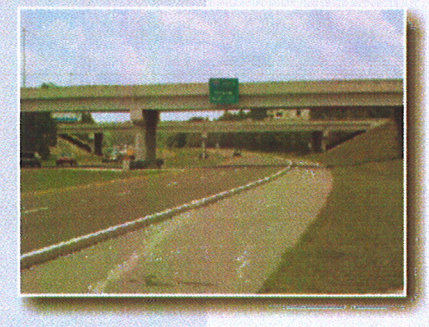
DESIGN

I-75 (SR 93A)

from south of Fowler Avenue, Hillsborough County, to north of SR 52, Pasco County

Noise Study Report Update



PB Americas, Inc.
FPID 408459 2 52 01
from south of Fowler Avenue to north of Bruce B. Downs Blvd. (CR 581)

URS Corporation
FPID 408459 3 52 01
from north of Bruce B. Downs Blvd. (CR 581) to south of SR 56

PBS&J
FPID 408459 4 52 01
from south of SR 56 to north of CR 54

Greenhorne & O'Mara, Inc.
FPID 258736 2 52 01
from north of CR 54 to north of SR 52

Submitted to
Florida Department of Transportation District Seven

Submitted by
PB Americas, Inc.

April 2009

NOISE STUDY REPORT UPDATE
I-75 (SR 93A) Design
from South of Fowler Avenue, Hillsborough County to North of SR 52, Pasco County

PB Americas, Inc.
FPID 408459 2 52 01
from south of Fowler Avenue to north of Bruce B. Downs Boulevard
(County Road 581)

URS Corporation
FPID 408459 3 52 01
from north of Bruce B. Downs Boulevard (County Road 581)
to State Road 56

PBS&J
FPID 408459 4 52 01
State Road 56 to north of County Road 54

Greenhorne & O'Mara, Inc.
FPID 258736 2 52 01
from north of County Road 54 to north of State Road 52

Submitted to:
Florida Department of Transportation
District Seven

Prepared by:
PB Americas, Inc.

April 2009

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) is preparing final design plans for the improvements to Interstate 75 (I-75) from south of Fowler Avenue to north of State Road (SR) 52.

This Noise Study Report (NSR) Update evaluates traffic noise levels for the affected residences at the two noise barrier locations determined to be feasible and potentially cost reasonable during the Project Development and Environment (PD&E) Study. The traffic noise analysis was performed to fulfill commitments made during the PD&E phase and was prepared in accordance with Title 23 Code of Federal Regulations Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise and the FDOT PD&E Manual, Part 2, Chapter 17 (October 6, 2003). This NSR Update was also prepared to update the building permit data for the four design projects (FPID 408459 2 52 01, FPID 408459 3 52 01, FPID 408459 4 52 01, and FPID 258736 2 52 01). Development is deemed to be planned, designed, and programmed if a proposed noise sensitive land use such as a residence, school, church, hospital, library, etc., has received a building permit from the local agency with jurisdiction for each building prior to the project's date of public knowledge.

The two feasible and potentially cost reasonable noise barriers listed in the commitments provided in the 2004 PD&E Study and new noise sensitive sites that had received building permits prior to the Location Design Acceptance (LDA) and the Federal Highway Administration Reevaluation approval dates (i.e., date of public knowledge) were included in this NSR Update. The date of approval for the PD&E Studies and Reevaluation are listed below.

- Segment of I-75 from south of Fowler to south of State Road (SR) 56 – May 10, 2004 (Type II Categorical Exclusion)
- Segment of I-75 from south of SR 56 to County Road (CR) 54 – February 2, 2004 (Reevaluation)
- Segment of I-75 from south of SR 56 to north of SR 52 – November 27, 2000 (Type II Categorical Exclusion)

Therefore, any building permits issued after these dates for new (additional) noise sensitive sites are not included in this study since they occurred after the date of public knowledge.

The residences included in this study are 23 homes at the southwest quadrant of the Fowler Avenue interchange Noise Sensitive Area (NSA 1), 51 homes in The Enclave at Tampa Palms (NSA 5), eight residences in Buckingham at Tampa Palms (NSA 9). At the time of the noise analysis update, design plans for the segment of I-75 from north of CR 54 to north of SR 52 were not sufficiently developed to predict noise levels. Consequently, residences in Tampa Bay Golf and Country Club (NSA 10) were evaluated in a separate design noise study (see Appendix G) with the results included in this NSR Update. An additional nine residences were evaluated in NSA 10.

Residences in the following neighborhoods were not included as part of this noise study update because the homes' building permits were issued after the LDA and Reevaluation

approval dates: all but eight residences in Buckingham at Tampa Palms (NSA 9), The Preserves (east of I-75, south of the I-275/I-75 apex), Tampa Bay at Cypress Creek (east of I-75, north of SR 56), Seven Oaks (east of I-75, north of SR 56), Tampa North Aero Park (west of I-75, south of CR 54), Westbrook Estates (west of I-75, south of CR 54), Santa Fe at Westbrook (west of I-75, south of CR 54), Saddlecreek (west of I-75, south of CR 54), and all but nine residences in Tampa Bay Golf and Country Club (NSA 10).

As part of this update, noise levels at residences in NSA 1, 5, and 9 were modeled using Traffic Noise Model Version 2.1, with noise levels at 43 residences predicted to approach or exceed the Noise Abatement Criteria for Activity Category B as a result of the Build Alternative. The Tampa Bay Golf and Country Club (NSA 10) was evaluated in a separate design noise study. Noise study methodology for NSA 10 is documented in Appendix G. Noise levels at five residences in NSA 10 are predicted to approach or exceed the Noise Abatement Criteria for Activity Category B as a result of the Build Alternative. The results of this NSR Update indicate that noise barriers remain feasible and cost reasonable at The Enclave at Tampa Palms (NSA 5), located west of I-75.

The noise levels presented in this report are expressed in A-weighted decibels (dBA). This scale most closely approximates the response characteristics of the human ear to traffic noise. All noise levels are reported as LAeq1h. The term LAeq1h is defined as the (A-weighted) equivalent steady-state sound level which in a 1-hour period contains the same acoustic energy as the time-varying sound level during the same 1-hour period.

Noise Sensitive Area 1

With the construction of the proposed Build Alternative, the predicted noise levels range from 63.8 to 77.5 dBA. Future noise levels at 15 of the 23 residences are predicted to approach or exceed the Noise Abatement Criteria for the Build Alternative.

Concurrent with the engineering review of the noise barriers in May 2006, it was determined that the z-elevation of the recommended noise barrier and roadway at NSA 1 could be improved with additional data obtained for areas south of the project limits (the 2004 PD&E Study recommended a noise barrier length that extends beyond the project limits to the south to provide the necessary insertion loss to homes located at the end of the project limits). Additional field reviews of the area were conducted in April and May 2006 to verify the data exhibited by roadway cross-sections. The noise analysis was revised with data from the field and roadway cross-section and topography. The noise barrier evaluation was also revised in May 2006. The revised noise barrier evaluation indicated that with the given parameters, the 16-foot noise barrier recommended during the 2004 PD&E Study was no longer cost reasonable.

Three noise barrier options were evaluated adjacent to NSA 1. The noise barrier option lengths typically extend from south of Lanway Drive to north of Navajo Avenue along the west side of I-75. With additional costs incurred to provide a gravity wall to accommodate a noise barrier and because so few residences would benefit from the noise barriers, it exceeds the FDOT cost criterion of $35,000 per benefited residence for all heights evaluated. According to the criteria outlined in the PD&E Manual, Part 2, Chapter 17, the noise barrier evaluated for NSA 1 is no longer a cost reasonable abatement measure.

Noise Sensitive Area 5

A 14-foot noise barrier and a 20-foot high noise barrier benefiting 28 affected residences are recommended for design at NSA 5. The noise barriers have a combined length of 2,443 feet and extend from Station Number 2055+00.00 to 2078+45.00 and Station Number 2079+25.00 to 2080+48.71. A noise barrier public opinion survey was conducted in August 2006 for the 28 affected property owners to establish public support. The result of the survey indicated that the majority of the affected property owners were in favor of the proposed noise barrier. Therefore, the noise barrier will be included in the design plans and built when the project is constructed.

Noise Sensitive Area 9

Since the eight residences that received building permits prior to the date of public knowledge within NSA 9 are not predicted to approach or exceed the NAC for Activity Category B for the Build Alternative, noise abatement measures were not evaluated.

Noise Sensitive Area 10

Residences in the Tampa Bay Golf and Country Club were under construction during the 2004 PD&E Study. Therefore, a commitment was made stating that residences in the community that received a building permit prior to the location design acceptance date (i.e., date of public knowledge, November 27, 2000) would be further evaluated for traffic noise in the design phase of the project. Building permits were issued for nine residences prior to the date of public knowledge. Noise levels at five of the residences, located along the golf course bordering I-75, were predicted to exceed the NAC for the year 2032 Build condition. The lowest cost per benefited residence that could be achieved for a noise barrier that would provide the five affected residences at least a 5 dBA reduction was $130,000. The cost exceeds the reasonable criterion of $35,000 per benefited residence. Consequently, a noise barrier is not a cost reasonable abatement measure.

