Design
NOISE STUDY REPORT

WIDEN FLORIDA'S TURNPIKE (SR 91) FROM NORTH OF OKEECHOBEE BLVD TO SOUTH OF BEELINE HIGHWAY (SR 710)

PALM BEACH COUNTY, FLORIDA
FLORIDA'S TURNPIKE ENTERPRISE

Financial Project ID No.: 406143-6

Prepared for:

Florida's Turnpike Enterprise

February 2025

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT), Florida's Turnpike Enterprise is planning to widen a five-mile segment of Florida's Turnpike Mainline/SR 91 between Okeechobee Boulevard (Blvd.)/SR 704 and Beeline Highway/SR 710 in Palm Beach County. The project will provide additional capacity, enhance safety, and accommodate future traffic volumes resulting from increased population in Palm Beach County. The proposed improvements include widening this segment to increase the number of lanes from four to eight lanes. Work includes replacement of the Roebuck Road and 45th Street bridges, replacement of the bridge over M Canal, pavement widening, reconstruction, roadway lighting, signing and pavement markings, stormwater drainage improvements, and noise walls in qualifying areas.

This Design phase noise study includes a traffic noise analysis for residences and special land use (SLU) areas (i.e., non-residential) in the project area. 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. The purpose of this noise study is to identify noise sensitive sites that would be impacted by the Design, 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.

Traffic noise levels were predicted at 257 receptor points representing 168 residences and two SLUs (Grassy Waters Elementary School and Dyer Blvd. Park). For Design Year (2050) conditions, traffic noise levels are predicted to approach, meet, or exceed the Noise Abatement Criteria (NAC) at 149 residences and both SLUs. These impacted residences and SLUs were further evaluated to determine the feasibility and cost reasonableness of providing noise barriers to reduce traffic noise.

As documented in the Noise Study Report for 406143-5/-8 (June 2023), a noise barrier was found to be feasible and reasonable for the residences in Renaissance and The Cove I and II at Briar Bay, located south of Roebuck Rd. This current evaluation confirmed the feasibility, reasonableness, and extent of the previously documented noise barrier using updated roadway and traffic data for 406143-6. This barrier is shown in **Appendix C** (Sheets 1-3). This barrier also provides a benefit to Grassy Waters Elementary School.

A noise barrier was found to not be not cost reasonable at Dyer Park due to not meeting person-hour usage requirements.

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ACRONYMS

CFR	Code of Federal Regulations
CBD	Central Business District
CNE	Common Noise Environment
dB	Decibels
dB(A)	A-weighted decibels
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
Ft	Feet
FGT	Florida Gas and Transmission Company
FTE	Florida's Turnpike Enterprise
LOS	Level of Service
MP	Mile Post
MSE	Mechanically Stabilized Earth
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NRDG	Noise Reduction Design Goal
PD&E	Project Development and Environment
ROW	Right-of-way
SLU	Special Land Use
SR	State Road
TIP	Transportation Improvement Program
TNM	Traffic Noise Model

SECTION 1
INTRODUCTION

The Florida Department of Transportation (FDOT), Florida's Turnpike Enterprise (FTE) is planning to widen the Florida's Turnpike (Turnpike) Mainline (SR 91) between Okeechobee Boulevard/SR 704 and Beeline Highway/SR 710 in Palm Beach County (**Figure 1-1**).

This Traffic Noise Evaluation 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 Project Development and Environment (*PD&E) Manual*, Part 2, Chapter 18 (*Highway Traffic Noise*). The purpose of this traffic 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.

1.1 Project Description

The project will provide additional capacity, enhance safety, and accommodate future traffic volumes resulting from increased population in Palm Beach County. The project covers approximately five miles of the Turnpike Mainline (SR 91). The proposed improvements include widening this segment to increase the number of lanes from four to eight lanes. Work includes replacement of the Roebuck Road and 45th Street bridges, replacement of the bridge over M Canal, pavement widening, reconstruction, roadway lighting, signing and pavement markings, stormwater drainage improvements, and noise walls in qualifying areas.

Land use in the area generally includes industrial and recreational areas.

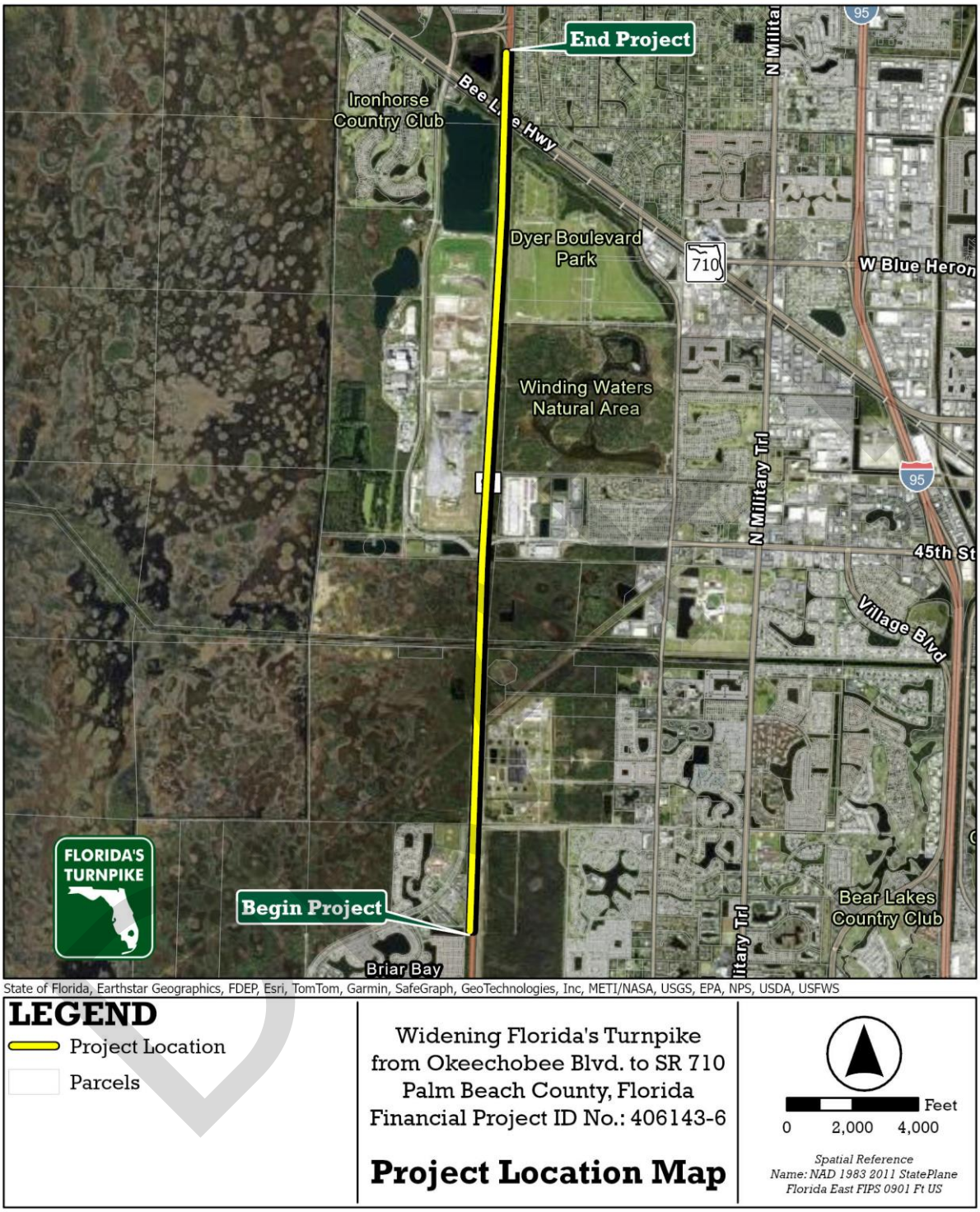


Figure 1-1 Project Location Map

1.2 Summary of PD&E Results and Commitments

The noise analysis, which was produced in support of the PD&E Study (Widening Florida's Turnpike from Lake Worth Rd. to Indiantown Rd. [March 2008]) evaluated widening the existing four lanes to eight lanes (with express lanes). No substantial increases were predicted, but several exceedances of the NAC were predicted. As a result, several noise barriers were recommended for further consideration during the Design phase, listed in **Table 1-1**. Note that the property described as an isolated residence is no longer a residential property and is currently not a noise sensitive site. Therefore, this property was not evaluated in the current Design analysis.

The 2008 PD&E noise study report utilized a methodology referred to as "cost-averaging" where the total cost of noise barriers and total number of benefits are determined project-wide.

