exceed the NAC at 226 residences and five special land uses. Noise barriers were found to be a reasonable and feasible form of traffic noise abatement for six residential areas. The remaining impacted land uses did not qualify for a noise barrier because they do not meet the criteria of reasonableness and/or feasibility to warrant the construction of a noise barrier and, therefore, were not recommended for this project.

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ACRONYMS

CFR	Code of Federal Regulations
CNE	Common Noise Environment
dB	Decibels
dB(A)	A-weighted decibels
DPK	Date of Public Knowledge
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
Ft	Feet
FTE	Florida's Turnpike Enterprise
LOS	Level of Service
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NRDG	Noise Reduction Design Goal
NSR	Noise Study Report
NSRA	Noise Study Report Addendum
PD&E	Project Development and Environment
ROW	Right-of-way
SR	State Road
TNM	Traffic Noise Model

SECTION 1
Introduction

1.1 *PROJECT DESCRIPTION*

The Florida Department of Transportation (FDOT), Florida's Turnpike Enterprise (FTE) is conducting a design-level study to determine the engineering and environmental effects of the proposed project to widen Seminole Expressway (State Road [SR] 417) from Aloma Avenue to SR 434 (**Figure 1**). The Widen Seminole Expressway (SR 417) project, located north of the Orange County - Seminole County line (Milepost 38) to north of SR 434 (Milepost 44), is being conducted to improve overall safety, enhance mobility, and accommodate projected traffic needs. This project covers approximately 6.6 miles of the Seminole Expressway mainline. The primary roadway improvement being proposed for the Seminole Expressway mainline is to increase the number of travel lanes from four to eight. In addition to the improvements along the mainline, interchange improvements are being proposed at the three existing interchanges of Aloma Road, Red Bug Lake Road/W Mitchell Hammock Road, and SR 434.

The proposed Turnpike mainline configuration consists of four 12-foot lanes, a 10-foot outside shoulder, and a 12-foot inside shoulder in both the northbound and southbound directions. Most of the proposed widening will occur along the inside lanes, with only five feet of widening to the outside lane. Additionally, a concrete barrier wall located in the median will separate opposing lanes of traffic. The typical section of the project is shown in **Figure 2**.

1.2 *SUMMARY OF PD&E RESULTS AND COMMITMENTS*

A Project Development and Environment (PD&E) study to evaluate noise sensitive areas and to determine if noise abatement is feasible and reasonable for the proposed widening of Seminole Expressway (SR 417) from south of Aloma Avenue to the Rinehart Road interchange was conducted by the FDOT FTE in June 2007. The PD&E study evaluated widening Seminole Expressway from a six-lane to an eight-lane facility. Based on the PD&E study, traffic noise impacts were identified at 507 residences, and noise barriers were found to be a potentially feasible and cost reasonable form of abatement for residences in Clayton Crossing, Summer Club apartments, South of Lake Jessup, Hidden Lake, Chase Groves, Mystic Cove/Loma Vista Apartments, Oak Hill Villas/Shed Grove/Worthington, Renaissance/Village Lakes Apartments/Placid Lake/Stonebrook Apartments, Lincoln Heights, and Pulte Regency Oaks.

Subsequent to the 2007 PD&E phase noise analysis, Title 23 Code of Federal Regulations Part 772 (23 CFR 772) was amended effective July 13, 2011. The FDOT's Noise Policy [currently FDOT's PD&E Chapter 18] was subsequently revised to comply with the changes to 23 CFR 772 (July 2011). The amended federal regulation identifies specific land uses as noise sensitive that were not previously considered (e.g., medical facilities, exterior areas of restaurants). Following the requirements of 23 CFR 772, this traffic noise study update includes the specific land uses identified in the amended federal regulation.

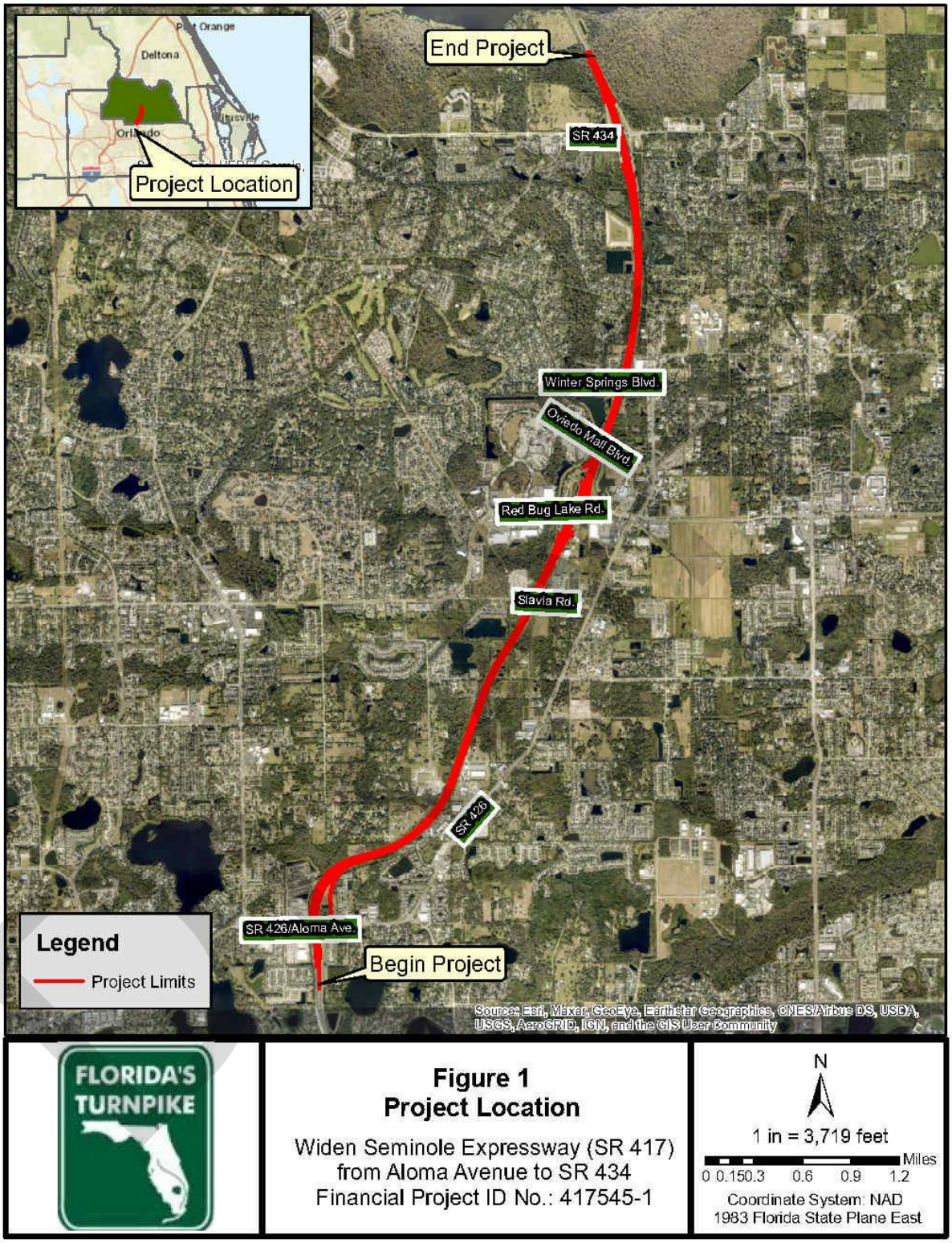

Figure 1 Project Location

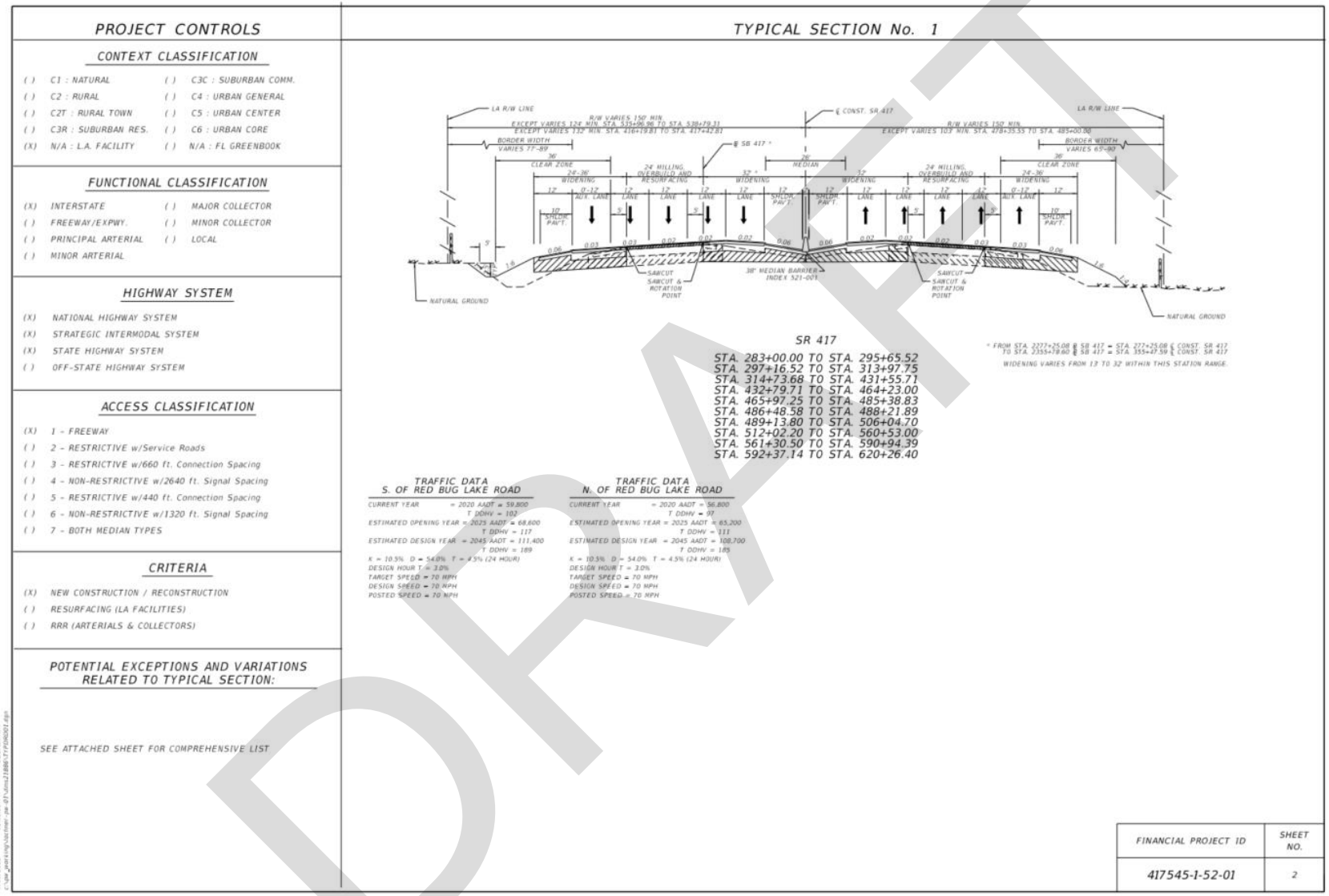

Figure 2 Proposed Typical Section for SR 417

SECTION 2
Methodology

This traffic noise study was performed in accordance with 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* using methodology established in the FDOT *PD&E Manual*, Part 2, Chapter 18 (*Highway Traffic Noise*) (FDOT, July 2020). Predicted noise levels were produced using the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM), version 2.5.

2.1 *NOISE METRICS*

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

2.2 *TRAFFIC DATA*

Among other factors, traffic noise is heavily dependent on both traffic speed and traffic volume with the amount of noise generated by traffic increasing as the vehicle speed and number of vehicles increases. The traffic conditions that result in the highest noise levels for roadways are the hourly traffic volumes that represent Level of Service (LOS) C traffic conditions because they represent maximized traffic volumes that continue to travel at free flow speed.

Traffic data were reviewed to determine maximum traffic volumes that would allow traffic to flow at speeds consistent with established speed limits. Traffic data for the 2050 Build condition were provided by FTE and reviewed to identify forecasted traffic volumes that would allow vehicles to travel at speeds consistent with established speed limits. For roadway segments where the predicted hourly design year traffic volumes equaled or exceeded LOS C, LOS C hourly traffic was utilized. For roadway segments where the predicted hourly traffic demand was less than LOS C traffic volumes, the predicted hourly demand volumes were utilized. For ramp volumes, hourly traffic demand volumes were utilized. Traffic volumes and speeds used in the analysis are provided in **Appendix A**. In addition, the total vehicle volume is divided between five classifications: automobiles, medium trucks, heavy trucks, buses, and motorcycles. Traffic vehicle percentages used in the analysis are provided in **Appendix A**.

2.3 *NOISE ABATEMENT CRITERIA*

Noise sensitive sites are any property where frequent human use occurs, and a lowered noise level would be of benefit. FHWA has established noise levels at which abatement is considered for various types of noise sensitive sites. These levels, which are used by the FTE for the purpose of evaluating traffic noise, are referred to as the Noise Abatement Criteria (NAC).

Table 1 FHWA Noise Abatement Criteria

Activity Category	Activity Leq(h)		Evaluation Location	Description of Land Use 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	67	66	Exterior	Residential.
C	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, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	51	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	71	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A – D or F.
F	------	------	------	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	------	------	------	Undeveloped lands that are not permitted.

Source: 23 CFR Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, FHWA, 2010.

As shown in **Table 1**, NAC vary by activity category (i.e., land use). Noise abatement measures are considered when predicted traffic noise levels for the design year (2050) approach, meet, or

exceed the NAC. FDOT defines "approach" as within 1 dB(A) of FHWA criteria. For perspective, **Table 2** provides typical noise levels of common indoor and outdoor activities.

Table 2 Typical Noise Levels

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

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

Noise abatement measures must also be considered when a substantial increase in traffic noise will occur as a direct result of the transportation project. FDOT defines a "substantial increase" as 15

or more decibels above existing conditions. A substantial increase typically occurs in areas where traffic noise is a minor component of the existing noise environment but would become a major component after the project is constructed (e.g., new alignment project). Based on predictions made during the PD&E phase, substantial increases in noise are not expected to occur.

Common Noise Environments (CNEs) are studied separately. A CNE is a group of receptors of the same NAC that are exposed to noise in a similar way. These noise exposures are due to traffic mix, volume, speed and topographic features, and typically occur between two secondary noise sources such as interchanges, intersections, and crossroads.

2.4 *NOISE ABATEMENT MEASURES*

Noise abatement is considered at all noise sensitive sites predicted to approach, meet, or exceed the NAC as stipulated by 23 CFR 772. Abatement measures considered during the PD&E phase included traffic management, alignment modifications, noise buffer zones through application of land use controls, and noise barriers. However, noise barriers were determined to be the only viable noise abatement measure. Therefore, consistent with the results of the PD&E, noise barriers are considered at all noise sensitive sites predicted to approach, meet, or exceed the NAC for the year 2050 Build condition.

Barriers reduce noise levels by blocking the sound path between a highway and noise sensitive sites. To effectively reduce traffic noise, a barrier must be relatively long, continuous (with no intermittent openings), and of sufficient height. For a noise barrier to be considered feasible and cost reasonable, the following minimum conditions should be met:

- At least two impacted receptors must be provided a noise reduction of 5 dB(A) or more to be considered feasible.
- A noise barrier must also attain the Noise Reduction Design Goal (NRDG), which states that a minimum noise reduction of 7 dB(A) for at least one benefitted receptor must be achieved. Of importance, this receptor may also have been previously identified as meeting the feasibility requirement of receiving a 5 dB(A) reduction (first bullet).
- The cost of the noise barriers should not exceed $42,000 per benefited receptor. This is the upper cost limit established by FDOT. A benefited receptor is defined as a recipient of an abatement measure that experiences at least a 5 dB(A) reduction as a result of providing a noise barrier. The current unit cost used to evaluate cost reasonableness is $30 per square foot (sq. ft.).

Within the project limits, noise barrier locations were evaluated as follows:

- Right-of-way noise barriers located outside the clear recovery zone, but within the right-of-way (ROW), are initially considered at heights ranging from 8 ft. to 22 ft. in 2-ft. increments. According to the *FDOT Design Manual*, noise barriers outside the clear zone shall not exceed a maximum height of 22 ft.
- If a right-of-way barrier cannot provide at least a 5 dB(A) reduction to an impacted receptor or the barrier is not feasible due to construction limitations, then a shoulder barrier is evaluated. According to the *FDOT Design Manual*, shoulder barriers within the clear zone shall not exceed 14 ft. in height when on embankment and 8 ft. in height when on structure.

- The length and height of the noise barriers are optimized based on the benefit provided to noise sensitive sites with predicted noise levels that approach, meet, or exceed the NAC.

2.5 *DATE OF PUBLIC KNOWLEDGE*

In order to be considered for abatement, noise sensitive sites must be in existence or have a building permit prior to the project's Date of Public Knowledge (DPK), which is the date of the approval of the environmental document (PD&E Study). Highway traffic noise was evaluated in 2007 in support of the State Environmental Impact Report (SEIR; approved on July 19, 2007), which evaluated widening Seminole Expressway (417) from south of Aloma Avenue to the Rinehart Road interchange. The current alignment does not add capacity or present a substantial change in vertical or horizontal alignment compared to the 2007 SEIR; therefore, the DPK is July 19, 2007.

Building permit issue dates were verified using data from the Seminole County Property Appraiser[1]. Several sites within the project's limits did not meet the DPK. As a result, the noise sensitive sites listed below were not included in this analysis.

- Residences in Park Place at Aloma
- Residences in Provenance (north of the cross Seminole Trail)
- Most of the residences in Estates at Wellington (with the exception of two residences that did meet the DPK)

[1] Seminole County Property Appraiser website: https://maps2.scpafl.org/SCPAExternal/

SECTION 3
Traffic Noise Analysis

3.1 *PREDICTED NOISE LEVELS AND ABATEMENT ANALYSIS*

Within the project limits, noise sensitive land uses adjacent to SR 417 include residential areas, medical facilities, daycares, schools, trails, and places of worship. Residential communities are in Activity Category B of the NAC, interior uses of places of worship are in Activity Category D of the NAC, while remaining land uses are in Activity Category C of the NAC. Noise levels were predicted at 409 receptor points in total, which represent 661 residences, one school, one daycare, one place of worship, and two trail crossings (Cross Seminole Trail in two locations).

The location of the receptor points representing the noise sensitive sites are in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 18 (*Highway Traffic Noise*). Residential receptor points are located at the edge of the building closest to the proposed SR 417.

Predicted noise levels for these sites are provided in **Appendix C**. The locations of the receptor points identified in **Appendix C** are depicted on the aerials found in **Appendix D**. The alphanumeric identification for each receptor point (e.g., RE4, RW13) associated with a noise sensitive site is formulated as follows:

- A "W" or "E" denotes which side of SR 417 the receptor is located (e.g., W4). A "W" indicates that the receptor is located along the southbound lanes (i.e., west of SR 417) while an "E" indicates that the receptor is located along the northbound lanes (i.e., east of SR 417).
- The numbers identify a specific receptor point and generally increase from north to south.

For the year 2050 Build condition, traffic noise levels are predicted to approach, meet, or exceed the NAC at 226 residences and five special land uses (i.e., non-residential) within the project limits. These impacted noise sensitive sites were evaluated to determine the feasibility and cost reasonableness of providing barriers to reduce traffic noise.

3.1.1 *NOISE SENSITIVE SITES - WEST SIDE OF SR 417*

Future noise levels are predicted to approach, meet, or exceed the NAC for 2050 Build condition at 106 residences and two trail crossings on the west side of SR 417. All impacted noise sensitive sites were evaluated to determine the feasibility and reasonableness of providing barriers to reduce traffic noise. The discussions that follow analyze residential communities along the west side (i.e., southbound lanes) of the proposed SR 417 from south to north.

3.1.1.1 Orange/Seminole County Line to Aloma Avenue (Isolated residence, Stratford Green/Clifton Park)

Residences between the Orange/Seminole County Line to Aloma Avenue (Ave.) (**Appendix C, sheet 1**) were evaluated by 25 receptor points representing 58 residences. Exterior traffic noise levels are predicted to range from 60.1 to 75.6 dB(A) for the Design year and approach, meet, or exceed the NAC at 15 residences. Therefore, a noise barrier was evaluated for these 15 impacted residences.

A ROW and a shoulder noise barrier were both evaluated. Due to the differences in elevation between the roadway and the residences, a ROW noise barrier was not acoustically effective and was found to not be cost reasonable. Therefore, a shoulder-mounted noise barrier was evaluated.

A shoulder-mounted noise barrier was evaluated at heights ranging from 8 – 22 ft.[2] The shoulder-mounted noise barrier evaluation, shown in **Table 3**, found that a shoulder-mounted noise barrier 22 feet in height would provide a benefit to at least two impacted receptors, meets the NRDG, and is cost reasonable. Therefore, a 22 ft. shoulder-mounted noise barrier was evaluated further.

The 22 ft. noise barrier configuration was evaluated in an engineering review to review safety, utility, maintenance, and other constructability issues. The results of the engineering review found no issues with the proposed shoulder-mounted noise barrier (shown in **Appendix D**). Therefore, the 22-ft. shoulder-mounted noise barrier was recommended for inclusion into the Design Plans and is shown in (**Appendix C, sheet 1**).