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1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) is preparing final design plans for the improvements to Interstate 75 (I-75) from south of Fowler Avenue to north of State Road (SR) 52.

This Noise Study Report (NSR) Update evaluates traffic noise levels for the affected residences at the two noise barrier locations determined to be feasible and potentially cost reasonable during the Project Development and Environment (PD&E) Study. The traffic noise analysis was performed to fulfill commitments made during the PD&E phase and was prepared in accordance with Title 23 Code of Federal Regulations Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, and the FDOT PD&E Manual, Part 2, Chapter 17 (October 6, 2003).

This NSR Update was also prepared to update the building permit data for the four design projects (FPID 408459 2 52 01, FPID 408459 3 52 01, FPID 408459 4 52 01, and FPID 258736 2 52 01). Development is deemed to be planned, designed, and programmed if a proposed noise sensitive land use such as a residence, school, church, hospital, library, etc., has received a building permit from the local agency with jurisdiction for each building prior to the project's date of public knowledge.

1.1 Previous Studies

The FDOT conducted PD&E Studies to evaluate and document the proposed improvements to I-75 from south of Fowler Avenue in Hillsborough County to SR 52 in Pasco County. A PD&E Study was conducted for the I-75 segment from south of Fowler Avenue to south of SR 56 in Hillsborough and Pasco Counties, Florida, and was approved by the Federal Highway Administration (FHWA) on May 10, 2004. A PD&E Study was conducted for the I-75 segment from south of SR 56 to north of SR 52 and was approved by the FHWA on November 27, 2000. The FHWA approved a Design Change Reevaluation from south of SR 56 to County Road (CR) 54 in Pasco County on February 2, 2004. The Design Change Reevaluation Study compared and documented the new approved design concepts to those contained in the I-75 PD&E Study of November 27, 2000. Appendix A includes the approved environmental documents that describe the proposed improvements.

The general objective of the studies was to provide documented information necessary for the FDOT and the FHWA to reach a decision on the type, design, and location of improvements to I-75. The May 10, 2004 PD&E Study incorporated all recommended improvements contained in the FHWA-approved Interchange Modification Report for I-75 at CR 581 (Bruce B. Downs Boulevard).

1.2 Project Limits

The I-75 design projects are divided into four segments.

- South of Fowler Avenue to north of Bruce B. Downs Boulevard (PB Americas, Inc.) (FPID 408459 2 52 01)

- North of Bruce B. Downs Boulevard to SR 56 (URS Corporation) (FPID 408459 3 52 01)
- SR 56 to north of CR 54 (PBS&J) (FPID 408459 4 52 01)
- North of CR 54 to north of SR 52 (Greenhorne & O'Mara, Inc.) (FPID 258736 2 52 01)

The purposes of this NSR Update is to further consider and evaluate noise barriers for the Noise Sensitive Area (NSA) at the southwest quadrant of the Fowler Avenue interchange (NSA 1), the Tampa Palms neighborhood of The Enclave (NSA 5) located west of I-75, Buckingham at Tampa Palms (NSA 9); and the Tampa Bay Golf and Country Club (NSA 10) and to update the building permit data for the four projects. The noise barrier evaluation uses specific details found in the roadway design plans (typically based on the 60 percent design). A project location map showing the limits of each design segment is shown Figure 1.

2.0 PLANNED IMPROVEMENTS

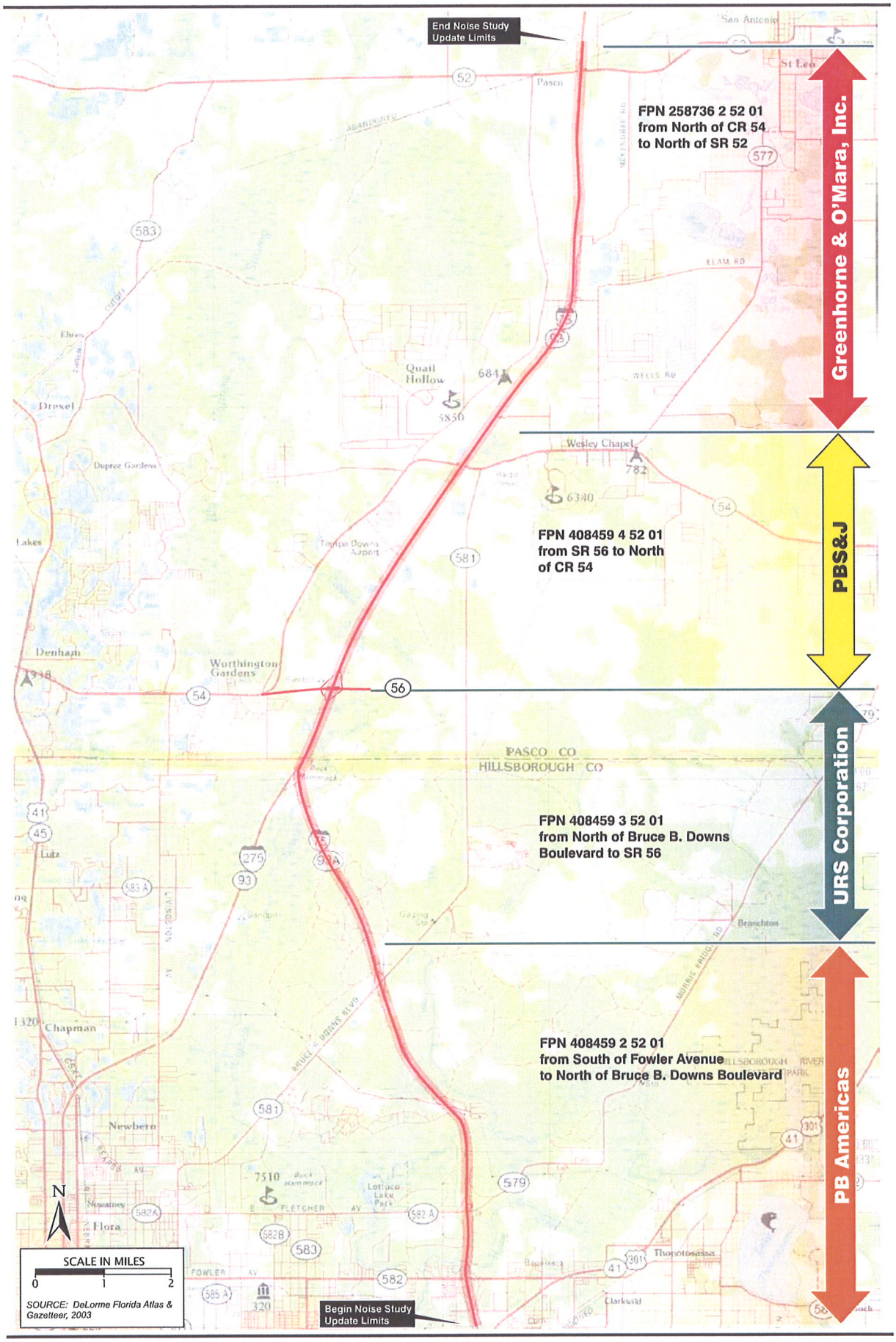
2.1 South of Fowler Avenue to North of Bruce B. Downs Boulevard (FPID 408459 2 52 01)

Based on the 60 percent ultimate build design plans dated July 2006 from south of the Hillsborough River to north of Bruce B. Downs Boulevard, the improvements consist of six 12-foot lanes (three in each direction), two 12-foot auxiliary lanes (one in each direction), and 12-foot inside and outside shoulders (of which 10 feet are paved), and a minimum 64-foot median (consistent with the 2004 PD&E Study). The noise analysis and noise barrier evaluations at NSA 1 and NSA 5 used details from this roadway design plans.

It should be noted that the interim improvements (100 percent design plans dated March 2008) is the design that is proposed for construction, which consists of improvements in the transitional area from south of Fowler Avenue to Fletcher Avenue include widening the inside and outside of I-75. The interim design typical section consists of six 12-foot lanes (three in each direction), two 12-foot auxiliary lanes (one in each direction), a minimum 64-foot median, and 12-foot inside and outside shoulders (of which 10 feet are paved).

From Fletcher Avenue to just south of the Hillsborough River, the improvement is an outside widening of I-75. The interim design typical section consists of six 12-foot lanes (three in each direction) with a variable-width median (88-foot minimum).

From south of the Hillsborough River to north of Bruce B. Downs Boulevard, the improvement is an inside widening of I-75 and the addition (outside) of one auxiliary lane to the southbound direction. The interim design typical section consists of six 12-foot lanes (three in each direction), a minimum 64-foot median and 12-foot inside and outside shoulders (of which 10 feet are paved). From milepost 33.451 to milepost 36.493, the existing outside southbound lane will not be resurfaced.