Table 1-1 2008 PD&E Feasible and Cost Reasonable Evaluation of Noise Barriers

Residential Location or Community	Number of Impacted Residences	Optimized Preliminary Barrier Height	Optimized Preliminary Barrier Length	Location[1]	Cost	Total Benefited Residences
Residences along Crockett Way	2	8	1,241	ROW	$297,840	2
Residences from Wendy Ln. to 7th Place and Woodslanding	15	16	5,531	ROW	$2,654,880	25
Residences along Pioneer Rd. and Armadillo Way (Sequoia)	11	16	2,723	ROW	$1,307,040	11
Isolated Residence[2]	1	8	196	ROW	$47,040	1
Villas at Emerald Dunes	67	22	1,753	ROW	$1,156,980	77
Renaissance and The Cove at Briar Bay	85	22	4,701	ROW	$3,102,660	117
Residences along Pine Hollow Lane	4	16	1,636	ROW	$785,280	4
Residences in the vicinity of Wilson Rd. (Possum Pass)	5	12/8	1,494/400	Shoulder	$777,264	3
Meadowbrook and Brookdale	114	16	2,014	ROW	$966,720	142
Century Village/Windsor	505	18	5,821	ROW	$3,143,340	677

[1] ROW = Right of Way

[2]This property is no longer a residential property and is currently not a noise sensitive site. Therefore, this property was not evaluated in the current Design analysis.

1.2.1 Date of Public Knowledge

The Date of Public Knowledge (DPK) is the approval date of the environmental document. However, the DPK has been reset, as there have been changes in capacity in Design since the approved PD&E.

1.3 Adjacent Proposed Noise Barriers

This project is a continuation of Florida Turnpike Project ID 406143-8, which recommended a shoulder-mounted noise barrier that was found both feasible and reasonable for residences at the Renaissance and the Cove I and II at Briar Bay, located at the southern termini of this project[1]. For this project, the barrier was reevaluated using the current Design and updated traffic to provide consistency and continuity between these projects. This barrier is shown in **Appendix C** (sheets 1-3).

[1] Information on this barrier, located near the southern termini of the project, was previously presented in the Design Noise Study Report (July 2023) for 406143-5/-8.

SECTION 2
METHODOLOGY

The Traffic Noise Evaluation documented in this report is performed in accordance with the Code of Federal Regulations Title 23 Part 772 (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 2024). Predicted traffic noise levels were produced using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM), version 2.5.

2.1 Noise Metrics

Traffic 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 traffic 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: cars, 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 defined as, 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). As shown in **Table 2-1** 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 2-2** provides typical noise levels of common indoor and outdoor activities.

For Type I projects, 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 traffic noise are not expected to occur when the number of travel lanes is increased in the future.

Common Noise Environments (CNEs) are studied separately. A CNE is a group of receptors of the same NAC that are exposed to traffic 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.

Table 2-1
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.

Table 2-2
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
Quiet Suburban Nighttime		(Background)
	---30---	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall
	---20---	(Background)
	---10---	
Lowest Threshold of Human Hearing	---0---	Lowest Threshold of Human Hearing

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

2.4 Noise Abatement Measures

Under Type I projects, 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 site. 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 benefited 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 $64,000 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 $40 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 foot (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.

2.4.1 Special Land Uses

Noise barriers for special land uses (i.e., non-residential) were evaluated following procedures documented in the *FDOT's Methodology to Evaluate Traffic Noise at Special Land Uses (December 2023*). In this methodology, SLUs are assigned an Equivalent Residential Value based on the person-hours of use at the SLU to evaluate the reasonableness and feasibility of a noise barrier.

SECTION 3
TRAFFIC NOISE ANALYSIS

3.1 Predicted Noise Levels and Abatement Analysis

Within the project limits, noise sensitive land uses adjacent to Florida's Turnpike include residences and two SLUs. Residential parcels were evaluated as NAC B, while SLUs were evaluated as NAC C. Noise levels were predicted at 257 receptor points representing 168 residences and two special land uses (Grassy Waters Elementary School and Dyer Park). 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*) and the FDOT's *Methodology to Evaluate Traffic Noise at Special Land Uses* (FDOT 2023), which included gridded and linear patterned receptors.

Predicted noise levels for these noise sensitive sites are provided in **Appendix B**. The locations of the receptor points identified in **Appendix B** are depicted on the aerials found in **Appendix C**. The numbers identify a specific receptor point and generally increase from south to north[2].

For Design Year (2050) conditions, traffic noise levels are predicted to approach, meet, or exceed the Noise Abatement Criteria (NAC) at 149 residences and two SLUs. These residences and SLUs were further evaluated to determine the feasibility and cost reasonableness of providing noise barriers to reduce traffic noise.

3.1.1 Noise Sensitive Sites

3.1.1.1 Residences in Renaissance and The Cove I & II at Briar Bay

Residences in Renaissance and the Cove I & II at Briar Bay (**Appendix C**, **sheets 1-3**) were evaluated by 111 receptor points representing 168 residences. The exterior traffic noise levels are predicted to range from 58.3 and 77.5 dB(A) for the Design year and approaches, meets, or exceeds the NAC at 149 residences. As previously mentioned, the 406143-8 noise evaluation recommended a barrier. This evaluation confirmed the feasibility, reasonableness, and extent of the barrier using the latest Design plans and traffic data. Notably, the noise barrier extent is the same as what was documented in the 406143-5/-8 NSR (July 2023). Moreover, additional benefited receptors were identified using the latest roadway and traffic data when compared to the evaluation for 406143-8.

[2] For consistency with the NSR 406143-5/-8 (July 2023), receptors for this area were not re-numbered. These receptors have an "RW" preceding the numerical identifier. The receptors for 406143-6 have an "R" preceding the numerical identifier.

A shoulder mounted noise barrier was evaluated at 14 ft., consistent with previous recommended barrier height. The results of the evaluation indicated that a 14 ft. shoulder mounted noise barrier would provide a benefit to at least two impacted receptors, meets the NRDG, and is considered cost reasonable.

The 14 ft. shoulder mounted noise barrier was evaluated in an engineering review previously with 406143-5/-8 Noise Study Report (July 2023) 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 which would prevent construction. Therefore, the 14 ft. shoulder mounted noise barrier was recommended for inclusion into the Design Plans and is shown in **Table 4-1** and in **Appendix C** (**sheets 1-3**).

Notably, the southern portion of this recommended noise barrier (2811+50 to STA 12835 +00) is outside of the project construction limits and will be constructed with the project to widen the Florida Turnpike from to Okeechobee Blvd. (FPID 406143-8).

3.1.1.2 Grassy Waters Elementary School

Grassy Waters Elementary School (**Appendix C**, sheet 2) is an elementary school with areas of frequent outdoor human use (baseball and basketball fields). The school's exterior use areas were evaluated and represented by two receptors. Exterior traffic noise levels are predicted to range from 71.1 to 73.7 dB(A) for the Design year and approach, meet, or exceed the NAC. However, the noise barrier proposed for the residences in Renaissance and the Cove I and II at Briar Bay (**Section 3.1.1.1**) will provide a benefit to this impacted school.

3.1.1.3 Dyer Park

Dyer Park (**Appendix C**, sheets 12-16) is located along Florida's Turnpike south of Beeline Highway and has several exterior use areas, including a bike trail, driving range, and soccer fields. Additional outdoor use areas outside of the area evaluated include baseball and basketball courts. These exterior use areas were evaluated for traffic noise impacts as an Activity Category C and was represented by 144 receptors (R1 – R144). The exterior traffic noise levels are predicted to range from 60.7 dB(A) to 77.4 dB(A) for the Design year Build condition and approach, meet, or exceed the NAC. Therefore, a noise barrier was evaluated for this park.

A ROW barrier was not evaluated due to a conflict with Florida Gas Transmission (FGT). Therefore a shoulder-mounted noise barrier was evaluated, ranging in heights from 8 to 14 feet, and limited to 8 feet where on structure. The *FDOT's Methodology to Evaluate Traffic Noise at Special Land Uses (FDOT 2023*) was used to assess the feasibility and reasonableness of the shoulder-mounted noise barrier(s). The results of the noise barrier analysis found that the noise barrier was not cost reasonable due to the benefited area of the facility not meeting usage requirements, shown in **Table 3-1**. For the shoulder-mounted noise barrier to meet usage requirements, the usage of the area evaluated would have to exceed 7,684 person-hours per day, seven days a week, for 52 weeks of the year (see **Table 3-2)**. It is unreasonable to assume that the park would receive this usage in a year.

Table 3-1 Noise Barrier Evaluation – Dyer Park

Barrier Scenario ID	Barrier Location	Barrier Height	Barrier Length[1]	Impacted and Benefited Equivalent Residences	Total Benefited Equivalent Residences[3]	Maximum Reduction [(dB(A)][5]	Barrier total cost[2]	Cost per Benefited Equivalent Residence	Cost Reasonable?
1	Shoulder	14	6,607	32	57	9.5	$3,699,920	$64,007	NOT REASONABLE
2	Shoulder	12	6,407	20	20	8.1	$3,265,120	$164,544	NOT REASONABLE
	Structure	8	593						
3	Shoulder	10	NA	NRDG not met.					
4	Shoulder	8	NA						

[1]Barrier length refers to the total length at the ROW, Shoulder, or on Structure.
[2]Assumes $40 per square foot.
[3]If total Impacted BER is less than 2, the noise barrier is not considered feasible.
[4]Maximum Reduction refers to the maximum reduction at any receptor (residential or SLU) evaluated for the noise barrier. If 7 dB(A) or greater, the Noise Reduction Design Goal (NRDG) is met.