[2] A noise barrier located along the shoulder of a roadway may be higher than 14 ft. if the noise barrier is shielded by a guard rail (i.e., placed between the noise barrier and the travel lanes) and not located on a structure (bridge or Mechanically Stabilized Earth [MSE] wall).

Table 3 Orange/Seminole County Line to Aloma Avenue (Isolated residence, Stratford Green/Clifton Park)
Shoulder Noise Barrier Evaluation

Barrier Height (feet)	Barrier Length[a] (Feet)	Barrier Type	Number of Impacted Residences	Number of Impacted Residences Within a Noise Reduction Range			Number of Benefited Residences				Total Estimated Cost[e]	Cost Per Benefited Residence	Cost Reasonable?
				5-5.9 dB(A)	6-6.9 dB(A)	≥7 dB(A)	Impacted[b]	Other[c]	Total[d]	Average Reduction dB(A)			
8	n/a	Shoulder	15	NRDG not met									
10	2,753			0	2	0	2	0	2	6.4	$825,900	$412,950	No
12	910			9	1	1	11	0	11	6.0	$327,600	$29,782	Yes
14	812			9	1	1	11	0	11	6.2	$341,040	$31,004	Yes
16	1,158			3	1	8	12	0	12	6.7	$555,840[f]	$46,320[f]	No
18	1,228			3	2	8	13	0	13	7.1	$663,120[f]	$51,009[f]	No
20	1,669			1	0	13	14	8	22	7.5	$1,001,400[f]	$45,518[f]	No
22	1,962			1	1	13	15	16	31	7.5	$1,294,920[f]	$41,772[f]	Yes

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[c] Other includes residences with predicted noise levels that do not approach, meet, or exceed 66 dB(A) but are incidentally benefited.
[d] Total Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Unit cost of $30/ft.^{2} for all barriers.
[f] Does not include the cost of the required guard rail.

3.1.1.2 Residences from Aloma Avenue to Vicinity of Cross Seminole Trail (Clayton Crossing)

Residences from Aloma Ave. to Vicinity of Cross Seminole Trail (Clayton Crossing) (**Appendix C, sheet 2**) were evaluated by 36 receptor points representing 46 residences. Exterior traffic noise levels are predicted to range from 56.3 to 69.2 dB(A) for the Design year and approach, meet, or exceed the NAC at 16 residences. Therefore, a noise barrier was evaluated for these 16 impacted residences.

The Cross Seminole Trail passes underneath the Seminole Expressway. Therefore, a noise barrier system was evaluated, with two noise barriers located along the ROW, and a single shoulder-mounted noise barrier. The ROW noise barrier was evaluated at heights ranging from 8 – 22 ft. The shoulder-mounted noise barrier was limited to 14 ft., except where located on structure or mechanically stabilized earth (MSE) where the shoulder-mounted noise barrier was limited to 8 ft. in accordance with FDOT Design specifications.

The evaluation examined various combinations of noise barrier placements, as shown in **Table 4**. The result of the evaluation identified that a shoulder-mounted noise barrier of 14 ft. (and 8 ft. when on structure) and a ROW barrier of 22 ft. would provide a benefit to at least two impacted receptors, meets the NRDG, and is cost reasonable. Therefore, a noise barrier for the residences from Aloma Ave. to the Cross Seminole Trail was evaluated further.

The 8 ft., 14 ft., and 22 ft. noise barrier system configuration was evaluated in an engineering review to review safety, utility, maintenance, and other constructability issues. The results of the engineering review found no issues with the proposed shoulder and ROW mounted noise barrier system (shown in **Appendix D**). Therefore, the 8 ft., 14 ft., and 22-ft. ROW and shoulder-mounted noise barrier system was recommended for inclusion into the Design Plans and is shown in **Appendix C, sheet 2**.

Table 4 Residences from Aloma Avenue to Vicinity of Cross Seminole Trail
ROW and Shoulder Noise Barrier System Evaluation

Barrier ID	Barrier Height (feet)	Barrier Length[a] (Feet)	Barrier Type	Number of Impacted Residences	Number of Impacted Residences Within a Noise Reduction Range			Number of Benefited Residences				Total Estimated Cost[e]	Cost Per Benefited Residence	Cost Reasonable?
					5-5.9 dB(A)	6-6.9 dB(A)	≥7 dB(A)	Impacted[b]	Other[c]	Total[d]	Average Reduction dB(A)			
1	8	1,062	Structure	16	9	6	1	16	10	26	5.9	$659,820	$25,378	Yes
	14	755	Shoulder											
	8	366	Row											
2	8	1,062	Structure		9	6	1	16	10	26	5.9	$662,280	$25,472	Yes
	14	755	Shoulder											
	10	301	ROW											
3	8	859	Structure		8	6	2	16	9	25	6.0	$543,000	$21,720	Yes
	14	544	Shoulder											
	12	301	ROW											
4	8	859	Structure		8	4	4	16	9	25	6.1	$561,060	$22,442	Yes
	14	544	Shoulder											
	14	301	ROW											
5	8	774	Structure		6	4	6	16	9	25	6.3	$753,120	$30,125	Yes
	14	544	Shoulder											
	16	706	ROW											
6	8	539	Structure		7	2	7	16	8	24	7.0	$854,640	$35,610	Yes
	14	544	Shoulder											
	18	920	ROW											
7	8	339	Structure		7	2	7	16	8	24	7.3	$914,040	$38,085	Yes
	14	544	Shoulder											
	20	1,007	ROW											
8	8	376	Structure		5	3	8	16	9	25	6.7	$784,680	$31,387	Yes
	14	544	Shoulder											
	22	706	ROW											

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[c] Other includes residences with predicted noise levels that do not approach, meet, or exceed 66 dB(A) but are incidentally benefited.
[d] Total Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Unit cost of $30/ft.^{2} for all barriers.

3.1.1.3 Cross Seminole Trail #1 (West Side of SR 417)

The Cross Seminole Trail is a recreational trail that passes under the Seminole Expressway and is present on the west side of SR 417 (**Appendix C, sheet 2**). The trail was evaluated as Activity Category C of the NAC and was represented by seven receptors. The exterior traffic noise level is predicted to range from 59.9 to 67.8 dB(A) for the Design year and approaches, meets, or exceeds the NAC at the trail. Therefore, a noise barrier for this trail was evaluated. However, a noise barrier is recommended for the surrounding residences in Clayton Crossing, as shown in **Table 4**. Portions of the Cross Seminole Trail receive a benefit from this noise barrier, as shown in **Appendix C, sheet 2**.

3.1.1.4 Vicinity of Robin Lee Road and Mikler Road (Roann Estates [formerly Raintree Country Estates], Estates at Wellington, and Mikler Road Estates)

Residences in the vicinity of Robin Lee Road and Mikler Road (Roann Estates [formerly Raintree Country Estates], Estates at Wellington, and Mikler Road Estates) were evaluated by 20 receptors representing 22 residences (**Appendix C, sheets 3, 4 and 5**). Notably, only two residences in Estates at Wellington met the project's Date of Public Knowledge and were therefore most of this subdivision was not included in the analysis (see **Section 2.5**). Of the residences included in the analysis from all communities that met the Date of Public Knowledge, the exterior traffic noise levels are predicted to range from 60.8 to 73.3 dB(A) for the Design year and approaches, meets, or exceeds the NAC at nine residences. Therefore, a noise barrier for these nine residences was evaluated.

A ROW noise barrier and a shoulder-mounted noise barrier were evaluated as shown in **Table 5**. The results of the evaluation found that neither a ROW nor a shoulder-mounted noise barrier were a cost reasonable form of abatement. The reason for this is the low density of homes evaluated relative to the size and cost of a noise barrier. Therefore, a noise barrier is not recommended for further evaluation.

Table 5 Vicinity of Robin Lee Road and Mikler Road
ROW and Shoulder Noise Barrier Evaluation

Barrier Height (feet)	Barrier Length[a] (Feet)	Barrier Type	Number of Impacted Residences	Number of Impacted Residences Within a Noise Reduction Range			Number of Benefited Residences				Total Estimated Cost[e]	Cost Per Benefited Residence	Cost Reasonable?
				5-5.9 dB(A)	6-6.9 dB(A)	≥7 dB(A)	Impacted[b]	Other[c]	Total[d]	Average Reduction dB(A)			
8	n/a	Shoulder	9	NRDG not met.									
10													
12	3,149	Shoulder		6	1	1	8	0	8	6.0	$1,133,640	$141,705	No
14	2,645			3	3	2	8	0	8	6.6	$1,110,900	$138,863	No
8	n/a	ROW		NRDG not met.									
10													
12													
14		ROW											
16	2,024			1	2	1	4	0	4	6.2	$971,520	$242,880	No
18	2,631			3	3	1	7	0	7	6.4	$1,420,740	$202,963	No
20	2,530			1	3	4	8	2	10	6.6	$1,518,000	$151,800	No
22	2,530			1	1	6	8	3	11	7.0	$1,669,800	$151,800	No

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[c] Other includes residences with predicted noise levels that do not approach, meet, or exceed 66 dB(A) but are incidentally benefited.
[d] Total Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Unit cost of $30/ft.^{2} for all barriers.

3.1.1.5 Regency Estates

A single residence in Regency Estates was evaluated by a single receptor, RW 61 (**Appendix C, sheet 6**). The exterior traffic noise level is predicted to be 64.0 dB(A) for the Design year and does not approach, meet, or exceed the NAC at this residence. Therefore, a noise barrier for Regency Estates was not evaluated.

3.1.1.6 Villas at Lakeside

Residences in Villas at Lakeside (formerly Summer Club Apartments; **Appendix C, sheet 7**) were evaluated by 58 receptor points representing 95 residences. The exterior traffic noise levels are predicted to range from 55.8 to 73.2 dB(A) for the Design year and approaches, meets, or exceeds the NAC at 27 residences. Therefore, a noise barrier was evaluated for these 27 residences.

A ROW noise barrier was evaluated, but was found to not be a cost reasonable form of abatement. Therefore, a shoulder-mounted noise barrier was evaluated at heights ranging from 8 ft. to 14 ft., and limited to 8 ft. where on structure, shown in **Table 6**. The results of the evaluation indicate that a 14 ft. shoulder-mounted noise barrier would provide a benefit to at least two impacted receptors, meets the NRDG, and is cost reasonable. Therefore, a noise barrier for the residences in Villas at Lakeside was evaluated further.

The 14 ft. noise barrier configuration was evaluated in an engineering review to review safety, utility, maintenance, and other constructability issues. The results of the engineering review found no issues with the proposed shoulder and ROW mounted noise barrier system (shown in **Appendix D**). Therefore, the 8 ft. and 14 ft. shoulder-mounted noise barrier system was recommended for inclusion into the Design Plans and is shown in (**Appendix C, sheet 7**).

Table 6 Residences in Villas at Lakeside
Shoulder Noise Barrier Evaluation

Barrier ID	Barrier Height (feet)	Barrier Length[a] (Feet)	Barrier Type	Number of Impacted Residences	Number of Impacted Residences Within a Noise Reduction Range			Number of Benefited Residences				Total Estimated Cost[e]	Cost Per Benefited Residence	Cost Reasonable?
					5-5.9 dB(A)	6-6.9 dB(A)	≥7 dB(A)	Impacted[b]	Other[c]	Total[d]	Average Reduction dB(A)			
1	8	n/a		27	NRDG not met.									
2	8													
3	10													
4	8													
5	12													
6	8	214	Structure		13	0	0	13	0	13	5.4	$1,230,000	$94,615	No
	12	3,274	Shoulder											
7	8	174	Structure		11	10	3	24	8	32	5.9	$1,029,420	$32,169	Yes
	14	2,351	Shoulder											

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[c] Other includes residences with predicted noise levels that do not approach, meet, or exceed 66 dB(A) but are incidentally benefited.
[d] Total Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Unit cost of $30/ft.^{2} for all barriers.

3.1.1.7 Residences within the Vicinity of Winter Springs Boulevard to Cross Seminole Trail (Chestnut Estates, Seneca Bend, Tuscawilla)

Residences within the Vicinity of Winter Springs Boulevard to Cross Seminole Trail (Chestnut Estates, Seneca Bend, Tuscawilla) (**Appendix C, sheets 10, 11 and 12**) were evaluated by 37 receptor points representing 75 residences. The exterior traffic noise levels are predicted to range from 60.3 to 76.3 dB(A) for the Design year and approaches, meets, or exceeds the NAC at 39 residences. Therefore, a noise barrier was evaluated for these 39 residences.

A ROW noise barrier was evaluated at heights ranging from 8 – 22 ft. The results of the evaluation found that a ROW noise barrier was not cost reasonable. Therefore, a shoulder-mounted noise barrier was evaluated.

A shoulder-mounted noise barrier was evaluated at heights ranging from 8 ft. to 14 ft., and limited to 8 ft. where on structure. As shown in **Table 7**, the result of the evaluation identified that a shoulder-mounted noise barrier of 14 ft. (and 8 ft. when on structure) would provide a benefit to at least two impacted receptors, meets the NRDG, and is cost reasonable ($41,706/benefited residence). Therefore, a noise barrier for the residences within the vicinity of Winter Springs Boulevard to the Cross Seminole Trail was evaluated further.

The 14 ft. noise barrier configuration was evaluated in an engineering review to review safety, utility, maintenance, and other constructability issues. The engineering review requested the noise barrier located on structure be continued for the remainder of the overpass, a distance of approximately 104 feet. The addition of the 104 ft. increased the cost per benefited receptor to $42,315 per benefited residence. However, because this cost is less than one percent over the $42,000 per benefit limit, approval was received to proceed with this 14 ft. noise barrier configuration. The remaining results of the engineering review found no issues with the proposed shoulder-mounted noise barrier (shown in **Appendix D**). Therefore, the 8 ft. and 14 ft. shoulder-mounted noise barrier system was recommended for inclusion into the Design Plans and is shown in (**Appendix C, sheets 10, 11 and 12**).

Table 7 Residences within the Vicinity of Winter Springs Boulevard to Cross Seminole Trail Shoulder Noise Barrier Evaluation

Barrier ID	Barrier Height (feet)	Barrier Length[a] (Feet)	Barrier Type	Number of Impacted Residences	Number of Impacted Residences Within a Noise Reduction Range			Number of Benefited Residences				Total Estimated Cost[e]	Cost Per Benefited Residence	Cost Reasonable?
					5-5.9 dB(A)	6-6.9 dB(A)	≥7 dB(A)	Impacted[b]	Other[c]	Total[d]	Average Reduction dB(A)			
1	8	0	Structure	39	NRDG not met.									
	8	5,240	Shoulder											
2	8	0	Structure		7	0	3	10	0	10	5.7	$1,071,900	$107,190	No
	10	3,573	Shoulder											
3	8	452	Structure		5	10	7	22	0	22	6.5	$1,499,520	$68,160	No
	12	3,864	Shoulder											
4	8	543	Structure		7	9	18	34	7	41	6.8	$1,709,940	$41,706	Yes
	14	3,761	Shoulder											
5	8	647[f]	Structure		7	9	18	34	7	41	6.8	$1,734,900	$42,315	No[g]
	14	3,761	Shoulder											

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[c] Other includes residences with predicted noise levels that do not approach, meet, or exceed 66 dB(A) but are incidentally benefited.
[d] Total Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Unit cost of $30/ft.^{2} for all barriers.
[f] The length of the noise barrier located on structure was extended by 104 ft. to accommodate engineering requests.
[g] Because this cost is less than one percent above the FDOT's $42,000 per benefit limit, approval was received to proceed with this 14 ft. noise barrier configuration.

3.1.1.8 Cross Seminole Trail #2 (West Side of SR 417)

The Cross Seminole Trail is a recreational trail that passes under the Seminole Expressway and is present on the west side of SR 417 (**Appendix C, sheet 12 and 13**). The trail was evaluated as Activity Category C of the NAC and was represented by eight receptors. The exterior traffic noise level is predicted to range from 62.5 to 74.0 dB(A) for the Design year and approaches, meets, or exceeds the NAC at the trail. Therefore, a noise barrier for this trail was evaluated.

A ROW barrier was not evaluated, as the barrier would not shield the trail due to a large gap to accommodate the trail. Therefore, a shoulder-mounted noise barrier was evaluated.

A shoulder-mounted noise barrier was evaluated at heights ranging from 8 ft. to 14 ft., and limited to 8 ft. where on structure. As shown in **Table 8**, the trail would need to be utilized by a minimum of 2,048 person-hours to be considered cost reasonable. Using an estimated walking speed of 3 miles per hour, a person is estimated to spend approximately 3 minutes walking the ~800 ft. of trail evaluated. For 2,048 person-hours to be reached, the trail needs to be utilized by 40,960 people walking along the 800 ft. of trail evaluated. It is unreasonable to assume this amount of use occurs on this portion of the trail every day. Therefore, a noise barrier for the Cross Seminole Trail was not evaluated further.

Table 8 Cross Seminole Trail #2 (West Side of SR 417)
Shoulder Noise Barrier Evaluation

Barrier ID	Barrier Height (feet)	Total Barrier Length (feet)[a]	Total Cost[b]	Total Number of Receptors in Grid	Total Number of Receptors Impacted	Total Number of Receptors Impacted and Benefited	Percentage of Impacted Area Benefited	Total Number of Receptors Benefited	Percentage of Evaluated Area Benefited	Maximum Reduction (d(B)A)	Required Person-Hours of Daily Use Within Benefited Area	Required Person-Hours of Daily Use Within Entire Facility
1	8	N/A				NRDG not met.						
2	10											
3	8	184	$364,200	8	4	2	50%	2	25%	7.0	512	2,048
	12	889										
4	8	643	$1,733,940			3	75%	3	38%	7.5	2,438	6,501
	14	3,761										

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Unit cost of $30/ft.^{2} for all barriers.

3.1.1.9 North of Cross Seminole Trail to SR 434 (Eagle's Watch)

Residences located north of Cross Seminole Trail to SR 434 (Eagle's Watch) were evaluated by one receptor representing ten residences (**Appendix C, sheets 13 and 14**). Exterior traffic noise levels are predicted to be 63.9 dB(A) for the Design year and does not approach, meet, or exceed the NAC. Therefore, a noise barrier for these residences was not evaluated.

3.1.2 *NOISE SENSITIVE SITES - EAST SIDE OF SR 417*

Future noise levels are predicted to approach, meet, or exceed the NAC for 2050 Build condition at 120 residences and four special land uses on the east side of SR 417 (including two trail crossings). All impacted noise sensitive sites were evaluated to determine the feasibility and reasonableness of providing barriers to reduce traffic noise. The discussions that follow analyze residential communities along the east side (i.e., northbound lanes) of the proposed SR 417 from south to north.

3.1.2.1 Residences from the Orange/Seminole County Line to Aloma Avenue (Deep Lake and Aloma Acres)

Residences from the Orange/Seminole County Line to Aloma Avenue (Deep Lake and Aloma Acres) (**Appendix C, sheet 1**) were evaluated by five receptor points representing nine residences. Exterior traffic noise levels are predicted to range from 64.8 to 67.3 dB(A) for the Design year and approach, meet, or exceed the NAC at one residence. Because FDOT's Noise Policy requires that two impacted receptors (discrete or representative locations of a noise sensitive area) be benefited by a five (5) decibel (dB[A]) reduction in order for a noise barrier to be a feasible abatement measure, there are no feasible and reasonable abatement measures to reduce or eliminate the predicted impact at the impacted residence.

3.1.2.2 Park Place at Aloma

Residences in Park Place at Aloma (**Appendix C, sheet 1**) were not evaluated because they did not meet the Date of Public Knowledge as described in **Section 2.5**.

3.1.2.3 Residences from Aloma Avenue to Via Loma Drive (Mystic Cove Apartments, Loma Vista, and Provenance [south of Cross Seminole Trail])

Residences from Aloma Avenue to Via Loma Drive (Mystic Cove Apartments, Loma Vista, and the portion of the Provenance community south of Cross Seminole Trail) (**Appendix C, sheets 2, 3 and 4**) were evaluated by 54 receptor points representing 208 residences. Exterior traffic noise levels are predicted to range from 60.4 to 69.8 dB(A) for the Design year and approach, meet, or exceed the NAC at 59 residences. Therefore, a noise barrier was evaluated for these 59 impacted residences.

A combination ROW and shoulder-mounted noise barrier system was evaluated, as shown in **Table 10**. The result of the evaluation identified that a shoulder-mounted noise barrier of 14 ft. (and 8 ft. when on structure) and a ROW barrier of 22 ft. would provide a benefit to at least two impacted receptors, meets the NRDG, and is cost reasonable. Therefore, a noise barrier for the residences from Aloma Avenue to Via Loma Drive (Mystic Cove Apartments, Loma Vista, and Provenance) was evaluated further.

The 8 ft., 14 ft., and 22 ft. noise barrier system configuration was evaluated in an engineering review to review safety, utility, maintenance, and other constructability issues. The results of the engineering review found no issues with the proposed shoulder and ROW mounted noise barrier system (shown in **Appendix D**). Therefore, the 8 ft., 14 ft., and 22-ft. shoulder-mounted noise barrier system was recommended for inclusion into the Design Plans and is shown in (**Appendix C, sheets 2, 3 and 4**).