I-75 (SR 93A)
from south of Fowler Avenue to north of State Road 52

Project Location

Figure 1

2.2 North of Bruce B. Downs Boulevard to SR 56 (FPID 408459 3 52 01, 421831 3 52 01)

From north of Bruce B. Downs Boulevard to south of SR 56, the improvement is a widening and resurfacing of I-75 (90 percent design plans June 2008). Generally, one lane will be added in each direction resulting in a six-lane typical section south of the I-75/I-275 apex and a 10-lane (four northbound lanes and six southbound lanes) typical section north of the I-75/I-275 apex. For the interim condition, the southbound lanes north of the I-75/I-275 apex will have five lanes. The project also includes the construction of a new single-lane northbound exit ramp from I-75 and a new single-lane northbound exit ramp from I-275 that will converge south of the apex and then continue parallel to the I-275/I-75 northbound lanes as a two-lane ramp northward to SR 56. To accommodate construction of these ramps, a portion of the I-275 northbound lanes east of I-75 will be realigned. The off ramp to SR 56 will be reconstructed under a separate project (421831 4 52 01 at 90 percent design plans dated April 2008).

2.3 SR 56 to North of CR 54 (FPID 408459 4 52 01, 421831 4 52 01)

From SR 56 to CR 54, the improvements include a six-lane typical section (three lanes in each direction) and two auxiliary lanes in each direction (90 percent design plans July 2008). A 64-foot median will be maintained. The bridges over CR 54 will be replaced to accommodate the widening of CR 54.

Because the existing interstate currently has a 64-foot median width, pavement widening to provide the additional through and auxiliary lanes will occur on the outside of the roadway. In the vicinity of the North Tampa Aero Park, the approved PD&E Study provides for an alignment shift for the purpose of avoiding impacts to the airplane glide path and possibly affecting the function and Federal Aviation Administration status of the airport. Within the limits of the glide path, the design of the improvements will hold the existing western edge of travel and widen and/or reconstruct the roadway entirely to the east. Pavement widening will transition from the normal outside widening (both sides) to widening into the median (for the southbound lanes) and new construction of the northbound lanes to accommodate the alignment shift. The improvements (interim and the PD&E Study) will provide for this alignment shift.

The scope of this project is to carry the design for the PD&E alternative to 60 percent status after which construction plans for an interim/staged improvement project (six through lanes with no auxiliary lanes) would be developed to completion. Replacement of the overpass at CR 54, reconstruction of all on/off ramps, and widening of CR 54 are included in the interim/staged improvements. The CR 54 interchange will be reconstructed under a separate project (421831 4 52 01 at 100 percent design plans January 2008) in advance of the six lane widening.

2.4 North of CR 54 to North of SR 52 (FPID 258736 2 52 01)

Improvements to I-75 in this segment involve the addition of one outside travel lane in each direction (15 percent design plans dated September 2007). The mainline typical section will have six 12-foot travel lanes (three in each direction) and 12-foot outside shoulders (while retaining the existing 64-foot wide median and 12-foot inside shoulders). A reduced border width of 80 feet is proposed in order to avoid the need for additional right-of-way acquisition. Since the resultant border width is less than the required 90 feet, a design variation will be required. A loop ramp will be constructed in the northwest quadrant of the SR 52 interchange for the westbound SR 52 to the southbound I-75. SR 52 will also be widened in the limits of the interchange.

3.0 TRAFFIC NOISE ANALYSIS

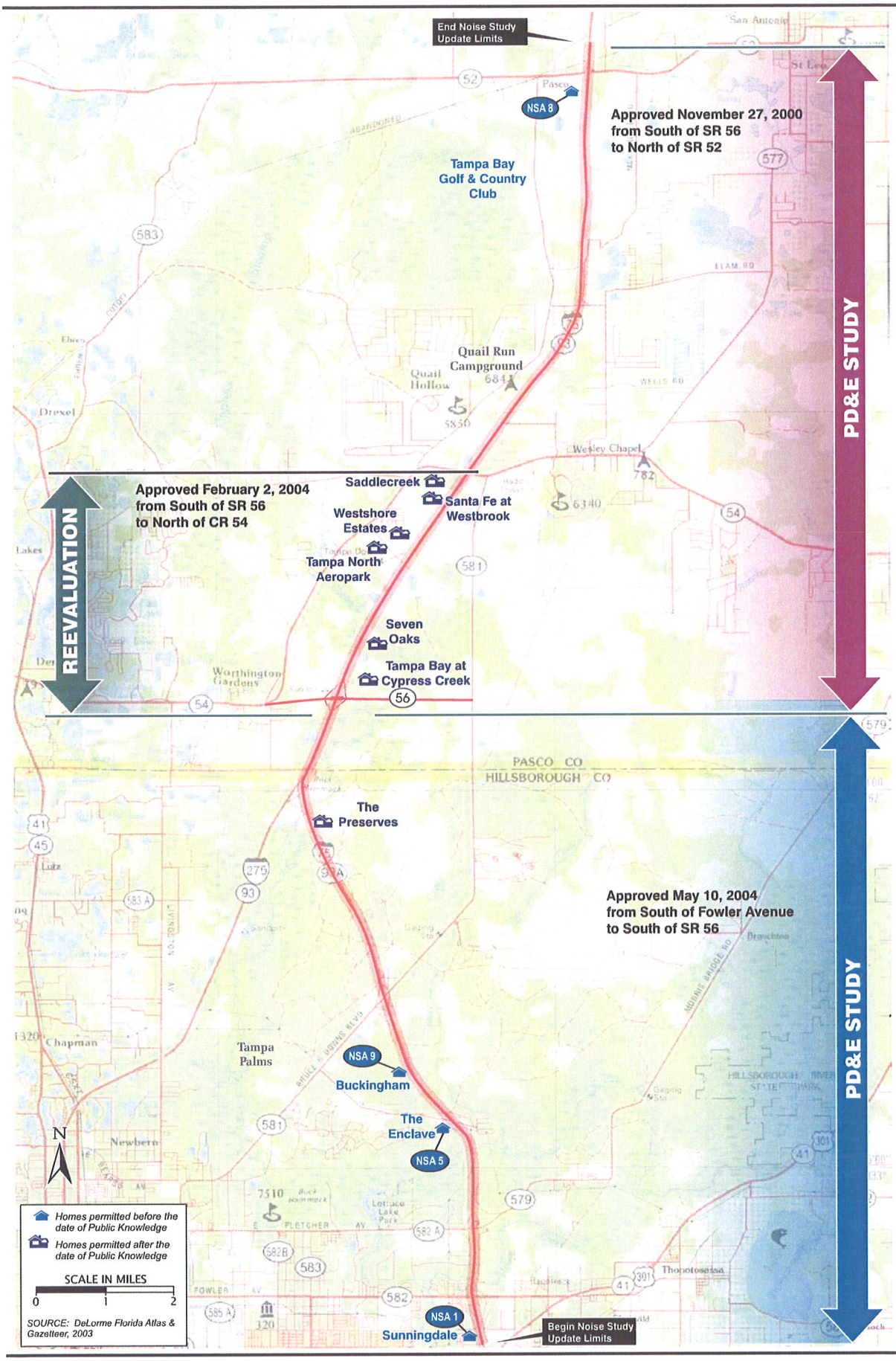
The noise levels presented in this report are expressed in A-weighted decibels (dBA). This scale most closely approximates the response characteristics of the human ear to traffic noise. All noise levels are reported as LAeq1h. The term LAeq1h is defined as the (A-weighted) equivalent steady-state sound level that in a 1-hour period contains the same acoustic energy as the time-varying sound level during the same 1-hour period.

3.1 Noise Study Update Limits

The limits of this NSR Update are from south of Fowler Avenue to north of SR 52. The study limits include the PD&E Studies and Reevaluation listed below along with their respective LDA and the FHWA approval dates.

- Segment of I-75 from south of Fowler to south of SR 56 – May 10, 2004 (Type II Categorical Exclusion)
- Segment of I-75 from south of SR 56 to CR 54 – February 2, 2004 (Reevalaution)
- Segment of I-75 from south of SR 56 to north of SR 52 – November 27, 2000 (Type II Categorical Exclusion)

The intent of the noise study is to further evaluate feasible and cost reasonable noise barriers identified during the PD&E Study and to evaluate noise impacts at new noise sensitive sites that received building permits prior to the FHWA approval date of the PD&E Studies and Reevaluation. This is referred to as the date of public knowledge. Therefore, any building permits issued after these dates for new (additional) noise sensitive sites are not included in this study since they occurred after the date of public knowledge. The noise study update limits, including noise sensitive sites, the I-75 PD&E Studies and Reevaluation limits, and associated LDA dates are shown in Appendix A. The building permit dates and copies of the FHWA LDA dates for the PD&E Study and Reevaluation Study are listed in Appendix A.



