NOISE STUDY REPORT

I-595 PD&E STUDY

I-595 from I-75 to East of I-95
FM No.: 409354-1-22-01
FAP No.: 5951 539 I

Florida Department of Transportation
District Four

I-595 (SR 862)

PROJECT DEVELOPMENT & ENVIRONMENT STUDY

FM No. 409354-1-22-01
FAP No. 5951 539 I
From the I-75 Interchange
To the I-95 Interchange
Broward County, Florida

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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to improve the I-595 corridor in central Broward County, Florida. The PD&E Study limits extend from the I-75/Sawgrass Expressway interchange to the I-95 interchange for a total project length of approximately 10 miles. As part of the PD&E Study for the proposed project, a noise study was conducted in accordance with the FDOT's PD&E Manual, Chapter 17, Noise (November 20, 2001) and with Title 23 CFR (Code of Federal Regulations) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise.

The improvements for recommended Build Alternative 2A include widening to the outside for additional auxiliary lanes where needed. Reversible lanes will be located on elevated structure within the existing I-595 median. The reversible lanes will be located one level higher than the mainline, with the exception of the area near the University Drive flyovers. At these points, the reversible lanes will be raised to a fourth level to avoid the flyovers. Details of all the proposed improvements are presented in the Preliminary Engineering Report for this project.

Single and multi-family residences and two parks (Acres South Park and Sewell Lock Park) represent the noise sensitive sites along the project corridor likely to be affected by the project. Three hundred eighty-four (384) receiver sites were selected to represent the 1,524 residences within the 42 residential communities and two parks identified along the project corridor (i.e., 44 noise sensitive areas). All 384 representative noise receiver sites are classified under Activity Category B of Federal Highway Administration's (FHWA) Noise Abatement Criteria (NAC). For Activity Category B, noise abatement measures must be considered when predicted design year noise levels are within 1 dBA of or exceed the 67 dBA NAC (>66 dBA) or when a substantial noise increase (i.e., 15 dBA) occurs above existing conditions.

Existing noise levels and future design year noise levels (2034) for the No Project Alternative and recommended Build Alternative 2A were predicted using FHWA's Traffic Noise Model (TNM) Version 2.5 (February 2004). Predicted noise levels represent the hourly equivalent sound level (L_{Aeq1h}). L_{Aeq1h} is measured in A-weighted decibels (dBA), which closely approximate the human frequency response.

Noise measurements were taken at 34 representative sites among 12 communities along the I-595 project corridor to determine whether TNM-predicted existing noise levels are representative of actual existing levels along I-595, to validate the TNM noise model (22 sites), and to establish ambient noise levels (12 sites). All of the TNM-predicted noise levels are within +/- 3.0 dBA of the measured noise levels. Therefore, the model has been validated and is considered acceptable for predicting existing and future traffic noise levels

along I-595. The average difference between TNM predicted levels and the monitored levels was 0.2 dBA.

For the existing conditions and future (design year 2034) conditions for the No Project Alternative, the predicted noise levels range from 44.5 dBA to 75.5 dBA. Noise levels at 377 of the 1,526 noise sensitive sites are predicted to be equal to or above 66.0 dBA. Existing noise levels within 20 of the 44 noise sensitive areas are equal to or above 66.0 dBA. The predicted noise levels for the existing conditions are also representative of the No Project Alternative because both predictions are based on LOS C traffic volumes.

For recommended Build Alternative (2A), the predicted design year (2034) noise levels range from 46.1 dBA to 76.7 dBA. Noise levels at 672 of the 1,526 noise sensitive sites are predicted to be equal to or above 66.0 dBA in the design year. Predicted future design year noise levels within 26 of the 44 noise sensitive areas are equal to or above 66.0 dBA. Alternative 2A will result in an additional 295 noise sensitive sites with predicted noise levels equal to or greater than 66.0 dBA compared to the existing conditions/No Project Alternative (672 versus 377). The design year noise levels at the 384 representative receiver sites are predicted to increase an average of 2.0 dBA above existing levels. The increase in noise levels is attributed to the increase in traffic volumes associated with the proposed new lanes including the elevated reversible lanes. In addition, the proposed improvements will bring the traffic closer to some of the noise sensitive sites along the project corridor.

The feasibility and reasonableness of noise abatement measures were evaluated for each of the 672 noise sensitive sites which approach or exceed the NAC for the Build Alternative. The abatement measures evaluated include traffic management, alignment modification, property acquisition, and noise barriers. Following analysis of abatement alternatives, available right of way, safety criteria, and associated constructability and maintenance issues, construction of noise barriers was determined to be the most reasonable and feasible abatement alternative. A design goal of 10.0 dBA noise reduction with a minimum reduction of 5.0 dBA was used in the development and evaluation of the noise barriers. FDOT's cost guideline of $35,000 per benefited receiver site was used to determine the cost reasonableness. To facilitate the barrier analysis, noise sensitive areas contiguous with other areas were grouped together. For Alternative 2A, noise barriers were evaluated at 19 locations representing the 26 areas where predicted noise levels approach or exceed the NAC.

For Alternative 2A, noise barriers at 12 of the 19 locations (including the replacement of a planned noise barrier associated with the widening of Florida's Turnpike) are recommended for further consideration during the Final Design phase of the project when more detailed information is available. Noise barriers at these 12 locations would provide benefit to 17 of the 26 noise sensitive areas affected by traffic noise. These 12 noise barriers are expected

to reduce traffic noise levels by at least 5.0 dBA at 541 residences along the project corridor. The number of benefited residences includes 394 of the 672 that are affected by traffic noise. The estimated total cost of these barriers is approximately $19,471,940 based on standard per square foot construction costs presented in Section *5.0 Noise Barrier Analysis*. The estimated total cost of these barriers based on the FDOT Long Range Estimate (LRE) method is approximately $17 million (see Section 9.17.4 of the PER).

FDOT is committed to the construction of feasible noise abatement measures at the locations where noise barriers have been recommended for further consideration during the Final Design phase, contingent upon the following conditions:

- Detailed noise analyses during the final design process supports the need for abatement;
- Reasonable cost analyses indicate that the economic cost of the barrier(s) will not exceed the guidelines;
- Community input regarding desires, types, heights, and locations of barriers has been solicited;
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses, has been noted;
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed; and
- Any other mitigating circumstances found in Section 17-4.6.1 of FDOT's PD&E Manual have been analyzed.

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

In addition to the coordination with the property owners adjacent to the noise barriers recommended for further consideration in the Final Design phase, FDOT will also coordinate with the property owners/residents of north of Sewell Lock in the community of Isla del Sol. Because of SFWMD's maintenance requirements for the North New River Canal and Sewell Lock, a ground mounted noise barrier north of Sewell Lock (Station 497+00 to 501+40) was not considered constructible within SFWMD's right of way. An easement from the adjacent property owners would be required to construct a noise barrier north of Sewell Lock. During the Design Phase of the project, FDOT will evaluate the effectiveness of noise barriers and potential of obtaining easements from the adjacent property owners necessary for the construction of a noise barrier in this area.

The cost to construct noise barriers at the remaining seven of 19 locations that were evaluated substantially exceeded FDOT's reasonable cost criteria of $35,000 per benefited residence. Therefore, noise barriers are not recommended for further consideration or construction at these locations because they are not cost reasonable. Based on the noise analyses performed to date, there appears to be no apparent solutions available to mitigate the noise impacts at the remaining noise sensitive sites along the project corridor. The traffic noise impacts to the 278 of 672 noise sensitive sites affected by the project are an unavoidable consequence of the project. Because of the relatively low number of impacted sites, the noise impacts associated with this project are not considered significant.

The project area includes residential areas that may be affected by noise and vibration associated with construction activities. Construction noise and vibration impacts to these sites will be minimized by adherence to the controls listed in the latest edition of the FDOT's Standard Specifications for Road and Bridge Construction.

To aid Broward County in promoting land use compatibility, FDOT will provide Broward County and local communities a copy of this Noise Study Report which provides information that can be used by local communities to protect future land development from becoming incompatible with anticipated high traffic noise levels.

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for proposed improvements to the I-595 corridor in central Broward County, Florida. The PD&E Study limits extend from the I-75/Sawgrass Expressway interchange (Mile Post 0.592) west of SW 136th Avenue to the I-95 interchange (Mile Post 10.407) for a total project length of approximately 10 miles. Figure 1-1 illustrates the location and limits of the project.

As part of the PD&E Study for the proposed project, a noise study was conducted in accordance with the Florida Department of Transportation's (FDOT, the Department) Project Development and Environment Manual, Chapter 17, Noise (November 20, 2001) and with Title 23 CFR (Code of Federal Regulations) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. The primary objectives of this noise study were to: 1) describe the existing site conditions including noise sensitive land uses within the project study area, 2) document the methodology used to conduct the noise assessment, 3) assess the significance of traffic noise levels on noise sensitive sites for both the No Build and Build Alternatives, and 4) evaluate mitigative measures for those noise sensitive sites "impacted" [i.e., approaching or exceeding Federal Highway Administration's (FHWA) Noise Abatement Criteria (NAC)]. Other objectives of this study include consideration of construction noise and vibration impacts and the development of noise level isopleths, which can be used by Broward County in the future to identify compatible land uses. The methods and results of this noise study are summarized in this report. The information within this report is also intended to provide the technical support for the findings presented in the project's Preliminary Engineering Report (PER) and Type 2 Categorical Exclusion Environmental Determination Form.

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I–595 PD&E STUDY	LOCATION MAP	FIGURE 1–1

2.0 PROJECT DESCRIPTION

The I-595 PD&E Study is a continuation of the I-595 Master Plan Study completed in March 2003. The Master Plan produced a Locally Preferred Alternative (LPA). Public comment on the LPA was received at a Public Hearing conducted on November 16, 2000, the LPA was adopted by the Broward County Metropolitan Planning Organization (MPO) on January 7, 2003, and subsequently was approved by the Federal Highway Administration (FHWA). The major components of the LPA that emerged from the Master Plan process include the following features.

- Reversible lanes at grade level serving express traffic from I-75 to east of SR 7
- Continuous connection of SR 84 between Davie Road and SR 7
- Collector-Distributor (C-D) system between Davie Road and I-95
- Two-lane off-ramps, as needed
- Braided interchange ramps to eliminate mainline weaving segments
- Combined ramps and cross-street bypasses to reduce congestion
- A westbound to northbound (WB-NB[1]) on-ramp at Florida's Turnpike
- Modifications to the I-595/Florida's Turnpike interchange
- Transit element, such as a commuter rail, integrated into the corridor (with details of the concept to be developed in a separate study)

Fifteen different build alternatives were evaluated during Tiers 1 and 2 of the Master Plan Study. The LPA consists of an integrated set of projects. This integration would be compromised if alternatives analyses for the individual projects resulted in design concepts that would necessitate a revisited corridor planning effort. Therefore, the I-595 Master Plan LPA served as the base build alternative for the I-595 PD&E Study.

The objective of the I-595 PD&E Study is to re-examine the original justifications for the Master Plan LPA to assure that federal, state and local policies enacted since initial development of the project concepts have been incorporated into its recommendations. The same is true of the design standards and technologies considered for application or implementation in the corridor. Complementary projects, either in progress or completed since earlier studies of the I-595 corridor were concluded, have also been considered in the development of recommendations. The detailed examination of these issues through the PD&E process assures that FDOT has identified the most cost-feasible, constructable improvements in the final recommended package. In addition to preserving both local and state interests, the PD&E process satisfies National Environmental Policy Act (NEPA) procedures. These measures are a prerequisite for receiving Location Design Concept Acceptance (LDCA) from FHWA, an essential step in qualifying for the federal funds needed to implement the proposed improvements.

[1] Throughout this document the following conventions are used: WB = westbound, NB = northbound, EB = eastbound and SB = southbound. Directional movements are written as shown in the following example: " . . . westbound to northbound travel . . . " will be written as ". . . WB-NB travel . . . "

2.1 PROJECT LOCATION

The I-595 corridor is located in central Broward County, Florida. The western study limits are the I-75/Sawgrass Expressway interchange (Mile Post 0.592); the eastern study limits are the I-95 interchange (Mile Post 10.407). The total project length is approximately 10 miles. The I-595 corridor passes through or lies immediately adjacent to six governmental jurisdictions: the Cities of Sunrise, Davie, Plantation, Ft. Lauderdale and Dania, as well as unincorporated areas of Broward County.

Unlike most interstate corridors in Florida, the majority of the I-595 corridor is comprised of two facilities: I-595 and SR 84. The I-595 portion of the corridor is a six-lane, limited access facility. In addition to interchanges with the two freeway systems at each end of the study corridor, there are nine other interchanges along the corridor at the following crossroads: SW 136th Avenue, Flamingo Road (SR 823), Hiatus Road, Nob Hill Road, Pine Island Road, University Drive (SR 817), Davie Road, Florida's Turnpike (SR 91), and SR 7 (US 441).

The SR 84 portion of the corridor lies both north and south of the I-595 mainline. The two lanes north of the mainline operate one-way WB while the two lanes south of the mainline operate one-way EB. In the area west of the I-75 interchange and continuing east to Davie Road, the SR 84 lanes serve as a collector-distributor system to the I-595 mainline. The SR 84 system is suspended through the I-595 interchanges with Florida's Turnpike and SR 7. East of the SR 7 interchange, the SR 84 and I-595 rights of way separate. The SR 84 alignment veers to the northeast and the I-595 alignment continues nearly due east.

2.2 NEED FOR IMPROVEMENT

The various improvements that comprise this project address a number of state, regional and corridor-specific needs. The following sections summarize the need for the proposed improvements. A more detailed discussion of the project justification is provided in Section 3.0 NEED FOR IMPROVEMENTS of the PD&E Study's accompanying *Preliminary Engineering Report* (PER).

2.2.1 Statewide Needs

The improvements proposed for the I-595 corridor are directly related to the FDOT Mission Statement.

> ***Florida will provide and manage a safe transportation system that ensures the mobility of people and goods, while enhancing economic competitiveness and the quality of our environment and communities.***

The proposed improvements to the I-595 corridor are directly related to the four goals that FDOT has adopted as its means of carrying out this Mission Statement.

1. **Safe Transportation** – The proposed improvements will enhance the safe operation of the corridor by increasing the number of persons, vehicles and travel modes that it can accommodate. This is an asset to residents, visitors and commerce.
2. **System Management** – The proposed improvements expand the service life of the corridor, expanding upon the original vision for whom and how the corridor operates to serve the Southeast Florida traveling public.
3. **Economic Competitiveness** – Because of its critical location in the center of Broward County and its proximity to a wide range of other major modes, such as the Port Everglades, Ft. Lauderdale-Hollywood International Airport, Florida East-Coast Rail Line and Tri-County Commuter Rail, as well as its connection to the region's major north-south expressways and principal highways, improvements to the I-595 corridor are a boost to the state and regional economic competitiveness in the global market.
4. **Quality of Life** – The proposed improvements to the I-595 corridor have been developed in a manner that ensures that the qualities of life that are of value to Florida citizens are sustained: preserving parklands, protecting sensitive wetlands and taking appropriate measures to mitigate any environmental impacts that may occur.

2.2.2 Regional (Areawide) Needs

There are a number of regional issues that serve to justify implementation of the proposed I-595 improvements. These regional issues include system linkages; transportation demand; federal, state and local authorities' support for the project; social demands and economic development; and modal interrelationships.

System Linkages

Within Dade, Broward and Palm Beach Counties, the I-595 corridor is the only east-west freeway providing connections to all of the region's principal north-south corridors, as well as freeways beyond the region's boundaries. West of the I-75/Sawgrass Expressway, I-595 becomes I-75, with direct connections to the population centers along the Gulf Coast. This linkage is important for many reasons.

- I-595 plays an important role in the distribution of products, both within the Southeast (SE) Florida area and between the region and other areas of the state and nation.
- I-595 is a critical link between other components of the Florida Intrastate Highway System (FIHS) network, such as US 27 (located west of the project corridor), Sawgrass Expressway, I-75, Florida's Turnpike and I-95. It is also an important link to Strategic Intermodal System (SIS) network components for other travel modes: freight and passenger rail, port, aviation and intercity bus. These linkages work to ensure an efficient transportation network.

- I-75 is an important facility in the area's emergency evacuation plans. Fox Trail Elementary School (1250 Nob Hill Road, Davie) is a designated emergency shelter and is located within one block of the corridor. I-595 is also a primary route for departure from the SE Florida area, while avoiding the coastal region.

Transportation Demand

Level of Service analyses were performed on Base Year 2002 (existing) travel conditions within the I-595 corridor. They examined each of the system's operating elements: mainline sections, mainline/ramp merge and diverge points, weave sections, ramps, and ramp/crossroad intersections. Table 2-1 identifies those elements of the project found to have volumes that resulted in less than acceptable levels of service, based on the local jurisdictions' adopted minimum standards.

Details of the levels of service assessment are provided in Section 6.0 TRAFFIC of the PER. Analysis of the traffic volumes forecast for the future years of this project (Year 2014 as the Year Open of proposed improvements and Year 2034 as the Design Year) showed that these deficiencies would only worsen in future years. Therefore, any degree of additional capacity that the corridor can contribute to the total system capacity will improve the responsiveness of the entire SE Florida regional transportation network to meet the needs of the motoring public.

Federal, State or Local Governmental Authority

It is important that any publicly-funded transportation project have the support of the public agencies charged with reviewing, approving, constructing and/or financing it. For a project on the interstate system, such as I-595, these agencies exist at the local, state and federal levels.

Local support for the I-595 PD&E Study and its related physical improvements are coordinated through the Broward County MPO. The *Broward County MPO 2030 Long-Range Transportation Plan* shows that the elements of the Master Plan-defined LPA are included.

Project #44 on the list of Cost-Feasible Highway Projects is broken down into two separate projects.

- The first is a 10-mile segment of I-595, from I-75 to SR 7, and includes adding reversible lanes in the median area.
- The second is a 14-mile segment of I-595, extending from I-75 to US 1.

Table 2-1 Corridor Elements Below Adopted Level of Service[3] (LOS) Standards

System Component: Direction of Travel Element Location	AM Peak Hour LOS	PM Peak Hour LOS
Mainline I-595: EB		
• Viaduct between I-95 and SR 7/Florida's Turnpike	F	
I-595 Mainline/Ramp Merges and Diverges: EB		
• SR 7 – Diverge	F	
• Florida's Turnpike – Merge	F	
• SR 7 – Merge [1]	F	
I-595 Mainline/Ramp Merges and Diverges: WB		
• SR 7, from NB mainline – Merge	E	F
• SR 84/Davie Road, from C-D Rd [2] – Merge		F
• SW 136th Avenue – Diverge		E
Mainline Weave Analyses: I-595 EB		
• Between 136th Ave and Flamingo Rd	E	
• Between Flamingo Rd and Hiatus Rd	F	
• Between Hiatus Rd and Nob Hill Rd	F	
• Between Nob Hill Rd and Pine Island Rd	F	E
• Between Pine Island Rd and University Dr	F	F
Mainline Weave Analysis: I-595 WB		
• Between Florida's Turnpike and Davie Rd	E	F
• Between University Dr and Pine Island Rd	E	F
• Between Pine Island Rd and Nob Hill Rd	F	F
• Between Nob Hill Rd and Hiatus Rd	E	F
• Between Hiatus Rd and Flamingo Rd	E	F
• Between Flaming Rd and SW 136th Ave		E
Ramp Levels of Service		
No ramps had substandard levels of service		
SR 84 /Crossroad Intersections: EB		
• Nob Hill Rd	F	
• Pine Island Rd	F	
• University Dr	E	
• Davie Rd	E	
SR 84/Crossroad Intersections: WB		
• SW 136th Ave		E
• Pine Island Rd		F
• Davie Rd		E

1. Highway Capacity Manual Methodology recommends analyzing upstream and downstream basic freeway segments when there is an Add/Drop lane design on the ramp.
2. C-D Road – Collector Distributor System developed using segments of parallel SR-84 and braided ramps between I-595 and SR 84.
3. Roadway Level of Service (LOS) is a classification system of the driving conditions (e.g., ability to change lanes and maintain a desired/posted speed) provided by a roadway facility. LOS is represented by the letters "A" through "F", with "A" representing the most favorable driving conditions and "F" representing the least favorable.

The South Florida Water Management District (SFWMD) has also been a partner in the development of this project. Throughout the development of proposed improvements, the FDOT worked closely with the SFWMD to ensure that their concerns were addressed in the design of project alternatives. From relocation of ramps and roadways to measures taken to mitigate such unavoidable impacts as stormwater retention and noise, SFWMD staff comments and concerns are reflected in designs throughout the corridor.

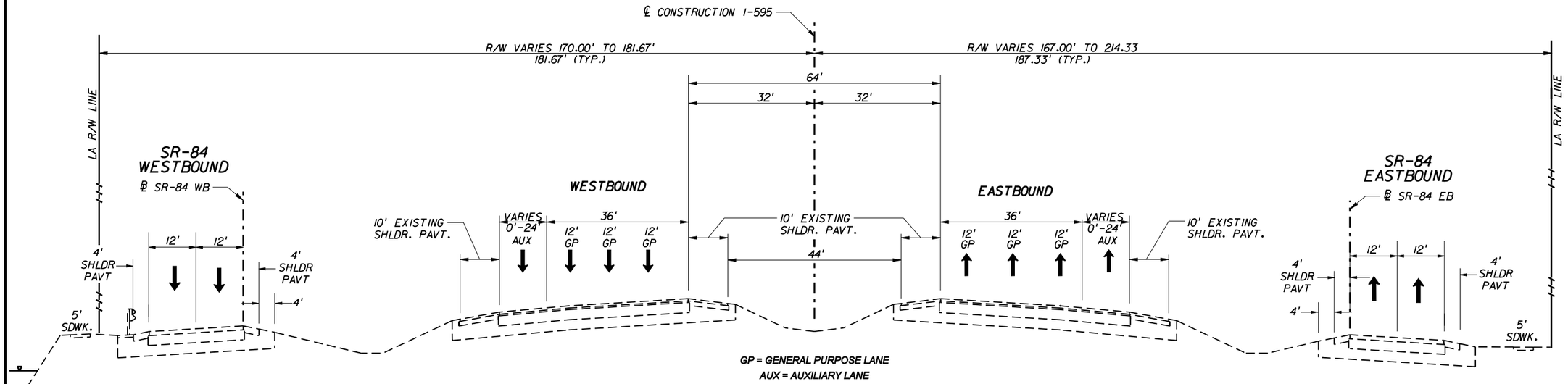
At the state level, the proposed improvements within the I-595 corridor are addressed in two different plans, one for each of the major corridor designations, FIHS and SIS. The FDOT prepared a comprehensive long-range plan for the FIHS network in 2000 with a planning horizon of 2020, with updates in 5-year cycles. The FDOT published its revised *FIHS 2025 Cost-Feasible Plan Update* in 2003. A number of the elements of the I-595 improvements package were retained in the state's FIHS Cost-Feasible Plan: the mainline reversible lanes, improvements to SR 84 EB and WB, and interchange improvements at SR 7, Florida's Turnpike and I-95.

The I-595 corridor is a Designated SIS Highway Corridor link of the state's Strategic Intermodal Transportation network. All components of the I-595 improvements package are included in the SIS "Unprogrammed Project Needs" list, published in early 2005, divided into eight separate project packages. Seven of these packages reference the Broward County MPO's Long Range Plan as the source of the project listing. The eighth package refers to a recently completed Intelligent Transportation Systems (ITS) study, FDOT District 4's *10-Year ITS Cost Feasible Plan*. The revised listing of SIS projects is anticipated to be published late in 2005. This listing will also include the proposed corridor improvements.

Federal agencies have also been involved in the development of the proposed improvements. In addition to FHWA, which has been involved with the project since its earlier Master Plan phase, several federal agencies have had opportunities to comment on the project. Because the New River, which lies north of SR 84 within the limits of the project, is a navigable waterway through much of the corridor, FDOT has also met with the U.S. Coast Guard to receive their input regarding the design and location of ramps and structures that overpass the river.

Social Demands and Economic Development

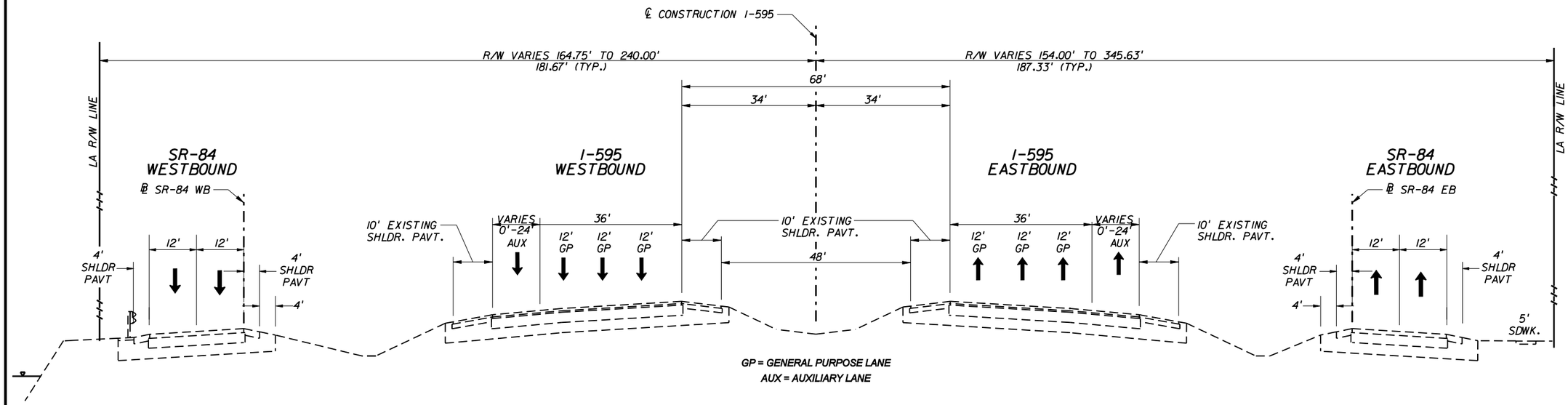
The I-595 PD&E Study maximizes the capacity of the corridor within the existing rights of way to the greatest extent feasible. Acquisition of additional rights of way has been restricted to very narrow confines. The directive to minimize acquisition of right of way worked to protect the Section 4(f) lands and the pristine waters and sensitive environmental features adjacent to the corridor. The protection of the natural assets of SE Florida enhances the area's attractiveness to potential business interests, developers and visitors.