Table 9 Residences from Aloma Avenue to Via Loma Drive (Mystic Cove Apartments, Loma Vista, and Provenance)
ROW and Shoulder Noise Barrier System Evaluation

Barrier ID	Barrier Height (feet)	Barrier Length[a] (Feet)	Barrier Type	Number of Impacted Residences	Number of Impacted Residences Within a Noise Reduction Range			Number of Benefited Residences				Total Estimated Cost[e]	Cost Per Benefited Residence	Cost Reasonable?
					5-5.9 dB(A)	6-6.9 dB(A)	≥7 dB(A)	Impacted[b]	Other[c]	Total[d]	Average Reduction dB(A)			
1	8	N/A		59	NRDG not met.									
	14													
	8													
2	8													
	14													
	10													
3	8													
	12													
	12													
4	8													
	14													
	14													
5	8	1,560	Structure		30	14	4	48	16	64	6.9	$2,870,040	$44,844	No
	14	3,462	Shoulder											
	16	2,170	ROW											
6	8	1,136	Structure		31	10	8	49	20	69	6.4	$2,626,860	$38,070	Yes
	14	2,895	Shoulder											
	18	2,108	ROW											
7	8	320	Structure		31	10	8	49	12	61	6.8	$2,558,760	$41,947	Yes
	14	2,868	Shoulder											
	20	2,129	ROW											
8	8	1,560	Structure		36	11	8	55	28	83	6.8	$3,043,140	$36,664	Yes
	14	3,513	Shoulder											
	22	1,808	ROW											

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[c] Other includes residences with predicted noise levels that do not approach, meet, or exceed 66 dB(A) but are incidentally benefited.
[d] Total Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Unit cost of $30/ft.^{2} for all barriers.

3.1.2.4 Cross Seminole Trail #1 (East Side of SR 417)

The Cross Seminole Trail is a recreational trail that passes under the Seminole Expressway and is present on the east side of SR 417 (**Appendix C, sheets 3, 4 and 5**). The trail was evaluated as Activity Category C of the NAC and was represented by 50 receptors. The exterior traffic noise level is predicted to range from 58.7 to 73.1 dB(A) for the Design year and approaches, meets, or exceeds the NAC at the trail. Therefore, a noise barrier for this trail was evaluated. However, a noise barrier is recommended for the surrounding residences from Aloma Ave. to Via Loma Dr., as shown in **Table 9**. The Cross Seminole Trail receives a benefit from this noise barrier, as shown in **Appendix C, sheet 3**.

3.1.2.5 Provenance [North of Cross Seminole Trail]

The portion of the Provenance Community between the Cross Seminole Trail and SR 417 (**Appendix C, sheet 4**) was not evaluated because it did not meet the Date of Public Knowledge as described in **Section 2.5**.

3.1.2.6 Scattered Residences within the Vicinity of Connection Point to W. Chapman Road

Residences within the Vicinity of Connection Point to W. Chapman Road (**Appendix C, sheets 5 and 6**) were evaluated by six receptor points representing six residences. Exterior traffic noise levels are predicted to range from 65.2 to 73.9 dB(A) for the Design year and approach, meet, or exceed the NAC at five residences. Therefore, a noise barrier was evaluated for these five impacted residences.

A ROW and a shoulder-mounted noise barrier were evaluated as shown in **Table 10**. The results of the evaluation found that neither a ROW nor a shoulder-mounted noise barrier were a cost reasonable form of abatement. The reason for this is the low density of homes evaluated relative to the size and cost of a noise barrier. Therefore, a noise barrier is not recommended for further evaluation.

Table 10 Residences Within the Vicinity of Connection Point to Chapman Rd.
ROW and Shoulder Noise Barrier Evaluation

Barrier Height (feet)	Barrier Length[a] (Feet)	Barrier Type	Number of Impacted Residences	Number of Impacted Residences Within a Noise Reduction Range			Number of Benefited Residences				Total Estimated Cost[e]	Cost Per Benefited Residence	Cost Reasonable?
				5-5.9 dB(A)	6-6.9 dB(A)	≥7 dB(A)	Impacted[b]	Other[c]	Total[d]	Average Reduction dB(A)			
8	N/A	Shoulder	5	NRDG not met.									
10													
12	1,235			1	0	1	2	0	2	6.2	$444,600	$222,300	No
14	1,235			0	1	1	2	0	2	7.2	$518,700	$259,350	No
8	1,261	ROW		1	0	1	2	0	2	6.1	$302,640	$151,320	No
10	1,060			1	0	1	2	0	2	6.6	$318,000	$159,000	No
12	1,060			0	1	1	2	0	2	7.1	$381,600	$190,800	No
14	2,973			1	1	1	3	0	3	6.5	$1,248,660	$416,220	No
16	2,772			1	1	1	3	0	3	6.8	$1,330,560	$443,520	No
18	3,621			2	1	2	5	0	5	7.4	$1,955,340	$391,068	No
20	3,420			2	1	2	5	0	5	7.6	$2,052,000	$410,400	No
22	3,221			2	1	2	5	0	5	7.8	$2,125,860	$425,172	No

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[c] Other includes residences with predicted noise levels that do not approach, meet, or exceed 66 dB(A) but are incidentally benefited.
[d] Total Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Unit cost of $30/ft.^{2} for all barriers.

3.1.2.7 Isolated Residence North of W. Chapman Road

An isolated residence north of W. Chapman Road (**Appendix C, sheet 7**) was evaluated by one receptor. Exterior traffic noise levels are predicted to be 63.0 dB(A) for the Design year and do not approach, meet or exceed the NAC at the residence. Therefore, a noise barrier was not evaluated for this residence.

3.1.2.8 Isolated Residence South of Slavia Road

An isolated residence south of Slavia Rd. (**Appendix C, sheet 7**) was evaluated represented by one receptor. Exterior traffic noise levels are predicted to be 67.0 dB(A) for the Design year and approach, meet, or exceed the NAC. However, because FDOT policy requires two impacted receptors to be benefited by a 5 dB(A) reduction in order for a barrier to be feasible, a barrier is not considered a feasible abatement measure for the impacted residence. Therefore, a noise barrier was not evaluated for this impacted residence.

3.1.2.9 The Master's Academy

The Master's Academy is a school which has several outdoor areas of frequent human use, including a football field, baseball field, softball field, and a playground (**Appendix C, sheet 8)**. These frequent human use areas were represented by two receptor points. Exterior traffic noise levels are predicted to range from 67.6 to 72.4 dB(A) for the Design year and approach, meet or exceed the NAC. Therefore, a noise barrier was evaluated for this impacted school using a grid of receptors.

A ROW noise barrier and a shoulder-mounted noise barrier were evaluated as shown in **Table 11**. A ROW noise barrier was evaluated at heights ranging from 8 – 22 ft. A shoulder-mounted noise barrier was evaluated at heights ranging from 8 ft. to 14 ft., and limited to 8 ft. where on structure. The minimum number of person-hours of use for a noise barrier to be considered cost reasonable is 1,986 person hours. The school has a student body of just over 1,000 students. Assuming that each student uses the outdoor areas for one hour per school day, it is unreasonable to assume that the minimum number of person hours would be met. Therefore, a nose barrier is not recommended for further evaluation.

Table 11 The Master's Academy
ROW and Shoulder Noise Barrier Evaluation

Barrier Height (feet)	Total Barrier Length (feet)[a]	Barrier Type	Total Cost[b]	Total Number of Receptors in Grid	Total Number of Receptors Impacted	Total Number of Receptors Impacted and Benefited	Percentage of Impacted Area Benefited	Total Number of Receptors Benefited	Percentage of Evaluated Area Benefited	Maximum Reduction (d(B)A)	Required Person-Hours of Daily Use Within Benefited Area	Required Person-Hours of Daily Use Within Entire Facility
8	2,945	Shoulder	$706,800	125	96	NRDG not met.						
10	2,713		$813,900			56	58%	56	45%	7.9	1,145	2,556
12	3,428		$1,234,080			96	100%	107	86%	9.6	1,735	2,027
14	3,039		$1,276,380			96	100%	113	90%	10.5	1,795	1,986
8	1,006	ROW	$241,440			3	3%	3	2%	7.0	340	14,167
10	1,603		$480,900			13	14%	13	10%	9.0	677	6,510
12	1,603		$577,080			25	26%	25	20%	10.3	812	4,060
14	1,806		$758,520			38	40%	38	30%	11.4	1,067	3,510
16	1,806		$866,880			55	57%	55	44%	12.2	1,219	2,770
18	1,806		$975,240			70	73%	70	56%	13.1	1,371	2,448
20	1,906		$1,143,600			81	84%	81	65%	13.8	1,608	2,481
22	2,007		$1,324,620			83	86%	86	69%	14.4	1,863	2,708

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Unit cost of $30/ft.2 for all barriers.

3.1.2.10 Oviedo Medical Center (Trail)

The Oviedo Medical Center is located north of Oviedo Mall Boulevard and has a recreational trail (**Appendix C, sheet 9**). This recreational trail was represented by 33 receptor points. Exterior traffic noise levels are predicted to range from 63.7 to 73.5 dB(A) for the Design year and approach, meet, or exceed the NAC. Therefore, a noise barrier was evaluated for this impacted trail.

A ROW noise barrier and a shoulder-mounted noise barrier were evaluated as shown in **Table 12**. A ROW noise barrier was evaluated at heights ranging from 8 – 22 ft. A shoulder-mounted noise barrier was evaluated at heights ranging from 8 ft. to 14 ft., and limited to 8 ft. where on structure. As shown, the trail would need to be utilized by a minimum of 1,601 person-hours to be considered cost reasonable. Using an estimated walking speed of 3 miles per hour, a person is estimated to spend approximately 8 minutes walking the 2,100 ft. of trail evaluated. For 1,601 person-hours to be reached, the trail needs to be utilized by 12,008 people walking along the 2,100 ft. of trail evaluated. It is unreasonable to assume this amount of use occurs on the trail every day. Therefore, a nose barrier is not recommended for further evaluation.

Table 12 Oviedo Medical Center Trail
ROW and Shoulder Noise Barrier Evaluation

Barrier Height (feet)	Total Barrier Length (feet)[a]	Barrier Type	Total Cost[b]	Total Number of Receptors in Grid	Total Number of Receptors Impacted	Total Number of Receptors Impacted and Benefited	Percentage of Impacted Area Benefited	Total Number of Receptors Benefited	Percentage of Evaluated Area Benefited	Maximum Reduction (d(B)A)	Required Person-Hours of Daily Use Within Benefited Area	Required Person-Hours of Daily Use Within Entire Facility
8	2,328	Shoulder	$558,720	33	25	15	60%	15	45%	7.2	786	1,729
10	1,955	Shoulder	$586,500			17	68%	17	52%	8.0	825	1,601
8	193	Structure	$1,708,080			25	100%	30	91%	10.2	2,402	2,642
12	4,616	Shoulder										
8	193	Structure	$1,567,560			25	100%	30	91%	11.0	2,204	2,424
14	3,622	Shoulder										
8	N/A	ROW	N/A			NRDG not met.						
10												
12												
14												
16	1,119		$537,120			13	52%	13	39%	7.3	756	1,919
18	1,119		$604,260			15	60%	15	45%	7.8	850	1,870
20	1,754		$1,052,400			20	80%	20	61%	8.3	1,480	2,442
22	1,566		$1,033,560			23	92%	25	70%	8.6	1,453	2,085

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Unit cost of $30/ft.^{2} for all barriers.

3.1.2.11 Isolated Residence North of Oviedo Mall Boulevard

An isolated residence north of Oviedo Mall Boulevard on Sugar Mill Road (**Appendix C, sheet 10**) was evaluated represented by one receptor. Exterior traffic noise levels are predicted to be 71.9 dB(A) for the Design year and approach, meet, or exceed the NAC. However, because FDOT policy requires two impacted receptors to be benefited by a 5 dB(A) reduction in order for a barrier to be feasible, a barrier is not considered a feasible abatement measure for the impacted residence. Therefore, a noise barrier was not evaluated for this impacted residence.

3.1.2.12 Mission Road Church Learning Center

The Mission Road Church Learning Center is located north of Winter Springs Boulevard and has a playground (**Appendix C, sheet 11**). This playground was represented by one receptor point. Exterior traffic noise levels are predicted to be 72.1 dB(A) for the Design year and approach, meet, or exceed the NAC. Therefore, a noise barrier was evaluated for this impacted daycare.

A ROW noise barrier and a shoulder-mounted noise barrier were evaluated as shown in **Table 13**. A ROW noise barrier was evaluated at heights ranging from 8 – 22 ft. A shoulder-mounted noise barrier was evaluated at heights ranging from 8 ft. to 14 ft., and limited to 8 ft. where on structure. The minimum number of person-hours of use for a noise barrier to be considered cost reasonable is 1,262 person hours. It is unreasonable to assume that the minimum number of person hours would be met at this small daycare. Therefore, a nose barrier is not recommended for further evaluation.

Table 13 Mission Road Learning Center
ROW and Shoulder Noise Barrier Evaluation

Barrier Height (feet)	Total Barrier Length (feet)[a]	Barrier Type	Total Cost[b]	Total Number of Receptors in Grid	Total Number of Receptors Impacted	Total Number of Receptors Impacted and Benefited	Percentage of Impacted Area Benefited	Total Number of Receptors Benefited	Percentage of Evaluated Area Benefited	Maximum Reduction (dB(A))	Required Person-Hours of Daily Use Within Benefited Area	Required Person-Hours of Daily Use Within Entire Facility
8	N/A	Shoulder	N/A	1	1	NRDG not met.						
10												
12												
14	2,137		$897,540			1	100%	1	100%	7.0	1,262	1,262
8	N/A	ROW	N/A			NRDG not met.						
10												
12												
14												
16												
18												
20	2,324		$1,394,400			1	100%	1	100%	7.0	1,961	1,961
22	1,385		$914,100			1	100%	1	100%	8.0	1,285	1,285

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Unit cost of $30/ft.^{2} for all barriers.

3.1.2.13 Mission Road Church of God in Christ

The Mission Road Church of God in Christ is a place of worship located north of Winter Springs Boulevard (**Appendix C, sheet 11**). The place of worship has no exterior frequent human use area. Therefore, the interior of the place of worship was evaluated and was represented by one receptor point. Including a 25 dB(A) insertion loss from the building, the interior traffic noise levels are predicted to be 50.4 dB(A) for the Design year and do not approach, meet, or exceed the NAC. Therefore, a noise barrier was not evaluated for this place of worship.

3.1.2.14 Residences from Winter Springs Boulevard to SR 434 (Oak Hill Villas, Richfield, Shed Grove, Hickory Glen, Willa Lake, Worthington, Casa Villa Heights)

Residences from Winter Springs Boulevard to SR 434 (Oak Hill Villas, Richfield, Shed Grove, Hickory Glen, Willa Lake, Worthington, Casa Villa Heights; **Appendix C, sheets 11, 12, 13 and 14**) were evaluated by 53 receptor points representing 117 residences. Exterior traffic noise levels are predicted to range from 59.4 to 76.2 dB(A) for the Design year and approach, meet, or exceed the NAC at 53 residences. Therefore, a noise barrier was evaluated for these 53 impacted residences.

A ROW noise barrier would not be effective as a gap in the noise barrier would be needed to accommodate the Cross Seminole Trail which passes underneath the Seminole Expressway. Therefore, a shoulder-mounted noise barrier system was evaluated. A shoulder-mounted noise barrier was evaluated at heights ranging from 8 ft. to 14 ft., and limited to 8 ft. where on structure. As shown in **Table 14**, the result of the evaluation identified that a shoulder-mounted noise barrier of 14 ft. (and 8 ft. when on structure) would provide a benefit to at least two impacted receptors, meets the NRDG, and is cost reasonable. Therefore, a noise barrier for the residences from Winter Springs Boulevard to SR 434 was evaluated further.

The 8 ft. and 14 ft. noise barrier system configuration was evaluated in an engineering review to review safety, utility, maintenance, and other constructability issues. The results of the engineering review found no issues with the proposed shoulder and ROW mounted noise barrier system (shown in **Appendix D**). Therefore, the 8 ft. and 14 ft. shoulder-mounted noise barrier system was recommended for inclusion into the Design Plans and is shown in (**Appendix C, sheets 11, 12, 13 and 14)**.

Table 14 Residences from Winter Springs Boulevard to SR 434 (Oak Hill Villas, Richfield, Shed Grove, Hickory Glen, Willa Lake, Worthington, Casa Villa Heights)

Barrier ID	Barrier Height (feet)	Barrier Length[a] (Feet)	Barrier Type	Number of Impacted Residences	Number of Impacted Residences Within a Noise Reduction Range			Number of Benefited Residences				Total Estimated Cost[e]	Cost Per Benefited Residence	Cost Reasonable?
					5-5.9 dB(A)	6-6.9 dB(A)	≥7 dB(A)	Impacted[b]	Other[c]	Total[d]	Average Reduction dB(A)			
1	8	1,527	Structure	53	NRDG not met.									
	8	7,896	Shoulder											
2	8	1,527	Structure		22	10	6	38	2	40	6.0	$2,049,180	$51,230	No
	10	5,609	Shoulder											
3	8	1,527	Structure		20	9	11	40	15	55	6.2	$2,143,440	$38,972	Yes
	12	4,936	Shoulder											
4	8	1,527	Structure		13	6	32	51	26	77	6.6	$2,468,160	$32,054	Yes
	14	5,004	Shoulder											

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[c] Other includes residences with predicted noise levels that do not approach, meet, or exceed 66 dB(A) but are incidentally benefited.
[d] Total Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Unit cost of $30/ft.^{2} for all barriers.

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3.1.2.15 Cross Seminole Trail #2 (East Side of SR 417)

The Cross Seminole Trail is a recreational trail that passes under the Seminole Expressway and is present on the east side of SR 417 (**Appendix C, sheets 12 and 13**). The trail was evaluated as Activity Category C of the NAC and was represented by eight receptors. The exterior traffic noise level is predicted to range from 63.5 to 72.6 dB(A) for the Design year and approaches, meets, or exceeds the NAC at the trail. Therefore, a noise barrier for this trail was evaluated. However, a noise barrier is recommended for the surrounding residences from Winter Springs Boulevard to SR 434, as shown in **Table 14**. The Cross Seminole Trail does not receive a benefit from this noise barrier due to the barrier along the shoulder being limited to 8 ft., as shown in **Appendix C, sheets 12 and 13**. Therefore, while the Cross Seminole Trail at crossing #2 will be shielded from SR 417 by a noise barrier, it is not expected to benefit from a 5 dB(A) noise reduction.

SECTION 4
Conclusions

Noise levels were predicted at 409 receptor points representing 661 residences and six special land uses (i.e., non-residential areas). For Design Year (2050) conditions, noise levels are predicted to approach, meet, or exceed the NAC at 226 residences and five special land uses. Noise barriers were found to be a reasonable and feasible form of traffic noise abatement for six residential areas. The remaining impacted land uses did not qualify for a noise barrier because they do not meet the criteria of reasonableness and/or feasibility to warrant the construction of a noise barrier and, therefore, were not recommended for this project.

As shown in **Table 15**, noise barriers were found to be a reasonable and feasible form of traffic noise abatement for six residential areas. These noise barriers provide a benefit to 289 residences and cost a total of $10,355,220.

Table 15 Summary of Reasonable and Feasible Noise Barriers

Barrier ID	Common Noise Environment	Barrier Location	Barrier Approx. Begin & End Stations		Optimized Barrier Height (feet)	Optimized Barrier Length[a] (feet)	Optimized Barrier Cost[b]	Number of Impacted Residences	Benefited Residences		Cost per Benefited Residence
			Min	Max					Impacted and Benefited[c]	Total Benefited[d]	
1	Residences from Aloma Avenue to Via Loma Drive (Mystic Cove Apartments, Loma Vista, and Provenance [portion south of trail])	Structure	1114 + 75	326 + 20	8	1,560	$3,043,140	59	55	83	$36,664
			314 + 61	317 + 91							
		Shoulder	297 + 6	314 + 61	14	3,513					
			317 + 91	319 +30							
			1101 + 50	1114 + 75							
			326 + 20	330 + 0							
		ROW	1122 + 40	339 + 40	22	1,808					
2	Residences from Winter Springs Boulevard to SR 434 (Oak Hill Villas, Richfield, Shed Grove, Hickory Glen, Willa Lake, Worthington, Casa Villa Heights)	Structure	550 + 0	565 + 15	8	1,527	$2,468,160	53	51	77	$32,054
		Shoulder	525 + 40	550 + 0	14	5,004					
			565 + 15	1375 + 0							
			577 + 20	590 + 10							
3	Orange/Seminole County Line to Aloma Avenue (Isolated residence, Stratford Green/Clifton Park)	Shoulder	270 +60	1189 + 22	22	1,962	$1,294,920[d]	15	15	31	$41,772[e]
4	Residences from Aloma Avenue to Vicinity of Cross Seminole Trail (Clayton Crossing)	Structure	305 + 40	306 + 60	8	376	$784,680	16	16	25	$31,387
			311 + 70	314 + 6							
		Shoulder	306 + 60	311 + 70	14	544					
		ROW	1304 + 85	1311 + 40	22	706					
5	Residences in Villas at Lakeside	Structure	430 + 73	432 + 80	8	174	$1,029,420	27	24	32	$32,169
		Shoulder	407 + 20	430 + 73	14	2,351					
6	Residences within the Vicinity of Winter Springs Boulevard to Cross Seminole Trail	Structure	505 + 61	512 + 10	8	647[f]	$1,734,900	39	34	41	$42,315[g]
		Shoulder	512 + 10	549 + 95	14	3,761					
	Totals	------	------		------	------	$10,355,220	209	195	289	------

[a] Full height is for the length indicated. The length of any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
[b] Unit cost of $30/ft.^{2} for all barriers.
[c] Impacted residences with predicted noise levels that approach, meet, or exceed 66 dB(A) and are provided a benefit.
[d] Impacted and Benefited includes impacted/benefited residences and additional residences with predicted noise levels that do not approach 66 dB(A) but are incidentally benefited.
[e] Does not include the cost of the required guard rail.
[f] The length of the noise barrier located on structure was extended by 104 ft. to accommodate engineering requests.
[g] Because this cost is less than one percent above the FDOT's $42,000 per benefit limit, approval was received to proceed with this 14 ft. noise barrier configuration.