I-75 (SR 93A)
from south of Fowler Avenue to north of State Road 52

Noise Study Update Limits

Figure 2

Only residences that received building permits before the above noted dates and are located within the noise level contours were evaluated in this NSR Update. Noise level contours, or points of equal noise levels, were estimated during the PD&E Studies and Reevaluation Study. Noise contours identify the noise sensitive sites that may approach or exceed the NAC of 66 dBA as a result of the design year Build Alternative. The distances to the 66-dBA contours were measured perpendicularly from the I-75 edge-of-pavement. They are listed below.

- South of Fowler Avenue to Fowler Avenue – 535 feet
- Fowler Avenue to Fletcher Avenue – 600 feet
- Fletcher Avenue to Bruce B. Downs Boulevard – 545 feet
- Bruce B. Downs Boulevard to County Line Road – 525 feet
- County Line Road to SR 56 – 600 feet
- SR 56 to CR 54 – 475 feet
- CR 54 to Overpass Road – 424 feet
- Overpass Road to SR 52 – 414 feet

3.1.1 Residences/Neighborhoods Included in the Study

This NSR Update includes the feasible and cost reasonable noise barriers listed in the 2004 PD&E Study commitments and new noise sensitive sites that had received building permits between the date of public knowledge and the initial preparation of the noise studies for the FHWA approved 2000 PD&E Study, 2004 PD&E Study and the Reevaluation. This study addresses 23 homes at the southwest quadrant of the Fowler Avenue interchange (NSA 1), 51 homes in The Enclave at Tampa Palms (NSA 5), eight residences in Buckingham at Tampa Palms (NSA 9). At the time of the noise analysis update, design plans for the segment of I-75 from north of CR 54 to north of SR 52 were not sufficiently developed to predict noise levels. Consequently, residences in Tampa Bay Golf and Country Club (NSA 10) were evaluated in a separate design noise study (see Appendix G) with the results included in this NSR Update. An additional nine residences were evaluated in NSA 10.

3.1.2 Residence/Neighborhoods Not Included in the Study

The noise contours developed during this NSR Update process revealed additional potentially affected noise sensitive sites within the neighborhoods of Buckingham at Tampa Palms (NSA 9), the Preserves (east of I-75, south of the I-275/I-75 apex), Tampa Bay at Cypress Creek (east of I-75, north of SR 56), Seven Oaks (east of I-75, north of SR 56), Tampa North Aero Park (west of I-75, south of CR 54), Westshore Estates (west of I-75, south of CR 54), Santa Fe at Westbrook (west of I-75, south of CR 54), Saddlecreek (west of I-75, south of CR 54), and Tampa Bay Golf and Country Club (NSA 10). However, these additional residences were not further evaluated for noise abatement features as part of this NSR Update because the homes were permitted after the LDA date.

3.2 Noise Abatement Criteria

A noise sensitive site is any property (owner occupied, rented, or leased) where frequent exterior human use occurs and where a lowered noise level would be of benefit. To evaluate traffic noise, the FHWA has established Noise Abatement Criteria (NAC). As shown in Table

1, the NAC vary according to land use activity. When predicted traffic noise levels "approach" or exceed the NAC, or when predicted traffic noise levels increase substantially from existing levels, the FHWA requires that noise abatement measures be considered. The FDOT defines the word "approach" as within one dBA of the NAC and that a substantial increase occurs if noise levels are predicted to increase by 15 dBA or more as a direct result of the transportation improvement project. Based on the results of the past PD&E Studies and Reevaluation Study, no noise sensitive sites are predicted to experience a substantial increase in traffic noise as part of the proposed improvements.

Table 1
Noise Abatement Criteria

Activity Category	LAeq1h (dBA)	Description of Activity
A	57 Exterior	Lands on which serenity and quietness of extraordinary significance serve an important public purpose and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B.
D	--	Undeveloped lands.
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Title 23 Code of Federal Regulations, Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, FHWA August 1996.

3.3 Noise Sensitive Sites

For the purpose of this NSR Update, the homes were grouped into NSAs (consistent with the Noise Study Report completed for the 2004 PD&E Study). An evaluation of the areas delineated by the noise contours identified 82 single-family residences for the design phase noise study update. An additional nine residences were identified and evaluated in the separate design noise study for Tampa Bay Golf and Country Club (see Appendix G). Table 2 lists the location and description of each NSA. The locations of the NSAs are shown in Figure 2.

Table 2
Noise Sensitive Areas

Noise Sensitive Area	Location	Land Use	Years Permitted*
NSA 1	West of I-75 and south of the Fowler Avenue interchange	single-family residences	1962 – 1980
NSA 5 The Enclave at Tampa Palms	West of I-75 and north of the Fletcher Avenue interchange	single-family residences	late 1980s – mid 1990s
NSA 9 Buckingham at Tampa Palms	West of I-75 and north of the Fletcher Avenue interchange	single-family residences	mid 2004 to late 2005
NSA 10 Tampa Bay Golf and Country Club	West of I-75 and southwest of the SR 52 interchange	single-family residences	late 2000 – late 2005

Note: *The years that the homes were permitted were obtained from the Hillsborough and Pasco Counties Property Appraisers' internet databases.

3.4 Noise Model

TNM 2.1 was used in this design phase noise study to be consistent with the noise methodology used in the PD&E Study (which determined the two feasible and potentially cost reasonable noise barriers). Methodology applied to the Tampa Bay Golf and Country Club (NSA 10), evaluated in a separate design noise study, is documented in Appendix G. Input parameters necessary to run TNM include detailed roadway geometry, receiver locations, propagation characteristics, shielding, and traffic data. The propagation path between the noise sensitive sites and I-75 is primarily soft. The preliminary design concepts were used to develop roadway geometry in TNM. The roadway geometry and receiver locations were evaluated in the field and mapped using MicroStation and recent aerial photography.

3.5 Traffic Data

Noise level predictions are made for the traffic characteristics that yield the worst hourly traffic noise on a regular basis. Generally, the worst hourly traffic volume is the peak-hour Level of Service (LOS) C or demand LOS, whichever is less. The design year for the project is 2028.

Peak-hour factors (K) of 9 to 10 percent were used along the I-75 project corridor for all three scenarios (i.e., existing condition, No Build Alternative, and Build Alternative) to calculate the peak-hour traffic volumes from the Annual Average Daily Traffic (AADT) volumes. Design-hour truck percentages range from 4.6 to 10.2 percent. The posted speed of 70 miles per hour was used for the I-75 segments. The 2004 PD&E Study traffic volumes were used for this NSR to maintain consistency with the 2004 study. The LOS C AADT volumes for the 2004 PD&E Study is consistent with the 60 percent ultimate build design plans LOS C AADT volumes (roadway typical section for the ultimate improvements). The PD&E Study traffic volumes are provided in Appendix B. Traffic volumes used to evaluate the Tampa Bay Golf and Country Club (NSA 10) are documented in a separate design noise study provided in Appendix G.

3.6 Predicted Noise Levels

For the noise analysis update, predicted noise levels for the Build Alternative were calculated and compared to the No Build Alternative and to the existing condition noise levels at 82 noise sensitive sites adjacent to I-75. Table 3 presents the predicted noise levels for the existing condition and the No Build and Build Alternatives and compares the increase in the predicted Build Alternative noise levels above the predicted existing condition. The printout of the TNM 2.1 output files and predicted noise level results are provided in Appendix C. Predicted noise levels for nine residences in the Tampa Bay Golf and Country Club (NSA 10) are provided in Table 3 for the Build condition (Appendix G).

Table 3
Predicted Traffic Noise Levels

Noise Sensitive Area	TNM Receiver Numbers[1]	Number of Sites Evaluated	Predicted Minimum – Maximum LAeq1h (dBA)[2]			Difference Existing vs. Build (dBA)	Number of Sites Affected[3]
			Existing Condition	No Build Alternative	Build Alternative		
1	1-1 to 1-23	23	64.0 – 76.4	64.1 – 76.5	63.8 – 77.5	-1.6 – 1.4	15
5	5-1 to 5-11	51	50.8 – 67.5	50.9 – 67.5	52.3 – 72.7	1.5 – 5.5	28
9	9-2 to 9-4	8	53.9 – 60.0	54.0 to 60.0	56.8 – 63.8	2.5 – 3.8	0
10[4]	8-34 to 8-36	9	N/A	N/A	60.4 – 69.5	N/A	5
	Total:	91				**Total:**	48

Notes: [1]The locations of the residences modeled are presented on the concept plans provided in Figures 3 to 5.
[2]The predicted noise levels by receiver are provided in Appendix C.
[3]The term "affected" is defined as the sites that are predicted to experience noise levels that approach or exceed the NAC as a result of the Build Alternative.
[4]Data for NSA 10 are from a separate design noise study provided in Appendix G.