GP = GENERAL PURPOSE LANE
AUX = AUXILIARY LANE

I-595 (SR-862) EXISTING TYPICAL SECTION 1
FROM SW 136th AVE. TO UNIVERSITY DR.
(64' EXISTING MEDIAN)

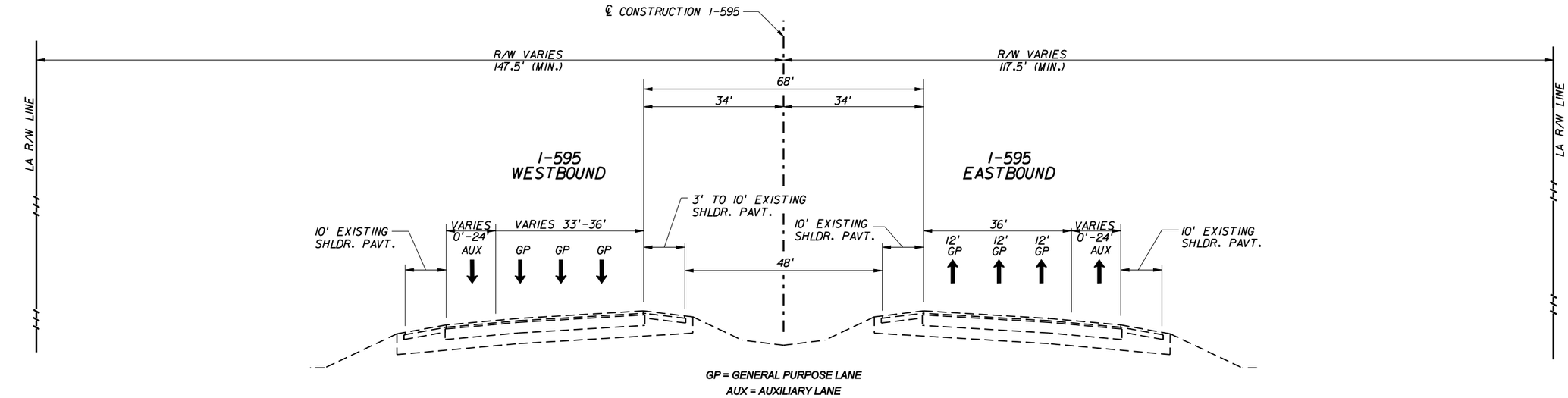
RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	EXISTING TYPICAL SECTIONS	FIGURE 2-1



GP = GENERAL PURPOSE LANE
AUX = AUXILIARY LANE

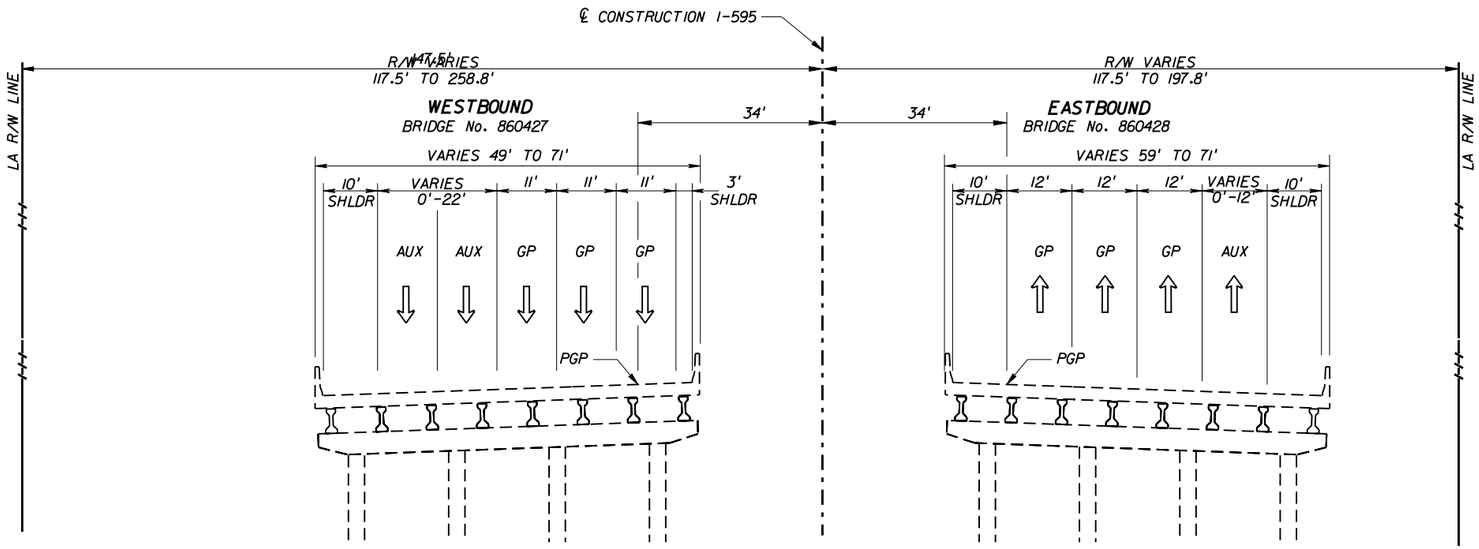
I-595 (SR-862) EXISTING TYPICAL SECTION 2
FROM UNIVERSITY DR. TO FLORIDA'S TURNPIKE
(68' EXISTING MEDIAN)

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	EXISTING TYPICAL SECTIONS	FIGURE 2-2



I-595 (SR-862) EXISTING TYPICAL SECTION 3
FROM FLORIDA'S TURNPIKE TO WEST OF SR-7

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	EXISTING TYPICAL SECTIONS	FIGURE 2-3



GP = GENERAL PURPOSE LANE
AUX = AUXILIARY LANE

I-595 (SR-862) EXISTING BRIDGE TYPICAL SECTION 4
FROM WEST OF SR-7 TO I-95

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	EXISTING TYPICAL SECTIONS	FIGURE 2-4

Modal Interrelationships
The LPA for the I-595 corridor that emerged from the Master Plan study introduced several multimodal features into the I-595 corridor: light rail transit (LRT), special use lanes, integration with transit lines on crossroads, and non-motorized travel. Utilizing a comprehensive multimodal planning approach in these I-595 corridor studies will enable optimum performance to be derived from all parts of the system, balancing the needs of the various travel modes while minimizing their collective impacts.

2.2.3 Project Corridor Needs
In addition to the statewide and regional benefits of implementing the proposed corridor improvements, there are benefits that are specific to the corridor. These include reductions of incident-related delay and design solutions for the existing interchange design deficiencies and unsafe weaving and merging conditions within the project corridor.

2.3 EXISTING ROADWAY CHARACTERISTICS
I-595 is a limited access facility that runs in an east-west direction with a posted speed of 65 miles per hour (mph). I-595 is an integral part of the FIHS and SIS through its functional classification as a limited access expressway. There are one-way frontage roadways (SR 84) on the north and south sides of the mainline between SW 136th Avenue and Davie Road. SR 84 is functionally classified as a one-way collector with a posted speed of 50 mph. Florida's Turnpike, a major north-south intersecting highway, is a six-lane freeway toll facility, three lanes in each direction, with a posted speed of 65 mph.

2.3.1 Typical Sections
The I-595 corridor has four main typical sections which are described below. The following are their limits.

- Typical Section 1 SW 136th Avenue to University Drive
- Typical Section 2 University Drive to Florida's Turnpike
- Typical Section 3 Florida's Turnpike to west of SR 7
- Typical Section 4 West of SR 7 to I-95

<u>Typical Section 1 – SW 136th Avenue to University Drive</u>
Typical Section 1 includes a 64-foot median, 10-foot paved inside and outside shoulders (12-foot overall width), and three general purpose (GP) lanes in each direction. There are one or two auxiliary lanes between each pair of successive interchanges. Guardrails are located on the outside of the travel lanes to protect motorists in sections with high fill, while barrier walls are located on areas where mechanically stabilized earth (MSE) retaining walls are used.

Typical Section 1 has a frontage road system, SR 84, on the north and south sides of the I-595. SR 84 is a two-lane, one-way pair that acts as a collector/distributor (C-D) roadway to I-595. When I-595 was planned, the SR 84 right of way served as the original working alignment for the new Interstate connector. Typical Section 1 is depicted in Figure 2-1.

<u>Typical Section 2 - University Drive to Florida's Turnpike</u>
Typical Section 2 is similar to Typical Section 1, except that its median width is 68 feet (see Figure 2-2). The I-595 mainline has a frontage road system (SR 84) on its north and south sides along most of its length, from University Drive to Davie Road.

<u>Typical Section 3 – Florida's Turnpike to West of SR 7</u>
Typical Section 3 has median and inside shoulder widths that vary. This variability is due to a restriping project, completed in 2002, that created an additional WB auxiliary lane on I-595. The mainline alignment is on curve and superelevated through much of this area. No frontage roads are present along this section of I-595. One or two auxiliary lanes are present between interchanges in both directions. Typical Section 3 is shown in Figure 2-3.

<u>Typical Section 4 – West of SR 7 to I-95</u>
I-595 is on bridge structure through much of this area. Typical Section 4 area has a varying median width and 3-foot inside shoulders that resulted from the 2002 restriping project described above. Three general purpose and two auxiliary lanes are present within this segment of I-595; no frontage roads present (see Figure 2-4). East of SR 7, SR 84 resumes its original alignment north of – and separate from – the I-595 mainline.

The existing Florida's Turnpike typical section and the proposed typical sections associated with the widening of Florida's Turnpike (Financial Project ID 406094-1) immediately north and south of I-595 are included in Appendix A (see Figures 2-1 and 2-3). These typical sections were taken from the "Noise Study Report" (July 8, 2005) for the *Widening Florida's Turnpike Project* that extended from Griffin Road to north of Sunrise Boulevard. The Florida's Turnpike project is separate from this I-595 PD&E Study.

2.3.2 Right of Way
Between SW 136th Avenue and Pine Island Road, I-595 and its adjacent frontage roads lie within a 324-foot right of way. Between Pine Island Road and Davie Road, where the frontage road terminates, the right of way varies in width up to 500 feet. Following the I-595 right of way east from Davie Road, it widens to as much as 1,800 feet in the vicinity of the SR 7 interchange, then narrows to 360 feet west of I-95. East of the I-95 interchange, the I-595 right of way narrows to a minimum of 155 feet.

2.3.3 Intersections and Signalizations

There are 14 signalized intersections within the corridor under the control of the Broward County Traffic Engineering Division. The following intersections were evaluated as part of this study. Each of the signals is actuated. The cycle lengths vary from 80 seconds to 150 seconds.

- SR 84 EB at SW 136th Avenue
- SR 84 EB at Flamingo Road
- SR 84 EB at Hiatus Road
- SR 84 EB at Nob Hill Road
- SR 84 EB at Pine Island Road
- SR 84 EB at University Drive
- SR 84 EB at Davie Road
- SR 84 WB at SW 136th Avenue
- SR 84 WB at Flamingo Road
- SR 84 WB at Hiatus Road
- SR 84 WB at Nob Hill Road
- SR 84 WB at Pine Island Road
- SR 84 WB at University Drive
- SR 84 WB at Davie Road

2.4 ALTERNATIVE ANALYSIS

The Master Plan LPA was developed with a Design Year of 2020. The primary objective of the alternative analysis phase was to refine the LPA as necessary to satisfy future travel demand to a Design Year of 2034. The LPA was updated to include changed conditions within the corridor that have occurred since the Master Plan Study was completed. In addition, the LPA was refined to reflect comments received at public workshops, as well as an extensive Value Engineering/Design Review (VE/DR) process conducted during the PD&E Study. The following are critical elements that were considered during the refinement of the Master Plan LPA.

PD&E Study Design Year 2034

The Master Plan LPA was developed with a Design Year of 2020; the PD&E Study Design Year is 2034. The LPA was refined to accommodate traffic growth for an additional 14 years that required additional auxiliary lanes and ramp widening at select locations.

North New River Greenway

Broward County is developing the North New River Greenway, a shared-use bicycle/pedestrian trail, extending from Markham Park, west of I-75, to SR 7. A portion of the Greenway between Davie Road and SR 7 was relocated to the north side of the corridor as part of the I-595 improvements due to conflicts associated with modifications to the SR 84 alignment in that area.

Sewell Lock Park

The historic Sewell Lock Park, located on the North New River Canal along the north side of I-595 immediately west of Davie Road, presented an obstacle for the

proposed LPA improvements in that area. The Master Plan LPA will impact the park and possibly create Section 4(f) involvement. To avoid impacts to the park, the alignment of the proposed braided ramps and typical sections for SR 84 and the on- and off-ramps between University Drive and Davie Road were modified.

Florida Power and Light (FP&L) Substation

The existing FP&L substation, located on the south side of I-595 west of Davie Road and across from Sewell Lock Park, extends into the SR 84 right of way. The Master Plan LPA most likely will require relocation of the substation. The roadway typical section and alignment in this area were adjusted to avoid impacts to the FP&L substation.

Central Broward East-West Transit Alternatives Analysis

Since the Master Plan Study, FDOT has initiated the Central Broward East-West Transit Alternatives Analysis. As a result of that study, the Broward County MPO endorsed the I-595 corridor in its meeting of April 14, 2005 as the preferred location for the East-West Transit Alignment. At the same time, the MPO identified light rail as the preferred transit mode. The preliminary transit concept provides for elevated light rail within the I-595 corridor between SW 136th Avenue and SR 7. The Master Plan LPA had proposed the transit alignment be elevated within the I-595 corridor as well, but placed it south of both I-595 and SR 84. Extensive coordination with transit officials has continued throughout the PD&E Study process to accommodate the potential transit alignment within the I-595 corridor.

Value Engineering/Design Review Process

As part of the PD&E Study design analysis, a comprehensive VE/DR Team was assembled, composed of senior staff from FDOT District 4, Broward County, Florida's Turnpike Enterprise and specialty consultants. The purpose of the VE/DR Team was to conduct detailed design reviews of the design alternatives at critical stages of the refinement process to assure that the project remained cost effective, constructible and made the most efficient uses of existing rights of way. The refinements to the LPA that emerged from the first four week-long VE/DR workshops were incorporated into a single PD&E design concept, **Alternative 1A**.

As the VE/DR alternative was developed further, it became apparent that extensive right of way acquisitions would be needed to construct the transit line along the south side of SR 84. As a result, the project team developed three additional concepts. The alternatives were developed in coordination with the transit study consultants, local municipalities and stakeholders, FHWA and the VE/DR Team. The three alternatives were designated as **Alternatives 1B**, **2A** and **2B**. The three alternatives maintained the basic design components of the Master Plan LPA (reversible lanes, auxiliary lanes, braided ramp

systems, etc.) but made more efficient use of the space available within the existing corridor right of way.

A comparative analysis of the four design alternatives was performed that evaluated each build alternative using such criteria as traffic service; preliminary engineering, environmental and socio-economic impacts; and costs. Based on this analysis, Alternatives 1A and 2B were considered "fatally flawed" and eliminated from further consideration. The Concept Plans for all of the alternatives evaluated, including the No Project Alternative, are presented in Appendix D – Alternative Concept Plans of the PER.

Selection of the alternative for which LDCA will be sought from FHWA will be made after receiving public input during the I-595 PD&E Public Hearing in December 2005.

2.5 PROJECT ALTERNATIVES

The following section describes the primary characteristics of the **No Project Alternative** and the two design concepts, **Alternatives 1B and 2A**.

2.5.1 No Project Alternative

The No Project Alternative entails maintaining the existing I-595 corridor without implementing capacity, operational or safety improvements, except for those already funded and included in the Broward County MPO's *2005/06 – 2009/10 Transportation Improvement Plan*. The following is a summary of the key corridor characteristics.

- Three general purpose lanes with paved inside and outside shoulders per direction, separated by either a 64-foot or 68-foot grass median
- One or two auxiliary lanes between each pair of interchanges
- SR 84, configured as a two-lane one-way pair, with WB lanes north of the mainline and the North New River Canal and EB lanes south of the mainline; extends from SW 136th Avenue to Davie Road; has a design speed of 50 mph (e max = 0.10); has an open drainage; serves as I-595 C-D system
- No frontage road between Davie Road and SR 7; east of SR 7, both EB and WB lanes of SR 84 on the north side of the mainline and the North New River Canal, following its original alignment – separated and apart from the I-595 right of way
- Tight diamond with frontage road interchange configuration at the following crossroads:
  - SW 136th Avenue
  - Flamingo Road
  - Hiatus Road
  - Nob Hill Road
  - Pine Island Road
  - University Drive
  - Davie Road

- Two flyovers at the University Drive interchange carrying SB-EB and NB-WB movements
- 70 mph design speed on mainline; 50 mph design speed on ramps

The consequences of selecting the No Project Alternative include the acceptance of increased traffic congestion that will result from the increased travel demand associated with the continued significant growth of SE Florida that is expected to occur over the next 20 years. By contrast, the advantages of the No Project Alternative include no additional costs, other than maintenance of the existing facility; no need for acquisition of additional rights of way for construction of retention/detention ponds that will be needed for additions to the impervious areas within the corridor limits; and no impacts to traffic or surrounding neighborhoods as a result of construction activities.

The No Project Alternative remains under consideration throughout the study process to provide a baseline for comparison with project design alternatives.

2.5.2 Design Alternatives

The improvement alternatives initially proposed for the I-595 corridor during the 2003 Master Plan and further developed through this PD&E Study process, have a number of design elements.

- Mainline I-595
- Mainline I-595 Interchanges
- Reversible Lanes
- Reversible Lane Interchanges
- SR 84
- Pedestrian and Bicycle Facilities
- I-595/Florida's Turnpike Interchange
- Florida's Turnpike Mainline
- Transit Facilities
- Pond Apple Slough

Common elements of the design alternatives are discussed below and are followed by a discussion of the unique elements of each design alternative. In general terms, Alternative 1B proposes constructing the new reversible lanes at grade level within the median of the I-595 corridor. In Alternative 2A, the reversible lanes would be elevated above the existing I-595 mainline median area.

Shared Design Alternative Design Features

Mainline I-595 – Each of the design alternatives preserves the existing I-595 mainline general purpose lanes in their present location through much of the corridor, 34 feet left and right of the centerline of construction. Where needed, an additional auxiliary lane is proposed so that two auxiliary lanes per direction are provided between each pair of successive interchanges within the corridor. Mainline design speeds of 70 mph are also preserved.

Mainline I-595 Interchanges – Major improvements are proposed for the mainline interchanges to eliminate friction in the outer lanes caused by merge, diverge and weaving segments along the mainline. This will be accomplished by introducing braided ramps, a design feature that eliminates ramps by combining ramp movements and reversing the typical on-ramp/off-ramp sequence usually found between successive interchanges. The proposed improvements will either eliminate mainline weaving segments altogether or relocate them to the frontage roads where any delays would not impact mainline traffic flow.

All ramps will be of parallel type, with auxiliary lanes beginning/ending at the ramp gores. This configuration will improve the operation of merge and diverge segments. In addition, all ramps at interchanges within the study corridor will have 50 mph design speeds.

In addition, the existing flyovers at the University Drive interchange will be reconstructed, moving them to allow widening of the median as needed to accommodate the reversible express lanes.

Reversible Lanes – The reversible lanes will be located within the I-595 median area. Their horizontal and vertical alignments are to follow the existing I-595 alignment. At the present time, it is envisioned that the reversible lane system will flow EB during the AM peak period and WB during the PM peak period, allowing a large percentage of long distance through traffic to be removed from the GP lanes and augmenting the number of lanes flowing in the direction of greatest demand.

Reversible Lane Interchanges – Whether originating within the I-595 corridor only, as proposed under Alternative 1B, or within both the I-595 and Florida's Turnpike corridors, as proposed under Alternative 2A, the median areas are to be widened to accommodate the reversible lane interchanges. Two inside auxiliary lanes will be developed for access to the reversible lane system, separated from the mainline by a 4-foot buffer area. Overhead Dynamic Message Signs (DMSs) are proposed to guide motorists into or away from the auxiliary lanes leading to the reversible lanes (depending on the time of day). Opposing traffic will be prohibited from entering the reversible lanes by a series of gates that will extend from the inside barrier wall in the area of the auxiliary lanes. Drop down safety nets are also proposed to further prohibit motorists from entering the reversible lanes in the wrong direction. Barrier walls will be used along the I-595 mainline to eliminate clear zone violations in the reversible lane interchange area.

SR 84 – A number of factors make it impractical to maintain SR 84 as a rural (open drainage) facility. These factors include limited rights of way, addition of mainline auxiliary lanes, proposed realignments of ramps, proposed addition or expansion of bicycle and pedestrian facilities, and potential impacts to the North New River Canal. It is proposed that SR 84 be changed to a suburban facility with two 12-foot lanes per direction,

installation of a Type F curb-and-gutter system on the outside and an 8-foot stabilized inside shoulder, of which 4 feet are paved. The proposed use of a curb-and-gutter system accomplishes several things: it allows the roadway drainage to be contained within the existing right of way; it allows for a pedestrian/bicycle path to be installed on the outside between Davie Road and SR 7; and it reduces clear zone requirements. A guardrail will be installed in the WB direction along the curb and gutter to protect users from the drop off hazard associated with the canal.

Additional rights of way are required along the north side of WB SR 84 for much of its length. Meetings were held with SFWMD regarding this issue. The SFWMD issued the following guidelines to be followed with respect to potential impacts to the North New River Canal.

- If the roadway footprint is within the SFWMD right of way, a bulkhead constructed with sheet piling will be installed to prevent encroachment on the canal.
- No reduction in the capacity of the canal cross section is permitted.
- No change in the conveyance of the canal is permitted.
- Sound walls may be installed on top of the bulkhead, but not within 100 feet of any bridge crossing the canal.

The reconstructed SR 84 will be located at the same elevation as the existing facility. It also will be located on the outside of I-595 mainline ramps and bypass ramps so that a continuous 4-foot undesignated bicycle lane can be maintained along the outside travel lane. The single exception to this occurs between Pine Island Road and Nob Hill Road.

As part of the SR 84 reconstruction, its intersections with SW 136th Avenue, Flamingo Road, Hiatus Road, Nob Hill Road, Pine Island Road, University Drive, and Davie Road will require reconstruction. Elimination of WB SR 84 access across the canal to and from SW 125th Avenue and Commodore Avenue will also be required, due to limited space between the widened I-595 mainline and the canal.

Improvements are also proposed for the EB lanes of SR 84. The improved EB lanes will be constructed at the elevation of the existing SR 84 Limited Access right of way line. The EB lanes will also be located outside of the I-595 mainline ramps and bypass ramps. This will enable access to the many driveways along EB SR 84 to be maintained, as well as allowing a continuous 4-foot undesignated bicycle lane to be constructed along the outside travel lane.

At the present time, SR 84 ends a few hundred feet east of Davie Road, at which point EB traffic is forced onto the I-595 mainline. Both of the design alternatives propose to extend SR 84 farther east, eliminating the need for frontage road traffic to use any portion of the I-595 mainline.

Pedestrian/Bicycle Facilities – Broward County has designated the I-595 corridor as a major component of its Greenway system. A bi-directional shared-use path is currently being designed (by others) that will be located on the north side of the North New River Canal between the western I-595 PD&E project limit and University Drive. The path leaves the project corridor between University Drive and Davie Road, reentering it at Davie Road. Between Davie Road and SR 7, it runs along the south side of the North New River Canal to SR 7. Following discussion with County officials, FDOT has agreed to relocate the portion of Greenway between Davie Road and SR 7 to the north side of the canal as part of this I-595 PD&E project. The relocation will eliminate potential conflicts with proposed ramps within the I-595/Florida's Turnpike interchange.

In addition to the Greenway, FDOT has requested that a 12-foot shared-use, bi-directional path be located along the outside of EB SR 84 (south of the mainline), between SW 136th Avenue and University Drive. It will be constructed adjacent to the proposed curb and gutter. The path will be narrowed to 6 feet between University Drive and Davie Road because of the limited right of way in front of an existing FP&L substation. Four-foot undesignated bicycle lanes will also be incorporated into the design of the outside travel lane of SR 84 in both directions to accommodate advanced riders that currently use SR 84.

Turnpike Interchange – A new WB-NB slip ramp is proposed for the northeast quadrant of the I-595/Florida's Turnpike interchange. Addition of the WB-NB ramp will remove WB-NB traffic volumes from the short weaving section where EB and WB I-595 volumes converge before separating to travel either NB or SB on Florida's Turnpike. Following the opening of the new ramp, a barrier wall will be placed along the existing weave section to prohibit vehicles from making unnecessary weaving movements.

It also is proposed that the bridge carrying both EB-SB and WB-SB traffic between I-595 and Florida's Turnpike be reconstructed as a three-lane structure. The new ramp structure will have a larger radius than the one it is replacing. The Griffin Road SB off-ramp will be relocated farther north to accommodate the wider bridge. It also is proposed that the existing NB-EB and NB-WB two-lane off-ramps be replaced with a single three-lane off-ramp. The NB and SB traffic will separate once away from the mainline. This configuration will eliminate one of the two mainline exits to the Turnpike.

Pond Apple Slough – Both design alternatives propose widening the I-595 causeway structures over Pond Apple Slough between SR 7 and I-95. This improvement will allow for the extension of SR 84 as far east as I-95. The proposed design avoids wetland impacts to the fullest extent possible while providing the additional I-595 lanes needed to satisfactorily handle future traffic demand. After careful study, it was determined that the least invasive solution would be to widen the existing structures to the inside as much as physically possible. This approach minimizes widening to the outside and into the environmentally sensitive areas of Pond Apple Slough.

Alternative 1B – At-Grade Reversible Lanes

Mainline I-595 – Mechanically stabilized earthen barrier walls are proposed for use in areas where I-595 passes over cross streets. Barrier walls along the outside shoulders will be required for much of the I-595 mainline because of clear zone violations and grade differentials between I-595 and SR 84.

All entrance ramps along I-595 will be parallel type entrance ramps with a 50 mph design speed.

Reversible Lanes – In Alternative 1B, the reversible lanes will be located at grade level within the I-595 median. In this configuration, the proposed reversible lane facility will have two 12-foot lanes, with 10-foot paved shoulders on each side. The reversible lanes will be physically separated from the I-595 GP lanes by median barrier walls that will drain to the outside through barrier wall inlets.

Access to and egress from the reversible lanes will be limited to two points. The western access point will be located between the SW 136th Avenue and Flamingo Road interchanges; the eastern access point will be located between Florida's Turnpike and SR 7.

Reversible Lane Interchanges – The auxiliary lanes constructed to provide connections between the I-595 mainline and the proposed reversible lanes will be separated from the mainline by a 4-foot buffer area.

Turnpike Mainline – Alternative 1B has no significant impacts to the Florida's Turnpike mainline alignment. The proposed improvements will consist mainly of restriping, reconstructing ramp terminals, and widening to the outside of the NB Florida's Turnpike lanes to accommodate the increased number of lanes on the proposed WB-NB on-ramp.

Transit Facilities – The potential transit alignment (which will be evaluated under separate study) will be elevated on a dedicated structure within the limits of the I-595 right of way.

The Alternative 1B transit envelope will be developed in the green space area created between SR 84 and I-595. Locating the transit in this area has several major benefits.

- Avoids the FP&L substation
- Avoids long spans when right-turn lanes are introduced along SR 84
- Minimizes right of way impacts and costs
- Allows for more visibility of businesses from SR 84

Alternative 2A – Elevated Reversible Lanes

Mainline I-595 – Alternative 2A recommends that the existing I-595 GP lanes be milled and resurfaced, with widening to the outside for the additional auxiliary lanes where needed. Mechanically stabilized earth walls are proposed where I-595 attains grade to pass over cross streets. Barrier walls along the outside shoulder are required for much of the I-595 mainline because of clear zone violations and grade differentials between I-595 and SR 84. All entrance ramps along I-595 will be of parallel type and will have 50 mph design speeds.

Reversible Lanes – In Alternative 2A, the reversible lanes will be located on elevated structure within the existing I-595 median. The reversible lanes will be located one level higher than the mainline, with the exception of the area near the University Drive flyovers. At these points, the reversible lanes will be raised to a fourth level to avoid the flyovers.

The proposed reversible lane structure will be 59 feet wide, with three 12-foot travel lanes and 10-foot paved shoulders on each side. Four points of access to and egress from the reversible lanes are proposed. The westernmost point will be located between the SW 136th Avenue and Flamingo Road interchanges. In clockwise sequence, the other points are along Florida's Turnpike, between Peters Road and I-595; between Florida's Turnpike and SR 7; and along Florida's Turnpike between I-595 and Griffin Road.

Reversible Lane Interchanges – The auxiliary lanes that carry traffic from the I-595 mainline to the reversible lanes will be elevated to a second level on MSE walls. Upon reaching a vertical clearance of 16.5 feet, the I-595 reversible lanes will be carried on structure, joining with the third lane. This third lane arises from or carries traffic to Florida's Turnpike and I-75.

Turnpike Mainline – The Florida's Turnpike mainline will require realignment in two areas: from north of Griffin Road to the south abutment of the Turnpike bridges over I-595, and from the north abutment of the Turnpike bridges over I-595 to Peters Road. Its median will also require widening to accommodate the I-595 reversible lane interchange areas, from its current 26 feet to 81.5 feet. In addition, the Turnpike's NB mainline lanes will be widened to the outside to incorporate the additional WB-NB on-ramp lanes.

Transit Facilities – Alternative 2A differs from Alternative 1B in that the transit corridor is located in the median under the elevated reversible lane structure. This requires raising the reversible lane structure from the second level to a third level. Transit traffic will enter and exit the I-595 median at Level 2 at two locations: east of Flamingo Road and west of University Drive. Once the transit line is away from the access/egress areas, it is lowered to the same profile as the I-595 mainline. This will allow the same benefits to be attained by both Alternatives 2A and 1B. The transit facilities are being evaluated under a separate study.