Table 3-2 Equivalent Residence Calculation – Dyer Park

SLU NAME	Dryer Blvd. Park						
SLU DESCRIPTION	Park						
NAC	C						
SLU Equivalent Residence (ER) Identification							
Step	**Sub-Step**	**Description**					**Value**
Average Single-Family Residence in Florida - Person Hours per Year							
A1	a	Average number of people in a single-family residence in Florida (US CENSUS, 2017-2021 data)					2.57
	b	Hours a single-family residence is available for use (24 hours x 365 days)					8,760
	c	**Residential Person-Hours per Year Available for Use**					22,513
SLU Person Hours per Year							
A2	a	Average number of users per day *in the area evaluated* at the SLU					7,684
	b	Approximate daily hourly usage by each person *in the area evaluated* at the SLU					1
	c	Number of days per week the SLU is operational					7
	d	Number of weeks per year the SLU is operational					52
	e	**Person-Hours per Year Available for Use at the SLU**					2,797,976
SLU Area Evaluated Equivalent Residence (ER)							
A3	a	**Equivalent Residence (ER)**					**124.24**
SLU Receptor Equivalent Residence (ER)							
A4	a	Identify the number of receptors evaluated at the SLU					144
	b	Individual Receptor Equivalent Residence (i.e., each receptor point evaluated is worth…)					0.863
SLU Weighted Residential Vote Value							
A5	a	Number of votes Assigned to SLU in Barrier Voting Process (if applicable)					125
Barrier Evaluation for SLU #1							
Barrier ID	**Barrier Location**	**Barrier Height**	**Barrier Length**	**Number of Impacted and Benefited Receptors at SLU #1**	**Number of Benefited Receptors at SLU #1**	**SLU Impacted BER**	**SLU BER**
1	Shoulder	14	6,607	38	67	32.8	57.8
2	Shoulder	12	6,407	23	23	19.8	19.8
	Structure	8	593				
3	Shoulder	10	NRDG not met.				
4	Shoulder	8					

SECTION 4
CONCLUSION

Traffic noise levels were predicted at 257 receptor points representing 168 residences and two SLUs. For Design Year (2050) conditions, traffic noise levels are predicted to approach, meet, or exceed the NAC at 149 residences and two SLUs. These impacted residences and special land uses were further evaluated to determine the feasibility and cost reasonableness of providing noise barriers to reduce traffic noise.

As documented in the Noise Study Report for 406143-5/-8 (June 2023), a noise barrier was found to be feasible and reasonable for the residences in Renaissance and The Cove I and II at Briar Bay, located south of Roebuck Rd. This current evaluation confirmed the feasibility, reasonableness, and extent of the previously documented noise barrier using updated roadway and traffic data for 406143-6. This barrier is shown in **Appendix C** (Sheets 1-3). This barrier also provides a benefit to Grassy Waters Elementary School. Therefore, this barrier was recommended for inclusion into the Design plans and is shown in **Appendix C** (Sheets 1-3) and **Table 4-1**.

A noise barrier was found to not be not cost reasonable at Dyer Park due to not meeting person-hour usage requirements.

Table 4-1 Reasonable and Feasible Noise Barriers

Barrier Number	CNE	Barrier Type	Barrier Height	Barrier Length[1]	Barrier Stationing	Barrier Cost[2]	Number of Impacted Residences	Number of Benefited Residences	Cost per Benefited Resident
1	Renaissance and The Cove I & II at Briar Bay[3]	Shoulder	14 ft.	5,751 ft.	STA 2811 + 50 to 2869 + 30	$3,220,560	149	149	$21,614

[1] Full height is for the length indicated. If a shoulder noise barrier location is indicated, the length of vertical height tapers at the shoulder barrier's terminus (See FDOT Standard Plans) would be in addition to the length indicated.

[2] Unit cost of $40 per sq. ft. of noise barrier, updated in 2024. Previously, the 406143-5/-8 analysis used the then-approved $30/sq. ft., resulting in a total barrier cost of $2,415,420.

[3]Notably, the southern portion of this recommended noise barrier (2811+50 to STA 12835 +00) is outside of the project construction limits and will be constructed with the project to widen the Florida Turnpike from to Okeechobee Blvd. (FPID 406143-8).

SECTION 5
CONSTRUCTION NOISE AND VIBRATION

Based on the existing land use within the limits of this project, some land uses are identified on the FDOT listing of noise and vibration sensitive sites (found in Figure 18-9 of the FDOT PD&E Manual, Chapter 18). However, construction of the proposed roadway improvements should not have any construction noise or vibration impact. 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 Florida's Turnpike Enterprise 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 Virtual Public Meeting will be held on February 25, 2025 from 5:30-7:30 PM
- An in-person Public Information Meeting will be held on February 27, 2025 5:30 to 7:30 PM
    - Location: West Palm Beach Marriot 1001 Okeechobee Blvd, West Palm Beach, FL

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.

Federal Highway Administration Report FHWA-HEP-10-025, "Highway Traffic Noise: Analysis and Abatement Guidance", June 2010 (revised December 2010); 76 pages.

Federal Highway Administration, Report FHWA-PD-96-009, "FHWA Traffic Noise Model, Version 1.0 User's Guide", January 1998; 192 pages + supplements.

Federal Highway Administration, Report Number FHWA-PD-96-046, "Measurement of Highway-Related Noise", Cynthia S.Y. Lee and Gregg Fleming; May 1996; 206 pages.

Federal Highway Administration, 2004. Traffic Noise Model (TNM) Version 2.5.

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

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

APPENDICES

Appendix A Traffic Data

Appendix B Predicted Noise Levels

Appendix C Aerials

Appendix D TNM Files

APPENDIX A

TRAFFIC DATA

Highway Traffic Noise: Traffic Data

Project Name	WIDEN TPK(SR91) N OF OKEECHOBEE BLVD TO S OF SR 710 (4TO8 LNS)
Project Number	406143-6
Condition	Build
Year	2050

Roadway Details					Traffic Details											
Roadway Name	From	To	Roadway Type	Number of Lanes (in 1 direction)	Two-Way LOS C AADT (if applicable)	LOS C Peak Hour Peak Direction (PHPD)	Demand Two-Way AADT (if applicable)	Demand Hourly Volumes (DHV) Peak Hour Peak Direction (PHPD)	% Automobiles	% Medium Trucks	% Heavy Trucks	% Buses	% Motorcycles	Standard K-factor (if applicable)	D-factor (if applicable)	Posted Speed (mph)
Turnpike Mainline	SR 704	SR 710	Mainline	4	113,800	5,840	125,100	6,420	82%	5.01%	12.27%	0.59%	0.12%	9.5%	54.0%	70
45th Street MP 103.7	East of Tpk	West of Tpk	Arterial	2	30,800	1,550	41,800	2,110	92%	1.71%	4.99%	0.61%	0.69%	9.0%	56.0%	45
Roebuck Rd MP 102.1	East of Tpk	West of Tpk	Arterial	2	30,800	1,550	30,500	1,540	92%	2.79%	3.55%	0.54%	1.12%	9.0%	56.0%	40

Note: Highlighted values were used in the analysis.