3.6.1 Noise Sensitive Area 1

NSA 1 represents 23 residences located west of I-75 and south of the Fowler Avenue interchange. With the construction of the proposed Build Alternative, the predicted noise levels range from 63.8 to 77.5 dBA. Future noise levels at 15 of the 23 residences are predicted to approach or exceed the NAC for the Build Alternative. The range in increase of the existing condition to the Build Alternative is -1.6 to 1.4 dBA. The range in increase of the No Build Alternative to the Build Alternative is -1.7 to 1.2 dBA. Since residences within NSA 1 are predicted to approach or exceed the NAC for the Build Alternative, noise abatement measures were further evaluated based on the locations and dimensions identified in the 2004 PD&E Study. The results of the abatement analysis are provided in Section 4.0.

3.6.2 Noise Sensitive Area 5

NSA 5 represents 51 residences within The Enclave subdivision of Tampa Palms. The Enclave subdivision is located north of the Fletcher Avenue interchange on the west side of I-

75. The predicted noise levels range from 52.3 to 72.7 dBA for the Ultimate Build Alternative in the year 2028. Future noise levels at 28 of the 51 residences are predicted to approach or exceed the NAC for the Build Alternative. The range in increase of the existing condition to the Build Alternative is 1.5 to 5.5 dBA. The range in increase of the No Build Alternative to the Build Alternative is 1.4 to 5.4 dBA. Since residences within NSA 5 are predicted to approach or exceed the NAC for Activity Category B for the Build Alternative, noise abatement measures were evaluated. The results of the abatement analysis are provided in Section 4.0.

3.6.3 Noise Sensitive Area 9

NSA 9 represents eight residences within the Buckingham subdivision of Tampa Palms, which were not initially evaluated in the PD&E Study's Noise Study Report, but had received building permits prior to the date of public knowledge of May 10, 2004. The Buckingham subdivision is located north of the Fletcher Avenue interchange on the west side of I-75. The predicted noise levels range from 56.8 to 63.8 dBA for the Ultimate Build Alternative in the year 2028. Since the residences that received building permits prior to the date of public knowledge within NSA 9 are not predicted to approach or exceed the NAC for Activity Category B for the Build Alternative, noise abatement measures were not evaluated. The building permit information for residences at the Buckingham subdivision is provided in Appendix A.

3.6.4 Noise Sensitive Area 10

NSA 10 represents nine residences within the Tampa Bay Golf and Country Club located west of I-75 and southwest of the I-75/SR 52 interchange. Records available through the Pasco County Property Appraiser revealed that building permits were issued for nine residences prior to the LDA date of November 27, 2000. Building permit information is provided in Appendix G. Predicted noise levels range from 60.4 to 69.5 dBA for the 2032 Build condition. Predicted noise levels approach or exceed the NAC at five residences located along the golf course bordering I-75. Noise abatement measures were evaluated for the five residences and the results of the abatement analysis are provided in Section 4.0.

4.0 NOISE BARRIER ANALYSIS

This Noise Study Report (NSR) evaluates traffic noise levels for the affected residences at the two noise barrier locations (NSA 1 and NSA 5) determined to be feasible and potentially cost reasonable during the PD&E Study. During the PD&E Study, the noise barriers were previously determined to be feasible and potentially cost reasonable based on the following minimum conditions:

- Provide a minimum insertion loss (noise reduction) of at least 5 dBA for first row homes with a design goal of 10 dBA being desirable.

- Using a unit cost of $25 per square foot, cost must not exceed $35,000 per benefited receiver.

The cost per benefited receiver has changed to $42,000 with an associated unit cost of $30 per square foot since the PD&E Study. It was decided that the original PD&E Study cost would be used in the determination of cost reasonableness to be consistent with the

information and methodology presented at the PD&E Study Public Hearing. Notably, the relationship between unit cost and cost per benefited residence remains unchanged; hence, the results of a cost reasonable analysis would remain unchanged regardless of the cost used.

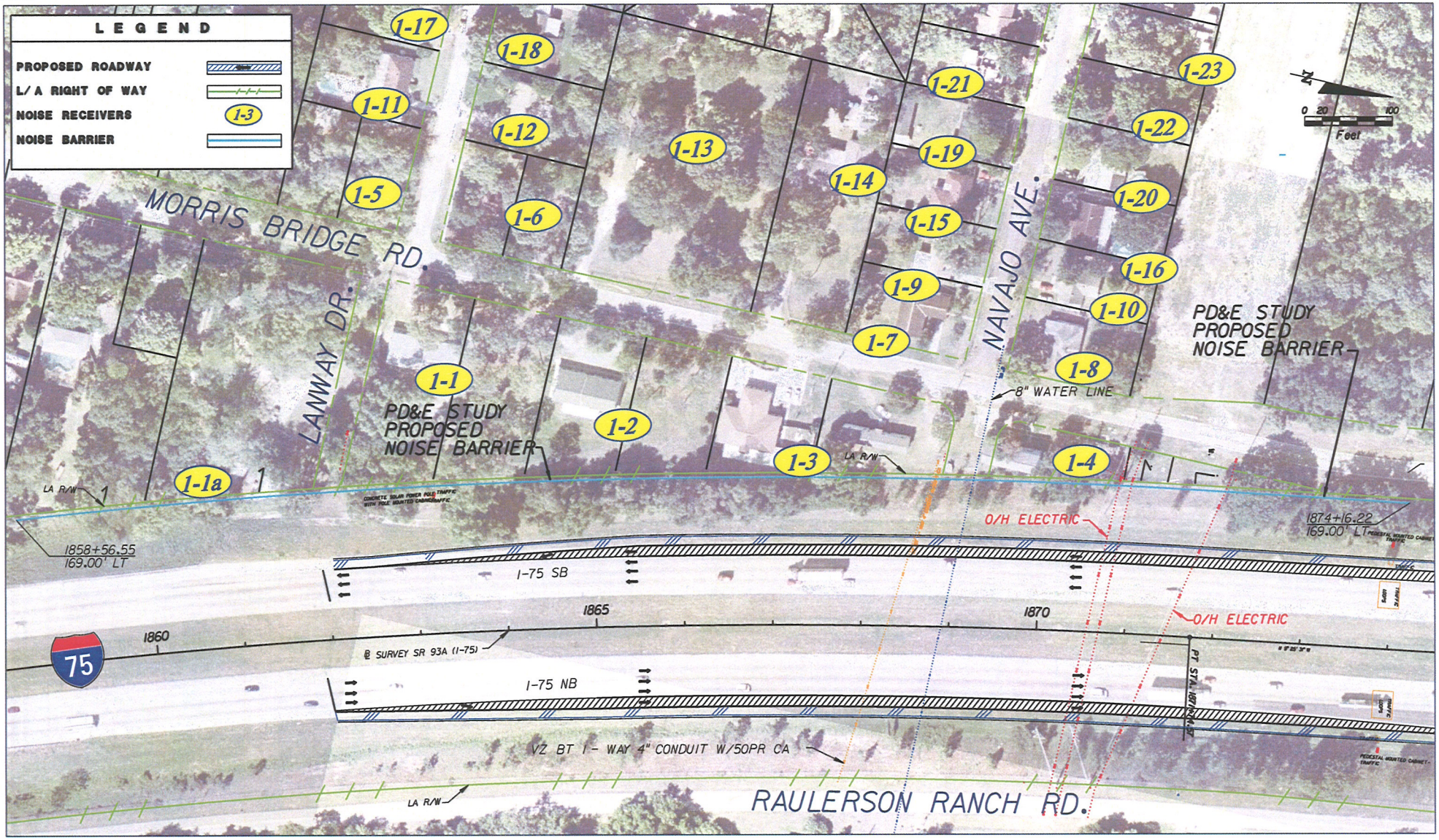
After determining the amount of noise reduction and cost, other factors such as community desires, adjacent land uses and land use stability, antiquity, predicted noise level increases, safety considerations, drainage issues, utility conflicts, maintenance requirements, and construction issues are also considered when evaluating the feasibility and reasonableness of providing noise barriers. A constructability review of the noise barrier locations was conducted in May 2006 to determine if there are significant issues associated with the barriers. The memorandum and responses to the review are included in Appendix D.

The FDOT has established 22 feet as the upper limit for the height of noise barriers. For areas where noise barriers were determined to be feasible, barrier heights from 10 to 22 feet were evaluated in 2-foot increments. Each barrier was analyzed to determine the most effective barrier design with the optimum height and length meeting the above conditions. The analysis indicates that there is a trend depicting a decrease in the number of benefited residences and an increase in the cost per benefited residence as the barrier height decreases. Therefore, an analysis for a barrier less than 10 feet in height was deemed not necessary. Noise barrier locations and noise sensitive sites are shown in Figure 3, Figure 4, and Figure 5.

4.1 Noise Sensitive Area 1

Concurrent with the engineering review of the noise barriers in May 2006, it was determined that the z-elevation of the recommended noise barrier and roadway at NSA 1 could be improved with additional data obtained for areas south of the project limits (the 2004 PD&E Study recommended a noise barrier length that extends beyond the project limits to the south to provide the necessary insertion loss to homes located at the end of the project limits). Additional field reviews of the area were conducted in April and May 2006 to verify the data exhibited by roadway cross-sections. The noise analysis was revised with data from the field and roadway cross-section and topography. The noise barrier evaluation was also revised in May 2006. The revised noise barrier evaluation indicated that with the given parameters, the 16-foot noise barrier recommended during the 2004 PD&E Study was no longer cost reasonable.