- Avoids the FP&L substation
- Minimizes the need for an additional transit structure
- Minimizes right of way impacts and costs
- Allows for more visibility of businesses from SR 84

Design Alternatives' Proposed Typical Sections

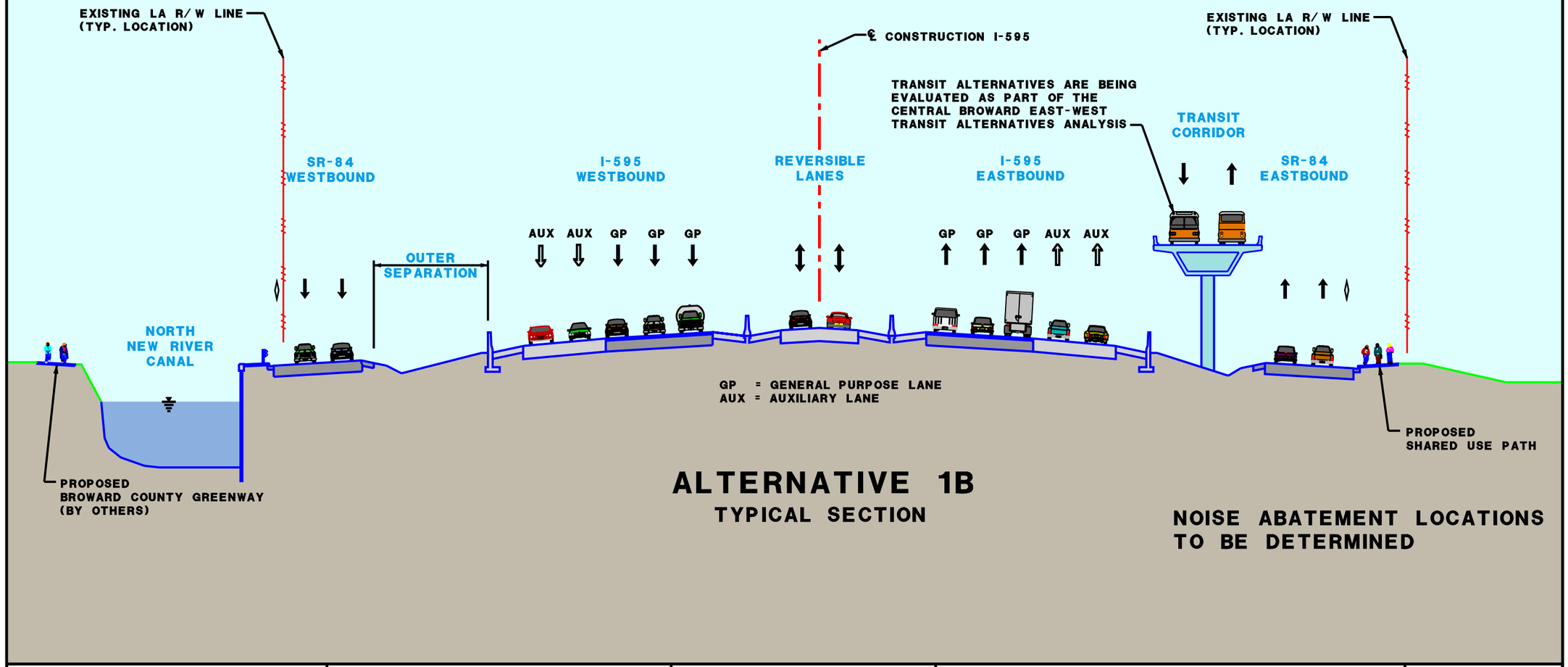
The typical sections proposed for Alternatives 1B and 2A will each provide six 12-foot wide general purpose lanes (three per direction) and two 12-foot auxiliary lanes between interchanges. The I-595 mainline will have 10-foot paved shoulders on both the inside and outside.

SR 84 will have two 12-foot lanes with 4-foot paved shoulders to the inside and to the outside. Type F curb and gutter and 6 feet to 12 feet of shared-use sidewalk/bicycle path will be included on the outside.

The configuration of the reversible lanes features is the primary way in which the two alternatives differ.

- **Alternative 1B** proposes that the reversible lanes be constructed at grade level within the I-595 median, separated from the mainline by median barrier walls. Under this design concept, there will be two 12-foot reversible lanes with 10-foot shoulders.
- **Alternative 2A** proposes that the reversible lanes be carried on a bridge structure that is 59 feet wide. It, too, will be located within the I-595 median. In Alternative 2A, there will be three 12-foot reversible lanes with 10-foot shoulders.

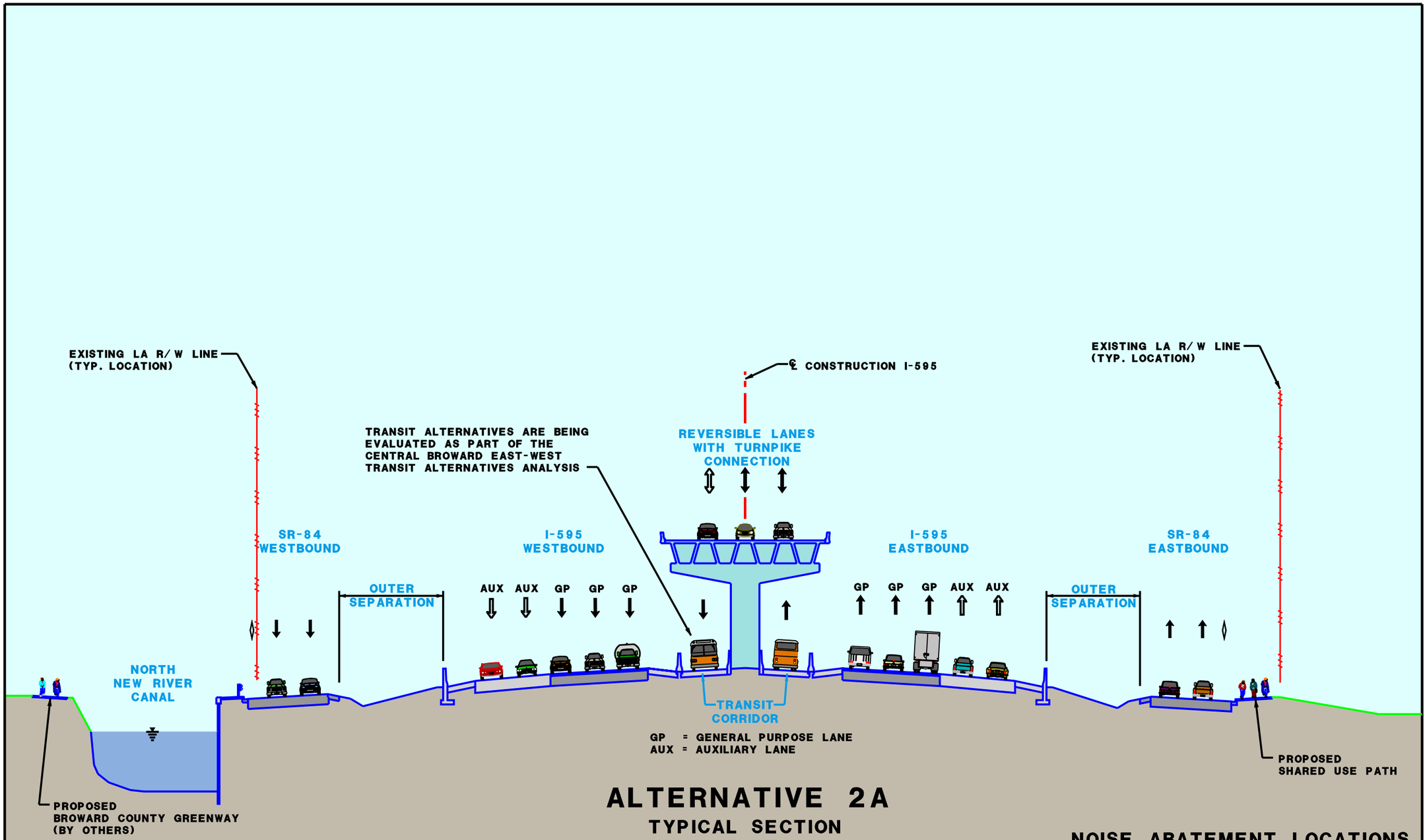
The proposed typical sections for **Alternatives 1B** and **2A** are shown in Figures 2-5 and 2-6. Figure 2-7 shows the system improvements proposed along the corridor.



ALTERNATIVE 1B
TYPICAL SECTION

NOISE ABATEMENT LOCATIONS TO BE DETERMINED

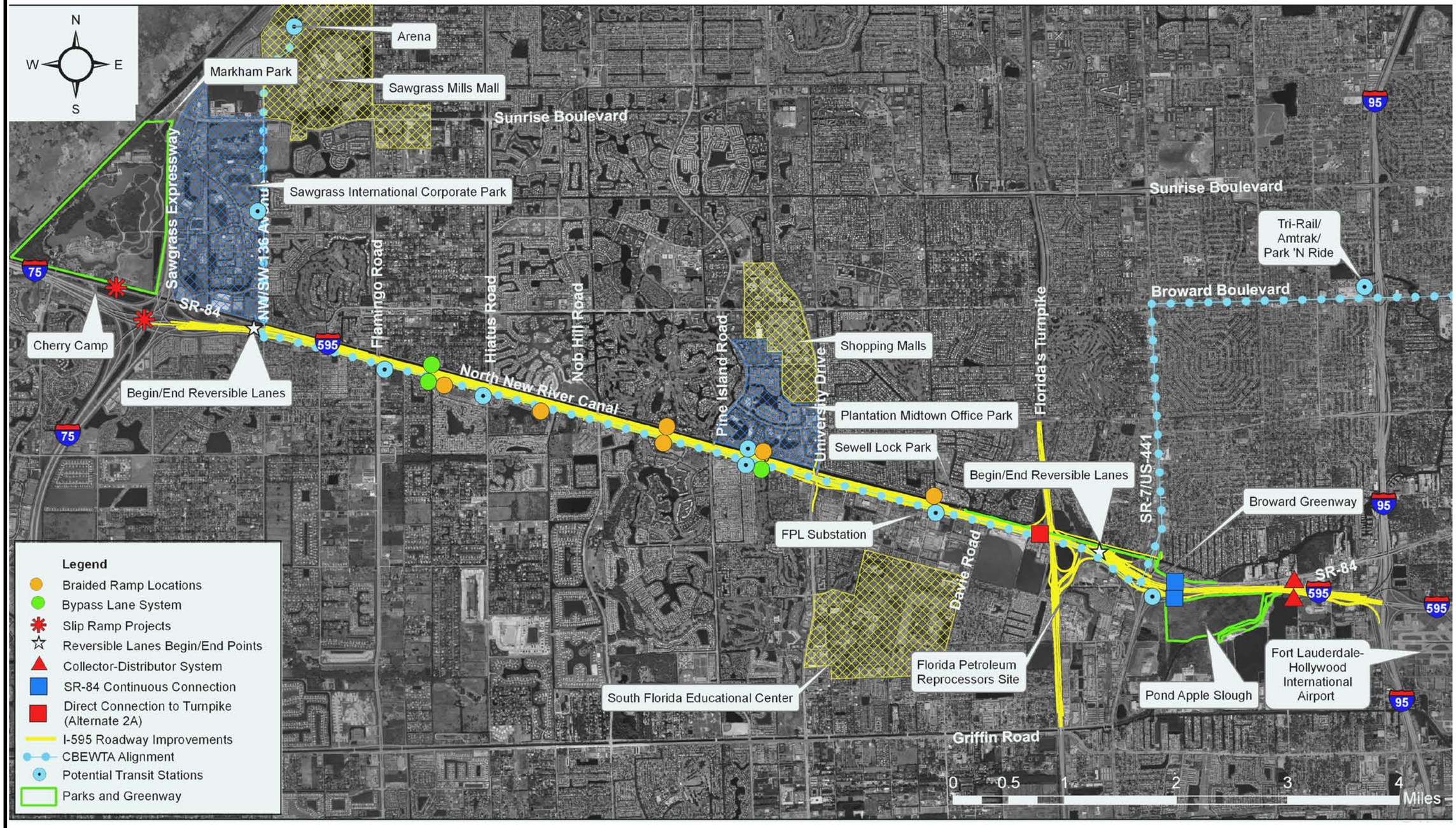
RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	*STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION*	*I-595 PD&E STUDY*	*ALTERNATIVE 1B TYPICAL SECTION*	*FIGURE 2-5*



ALTERNATIVE 2A
TYPICAL SECTION

NOISE ABATEMENT LOCATIONS TO BE DETERMINED

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	*STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION*	*I-595 PD&E STUDY*	*ALTERNATIVE 2A TYPICAL SECTION*	*FIGURE 2-6*



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	**I–595 PD&E STUDY**	**SUMMARY OF PROPOSED I–595 CORRIDOR IMPROVEMENTS**	**FIGURE 2–7**

3.0 LAND USE

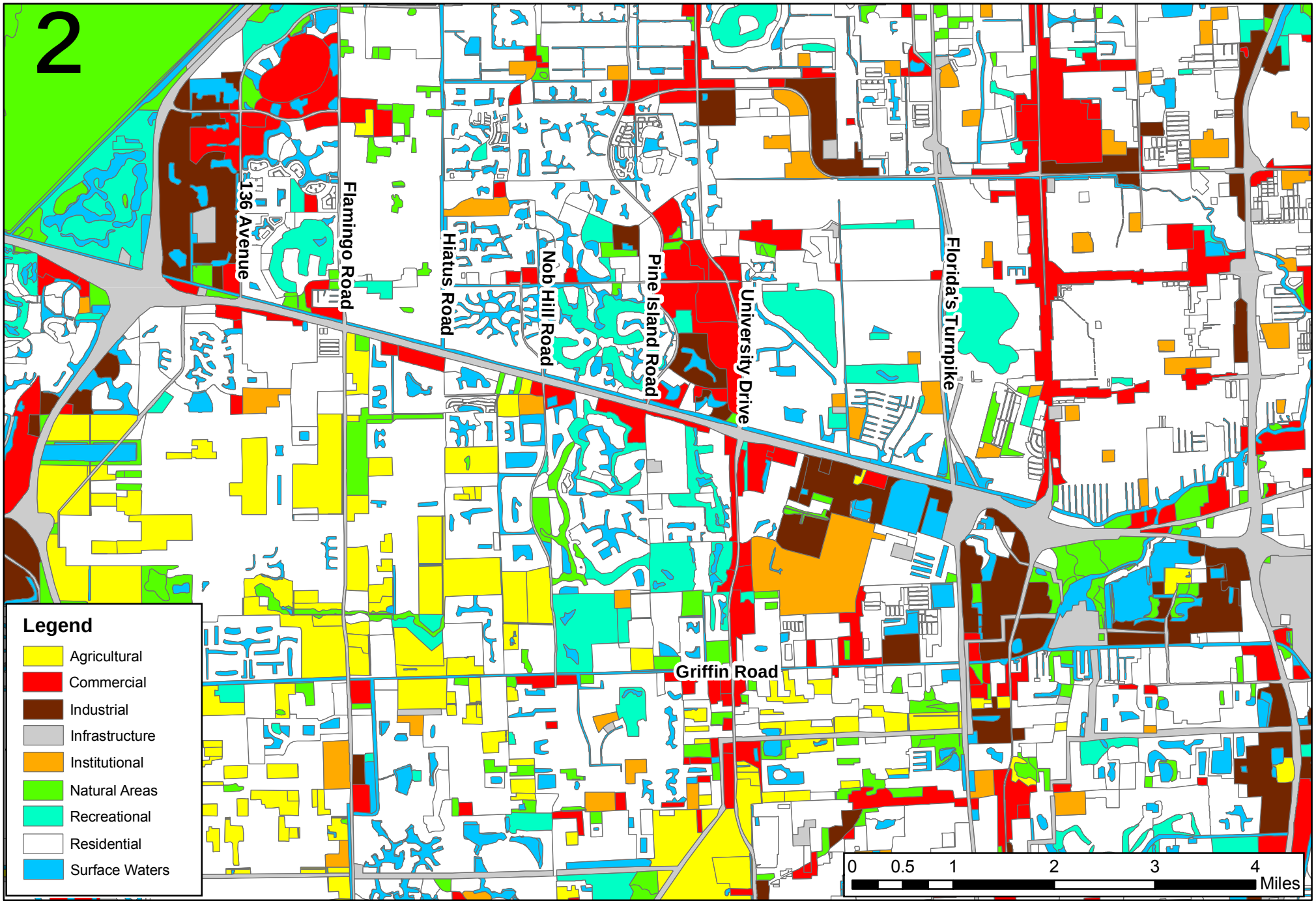
3.1 EXISTING LAND USE

The existing land uses along the project corridor are a mix of commercial and residential uses. The majority of the area is fully developed. The North New River Canal (C-15) parallels the north side of WB SR 84 through most of the project corridor, from SW 136th Avenue to SR 7. Land uses north of the canal are primarily residential, with some commercial development clustered near interchanges. Land uses along EB SR 84 and south of the corridor are generally strip commercial with adjacent multi-family and single-family residential development. Figure 3-1 illustrates existing land uses within the study area.

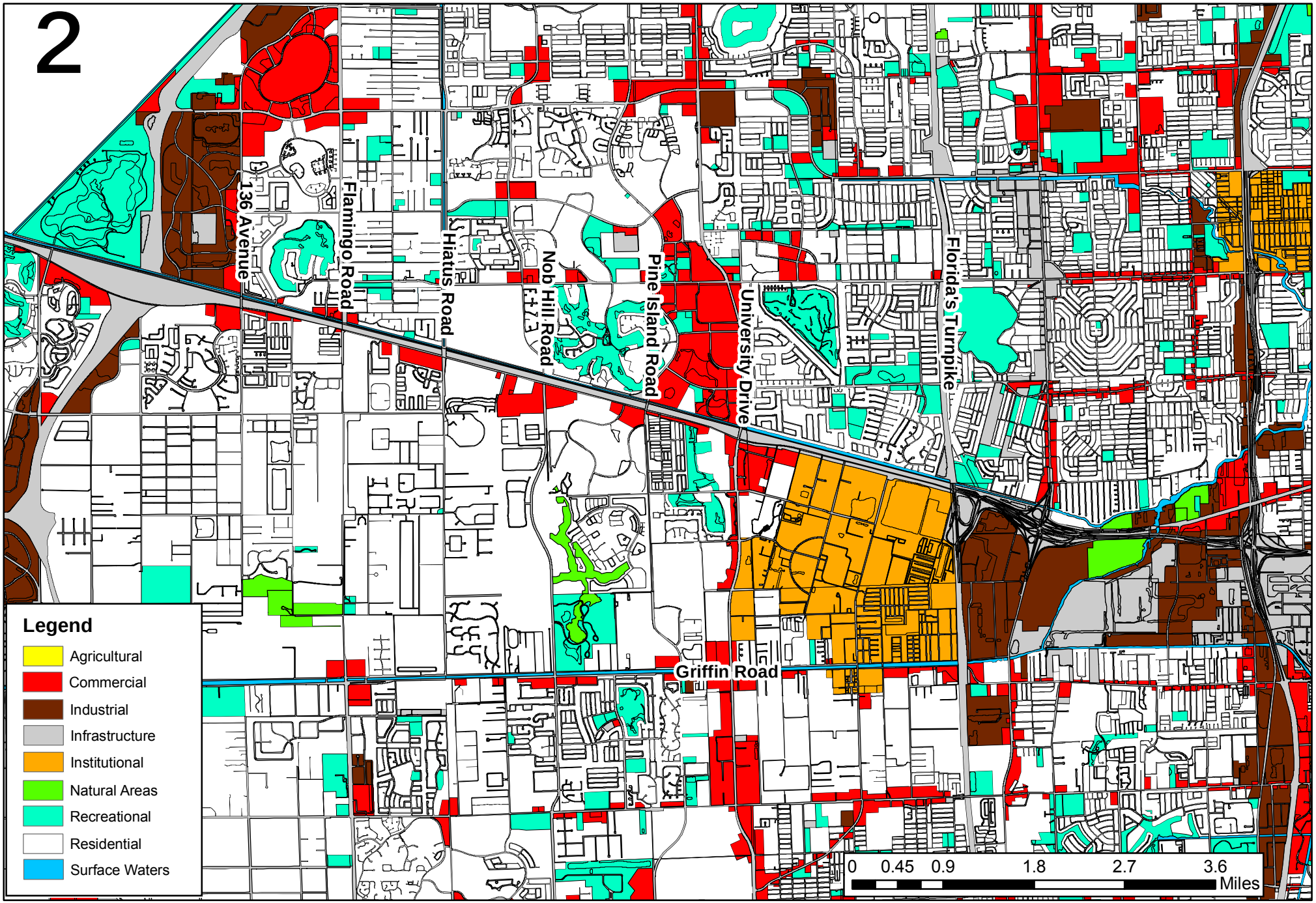
East of I-95 and the eastern project terminus, Ft. Lauderdale/Hollywood International Airport borders the south side of I-595. Light industrial land use is also found south of the corridor and east of Florida's Turnpike. A mixture of residential, industrial and open space land uses border the corridor northeast of the I-595/I-95 interchange area.

3.2 FUTURE LAND USE

The future land use in the project corridor is shown in Figure 3-2. This map was based on the Broward County Planning Council's *Future Land Use Plan*, an element of its Local Government Comprehensive Plan. Because the project area is almost entirely developed, future land uses will be similar to existing patterns. The future land use map shows continued mixed-use development in the project corridor, with a change from industrial/residential to institutional land use in the central portion of the I-595 corridor south of SR 84.



RS&H	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY EXISTING LAND USE	FIGURE 3-1



RS&H

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

I-595 PD&E STUDY
FUTURE LAND USE

FIGURE 3-2

4.0 TRAFFIC NOISE ANALYSIS

The methods and results of the traffic noise analysis are summarized within this section and involved the following procedures:

- Identification of Noise Sensitive Receivers
- Field Measurement of Noise Levels and Noise Model Validation
- Prediction of Existing and Future Noise Levels
- Assessment of Traffic Noise Impacts
- Consideration of Noise Abatement Measures

For this project, FHWA's Traffic Noise Model (TNM) Version 2.5 (February 2004) was used to predict traffic noise levels and to analyze the effectiveness of noise barriers. This model estimates the acoustic intensity at a noise sensitive receiver from a series of roadway segments (the source). Model-predicted noise levels are influenced by several factors, such as vehicle speed and distribution of vehicle types. Noise levels are also affected by characteristics of the source-to-receiver path, including the effects of intervening barriers, structures (houses, trees, etc.), ground surface type (hard or soft), and topography. Because elevation data was available from the design survey conducted for this project, actual elevations were used in traffic noise modeling.

Noise levels documented in this report represent the hourly equivalent sound level (L_{Aeq1h}). L_{Aeq1h} is the steady-state sound level, which contains the same amount of acoustic energy as the actual time-varying sound level over a one-hour period. L_{Aeq1h} is measured in A-weighted decibels (dBA), which closely approximate the human frequency response.

4.1 NOISE SENSITIVE RECEIVERS

The FHWA's NAC (Noise Abatement Criteria) is used to determine the levels of traffic noise impact on human activity. Five land use activity categories have been identified by FHWA for use in noise impact analysis. Maximum noise level thresholds have been established for four of these activity categories. These maximum thresholds, or criteria levels, represent acceptable traffic noise level conditions. The NAC levels are presented in Table 4.1-1 and apply only to areas of regular human use where lowered noise levels are desirable. Noise abatement measures must be considered when predicted noise levels approach (i.e., within 1 dBA) or exceed the NAC levels or when a substantial noise increase occurs. A substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 dBA or more as a result of the transportation improvement project.

Table 4.1-1. Hourly A-Weighted Noise Abatement Criteria Levels--Decibels (dBA)

Activity Category	Abatement Level (in L_{Aeq1h}) FHWA	FDOT	Description of Activity Category
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)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
C	72	71 (Exterior)	Developed lands, properties, or activities not included in Category A or B above.
D	--	--	Undeveloped lands
E	52	51 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches. libraries, hospitals, and auditoriums.

Source: *PD&E Manual*, Chapter 17, Noise

A survey of the project corridor was conducted to identify the noise sensitive receivers that may be impacted by traffic noise associated with the proposed improvements. Noise sensitive receivers represent any property (owner occupied, rented, or leased) where frequent exterior human use occurs and where a lowered noise level would be of benefit. Typical noise sensitive receivers include residences, parks, schools, hospitals, and churches.

As described in Section 3.1 and depicted in the Existing Land Use Map (Figure 3-1), the study area includes a number of residential areas located north and south of I-595 and east and west of Florida's Turnpike. These residential areas and Acres South Park and Sewell Lock Park represent the noise sensitive sites within the project limits. Within the project limits, 44 noise sensitive areas that include 1,489 noise sensitive sites are potentially affected by traffic noise from the proposed improvements. These noise sensitive areas and the number of noise sensitive sites associated with each area are listed in Table 4.1-2. The general locations of these residential areas as well as the parks are depicted on Figures 4-1 and 4-2. Several communities including Vista Filare, Royal Palm, and Poinciana Parc which are located west of SW 136th Avenue and New River Estates and Markham Park located west of I-75/Sawgrass Expressway (see Figure 4-2, Sheet 1 of 15) are located outside the limits of this project. Therefore, an assessment of existing and future traffic noise levels to determine potential project impacts were not conducted for these areas.

To facilitate the analysis of traffic noise impacts of the 1,489 noise sensitive sites associated with these 44 areas, 384 representative receiver sites were chosen based on noise sensitivity, roadway proximity, anticipated impacts from the proposed project, and homogeneity (i.e., representative of other similar sites in the project study area). Table 4.3-2 (see Section 4.3.2 Predicted Traffic Noise Levels) lists the representative noise receivers sites by areas, approximate location (Station Number), number of noise sensitive sites represented, and their approximate distance to the nearest existing and proposed travel lanes of I-595, SR 84, and elevated reversible lanes associated with Alternative 2A. Figure 4-2 (Sheets 2 through 15) shows the general location of each of the representative receiver sites. Alpha numeric labels were used to identify each of the representative receiver sites. The two to three letters used in the labels are representative of the noise sensitive areas where the receiver sites are located (e.g., SC for Sunshine City).

Figure 4-2 also shows the location of five noise barriers (see Sheets 13 of 15 through 15 of 15) that are associated with the widening of Florida's Turnpike (Financial Project ID 406094-1) which is separate from the I-595 PD&E Study. Table 4.1-3 summarizes the location, dimensions, amount of noise reduction, and cost of these planned noise barriers. Since the noise barriers have been designed and are planned to be constructed within the next several years, they were assumed to be in place in the design year (2034).