APPENDIX B

PREDICTED NOISE LEVELS

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
Dyer Park	12	R1	C	Park	N/A	64.0	NO
	12	R2				64.6	NO
	12	R3				65.3	NO
	12	R4				65.9	NO
	12	R5				66.6	YES
	12	R6				67.2	YES
	12	R7				67.9	YES
	12	R8				68.7	YES
	12	R9				69.5	YES
	12	R10				70.4	YES
	12	R11				71.5	YES
	12	R12				72.7	YES
	12	R13				74.0	YES
	12	R14				75.5	YES
	12	R15				76.8	YES
	12	R16				75.6	YES
	12	R17				76.4	YES
	13	R18				77.0	YES
	13	R19				72.6	YES
	13	R20				72.6	YES
	13	R21				72.5	YES
	13	R22				71.5	YES
	13	R23				71.5	YES
	13	R24				71.4	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	13	R25				70.3	YES
	13	R26				70.4	YES
	13	R27				70.4	YES
	13	R28				69.3	YES
	13	R29				69.4	YES
	13	R30				68.5	YES
	13	R31				68.7	YES
	13	R32				67.9	YES
	13	R33				68.0	YES
	13	R34				77.2	YES
	13	R35				65.3	NO
	13	R36				65.5	NO
	13	R37				65.6	NO
	13	R38				65.7	NO
	13	R39				64.7	NO
	13	R40				64.8	NO
	13	R41				64.9	NO
	13	R42				64.0	NO
	13	R43				64.2	NO
	13	R44				64.3	NO
	13	R45				64.4	NO
	13	R46				63.5	NO
	13	R47				63.6	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	13	R48				63.7	NO
	13	R49				62.8	NO
	13	R50				62.9	NO
	13	R51				63.0	NO
	13	R52				63.1	NO
	13	R53				62.3	NO
	13	R54				62.5	NO
	13	R55				62.6	NO
	13	R56				61.9	NO
	13	R57				62.0	NO
	13	R58				62.1	NO
	13	R59				62.2	NO
	13	R60				61.5	NO
	13	R61				61.6	NO
	13	R62				61.6	NO
	13	R63				60.8	NO
	13	R64				61.0	NO
	13	R65				61.1	NO
	13	R66				61.2	NO
	13	R67				76.3	YES
	13	R68				71.8	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	14	R69				64.3	NO
	14	R70				65.0	NO
	14	R71				65.7	NO
	14	R72				66.4	YES
	14	R73				67.1	YES
	14	R74				67.8	YES
	14	R75				68.1	YES
	14	R76				68.2	YES
	14	R77				68.7	YES
	14	R78				69.3	YES
	14	R79				70.0	YES
	14	R80				70.8	YES
	14	R81				71.5	YES
	14	R82				71.9	YES
	14	R83				72.0	YES
	14	R84				72.0	YES
	14	R85				71.9	YES
	14	R86				71.9	YES
	14	R87				71.9	YES
	14	R88				71.8	YES
	14	R89				71.8	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	14	R90				71.8	YES
	14	R91				71.8	YES
	14	R92				71.8	YES
	14	R93				71.9	YES
	14	R94				71.9	YES
	14	R95				71.9	YES
	14	R96				71.9	YES
	14	R97				71.9	YES
	14	R98				72.0	YES
	14	R99				72.0	YES
	14	R100				72.0	YES
	14	R101				72.0	YES
	14	R102				72.0	YES
	14	R103				71.9	YES
	14	R104				71.9	YES
	14	R105				71.8	YES
	14	R106				71.4	YES
	14	R107				70.8	YES
	14	R108				70.3	YES
	14	R109				69.9	YES
	14	R110				69.4	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	14	R111				68.9	YES
	14	R112				68.3	YES
	14	R113				67.7	YES
	14	R114				67.1	YES
	14	R115				66.5	YES
	14	R116				65.9	NO
	14	R117				65.4	NO
	14	R118				72.0	YES
	14	R119				76.6	YES
	14	R120				72.0	YES
	14	R121				76.7	YES
	14	R122				72.0	YES
	15	R123				71.4	YES
	15	R124				75.0	YES
	15	R125				74.5	YES
	15	R126				73.8	YES
	15	R127				73.3	YES
	15	R128				72.5	YES
	15	R129				71.5	YES
	15	R130				70.7	YES
	15	R131				70.0	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	15	R132				69.3	YES
	15	R133				68.6	YES
	15	R134				68.0	YES
	15	R135				67.4	YES
	15	R136				67.1	YES
	15	R137				66.6	YES
	15	R138				66.2	YES
	15	R139				65.9	NO
	15	R140				65.3	NO
	15	R141				64.9	NO
	15	R142				64.7	NO
	15	R143				64.5	NO
	15	R144				64.1	NO
Grassy Waters Elementary School	2	RW166	C	School	N/A	71.1	YES
	2	RW167				73.7	YES
Renaissance and The Cove I & II at Briar Bay	1	RW139	B	Residential	2	71.0	YES
	1	RW140			2	73.3	YES
	1	RW141			2	77.5	YES
	1	RW142			2	68.9	YES
	1	RW143			2	77.1	YES
	1	RW144			2	77.0	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	1	RW145			2	69.1	YES
	1	RW146			2	71.9	YES
	1	RW147			2	77.3	YES
	1	RW148			2	67.6	YES
	1	RW149			2	71.9	YES
	1	RW150			2	77.4	YES
	1	RW151			2	68.5	YES
	1	RW152			2	75.5	YES
	1	RW153			2	68.0	YES
	1	RW154			2	76.0	YES
	1	RW155			2	70.4	YES
	1	RW156			2	77.3	YES
	1	RW157			2	69.4	YES
	1	RW158			2	77.3	YES
	1	RW268			2	68.6	YES
	1	RW269			2	67.8	YES
	1	RW270			2	66.7	YES
	1	RW271			2	68.5	YES
	1	RW272			2	67.8	YES
	1	RW273			2	66.6	YES
	1	RW274			2	68.0	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	1	RW275			2	67.2	YES
	1	RW276			2	66.4	YES
	1	RW277			2	68.0	YES
	1	RW278			2	67.2	YES
	1	RW279			2	66.2	YES
	1	RW280			2	68.1	YES
	1	RW281			2	67.2	YES
	1	RW282			2	66.4	YES
	1	RW283			2	68.2	YES
	1	RW284			2	67.3	YES
	1	RW285			2	66.4	YES
	1	RW287			2	70.5	YES
	1	RW288			2	69.4	YES
	1	RW289			2	68.4	YES
	1	RW286			2	66.4	YES
	1	RW159			2	69.2	YES
	1	RW160			2	75.9	YES
	1	RW161			2	68.0	YES
	1	RW162			2	75.3	YES
	1	RW163			2	68.6	YES
	1	RW164			2	76.5	YES

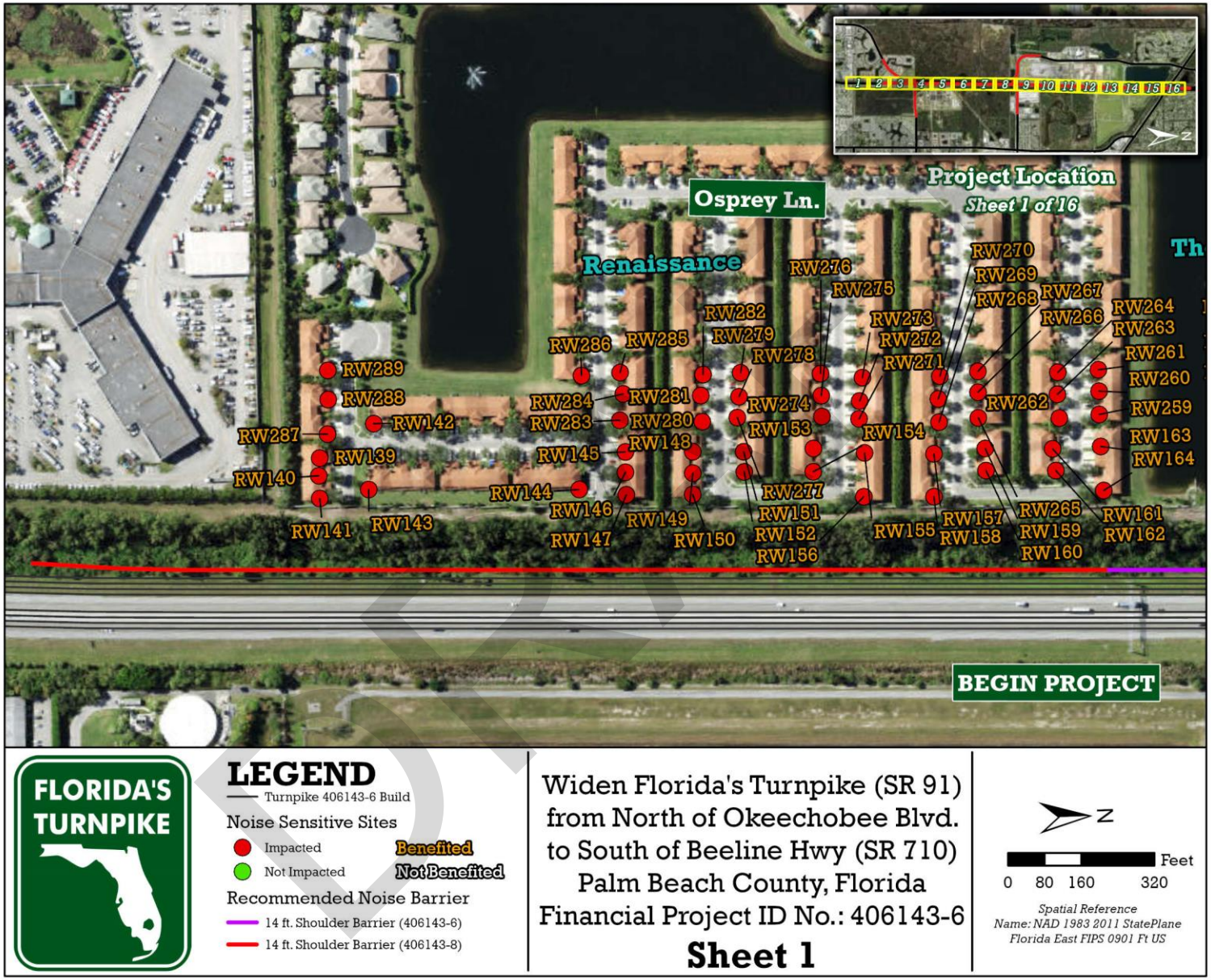
Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	1	RW165			1	68.1	YES
	1	RW259			2	68.8	YES
	1	RW260			2	68.2	YES
	1	RW261			2	67.4	YES
	1	RW262			2	68.4	YES
	1	RW263			2	67.7	YES
	1	RW264			2	67.1	YES
	1	RW265			2	68.6	YES
	1	RW266			2	67.4	YES
	1	RW267			2	66.6	YES
	2	RW257			1	67.8	YES
	2	RW258			1	67.4	YES
	2	RW175			1	64.7	NO
	2	RW176			1	64.7	NO
	2	RW177			1	64.5	NO
	2	RW245			1	67.0	YES
	2	RW246			1	66.1	YES
	2	RW247			1	64.8	NO
	2	RW248			1	64.4	NO
	2	RW249			1	64.9	NO
	2	RW250			1	64.7	NO