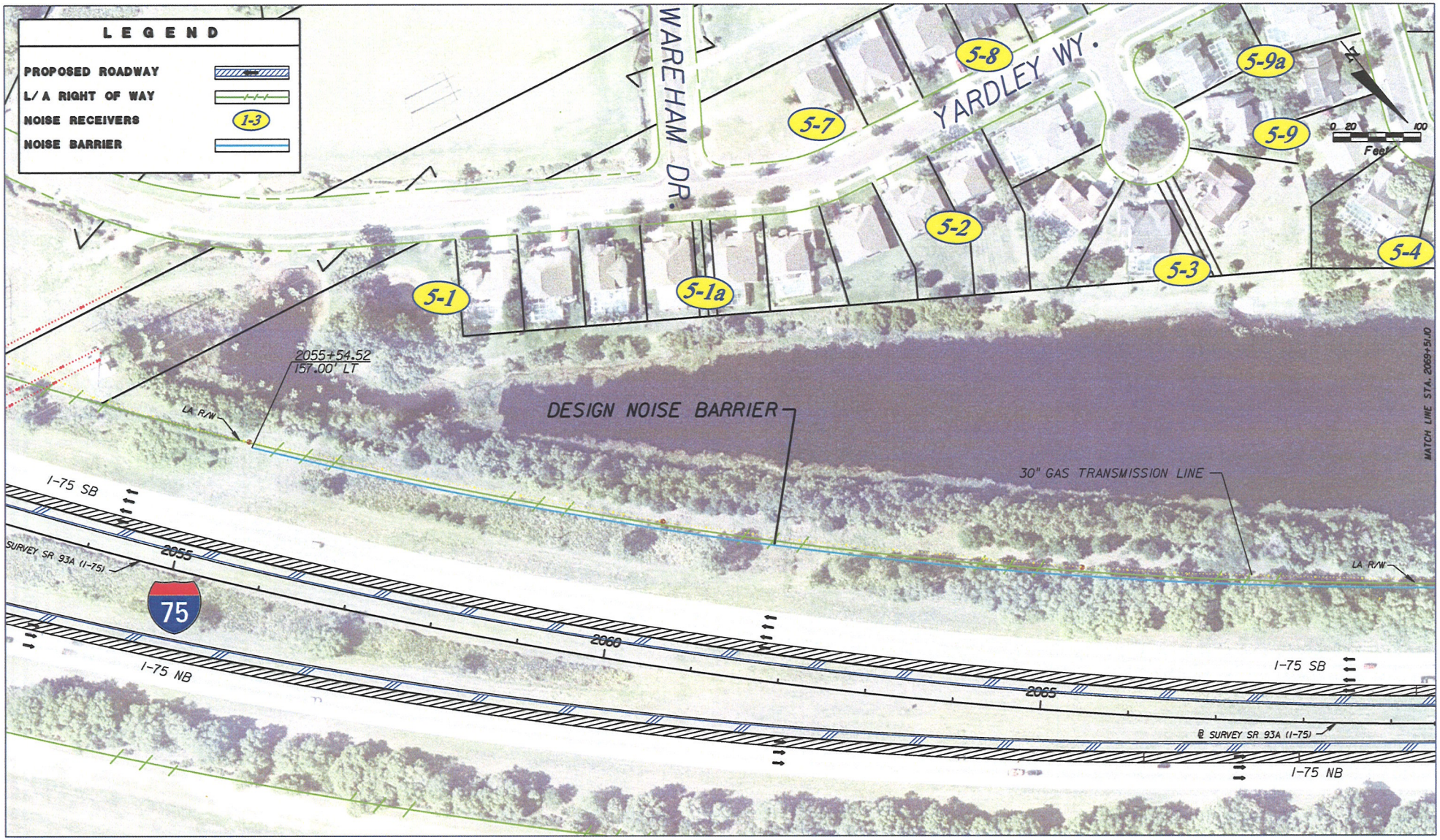
Any new noise sensitive sites within NSA 1 were reviewed to determine homes that had received building permits between the date of public knowledge and the initial preparation of the noise studies (see Section 3.1). Fifteen of 23 residences evaluated in NSA 1 are predicted to approach or exceed the NAC for the Build Alternative. Three noise barrier options were evaluated adjacent to NSA 1 to determine the effectiveness of barriers along the right-of-way and adjacent to the roadway. The noise barrier option lengths typically extend from south of Lanway Drive to north of Navajo Avenue along the west side of I-75. Detailed information regarding noise barriers for all options and gravity wall cost estimates are provided in Appendix E.



I-75 (SR 93A)
from south of Fowler Avenue to north of State Road 52

Noise Barrier Location and Noise Sensitive Sites at NSA 1

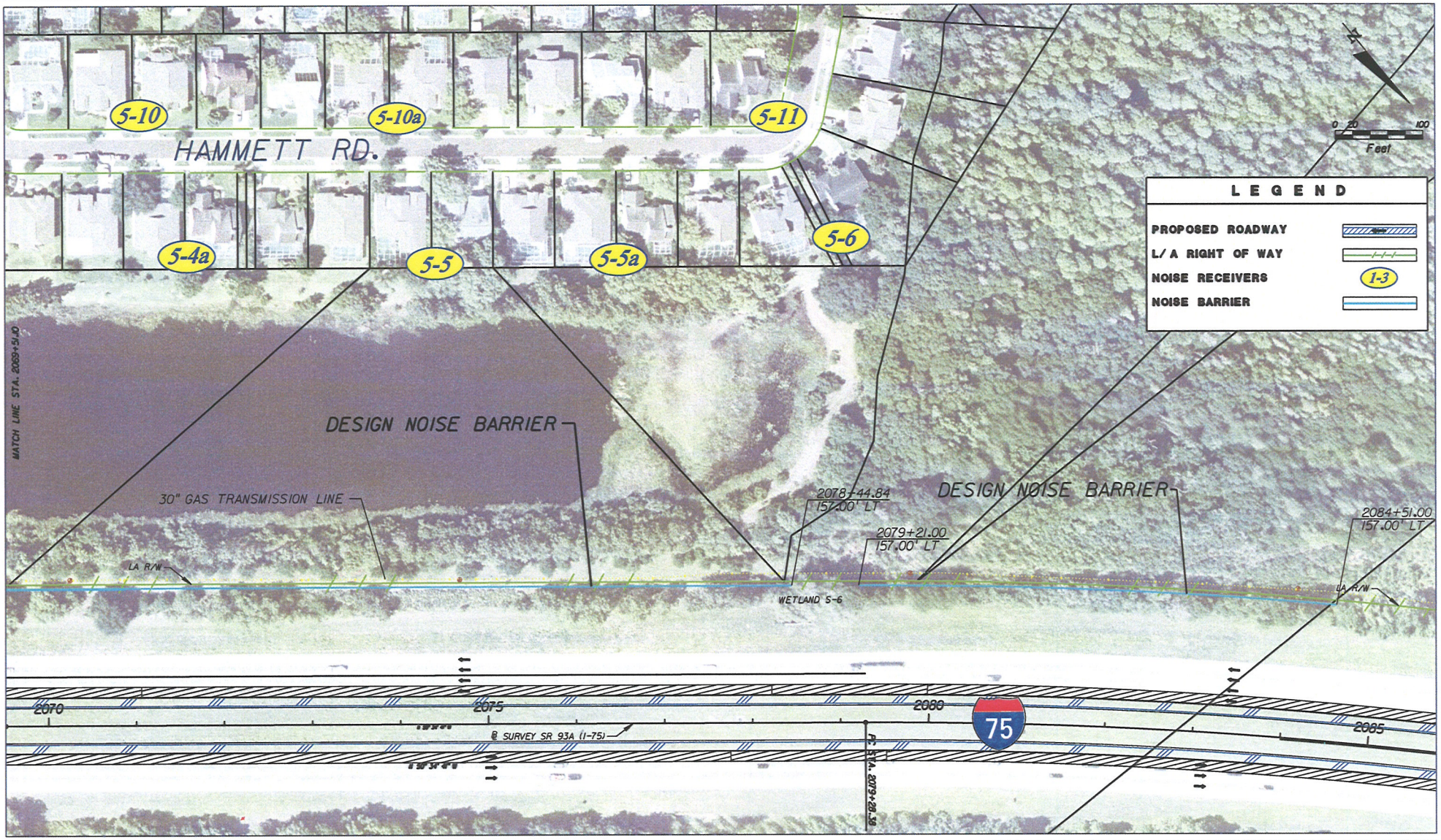
Figure 3



I-75 (SR 93A)
from south of Fowler Avenue to north of State Road 52

Noise Barrier Location and Noise Sensitive Sites at NSA 5

Figure 4



I-75 (SR 93A)
from south of Fowler Avenue to north of State Road 52

Noise Barrier Location and Noise Sensitive Sites at NSA 5 (continued)

Figure 5

4.1.1 Noise Barrier Option A

This option includes two overlapping noise barriers; one located 5 feet from the I-75 right-of-way and another located adjacent to the proposed improvement outside shoulder. Both noise barriers would be set on existing ground.