Table 4.1-2 Noise Sensitive Areas Along the Project Corridor

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Name	Area Identifier	Area Identification Number	Type of Noise Sensitive Site	Number of Noise Sensitive Sites	Number of Representative Receiver Sites	Figure 4-2 Sheet Number
Between SW 136th Avenue and Flamingo Road	North of I-595	Sunshine City	SC	A-1	Residential (Mobile Home Park)	91	15	2 & 3 of 15
		Mar Lago Village	ML	A-2	Multi-Family Residential (Multi-Story Apartment Buildings)	2	2	3 of 15
		Lago Estates	LE	A-3	Residential (Single Family)	9	5	3 of 15
		Melaleuca Isles	MI	A-4	Residential (Single Family)	28	5	3 of 15
	South of I-595	Sunshine Village	SV	A-5	Residential (Mobile Home Park)	48	9	2 & 3 of 15
		Western Hills	WH	A-6	Residential (Mobile Home Park)	34	6	3 of 15
		Paradise Village	PV	A-7	Residential (Mobile Home Park)	57	11	3 of 15
		Kings Manor Estates	KM	A-8	Residential (Mobile Home Park)	38	13	3 of 15
Between Flamingo Road and Hiatus Road	North of I-595	Plantation Acres	PA	A-9	Residential (Single Family)	71	18	3 & 4 of 15
		Acres South Park	AS	A-10	Park (Passive Recreation)	1	3	4 of 15
	South of I-595	Village at Pine Lake	VPL	A-11	Multi-Family Residential (Two Story Quadraplexes)	22	9	4 of 15
		Rexmere Village	RV	A-12	Residential (Mobile Home Park)	1	1	4 of 15
Between Hiatus Road and Nob Hill Road	North of I-595	Hawk's Landing	HL	A-13	Residential (Single Family)	105	15	4 & 5 of 15
	South of I-595	The Palms Apartment Homes	PAH	A-14	Multi-Family Residential (Multi-Story Apartment Buildings)	146	27	4 & 5 of 15
		Scarborough	S	A-15	Residential (Single Family)	1	1	5 of 15
Between Nob Hill Road and Pine Island Road	North of I-595	Manaranda Village Condos	MVC	A-16	Multi-Family Residential (Multi-Story Condominium Buildings)	4	4	5 of 15
		The Trellises Condos	TC	A-17	Multi-Family Residential (Two Story Townhomes)	38	5	5 & 6 of 15
		Davide Isles	DI	A-18	Single Family Residential	36	6	6 of 15
		Jacaranda Villas	JV	A-19	Multi-Family Residential (Multi-Story Condominium Buildings)	20	10	6 of 15
	South of I-595	Nob Hill Palms	NHP	A-20	Residential (Single Family)	1	1	6 of 15
		Evergreen Place	EP	A-21	Multi-Family Residential (Multi-Story Condominium Buildings)	56	27	6 of 15
Between Pine Island Road to University Drive	North of I-595	Plantation Colony Apartments	PC	A-22	Multi-Family Residential (Multi-Story Apartment Buildings)	12	12	7 of 15
	South of I-595	Park City Estates	PCE	A-23	Residential (Mobile Home Park)	40	12	6 & 7 of 15
		Arrowhead Golf and Tennis Club	AGT	A-24	Multi-Family Residential (Multi-Story Apartment Buildings)	22	7	7 of 15
		Valencia Village	VV	A-25	Multi-Family Residential (Multi-Story Apartment Buildings)	20	3	7 of 15
Between University Drive to Florida's Turnpike	North of I-595	Lake View Estates	LV	A-26	Residential (Single Family)	116	17	7 & 8 of 15
		Isla del Sol	IDS	A-27	Residential (Single Family)	27	7	7 & 8 of 15
		Sewell Lock Park	SL	A-28	Park (Passive Recreation)	1	1	7 & 8 of 15
		Plantation Landings	PL	A-29	Residential (Single Family)	9	4	9 of 15
		Plantation Harbor	PHa	A-30	Residential (Single Family)	41	9	9 of 15
Between Florida's Turnpike to SR 7	North of I-595	Golden Manor	GM	A-31	Residential (Single Family)	6	3	10 of 15
		Marshall Court	MC	A-32	Residential (Single Family)	7	2	10 of 15
		Golden Court	GC	A-33	Residential (Single Family)	5	2	10 of 15
		Coram Gardens	CG	A-34	Multi-Family Residential (Duplexes)	6	2	10 of 15
		Lazy Land	LL	A-35	Residential (Mobile Home Park)	30	2	10 of 15
Between SR 7 to I-95	North of I-595	Archstone Apartments	AA	A-36	Multi-Family Residential (Multi-Story Apartment Buildings)	116	63	10 & 11 of 15
		Hacienda Flores	HF	A-37	Residential (Single Family)	5	3	11 of 15
		Lauderdale Isles	LI	A-38	Residential (Single Family)	10	4	11 of 15
Between Griffin Road to I-595	West of Florida's Turnpike	Lauderdale Little Ranches	LR	A-39	Residential (Single Family)	51	6	13 of 15
		Everglades Lakes	EL	A-40	Residential (Mobile Home Park)	81	12	14 of 15
	East of Florida's Turnpike	Twin Lakes Travel Park	TL	A-41	Residential (Mobile Home Park)	2	1	14 of 15
Between I-595 to Peters Road	West of Florida's Turnpike	Plantation Harbor	PHb	A-42	Residential (Single Family)	32	8	15 of 15
	East of Florida's Turnpike	Plantation Point	PPb	A-43	Residential (Single Family)	78	11	15 of 15
		Broadview Park		A-44	Residential (Single Family)			
					Total	1526	384	--

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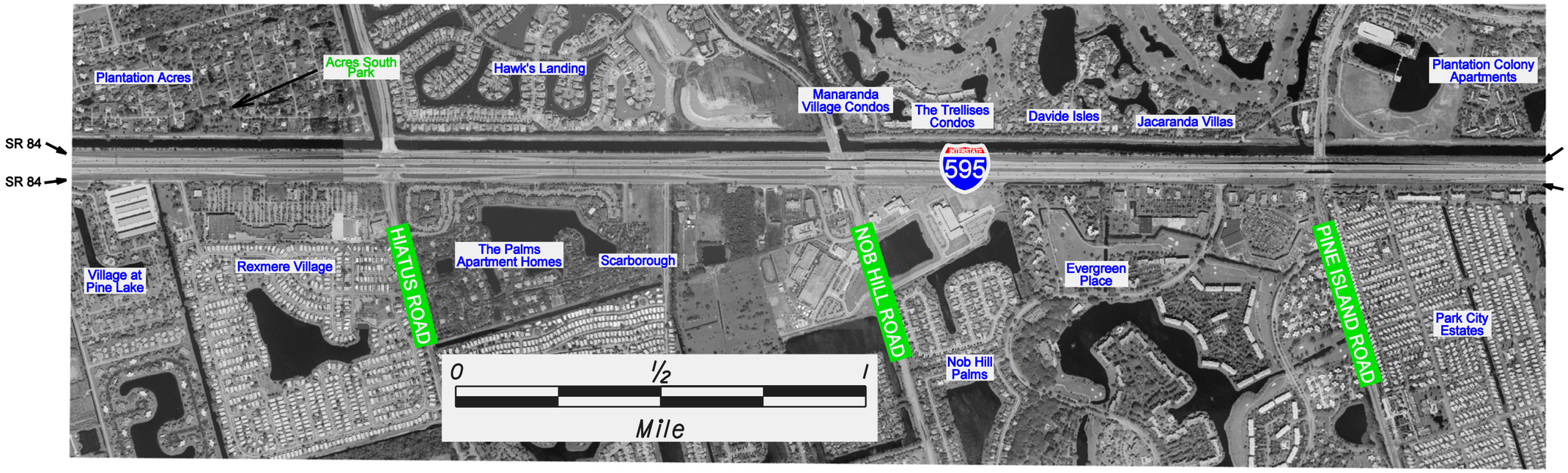
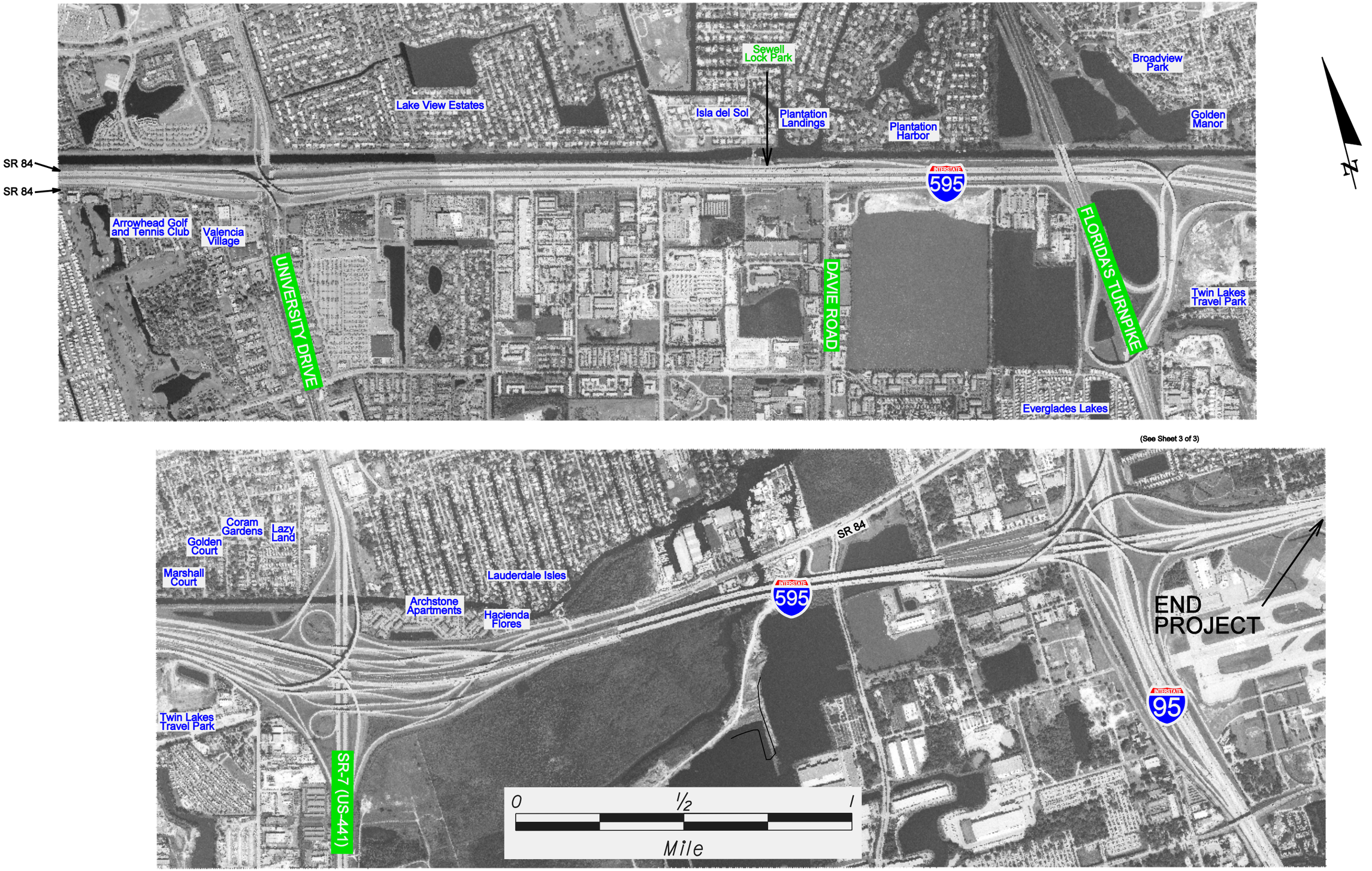


RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	NOISE SENSITIVE AREAS LOCATION MAP	FIGURE 4-1 1 of 3



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	NOISE SENSITIVE AREAS LOCATION MAP	FIGURE 4-1 2 of 3

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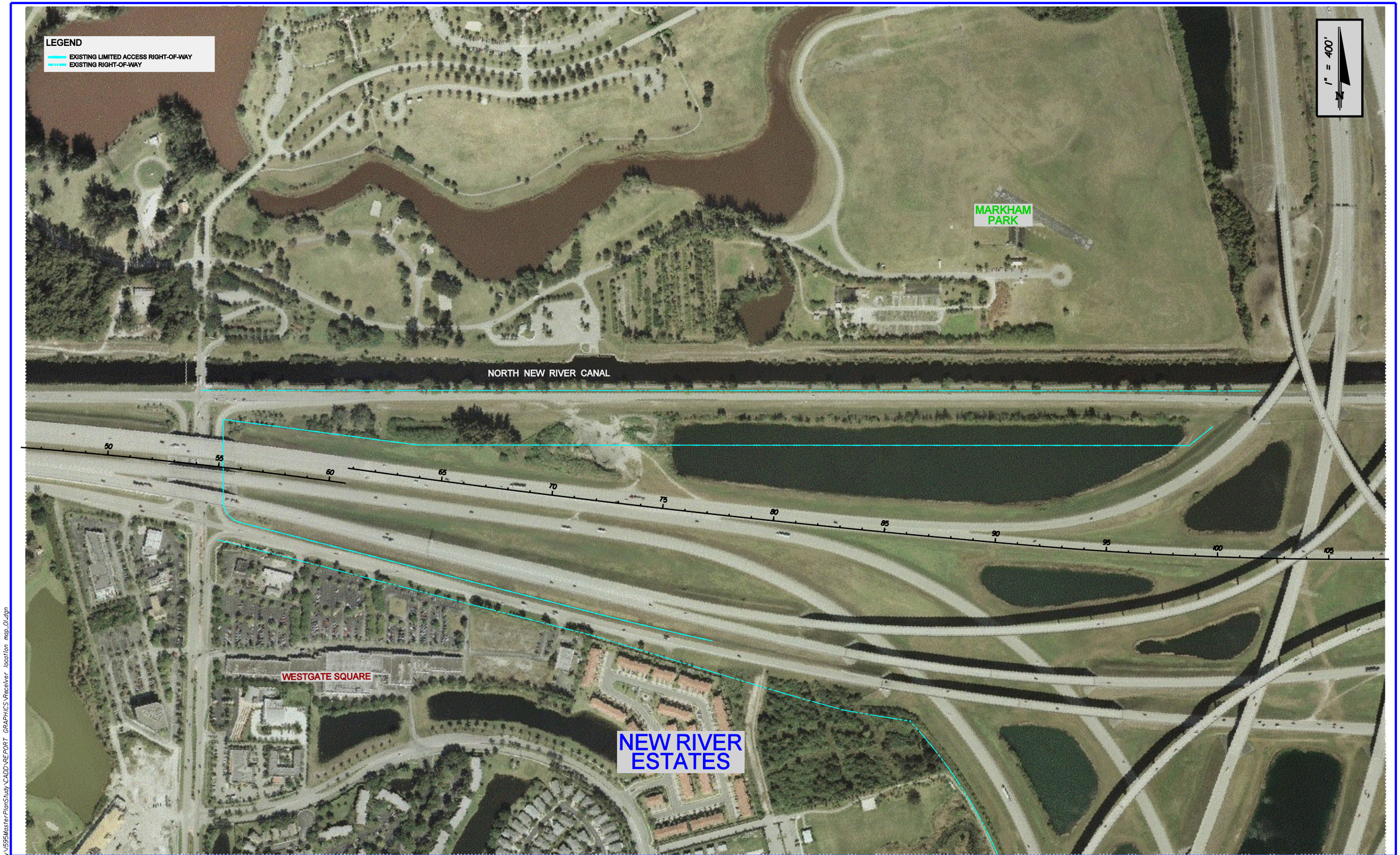
RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	NOISE SENSITIVE AREAS LOCATION MAP	FIGURE 4-1 3 of 3



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RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 1 of 15

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RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 2 of 15

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 3 of 15

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LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE
- NOISE MEASURMENT LOCATION FOR TRAFFIC NOISE MODEL VALIDATION

1" = 400'

PLANTATION ACRES

PA1 PA2 PA3 PA4 PA5 PA6 PA7 PA8 PA9 PA10 PA11 PA12 PA13 PA14 PA15 PA16 PA17 PA18

MS-PA1 MS-PA2 MS-PA3 MS-PA4

AS1 AS2 AS3

ACRES SOUTH PARK

HL1 HL2 HL3 HL4

NORTH NEW RIVER CANAL

VP1 VP2 VP3 VP4 VP5 VP6 VP7 VP8 VP9

595 PARK OF COMMERCE

VILLAGE AT PINE LAKE

MOBIL GAS

LEFTY'S TAVERN AND GRILL

THE PLAZA

GYMNASTICS

84 DINER

CHINA 84

GOODWILL STORE

WINN DIXIE

WALGREENS

RV1

REXMERE VILLAGE

PAH1 PAH2 PAH3 PAH4

I:\I-595PD&E Study\595MasterPlanStudy\CADD\REPORT GRAPHICS\Receiver location map_04.dgn

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 4 of 15

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE
- NOISE MEASUREMENT LOCATION FOR TRAFFIC NOISE MODEL VALIDATION

1" = 400'

HAWK'S LANDING

MANARANDA VILLAGE CONDOS

MS-HL3 MS-HL2 MS-HL1 HL6 HL5 HL7 HL9 HL8 MS-HL5 MS-HL4 HL11 HL10 HL15 HL12 HL14 HL13 MVC1 TC1 TC2

BLUE PALM STREET

NOB HILL ROAD

NORTH NEW RIVER CANAL

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

PAH3 PAH4 PAH5 PAH6 PAH7 PAH8 PAH9

CAMERON COURT

THE PALMS APARTMENT HOMES

S1

SCARBOROUGH

BP AMOCO

GOODYEAR

IMPERIAL ELECTRIC LIGHTING

BURGER KING

DRY CLEANERS

CREATIVE CHILD

TOWN OF DAVIE POLICE DEPT.

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RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 5 of 15

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE
- NOISE MEASUREMENT LOCATION FOR TRAFFIC NOISE MODEL VALIDATION

1" = 400'

THE TRELLISES CONDOS

DAVIDE ISLES

JACARANDA VILLAS

TC2 TC3 TC5 TC4 DI2 DI1 MS-DI2 MS-DI1 DI4 DI3 DI5 DI6 JV1 JV2 JV3 JV4 JV5 JV6

NORTH NEW RIVER CANAL ROAD

NORTH NEW RIVER CANAL

PINE ISLAND ROAD

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

DAVIE DEPT.

EP1 EP2 EP3 EP4 EP5 EP6 EP7 EP8 EP9

TIRE & AUTO CENTER

METRO PCS

VIENNA CAFE

CHAR HUT

AMC THEATER

PINE ISLAND PLAZA

PINE RIDGE DRIVE

SCRUBY'S BARBEQUE

BROWARD SCHOOLS CREDIT UNION

KFC

WACHOVIA

MOBIL

EXPO DESIGN CENTER

7 ELEVEN

PCE1 PCE2 PCE3 PCE4 PCE5 PCE6 PCE7

EVERGREEN PLACE

PARK CITY ESTATES

NHP1 MS-NHP1 MS-NHP2

NOB HILL PALMS

I:\V-595PD&EStudy\595MasterPlanStudy\CADD\REPORT GRAPHICS\Receiver location map_06.dgn

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 6 of 15

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE
- NOISE MEASUREMENT LOCATION FOR TRAFFIC NOISE MODEL VALIDATION

1" = 400'

PLANTATION COLONY APARTMENTS

PC1 PC2 PC3 PC4 PC5 PC6

LV1 LV2 LV3 LV4 LV5 LV6 MS-LV1 MS-LV2

PARK CITY ESTATES

PCE5 PCE6 PCE7 PCE8 PCE9 PCE10 PCE11 PCE12 MS-PCE1 MS-PCE2

CITY FURNITURE

AMF DAVIE LANES BOWLING

METRO PCS

ARROWHEAD GOLF AND TENNIS CLUB

AGT1 AGT2 AGT3 AGT4 AGT5 AGT6 AGT7

VALENCIA VILLAGE

VV1 VV2 VV3

BED BATH & BEYOND

SPEE DEE OIL CHANGE &TUNE UP

BIG K-MART

COSTCO

I:\I-595PD&EStudy\595MasterPlanStudy\CADD\REPORT GRAPHICS\Receiver location map_07.dgn

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 7 of 15

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 8 of 15

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RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 9 of 15

I:\I-595PD&EStudy\I595MasterPlanStudy\CADD\REPORT GRAPHICS\Receiver location map_09.dgn

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE
- NOISE MEASURMENT LOCATION FOR TRAFFIC NOISE MODEL VALIDATION

1" = 400'

GOLDEN MANOR

MARSHALL COURT

GOLDEN COURT

CORAM GARDENS

LAZY LAND

ARCHSTONE APARTMENTS

GM3 GM2 GM1 MS-GM2 MS-GM1

MC2 MC1

GC2 GC1

CG2 CG1

LL2 LL1

SW 25TH STREET

NORTH NEW RIVER CANAL

I-595 WESTBOUND

I-595 EASTBOUND

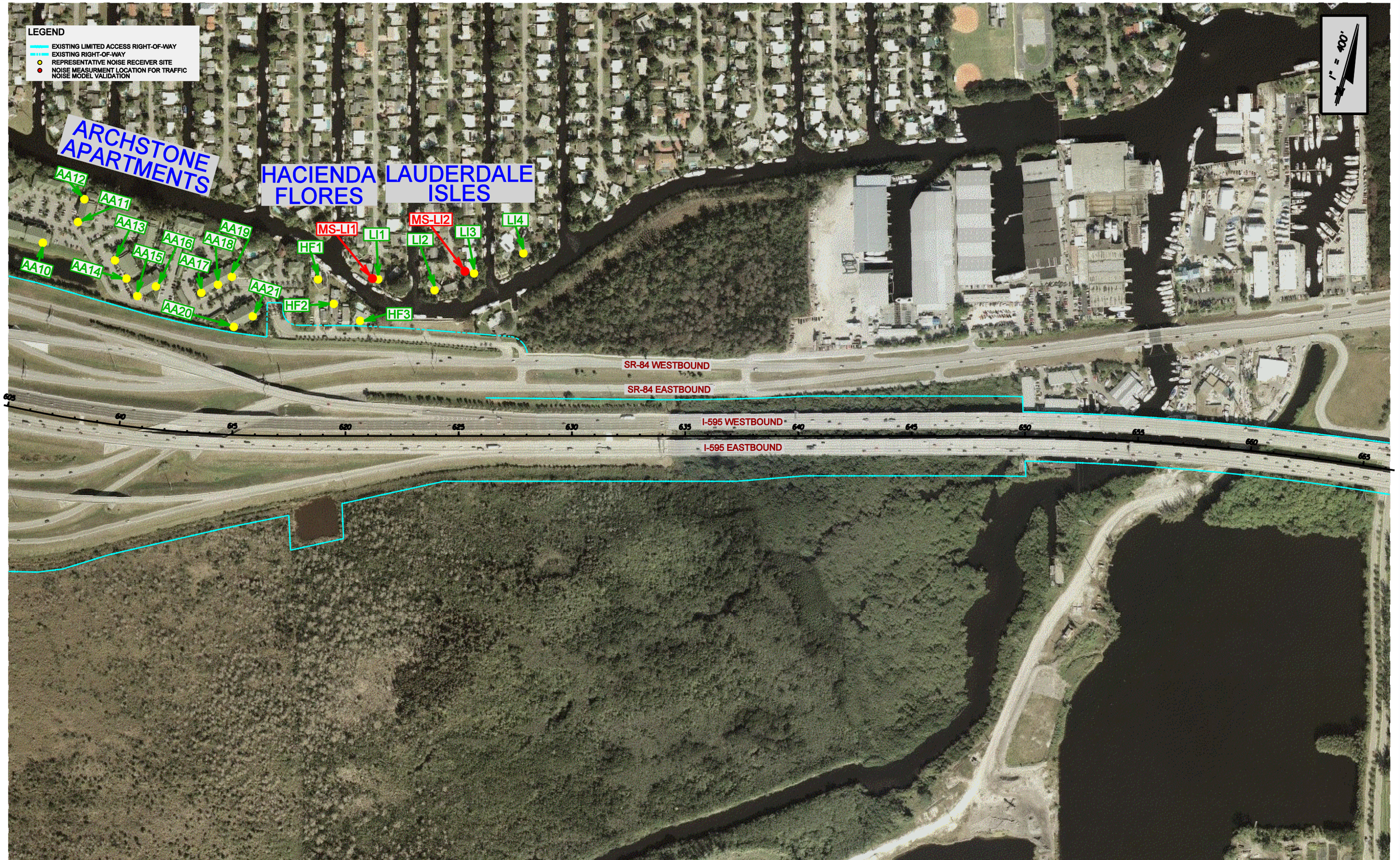
SR-7 (US-441) SOUTHBOUND

SR-7 (US-441) NORTHBOUND

AA1 AA2 AA3 AA4 AA5 AA6 AA7 AA8 AA9 AA10 AA11 AA12 AA13 AA14 AA15 AA16 AA17 AA18 AA19 AA20

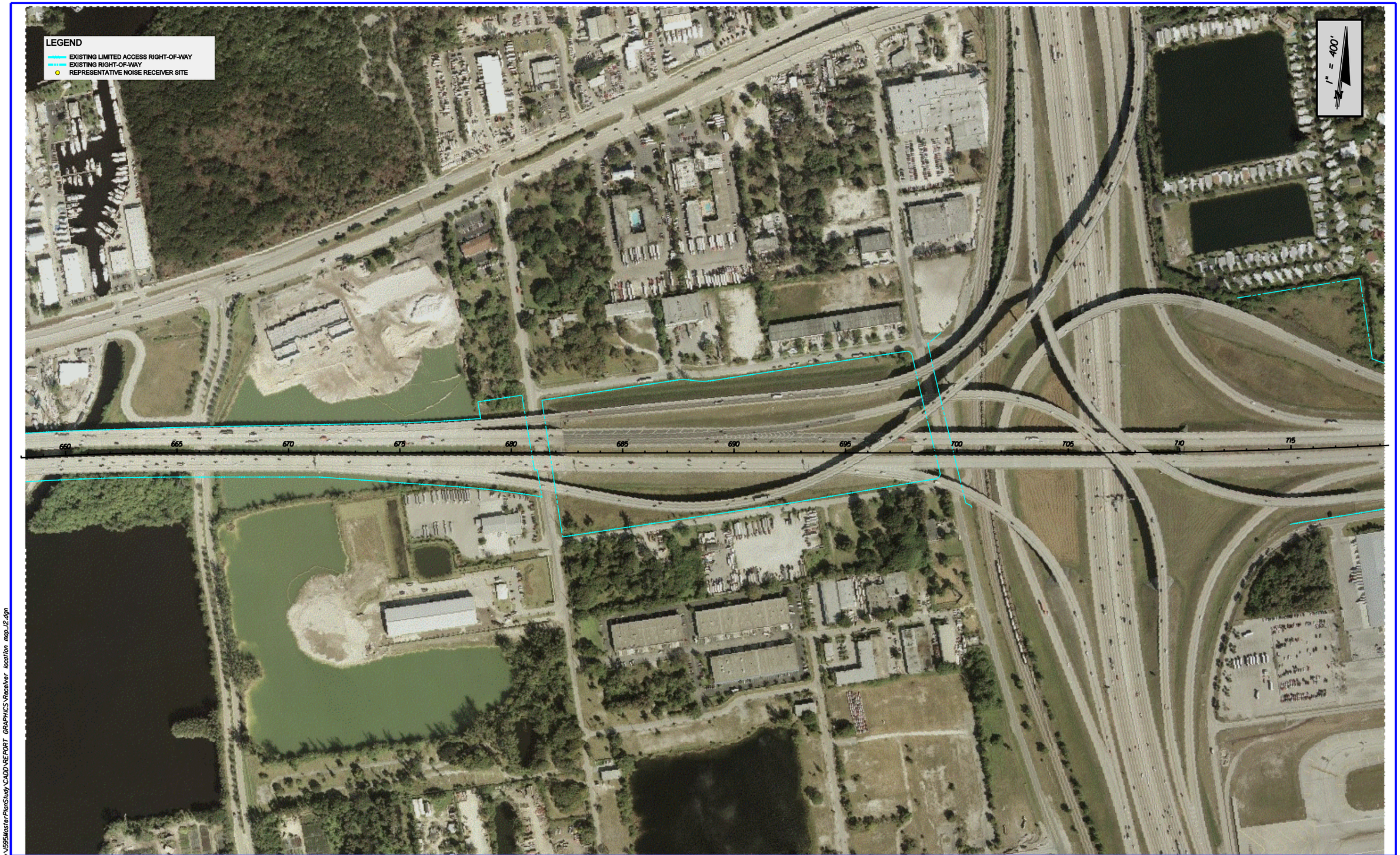
I:\I-595\PD&E\Study\I595MasterPlanStudy\CADD\REPORT GRAPHICS\Receiver location map_10.dgn

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 10 of 15



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 11 of 15

I:\I-595PD&E Study\I595MasterPlanStudy\CADD\REPORT GRAPHICS\Receiver location map.11.dgn



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 12 of 15

I:\I-595PD&EStudy\I595MasterPlanStudy\CADD\REPORT GRAPHICS\Receiver location map_12.dgn

LEGEND
- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE
- PLANNED NOISE BARRIERS BY FLORIDA'S TURNPIKE

1" = 400'

PLANNED 10 FT TALL SHOULDER MOUNTED NOISE BARRIER ASSOCIATED WITH THE WIDENING OF FLORIDA'S TURNPIKE FINANCIAL PROJECT ID 406094-1

PLANNED 16 FT TALL GROUND MOUNTED NOISE BARRIER ASSOCIATED WITH THE WIDENING OF FLORIDA'S TURNPIKE FINANCIAL PROJECT ID 406094-1

PLANNED 8 FT TALL SHOULDER MOUNTED NOISE BARRIER ASSOCIATED WITH THE WIDENING OF FLORIDA'S TURNPIKE FINANCIAL PROJECT ID 4060941-1

MC CALL NURSERY

NEWMANS SURVEY

LAUDERDALE LITTLE RANCHES

PELICAN BAY INDUSTRIAL PARK

SW 54TH TER

SW 54TH AVE

SW 53RD AVE

SW 52ND AVE

SW 49TH ST

SW 48TH ST

SW 52ND ST

SW 51ST ST

GRIFFEN ROAD

ORANGE DRIVE

SOUTH NEW RIVER CANAL

KEAN RD

FLORIDA'S TURNPIKE SOUTHBOUND

FLORIDA'S TURNPIKE NORTHBOUND

LR1 LR2 LR3 LR4 LR5 LR6

4675 4680 4685 4690 4695 4700 4705 4710 4715 4720 4725 4730

I:\V-595PD&EStudy\595MasterPlanStudy\CADD\REPORT GRAPHICS\Receiver location map_13.dgn

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 13 of 15

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE
- NOISE MEASUREMENT LOCATION FOR TRAFFIC NOISE MODEL VALIDATION
- PLANNED NOISE BARRIERS BY FLORIDA'S TURNPIKE

1" = 400'