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	2	RW251			1	71.8	YES
	2	RW252			1	71.4	YES
	2	RW253			1	71.1	YES
	2	RW254			1	70.9	YES
	2	RW255			1	70.6	YES
	2	RW256			1	70.6	YES
	2	RW239			1	60.3	NO
	2	RW240			1	59.0	NO
	2	RW241			1	58.3	NO
	2	RW242			1	59.8	NO
	2	RW243			1	63.9	NO
	2	RW244			1	65.3	NO
	2	RW169			1	65.9	NO
	2	RW170			1	63.2	NO
	2	RW174			1	64.7	NO
	2	RW173			1	64.7	NO
	2	RW171			1	64.2	NO
	2	RW172			1	64.6	NO
	2	RW178			1	77.4	YES
	2	RW179			1	77.3	YES
	2	RW180			1	77.3	YES

Common Noise Environment	Aerial Sheet Number	Receptor ID	Activity Category	Property Type	Number of Residents Represented	Predicted Noise Level 2050 Build Condition dB(A)	NAC Approached or Exceeded?
	2	RW181			1	77.3	YES
	2	RW182			1	77.3	YES
	2	RW183			1	77.3	YES
	2	RW189			1	77.3	YES
	2	RW188			1	77.4	YES
	2	RW187			1	77.3	YES
	2	RW186			1	77.4	YES
	2	RW185			1	77.4	YES
	2	RW227			1	77.3	YES
	2	RW228			1	77.3	YES
	2	RW229			1	77.3	YES
	2	RW230			1	77.4	YES
	2	RW231			1	77.4	YES
	2	RW232			1	77.4	YES
	2	RW233			1	77.3	YES
	2	RW234			1	77.3	YES
	2	RW235			1	77.3	YES
	2	RW236			1	77.5	YES
	2	RW237			1	77.3	YES
	2	RW238			1	77.3	YES
	2	RW184			1	77.4	YES

APPENDIX C

AERIALS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Osprey Ln.
Renaissance
BEGIN PROJECT
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RW143
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RW145
RW146
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RW149
RW150
RW151
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RW289
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Benefited
Not Impacted
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 1
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Feet
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Spatial Reference
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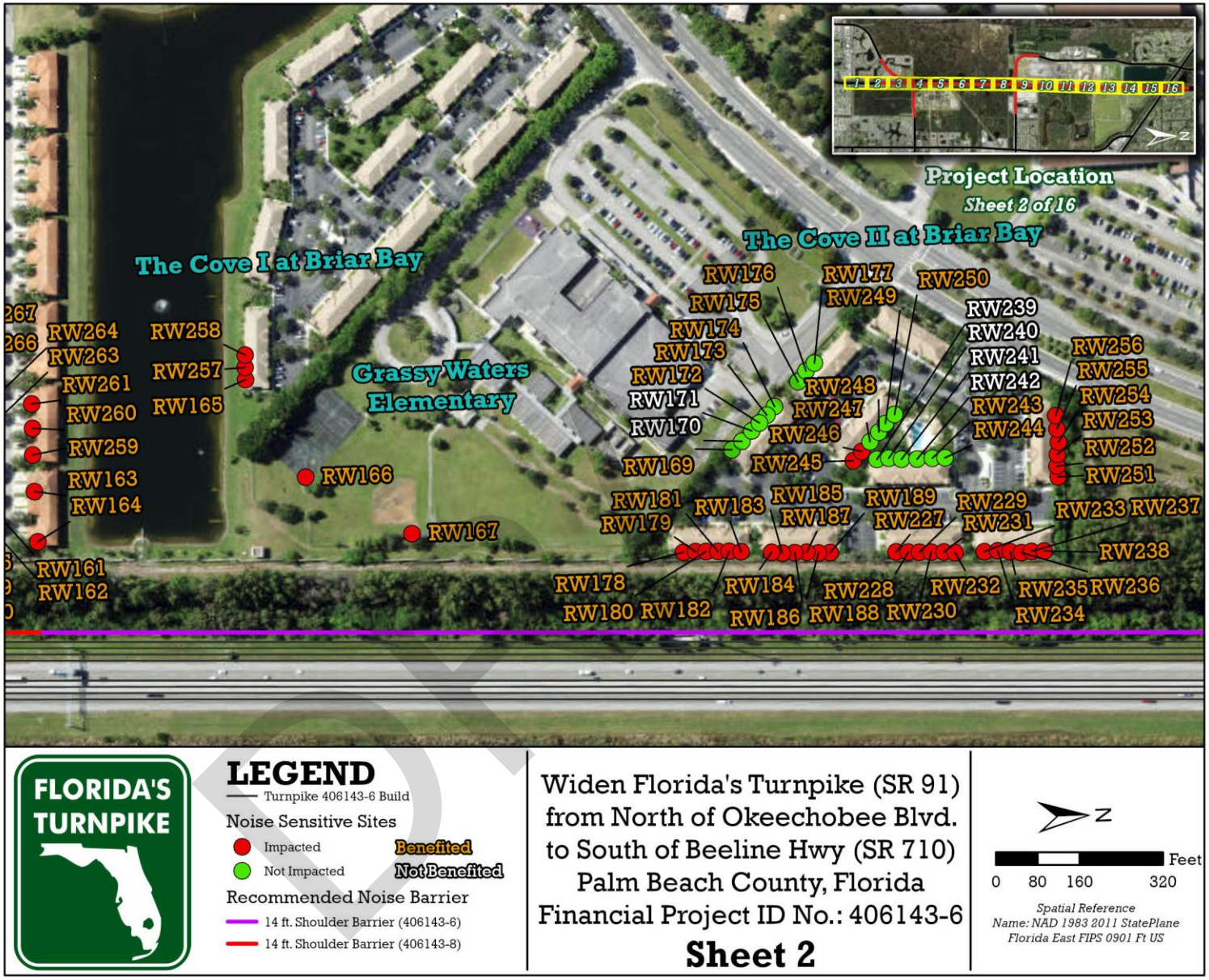
Florida East FIPS 0901 Ft US


The Cove I at Briar Bay
The Cove II at Briar Bay
Grassy Waters Elementary
Project Location
Sheet 2 of 16
RW264
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RW164
RW161
RW162
RW258
RW257
RW165
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RW167
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RW186
RW228
RW188
RW232
RW230
RW235
RW234
RW236
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Benefited
Not Impacted
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 2
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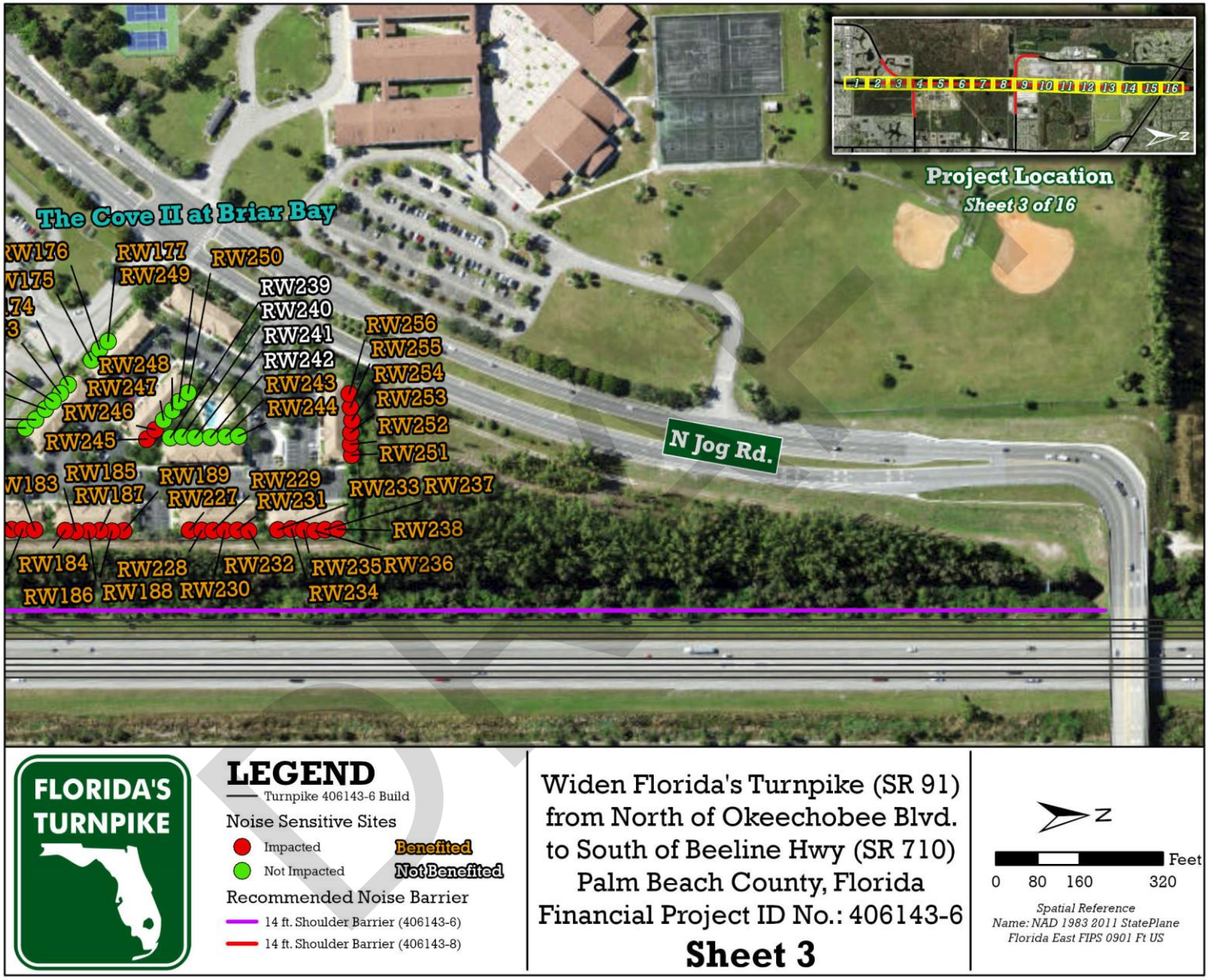
Feet
0 80 160 320
Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US