The results of the analysis indicate that noise barriers could provide at least a 5 dBA insertion loss to a maximum of 24 residences at heights of 10 to 22 feet. The benefited residences would receive an average insertion loss of 7.7 to 8.3 dBA, depending on barrier height. Table 4 summarizes the barrier analysis.

Because so few residences would benefit from the noise barrier, it exceeds the FDOT cost criterion of $35,000 per benefited residence for all heights evaluated. According to the criteria outlined in the PD&E Manual, Part 2, Chapter 17, the noise barrier evaluated is no longer a cost reasonable abatement measure.

Table 4
Noise Barrier Evaluation Matrix for Noise Barrier Option A

Barrier Height (feet)[1]	Affected Residences With Insertion Loss of (dBA)						Number of Benefited Residences			Barrier Length (feet)[3]	Total Estimated Cost[4]	Cost Per Benefited Res.	Cost Reasonable Yes/No
	5	6	7	8	9	10 or >	Affec-ted	Other[2]	Total				
10	3	1	2	3	-	3	12	-	12	2,123	$621,650	$51,804	No
12	6	2	-	-	3	5	16	-	16	2,116	$862,050	$53,878	No
14	8	1	1	-	3	5	18	-	18	2,036	$848,950	$47,164	No
16	11	1	1	1	2	5	21	-	21	2,076	$875,850	$41,707	No
18	11	-	2	1	-	7	21	-	21	1,996	$852,750	$40,607	No
20	7	4	1	2	-	7	21	-	21	1,993	$996,500	$47,452	No
22	12	2	1	1	1	7	23	1	24	1,996	$1,097,800	$45,742	No

Note: [1]Height of the noise barrier located 5 feet from the I-75 right-of-way. The height of the second barrier fluctuates. More information on barrier height is available in Appendix E.

[2]Other = Residences determined to be unaffected by the project (traffic noise levels less than 66 dBA) but benefited by the noise barrier.

[3]Combined lengths of two barriers.

[4]Total Estimated Cost was calculated using $25 per square foot.

4.1.2 Noise Barrier Option B

This option includes two overlapping noise barriers; one located 5 feet from the I-75 right-of-way and another on a skew angle along the embankment (beginning at the vicinity of the noise barrier located along the right-of-way and ending at the shoulder of the proposed roadway improvement on I-75). The noise barrier located along the I-75 right-of-way would be set on existing ground; the noise barrier on a skew alignment would be set on a gravity wall.

The results of the analysis indicate that noise barriers could provide at least a 5 dBA insertion loss to a maximum of 24 residences at heights of 10 to 22 feet. The benefited residences would receive an average insertion loss of 7.4 to 8.5 dBA, depending on barrier height. Table 5 summarizes the barrier analysis.

Because so few residences would benefit from the noise barrier, it exceeds the FDOT cost criterion of $35,000 per benefited residence for all heights evaluated. According to the criteria outlined in the PD&E Manual, Part 2, Chapter 17, the noise barrier evaluated is no longer a cost reasonable abatement measure.

Table 5
Noise Barrier Evaluation Matrix for Noise Barrier Option B

Barrier Height (feet)[1]	Affected Residences With Insertion Loss of (dBA)						Number of Benefited Residences			Barrier Length (feet)[3]	Total Estimated Cost[4]	Cost Per Benefited Res.	Cost Reasonable Yes/No
	5	6	7	8	9	10 or >	Affec-ted	Other[2]	Total				
10	4	4	-	2	-	3	13	-	13	2,114	$664,550	$51,119	No
12	8	2	-	2	2	4	18	-	18	2,325	$924,250	$51,347	No
14	9	1	1	3	-	5	19	-	19	1,871	$815,650	$42,929	No
16	12	1	1	3	-	5	22	-	22	1,891	$877,000	$39,864	No
18	10	2	2	-	3	5	22	-	22	2,135	$960,750	$43,670	No
20	9	4	1	1	-	8	23	-	23	2,342	$1,171,000	$50,913	No
22	8	6	-	2	-	8	23	1	24	2,319	$1,235,250	$51,469	No

Note: [1]Height of the noise barrier located 5 feet from the I-75 right-of-way. The height of the second barrier fluctuates. More information on barrier height is available in Appendix E.

[2]Other = Residences determined to be unaffected by the project (traffic noise levels less than 66 dBA) but benefited by the noise barrier.

[3]Combined lengths of two barriers.

[4]Total Estimated Cost was calculated using $25 per square foot.

4.1.3 Noise Barrier Option C

This noise barrier is located 5 feet from the I-75 right-of-way. It is designed to be built on top of a gravity wall to improve the effectiveness of the barrier in areas where the ground elevation is significantly lower than the adjacent residences and proposed improvements.

The results of the analysis indicate that noise barriers could provide at least a 5 dBA insertion loss to a maximum of 20 residences at heights of 10 to 22 feet. The benefited residences would receive an average insertion loss of 7.7 to 8.3 dBA, depending on barrier height. Table 6 summarizes the barrier analysis.

Based on the total estimated cost for reasonable noise barriers and the quality of insertion loss provided, a 16-foot noise barrier benefiting 19 affected residences appears to be cost reasonable. However, the cost of constructing the gravity wall must also be included in the noise barrier evaluation matrix. The cost of construction anticipated for the gravity wall is $582,206.60 (construction cost estimates are provided in Appendix E). Incorporation of this

cost to the cost per benefit calculation would exceed the FDOT cost criterion of $35,000 per benefited residence. According to the criteria outlined in the PD&E Manual, Part 2, Chapter 17, the noise barrier evaluated is no longer a cost reasonable abatement measure.

Table 6
Noise Barrier Evaluation Matrix for Noise Barrier Option C

Barrier Height (feet)	Affected Residences With Insertion Loss of (dBA)						Number of Benefited Residences			Barrier Length (feet)	Total Estimated Cost[2]	Cost Per Benefited Res.	Cost Reasonable Yes/No
	5	6	7	8	9	10 or >	Affec-ted	Other[1]	Total				
10	2	4	-	2	-	3	11	-	11	1,667	$998,957	$90,814	No
12	4	2	2	-	2	3	13	-	13	1,619	$1,067,907	$82,147	No
14	6	1	2	2	-	5	16	-	16	1,619	$1,148,857	$71,804	No
16	9	1	2	2	-	5	19	-	19	1,619	$1,229,807	$64,727	No
18	7	-	2	1	2	5	17	-	17	1,519	$1,265,757	$74,456	No
20	7	1	2	1	2	5	18	-	18	1,519	$1,341,707	$74,539	No
22	8	2	2	-	1	7	20	-	20	1,519	$1,417,657	$70,883	No

Note: [1]Other = Residences determined to be unaffected by the project (traffic noise levels less than 66 dBA) but benefited by the noise barrier.

[2]Total Estimated Cost was calculated using $25 per square foot. Gravity wall construction cost of $582,206.60 is included.

4.2 Noise Sensitive Area 5

Any new noise sensitive sites within NSA 5 were reviewed to determine homes that had received building permits between the date of public knowledge and the initial preparation of the noise studies (see Section 3.1). Twenty-eight out of 51 homes in this neighborhood are predicted to approach or exceed the NAC for the Build Alternative. Two noise barriers, separated by an approximate 80-foot gap to allow passage of the creek, were evaluated. The noise barriers were located along the west side of I-75 within the limited access right-of-way, adjacent to The Enclave subdivision. Other barrier location options were analyzed, but the final noise barrier will be located 10 feet from the right-of-way line at the request of FDOT District 7 Roadway Maintenance. A detailed explanation (in tabular form) of the noise barrier analyses is provided in Appendix E.

The results of the analysis indicate that noise barriers could provide at least a 5 dBA insertion loss to a maximum of 28 affected residences at heights of 12 to 22 feet. The benefited residences would receive an average insertion loss of 5.7 to 7.6 dBA, depending on barrier height. Noise barriers at heights of 12 to 16 feet would meet the cost reasonable criterion of $35,000 per benefited residence. Table 7 summarizes the barrier analysis for NSA 5.

Based on the total estimated cost for reasonable noise barriers and the quality of insertion loss provided, a 14-foot high noise barrier and a 20-foot high noise barrier benefiting 28 affected residences are recommended for design at NSA 5. The noise barriers have a combined length of 2,443 feet.