PLANNED 16 FT TALL GROUND MOUNTED NOISE BARRIER ASSOCIATED WITH THE WIDENING OF FLORIDA'S TURNPIKE FINANCIAL PROJECT ID 4060941

PLANNED 16 FT TALL GROUND MOUNTED NOISE BARRIER ASSOCIATED WITH THE WIDENING OF FLORIDA'S TURNPIKE FINANCIAL PROJECT ID 406094-1

EVERGLADES LAKES

LR6 MS-LR1B MS-LR1A LR5

EL4a EL4 EL3 EL2a EL2 EL1 MS-EL2C MS-EL2B MS-EL2A

EL6a EL6 EL5 EL7b EL7a EL7

SW 50TH LN SW 50TH TER SW 50TH RD SW 51ST AVE REESE RD

4730 4735 4740 4745 4750 4755 4760 4765 4770 4775 4780 4785

FLORIDA'S TURNPIKE SOUTHBOUND

FLORIDA'S TURNPIKE NORTHBOUND

SW 53RD AVE OAKES ROAD SW 34TH PL HACIENDA BLVD SW 49TH WAY

TL1

TWIN LAKES TRAVEL PARK

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RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 14 of 15

LEGEND
- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE
- PLANNED NOISE BARRIERS BY FLORIDA'S TURNPIKE

1" = 400'

PLANNED 12 FT TALL SHOULDER MOUNTED NOISE BARRIER ASSOCIATED WITH THE WIDENING OF FLORIDA'S TURNPIKE FINANCIAL PROJECT ID 406094-1

PLANNED NOISE BARRIER FOR THIS LOCATION WILL BE EITHER A 20 FT TALL GROUND MOUNTED (ALTERNATIVE 1B) OR 12 FT TALL SHOULDER MOUNTED (ALTERNATIVE 2A) NOISE BARRIER ASSOCIATED WITH THE WIDENING OF FLORIDA'S TURNPIKE FINANCIAL PROJECT ID 406094-1

PHb1 PHb2 PHb3 PHb4 PHb5 PHb6 PHb7 PHb8

PPb1 PPb2 PPb3 PPb4 PPb5 PPb6 PPb7 PPb8 PPb9 PPb10 PPb11

SW 53RD AVE
SW 52ND AVE
SW 54TH AVE
SW 51ST TER
SW 52ND WAY
SW 52ND TER
SW 50TH TER
SW 52ND AVE
SW 51ST AVE
SW 49TH ST
PINE RIDGE DR
PETERS ROAD

FLORIDA'S TURNPIKE SOUTHBOUND
FLORIDA'S TURNPIKE NORTHBOUND

4810 4815 4820 4825 4830 4835 4840 4845 4850 4855 4860 4865

PLANTATION HARBOR
HERITAGE ELEMENTARY
SOUTH PLANTATION HIGH SCHOOL
PLANTATION POINT
BROADVIEW PARK
LAUDERDALE GOLF ESTATES

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RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	COMMUNITY LOCATION AND NOISE SENSITIVE RECEIVER SITE MAP	FIGURE 4-2 15 of 15

Table 4.1-3 Evaluation Summary for the Planned Noise Barriers Along Florida's Turnpike (Financial Project ID 406094-1)

Residential Area	Location Relative to Florida's Turnpike	Noise Barrier Type	Height (feet)	Length (feet)	Begin Station (Approximate)	End Station (Approximate)	Number of Receivers Predicted to Approach or Exceed Noise Abatement Criteria in the Design Year (2030)	Number of Benefited Receivers		Average Insertion Loss (dBA)	Total Estimated Cost
								Impacted	Total		
Newmans Survey	South of Griffin Road	Shoulder Mounted (Entrance Ramp)	10	600	4691+00	4697+00	4	4	7	6.0	$447,400
		Shoulder Mounted (Florida's Turnpike On Structure)	8	1,157	4694+43	4706+00					
Lauderdale Little Ranches	North of Griffin Road	Ground Mounted Outside Clear Zone	16	1,900	4719+00	4738+00	22	21	30	6.0	$1,031,400
		Shoulder Mounted (On Structure)	8	1,357	4706+00	4719+57					
Everglades Lakes Mobile Home Park	South of I-595	Ground Mounted Outside Clear Zone	16	1,510	4752+20	4767+18	30	29	29	12.4	$604,000
Plantation Harbor	North of I-595 and South of Peters Road	Shoulder Mounted	12	2,625	4815+00	4841+25	21	21	37	7.2	$1,197,000
Plantation Point	North of I-595 and South of South of Peters Road	Ground Mounted Outside Clear Zone (Alternative 1B at Plantation Point)	20	4,330	4809+40	4852+70	52	50	50	10.0	$2,165,000
		Shoulder Mounted (Alternative 2A at Plantation Point and Lauderdale Golf Estates)	12	7,195	4809+30	4881+25	82	74	88	7.4	$3,280,920

I:\I-595PD&EStudy\Noise Study Report Draft\[Table4.1-3_TurnpikeBarrierSummary091805.xls]Table4.1-2

Source: Noise Study Report (July 8, 2005) for Widening Florida's Turnpike from Griffin Road to North of Sunrise Boulevard Financial Project ID 406094-1
Note: The type and location of planned noise barrier by Florida's Turnpike Enterprise at Plantation Point and Broadview Park communities varies between Alternatives 1B and 2A. For Alternative 1B, a 20 ft tall ground mounted noise barrier is planned for this community by the Florida's Turnpike. For Alternative 2A, a 12 ft tall ground mounted noise barrier is planned for this community by the Florida's Turnpike. For Alternative 2A, Florida's Turnpike will be shifted 10 feet to the west from north of I-595 to south of Peters Road to accommodate the Florida Gas Transmission (FGT) line. The right of way requirements for the FGT line precludes a ground mounted noise barrier in this area.

All 384 representative noise receiver sites are classified under Activity Category B of the NAC. For Activity Category B, noise abatement measures must be considered when predicted noise levels are within 1 dBA of or exceed the 67 dBA NAC (>66 dBA) or when a substantial noise increase (i.e., 15 dBA) occurs.

4.2 FIELD MEASUREMENT OF NOISE LEVELS AND MODEL VALIDATION

Noise measurements were taken at 34 representative sites among 12 communities along the I-595 project corridor. Twelve of these sites were used to establish ambient noise levels. Twenty-two of these sites were used to determine whether TNM-predicted existing noise levels are representative of actual existing levels along I-595 and to validate the TNM noise model. The locations of the 34 representative sites are described in Table 4.2-1 and depicted in Figure 4-2. Noise measurements were taken at up to six locations per community to represent the first, second, and third row residences. In addition to a comparison of noise levels, the average differences between measured and TNM-predicted noise levels for each community are provided in Table 4.2-1.

The noise level monitoring was completed using Larson-Davis Model 870 sound-level analyzers, in accordance with the methodology established by the FHWA and documented in Report No. DP-96-046, *Measurement of Highway-Related Noise: Final Report*, May 1996. The A-weighted frequency scale was used and the sound meter was calibrated to 114 dBA using a Larson-Davis Model CA250 sound-level calibrator. At each site, monitoring was conducted for three ten-minute intervals with the microphone approximately five feet above the land surface. Community noises and traffic information, such as number of passenger cars and trucks and average speeds, were also collected at the time of noise monitoring. A K15-K Doppler Radar Gun was used to obtain average operating speeds for cars, medium trucks, and heavy trucks. Since all noise levels in this report are based on a one-hour period, the field-recorded traffic volumes were adjusted upward to reflect hourly volumes. The data collected was then used as input to TNM. The dates, times, traffic data, and the measured and TNM-predicted noise levels are presented in Table 4.2-1.

To validate the computer noise model, the TNM-predicted noise levels were compared to measured noise levels. When measured noise levels are within +/- 3.0 dBA of the computer-predicted levels, the model is considered validated. All of the measured noise levels obtained at the 22 representative sites were within +/- 3.0 dBA of the TNM-predicted levels (see Table 4.2-1). Because the TNM-predicted noise levels are within +/- 3.0 dBA of the measured noise levels, the model has been validated and is considered acceptable for predicting existing and future traffic noise levels along I-595. The average difference between TNM predicted levels and the monitored levels was 0.2 dBA.

Table 4.2-1 Noise Monitoring Data and TNM 2.5 Validation Results (Sheet 1 of 3)

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Community Name	Date	Monitoring Site Number	Monitoring Location	Figure 4-2 Sheet Number	Begin Time	End Time	Distance from Nearest Travel Lane (ft)	Monitored Leq (h) dBA	TNM 2.5 Predicted Leq (h) dBA	Difference Between TNM 2.5 Predicted and Monitored Noise Levels Leq (h) dBA	Average Difference Leq (h) dBA	Model Validated (Comments)
Between SW 136th Avenue and Flamingo Road	North of I-595	Melaluca Isles	8/17/2005	MS-MI1	First Row Residence (12500 SW 2nd Street, Back Edge of Residence)	3 of 15	1:18 PM	1:28 PM	650	58.2	--	--	--	Ambient Noise Monitoring Data
							1:38 PM	1:48 PM		56.0	--	--		
							1:49 PM	1:59 PM		55.8	--	--		
				MS-MI2	Second Row Residence (191 SW 125th Avenue, Front Edge of Residence)	3 of 15	1:18 PM	1:28 PM	785	56.3	--	--		
							1:38 PM	1:48 PM		55.4	--	--		
							1:49 PM	1:59 PM		54.6	--	--		
Between Flamingo Road and Hiatus Road	North of I-595	Plantation Acres	4/22/2004	MS-PA1	First Row Residence (12080 Tara Drive, Back Edge of Residence)	4 of 15	10:35 AM	10:45 AM	297	66.1	66.3	0.2	1.5	Yes
							10:50 AM	11:00 AM		65.9	66.6	0.7		Yes
							11:05 AM	11:15 AM		66.6	66.4	-0.2		Yes
				MS-PA2	Second Row Residence (Station 227+16; Front Edge of Residence)	4 of 15	10:35 AM	10:45 AM	500	61.6	62.5	0.9		Yes
							10:50 AM	11:00 AM		60.7	62.9	2.2		Yes
							11:05 AM	11:15 AM		60.1	62.6	2.5		Yes
				MS-PA3	First Row Residence (11700 Tara Drive, Back Edge of Residence)	4 of 15	10:35 AM	10:45 AM	264	63.1	65.2	2.1		Yes
							10:50 AM	11:00 AM		62.6	65.5	2.9		Yes
							11:05 AM	11:15 AM		62.8	65.3	2.5		Yes
				MS-PA4	Second Row Residence (11701 Tara Drive, Front Edge of Residence)	4 of 15	10:35 AM	10:45 AM	484	60.3	60.7	0.4		Yes
							10:50 AM	11:00 AM		59.0	61.0	2.0		Yes
							11:05 AM	11:15 AM		59.1	60.8	1.7		Yes
Between Hiatus Road and Nob Hill Road	North of I-595	Hawk's Landing	4/22/2004	MS-HL1	First Row Residence (10898 Blue Palm Street, Back Edge of Residence)	5 of 15	12:50 PM	1:00 PM	273	61.9	63.5	1.6	-0.8	Yes
							1:07 PM	1:17 PM		62.6	63.3	0.7		Yes
							1:27 PM	1:37 PM		62.5	62.3	-0.2		Yes
				MS-HL2	First Row Residence (10898 Blue Palm Street, Front Edge of Residence)	5 of 15	1:27 PM	1:37 PM	370	59.8	58.7	-1.1		Yes
				MS-HL3	Second Row Residence (10887 Blue Palm Street, Front Edge of Residence)	5 of 15	12:50 PM	1:00 PM	465	59.4	57.1	-2.3		Yes
							1:07 PM	1:17 PM		60.0	58.8	-1.2		Yes
				MS-HL4	Vacant Lot Along Blue Palm Street (Station 293+90; Representative of First Row Residence)	5 of 15	12:50 PM	1:00 PM	320	63.4	63.2	-0.2		Yes
							1:07 PM	1:17 PM		63.5	62.9	-0.6		Yes
							1:27 PM	1:37 PM		62.1	60.7	-1.4		Yes (Variable winds)
				MS-HL5	Vacant Lot Along Blue Palm Street (Station 294+20; Representative of Second Row Residence)	5 of 15	12:50 PM	1:00 PM	388	63.7	62.9	-0.8		Yes
							1:07 PM	1:17 PM		64.1	62.6	-1.5		Yes (Breezy)
							1:27 PM	1:37 PM		62.6	60.4	-2.2		Yes (Variable winds)
Between Nob Hill Road and Pine Island Road	North of I-595	Davide Isles	8/17/2005	MS-DI1	First Row Residence (9599 Park Lane, Back Edge of Residence)	6 of 15	3:29 PM	3:39 PM	300	62.4	--	--	--	Ambient Noise Monitoring Data
							3:39 PM	3:49 PM		63.0	--	--		
							3:49 PM	3:59 PM		61.9	--	--		
				MS-DI2	Second Row Residence (9595 Park Lane, Front Edge of Residence)	6 of 15	3:29 PM	3:39 PM	390	59.3	--	--		
							3:39 PM	3:49 PM		60.9	--	--		
							3:49 PM	3:59 PM		59.5	--	--		
	South of I-595	Nob Hill Palms	8/17/2005	MS-NHP1	First Row Residence (1450 SW 96th Terrace, Back Edge of Residence)	6 of 15	11:19 AM	11:29 AM	950	53.9	--	--	--	Ambient Noise Monitoring Data
							11:32 AM	11:42 AM		54.1	--	--		
							11:43 AM	11:53 AM		55.1	--	--		
				MS-NHP2	First Row Residence (9721 SW 14th Place, Back Edge of Residence)	6 of 15	11:19 AM	11:29 AM	1080	53.4	--	--		
							11:32 AM	11:42 AM		53.9	--	--		
							11:43 AM	11:53 AM		55.8	--	--		

Traffic Noise Monitoring Data and TNM 2.5 Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.2-1 Noise Monitoring Data and TNM 2.5 Validation Results (Sheet 2 of 3)

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Community Name	Date	Monitoring Site Number	Monitoring Location	Figure 4-2 Sheet Number	Begin Time	End Time	Distance from Nearest Travel Lane (ft)	Monitored Leq (h) dBA	TNM 2.5 Predicted Leq (h) dBA	Difference Between TNM 2.5 Predicted and Monitored Noise Levels Leq (h) dBA	Average Difference Leq (h) dBA	Model Validated (Comments)
Between Pine Island Road and University Drive	South of I-595	Park City Estates	8/17/2005	MS-PCE1	First Row Residence (1561 SW 84th Avenue, Front Edge of Residence)	7 of 15	2:31 PM	2:41 PM	220	60.8	--	--	--	Ambient Noise Monitoring Data
							2:42 PM	2:53 PM		60.9	--	--		
							2:52 PM	3:02 PM		60.9	--	--		
				MS-PCE2	First Row Residence (Vacant Lot, Front Edge of Residence)	7 of 15	2:31 PM	2:41 PM	285	63.7	--	--		
							2:42 PM	2:53 PM		64.1	--	--		
							2:52 PM	3:02 PM		64.0	--	--		
Between University Drive and Florida's Turnpike	North of I-595	Lake View Estates	4/22/2004	MS-LV1	First Row Residence (7440 SW 20th Street, Back Edge of Residence)	7 of 15	8:25 AM	8:35 AM	282	68.8	65.9	-2.9	-0.7	Yes (Barking dog nearby)
							8:40 AM	8:50 AM		66.7	65.9	-0.8		Yes
							8:54 AM	9:04 AM		67.1	65.6	-1.5		Yes
				MS-LV2	Second Row Residence (7421 SW 20th Street, Front Edge of Residence)	7 of 15	8:25 AM	8:35 AM	455	62.6	63.4	0.8		Yes
							8:40 AM	8:50 AM		63.1	63.4	0.3		Yes
							8:54 AM	9:04 AM		63.2	63.1	-0.1		Yes
			9/24/2003	MS-LV3	First Row Residence (6930 SW 20th Street, Back Edge of Residence)	8 of 15	11:21 AM	11:31 AM	260	63.9	66.8	2.9	2.1	Yes (Breeze with wind gusts)
							11:35 AM	11:45 AM		64.6	66.8	2.2		Yes (Breeze with wind gusts)
							11:48 AM	11:58 AM		63.8	66.6	2.8		Yes (Breeze with wind gusts)
				MS-LV4	Second Row Residence(1941 SW 69th Avenue, Front Edge of Residence)	8 of 15	11:21 AM	11:31 AM	418	61.7	63.5	1.8		Yes
							11:35 AM	11:45 AM		62.5	63.5	1.0		Yes
							11:48 AM	11:58 AM		61.2	63.3	2.1		Yes (Breeze with wind gusts)
			4/22/2004	MS-LV5	First Row Residence (6860 SW 20th Street, Back Edge of Residence)	8 of 15	8:25 AM	8:35 AM	241	66.9	67.2	0.3	-0.4	Yes
							8:40 AM	8:50 AM		67.6	67.3	-0.3		Yes
							8:54 AM	9:04 AM		66.4	67.1	0.7		Yes
				MS-LV6	Fifth Row Residence (6527 SW 20th Court, Front Edge of Residence)	8 of 15	8:25 AM	8:35 AM	975	60.2	59.2	-1.0		Yes
							8:40 AM	8:50 AM		59.7	59.5	-0.2		Yes
							8:54 AM	9:04 AM		60.9	59.2	-1.7		Yes
		Isla del Sol	9/24/2003	MS-IDS1	First Row Residence (6160 SW 21st Street, Back Edge of Residence)	8 of 15	10:10 AM	10:20 AM	295	66.3	66.9	0.6	1.0	Yes
							10:25 AM	10:35 AM		65.4	67.6	2.2		Yes
							10:40 AM	10:50 AM		67.3	68.0	0.7		Yes
				MS-IDS2	Second Row Residence (6161 SW 21st Street, Front Edge of Residence)	8 of 15	10:10 AM	10:20 AM	435	61.1	61.8	0.7		Yes
							10:25 AM	10:35 AM		60.6	62.5	1.9		Yes
							10:40 AM	10:50 AM		62.9	62.8	-0.1		Yes
Between Florida's Tumpike and SR 7	North of I-595	Golden Manor	8/17/2005	MS-GM1	First Row Residence (2431 SW 44th Terrance, Front Edge of Residence)	10 of 15	4:26 PM	4:36 PM	485	59.9	--	--	--	Ambient Noise Monitoring Data
							4:37 PM	4:47 PM		60.2	--	--		
							4:47 PM	4:57 PM		62.2	--	--		
				MS-GM2	Second Row Residence (2429 SW 44th Terrance, Front Edge of Residence)	10 of 15	4:26 PM	4:36 PM	560	57.3	--	--		
							4:37 PM	4:47 PM		57.3	--	--		
							4:47 PM	4:57 PM		61.9	--	--		
Between SR 7 and I-95	North of I-595	Lauderdale Isles	8/17/2005	MS-LI1	First Row Residence (2690 Key Largo Lane, Back Edge of Residence)	11 of 15	10:05 AM	10:15 AM	350	63.4	--	--	--	Ambient Noise Monitoring Data
							10:23 AM	10:33 AM		62.8	--	--		
							10:35 AM	10:45 AM		63.1	--	--		
				MS-LI2	Second Row Residence (2676 Gulf Stream Lane, Front Edge of Residence)	11 of 15	10:05 AM	10:15 AM	530	54.1	--	--		
							10:23 AM	10:33 AM		54.3	--	--		
							10:35 AM	10:45 AM		55.3	--	--		

Traffic Noise Monitoring Data and TNM 2.5 Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.2-1 Noise Monitoring Data and TNM 2.5 Validation Results (Sheet 3 of 3)

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Community Name	Date	Monitoring Site Number	Monitoring Location	Figure 4-2 Sheet Number	Begin Time	End Time	Distance from Nearest Travel Lane (ft)	Monitored Leq (h) dBA	TNM 2.5 Predicted Leq (h) dBA	Difference Between TNM 2.5 Predicted and Monitored Noise Levels Leq (h) dBA	Average Difference Leq (h) dBA	Model Validated (Comments)
Between Griffin Road and I-595	West of Florida's Turnpike	Lauderdale Little Ranches	4/4/2003	MS-LR1A	First Row Residence (3650 SW 53rd Avenue, Back Edge of Residence)	14 of 15	11:22 AM	11:32 AM	280	63.4	63.9	0.5	-0.4	Yes
							11:37 AM	11:47 AM		64.5	63.0	-1.5		Yes
							11:55 AM	12:05 PM		63.0	63.8	0.8		Yes
							12:10 PM	12:20 PM		63.1	64.0	0.9		Yes
				MS-LR1B	Second Row Residence (3921 SW 53rd Avenue, Front Edge of Residence)	14 of 15	11:22 AM	11:32 AM	480	61.4	59.7	-1.7		Yes
							11:37 AM	11:47 AM		61.0	58.9	-2.1		Yes
							11:55 AM	12:05 PM		59.5	59.7	0.2		Yes
							12:10 PM	12:20 PM		59.8	59.8	0.0		Yes
		Everglades Lakes	4/4/2003	MS-EL2A	First Row Residence (Station 4753+87)	14 of 15	1:38 PM	1:48 PM	90	71.6	71.9	0.3	-0.5	Yes
							1:53 PM	2:03 PM		71.9	72.7	0.8		Yes
							2:08 PM	2:18 PM		72.1	72.7	0.6		Yes
				MS-EL2B	Second Row Residence (Station 4754+02)	14 of 15	1:38 PM	1:48 PM	188	65.0	62.5	-2.5		Yes
							1:53 PM	2:03 PM		64.5	63.1	-1.4		Yes
							2:08 PM	2:18 PM		64.9	63.2	-1.7		Yes
				MS-EL2C	Third Row Residence (Station 4754+32)	14 of 15	1:38 PM	1:48 PM	245	64.1	62.4	-1.7		Yes
							1:53 PM	2:03 PM		62.3	63.1	0.8		Yes
							2:08 PM	2:18 PM		62.8	63.1	0.3		Yes

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Average Difference Between TNM 2.5 Predicted Leq and Monitored Leq (dBA)	0.2
Range of Differences Between TNM 2.5 Predicted Leq and Monitored Leq	-2.9 dBA to 2.9 dBA

Traffic Noise Monitoring Data and TNM 2.5 Predicted Noise Levels that Equal or Exceed 66 dBA

4.3 PREDICTED NOISE LEVELS

TNM was used to predict traffic noise levels at the 384 representative noise sensitive receivers along I-595 and Florida's Turnpike, which were described in Section 4.1 and are presented in Table 4.3-2. These representative sites represent 1,524 residences and two parks (Acres South Park and Sewell Lock Park) along the project corridor. For single family residences, traffic noise levels for the existing conditions/No Project Alternative and Alternatives 1B and 2A were predicted at the edge of the dwelling unit closest to the travel lane. For multi-family residences, traffic noise levels were predicted at the edge of the patio or balcony closest to the travel lane. For the two parks, traffic noise levels were predicted at representative sites or where recreational activities occur. The traffic data used in these predictions are presented in Section 4.3.1 and the predicted traffic noise levels at these sites are presented in Section 4.3.2.

4.3.1 Traffic Data

Traffic data used in the noise analysis is based on the traffic data presented in the Project's Travel Demand Report (January 2004), Section 6.0 of the PER, and the Level of Service (LOS) C volumes contained in FDOT's 2002 Quality and Level of Service Manual (Table 4-7 Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas). Typically, traffic volumes used to predict noise levels included the least of either: 1) the traffic capacity of the roadway at LOS C, or 2) the projected traffic demand of the roadway. These traffic volumes can be expected to produce the worst case noise conditions likely to occur. Because demand traffic volumes exceed LOS C volumes for existing conditions and future design year (2034) conditions, LOS C volumes were used to predict noise levels to demonstrate the worst case scenario for traffic noise along I-595. The directional LOS C volumes by vehicle type (i.e., cars, medium trucks, and heavy trucks) and posted speeds for existing and design year conditions (2034) are summarized in Table 4.3-1.

The 24-hour truck factor was used for noise modeling purposes because LOS C volumes were used versus the peak hour demand volumes. The existing 24-hour truck factor was obtained from FDOT's vehicle classification count stations. For I-595 mainline traffic lanes, a total truck percentage of 5% was used based on FDOT's count stations. This total truck percentage was divided into medium trucks (2.5%) and heavy trucks (2.5%) for input into TNM. For all other nearby roadways a total truck factor of 2% (1% medium trucks and 1% heavy trucks) was used.

4.3.2 Predicted Traffic Noise Levels

The predicted traffic noise levels at the 384 representative noise sensitive receivers are shown in Table 4.3-2. A summary of the predicted noise levels for each of the noise sensitive area is presented in Table 4.3-3. For each area, this table shows the minimum and maximum predicted levels for existing/No-Build conditions, Alternative 1B and 2A, and the number of sites with predicted noise levels that are equal to or greater than 66.0 dBA.