SECTION 5
Construction Noise and Vibration

Based on the existing land use within the limits of this project, construction of the proposed roadway improvements will not have any noise or vibration impact. If noise-sensitive land uses develop adjacent to the roadway prior to construction, additional impacts could result. It is anticipated that the application of the FDOT Standard Specifications for Road and Bridge Construction will minimize or eliminate most of the potential construction noise and vibration impacts. However, should unanticipated noise or vibration issues arise during the construction process, the Project Manager, in concert with the FTE Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

SECTION 6
Community Coordination

Coordination with local agencies, officials, and the general public is ongoing and the public has had the opportunity to comment on the proposed project at public meetings and other outreach efforts, including:

- A meeting to discuss noise issues during the City of Winter Springs City Council Meeting on April 11, 2022. Participants requested noise barriers throughout the corridor as well as special "quieter pavements" and treatments for underpasses (neither of which are on FDOT's approved materials lists).
- A Virtual Public Information Meeting was held online in on Tuesday August 30, 2022
- An in-person Public Information Meeting was held on September 1, 2022 at the Oviedo Amphitheatre and Cultural Center
    - [insert noise comments, if any]

Comments from the meetings were considered in this final noise study report.

SECTION 7
References

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

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Federal Highway Administration. "*Consideration of Existing Noise Barrier in a Type I Noise Analysis FHWA-HEP-12-051."* https://www.fhwa.dot.gov/ENVIRONMENT/noise/noise_barriers/abatement/existing.cfm. Accessed May 6, 2019.

APPENDICES

Appendix A Traffic Data

Appendix B Predicted Noise Levels

Appendix C Aerials

Appendix D Engineering Review Package

Appendix E TNM Files

APPENDIX A

TRAFFIC DATA

Traffic Data – Seminole Expressway (SR 417)
FPID 417545-1 Widen Seminole Expressway from Aloma Avenue to SR 434
Build (2050) Conditions

Seminole Expressway Mainline

Mainline Segment	Number of Lanes	Two-Way AADT	LOS C AADT	Peak Hour Peak Direction	LOS C Peak Hour Peak Direction	Design Hr. % Trucks	Design Hr. % MT	Design Hr. % HT	Design Hr. % Buses	Design Hr. % Motorcycles	Standard K-factor	D-factor	Posted Speed (mph)
Seminole Expressway (SR 417)													
From Aloma Avenue to Red Bug Lake Road	8	119,700	111,300	6,410	6,280	5.45%	2.06%	3.03%	0.36%	0.28%	10.0%	56.4%	70
From Red Bug Lake Road to SR 434	8	115,700	111,300	6,200	6,280	5.45%	2.06%	3.03%	0.36%	0.28%	10.0%	56.4%	70

Seminole Expressway Mainline Ramps

Interchange Ramp	Number of Lanes	One-Way AADT	One-Way LOS C AADT	Peak Hour Peak Direction	LOS C Peak Hour Peak Direction	Design Hr. % Trucks	Design Hr. % MT	Design Hr. % HT	Design Hr. % Buses	Design Hr. % Motorcycles	K-factor	D-factor	Posted Speed (mph)
Aloma Avenue (SR 426)													
Northbound Off-Ramp	2	15,500	12,700	2,160	2,540	2.77%	0.99%	1.59%	0.18%	0.28%	10.0%	100.0%	45
Southbound On-Ramp	2	15,500	12,700	2,160	2,540	2.77%	0.99%	1.59%	0.18%	0.28%	10.0%	100.0%	45
Northbound On-Ramp	1	7,300	6,400	890	1,270	2.77%	0.99%	1.59%	0.18%	0.28%	10.0%	100.0%	45
Southbound Off-Ramp	1	7,300	6,400	890	1,270	2.77%	0.99%	1.59%	0.18%	0.28%	10.0%	100.0%	45
Red Bug Lake Road													
Northbound Off-Ramp	2	13,400	12,700	1,970	2,540	3.11%	1.05%	1.86%	0.21%	0.28%	10.0%	100.0%	45
Southbound On-Ramp (EB - Diagonal)	1	4,000	6,400	590	1,270	3.11%	1.05%	1.86%	0.21%	0.28%	10.0%	100.0%	45
Southbound On-Ramp (WB - Loop)	1	9,300	6,200	1,380	1,240	3.11%	1.05%	1.86%	0.21%	0.28%	10.0%	100.0%	35
Northbound On-Ramp	1	11,400	6,400	1,760	1,270	3.11%	1.05%	1.86%	0.21%	0.28%	10.0%	100.0%	45
Southbound Off-Ramp	1	11,400	6,400	1,760	1,270	3.11%	1.05%	1.86%	0.21%	0.28%	10.0%	100.0%	45
SR 434													
Northbound Off-Ramp	1	9,600	6,400	1,430	1,270	4.21%	1.46%	2.47%	0.28%	0.28%	10.0%	100.0%	45
Southbound On-Ramp	1	9,600	6,400	1,430	1,270	4.21%	1.46%	2.47%	0.28%	0.28%	10.0%	100.0%	45
Northbound On-Ramp	1	7,800	6,400	1,110	1,270	4.21%	1.46%	2.47%	0.28%	0.28%	10.0%	100.0%	45
Southbound Off-Ramp	1	7,800	6,400	1,110	1,270	4.21%	1.46%	2.47%	0.28%	0.28%	10.0%	100.0%	45

Arterials

Arterial Segment	Number of Lanes	Two-Way AADT	LOS C AADT	Peak Hour Peak Direction	LOS C Peak Hour Peak Direction	Design Hr. % Trucks	Design Hr. % MT	Design Hr. % HT	Design Hr. % Buses	Design Hr. % Motorcycles	K-factor	D-factor	Posted Speed (mph)
Aloma Avenue (SR 426)													
East of SR 417	4	46,200	36,700	2,770	2,110	5.20%	4.15%	0.36%	0.69%	0.28%	9.0%	63.9%	45
West of SR 417	6	74,800	67,800	2,430	3,250	5.20%	4.15%	0.36%	0.69%	0.28%	9.0%	53.2%	45
Slavia Road													
West of SR 417	2	18,000	14,100	550	660	2.15%	1.79%	0.07%	0.28%	0.28%	9.0%	51.9%	45
Red Bug Lake Road													
East of SR 417	6	71,800	65,400	1,800	3,250	2.50%	2.00%	0.17%	0.33%	0.28%	9.0%	55.2%	45
West of SR 417	6	52,800	70,000	1,840	3,250	2.50%	2.00%	0.17%	0.33%	0.28%	9.0%	51.6%	45
Oviedo Mall Boulevard													
East of SR 417	4	11,600	17,100	350	800	3.95%	3.15%	0.27%	0.52%	0.28%	9.0%	51.9%	35
Winter Springs Boulevard													
West of SR 417	4	16,000	17,100	480	800	1.85%	1.48%	0.13%	0.24%	0.28%	9.0%	51.9%	30
SR 434*													
East of SR 417	4	46,400	39,700	1,580	2,110	4.10%	3.27%	0.28%	0.54%	0.28%	9.0%	59.0%	45
West of SR 417	4	50,400	42,900	2,300	2,110	4.10%	3.27%	0.28%	0.54%	0.28%	9.0%	54.6%	50

AADT: Annual Average Daily Traffic *MT: Medium Trucks* *HT: Heavy Trucks*

Notes:

(1) Number of lanes are obtained from the aerial maps and design layouts.
(2) Traffic data is obtained from the Seminole Expressway 2021 Traffic Trends and Florida Traffic Online (FTO).
(3) Peak hour demand and LOS C Peak Hour maximum service volumes are provided directionally.
(4) Freeway mainline and ramp LOS C targets are based on the FDOT Systems Planning Office Estimation of Capacities on Florida Freeways report, dated September 2014, and adjusted for local conditions. LOS C targets for the GUL are obtained from FDOT 2020
Generalized Service Volume Tables, and adjusted for trucks.
(5) LOS C AADTs are estimated using K and D factors and the design hour peak direction LOS C maximum service volumes.
(6)Seminole Expressway and tolled ramps design hour truck percentages are based on toll data. Truck percentages for non-tolled ramps are based on applicable adjacent toll data. Truck percentages for arterials were estimated from counts and distributed based on
class data from the FTO Application. The medium vehicle classifications listed here make a distinction between medium trucks and buses.
(7) Posted speed data is obtained from Google Maps.
(8) * SR 434 east of the interchange will taper to two lanes (one lane each direction) beyond the interchange footprint

APPENDIX B

PREDICTED NOISE LEVELS

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
Orange/Seminole County Line to Aloma Avenue (Deep Lake, Aloma Acres)	1	RE17	B	Residential	1	67.3	YES
	1	RE18	B	Residential	1	64.9	NO
	1	RE19	B	Residential	1	65.9	NO
	1	RE20	B	Residential	4	64.8	NO
	1	RE21	B	Residential	2	65.9	NO
Aloma Avenue to Via Loma Drive (Mystic Cove Apartments, Loma Vista, and Provenance[portion south of trail])	2	RE23	B	Residential	4	65.8	NO
	2	RE26	B	Residential	8	65.4	NO
	2	RE27	B	Residential	8	65.9	NO
	2	RE28	B	Residential	8	66.3	YES
	2	RE29	B	Residential	8	66.7	YES
	2	RE30	B	Residential	4	67.2	YES
	2	RE38	B	Residential	4	66.4	YES
	2	RE39	B	Residential	2	67.5	YES
	2	RE40	B	Residential	4	69.4	YES
	3	RE41	B	Residential	4	69.7	YES
	3	RE42	B	Residential	2	67.9	YES
	3	RE43	B	Residential	4	65.9	NO
	3	RE44	B	Residential	4	66.4	YES
	3	RE45	B	Residential	4	65.3	NO
	3	RE46	B	Residential	4	65.7	NO
	3	RE47	B	Residential	1	68.5	YES
	3	RE48	B	Residential	1	64.3	NO
	3	RE49	B	Residential	1	69.8	YES
	3	RE50	B	Residential	4	68.0	YES
	3	RE51	B	Residential	4	68.1	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	3	RE52	B	Residential	4	66.9	YES
	3	RE53	B	Residential	4	65.5	NO
	3	RE54	B	Residential	4	64.6	NO
	3	RE55	B	Residential	4	62.4	NO
	3	RE56	B	Residential	4	61.2	NO
	3	RE59	B	Residential	4	61.2	NO
	3	RE60	B	Residential	24	62.2	NO
	3	RE49.1	B	Residential	1	67.7	YES
	4	RE370	B	Residential	1	62.1	NO
	4	RE371	B	Residential	2	62.0	NO
	4	RE372	B	Residential	1	62.4	NO
	4	RE373	B	Residential	1	62.4	NO
	4	RE374	B	Residential	2	62.3	NO
	4	RE375	B	Residential	1	62.0	NO
	4	RE376	B	Residential	1	62.5	NO
	4	RE377	B	Residential	2	63.0	NO
	4	RE378	B	Residential	1	63.1	NO
	3	RE25	B	Residential	4	62.0	NO
	3	RE31	B	Residential	4	61.1	NO
	3	RE32	B	Residential	4	62.9	NO
	3	RE33	B	Residential	4	60.4	NO
	3	RE34	B	Residential	2	68.0	YES
	3	RE35	B	Residential	2	66.1	YES
	3	RE36	B	Residential	4	65.1	NO
	3	RE37	B	Residential	4	64.4	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	2	RE382	B	Residential	8	65.3	NO
	2	RE389	B	Residential	8	64.7	NO
	2	RE383	B	Residential	4	65.3	NO
	2	RE381	B	Residential	4	65.6	NO
	3	RE384	B	Residential	2	64.0	NO
	3	RE386	B	Residential	2	64.2	NO
	3	RE388	B	Residential	2	63.4	NO
	3	RE387	B	Residential	2	63.5	NO
	3	RE385	B	Residential	4	65.9	NO
Vicinity of Connection Point to W. Chapman Road (Scattered Residences)	5	RE62	B	Residential	1	70.7	YES
	5	RE63	B	Residential	1	71.6	YES
	5	RE64	B	Residential	1	65.2	NO
	6	RE65	B	Residential	1	73.7	YES
	6	RE66	B	Residential	1	70.5	YES
	6	RE67	B	Residential	1	73.9	YES
North of W. Chapman Road (Isolated Residence)	7	RE71	B	Residential	2	63.0	NO
South of Slavia Road (Isolated Residence)	7	RE72	B	Residential	1	67.0	YES
The Master's Academy	8	RE73	C	School (exterior)	0	72.4	YES
	8	RE74			0	67.6	YES
North of Oviedo Mall Boulevard (Isolated Residence)	10	RE78	B	Residential	1	71.9	YES
Winter Springs Road to SR 434 (Oak Hill Villas, Richfield, Shed Grove, Hickory Glen, Willa Lake, Worthington, Casa Villa Heights)	11	RE82	B	Residential	2	75.4	YES
	11	RE83	B	Residential	1	65.0	NO
	11	RE84	B	Residential	2	64.0	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	11	RE85	B	Residential	4	68.5	YES
	11	RE86	B	Residential	6	70.5	YES
	12	RE87	B	Residential	5	75.1	YES
	12	RE88	B	Residential	1	69.3	YES
	12	RE89	B	Residential	1	69.4	YES
	12	RE90	B	Residential	3	66.8	YES
	12	RE91	B	Residential	4	64.7	NO
	12	RE92	B	Residential	2	66.7	YES
	12	RE93	B	Residential	1	64.1	NO
	11	RE94	B	Residential	1	65.5	NO
	11	RE95	B	Residential	1	62.5	NO
	11	RE96	B	Residential	3	59.4	NO
	11	RE97	B	Residential	3	60.4	NO
	12	RE98	B	Residential	1	63.0	NO
	12	RE99	B	Residential	2	63.7	NO
	12	RE100	B	Residential	2	65.5	NO
	12	RE101	B	Residential	4	63.6	NO
	12	RE102	B	Residential	1	68.3	YES
	12	RE103	B	Residential	2	64.2	NO
	12	RE104	B	Residential	2	62.8	NO
	11	RE105	B	Residential	4	61.5	NO
	11	RE106	B	Residential	3	62.1	NO
	11	RE107	B	Residential	1	65.2	NO
	11	RE108	B	Residential	2	64.7	NO
	11	RE109	B	Residential	3	67.0	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	12	RE114	B	Residential	3	66.5	YES
	12	RE117	B	Residential	3	62.9	NO
	12	RE118	B	Residential	1	67.7	YES
	12	RE119	B	Residential	2	64.6	NO
	12	RE121	B	Residential	1	65.2	NO
	13	RE122	B	Residential	1	67.3	YES
	13	RE123	B	Residential	1	76.2	YES
	13	RE124	B	Residential	2	71.9	YES
	13	RE125	B	Residential	2	65.5	NO
	13	RE127	B	Residential	2	69.8	YES
	13	RE128	B	Residential	5	70.0	YES
	13	RE129	B	Residential	7	69.0	YES
	13	RE130	B	Residential	1	67.7	YES
	13	RE131	B	Residential	1	64.3	NO
	13	RE132	B	Residential	1	64.5	NO
	13	RE133	B	Residential	1	61.4	NO
	13	RE134	B	Residential	4	60.4	NO
	13	RE135	B	Residential	2	63.2	NO
	13	RE136	B	Residential	1	65.9	NO
	13	RE137	B	Residential	3	62.7	NO
	13	RE138	B	Residential	1	62.6	NO
	13	RE139	B	Residential	1	64.3	NO
	12	RE115	B	Residential	1	65.9	NO
	12	RE116	B	Residential	2	66.4	YES
	13	RE141	B	Residential	1	64.6	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
Orange/Seminole County Line to Aloma Avenue (Isolated residence, Stratford Green/Clifton Park)	1	RW11	B	Residential	1	73.8	YES
	1	RW12	B	Residential	1	60.1	NO
	1	RW15	B	Residential	19	60.8	NO
	1	RW13	B	Residential	1	73.3	YES
	1	RW13.1	B	Residential	1	68.3	YES
	1	RW13.2	B	Residential	1	65.4	NO
	1	RW13.3	B	Residential	1	64.7	NO
	1	RW14	B	Residential	7	75.6	YES
	1	RW14.1	B	Residential	1	62.9	NO
	1	RW16	B	Residential	1	71.7	YES
	1	RW16.1	B	Residential	1	66.7	YES
	1	RW14.2	B	Residential	4	63.5	NO
	1	RW16.2	B	Residential	1	72.7	YES
	1	RW16.3	B	Residential	1	67.3	YES
	1	RW16.4	B	Residential	1	65.0	NO
	1	RW138	B	Residential	2	63.0	NO
	1	RW139	B	Residential	3	64.4	NO
	1	RW140	B	Residential	1	67.2	YES
	1	RW141	B	Residential	1	65.9	NO
	1	RW142	B	Residential	1	64.9	NO
	1	RW143	B	Residential	1	64.9	NO
	1	RW144	B	Residential	1	64.1	NO
	1	RW145	B	Residential	1	65.0	NO
	1	RW146	B	Residential	3	63.0	NO
	1	RW147	B	Residential	2	63.6	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
Aloma Avenue to Vicinity of Cross Seminole Trail (Clayton Crossing)	2	RW19	B	Residential	2	60.7	NO
	2	RW31	B	Residential	2	64.7	NO
	2	RW32	B	Residential	2	57.9	NO
	2	RW33	B	Residential	3	66.4	YES
	2	RW34	B	Residential	2	57.0	NO
	2	RW35	B	Residential	2	56.3	NO
	2	RW38	B	Residential	6	58.6	NO
	2	RW39	B	Residential	4	60.5	NO
	2	RW36	B	Residential	3	65.8	NO
	2	RW22	B	Residential	4	62.9	NO
	2	RW17.1	B	Residential	1	69.2	YES
	2	RW17.2	B	Residential	1	69.0	YES
	2	RW17.3	B	Residential	1	68.8	YES
	2	RW17.4	B	Residential	1	68.5	YES
	2	RW17.5	B	Residential	1	68.2	YES
	2	RW17.6	B	Residential	1	67.9	YES
	2	RW20.1	B	Residential	1	67.5	YES
	2	RW20.2	B	Residential	1	67.2	YES
	2	RW20.3	B	Residential	1	67.0	YES
	2	RW20.4	B	Residential	1	66.7	YES
	2	RW21.1	B	Residential	1	66.3	YES
	2	RW21.2	B	Residential	1	66.0	YES
	2	RW21.3	B	Residential	1	65.8	NO
	2	RW21.4	B	Residential	1	65.7	NO
	2	RW21.5	B	Residential	1	65.6	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	2	RW21.6	B	Residential	1	65.4	NO
	2	RW23.1	B	Residential	1	65.0	NO
	2	RW23.2	B	Residential	1	64.8	NO
	2	RW23.3	B	Residential	1	64.6	NO
	2	RW23.4	B	Residential	1	64.4	NO
	2	RW23.5	B	Residential	1	64.2	NO
	2	RW23.6	B	Residential	1	64.0	NO
	2	RW18.1	B	Residential	1	66.5	YES
	2	RW18.2	B	Residential	1	64.6	NO
	2	RW18.3	B	Residential	1	63.2	NO
	2	RW18.4	B	Residential	1	62.2	NO
Vicinity of Robin Lee Road and Mikler Road (Roann Estates (formerly Raintree Country Estates), Estates at Wellington, and Mikler Road Estates)	3	RW40	B	Residential	1	60.8	NO
	3	RW42	B	Residential	2	64.2	NO
	3	RW43	B	Residential	1	68.5	YES
	3	RW44	B	Residential	1	66.6	YES
	4	RW45	B	Residential	1	64.2	NO
	4	RW49	B	Residential	1	64.3	NO
	4	RW51	B	Residential	1	73.3	YES
	4	RW52	B	Residential	1	69.5	YES
	4	RW53	B	Residential	1	62.9	NO
	4	RW54	B	Residential	1	68.3	YES
	4	RW55	B	Residential	1	62.6	NO
	4	RW56	B	Residential	1	68.0	YES
	5	RW57	B	Residential	1	63.6	NO
	5	RW58	B	Residential	1	64.5	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	5	RW59	B	Residential	1	62.6	NO
	5	RW60	B	Residential	2	61.5	NO
	3	RW43.1	B	Residential	1	67.0	YES
	4	RW46	B	Residential	1	65.5	NO
	4	RW48	B	Residential	1	70.8	YES
	4	RW47	B	Residential	1	72.2	YES
Regency Estates	6	RW61	B	Residential	1	64.0	NO
Villas at Lakesie Condominiums (formerly Summer Club Apartments)	7	RW65A	B	Residential	1	67.4	YES
	7	RW65B	B	Residential	1	69.5	YES
	7	RW65C	B	Residential	1	70.2	YES
	7	RW66A	B	Residential	1	70.5	YES
	7	RW66B	B	Residential	1	72.5	YES
	7	RW66C	B	Residential	1	73.2	YES
	7	RW67A	B	Residential	2	68.8	YES
	7	RW67B	B	Residential	2	71.2	YES
	7	RW67C	B	Residential	2	71.9	YES
	7	RW68A	B	Residential	1	67.2	YES
	7	RW68B	B	Residential	1	69.9	YES
	7	RW68C	B	Residential	1	70.8	YES
	7	RW69A	B	Residential	1	63.9	NO
	7	RW69B	B	Residential	1	66.1	YES
	7	RW69C	B	Residential	1	67.3	YES
	7	RW70A	B	Residential	2	63.6	NO
	7	RW70B	B	Residential	2	65.4	NO
	7	RW70C	B	Residential	2	66.6	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	7	RW72A	B	Residential	1	58.8	NO
	7	RW72B	B	Residential	1	63.6	NO
	7	RW72C	B	Residential	1	65.0	NO
	7	RW73A	B	Residential	1	60.8	NO
	7	RW73B	B	Residential	1	64.4	NO
	7	RW73C	B	Residential	1	65.7	NO
	7	RW74A	B	Residential	3	60.7	NO
	7	RW74B	B	Residential	2	64.2	NO
	7	RW74C	B	Residential	2	65.7	NO
	7	RW76A	B	Residential	2	58.3	NO
	7	RW76B	B	Residential	2	62.0	NO
	7	RW76C	B	Residential	2	65.5	NO
	7	RW77A	B	Residential	1	55.8	NO
	7	RW77B	B	Residential	1	59.4	NO
	7	RW77C	B	Residential	1	64.0	NO
	7	RW78A	B	Residential	2	64.4	NO
	7	RW79A	B	Residential	4	64.3	NO
	7	RW79B	B	Residential	2	67.9	YES
	7	RW80A	B	Residential	2	65.5	NO
	7	RW80B	B	Residential	1	68.4	YES
	7	RW72.1A	B	Residential	3	58.6	NO
	7	RW72.1B	B	Residential	2	62.8	NO
	7	RW72.1C	B	Residential	2	64.4	NO
	7	RW64A	B	Residential	2	64.7	NO
	7	RW64B	B	Residential	2	66.6	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	7	RW64C	B	Residential	2	67.7	YES
	7	RW62A	B	Residential	2	63.3	NO
	7	RW62B	B	Residential	2	64.7	NO
	7	RW62C	B	Residential	2	65.9	NO
	7	RW63A	B	Residential	2	57.8	NO
	7	RW63B	B	Residential	2	61.6	NO
	7	RW63C	B	Residential	2	63.4	NO
	7	RW75A	B	Residential	2	60.2	NO
	7	RW75B	B	Residential	2	63.4	NO
	7	RW75C	B	Residential	2	65.2	NO
	7	RW71A	B	Residential	2	58.9	NO
	7	RW71B	B	Residential	2	62.7	NO
	7	RW64.1A	B	Residential	1	63.1	NO
	7	RW64.1B	B	Residential	1	64.9	NO
	7	RW64.1C	B	Residential	1	66.1	YES
Vicinity of Winter Springs Boulevard to Cross Seminole Trail (Chestnut Estates, Seneca Bend, Tuscawilla)	10	RW84	B	Residential	2	64.8	NO
	10	RW95	B	Residential	1	66.4	YES
	10	RW96	B	Residential	1	68.8	YES
	10	RW97	B	Residential	1	70.1	YES
	11	RW98	B	Residential	3	75.8	YES
	11	RW99	B	Residential	1	75.0	YES
	11	RW100	B	Residential	1	69.4	YES
	11	RW101	B	Residential	1	68.7	YES
	11	RW106	B	Residential	2	74.4	YES
	11	RW107	B	Residential	1	72.1	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	11	RW108	B	Residential	3	71.4	YES
	11	RW109	B	Residential	2	76.3	YES
	11	RW110	B	Residential	2	72.2	YES
	11	RW111	B	Residential	2	65.9	NO
	11	RW112	B	Residential	6	72.3	YES
	11	RW113	B	Residential	3	65.7	NO
	12	RW114	B	Residential	1	73.8	YES
	12	RW115	B	Residential	1	69.1	YES
	12	RW116	B	Residential	1	67.8	YES
	12	RW120	B	Residential	4	64.4	NO
	11	RW121	B	Residential	4	62.7	NO
	11	RW122	B	Residential	3	63.3	NO
	11	RW124	B	Residential	2	69.2	YES
	11	RW96.1	B	Residential	1	67.5	YES
	11	RW107.1	B	Residential	3	72.4	YES
	11	RW113.1	B	Residential	1	67.4	YES
	11	RW104	B	Residential	1	69.2	YES
	11	RW105	B	Residential	1	68.6	YES
	12	RW117	B	Residential	1	65.8	NO
	11	RW93	B	Residential	1	65.1	NO
	11	RW94	B	Residential	2	66.9	YES
	11	RW102	B	Residential	1	65.7	NO
	11	RW123	B	Residential	1	63.5	NO
	11	RW125	B	Residential	1	65.8	NO
	12	RW134	B	Residential	6	60.6	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	13	RW135	B	Residential	6	60.3	NO
	12	RW133	B	Residential	1	62.6	NO
North of Cross Seminole Trail to SR 434 (Eagles Watch)	13	RW137.5	B	Residential	10	63.9	NO
Cross Seminole Trail #1 (west side)	2	CST-1	C	Trail	0	60.1	NO
	2	CST-2			0	62.6	NO
	2	CST-3			0	65.7	NO
	2	CST-4			0	66.5	YES
	2	CST-5			0	67.4	YES
	2	CST-6			0	68.2	YES
	2	CST-7			0	69.4	YES
Cross Seminole Trail #1 (east side)	3	CST-8	C	Trail	0	69.8	YES
	3	CST-9			0	69.8	YES
	3	CST-10			0	69.6	YES
	3	CST-11			0	69.9	YES
	3	CST-12			0	70.5	YES
	3	CST-13			0	71.7	YES
	3	CST-14			0	72.4	YES
	3	CST-15			0	72.7	YES
	3	CST-16			0	73.0	YES
	3	CST-17			0	73.1	YES
	3	CST-18			0	72.8	YES
	3	CST-19			0	72.5	YES
	3	CST-20			0	72.4	YES
	3	CST-21			0	72.2	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	3	CST-22			0	71.7	YES
	3	CST-23			0	71.3	YES
	3	CST-24			0	70.7	YES
	3	CST-25			0	70.1	YES
	3	CST-26			0	68.7	YES
	3	CST-28			0	62.4	NO
	4	CST-29			0	60.3	NO
	4	CST-30			0	58.6	NO
	4	CST-31			0	63.6	NO
	4	CST-27			0	65.4	NO
	4	CST-32			0	65.0	NO
	4	CST-33			0	62.1	NO
	4	CST-34			0	59.3	NO
	4	CST-37			0	62.2	NO
	4	CST-38			0	64.0	NO
	4	CST-39			0	64.8	NO
	4	CST-40			0	65.1	NO
	4	CST-41			0	65.1	NO
	4	CST-42			0	65.2	NO
	4	CST-43			0	65.1	NO
	4	CST-44			0	65.0	NO
	4	CST-45			0	65.1	NO
	4	CST-46			0	65.0	NO
	4	CST-47			0	64.7	NO
	4	CST-48			0	64.4	NO