Table 7
Noise Barrier Evaluation Matrix for Noise Sensitive Area 5

Barrier Height (feet)	Affected Residences With Insertion Loss of (dBA)						Number of Benefited Residences			Total Barrier Length (feet)	Total Estimated Cost[2]	Cost Per Benefited Res.	Cost Reasonable Yes/No
	5	6	7	8	9	10 or >	Affec-ted	Other[1]	Total				
10	9	-	-	-	-	-	9	-	9	3,033	$831,386	$46,188	No
12	10	18	-	-	-	-	28	-	28	2,753	$923,976	$32,999	Yes
14	10	9	9	-	-	-	28	-	28	2,443	$906,626	$32,380	Yes
16	10	6	9	3	-	-	28	-	28	2,282	$953,170	$34,042	Yes
18	7	3	9	9	-	-	28	-	28	2,282	$1,052,890	$37,603	No
20	7	3	9	9	-	-	28	-	28	2,282	$1,151,502	$41,125	No
22	7	3	-	12	6	-	28	-	28	2,282	$1,255,100	$44,825	No

Note: [1]Other = Residences determined to be unaffected by the project (traffic noise levels less than 66 dBA) but benefited by the noise barrier.

[2]Total Estimated Cost was calculated using $25 per square foot.

4.2.1 Noise Barrier Design

The barrier south of the creek is 2,311 feet long and begins at Station Number 2055+00.00 and ends at Station Number 2078+45.00. This barrier will be consistently 14 feet high (from existing ground) except for in the area close to the creek, where the barrier will have to be 18 to 20 feet high (from existing ground) due to the ground elevation. The barrier north of the creek is 132 feet long and begins at Station Number 2079+25.00 and ends at Station Number 2080+48.71. This barrier will be consistently 20 feet high from ground elevation. The maximum height of a noise wall panel will not exceed 20 feet.

At the request of the FDOT, the noise barriers' top elevations shall be designed to be as level as possible while maintaining the needed elevation of the top of the noise barrier (approximately 53 feet). The 53-foot top elevation was determined by using the highest ground elevation (37 feet) in the footprint of the 14-foot noise barrier, adding 14 feet for the noise barrier height, and an additional 2 feet to account for any fluctuations in grading.

4.3 Noise Sensitive Area 10

Nine residences within the Tampa Bay Golf and Country Club community were issued building permits prior to the LDA date of November 27, 2000. Noise levels at five of the nine residences are predicted to approach or exceed the NAC. A noise barrier located along the west side of I-75 within the limited access right-of-way was evaluated. The results of the noise barrier analysis indicate that a barrier could provide at least a 5 dBA reduction to the five affected residences at heights of 16 to 22 feet. The benefited residences would receive an average reduction of 5.4 to 5.5 dBA, depending on barrier height. Table 8 summarizes the barrier analysis.

Table 8
Noise Barrier Evaluation Matrix for Noise Sensitive Area 10

Barrier Height (feet)	Affected Residences With Insertion Loss of (dBA)						Number of Benefited Residences			Total Barrier Length (feet)	Total Estimated Cost[2]	Cost Per Benefited Res.	Cost Reasonable Yes/No
	5	6	7	8	9	10 or >	Affected	Other[1]	Total				
14	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
16	5	0	0	0	0	0	5	0	5	2,316	$926,400	$185,280	No
18	5	0	0	0	0	0	5	0	5	1,706	$767,700	$153,540	No
20	5	0	0	0	0	0	5	0	5	1,300	$650,000	$130.000	No
22	5	0	0	0	0	0	5	0	5	1,200	$660,000	$132,000	No

Note: [1]Other = Residences determined to be unaffected by the project (traffic noise levels less than 66 dBA) but benefited by the noise barrier.

[2]Total Estimated Cost was calculated using $25 per square foot.

The lowest cost per benefited residence that could be achieved for a noise barrier that would provide the five affected residences at least a 5 dBA reduction was $130,000. The cost exceeds the reasonable criterion of $35,000 per benefited residence. Consequently, a noise barrier is not a cost reasonable abatement measure.

5.0 PUBLIC INVOLVEMENT

A noise barrier public opinion survey was conducted for the 28 affected property owners in August 2006 to determine if the barrier is to be constructed. A pre-survey information letter was sent on August 11, 2006, and the survey was sent on August 14, 2006. Of the 28 surveyed property owners, 21 responses to the survey were received. All 21 responses favored the proposed noise barrier. A copy of the survey letter and public responses to the surveys are included in Appendix F.

6.0 CONCLUSIONS AND COMMITMENTS

The feasible and cost reasonable noise barriers (noise barriers at NSA 1 and NSA 5) listed in the 2004 PD&E Study commitments and new noise sensitive sites (Buckingham at Tampa Palms (NSA 9) and NSA 10 at Tampa Bay Golf and Country Club) that had received building permits prior to the date of public knowledge were included in this noise study update.

For NSA 1, 5, and 9, noise levels at 82 residences were modeled with 43 residences predicted to approach or exceed the NAC for Activity Category B as a result of the Build Alternative. An additional nine residences were evaluated in the separate design noise study (see Appendix G) for Tampa Bay Golf and Country Club (NSA 10) with noise levels at five residences predicted to approach or exceed the NAC for Activity Category B. The results of the NSR Update indicate that noise barriers are feasible and cost reasonable at NSA 5.

NOISE SENSITVE AREA 1:

Three noise barrier options were evaluated adjacent to NSA 1. With additional costs incurred to provide a gravity wall to accommodate a noise barrier and because so few residences would benefit from the noise barriers, it exceeds the FDOT cost criterion of $35,000 per benefited residence for all heights evaluated. According to the criteria outlined in the PD&E Manual, Part 2, Chapter 17, the noise barrier evaluated for NSA 1 is no longer a cost reasonable abatement measure.

NOISE SENSITIVE AREA 5:

Two noise barriers were evaluated at NSA 5, separated by an approximately 80-foot gap to allow passage of the creek. The barriers were located 10 feet from the right-of-way line adjacent to The Enclave subdivision, along the west side of I-75.

The results of the analysis indicate that noise barriers could provide at least a 5 dBA insertion loss to a maximum of 28 affected residences at heights of 12 to 22 feet. The benefited residences would receive an average insertion loss of 5.7 to 7.6 dBA, depending on barrier height. Noise barriers at heights of 12 to 16 feet would meet the cost reasonable criterion of $35,000 per benefited residence. Based on the total estimated cost for reasonable noise barriers and the quality of insertion loss provided, a 14-foot high noise barrier and a 20-foot high noise barrier benefiting 28 affected residences are recommended for design at NSA 5. The noise barriers have a combined length of 2,443 feet and extend from Station Number 2055+00.00 to 2078+45.00 and Station Number 2079+25.00 to 2080+48.71.

A noise barrier public opinion survey was conducted in August 2006 for the 28 affected property owners to determine if the barrier is to be constructed. The result of the survey indicated that the majority of the affected property owners were in favor of the proposed noise barrier.

NOISE SENSITVE AREA 9:

Since residences within NSA 9 are not predicted to approach or exceed the NAC for Activity Category B for the Build Alternative, noise abatement measures were not further evaluated.

NOISE SENSITVE AREA 10:

A noise barrier was evaluated for the five residences that were issued a building permit prior to the LDA date and have predicted noise levels that approach or exceed the NAC. The lowest cost per benefited residence that could be achieved for a noise barrier that would provide the five affected residences at least a 5 dBA reduction was $130,000. The cost exceeds the reasonable criterion of $35,000 per benefited residence and, therefore, a noise barrier is not a cost reasonable abatement measure.

7.0 REFERENCES

23 CFR Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, July 8, 1982, August 5, 1982, and August 26, 1996; 8 pages. Available from FHWA and FDOT.

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. Available from National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

Federal Highway Administration. Report Number FHWA-PD-96-009, FHWA Traffic Noise Model, Version 1.1 Users Guide." January 1998, 192 pages. Available from McTrans Center, University of Florida, Gainesville, Florida.

Federal Highway Administration. Technical Advisory T6160.2. "Analysis of Highway Construction Noise," March 13, 1984; 4 pages. Available from FHWA and FDOT.

Florida Department of Transportation. Project Development and Environment Manual. Part 2, Chapter 17, October 6, 2003.

Florida Department of Transportation. Standard Specifications for Road and Bridge Construction. 1999; 798 pages. Available from FDOT Maps and Publications, Mail Station 12, 605 Suwannee Street, Tallahassee, FL 32399-0450.

Florida Statute 335.17, "State highway construction; means of noise abatement." 1989. 1 page. Available from FDOT.

I-75 (SR 93A) PD&E Study from South of Fowler Avenue, Hillsborough County, to South of SR 56, Pasco County; and Reevaluation Study from South of SR 56 to CR 54, Pasco County, Final Noise Study Report (April 2004).

I-75 (SR 93A) PD&E Study from South of SR 56 to North of SR 52, Pasco County, Final Noise Study Report (December 2000).

PBS&J Memorandum. Traffic Noise Reanalysis for the Tampa Bay Golf and Country Club (June 4, 2008). 9 pages. Available from FDOT.

Hillsborough County Property Appraiser website

Pasco County Property Appraiser website