Table 4.3-1 Traffic Data for I-595 Noise Modeling

ROADWAY/ ROADWAY SEGMENT	DIRECTION	NUMBER OF LANES	PREDICTED PEAK HOUR VOLUME	LEVEL-OF-SERVICE C VOLUME	CARS	HEAVY TRUCKS	MEDIUM TRUCKS	POSTED SPEED (MPH)
Existing Conditions								
I-595 (Mainline)	Eastbound	3	5,700	4,180	4,096	42	42	65
	Westbound	3	5,700	4,180	4,096	42	42	
	Eastbound	4	5,700	5,700	5,586	57	57	
	Westbound	4	5,700	5,700	5,586	57	57	
SR 84 (Collector/Distributor)	Eastbound	2	2,172	2,172	2,129	22	22	50
	Westbound	2	2,172	2,172	2,129	22	22	
	Eastbound	3	3,264	3,264	3,199	33	33	
	Westbound	3	3,264	3,264	3,199	33	33	
I-595 (Ramps)	Eastbound/ Westbound	1	1,520	1,520	15	15	15	50
		2	3,040	3,040	30	30	15	
		3	4,180	4,180	42	42	15	
SW 136th Avenue	Northbound	3	--	2,110	2,068	21	21	45
	Southbound	3	--	2,110	2,068	21	21	
Flamingo Road	Northbound	3	--	2,110	2,068	21	21	50
	Southbound	3	--	2,110	2,068	21	21	
Hiatus Road	Northbound	2	--	1,360	1,333	14	14	45
	Southbound	2	--	1,360	1,333	14	14	
Nob Hill Road	Northbound	2	--	1,360	1,333	14	14	35
	Southbound	2	--	1,360	1,333	14	14	
Pine Island Road	Northbound	3	--	2,110	2,068	21	21	45
	Southbound	3	--	2,110	2,068	21	21	
University Drive	Northbound	3	--	2,110	2,068	21	21	45
	Southbound	3	--	2,110	2,068	21	21	
Davie Road	Northbound	2	--	1,360	1,333	14	14	45
	Southbound	2	--	1,360	1,333	14	14	
S.R. 7 (US 441)	Northbound	3	--	2,110	2,068	21	21	45
	Southbound	3	--	2,110	2,068	21	21	
I-95 (Mainline)	Northbound	5	--	7,215	7,075	70	70	70
	Southbound	5	--	7,215	7,075	70	70	
I-75 (Mainline)	Northbound	3	--	4,180	4,096	42	42	70
	Southbound	3	--	4,180	4,096	42	42	
Florida's Turnpike (Mainline)	Northbound	3	--	4,180	4,096	42	42	65
	Southbound	3	--	4,180	4,096	42	42	
Proposed Conditions (Design Year 2034)								
I-595 (Mainline)	Eastbound	4	-5,696	5,700	5,415	143	143	65
	Westbound	4	-5,696	5,700	5,415	143	143	
SR 84 (Collector/Distributor)	Eastbound	2	-2,170	2,172	2,129	22	22	50
	Westbound	2	-2,170	2,172	2,129	22	22	
	Eastbound	3	-3,261	3,264	3,199	33	33	
	Westbound	3	-3,261	3,264	3,199	33	33	
I-595 (Ramps)	Eastbound/ Westbound	1	-1,519	1,520	1,490	15	15	50
		2	2,979	3,040	2,979	30	30	
		3	-4,177	4,180	4,096	42	42	
SW 136th Avenue	Northbound	3	2,068	2,110	2,068	21	21	45
	Southbound	3	2,068	2,110	2,068	21	21	
Flamingo Road	Northbound	3	2,068	2,110	2,068	21	21	45
	Southbound	3	2,068	2,110	2,068	21	21	
Hiatus Road	Northbound	2	1,333	1,360	1,333	14	14	45
	Southbound	2	1,333	1,360	1,333	14	14	
Nob Hill Road	Northbound	2	1,333	1,360	1,333	14	14	45
	Southbound	2	1,333	1,360	1,333	14	14	
Pine Island Road	Northbound	3	2,068	2,110	2,068	21	21	45
	Southbound	3	2,068	2,110	2,068	21	21	
University Drive	Northbound	3	2,068	2,110	2,068	21	21	45
	Southbound	3	2,068	2,110	2,068	21	21	
Davie Road	Northbound	2	1,333	1,360	1,333	14	14	45
	Southbound	2	1,333	1,360	1,333	14	14	
S.R. 7 (US 441)	Northbound	3	2,068	2,110	2,068	21	21	45
	Southbound	3	2,068	2,110	2,068	21	21	
I-95 (Mainline)	Northbound	5	7,075	7,215	7,075	70	70	70
	Southbound	5	7,075	7,215	7,075	70	70	
I-75 (Mainline)	Northbound	3	4,096	4,180	4,096	42	42	70
	Southbound	3	4,096	4,180	4,096	42	42	
Florida's Turnpike (Mainline)	Northbound	4	6,380	6,480	6,380	57	43	65
	Southbound	4	6,380	6,480	6,380	57	43	
I-595 (Reversible Lanes)	Eastbound/ Westbound	2 (Alternative 1B)	2,708	2,852	2,708	72	72	65
		3 (Alternative 2A)	12,186	4,494	4,062	108	108	

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* Heavy Trucks = 1%, Medium Trucks = 1% FOR ALL ROADS EXCEPT 595 MAINLINE (2.5% HT AND 2.5% MT)

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Between SW 136th Avenue and Flamingo Road															
Sunshine City (North of I-595 between Station 150+60 and Station 170+50)	SC1	157+34	1 (First Row Residence)	227	381	245	378	468	67.0	69.9	70.0	2.9	3.0	Exceeds	Exceeds
	SC2	158+06	1 (First Row Residence)	210	358	228	355	445	66.2	67.9	67.9	1.7	1.7	Exceeds	Exceeds
	SC3	158+89	2 (First Row Residences)	210	350	228	347	437	64.8	67.0	67.1	2.2	2.3	Exceeds	Exceeds
	SC4	158+24	2 (Second Row Residences)	340	487	358	484	574	63.4	65.7	65.8	2.3	2.4	Below	Below
	SC5	161+24	14 (First Row Residences)	209	331	225	326	418	64.7	67.0	67.1	2.3	2.4	Exceeds	Exceeds
	SC6	161+30	10 (Second Row Residences)	342	464	358	459	551	62.5	65.5	65.7	3.0	3.2	Below	Below
	SC7	164+97	4 (First Row Residences)	230	324	251	309	411	65.2	67.6	67.9	2.4	2.7	Exceeds	Exceeds
	SC8	165+30	4 (Second Row Residences)	349	442	369	427	529	63.3	66.0	66.4	2.7	3.1	Approaches	Approaches
	SC9	164+70	17 (Third Row Residences)	421	516	442	501	603	62.3	65.2	65.5	2.9	3.2	Below	Below
	SC10	168+19	1 (Third Row Residence)	437	525	450	511	612	62.6	65.1	65.8	2.5	3.2	Below	Below
	SC11	170+61	13 (First Row Residences)	226	313	228	299	399	66.5	68.5	69.6	2.0	3.1	Exceeds	Exceeds
	SC12	170+28	8 (Second Row Residences)	355	442	358	427	527	64.1	66.1	67.3	2.0	3.2	Approaches	Exceeds
	SC13	173+85	3 (First Row Residences)	230	315	214	311	397	67.0	68.3	70.0	1.3	3.0	Exceeds	Exceeds
	SC14	173+39	10 (First and Second Row Residences)	354	439	340	436	521	64.3	65.7	67.4	1.4	3.1	Below	Exceeds
	SC15	174+64	1 (First Row Residence)	233	317	214	287	398	67.1	68.0	70.1	0.9	3.0	Exceeds	Exceeds
												Number of Noise Sensitive Sites Impacted by Project Alternatives		51	61
Mar Lago Village (North of I-595 between Station 160+60 and Station 180+00)	ML1	175+86	1 (First Row Residence, First Floor Patio)	671	754	648	751	834	60.1	60.1	61.4	0.0	1.3	Below	Below
	ML2	175+86	1 (First Row Residence, Second Floor Balcony)	671	754	648	751	834	62.6	63.6	64.3	1.0	1.7	Below	Below
												Number of Noise Sensitive Sites Impacted by Project Alternatives		0	0
Lago Estates (North of I-595 between Station 180+60 and Station 190+40); Predicted Noise Levels with Existing 8 ft Tall Privacy Wall (Station 187+50 to 191+50 ~400 ft Long)	LE1	187+41	1 (First Row Residence)	294	383	273	376	460	62.7	64.9	65.0	2.2	2.3	Below	Below
	LE2	187+14	1 (Second Row Residence)	347	347	326	429	512	62.6	64.6	64.6	2.0	2.0	Below	Below
	LE3	188+42	4 (Second Row Residences)	412	412	391	491	580	60.0	62.0	62.2	2.0	2.2	Below	Below
	LE4	190+38	2 (First Row Residences)	225	314	204	300	397	59.6	62.1	62.1	2.5	2.5	Below	Below
	LE5	191+13	1 (First Row Residence)	223	311	202	294	397	60.7	63.5	63.5	2.8	2.8	Below	Below
												Number of Noise Sensitive Sites Impacted by Project Alternatives		0	0
Melaleuca Isles (North of I-595 between Station 190+40 and Station 210+00)	MI1	194+99	7 (First Row Residences)	520	619	499	582	711	61.1	62.1	63.3	1.0	2.2	Below	Below
	MI2	195+70	5 (Second Row Residences)	696	796	675	758	891	59.2	60.6	61.5	1.4	2.3	Below	Below
	MI3	203+48	7 (First Row Residences)	714	810	696	771	922	57.5	58.9	58.9	1.4	1.4	Below	Below
	MI4	202+28	7 (Second Row Residences)	884	941	824	901	1053	58.1	60.3	60.6	2.2	2.5	Below	Below
	MI5	208+64	2 (First Row Residences)	852	951	866	920	1063	62.3	64.4	64.3	2.1	2.0	Below	Below
												Number of Noise Sensitive Sites Impacted by Project Alternatives		0	0
Sunshine Village (South of I-595 between Station 150+80 and Station 170+20)	SV1	158+94	2 (Second Row Residences)	331	476	349	483	582	71.6	71.8	71.8	0.2	0.2	Exceeds	Exceeds
	SV2	159+25	1 (First Row Residence)	218	363	236	369	468	70.0	68.1	69.3	-1.9	-0.7	Exceeds	Exceeds
	SV3	159+79	1 (First Row Residence)	221	363	239	370	469	66.3	69.3	68.0	3.0	1.7	Exceeds	Exceeds

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Sunshine Village (South of I-595 between Station 150+80 and Station 170+20)	SV4	160+92	2 (First Row Residences)	233	371	251	378	477	63.1	65.4	65.3	2.3	2.2	Below	Below
	SV5	160+30	4 (Second Row Residences)	361	502	379	508	607	61.9	64.4	64.4	2.5	2.5	Below	Below
	SV6	167+96	17 (First Row Residences)	288	385	311	397	490	58.8	61.3	61.1	2.5	2.3	Below	Below
	SV7	168+49	15 (Second Row Residences)	415	510	439	523	615	58.7	61.5	61.3	2.8	2.6	Below	Below
	SV8	171+85	4 (First Row Residences)	327	411	348	424	516	61.8	65.7	65.5	3.9	3.7	Below	Below
	SV9	171+99	2 (Second Row Residences)	438	522	458	534	626	59.9	63.5	63.2	3.6	3.3	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			4	4
Western Hills (South of I-595 between Station 170+20 and Station 180+50)	WH1	173+06	19 (First Row Residences)	493	577	514	588	681	59.1	62.9	62.7	3.8	3.6	Below	Below
	WH2	181+31	1 (First Row Residence)	282	368	300	373	476	62.4	63.9	63.8	1.5	1.4	Below	Below
	WH3	182+26	4 (Second Row Residences)	384	470	402	475	579	62.4	63.8	63.7	1.4	1.3	Below	Below
	WH4	183+82	6 (First Row Residences)	347	334	266	338	442	66.7	68.3	68.4	1.6	1.7	Exceeds	Exceeds
	WH5	184+20	3 (Second Row Residence)	344	430	363	435	539	63.9	65.4	65.4	1.5	1.5	Below	Below
	WH6	184+84	1 (First Row Residence)	185	271	204	276	379	68.5	70.1	70.1	1.6	1.6	Exceeds	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			7	7
Paradise Village (South of I-595 between Station 180+50 and Station 190+80)	PV1	189+61	6 (First Row Residences)	352	439	371	443	538	62.1	64.3	64.2	2.2	2.1	Below	Below
	PV2	190+01	11 (Second Row Residences)	443	530	463	534	628	61.5	63.5	63.6	2.0	2.1	Below	Below
	PV3	191+36	3 (First Row Residences)	304	390	323	395	484	65.5	67.4	67.2	1.9	1.7	Exceeds	Exceeds
	PV4	191+58	3 (Second Row Residences)	387	474	407	478	566	63.5	65.5	65.4	2.0	1.9	Below	Below
	PV5	191+88	4 (Third Row Residences)	503	589	522	594	680	62.4	64.7	64.6	2.3	2.2	Below	Below
	PV6	195+14	6 (First Row Residences)	213	300	232	304	375	68.2	69.9	69.8	1.7	1.6	Exceeds	Exceeds
	PV7	195+31	6 (Second Row Residences)	276	363	395	367	438	66.6	68.4	68.2	1.8	1.6	Exceeds	Exceeds
	PV8	195+64	5 (Third Row Residences)	404	490	423	494	563	64.1	66.1	66.0	2.0	1.9	Approaches	Approaches
	PV9	199+13	5 (First Row Residences)	98	185	117	189	245	71.8	72.9	72.8	1.1	1.0	Exceeds	Exceeds
	PV10	199+33	4 (Second Row Residences)	177	264	195	267	323	69.5	70.8	70.7	1.3	1.2	Exceeds	Exceeds
	PV11	199+64	4 (Third Row Residences)	296	383	314	386	441	66.5	68.0	67.8	1.5	1.3	Exceeds	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			26	32
Kings Manor Estates (South of I-595 between Station 190+80 and Station 210+20)	KM1	199+77	1 (First Row Residence)	65	152	83	155	210	74.3	74.8	74.7	0.5	0.4	Exceeds	Exceeds
	KM2	199+67	3 (Second Row Residences)	140	227	159	230	286	70.2	71.0	70.8	0.8	0.6	Exceeds	Exceeds
	KM3	200+27	5 (Third Row Residences)	205	292	223	295	349	68.8	70.0	69.8	1.2	1.0	Exceeds	Exceeds
	KM4	205+48	1 (First Row Residence)	18	110	35	107	160	75.5	75.9	75.9	0.4	0.4	Exceeds	Exceeds
	KM5	205+80	2 (Second Row Residences)	83	175	100	171	225	71.0	72.0	71.9	1.0	0.9	Exceeds	Exceeds
	KM6	205+91	1 (Third Row Residence)	128	221	145	217	270	69.1	70.4	70.3	1.3	1.2	Exceeds	Exceeds
	KM7	207+21	5 (First Row Residences)	213	307	229	301	354	66.6	68.4	68.3	1.8	1.7	Exceeds	Exceeds
	KM8	208+50	8 (Second Row Residences)	345	441	361	433	486	64.3	66.6	66.5	2.3	2.2	Approaches	Approaches
	KM9	209+03	5 (Third Row Residences)	417	513	433	505	559	63.2	65.7	65.6	2.5	2.4	Below	Below

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Kings Manor Estates (South of I-595 between Station 190+80 and Station 210+20)	KM10	210+21	2 (First Row Residences)	160	256	176	247	301	67.6	62.1	62.0	-5.5	-5.6	Below	Below
	KM11	211+80	1 (Second Row Residence)	103	198	118	190	244	69.3	69.3	69.3	0.0	0.0	Exceeds	Exceeds
	KM12	212+53	1 (Second Row Residence)	183	278	198	270	324	68.4	68.9	68.8	0.5	0.4	Exceeds	Exceeds
	KM13	212+36	3 (Third Row Residences)	322	417	337	409	462	65.9	67.2	67.2	1.3	1.3	Exceeds	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			37	39
Between Flamingo Road and Hiatus Road															
Plantation Acres (North of I-595 between Station 210+60 and Station 260+60)	PA1	218+65	1 (First Row Residence)	277	389	293	393	458	63.7	67.0	67.3	3.3	3.6	Exceeds	Exceeds
	PA2	217+94	1 (Second Row Residence)	373	484	388	488	553	61.5	64.8	65.3	3.3	3.8	Below	Below
	PA3	217+86	1 (Third Row Residence)	479	590	494	594	659	60.0	63.8	64.2	3.8	4.2	Below	Below
	PA4	222+07	7 (First Row Residences)	276	376	296	381	445	65.1	68.0	68.3	2.9	3.2	Exceeds	Exceeds
	PA5	220+49	12 (Second Row Residences)	435	546	450	551	615	62.3	65.7	66.2	3.4	3.9	Below	Approaches
	PA6	219+64	1 (First Row Residence)	541	652	556	657	721	61.1	64.5	65.1	3.4	4.0	Below	Below
	PA7	230+63	8 (First Row Residences)	248	347	269	351	415	66.7	69.7	69.8	3.0	3.1	Exceeds	Exceeds
	PA8	230+12	4 (Second Row Residences)	522	621	542	625	689	62.1	64.7	65.5	2.6	3.4	Below	Below
	PA9	230+88	3 (Third Row Residences)	614	712	634	716	780	59.2	61.6	63.0	2.4	3.8	Below	Below
	PA10	241+48	7 (First Row Residences)	252	347	253	352	416	66.9	68.9	69.3	2.0	2.4	Exceeds	Exceeds
	PA11	241+56	2 (Second Row Residences)	460	556	460	560	624	62.8	64.8	65.8	2.0	3.0	Below	Below
	PA12	241+56	6 (Third Row Residences)	607	703	607	707	771	59.2	61.2	63.0	2.0	3.8	Below	Below
	PA13	246+62	5 (First Row Residences)	585	679	576	684	748	60.7	63.1	64.6	2.4	3.9	Below	Below
	PA14	258+54	2 (First Row Residences)	242	334	234	339	403	64.6	67.3	67.9	2.7	3.3	Exceeds	Exceeds
	PA15	257+40	2 (Second Row Residences)	451	544	443	549	613	61.7	64.6	65.6	2.9	3.9	Below	Below
	PA16	257+403	5 (Third Row Residences)	576	669	569	674	738	59.1	62.0	63.4	2.9	4.3	Below	Below
	PA17	264+04	2 (First Row Residences)	324	416	445	548	612	63.0	65.6	66.5	2.6	3.5	Below	Approaches
	PA18	263+24	2 (Second Row Residences)	451	543	318	421	485	61.5	64.3	65.2	2.8	3.7	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			24	39
Acres South Park (North of I-595 between Station 240+40 and Station 250+00)	AS1	247+96	Right of Way	214	308	205	313	377	67.6	70.1	70.2	2.5	2.6	Exceeds	Exceeds
	AS2	247+47	Park Center	409	504	400	508	572	63.3	65.9	66.8	2.6	3.5	Below	Approaches
	AS3	247+60	Northern Park Boundary	546	641	537	646	710	61.2	63.5	64.9	2.3	3.7	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			1	1
Village at Pine Lake (South of I-595 between Station 220+70 and Station 240+00)	VP1	227+96.32	2 (First Row Residences)	114	210	132	224	264	70.5	70.2	70.5	-0.3	0.0	Exceeds	Exceeds
	VP2	227+73	1 (Second Row Residence)	193	289	211	402	343	66.2	66.3	67.1	0.1	0.9	Approaches	Exceeds
	VP3	227+73	2 (Third Row Residences)	278	373	296	387	428	64.7	64.7	66.4	0.0	1.7	Below	Approaches
	VP4	228+41	4 (Fourth Row Residences)	336	432	354	447	487	61.2	61.1	62.9	-0.1	1.7	Below	Below
	VP5	229+65	2 (First Row Residences)	268	364	286	380	421	65.0	64.9	66.4	-0.1	1.4	Below	Approaches
	VP6	230+30	5 (Second Row Residences)	340	436	358	452	494	59.8	60.0	61.6	0.2	1.8	Below	Below

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Village at Pine Lake (South of I-595 between Station 220+70 and Station 240+00)	VP7	231+69	2 (First Row Residences)	223	319	241	335	379	67.0	67.0	67.9	0.0	0.9	Exceeds	Exceeds
	VP8	323+63	1 (First Row Residence)	276	372	294	388	433	65.0	65.1	66.5	0.1	1.5	Below	Approaches
	VP9	234+09	3 (Second Row Residences)	368	464	386	480	527	61.8	62.0	64.9	0.2	3.1	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			5	10
Rexmere Village (South of I-595 between Station 240+40 and Station 260+80)	RV1	244+46	1 (First Row Residence)	689	785	707	800	852	57.4	55.0	59.2	-2.4	1.8	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Between Hiatus Road and Nob Hill Road															
Hawk's Landing (North of I-595 between Station 260+80 and Station 300+00)	HL1	269+53	1 (First Row Residence)	259	362	249	368	432	63.0	65.8	66.8	2.8	3.8	Below	Approaches
	HL2	269+02	2 (Second Row Residences)	363	467	354	472	536	62.2	64.7	65.4	2.5	3.2	Below	Below
	HL3	270+78	5 (First Row Residences)	230	334	221	340	404	59.7	62.8	63.3	3.1	3.6	Below	Below
	HL4	270+78	6 (Second Row Residences)	426	530	417	535	599	57.8	60.6	61.0	2.8	3.2	Below	Below
	HL5	279+57	13 (First Row Residences)	270	359	362	364	428	62.3	64.6	65.8	2.3	3.5	Below	Below
	HL6	278+93	13 (Second Row Residences)	450	539	442	545	609	55.8	58.8	59.3	3.0	3.5	Below	Below
	HL7	285+42	3 (Second Row Residences)	475	566	468	571	635	58.4	61.8	63.5	3.4	5.1	Below	Below
	HL8	289+16	8 (First Row Residences)	321	411	313	416	480	61.5	64.9	66.4	3.4	4.9	Below	Approaches
	HL9	288+67	7 (Third Row Residences)	544	635	537	640	704	54.4	57.3	58.0	2.9	3.6	Below	Below
	HL10	301+15	14 (First Row Residences)	272	363	266	368	432	61.4	64.8	66.4	3.4	5.0	Below	Approaches
	HL11	300+80	5 (Second Row Residences)	472	563	466	568	632	59.9	63.7	65.4	3.8	5.5	Below	Below
	HL12	311+75	10 (First Row Residences)	339	433	340	426	502	61.8	66.1	66.7	4.3	4.9	Approaches	Approaches
	HL13	316+75	2 (First Row Residences)	267	363	278	356	432	62.5	66.3	66.9	3.8	4.4	Approaches	Approaches
	HL14	316+80	5 (Second Row Residences)	347	443	358	436	512	62.5	66.1	66.7	3.6	4.2	Approaches	Approaches
	HL15	311+10	11 (Second Row Residences)	562	657	563	650	726	59.8	64.0	58.0	4.2	-1.8	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			13	42
The Palms Apartment Homes (South of I-595 between Station270+00 and Station 290+40)	PAH1f	270+79	1 (First Row Residence, First Floor Patio)	146	245	151	247	311	65.9	65.6	67.1	-0.3	1.2	Below	Exceeds
	PAH1s	270+79	1 (First Row Residence, Second Floor Balcony)	146	245	151	247	311	68.9	69.0	69.8	0.1	0.9	Exceeds	Exceeds
	PAH1t	270+79	1 (First Row Residence, Third Floor Balcony)	146	245	151	247	311	70.2	70.3	70.9	0.1	0.7	Exceeds	Exceeds
	PAH2f	270+70	2 (Second Row Residences, First Floor Patio)	217	316	222	318	382	63.5	63.3	64.8	-0.2	1.3	Below	Below
	PAH2s	270+70	2 (Second Row Residences, Second Floor Balcony)	217	316	222	318	382	66.2	66.8	67.6	0.6	1.4	Approaches	Exceeds
	PAH2t	270+70	2 (Second Row Residences, Third Floor Balcony)	217	316	222	318	382	67.2	68.1	68.7	0.9	1.5	Exceeds	Exceeds
	PAH3f	272+12	4 (First Row Residences, First Floor Patio)	119	217	124	219	283	66.6	66.9	68.1	0.3	1.5	Approaches	Exceeds
	PAH3s	272+12	4 (First Row Residences, Second Floor Balcony)	119	217	124	219	283	69.7	69.6	70.4	-0.1	0.7	Exceeds	Exceeds
	PAH3t	272+12	4 (First Row Residences, Third Floor Balcony)	119	217	178	219	283	70.8	70.4	71.1	-0.4	0.3	Exceeds	Exceeds
	PAH4f	273+88	4 (First Row Residences, First Floor Patio)	214	311	219	314	378	65.0	62.9	64.5	-2.1	-0.5	Below	Below
	PAH4s	273+88	4 (First Row Residences, Second Floor Balcony)	214	311	219	314	378	67.0	65.4	66.6	-1.6	-0.4	Below	Approaches
	PAH4t	273+88	4 (First Row Residences, Third Floor Balcony)	214	311	219	314	378	68.8	67.4	68.4	-1.4	-0.4	Exceeds	Exceeds

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
The Palms Apartment Homes (South of I-595 between Station270+00 and Station 290+40)	PAH5f	278+97	12 (First Row Residences, First Floor Patio)	162	260	170	263	327	68.1	63.1	64.4	-5.0	-3.7	Below	Below
	PAH5s	278+97	12 (First Row Residences, Second Floor Balcony)	162	260	170	263	327	70.6	66.3	67.5	-4.3	-3.1	Approaches	Exceeds
	PAH5t	278+97	9 (First Row Residences, Third Floor Balcony)	162	260	170	263	327	72.3	67.8	69.0	-4.5	-3.3	Exceeds	Exceeds
	PAH6f	280+79	8 (First Row Residences, First Floor Patio)	141	240	150	243	307	69.5	63.9	64.7	-5.6	-4.8	Below	Below
	PAH6s	280+79	8 (First Row Residences, Second Floor Balcony)	141	240	150	243	307	72.2	67.5	68.5	-4.7	-3.7	Exceeds	Exceeds
	PAH6t	280+79	6 (First Row Residences, Third Floor Balcony)	141	240	150	243	307	73.2	68.7	69.7	-4.5	-3.5	Exceeds	Exceeds
	PAH7f	286+63	12 (First Row Residences, First Floor Patio)	171	269	181	260	336	67.2	64.2	65.8	-3.0	-1.4	Below	Below
	PAH7s	286+63	12 (First Row Residences, Second Floor Balcony)	171	269	181	260	336	69.9	68.1	69.4	-1.8	-0.5	Exceeds	Exceeds
	PAH7t	286+63	10 (First Row Residences, Third Floor Balcony)	171	269	181	260	336	72.2	71.7	72.0	-0.5	-0.2	Exceeds	Exceeds
	PAH8f	292+77	4 (First Row Residences, First Floor Patio)	198	294	208	285	361	66.0	65.1	66.1	-0.9	0.1	Below	Approaches
	PAH8s	292+77	4 (First Row Residences, Second Floor Balcony)	198	294	208	285	361	69.0	69.5	70.0	0.5	1.0	Exceeds	Exceeds
	PAH8t	292+77	4 (First Row Residences, Third Floor Balcony)	198	294	208	285	361	71.5	72.4	72.5	0.9	1.0	Exceeds	Exceeds
	PAH9fo	293+53	4 (Second Row Residences, First Floor Patio)	380	476	390	467	543	60.5	62.8	63.9	2.3	3.4	Below	Below
	PAH9s	293+53	4 (Second Row Residences, Second Floor Balcony)	380	476	390	467	543	64.3	66.1	66.2	1.8	1.9	Approaches	Approaches
	PAH9t	293+53	4 (Second Row Residences, Third Floor Balcony)	380	476	390	467	543	66.3	67.6	67.8	1.3	1.5	Exceeds	Exceeds
														Number of Noise Sensitive Sites Impacted by Project Alternatives	97	104
Scarborough (South of I-595 between Station 290+30 and Station 290+90)	S1	296+11	1 (First Row Residence)	515	611	509	585	661	60.0	62.8	63.8	2.8	3.8	Below	Below
														Number of Noise Sensitive Sites Impacted by Project Alternatives	0	0
Between Nob Hill Road and Pine Island Road															
Maranda Village Condos (North of I-595 between Station 320+00 and Station 320+60)	MVC1f	324+06	1 (First Row Residence, First Floor Patio)	406	515	420	508	584	53.7	56.3	57.5	2.6	3.8	Below	Below
	MVC1s	324+06	1 (First Row Residence, Second Floor Balcony)	406	515	420	508	584	56.1	58.5	59.4	2.4	3.3	Below	Below
	MVC1t	324+06	1 (First Row Residence, Third Floor Balcony)	406	515	420	508	584	57.6	59.6	60.3	2.0	2.7	Below	Below
	MVC1fo	324+06	1 (Second Row Residence, Forth Floor Balcony)	406	515	420	508	584	60.6	61.9	63.2	1.3	2.6	Below	Below
														Number of Noise Sensitive Sites Impacted by Project Alternatives	0	0
The Trellises Condos (North of I-595 between Station 320+60 and Station 330+80)	TC1	331+25	13 (First Row Residences)	310	410	328	400	464	63.5	66.2	67.1	2.7	3.6	Approaches	Exceeds
	TC2	332+26	2 (Second Row Residences)	481	577	492	564	644	54.5	55.5	57.1	1.0	2.6	Below	Below
	TC3	334+56	18 (First Row Residences)	398	490	402	473	558	64.1	66.9	67.6	2.8	3.5	Approaches	Exceeds
	TC4	336+51	3 (First Row Residences)	346	434	345	415	503	64.5	67.3	67.9	2.8	3.4	Exceeds	Exceeds
	TC5	336+51	2 (Second Row Residences)	466	554	466	536	624	60.6	63.3	64.2	2.7	3.6	Below	Below
														Number of Noise Sensitive Sites Impacted by Project Alternatives	34	34