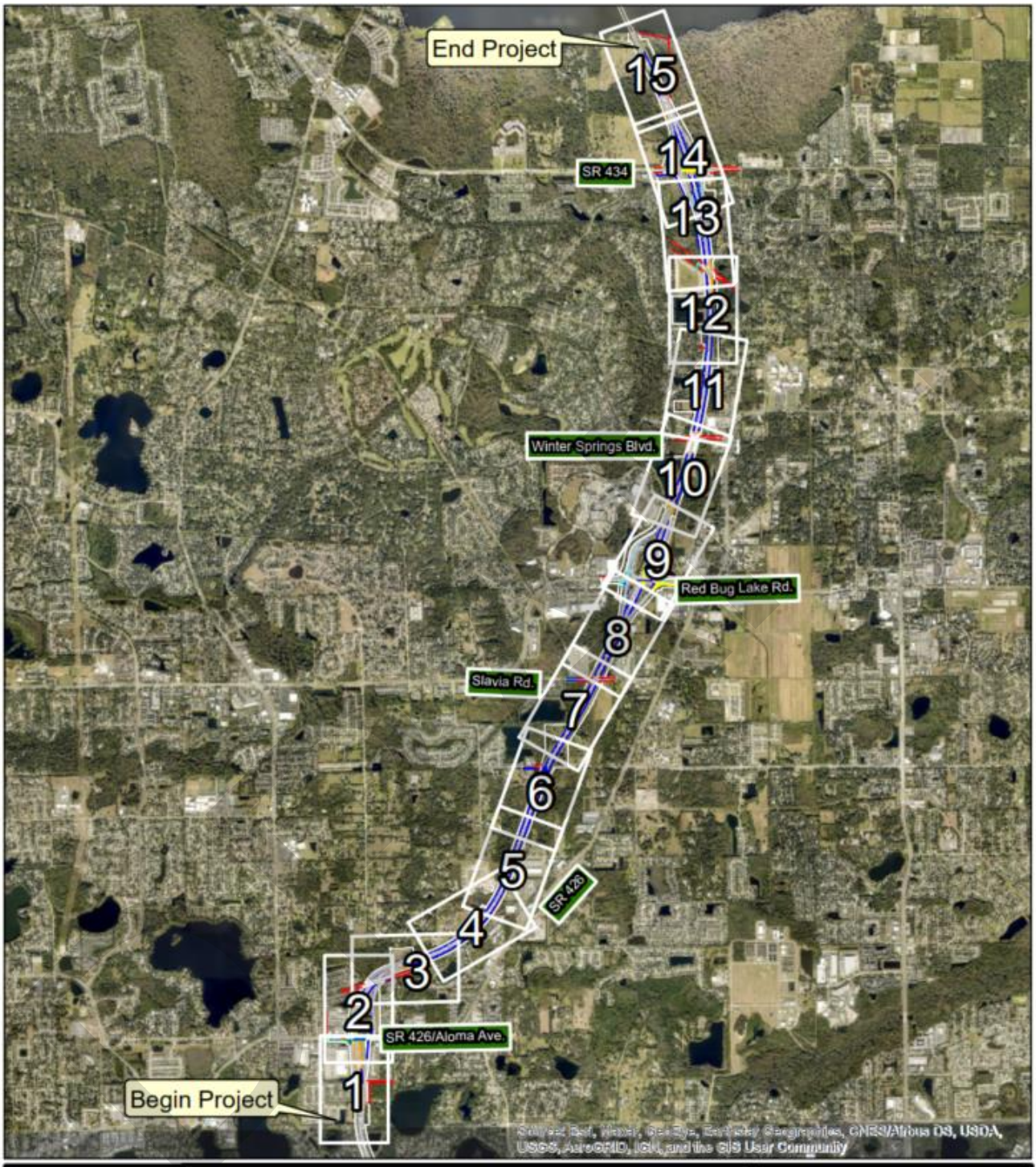
Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	4	CST-49			0	63.8	NO
	4	CST-50			0	63.8	NO
	4	CST-51			0	63.7	NO
	4	CST-35			0	59.3	NO
	4	CST-36			0	60.3	NO
	4	CST-52			0	63.4	NO
	4	CST-53			0	63.0	NO
	5	CST-55			0	62.4	NO
	5	CST-56			0	62.4	NO
	5	CST-57			0	61.7	NO
	5	CST-54			0	62.7	NO
Cross Seminole Trail #2 (east side)	12	CST-58	C	Trail	0	64.6	NO
	12	CST-59			0	66.3	YES
	12	CST-60			0	67.2	YES
	12	CST-61			0	67.9	YES
	12	CST-62			0	68.7	YES
	12	CST-63			0	70.8	YES
	12	CST-64			0	72.6	YES
	12	CST-65			0	63.5	NO
Cross Seminole Trail #2 (west side)	13	CST-66	C	Trail	0	74.0	YES
	13	CST-67			0	72.8	YES
	13	CST-68			0	69.9	YES
	13	CST-69			0	67.7	YES
	13	CST-70			0	65.9	NO
	13	CST-71			0	64.8	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	13	CST-72			0	63.3	NO
	13	CST-73			0	62.5	NO
Oviedo Medical Center Trail	9	OMC-1	C	Medical Facility (exterior)	0	64.9	NO
	9	OMC-2			0	65.2	NO
	9	OMC-3			0	65.7	NO
	9	OMC-4			0	66.3	YES
	9	OMC-5			0	66.7	YES
	9	OMC-6			0	67.2	YES
	9	OMC-7			0	67.7	YES
	9	OMC-8			0	67.8	YES
	9	OMC-9			0	67.7	YES
	9	OMC-10			0	67.8	YES
	9	OMC-11			0	67.6	YES
	9	OMC-12			0	68.5	YES
	9	OMC-13			0	69.8	YES
	9	OMC-14			0	70.9	YES
	9	OMC-15			0	70.9	YES
	9	OMC-16			0	71.7	YES
	9	OMC-17			0	71.8	YES
	9	OMC-18			0	72.0	YES
	9	OMC-19			0	72.8	YES
	9	OMC-20			0	73.5	YES
	9	OMC-21			0	72.9	YES
	9	OMC-22			0	71.4	YES
	9	OMC-23			0	70.4	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residences Represented	2050 Build Condition dB(A)	NAC Approached or Exceeded?
	9	OMC-24			0	69.4	YES
	9	OMC-25			0	68.7	YES
	9	OMC-26			0	68.1	YES
	9	OMC-27			0	67.3	YES
	9	OMC-28			0	66.2	YES
	9	OMC-29			0	65.7	NO
	9	OMC-30			0	65.2	NO
	9	OMC-31			0	65.0	NO
	9	OMC-32			0	64.4	NO
	9	OMC-33			0	63.7	NO
Mission Road Church Learning Center	11	RE380	C	Daycare (exterior)	0	72.1	YES
Mission Road Church of God in Christ	11	RE379	D	Place of Worship (interior)	0	50.4	NO

APPENDIX C

AERIALS



FLORIDA'S TURNPIKE

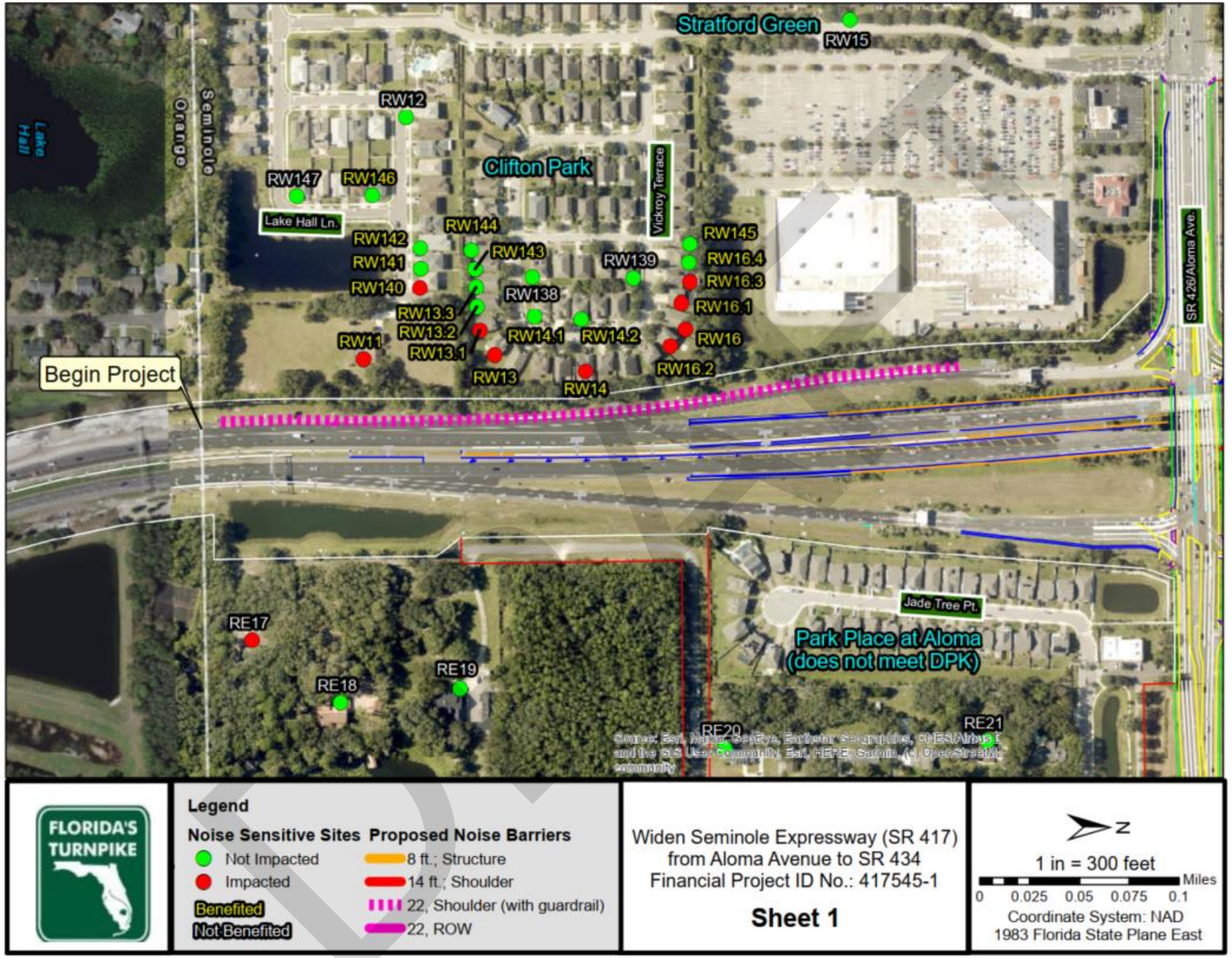
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1

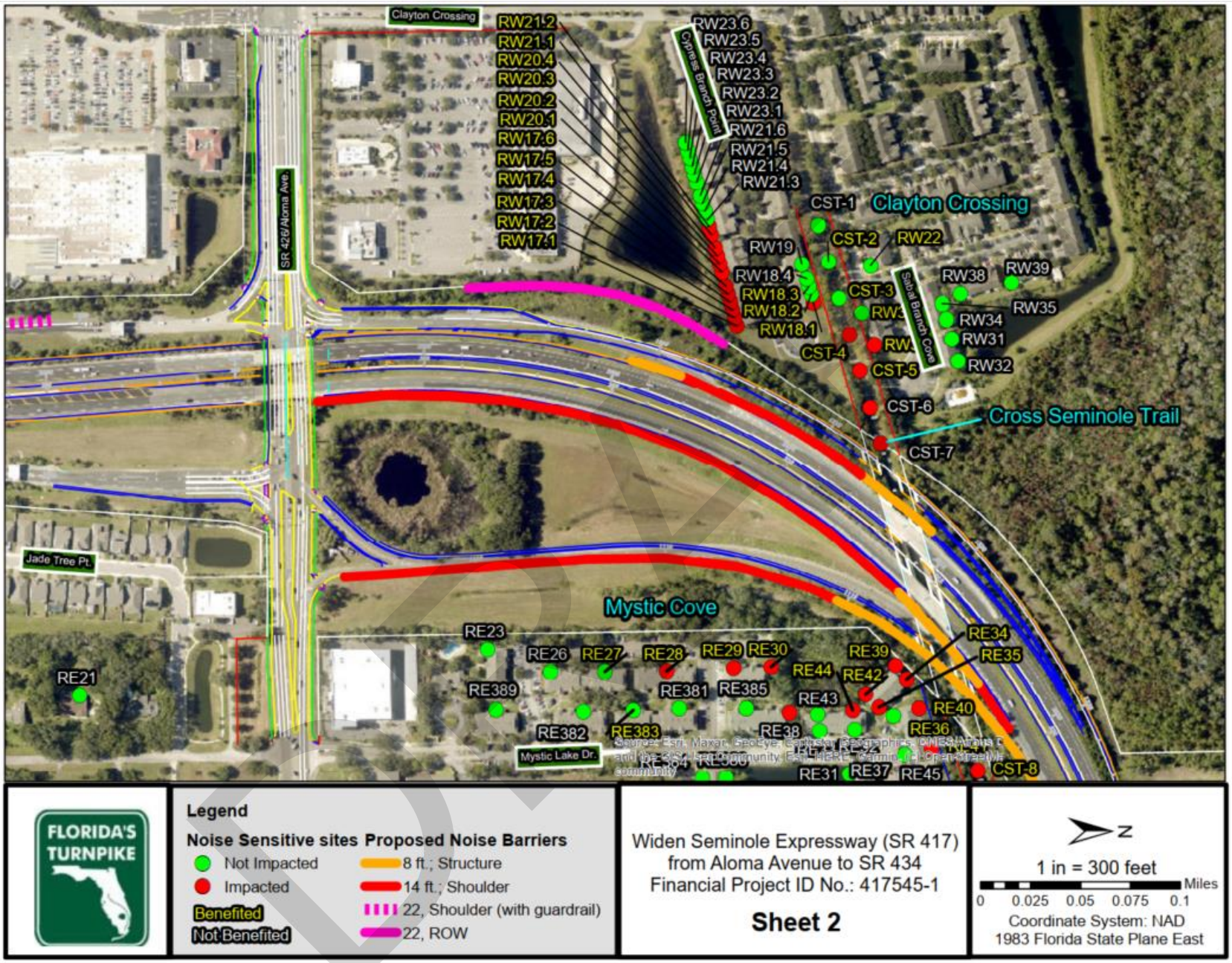
N

1 in = 3,700 feet

0 0.3 0.6 0.9 1.2 Miles

Coordinate System: NAD 1983 Florida State Plane East


Stratford Green
RW15
RW12
Lake Hall
Orange
Seminole
Clifton Park
Vickroy Terrace
RW147
RW146
Lake Hall Ln.
RW142
RW141
RW140
RW144
RW143
RW139
RW145
RW16.4
RW16.3
RW16.1
RW138
RW13.3
RW13.2
RW13.1
RW14.1
RW14.2
RW16
RW16.2
RW11
RW13
RW14
SR 426/Aloma Ave.
Begin Project
Jade Tree Pt.
Park Place at Aloma
(does not meet DPK)
RE17
RE18
RE19
RE20
RE21
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus D
and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMa
community
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 1
N
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East