The Cove II at Briar Bay
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RW175
74
3
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RW255
RW254
RW253
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RW251
RW248
RW247
RW246
RW245
N Jog Rd.
W183
RW185
RW187
RW189
RW227
RW229
RW231
RW233
RW237
RW238
RW184
RW186
RW228
RW188
RW232
RW230
RW235
RW234
RW236
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Project Location
Sheet 3 of 16
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Benefited
Not Impacted
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 3
N
Feet
0 80 160 320
Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Project Location
Sheet 4 of 16
Roebuck Rd.
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Benefited
Not Impacted
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 4
N
Feet
0 80 160 320
Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US

FLORIDA'S TURNPIKE

LEGEND

Turnpike 406143-6 Build

Noise Sensitive Sites

Impacted — Benefited

Not Impacted — Not Benefited

Recommended Noise Barrier

14 ft. Shoulder Barrier (406143-6)

14 ft. Shoulder Barrier (406143-8)

Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6

Sheet 5

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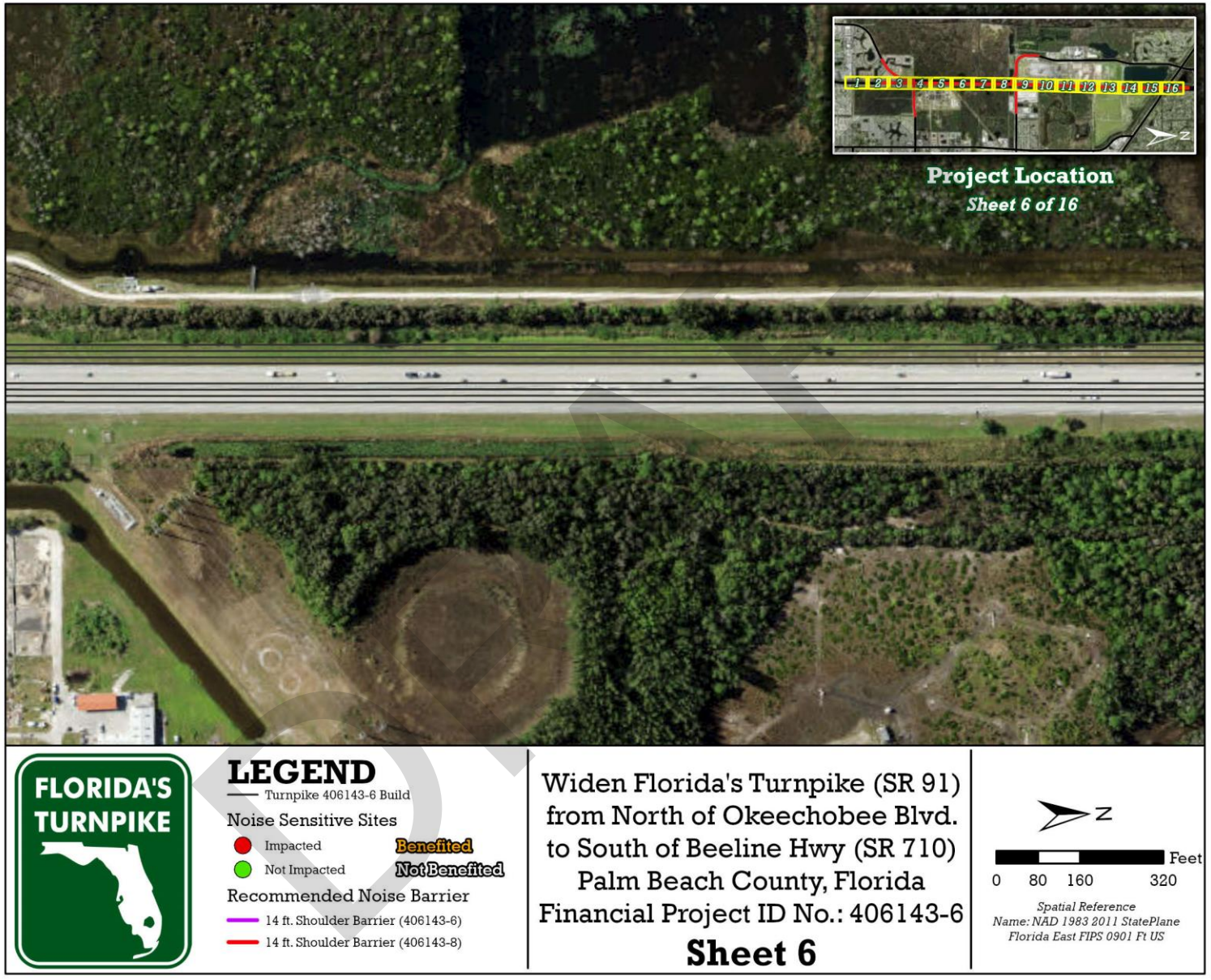
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N
Project Location
Sheet 6 of 16
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Benefited
Not Impacted
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 6
N
Feet
0 80 160 320
Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US

FLORIDA'S TURNPIKE

LEGEND

Turnpike 406143-6 Build

Noise Sensitive Sites

Impacted — Benefited

Not Impacted — Not Benefited

Recommended Noise Barrier

14 ft. Shoulder Barrier (406143-6)

14 ft. Shoulder Barrier (406143-8)

Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6

Sheet 7

N

0 80 160 320 Feet

Spatial Reference
Name: NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US

FLORIDA'S TURNPIKE

LEGEND

Turnpike 406143-6 Build

Noise Sensitive Sites

Impacted — Benefited

Not Impacted — Not Benefited

Recommended Noise Barrier

14 ft. Shoulder Barrier (406143-6)

14 ft. Shoulder Barrier (406143-8)

Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6

Sheet 8

N

Feet

0 80 160 320

Spatial Reference
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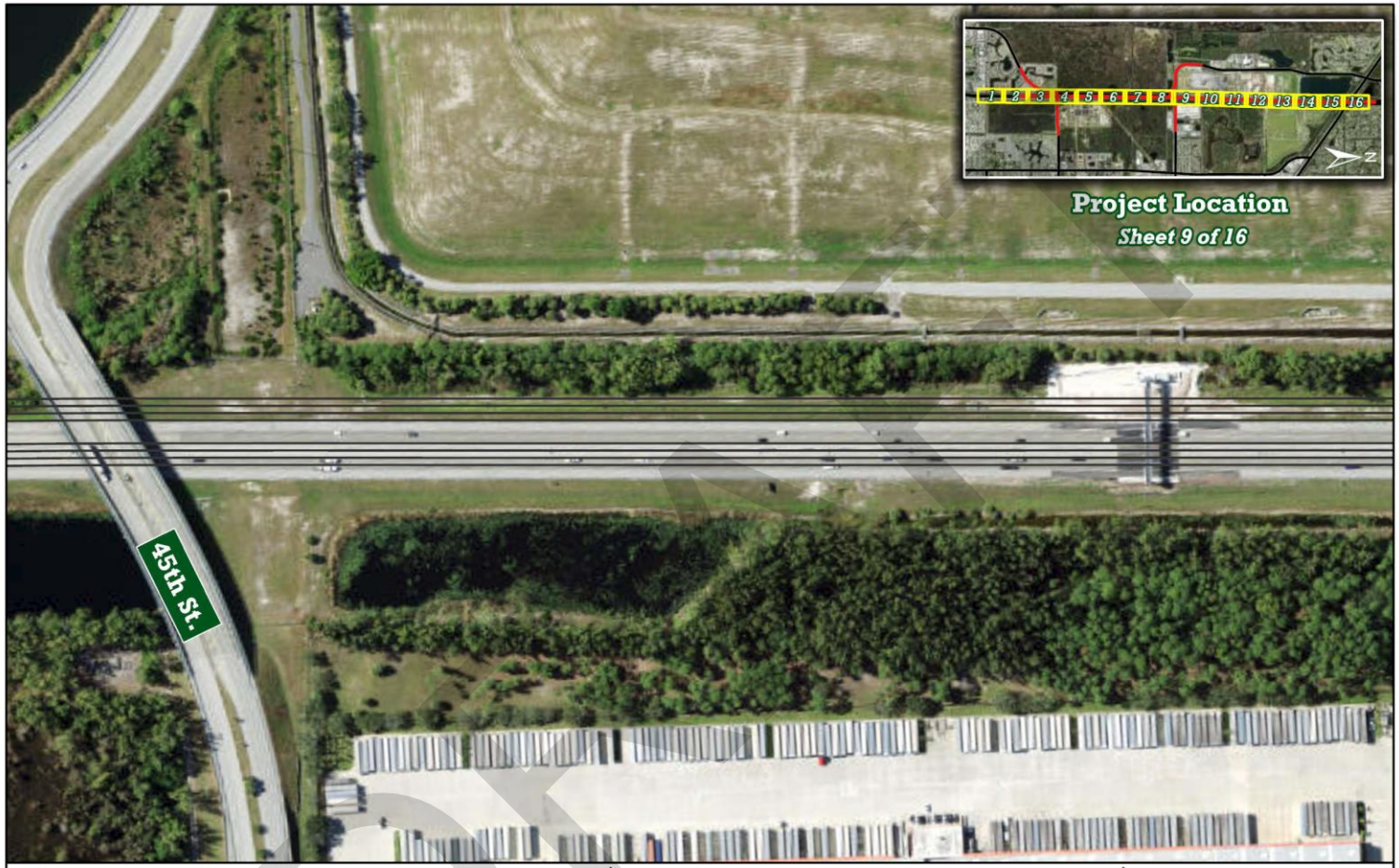
Florida East FIPS 0901 Ft US



FLORIDA'S TURNPIKE

LEGEND

Turnpike 406143-6 Build

Noise Sensitive Sites

Impacted — Benefited

Not Impacted — Not Benefited

Recommended Noise Barrier

14 ft. Shoulder Barrier (406143-6)

14 ft. Shoulder Barrier (406143-8)

Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6

Sheet 9

N

Feet

0 80 160 320

Spatial Reference
Name: NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Project Location
Sheet 10 of 16
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Not Impacted
Benefited
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 10
N
Feet
0 80 160 320
Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US

FLORIDA'S TURNPIKE

LEGEND

Turnpike 406143-6 Build

Noise Sensitive Sites

Impacted — Benefited

Not Impacted — Not Benefited

Recommended Noise Barrier

14 ft. Shoulder Barrier (406143-6)

14 ft. Shoulder Barrier (406143-8)

Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6

Sheet 11

N

Feet

0 80 160 320

Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US

FLORIDA'S TURNPIKE

LEGEND

Turnpike 406143-6 Build

Noise Sensitive Sites

- Impacted — Benefited
- Not Impacted — Not Benefited

Recommended Noise Barrier

- 14 ft. Shoulder Barrier (406143-6)
- 14 ft. Shoulder Barrier (406143-8)

Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6

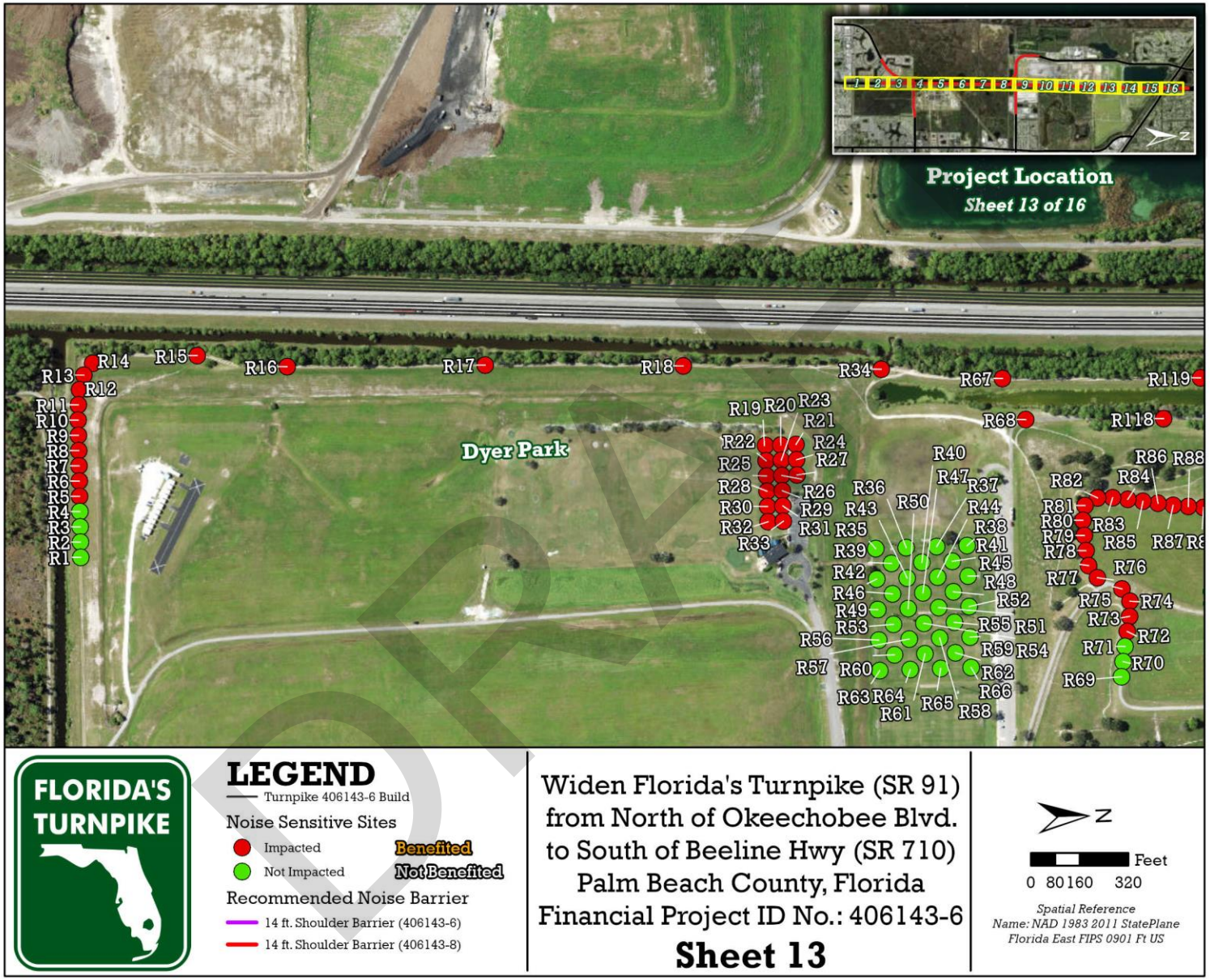
Sheet 12

N

Feet

0 80160 320

Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US


Project Location
Sheet 13 of 16
Dyer Park
R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18
R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33
R34 R35 R36 R37 R38 R39 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50 R51 R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63 R64 R65 R66
R67 R68
R69 R70 R71 R72 R73 R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88
R118 R119
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Benefited
Not Impacted
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
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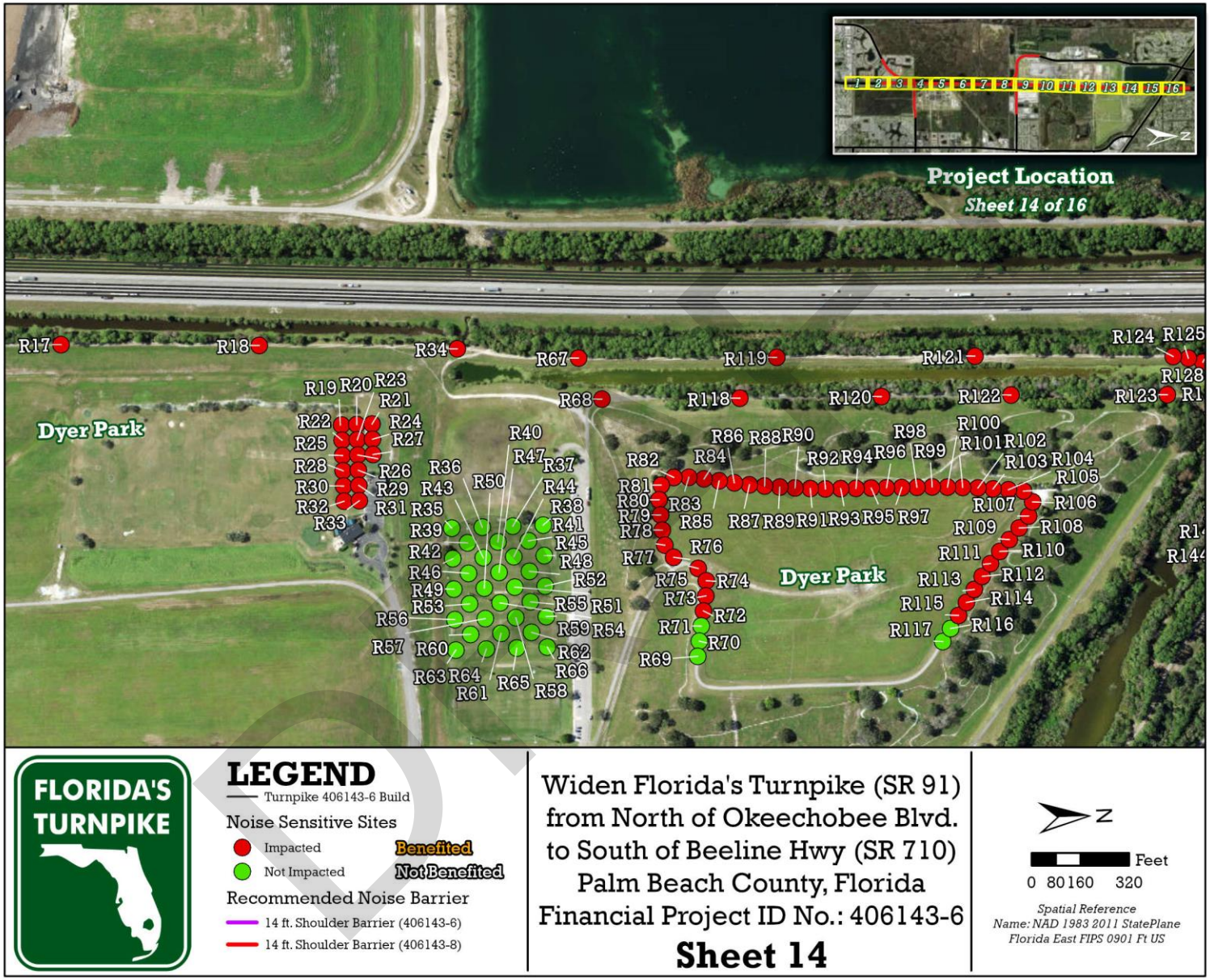
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 13
N
Feet
0 80160 320
Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US


Project Location
Sheet 14 of 16
Dyer Park
Dyer Park
R17 R18 R34 R67 R119 R121 R124 R125 R128
R19 R20 R23 R21 R68 R118 R120 R122 R123
R22 R24 R25 R27 R28 R26 R30 R29 R32 R31 R33
R36 R43 R50 R40 R47 R37 R44 R35 R38 R39 R41 R42 R45 R46 R48 R49 R52 R53 R55 R51 R56 R59 R54 R57 R60 R62 R63 R64 R61 R65 R66 R58
R82 R84 R86 R88 R90 R92 R94 R96 R98 R99 R100 R101 R102 R103 R104 R105 R106 R107 R108 R109 R110 R111 R112 R113 R114 R115 R116 R117
R81 R80 R79 R78 R83 R85 R87 R89 R91 R93 R95 R97
R77 R76 R75 R74 R73 R72 R71 R70 R69
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Not Impacted
Benefited
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
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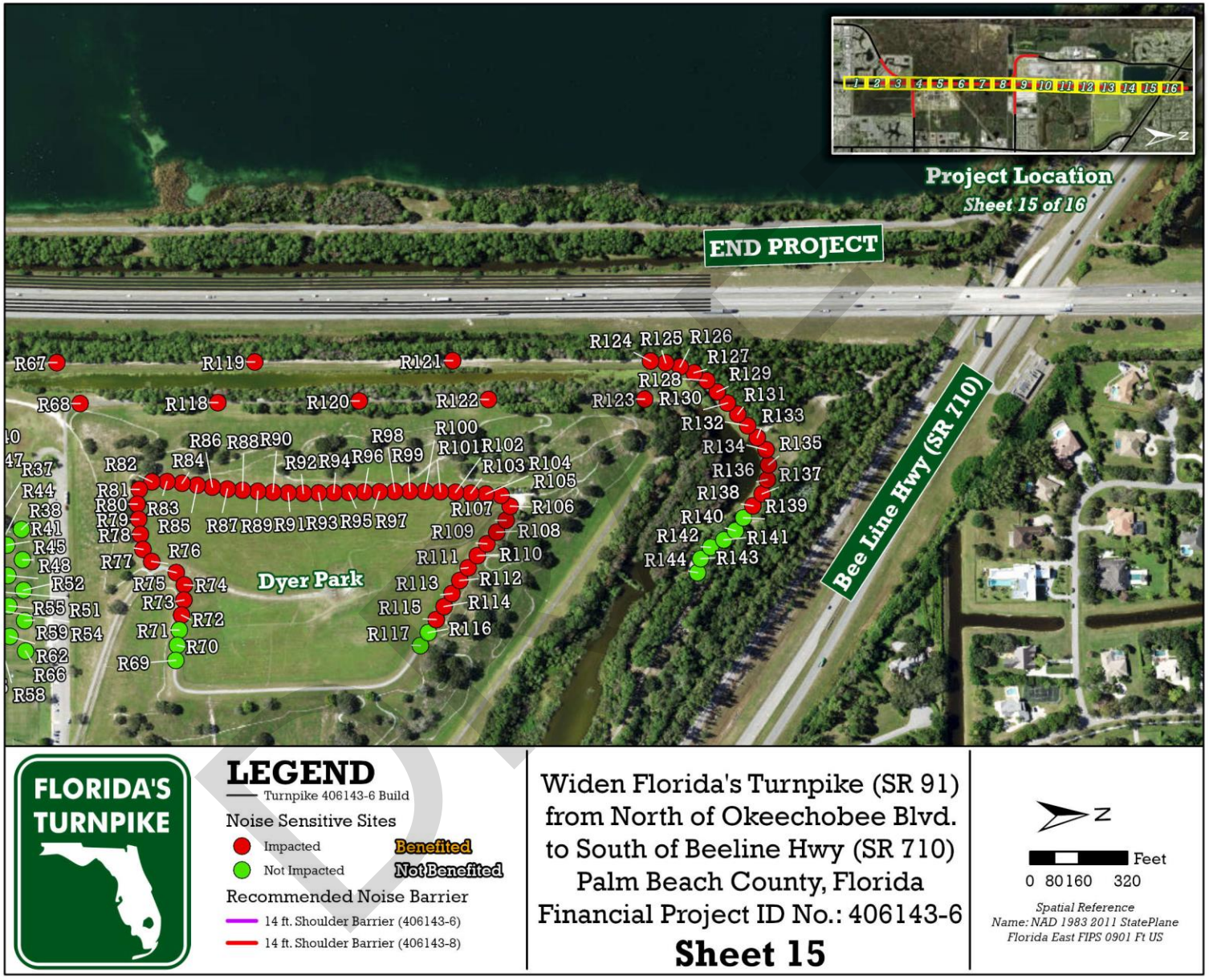
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 14
N
Feet
0 80160 320
Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US


Project Location
Sheet 15 of 16
END PROJECT
Bee Line Hwy (SR 710)
Dyer Park
R67 R68 R119 R118 R121 R120 R122 R124 R125 R126 R127 R128 R129 R123 R130 R131 R132 R133 R134 R135 R136 R137 R138 R139 R140 R141 R142 R143 R144
R37 R44 R38 R41 R45 R48 R52 R55 R51 R59 R54 R62 R66 R58
R82 R84 R86 R88 R90 R92 R94 R96 R98 R99 R100 R101 R102 R103 R104 R105 R106 R107 R108 R109 R110 R111 R112 R113 R114 R115 R116 R117
R81 R80 R79 R78 R83 R85 R87 R89 R91 R93 R95 R97 R77 R76 R75 R74 R73 R72 R71 R70 R69
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Benefited
Not Impacted
Not Benefited
Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
14 ft. Shoulder Barrier (406143-8)
FLORIDA'S TURNPIKE
Widen Florida's Turnpike (SR 91)
from North of Okeechobee Blvd.
to South of Beeline Hwy (SR 710)
Palm Beach County, Florida
Financial Project ID No.: 406143-6
Sheet 15
N
Feet
0 80160 320
Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US


Project Location
Sheet 16 of 16
END PROJECT
Bee Line Hwy (SR 710)
R123
R124
R125
R126
R127
R128
R129
R130
R131
R132
R133
R134
R135
R136
R137
R138
R139
R140
R141
R142
R143
R144
FLORIDA'S TURNPIKE
LEGEND
Turnpike 406143-6 Build
Noise Sensitive Sites
Impacted
Benefited
Not Impacted
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Recommended Noise Barrier
14 ft. Shoulder Barrier (406143-6)
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Sheet 16
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Feet
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Spatial Reference
Name: NAD 1983 2011 StatePlane
Florida East FIPS 0901 Ft US

APPENDIX D

TNM Files

TNM Files provided in the Project File.