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Davide Isles (North of I-595 between Station 330+80 and Station 350+80)	DI1	339+56	6 (First Row Residences)	306	388	298	371	459	66.0	68.4	68.8	2.4	2.8	Exceeds	Exceeds
	DI2	339+47	6 (Second Row Residences)	395	478	388	461	549	62.3	64.7	65.5	2.4	3.2	Below	Below
	DI3	347+09	5 (First Row Residences)	314	398	304	378	466	66.5	68.5	68.9	2.0	2.4	Exceeds	Exceeds
	DI4	347+29	9 (Second Row Residences)	416	499	406	479	567	63.0	65.3	66.3	2.3	3.3	Below	Approaches
	DI5	356+24	2 (Second Row Residences)	382	465	371	469	532	62.0	64.7	65.4	2.7	3.4	Below	Below
	DI6	359+96	8 (First Row Residences)	309	391	297	395	459	65.9	68.5	68.9	2.6	3.0	Exceeds	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			19	28
Jacaranda Villas (North of I-595 between Station 350+80 and Station 370+00)	JV1	361+67	1 (First Row Residence, First Floor Patio)	413	495	401	499	563	45.0	46.7	46.9	1.7	1.9	Below	Below
	JV2	365+47	1 (First Row Residence, First Floor Patio)	443	525	430	529	593	44.5	45.7	46.1	1.2	1.6	Below	Below
	JV3f	366+30	1 (First Row Residence, First Floor Patio)	382	463	369	467	531	63.5	62.8	64.9	-0.7	1.4	Below	Below
	JV3s	366+30	1 (First Row Residence, Second Floor Balcony)	382	463	369	467	531	65.4	64.9	66.2	-0.5	0.8	Below	Below
	JV4f	367+32	2 (First Row Residences, First Floor Patio)	327	409	317	413	477	64.1	63.2	65.1	-0.9	1.0	Below	Below
	JV4s	367+32	2 (First Row Residences, Second Floor Balcony)	327	409	317	413	477	66.1	65.2	66.6	-0.9	0.5	Below	Below
	JV5f	367+53	3 (Second Row Residences, First Floor Patio)	368	450	358	454	518	59.7	58.5	60.7	-1.2	1.0	Below	Below
	JV5s	367+53	3 (Second Row Residences, Second Floor Balcony)	368	450	358	454	518	61.6	60.1	62.0	-1.5	0.4	Below	Below
	JV6f	369+55	3 (First Row Residences, First Floor Patio)	380	462	383	466	530	63.1	62.2	64.4	-0.9	1.3	Below	Below
	JV6s	369+55	3 (First Row Residences, Second Floor Balcony)	380	462	383	466	530	65.1	63.9	65.6	-1.2	0.5	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	3
Nob Hill Palms (South of I-595 between Station 320+40 and Station 340+20)	NHP1	338+01	1 (First Row Residence)	895	978	897	995	1047	56.4	58.6	59.7	2.2	3.3	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Evergreen Place (South of I-595 between Station 340+00 and Station 360+40)	EP1f	342+59	4 (First Row Residence, First Floor Patio)	152	234	165	249	301	70.5	71.6	71.9	1.1	1.4	Exceeds	Exceeds
	EP1s	342+59	3 (First Row Residences, Second Floor Balcony)	152	234	165	249	301	72.3	73.6	73.8	1.3	1.5	Exceeds	Exceeds
	EP1t	342+59	1 (First Row Residence, Third Floor Balcony)	152	234	165	249	301	73.4	75.0	75.0	1.6	1.6	Exceeds	Exceeds
	EP1fo	342+59	2 (First Row Residences, Fourth Floor Balcony)	152	234	165	249	301	73.7	75.6	75.4	1.9	1.7	Exceeds	Exceeds
	EP2f	343+15	4 (Second Row Residences, First Floor Patio)	323	404	335	419	471	61.3	62.7	63.7	1.4	2.4	Below	Below
	EP2s	343+15	4 (Second Row Residences, Second Floor Balcony)	323	404	335	419	471	64.2	65.2	65.6	1.0	1.4	Below	Below
	EP2t	343+15	3 (Second Row Residences, Third Floor Balcony)	323	404	335	419	471	65.1	66.4	66.6	1.3	1.5	Approaches	Approaches
	EP2fo	343+15	4 (Second Row Residences, Fourth Floor Balcony)	323	404	335	419	471	65.9	67.6	67.6	1.7	1.7	Exceeds	Exceeds
	EP3f	344+95	3 (First Row Residence, First Floor Patio)	143	224	155	239	291	66.1	67.1	67.6	1.0	1.5	Exceeds	Exceeds
	EP3s	344+95	3 (First Row Residences, Second Floor Balcony)	143	224	155	239	291	67.8	69.4	69.5	1.6	1.7	Exceeds	Exceeds
	EP3t	344+95	2 (First Row Residences, Third Floor Balcony)	143	224	155	239	291	68.8	70.6	70.5	1.8	1.7	Exceeds	Exceeds
	EP3fo	344+95	2 (First Row Residences, Fourth Floor Balcony)	143	224	155	239	291	69.3	71.3	71.1	2.0	1.8	Exceeds	Exceeds
	EP4f	346+40	1 (First Row Residence, First Floor Patio)	157	237	169	253	405	63.5	64.6	63.7	1.1	0.2	Below	Below
	EP4s	346+40	1 (First Row Residence, Second Floor Balcony)	157	237	169	253	405	61.9	63.2	62.9	1.3	1.0	Below	Below
	EP4t	346+40	1 (First Row Residence, Third Floor Balcony)	157	237	169	253	405	53.7	55.8	55.7	2.1	2.0	Below	Below

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Evergreen Place (South of I-595 between Station 340+00 and Station 360+40)	EP4fo	346+40	1 (First Row Residence, Fourth Floor Balcony)	157	237	169	253	405	58.3	60.8	60.8	2.5	2.5	Below	Below
	EP5s	346+89	4 (First Row Residence, First/Second Floor Units)	172	252	184	268	320	67.7	68.8	69.0	1.1	1.3	Exceeds	Exceeds
	EP5t	346+89	2 (First Row Residence, Third Floor Balcony)	172	252	184	268	320	68.4	70.0	69.9	1.6	1.5	Exceeds	Exceeds
	EP5fo	346+89	2 (First Row Residence, Fourth Floor Balcony)	172	252	184	268	320	68.4	70.3	70.0	1.9	1.6	Exceeds	Exceeds
	EP6f	348+13	1 (First Row Residence, First Floor Patio)	184	264	196	266	332	61.3	63.1	62.3	1.8	1.0	Below	Below
	EP6s	348+13	1 (First Row Residence, Second Floor Balcony)	184	264	196	266	332	57.0	59.1	59.3	2.1	2.3	Below	Below
	EP6t	348+13	1 (First Row Residence, Third Floor Balcony)	184	264	196	266	332	64.8	66.5	66.2	1.7	1.4	Approaches	Approaches
	EP6fo	348+13	1 (First Row Residence, Fourth Floor Balcony)	184	264	196	266	332	68.9	70.8	70.4	1.9	1.5	Exceeds	Exceeds
	EP7f	348+21	2 (First Row Residences, First Floor Patio)	241	322	253	325	389	66.0	67.2	67.1	1.2	1.1	Exceeds	Exceeds
	EP8t	348+73	1 (Second Row Residence, Third Floor Balcony)	299	379	311	383	447	66.6	67.9	67.5	1.3	0.9	Exceeds	Exceeds
	EP8fo	348+73	1 (Second Row Residence, Fourth Floor Balcony)	299	379	311	383	447	67.3	69.0	68.8	1.7	1.5	Exceeds	Exceeds
	EP9	349+00	Pool Area	248	328	260	330	396	63.2	64.4	64.8	1.2	1.6	Below	Below
														41	41
Between Pine Island Road and University Drive															
Plantation Colony Apartments (North of I-595 between Station 390+20 and Station 400+20)	PC1f	394+35	1 (First Row Residence, First Floor Patio)	331	411	326	415	479	62.2	64.8	65.4	2.6	3.2	Below	Below
	PC1s	394+35	1 (First Row Residence, Second Floor Balcony)	331	411	326	415	479	64.7	66.2	66.5	1.5	1.8	Approaches	Approaches
	PC2f	394+54	1 (First Row Residence, First Floor Patio)	368	449	363	453	517	50.8	53.8	53.6	3.0	2.8	Below	Below
	PC2s	394+54	1 (First Row Residence, Second Floor Balcony)	368	449	363	453	517	58.0	59.8	59.9	1.8	1.9	Below	Below
	PC3f	396+52	1 (First Row Residence, First Floor Patio)	392	472	380	476	540	58.0	59.5	60.1	1.5	2.1	Below	Below
	PC3s	396+52	1 (First Row Residence, Second Floor Balcony)	392	472	380	476	540	61.0	62.0	62.1	1.0	1.1	Below	Below
	PC4f	396+78	1 (Second Row Residence, First Floor Patio)	484	565	472	569	633	55.2	56.9	58.0	1.7	2.8	Below	Below
	PC4s	396+78	1 (Second Row Residence, Second Floor Balcony)	484	565	472	569	633	57.3	58.3	59.3	1.0	2.0	Below	Below
	PC5f	398+51	1 (First Row Residence, First Floor Patio)	483	564	465	568	632	57.9	59.6	60.6	1.7	2.7	Below	Below
	PC5s	398+51	1 (First Row Residence, Second Floor Balcony)	483	564	465	568	632	60.2	61.7	62.0	1.5	1.8	Below	Below
	PC6f	400+17	1 (First Row Residence, First Floor Patio)	384	466	363	470	534	62.2	63.3	64.2	1.1	2.0	Below	Below
	PC6s	400+17	1 (First Row Residence, Second Floor Balcony)	384	466	363	470	534	63.8	64.6	64.9	0.8	1.1	Below	Below
														1	1
Park City Estates (South of I-595 between Station 370+80 and Station 400+00)	PCE1	378+18	1 (First Row Residence)	207	291	209	295	359	69.4	69.8	70.1	0.4	0.7	Exceeds	Exceeds
	PCE2	378+69	2 (First Row Residences)	272	356	274	360	424	66.7	67.3	68.0	0.6	1.3	Exceeds	Exceeds
	PCE3	379+64	1 (First Row Residence)	387	370	288	374	438	62.5	63.8	65.4	1.3	2.9	Below	Below
	PCE4	381+86	11 (First Row Residences)	203	384	201	287	351	60.5	63.2	63.8	2.7	3.3	Below	Below
	PCE5	383+78	2 (First Row Residences)	217	297	215	301	365	63.0	65.2	66.0	2.2	3.0	Below	Approaches
	PCE6	385+77	3 (First Row Residences)	235	315	233	319	383	63.8	66.1	66.8	2.3	3.0	Approaches	Approaches
	PCE7	386+80	3 (First Row Residences)	210	290	208	294	358	62.2	64.4	65.1	2.2	2.9	Below	Below
	PCE8	389+45	6 (First Row Residences)	210	290	212	294	358	59.0	61.3	61.9	2.3	2.9	Below	Below

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Park City Estates (South of I-595 between Station 370+80 and Station 400+00)	PCE9	392+78	1 (First Row Residence)	223	303	232	307	371	64.0	67.6	68.0	3.6	4.0	Exceeds	Exceeds
	PCE10	392+93	3 (First Row Residences)	273	353	282	357	421	62.7	65.9	66.7	3.2	4.0	Below	Approaches
	PCE11	397+23	4 (First Row Residences)	273	353	282	356	420	63.4	65.7	66.6	2.3	3.2	Below	Approaches
	PCE12	398+16	3 (First Row Residences)	217	296	226	300	364	64.6	66.7	67.3	2.1	2.7	Approaches	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			10	19
Arrowhead Golf and Tennis Club (South of I-595 between Station 400+60 and Station 410+60); Predicted Noise Levels with Existing 8 ft Tall Privacy Wall South of I-595 Right of Way Line (Station 414+60 to 417+00 ~240 ft Long)	AGT1	412+43	3 (Second Row Residences)	257	371	274	376	440	59.5	61.7	62.5	2.2	3.0	Below	Below
	AGT2	412+71	2 (First Row Residences)	156	273	174	278	342	63.3	64.2	64.9	0.9	1.6	Below	Below
	AGT3	713+82	3 (Second Row Residences)	277	400	296	405	469	61.0	61.5	62.5	0.5	1.5	Below	Below
	AGT4	415+69	6 (First Row Residences)	42	176	60	182	246	65.4	69.7	70.2	4.3	4.8	Exceeds	Exceeds
	AGT5	416+94	3 (First Row Residences)	42	184	60	190	254	63.8	68.1	69.0	4.3	5.2	Exceeds	Exceeds
	AGT6	417+43	3 (First Row Residences)	168	313	186	319	383	61.4	65.3	66.0	3.9	4.6	Below	Approaches
	AGT7	417+36	2 (Second Row Residences)	256	401	274	406	470	61.8	62.7	63.4	0.9	1.6	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			9	9
Valencia Village (South of I-595 between Station 410+80 and Station 420+20); Predicted Noise Levels with Existing 6 ft Tall Privacy Wall South of I-595 Right of Way Line (Station 417+00 to 420+40 ~340 ft Long)	VV1	418+90	3 (First Row Residences, First Floor Patios)	65	218	83	223	286	67.6	68.2	69.0	0.6	1.4	Exceeds	Exceeds
			2 (Second Floor Balcony)						73.4	73.4	73.5	0.0	0.1		
	VV2	418+10	2 (First Row Residences, First Floor Patios)	202	351	220	356	420	58.8	60.4	61.4	1.6	2.6	Below	Below
			2 (Second Floor Balcony)						62.6	64.0	64.6	1.4	2.0		
	VV3	420+25	6 (First Row Residences, First Floor Patios)	48	207	66	212	276	67.5	67.8	68.8	0.3	1.3	Exceeds	Exceeds
			5 (Second Floor Balcony)						73.3	73.2	73.5	-0.1	0.2		
											Number of Noise Sensitive Sites Impacted by Project Alternatives			9	9
Between University Drive and Florida's Turnpike															
Lake View Estates (North of I-595 between Station 430+00 and Station 480+40)	LV1	431+16	2 (First Row Residences)	314	505	328	512	576	64.7	65.3	66.9	0.6	2.2	Below	Approaches
	LV2	432+17	2 (First Row Residences)	365	452	279	459	523	64.6	65.4	67.3	0.8	2.7	Below	Exceeds
	LV3	432+69	3 (Second Row Residences)	425	609	438	615	679	62.9	63.4	65.3	2.4	2.4	Below	Below
	LV4	434+10	7 (Third Row Residences)	531	704	541	710	774	60.4	61.0	63.1	2.7	2.7	Below	Below
	LV5	437+31	7 (First Row Residences)	284	427	284	433	497	64.8	66.3	68.0	3.2	3.2	Approaches	Exceeds
	LV6	443+12	9 (First Row Residences)	258	383	277	388	452	66.4	67.4	68.6	1.0	2.2	Exceeds	Exceeds
	LV7	448+39	16 (Second Row Residences)	397	515	417	520	584	63.8	64.2	65.7	0.4	1.9	Below	Below
	LV8	448+50	7 (Third Row Residences)	508	626	528	631	695	60.8	61.2	62.8	0.4	2.0	Below	Below
	LV9	455+44	9 (First Row Residences)	233	349	251	343	419	66.6	68.5	69.6	1.9	3.0	Exceeds	Exceeds
	LV10	455+99	2 (Second Row Residences)	414	530	432	525	600	63.3	64.3	65.6	1.0	2.3	Below	Below
	LV11	455+53	4 (Third Row Residences)	521	637	539	631	707	60.8	61.0	62.6	0.2	1.8	Below	Below
	LV12	465+80	20 (First Row Residences)	222	339	220	345	409	66.6	66.7	68.4	0.1	1.8	Approaches	Exceeds
	LV13	466+80	13 (Second Row Residences)	408	525	402	531	594	62.8	62.6	64.6	-0.2	1.8	Below	Below

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Lake View Estates (North of I-595 between Station 430+00 and Station 480+40)	LV14	466+37	7 (Third Row Residences)	494	611	489	616	680	58.9	59.1	60.6	0.2	1.7	Below	Below
	LV15	482+69	3 (First Row Residences)	242	358	227	358	428	66.1	65.1	66.6	-1.0	0.5	Below	Approaches
	LV16	481+41	2 (Second Row Residences)	413	529	398	529	598	62.9	63.6	64.9	0.7	2.0	Below	Below
	LV17	479+79	3 (Third Row Residences)	519	636	505	636	706	61.7	62.3	63.6	0.6	1.9	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			50	68
Isla del Sol (North of I-595 between Station 480+40 and Station 500+20)	IDS1	494+33	4 (First Row Residences)	290	361	286	366	445	66.0	67.0	68.3	1.0	2.3	Exceeds	Exceeds
	IDS2	494+33	2 (Second Row Residences)	441	512	437	518	596	63.0	64.3	65.7	1.3	2.7	Below	Below
	IDS3	494+13	4 (Third Row Residences)	529	614	525	608	686	61.2	62.4	63.9	1.2	2.7	Below	Below
	IDS4	497+09	7 (First Row Residences)	300	360	299	366	443	65.7	69.2	69.9	3.5	4.2	Exceeds	Exceeds
	IDS5	497+46	4 (Second Row Residences)	466	525	465	531	608	62.5	65.9	66.9	3.4	4.4	Below	Approaches
	IDS6	496+31	4 (Third Row Residences)	515	577	512	582	660	60.8	63.7	64.7	2.9	3.9	Below	Below
	IDS7	501+40	2 (Second Row Residences)	460	505	410	511	580	63.1	66.8	67.7	3.7	4.6	Approaches	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			19	26
Sewell Lock Park (North of I-595 between Station 490+60 and Station 500+20)	SL1	499+05	Central Portion of Park (Picnic Table)	110	171	100	165	235	69.2	72.1	73.0	3.8	3.8	Exceeds	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			1	1
Plantation Landings (North of I-595 between Station 500+10 and Station 500+80)	PL1	505+33	4 (First Row Residences)	286	370	262	376	452	65.2	68.8	69.9	3.6	4.7	Exceeds	Exceeds
	PL2	505+14	2 (Second Row Residences)	446	528	422	535	611	62.4	66.0	66.7	3.6	4.3	Approaches	Approaches
	PL3	504+34	2 (Second Row Residences)	525	582	382	495	571	62.0	65.7	66.3	3.7	4.3	Below	Approaches
	PL4	504+94	1 (Third Row Residence)	537	617	512	624	700	61.6	65.1	65.9	3.5	4.3	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			6	8
Plantation Harbor (North of I-595 between Station 500+80 and Station 530+20)	Pha1	509+16	4 (First Row Residences)	262	381	268	387	463	64.5	67.9	69.0	3.4	4.5	Exceeds	Exceeds
	Pha2	508+58	3 (Second Row Residences)	376	491	379	497	573	63.5	66.6	67.3	3.1	3.8	Approaches	Exceeds
	Pha3	508+72	5 (Third Row Residences)	474	589	477	596	672	62.6	65.6	66.4	3.0	3.8	Below	Approaches
	Pha4	521+66	6 (First Row Residences)	296	353	240	359	417	67.5	69.9	70.2	2.4	2.7	Exceeds	Exceeds
	Pha5	521+66	6 (Second Row Residences)	381	438	325	444	502	64.4	66.9	67.4	2.5	3.0	Approaches	Exceeds
	Pha6	521+66	2 (Third Row Residences)	478	536	422	541	600	61.0	63.7	64.5	2.7	3.5	Below	Below
	Pha7	528+52	7 (First Row Residences)	361	361	260	372	266	66.3	68.9	69.1	2.6	2.8	Exceeds	Exceeds
	Pha8	528+66	5 (Second Row Residences)	538	538	438	549	431	62.8	65.5	65.9	2.7	3.1	Below	Below
	Pha9	528+31	3 (Third Row Residences)	652	652	552	663	551	54.4	56.9	57.9	2.5	3.5	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			26	32
I-595 Between Florida's Turnpike and SR 7															
Golden Manor (North of I-595 between Station 560+00 and Station 560+60)	GM1	561+02	2 (First Row Residences)	--	495	250	502	560	59.3	65.9	65.9	6.6	6.6	Below	Below
	GM2	560+92	2 (Second Row Residences)	--	570	326	576	635	58.3	64.3	64.3	6.0	6.0	Below	Below
	GM3	560+84	2 (Third Row Residences)	--	634	391	640	699	57.3	62.8	62.8	5.5	5.5	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Marshall Court (North of I-595 between Station 560+60 and Station 570+20)	MC1	567+69	2 (First Row Residences)	--	591	308	589	659	58.3	61.6	61.6	3.3	3.3	Below	Below
	MC2	567+65	5 (Second Row Residences)	--	691	407	688	759	57.9	60.3	60.3	2.4	2.4	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Golden Court (North of I-595 between Station 570+20 and Station 570+60)	GC1	572+53	2 (First Row Residences)	--	670	423	680	750	58.4	60.7	60.7	2.3	2.3	Below	Below
	GC2	572+29	3 (Second Row Residences)	--	779	528	788	858	57.5	58.7	58.7	1.2	1.2	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Coram Gardens (North of I-595 between Station 570+60 and Station 580+60)	CG1	575+03	3 (First Row Residences)	--	742	501	740	810	57.6	59.3	59.3	1.7	1.7	Below	Below
	CG2	575+06	3 (Second Row Residences)	--	813	573	812	882	56.4	57.7	57.7	1.3	1.3	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Lazy Land (North of I-595 between Station 580+20 and Station 610+60)	LL1	580+52	13 (First Row Residences)	--	888	682	878	948	57.2	58.5	58.5	1.3	1.3	Below	Below
	LL2	580+22	17 (Second Row Residences)	--	957	752	948	1,018	56.1	57.1	57.1	1.0	1.0	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
I-595 Between SR 7 and I-95															
Archstone Apartments (North of I-595 between Station 590+40 and Station 610+60)	AA1f	598+57	2 (First Row Residences, First Floor Patio)	545	592	472	582	--	61.4	62.0	62.0	0.6	0.6	Below	Below
	AA1s	598+57	2 (First Row Residences, Second Floor Balcony)	545	592	472	582	--	65.7	65.9	65.9	0.2	0.2	Below	Below
	AA1t	598+57	1 (First Row Residence, Third Floor Balcony)	545	592	472	582	--	67.5	67.7	67.7	0.2	0.2	Exceeds	Exceeds
	AA2f	599+35	2 (First Row Residences, First Floor Patio)	482	532	421	523	--	63.9	64.4	64.4	0.5	0.5	Below	Below
	AA2s	599+35	2 (First Row Residences, Second Floor Balcony)	482	532	421	523	--	68.3	68.3	68.3	0.0	0.0	Exceeds	Exceeds
	AA2t	599+35	1 (First Row Residence, Third Floor Balcony)	482	532	421	523	--	69.3	69.5	69.5	0.2	0.2	Exceeds	Exceeds
	AA3f	598+38	2 (First Row Residences, First Floor Patio)	642	688	565	678	--	58.6	59.5	59.5	0.9	0.9	Below	Below
	AA3s	598+38	2 (First Row Residences, Second Floor Balcony)	642	688	565	678	--	62.2	63.0	63.0	0.8	0.8	Below	Below
	AA3t	598+38	2 (First Row Residences, Third Floor Balcony)	642	688	565	678	--	64.2	65.1	65.1	0.9	0.9	Below	Below
	AA4f	599+25	2 (Second Row Residences, First Floor Patio)	716	766	652	757	--	56.8	58.0	58.0	1.2	1.2	Below	Below
	AA4s	599+25	2 (Second Row Residences, Second Floor Balcony)	716	766	652	757	--	59.8	60.7	60.7	0.9	0.9	Below	Below
	AA4t	599+25	2 (Second Row Residences, Third Floor Balcony)	716	766	652	757	--	61.7	62.7	62.7	1.0	1.0	Below	Below
	AA5f	599+92	2 (Second Row Residences, First Floor Patio)	530	583	476	574	--	58.2	58.8	58.8	0.6	0.6	Below	Below
	AA5s	599+92	2 (Second Row Residences, Second Floor Balcony)	530	583	476	574	--	62.2	62.4	62.4	0.2	0.2	Below	Below
	AA5t	599+92	1 (Second Row Residence, Third Floor Balcony)	530	583	476	574	--	63.9	64.3	64.3	0.4	0.4	Below	Below
	AA6f	599+15	2 (Second Row Residences, First Floor Patio)	603	652	539	643	--	55.3	56.0	56.0	0.7	0.7	Below	Below
	AA6s	599+15	2 (Second Row Residences, Second Floor Balcony)	603	652	539	643	--	58.8	59.2	59.2	0.4	0.4	Below	Below
	AA6t	599+15	1 (Second Row Residence, Third Floor Balcony)	603	652	539	643	--	61.0	61.6	61.6	0.6	0.6	Below	Below
	AA7f	601+48	2 (First Row Residences, First Floor Patio)	596	656	564	648	--	60.4	61.1	61.1	0.7	0.7	Below	Below
	AA7s	601+48	2 (First Row Residences, Second Floor Balcony)	596	656	564	648	--	64.3	64.7	64.7	0.4	0.4	Below	Below
	AA7t	601+48	2 (First Row Residences, Third Floor Balcony)	596	656	564	648	--	66.3	66.9	66.9	0.6	0.6	Approaches	Approaches
	AA8f	602+26	2 (Second Row Residences, First Floor Patio)	655	719	632	711	--	58.0	59.1	59.1	1.1	1.1	Below	Below

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Archstone Apartments (North of I-595 between Station 590+40 and Station 610+60)	AA8s	602+26	2 (Second Row Residences, Second Floor Balcony)	655	719	632	711	--	61.8	62.2	62.2	0.4	0.4	Below	Below
	AA8t	602+26	2 (Second Row Residences, Third Floor Balcony)	655	719	632	711	--	63.7	64.5	64.5	0.8	0.8	Below	Below
	AA9f	602+66	3 (First Row Residences, First Floor Patio)	591	656	572	649	--	60.5	61.2	61.2	0.7	0.7	Below	Below
	AA9s	602+66	2 (First Row Residences, Second Floor Balcony)	591	656	572	649	--	64.2	64.8	64.8	0.6	0.6	Below	Below
	AA9t	602+66	2 (First Row Residences, Third Floor Balcony)	591	656	572	649	--	66.3	67.0	67.0	0.7	0.7	Exceeds	Exceeds
	AA10f	604+96	3 (First Row Residences, First Floor Patio)	572	649	570	641	--	60.7	61.3	61.3	0.6	0.6	Below	Below
	AA10s	604+96	2 (First Row Residences, Second Floor Balcony)	572	649	570	641	--	64.5	65.1	65.1	0.6	0.6	Below	Below
	AA10t	604+96	2 (First Row Residences, Third Floor Balcony)	572	649	570	641	--	66.6	66.9	66.9	0.3	0.3	Approaches	Approaches
	AA11f	606+52	2 (First Row Residences, First Floor Patio)	679	770	692	763	--	59.0	59.7	59.7	0.7	0.7	Below	Below
	AA11s	606+52	2 (First Row Residences, Second Floor Balcony)	679	770	692	763	--	62.8	63.1	63.1	0.3	0.3	Below	Below
	AA11t	606+52	1 (First Row Residence, Third Floor Balcony)	679	770	692	763	--	64.5	64.5	64.5	0.0	0.0	Below	Below
	AA12f	606+62	2 (Second Row Residences, First Floor Patio)	781	874	795	866	--	57.8	58.5	58.5	0.7	0.7	Below	Below
	AA12s	606+62	2 (Second Row Residences, Second Floor Balcony)	781	874	795	866	--	61.3	61.6	61.6	0.3	0.3	Below	Below
	AA12t	606+62	1 (Second Row Residence, Third Floor Balcony)	781	874	795	866	--	62.8	62.8	62.8	0.0	0.0	Below	Below
	AA13f	608+71	2 (First Row Residences, First Floor Patio)	528	631	546	624	--	60.4	60.8	60.8	0.4	0.4	Below	Below
	AA13s	608+71	2 (First Row Residences, Second Floor Balcony)	528	631	546	624	--	64.3	64.6	64.6	0.3	0.3	Below	Below
	AA13t	608+71	1 (First Row Residence, Third Floor Balcony)	528	631	546	624	--	66.5	66.4	66.4	-0.1	-0.1	Approaches	Approaches
	AA14f	609+41	2 (First Row Residences, First Floor Patio)	451	558	469	552	--	61.5	61.6	61.6	0.1	0.1	Below	Below
	AA14s	609+41	2 (First Row Residences, Second Floor Balcony)	451	558	469	552	--	65.4	65.6	65.6	0.2	0.2	Below	Below
	AA14t	609+41	1 (First Row Residence, Third Floor Balcony)	451	558	469	552	--	67.9	67.6	67.6	-0.3	-0.3	Exceeds	Exceeds
	AA15f	610+06	2 (First Row Residences, First Floor Patio)	377	488	395	482	--	63.6	63.9	63.9	0.3	0.3	Below	Below
	AA15s	610+06	2 (First Row Residences, Second Floor Balcony)	377	488	395	482	--	68.0	68.1	68.1	0.1	0.1	Exceeds	Exceeds
	AA15t	610+06	1 (First Row Residence, Third Floor Balcony)	377	488	395	482	--	70.0	69.8	69.8	-0.2	-0.2	Exceeds	Exceeds
	AA16f	610+91	2 (First Row Residences, First Floor Patio)	421	539	439	535	--	62.1	62.4	62.4	0.3	0.3	Below	Below
	AA16s	610+91	2 (First Row Residences, Second Floor Balcony)	421	539	439	535	--	65.8	66.1	66.1	0.3	0.3	Approaches	Approaches
	AA16t	610+91	1 (First Row Residence, Third Floor Balcony)	421	539	439	535	--	68.3	68.1	68.1	-0.2	-0.2	Exceeds	Exceeds
	AA17f	613+92	2 (First Row Residences, First Floor Patio)	386	530	404	529	--	61.3	62.0	62.0	0.7	0.7	Below	Below
	AA17s	613+92	2 (First Row Residences, Second Floor Balcony)	386	530	404	529	--	65.0	65.4	65.4	0.4	0.4	Below	Below
	AA17t	613+92	2 (First Row Residences, Third Floor Balcony)	386	530	404	529	--	67.6	67.8	67.8	0.2	0.2	Exceeds	Exceeds
	AA18f	613+98	2 (Second Row Residences, First Floor Patio)	413	570	431	570	--	60.1	60.5	60.5	0.4	0.4	Below	Below
	AA18s	613+98	2 (Second Row Residences, Second Floor Balcony)	413	570	431	570	--	63.7	64.0	64.0	0.3	0.3	Below	Below
	AA18t	613+98	2 (Second Row Residences, Third Floor Balcony)	413	570	431	570	--	66.3	66.3	66.3	0.0	0.0	Approaches	Approaches
	AA19f	614+66	2 (Second Row Residences, First Floor Patio)	440	608	458	609	--	60.2	60.5	60.5	0.3	0.3	Below	Below
	AA19s	614+66	2 (Second Row Residences, Second Floor Balcony)	440	608	458	609	--	63.4	63.6	63.6	0.2	0.2	Below	Below
	AA19t	614+66	2 (Second Row Residences, Third Floor Balcony)	440	608	458	609	--	65.8	65.5	65.5	-0.3	-0.3	Below	Below