Clayton Crossing
SR 426/Aloma Ave.
Jade Tree Pl.
Mystic Lake Dr.
Cypress Branch Point
Sabal Branch Cove
Clayton Crossing
Cross Seminole Trail
Mystic Cove
RW21.2
RW21.1
RW20.4
RW20.3
RW20.2
RW20.1
RW17.6
RW17.5
RW17.4
RW17.3
RW17.2
RW17.1
RW23.6
RW23.5
RW23.4
RW23.3
RW23.2
RW23.1
RW21.6
RW21.5
RW21.4
RW21.3
RW19
RW18.4
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CST-6
CST-7
CST-8
RE21
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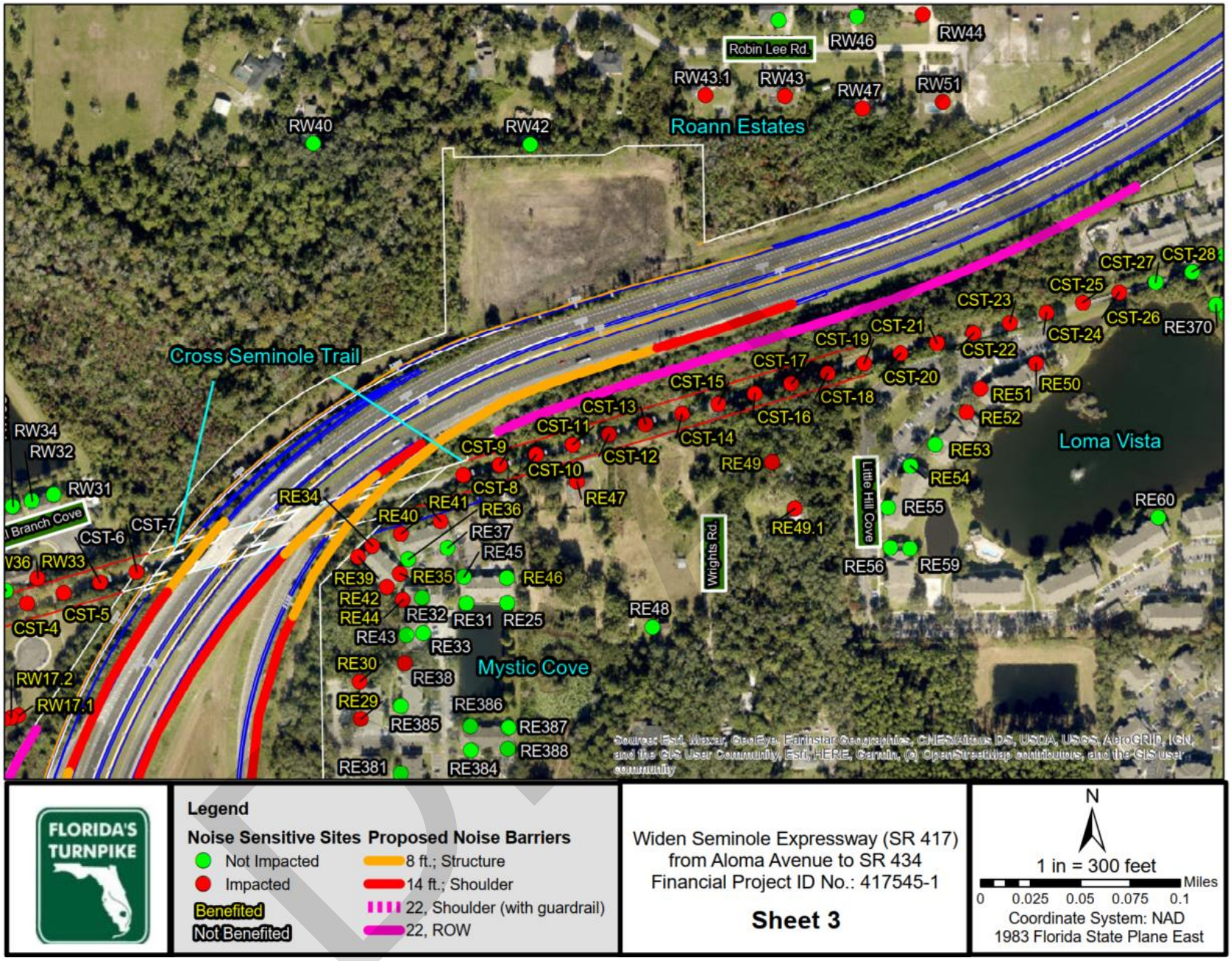
RE44
RE42
RE43
RE40
RE36
RE389
RE381
RE385
RE382
RE383
RE38
RE31
RE37
RE45
Legend
Noise Sensitive sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 2
N
1 in = 300 feet
0 0.025 0.05 0.075 0.1 Miles
Coordinate System: NAD
1983 Florida State Plane East



FLORIDA'S TURNPIKE

Legend

Noise Sensitive Sites
- Not Impacted
- Impacted
- Benefited
- Not Benefited

Proposed Noise Barriers
- 8 ft.; Structure
- 14 ft.; Shoulder
- 22, Shoulder (with guardrail)
- 22, ROW

Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1

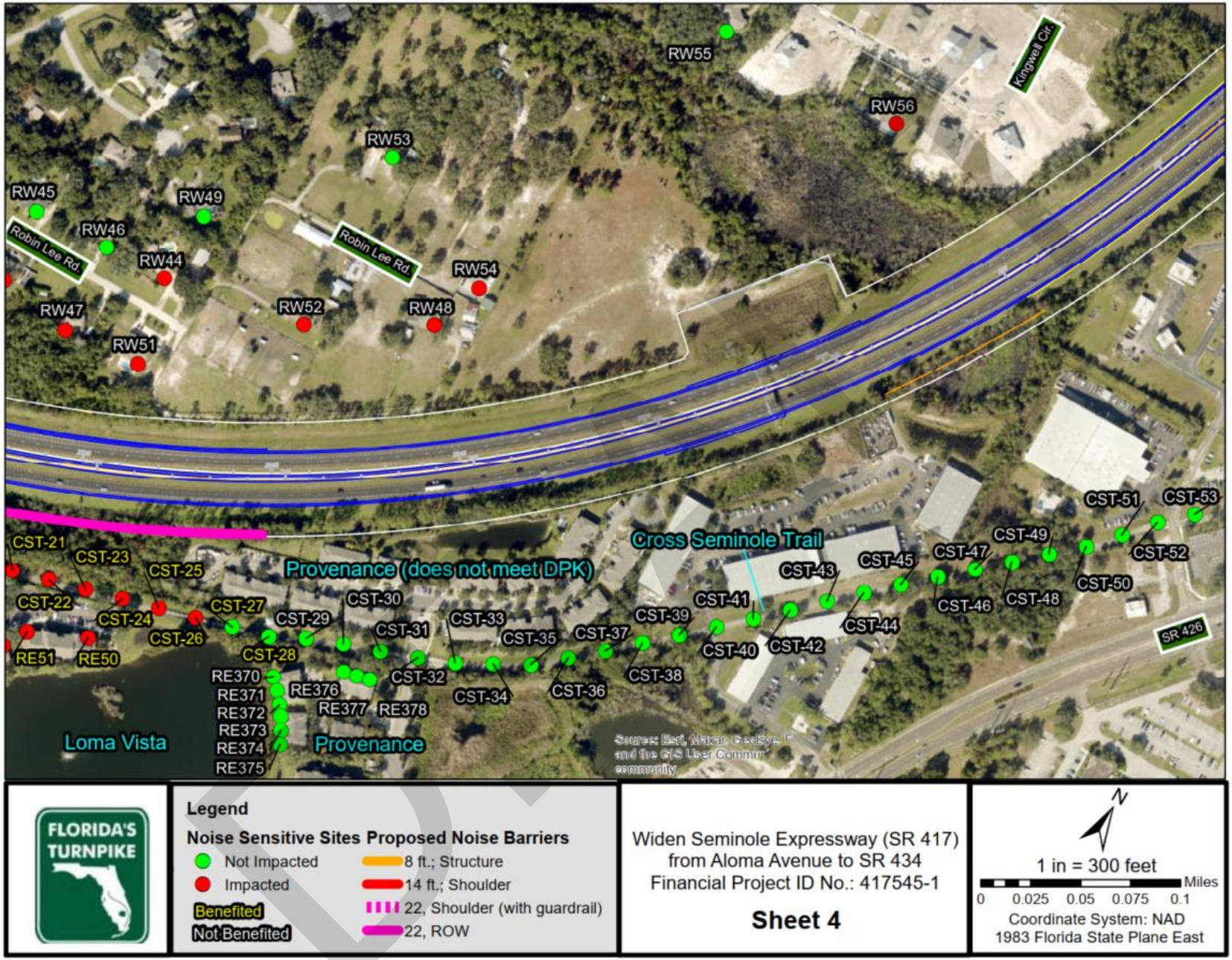
Sheet 3

N

1 in = 300 feet

0 0.025 0.05 0.075 0.1 Miles

Coordinate System: NAD 1983 Florida State Plane East



FLORIDA'S TURNPIKE

Legend

Noise Sensitive Sites Proposed Noise Barriers

- Not Impacted
- Impacted
- Benefited
- Not Benefited
- 8 ft.; Structure
- 14 ft.; Shoulder
- 22, Shoulder (with guardrail)
- 22, ROW

Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1

Sheet 4

N

1 in = 300 feet

0 0.025 0.05 0.075 0.1 Miles

Coordinate System: NAD
1983 Florida State Plane East

FLORIDA'S TURNPIKE

Legend

Noise Sensitive Sites	Proposed Noise Barriers
Not Impacted	8 ft.; Structure
Impacted	14 ft.; Shoulder
Benefited	22, Shoulder (with guardrail)
Not Benefited	22, ROW

Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1

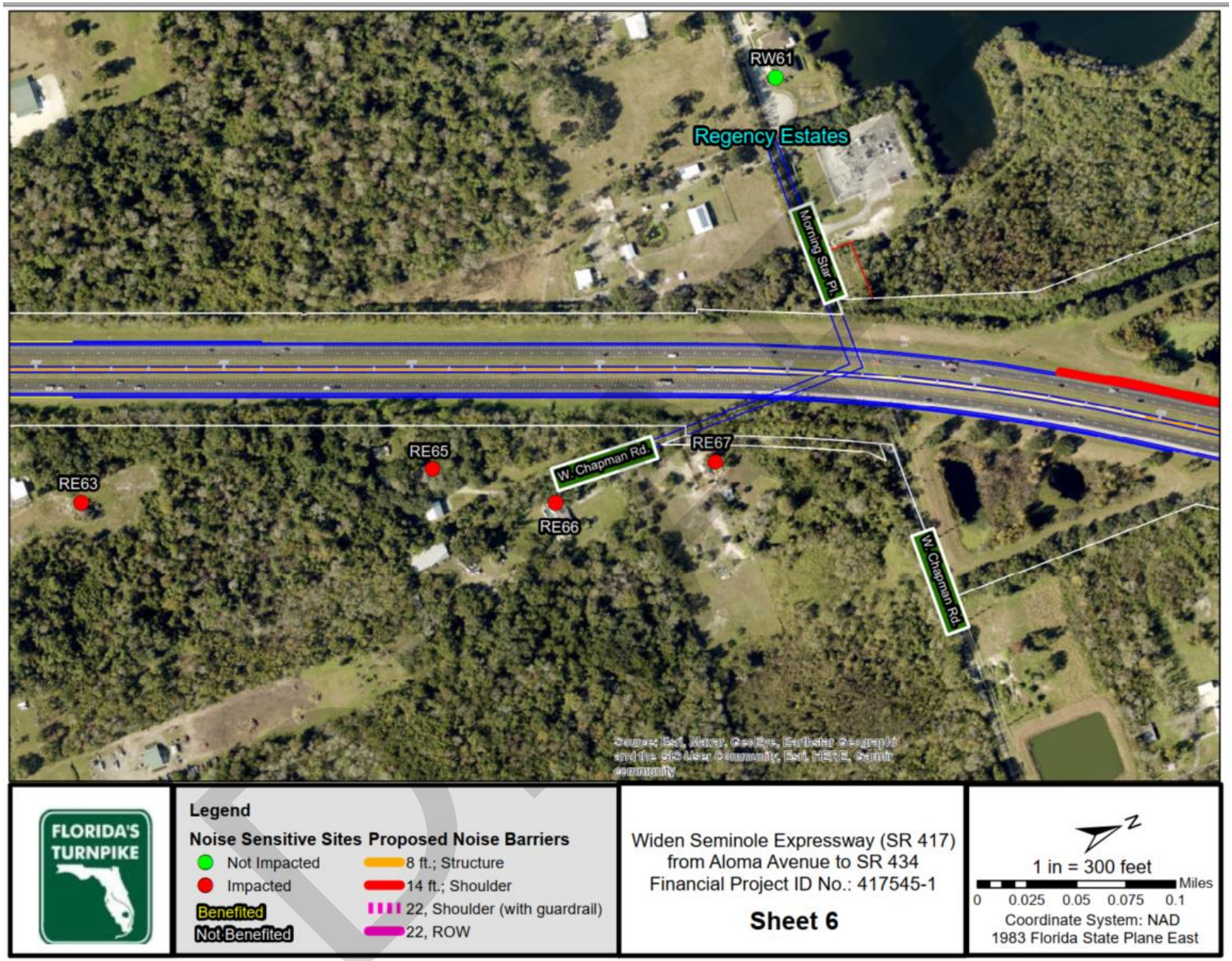
Sheet 5

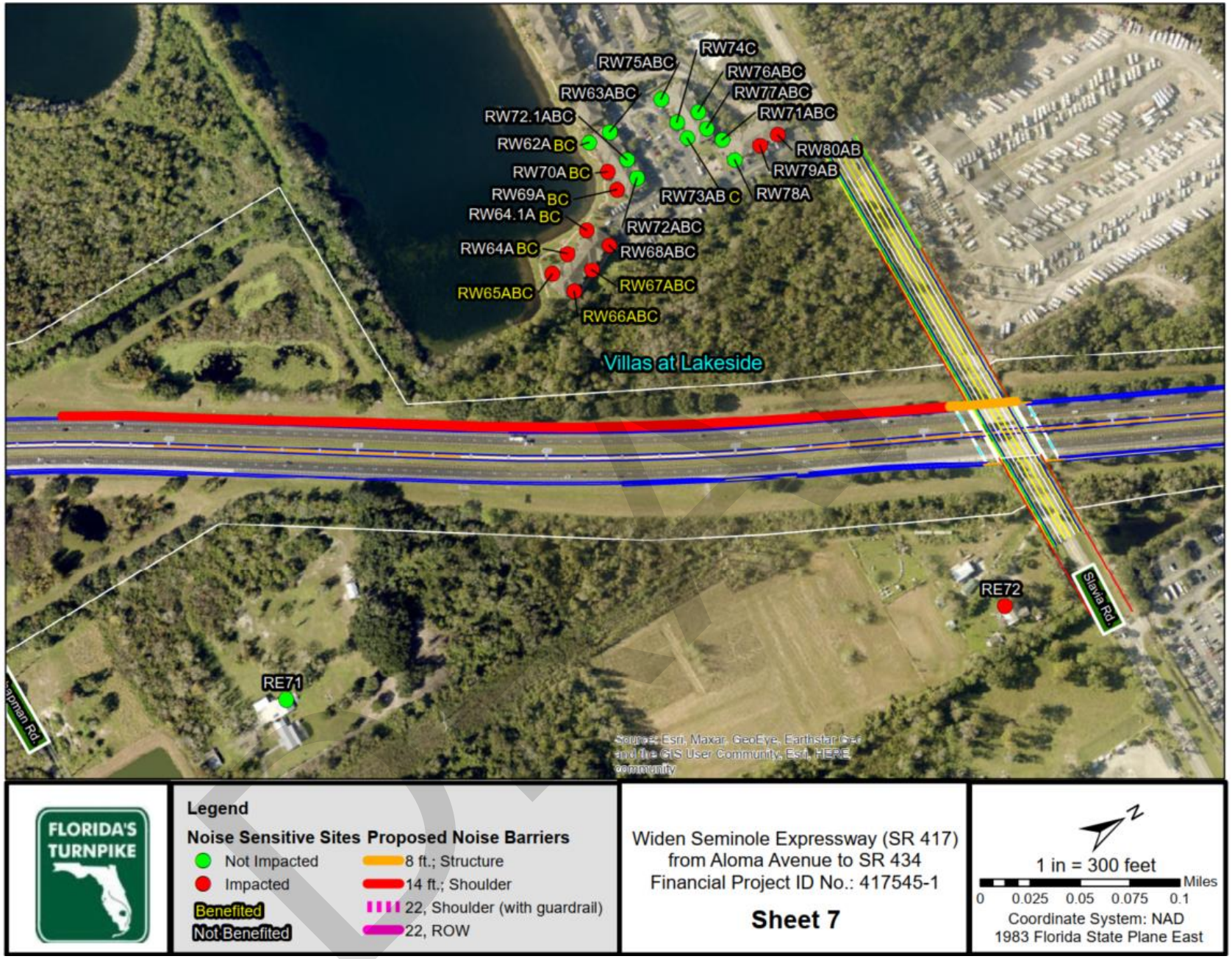
N

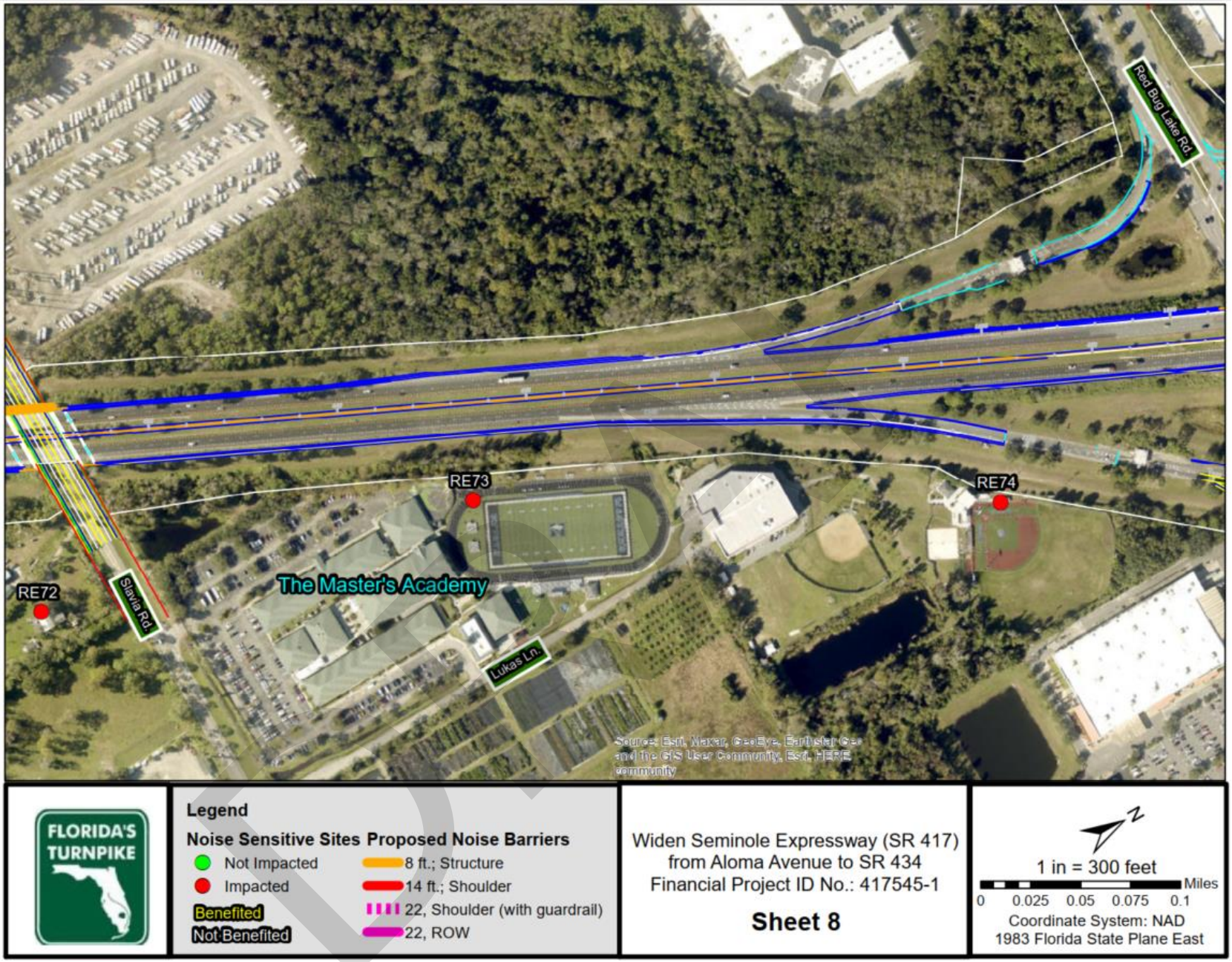
1 in = 332 feet

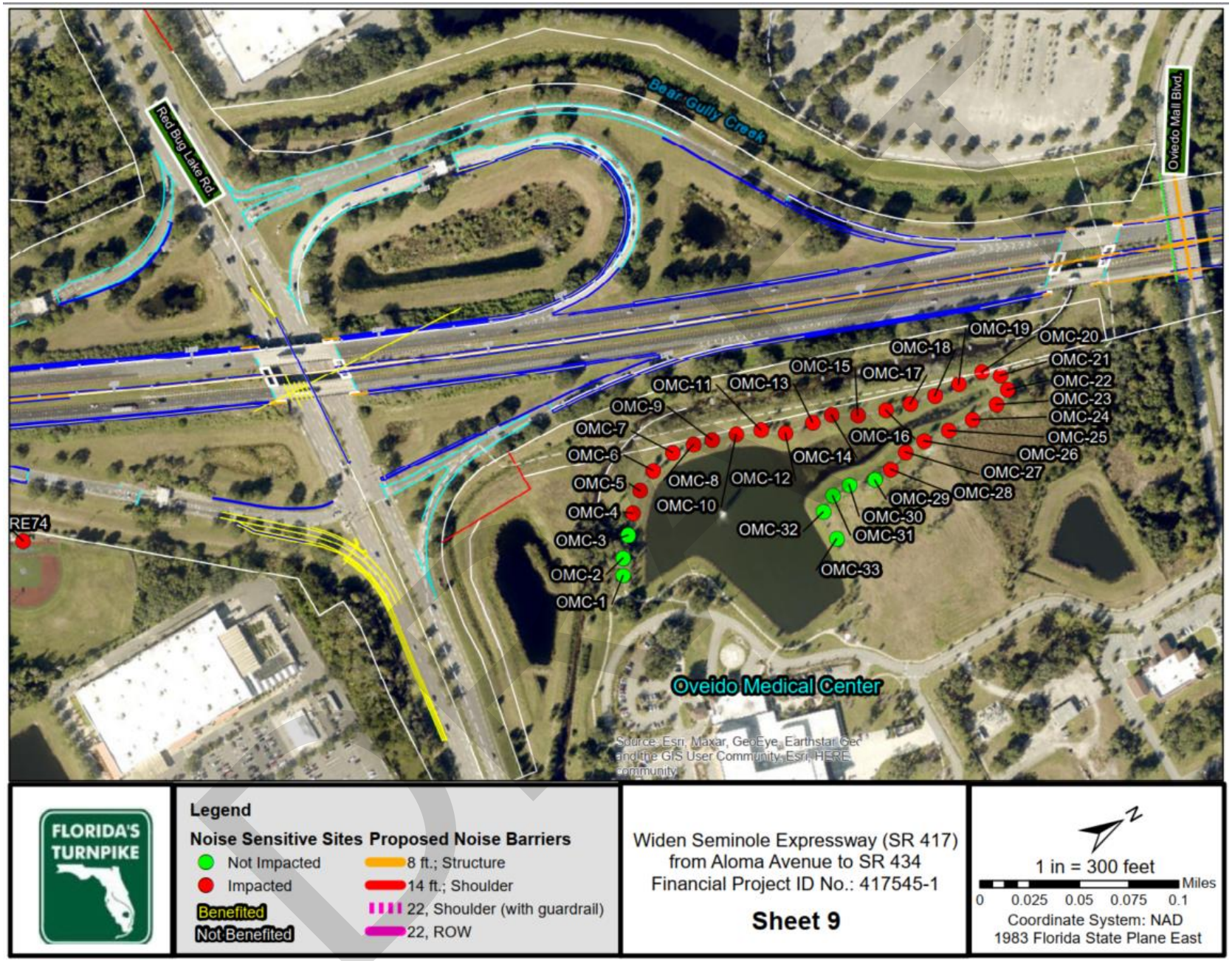
0 0.025 0.05 0.075 0.1 Miles

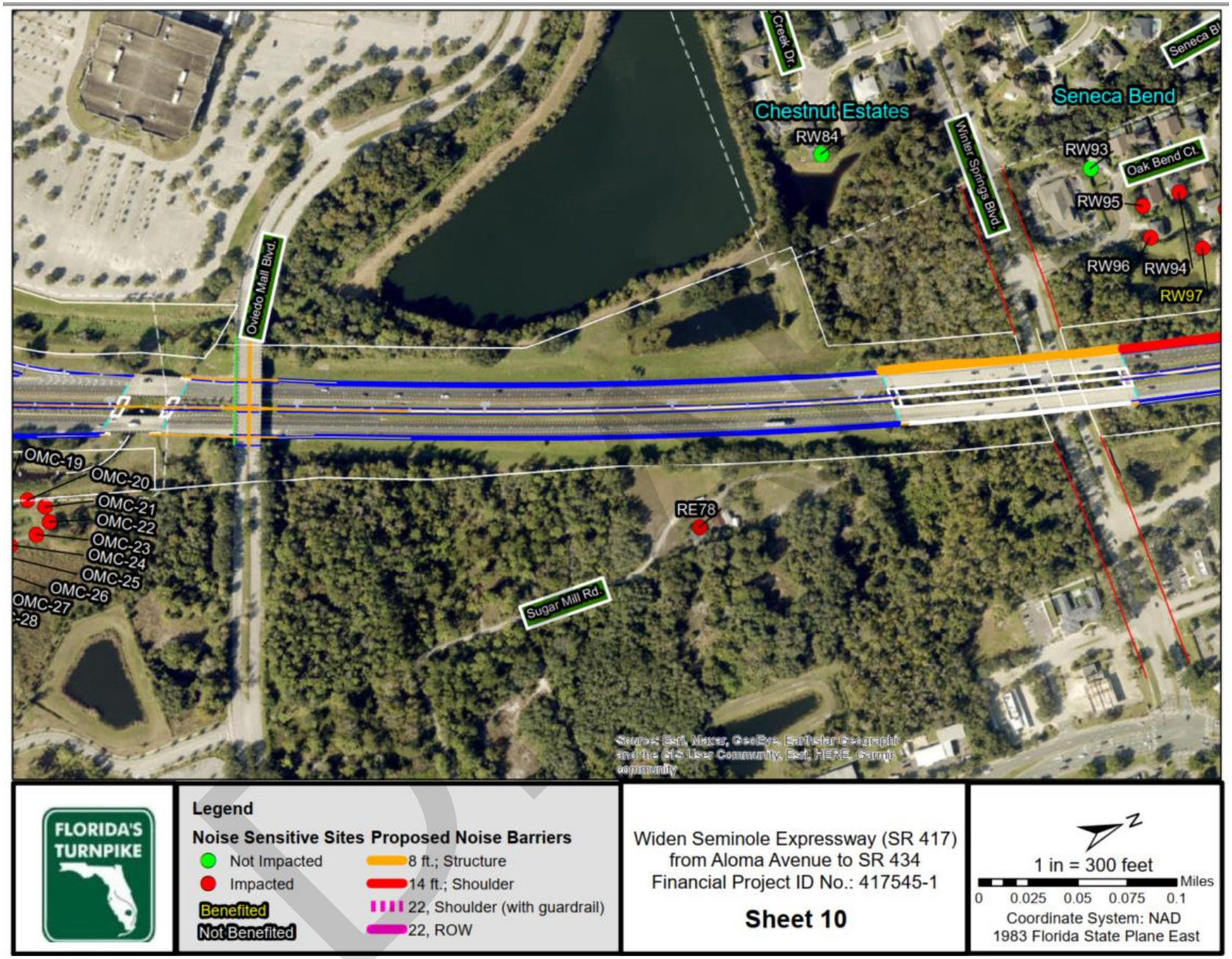
Coordinate System: NAD 1983 Florida State Plane East

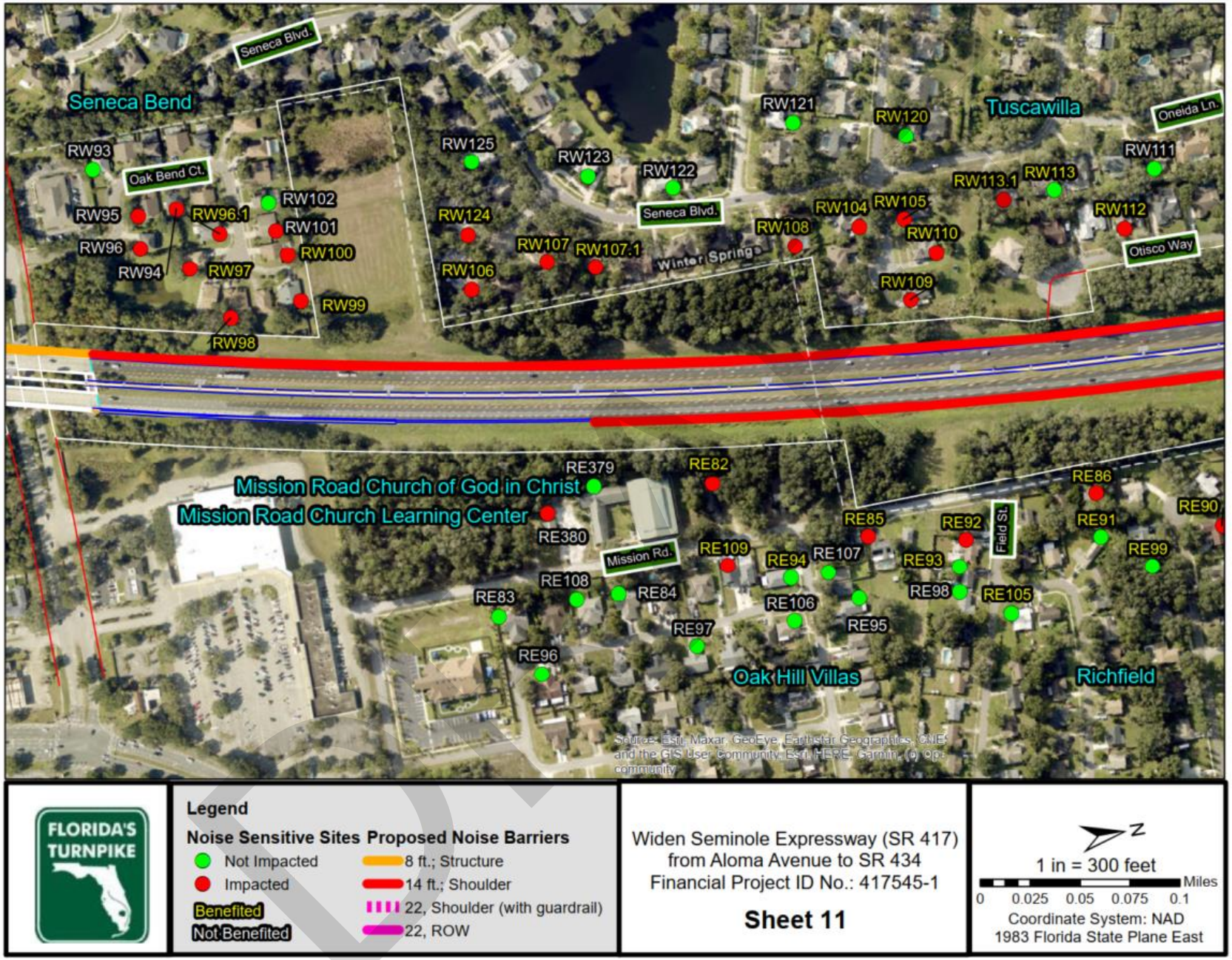

RW61
Regency Estates
Morning Star Pl.
RE63
RE65
W. Chapman Rd.
RE67
RE66
W. Chapman Rd.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, and the GIS User Community, Esri, HERE, Garmin, community
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 6
N
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East

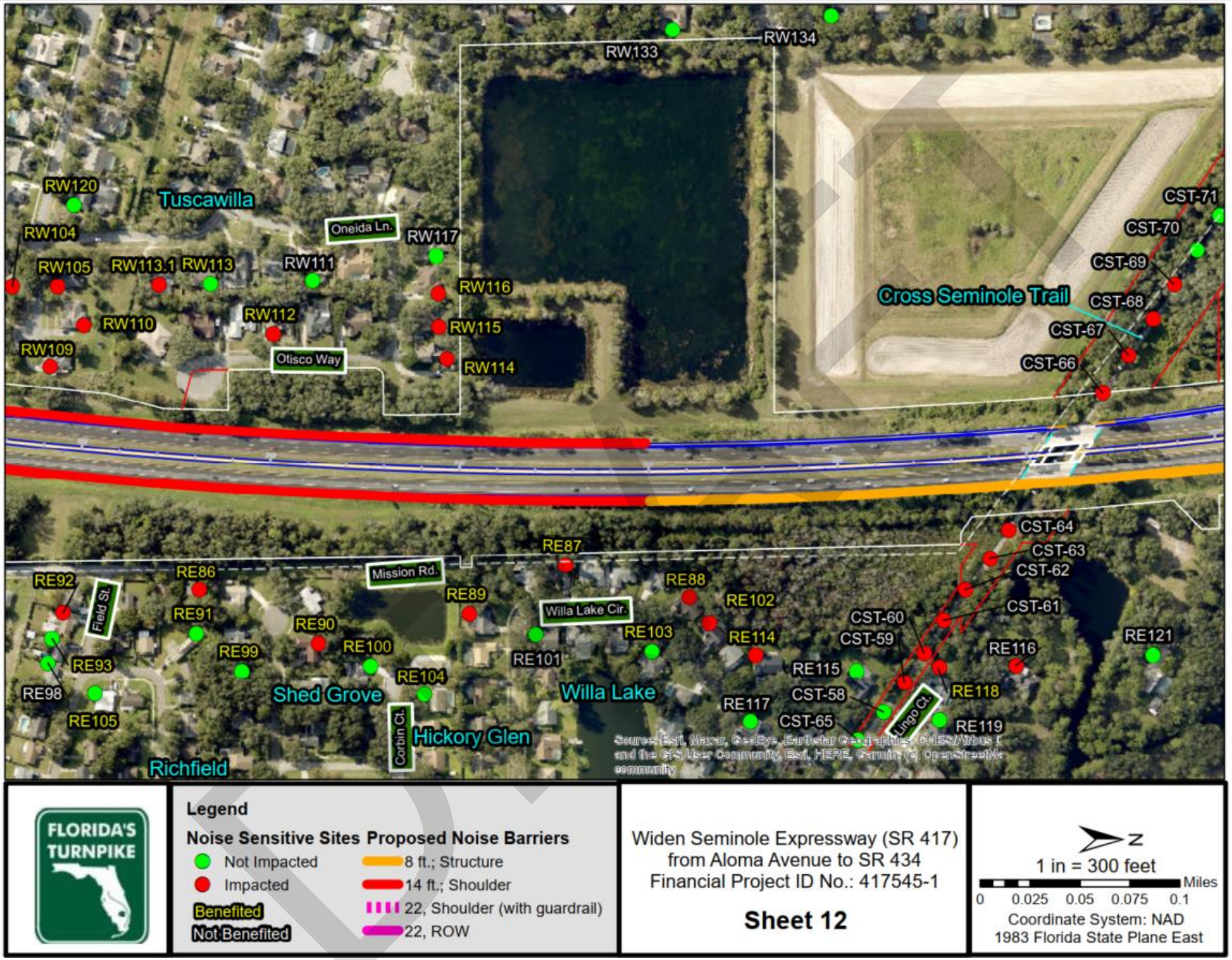

RW74C
RW75ABC
RW76ABC
RW63ABC
RW77ABC
RW72.1ABC
RW71ABC
RW62A BC
RW80AB
RW70A BC
RW79AB
RW69A BC
RW73AB C
RW78A
RW64.1A BC
RW72ABC
RW64A BC
RW68ABC
RW65ABC
RW67ABC
RW66ABC
Villas at Lakeside
RE72
Slavia Rd.
RE71
Chapman Rd.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, and the GIS User Community, Esri, HERE Community
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 7
N
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East

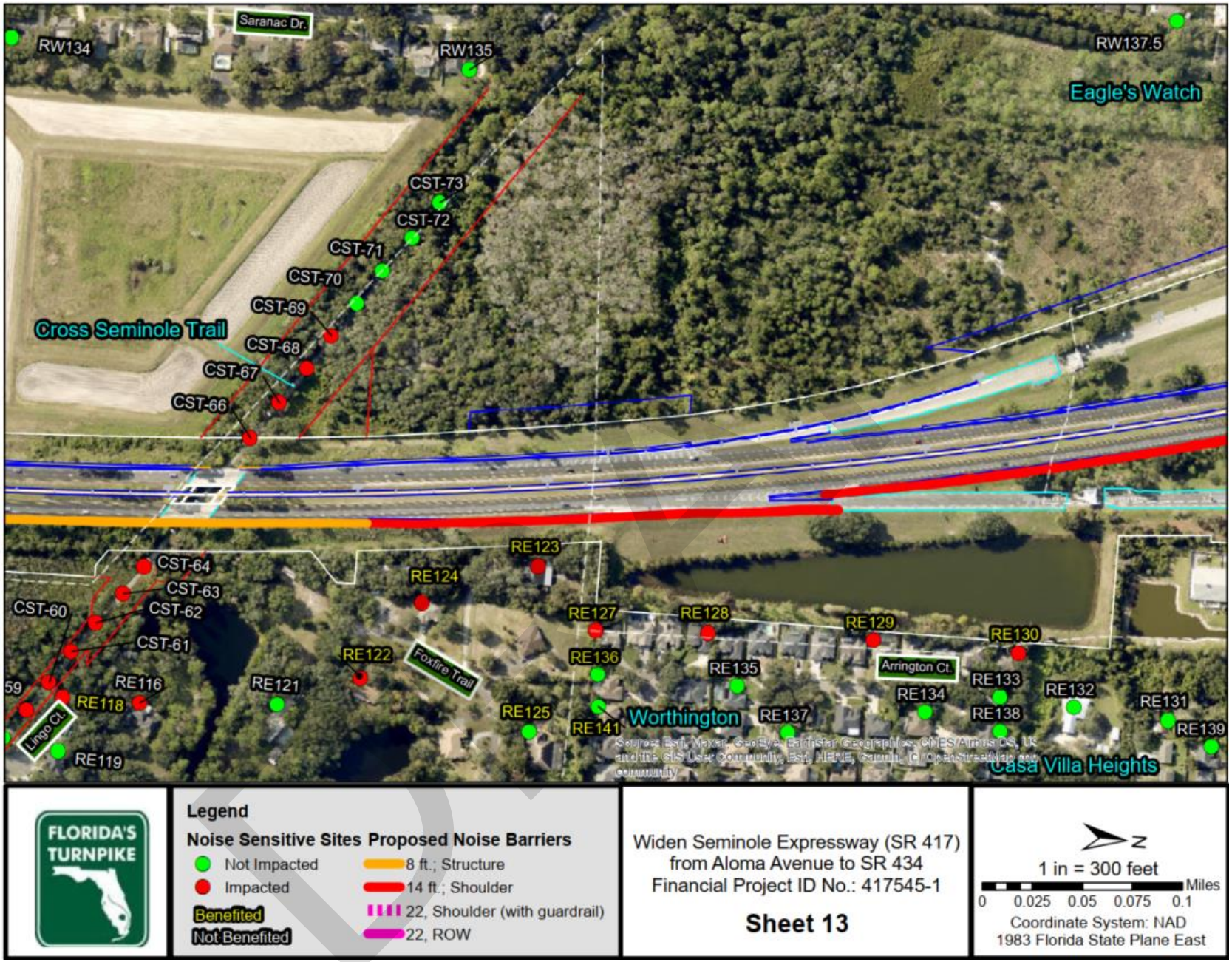

RE72
RE73
RE74
Slavia Rd.
The Master's Academy
Lukas Ln.
Red Bug Lake Rd.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, and the GIS User Community, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Esri Community
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 8
N
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East

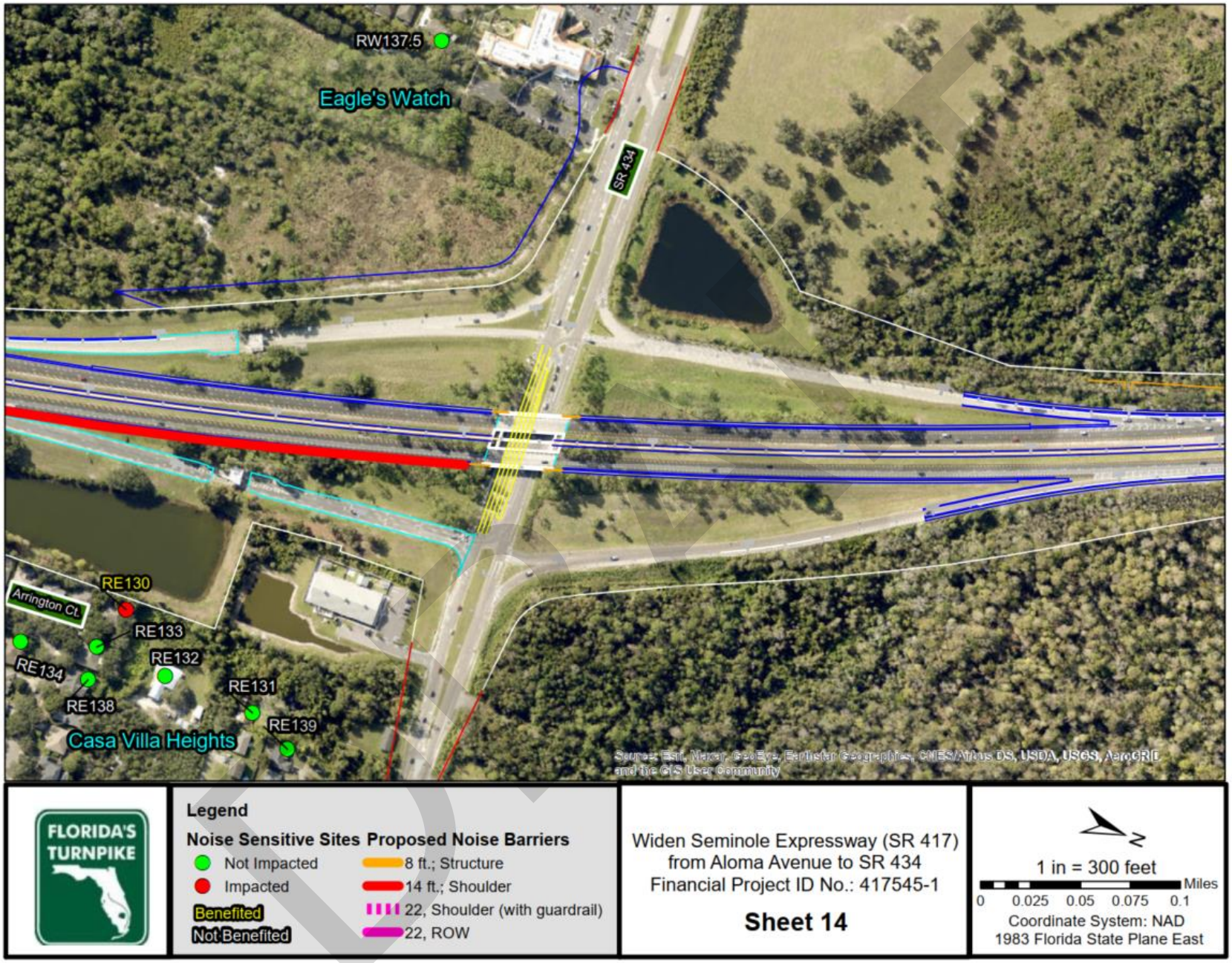

Red Bug Lake Rd
Bear Gully Creek
Oviedo Mall Blvd
RE74
OMC-1
OMC-2
OMC-3
OMC-4
OMC-5
OMC-6
OMC-7
OMC-8
OMC-9
OMC-10
OMC-11
OMC-12
OMC-13
OMC-14
OMC-15
OMC-16
OMC-17
OMC-18
OMC-19
OMC-20
OMC-21
OMC-22
OMC-23
OMC-24
OMC-25
OMC-26
OMC-27
OMC-28
OMC-29
OMC-30
OMC-31
OMC-32
OMC-33
Oveido Medical Center
Source: Esri, Maxar, GeoEye, Earthstar Geo and the GIS User Community, Esri, HERE, community
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 9
N
1 in = 300 feet
0 0.025 0.05 0.075 0.1 Miles
Coordinate System: NAD
1983 Florida State Plane East

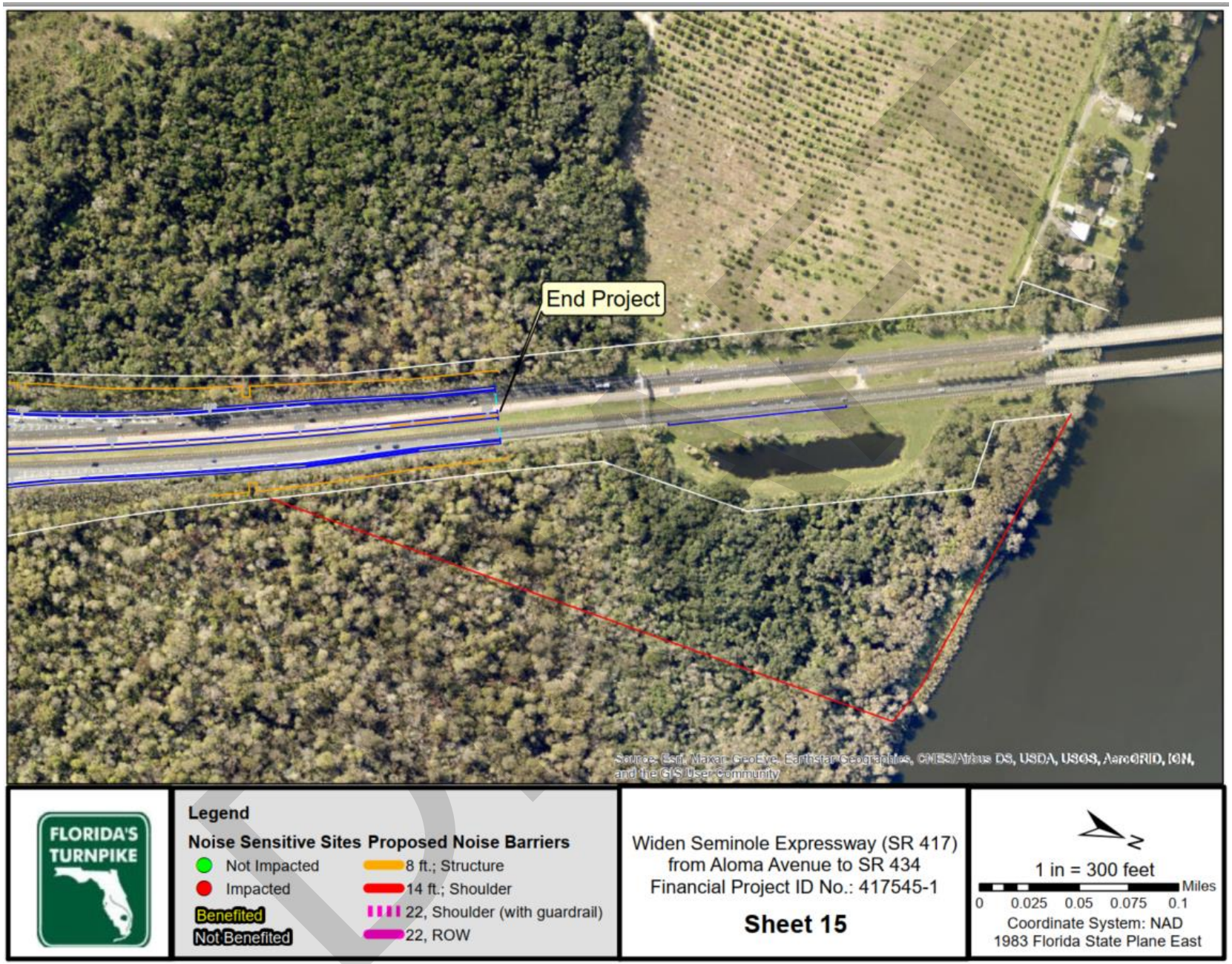

Chestnut Estates
Seneca Bend
RW84
RW93
RW95
RW96
RW94
RW97
Oak Bend Ct.
Winter Springs Blvd.
Oviedo Mall Blvd.
OMC-19
OMC-20
OMC-21
OMC-22
OMC-23
OMC-24
OMC-25
OMC-26
OMC-27
RE78
Sugar Mill Rd.
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 10
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East


Seneca Blvd.
Seneca Bend
Oak Bend Ct.
RW93
RW95
RW96
RW94
RW96.1
RW97
RW102
RW101
RW100
RW99
RW98
RW125
RW123
RW122
RW124
RW107
RW107.1
RW106
Winter Springs
Seneca Blvd.
RW121
RW120
Tuscawilla
Oneida Ln.
RW111
RW113.1
RW113
RW112
RW104
RW105
RW108
RW110
Otisco Way
RW109
RE379
RE82
Mission Road Church of God in Christ
Mission Road Church Learning Center
RE380
Mission Rd.
RE109
RE94
RE107
RE108
RE84
RE83
RE106
RE97
RE96
RE95
RE85
RE92
Field St.
RE86
RE91
RE90
RE93
RE99
RE98
RE105
Oak Hill Villas
Richfield
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS User community
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 11
N
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East


RW133
RW134
RW120
Tuscawilla
RW104
Oneida Ln.
RW117
RW105
RW113.1
RW113
RW111
RW116
Cross Seminole Trail
RW110
RW112
RW115
RW109
Otisco Way
RW114
CST-71
CST-70
CST-69
CST-68
CST-67
CST-66
CST-64
CST-63
CST-62
CST-61
CST-60
CST-59
CST-58
CST-65
RE87
RE86
Mission Rd.
RE92
Field St.
RE91
RE89
RE88
RE102
Willa Lake Cir.
RE90
RE103
RE114
RE121
RE116
RE99
RE100
RE101
RE115
RE93
RE104
RE118
RE98
Shed Grove
Willa Lake
RE117
RE105
Corbin Ct.
Hickory Glen
Lingo Ct.
RE119
Richfield
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, and the GIS User Community, Esri, HERE, Garmin, © OpenStreetMap contributors
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 12
N
1 in = 300 feet
0 0.025 0.05 0.075 0.1 Miles
Coordinate System: NAD
1983 Florida State Plane East


Saranac Dr.
RW134
RW135
RW137.5
Eagle's Watch
CST-73
CST-72
CST-71
CST-70
CST-69
Cross Seminole Trail
CST-68
CST-67
CST-66
CST-64
CST-63
CST-60
CST-62
CST-61
RE123
RE124
RE127
RE128
RE129
RE130
RE122
Foxfire Trail
RE136
RE135
Arrington Ct.
RE133
RE134
RE132
RE131
RE116
RE121
RE118
RE125
RE141
Worthington
RE137
RE138
RE139
Lingo Ct.
RE119
Casa Villa Heights
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 13
N
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East


RW137.5
Eagle's Watch
SR 434
Arrington Ct.
RE130
RE133
RE134
RE132
RE131
RE138
RE139
Casa Villa Heights
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID and the GIS User Community
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 14
N
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East


End Project
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
FLORIDA'S TURNPIKE
Legend
Noise Sensitive Sites
Not Impacted
Impacted
Benefited
Not Benefited
Proposed Noise Barriers
8 ft.; Structure
14 ft.; Shoulder
22, Shoulder (with guardrail)
22, ROW
Widen Seminole Expressway (SR 417)
from Aloma Avenue to SR 434
Financial Project ID No.: 417545-1
Sheet 15
N
1 in = 300 feet
Miles
0 0.025 0.05 0.075 0.1
Coordinate System: NAD
1983 Florida State Plane East

APPENDIX D

Engineering Review Forms

Noise Barrier Engineering Review Form

SR 417 from South of Aloma Avenue to SR 434

FPID: 417545-1

Noise Barrier #: Barrier #1 (Mystic Cove, Loma Vista, and Provenance)_____

Date Provided: 04/29/22_____

Date Reviewed: ___5/13/2022_____

Reviewed By: ___Lochner Concept Design Team_____

Topic	Details
Location	Shoulder, Structure and ROW
Stationing Limits (approximate)	**8 ft.** – 1114 + 75 to 326 + 20; 314 + 61 to 317 + 91 **14 ft.** – 297 + 6 to 314 + 61; 317 + 91 to 319 + 30; 1101 + 50 to 1114 + 75; 326 + 20 to 330 + 0 **22 ft.** – 1122 + 40 to 339 + 40
Length	**8 ft.** – 1,560 ft. **14 ft.** – 3,513 ft. **22 ft.** – 1,808 ft.
Height	8 ft., 14 ft., and 22 ft.
Estimated Cost	$3,043,140 Total ($36,664/benefited receptor)
Design/Constructability Issues	General Comments that affect all proposed noise walls on the project: Structures load ratings are being checked for noise walls on the widened bridges. The limits of structure walls are still being worked out and if anything they may shorten, so where 8 foot walls are shown it will be ok regardless. Access to ITS devices is being checked as well as Fiber conduit impacts to existing. Drainage, S&PM, Traffic Control, Geotechnical and Landscaping are all aware of the wall locations with only minor design adjustments to their concepts. This will all be handled with the design build RFP and concepts and will not cause the Noise walls to be revised.
Drainage Issues	None
Utility Issues	None
Safety Issues	Shoulder widths have been adjusted to allow for sight distance.
Maintenance Issues	None
ROW Acquisition Issues	No R/W required

Legal Issues	Please check with FTE
Outdoor Advertising Issues	Please check with FTE
Are any of the above issues severe enough so that a noise barrier cannot be constructed at this location? If so, please explain in detail.	No
Barrier Aesthetics (if applicable)	Separate Aesthetic Guidelines have been developed by Lochner and approved by the FTE Aesthetics Committee

Noise Barrier Engineering Review Form

SR 417 from South of Aloma Avenue to SR 434

FPID: 417545-1

Noise Barrier #: Barrier #2: Oak Hill Villas, Richfield, Shed Grove, Hickory Glen, Willa Lake, Worthington, Casa Villa Heights_____

Date Provided: 04/29/22_____

Date Reviewed: __5/13/22_____

Reviewed By: ____ Lochner Concept Design Team _____

Topic	Details
Location	Shoulder and Structure
Stationing Limits (approximate)	**8 ft. –** 550 + 0 to 565 + 15 **14 ft. –** 525 + 40 to 550 + 0; 565 + 15 to 1375 + 0; 577 + 20 to 590 + 10
Length	**8 ft. –** 1,527 ft. **14 ft. –** 5,004 ft.
Height	8 ft. 14 ft.
Estimated Cost	$2,468,160 ($32,054/benefited residence)
Design/Constructability Issues	General Comments that affect all proposed noise walls on the project: Structures load ratings are being checked for noise walls on the widened bridges. The limits of structure walls are still being worked out and if anything they may shorten, so where 8 foot walls are shown it will be ok regardless. Access to ITS devices is being checked as well as Fiber conduit impacts to existing. Drainage, S&PM, Traffic Control, Geotechnical and Landscaping are all aware of the wall locations with only minor design adjustments to their concepts. This will all be handled with the design build RFP and concepts and will not cause the Noise walls to be revised.
Drainage Issues	none
Utility Issues	none
Safety Issues	none
Maintenance Issues	None
ROW Acquisition Issues	None
Legal Issues	Please check with FTE

Outdoor Advertising Issues	Please check with FTE
Are any of the above issues severe enough so that a noise barrier cannot be constructed at this location? If so, please explain in detail.	No
Barrier Aesthetics (if applicable)	Separate Aesthetic Guidelines have been developed by Lochner and approved by the FTE Aesthetics Committee

Noise Barrier Engineering Review Form

SR 417 from South of Aloma Avenue to SR 434

FPID: 417545-1

Noise Barrier #: Barrier #3 (Clifton Park)_____

Date Provided: 04/29/22_____

Date Reviewed: ___5/13/22_____

Reviewed By: _____ Lochner Concept Design Team _____

Topic	Details
Location	Shoulder (ramp)
Stationing Limits (approximate)	270 + 60 to 1189 + 22
Length	1962 ft.
Height	22 ft.
Estimated Cost	$1,294,920 (plus cost of guardrail) ($41,772/benefited residence)
Design/Constructability Issues	General Comments that affect all proposed noise walls on the project: Structures load ratings are being checked for noise walls on the widened bridges. The limits of structure walls are still being worked out and if anything they may shorten, so where 8 foot walls are shown it will be ok regardless. Access to ITS devices is being checked as well as Fiber conduit impacts to existing. Drainage, S&PM, Traffic Control, Geotechnical and Landscaping are all aware of the wall locations with only minor design adjustments to their concepts. This will all be handled with the design build RFP and concepts and will not cause the Noise walls to be revised.
Drainage Issues	None
Utility Issues	None
Safety Issues	None
Maintenance Issues	None
ROW Acquisition Issues	None
Legal Issues	Please check with FTE
Outdoor Advertising Issues	Please check with FTE
Are any of the above issues severe enough so that a noise barrier cannot be constructed at this location? If so, please explain in detail.	No
Barrier Aesthetics (if applicable)	Separate Aesthetic Guidelines have been developed by Lochner and approved by the FTE Aesthetics Committee

Noise Barrier Engineering Review Form

SR 417 from South of Aloma Avenue to SR 434

FPID: 417545-1

Noise Barrier #: Barrier #4 (W2 - Clayton Crossing)_____

Date Provided: 04/29/22_____

Date Reviewed: ___5/13/22_____

Reviewed By: _____ Lochner Concept Design Team _____

Topic	Details
Location	Shoulder, Structure, and ROW
Stationing Limits (approximate)	**8 ft.:** 305 + 40 to 306+60; 311 + 70 to 314 + 6 **14 ft.:** 306 + 60 to 311 + 70 **22 ft:** 1304 + 85 to 1311 + 40
Length	**8 ft.:** 240 ft. **14 ft.:** 543 ft. **8 ft:** 136 ft. **22 ft:** 706 ft.
Height	8 ft., 14 ft., and 22 ft.
Estimated Cost	$784,680 ($31,387/benefited residence)
Design/Constructability Issues	General Comments that affect all proposed noise walls on the project: Structures load ratings are being checked for noise walls on the widened bridges. The limits of structure walls are still being worked out and if anything they may shorten, so where 8 foot walls are shown it will be ok regardless. Access to ITS devices is being checked as well as Fiber conduit impacts to existing. Drainage, S&PM, Traffic Control, Geotechnical and Landscaping are all aware of the wall locations with only minor design adjustments to their concepts. This will all be handled with the design build RFP and concepts and will not cause the Noise walls to be revised.
Drainage Issues	None
Utility Issues	None
Safety Issues	None
Maintenance Issues	None
ROW Acquisition Issues	None
Legal Issues	Please check with FTE

Outdoor Advertising Issues	Please check with FTE
Are any of the above issues severe enough so that a noise barrier cannot be constructed at this location? If so, please explain in detail.	No
Barrier Aesthetics (if applicable)	Separate Aesthetic Guidelines have been developed by Lochner and approved by the FTE Aesthetics Committee

Noise Barrier Engineering Review Form

SR 417 from South of Aloma Avenue to SR 434

FPID: 417545-1

Noise Barrier #: Barrier #5 (Villas at Lakeside)_____

Date Provided: 04/29/22_____

Date Reviewed: ___5/13/22_____

Reviewed By: _____ Lochner Concept Design Team _____

Topic	Details
Location	Shoulder and Structure
Stationing Limits (approximate)	**14 ft.:** 407 + 20 to 430 +73 **8 ft.:** 430 + 73 to 432 + 80
Length	**14 ft.:** 2,351 ft. **8 ft.:** 175 ft.
Height	14 ft. and 8 ft.
Estimated Cost	$1,029,420 ($32,169/benefited residence)
Design/Constructability Issues	General Comments that affect all proposed noise walls on the project: Structures load ratings are being checked for noise walls on the widened bridges. The limits of structure walls are still being worked out and if anything they may shorten, so where 8 foot walls are shown it will be ok regardless. Access to ITS devices is being checked as well as Fiber conduit impacts to existing. Drainage, S&PM, Traffic Control, Geotechnical and Landscaping are all aware of the wall locations with only minor design adjustments to their concepts. This will all be handled with the design build RFP and concepts and will not cause the Noise walls to be revised.
Drainage Issues	None
Utility Issues	None
Safety Issues	None
Maintenance Issues	None
ROW Acquisition Issues	None
Legal Issues	Please check with FTE
Outdoor Advertising Issues	Please check with FTE

Are any of the above issues severe enough so that a noise barrier cannot be constructed at this location? If so, please explain in detail.	No
Barrier Aesthetics (if applicable)	Separate Aesthetic Guidelines have been developed by Lochner and approved by the FTE Aesthetics Committee

Noise Barrier Engineering Review Form

SR 417 from South of Aloma Avenue to SR 434

FPID: 417545-1

Noise Barrier #: Barrier #6 (Seneca Bend and Tuscawilla)_____

Date Provided: 4/29/22_____

Date Reviewed: ____5/13/22_____

Reviewed By: _____ Lochner Concept Design Team _____

Topic	Details
Location	Shoulder and Structure
Stationing Limits (approximate)	**8 ft.:** 505 + 61 to 512 +10 **14 ft.:** 512 + 10 to 549 + 95
Length	**8 ft.:** 647 ft. **14 ft.:** 3,761 ft.
Height	14 ft. and 8 ft.
Estimated Cost	$1,734,900 ($42,315/benefited residence)
Design/Constructability Issues	General Comments that affect all proposed noise walls on the project: Structures load ratings are being checked for noise walls on the widened bridges. The limits of structure walls are still being worked out and if anything they may shorten, so where 8 foot walls are shown it will be ok regardless. Access to ITS devices is being checked as well as Fiber conduit impacts to existing. Drainage, S&PM, Traffic Control, Geotechnical and Landscaping are all aware of the wall locations with only minor design adjustments to their concepts. This will all be handled with the design build RFP and concepts and will not cause the Noise walls to be revised.
Drainage Issues	None
Utility Issues	None
Safety Issues	None
Maintenance Issues	None
ROW Acquisition Issues	None
Legal Issues	Please check with FTE
Outdoor Advertising Issues	Please check with FTE

Are any of the above issues severe enough so that a noise barrier cannot be constructed at this location? If so, please explain in detail.	No
Barrier Aesthetics (if applicable)	Separate Aesthetic Guidelines have been developed by Lochner and approved by the FTE Aesthetics Committee

APPENDIX E

TNM Files

TNM Files provided in the Project File.