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Archstone Apartments (North of I-595 between Station 590+40 and Station 610+60)	AA20f	614+86	2 (First Row Residences, First Floor Patio)	220	388	238	389	--	65.3	65.5	65.5	0.2	0.2	Below	Below
	AA20s	614+86	2 (First Row Residences, Second Floor Balcony)	220	388	238	389	--	68.8	68.8	68.8	0.0	0.0	Exceeds	Exceeds
	AA20t	614+86	1 (First Row Residence, Third Floor Balcony)	220	388	238	389	--	70.7	71.0	71.0	0.3	0.3	Exceeds	Exceeds
	AA21f	615+76	2 (First Row Residences, First Floor Patio)	256	438	274	440	--	63.5	64.0	64.0	0.5	0.5	Below	Below
	AA21s	615+76	2 (First Row Residences, Second Floor Balcony)	256	438	274	440	--	67.2	67.2	67.2	0.0	0.0	Exceeds	Exceeds
	AA21t	615+76	1 (First Row Residence, Third Floor Balcony)	256	438	274	440	--	69.3	69.6	69.6	0.3	0.3	Exceeds	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			28	28
Hacienda Flores (North of I-595 between Station 610+60 and Station 620+10)	HF1	618+79	3 (Second Row Residences)	374	603	392	605	--	63.2	62.7	62.7	-0.5	-0.5	Below	Below
	HF2	619+48	1 (First Row Residence)	256	495	274	496	--	64.3	64.4	64.4	0.1	0.1	Below	Below
	HF3	620+65	1 (First Row Residence)	167	420	185	419	--	66.1	65.9	65.9	-0.2	-0.2	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Lauderdale Isles (North of I-595 between Station 590+40 and Station 650+00)	LI1	621+45	3 (First Row Residences)	343	604	361	601	--	63.9	63.3	63.3	-0.6	-0.6	Below	Below
	LI2	623+94	2 (First Row Residences)	292	556	310	550	--	65.2	64.3	64.3	-0.9	-0.9	Below	Below
	LI3	625+68	2 (First Row Residences)	367	630	385	624	--	62.9	61.7	61.7	-1.2	-1.2	Below	Below
	LI4	627+86	3 (First Row Residences)	458	707	476	712	--	63.1	61.5	61.5	-1.6	-1.6	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Florida's Turnpike Between I-595 and Peters Road															
Plantations Harbor (West of Florida's Turnpike between Station 4802+00 and Station 4837+00); Predicted Noise Levels for Alternative 1B with Planned 12 ft Tall Shoulder Mounted Noise Barrier (Station 4815+00 to 4841+25 ~2,625 ft Long)	PHb1	4819+10	4 (First Row Residences)	--	340	--	340	295 (ML)/370 (EL)	61.8	62.0	67.5	0.2	5.7	Below	Exceeds
	PHb2	4824+00	4 (First Row Residences)	--	180	--	180	130 (ML)/210 (EL)	63.3	63.3	73.2	0.0	9.9	Below	Exceeds
	PHb3	4826+00	4 (Second Row Residences)	--	300	--	300	250 (ML)/325 (EL)	56.2	56.3	61.5	0.1	5.3	Below	Below
	PHb4	4829+00	1 (First Row Residence)	--	160	--	160	125 (ML)/205 (EL)	64.1	64.1	74.9	0.0	10.8	Below	Exceeds
	PHb5	4829+50	2 (Second Row Residences)	--	260	--	260	230 (ML)/310 (EL)	61.0	61.0	69.8	0.0	8.8	Below	Exceeds
	PHb6	4835+50	11 (First Row Residences)	--	100	--	100	90 (ML)/190 (EL)	65.2	65.2	76.7	0.0	11.5	Below	Exceeds
	PHb7	4835+50	5 (Second Row Residences)	--	270	--	270	260 (ML)/350 (EL)	56.3	56.3	61.6	0.0	5.3	Below	Below
	PHb8	4837+20	1 (Second Row Residence)	--	280	--	280	270 (ML)/370 (EL)	60.3	60.3	67.6	0.0	7.3	Below	Exceeds
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	23
Plantation Point and Broadview Park (East of Florida's Turnpike between Station 4812+00 to 4853+00); Predicted Noise Levels with Planned 20 ft Tall Ground Mounted Noise Barrier (Station 4809+40 to 4852+70 ~4,330 ft Long)	PPb1	4812+90	2 (Second Row Residences)	--	260	--	240	260 (ML)/370 (EL)	63.1	64.2	64.7	1.1	1.6	Below	Below
	PPb2	4818+90	4 (First Row Residences)	--	80	--	70	60 (ML)/140 (EL)	60.0	60.3	61.1	0.3	1.1	Below	Below
	PPb3	4817+50	4 (Second Row Residences)	--	190	--	190	180 (ML)/260 (EL)	61.4	61.6	61.9	0.2	0.5	Below	Below
	PPb4	4826+50	3 (First Row Residences)	--	240	--	240	200 (ML)/290 (EL)	61.7	61.7	62.2	0.0	0.5	Below	Below
	PPb5	4832+00	7 (First and Second Row Residences)	--	300	--	300	270 (ML)/350 (EL)	61.0	61.0	61.7	0.0	0.7	Below	Below
	PPb6	4838+10	18 (Second Row Residences)	--	130	--	130	120 (ML)	61.9	61.9	62.5	0.0	0.6	Below	Below

* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-2 Location and Description of Representative Noise Sensitive Receivers and TNM Predicted Levels

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)				
Plantation Point and Broadview Park (East of Florida's Turnpike between Station 4812+00 to 4853+00); Predicted Noise Levels with Planned 20 ft Tall Ground Mounted Noise Barrier (Station 4809+40 to 4852+70 ~4,330 ft Long)	PPb7	4837+60	12 (First and Second row Residences)	--	260	--	260	250 (ML)	61.4	61.4	62.0	0.0	0.6	Below	Below
	PPb8	4848+90	11 (First Row Residences)	--	180	--	180	180 (ML)	60.3	60.3	60.4	0.0	0.1	Below	Below
	PPb9	4848+00	12 (Second Row Residences)	--	300	--	300	300 (ML)	61.2	61.2	61.3	0.0	0.1	Below	Below
	PPb10	4851+90	3 (First Row Residences)	--	310	--	310	310 (ML)	61.8	61.8	61.8	0.0	0.0	Below	Below
	PPb11	4852+00	2 (First Row Residences)	--	420	--	420	420 (ML)	63.1	63.1	63.1	0.0	0.0	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Florida's Turnpike Between Griffin Road and I-595															
Everglades Lakes (West of Florida's Turnpike between Station 4747+00 and Station 4770+00); Predicted Noise Levels for Existing/No Build Conditions with Planned 16 ft Tall Ground Mounted Noise Barrier (Station 4752+20 to 4767+18 ~1,510 ft Long)	EL1	4753+00	2 (First Row Residences)	--	80	--	Relocated	Relocated	58.4	--	--	--	--	--	--
	EL2	4753+10	1 (Second Row Residence)	--	180	--	95	100	64.4	70.6	70.6	6.2	6.2	Exceeds	Exceeds
	EL2a	4753+10	3 (Third Row Residences)	--	230	--	165	170	63.0	67.9	67.9	4.9	4.9	Exceeds	Exceeds
	EL3	4759+70	22 (First Row Residences)	--	80	--	Relocated	Relocated	60.0	--	--	--	--	--	--
	EL4	4759+70	12 (Second Row Residences)	--	190	--	110	115	61.0	69.1	69.1	8.1	8.1	Exceeds	Exceeds
	EL4a	4759+70	18 (Third Row Residences)	--	290	--	220	220	60.0	64.5	64.2	4.5	4.2	Below	Below
	EL5	4766+50	3 (First Row Residences)	--	65	--	Relocated	Relocated	57.9	--	--	--	--	--	--
	EL6	4764+80	11 (Second Row Residences)	--	140	--	90	90	61.2	69.1	68.5	7.9	7.3	Exceeds	Exceeds
	EL6a	4764+80	3 (Third Row Residences)	--	205	--	260	260	59.0	63.9	63.5	4.9	4.5	Below	Below
	EL7	4764+80	1 (First Row Residence)	--	130	--	70	70 (230 EL)	65.5	69.3	69.1	3.8	3.6	Exceeds	Exceeds
	EL7a	4768+00	3 (Second Row Residences)	--	230	--	170	170 (330 EL)	63.9	67.4	67.4	3.5	3.5	Exceeds	Exceeds
	EL7b	4767+00	2 (Third Row Residences)	--	240	--	190	190 (350 EL)	61.6	66.5	65.9	4.9	4.3	Approaches	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			33	31
Twin Lakes Travel Park (East of Florida's Turnpike between Station 4772+00 and Station 4774+00)	TLP1	4773+30	2 (First Row Residences)	--	260 (Ramp)	--	280 (Ramp)	840	64.2	65.2	65.3	1.0	1.1	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
Lauderdale Little Ranches (West of Florida's Turnpike between Station 4708+00 to 4736+00) Predicted Noise Levels with Planned 8 ft Tall Shoulder Mounted Noise Barrier (Station 4706+00 to 4719+57 ~1,357 ft long) and 16 ft Tall Ground Mounted Noise Barrier (Station 4719+00 to 4738+00 ~1,900 ft Long)	LR1	4712+50	6 (First Row Residences)	--	240 (ML)	--	240 (ML)	240 (ML)	64.3	64.5	64.4	0.2	0.1	Below	Below
	LR2	4712+00	6 (Second Row Residences)	--	520 (ML)	--	520 (ML)	520 (ML)	60.1	60.2	60.1	0.1	0.0	Below	Below
	LR3	4718+50	11 (First Row Residences)	--	300 (Ramp)	--	240 (Ramp)	240 (Ramp)	63.3	63.5	63.1	0.2	-0.2	Below	Below
	LR4	4718+50	14 (Second Row Residences)	--	450 (Ramp)	--	450 (Ramp)	450 (Ramp)	55.8	55.9	55.4	0.1	-0.4	Below	Below
	LR5	4731+20	5 (First Row Residences)	--	300 (ML)	--	300 (ML)/250 (Ramp)	300 (ML)/240 (Ramp)	61.5	62.0	59.9	0.5	-1.6	Below	Below
	LR6	4730+00	9 (Second Row Residences)	--	480 (ML)	--	480 (ML)/450 (Ramp)	480 (ML)/440 (Ramp)	57.7	58.4	56.7	0.7	-1.0	Below	Below
											Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0
											Total Number of Noise Sensitive Sites Impacted by Project Alternatives			551	700

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* Distance to nearest Travel Lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

Table 4.3-3 Summary of Predicted Noise Levels by Noise Sensitive Areas Located along the Project Corridor

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Name	Area Identifier	Area Identification Number	Type of Noise Sensitive Site	Number of Noise Sensitive Sites	Predicted Noise Levels										Comments
							Existing/No-Build Conditions			Alternative 1B				Alternative 2A				
							Minimum	Maximum	Number of Sites Equal to or Greater than 66.0 dBA	Minimum	Maximum	Average Difference from Existing and No Build	Number of Sites Equal to or Greater than 66.0 dBA	Minimum	Maximum	Average Difference from Existing and No Build	Number of Sites Equal to or Greater than 66.0 dBA	
Between SW 136th Avenue and Flamingo Road	North of I-595	Sunshine City	SC	A-1	Residential (Mobile Home Park)	91	62.3	67.1	19	65.1	69.9	2.3	51	65.5	70.1	3.0	61	--
		Mar Lago Village	ML	A-2	Multi-Family Residential (Multi-Story Apartment Buildings)	2	60.1	62.6	0	60.1	63.6	0.5	0	61.4	64.3	1.5	0	--
		Lago Estates	LE	A-3	Residential (Single Family)	9	59.6	62.7	0	62.0	64.9	2.2	0	62.1	65.0	2.3	0	--
		Melaleuca Isles	MI	A-4	Residential (Single Family)	28	57.5	62.3	0	58.9	64.4	1.6	0	58.9	64.3	2.1	0	--
	South of I-595	Sunshine Village	SV	A-5	Residential (Mobile Home Park)	48	58.7	71.6	4	61.3	71.8	2.6	4	61.1	71.8	2.4	4	--
		Western Hills	WH	A-6	Residential (Mobile Home Park)	34	59.1	68.5	7	62.9	70.1	2.8	7	62.7	70.1	2.7	7	--
		Paradise Village	PV	A-7	Residential (Mobile Home Park)	57	61.5	71.8	25	63.5	72.9	1.8	26	63.6	72.8	1.7	32	--
		Kings Manor Estates	KM	A-8	Residential (Mobile Home Park)	38	63.2	75.5	27	62.1	75.9	1.2	37	62.0	75.9	1.1	39	--
Between Flamingo Road and Hiatus Road	North of I-595	Plantation Acres	PA	A-9	Residential (Single Family)	71	59.1	66.9	15	61.2	69.7	2.7	24	63.0	69.8	3.5	39	--
		Acres South Park	AS	A-10	Park (Passive Recreation)	1	61.2	67.6	1	63.5	70.1	2.5	1	64.9	70.2	3.3	1	--
	South of I-595	Village at Pine Lake	VPL	A-11	Multi-Family Residential (Two Story Quadraplexes)	22	59.8	70.5	5	60.0	70.2	0.0	5	61.6	70.5	1.6	10	--
		Rexmere Village	RV	A-12	Residential (Mobile Home Park)	1	57.4	57.4	0	55.0	55.0	-2.4	0	59.2	59.2	1.8	0	--
Between Hiatus Road and Nob Hill Road	North of I-595	Hawk's Landing	HL	A-13	Residential (Single Family)	105	54.4	63.0	0	57.3	66.3	3.3	13	58.0	66.9	3.6	42	--
	South of I-595	The Palms Apartment Homes	PAH	A-14	Multi-Family Residential (Multi-Story Apartment Buildings)	146	60.5	73.2	131	62.8	72.4	-2.2	97	63.9	72.5	-1.2	104	--
		Scarborough	S	A-15	Residential (Single Family)	1	60.0	60.0	0	62.8	62.8	2.8	0	63.8	63.8	3.8	0	--
Between Nob Hill Road and Pine Island Road	North of I-595	Manaranda Village Condos	MVC	A-16	Multi-Family Residential (Multi-Story Condominium Buildings)	4	53.7	60.6	0	56.3	61.9	1.4	0	57.5	63.2	2.2	0	--
		The Trellises Condos	TC	A-17	Multi-Family Residential (Two Story Townhomes)	38	50.4	64.5	0	50.1	67.3	1.6	34	64.2	67.9	2.9	34	--
		Davide Isles	DI	A-18	Single Family Residential	36	62.0	66.5	11	64.7	68.5	2.4	19	65.4	68.9	3.1	28	--
		Jacaranda Villas	JV	A-19	Multi-Family Residential (Multi-Story Condominium Buildings)	20	44.5	66.1	2	45.7	65.2	-0.8	0	46.1	66.6	0.9	3	--
	South of I-595	Nob Hill Palms	NHP	A-20	Residential (Single Family)	1	56.4	56.4	0	58.6	58.6	2.2	0	59.7	59.7	3.3	0	--
		Evergreen Place	EP	A-21	Multi-Family Residential (Multi-Story Condominium Buildings)	56	53.7	73.7	33	55.8	75.6	1.5	41	55.7	75.4	1.6	41	--
Between Pine Island Road and University Drive	North of I-595	Plantation Colony Apartments	PC	A-22	Multi-Family Residential (Multi-Story Apartment Buildings)	12	50.8	64.7	0	53.8	66.2	1.6	1	53.6	66.5	2.1	1	--
	South of I-595	Park City Estates	PCE	A-23	Residential (Mobile Home Park)	40	59.0	69.4	3	61.3	69.8	2.3	10	61.9	70.1	3.0	19	--
		Arrowhead Golf and Tennis Club	AGT	A-24	Multi-Family Residential (Multi-Story Apartment Buildings)	22	59.5	65.4	0	61.5	69.7	2.8	9	62.5	70.2	3.6	9	--
		Valencia Village	VV	A-25	Multi-Family Residential (Multi-Story Apartment Buildings)	20	58.8	73.4	9	60.4	73.4	0.5	9	61.4	73.5	1.1	9	--
Between University Drive and Florida's Turnpike	North of I-595	Lake View Estates	LV	A-26	Residential (Single Family)	116	58.9	66.6	41	59.1	68.5	0.8	47	60.6	69.6	2.1	54	--
		Isla del Sol	IDS	A-27	Residential (Single Family)	27	60.8	66.0	4	62.4	69.2	2.5	8	63.9	69.9	3.6	12	--
		Sewell Lock Park	SL	A-28	Park (Passive Recreation)	1	69.2	69.2	1	72.1	72.1	2.9	1	73.0	73.0	3.8	1	--
		Plantation Landings	PL	A-29	Residential (Single Family)	9	61.6	65.2	0	65.1	68.8	3.6	6	65.9	69.9	4.5	8	--
		Plantation Harbor	PHa	A-30	Residential (Single Family)	41	54.4	67.5	13	56.9	69.9	2.7	26	57.9	70.2	3.3	32	--
Between Florida's Turnpike and SR 7	North of I-595	Golden Manor	GM	A-31	Residential (Single Family)	6	57.3	57.9	0	62.8	65.9	6.0	0	62.8	65.9	6.0	0	Alternatives 1B and 2A has the same roadway geometry along this segment of I-595
		Marshall Court	MC	A-32	Residential (Single Family)	7	57.9	58.3	0	60.3	61.6	2.7	0	61.6	60.3	2.7	0	Alternatives 1B and 2A has the same roadway geometry along this segment of I-595
		Golden Court	GC	A-33	Residential (Single Family)	5	57.5	58.4	0	58.7	60.7	1.6	0	58.7	60.7	1.6	0	Alternatives 1B and 2A has the same roadway geometry along this segment of I-595
		Coram Gardens	CG	A-34	Multi-Family Residential (Duplexes)	6	56.4	57.6	0	57.7	59.3	1.5	0	57.7	59.3	1.5	0	Alternatives 1B and 2A has the same roadway geometry along this segment of I-595
		Lazy Land	LL	A-35	Residential (Mobile Home Park)	30	57.2	57.2	0	57.1	58.5	1.1	0	57.1	58.5	1.1	0	Alternatives 1B and 2A has the same roadway geometry along this segment of I-595
Between SR 7 and I-95	North of I-595	Archstone Apartments	AA	A-36	Multi-Family Residential (Multi-Story Apartment Buildings)	116	55.3	70.7	26	56.0	71.0	0.4	28	56.0	71.0	0.4	28	Alternatives 1B and 2A has the same roadway geometry along this segment of I-595
		Hacienda Flores	HF	A-37	Residential (Single Family)	5	63.2	66.1	1	62.7	65.9	-0.3	0	62.7	65.9	0.0	0	Alternatives 1B and 2A has the same roadway geometry along this segment of I-595
		Lauderdale Isles	LI	A-38	Residential (Single Family)	10	62.9	65.2	0	61.5	64.3	-1.1	0	61.5	64.3	-1.1	0	Alternatives 1B and 2A has the same roadway geometry along this segment of I-595
Between Griffin Road and I-595	West of Florida's Turnpike	Lauderdale Little Ranches	LR	A-39	Residential (Single Family)	51	55.8	64.3	0	55.9	64.5	0.3	0	55.4	64.4	-0.5	0	--
		Everglades Lakes	EL	A-40	Residential (Mobile Home Park)	81	57.9	65.5	0	63.9	70.6	4.0	32	63.5	70.6	3.8	31	--
	East of Florida's Turnpike	Twin Lakes Travel Park	TL	A-41	Residential (Mobile Home Park)	2	64.2	64.2	0	65.2	65.2	1.0	0	65.3	65.3	1.1	0	--
Between I-595 and Peters Road	West of Florida's Turnpike	Plantation Harbor	PHb	A-42	Residential (Single Family)	32	56.2	65.2	0	56.3	65.2	0.0	0	61.5	76.7	8.5	23	--
	East of Florida's Turnpike	Plantation Point	PPb	A-43	Residential (Single Family)	78	60.0	63.1	0	60.3	64.2	0.1	0	60.4	64.7	0.5	0	--
		Broadview Park		A-44	Residential (Single Family)													--
					Totals	1526	44.5	75.5	377	45.7	75.9	1.4	536	46.1	76.7	2.0	672	--

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Traffic Noise Model (TNM Version 2.5) Predicted Noise Levels that Equal or Exceed 66 dBA

The predicted noise levels for the existing conditions are also representative of the No Project Alternative because both are based on LOS C traffic volumes. The predicted noise levels at Alternatives 1B and 2A are summarized below and in Table 4.3-4.

For **Alternative 1B**, the predicted design year noise levels range from **45.7 dBA to 75.9 dBA**. Noise levels at **536 noise sensitive sites** are predicted to be equal to or above 66.0 dBA in the design year. The design year noise levels at **384 representative sites** (i.e., representative of 1,526 noise sensitive sites) are predicted to **increase an average of 1.4 dBA above existing levels**. The increase in noise levels is attributed to the increase in traffic volumes associated with the proposed new lanes. In addition, the proposed improvements will bring the traffic closer to some of the noise sensitive sites along the project corridor. As indicated in Table 4.3-2, design year noise levels at some representative sites are predicted to decrease. The decrease in noise levels are associated with the proposed 2.8 foot tall traffic railing barrier proposed on the outside shoulders and the shielding of the mainline traffic noise from braided interchange ramps which are on MSE walls. Because the braided ramps are elevated, they function as a noise barrier by shielding some of the I-595 traffic noise from the nearby noise sensitive sites.

For **Alternative 2A**, the predicted design year noise levels range from **46.1 dBA to 76.7 dBA**. Noise levels at **672 noise sensitive sites** are predicted to be equal to or above 66.0 dBA in the design year. The design year noise levels at the **384 representative sites** are predicted to **increase an average of 2.0 dBA** above existing levels. The increase in noise levels is attributed to the increase in traffic volumes associated with the proposed new lanes as well as the elevated reversible lanes. In addition, the proposed improvements will bring the traffic closer to some of the noise sensitive sites along the project corridor. As indicated in Table 4.3-2, design year noise levels at some representative sites are predicted to decrease. The decrease in noise levels are associated with the proposed 2.8 foot tall traffic barrier wall proposed on the outside shoulders and the shielding of the mainline traffic noise from braided interchange ramps which are on MSE walls. Because the braided ramps are elevated, they function as a noise barrier by shielding some of the I-595 traffic noise from the nearby noise sensitive sites.

Table 4.3-4 Summary of Predicted Noise Levels by I-595 PD&E Study Alternatives

Predicted Noise Levels	No Project Alternative	Alternative 1B	Alternative 2A
Minimum (dBA)	44.5	45.7	46.1
Maximum (dBA)	75.5	75.9	76.7
Number of Sites = or > 66.0 dBA	377	536	672
Average Difference from No Project (dBA)	---	1.4	2.0
Noise Sensitive Sites Affected by Traffic Noise	20	24	26

4.4 NOISE IMPACT ANALYSIS

Predicted design year noise levels for the Build Alternative were compared to the NAC and to the predicted levels for the existing conditions to assess potential noise impacts associated with the proposed project. With Alternative 1B, design year traffic noise levels will approach or exceed the NAC at 536 noise sensitive sites within 24 noise sensitive areas. With Alternative 2A, design year traffic noise levels will approach or exceed the NAC at 672 noise sensitive sites within 26 noise sensitive areas. The areas with noise sensitive sites impacted by the project are presented in Table 4.4-1. **Alternative 1B** will result in an **additional 159 noise sensitive sites** with predicted noise levels equal to or greater than 66.0 dBA compared to the existing conditions/No Project Alternative (536 versus 377). **Alternative 2A** will result in an **additional 295 noise sensitive sites** with predicted noise levels equal to or greater than 66.0 dBA compared to the existing conditions/No Project Alternative (672 versus 377). Consideration of noise abatement measures for the sites that approach or exceed the NAC is presented in Section 4.5.

Although a number of sites approach or exceed the NAC, **the proposed improvements do not result in any substantial noise increases (i.e., greater than 15 dBA)**. **In addition, the predicted average increase in traffic noise levels of 1.4 dBA to 2.0 dBA associated with the project will be barely detectable.** Generally, noise level increases of less than 3.0 dBA are imperceptible to the human ear. Therefore, the noise impacts associated with this project are not considered significant.

Table 4.4-1 Noise Abatement Criteria Status Summary by Noise Sensitive Areas for Alternatives 1B and 2A

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Name	Area Identifier	Area Identification Number	Type of Noise Sensitive Site	Alternative 1B			Alternative 2A		
						Noise Abatement Criteria Status	Number of Sites Impacted	Area Recommended for Noise Abatement Considerations	Noise Abatement Criteria Status	Number of Sites Impacted	Area Recommended for Noise Abatement Considerations
Between SW 136th Avenue and Flamingo Road	North of I-595	Sunshine City	SC	A-1	Residential (Mobile Home Park)	Approaches or Exceeds	51	Yes	Approaches or Exceeds	61	Yes
		Mar Lago Village	ML	A-2	Multi-Family Residential (Multi-Story Apartment Buildings)	Below (Maximum 63.6 dBA)	0	No	Below (Maximum 64.3 dBA)	0	No
		Lago Estates	LE	A-3	Residential (Single Family)	Below (Maximum 64.9 dBA)	0	No	Below (Maximum 65.0 dBA)	0	No
		Melaleuca Isles	MI	A-4	Residential (Single Family)	Below (Maximum 64.4 dBA)	0	No	Below (Maximum 64.3 dBA)	0	No
	South of I-595	Sunshine Village	SV	A-5	Residential (Mobile Home Park)	Approaches or Exceeds	4	Yes	Approaches or Exceeds	4	Yes
		Western Hills	WH	A-6	Residential (Mobile Home Park)	Approaches or Exceeds	7	Yes	Approaches or Exceeds	7	Yes
		Paradise Village	PV	A-7	Residential (Mobile Home Park)	Approaches or Exceeds	26	Yes	Approaches or Exceeds	32	Yes
		Kings Manor Estates	KM	A-8	Residential (Mobile Home Park)	Approaches or Exceeds	37	Yes	Approaches or Exceeds	39	Yes
Between Flamingo Road and Hiatus Road	North of I-595	Plantation Acres	PA	A-9	Residential (Single Family)	Approaches or Exceeds	24	Yes	Approaches or Exceeds	39	Yes
		Acres South Park	AS	A-10	Park (Passive Recreation)	Approaches or Exceeds	1	Yes	Approaches or Exceeds	1	Yes
	South of I-595	Village at Pine Lake	VPL	A-11	Multi-Family Residential (Two Story Quadraplexes)	Approaches or Exceeds	5	Yes	Approaches or Exceeds	10	Yes
		Rexmere Village	RV	A-12	Residential (Mobile Home Park)	Below (Maximum 55.0 dBA)	0	No	Below (Maximum 59.2 dBA)	0	No
Between Hiatus Road and Nob Hill Road	North of I-595	Hawk's Landing	HL	A-13	Residential (Single Family)	Approaches or Exceeds	13	Yes	Approaches or Exceeds	42	Yes
	South of I-595	The Palms Apartment Homes	PAH	A-14	Multi-Family Residential (Multi-Story Apartment Buildings)	Approaches or Exceeds	97	Yes	Approaches or Exceeds	104	Yes
		Scarborough	S	A-15	Residential (Single Family)	Below (Maximum 62.8 dBA)	0	No	Below (Maximum 63.8 dBA)	0	No
Between Nob Hill Road and Pine Island Road	North of I-595	Manaranda Village Condos	MVC	A-16	Multi-Family Residential (Multi-Story Condominium Buildings)	Below (Maximum 61.9 dBA)	0	No	Below (Maximum 63.2 dBA)	0	No
		The Trellises Condos	TC	A-17	Multi-Family Residential (Two Story Townhomes)	Approaches or Exceeds	34	Yes	Approaches or Exceeds	34	Yes
		Davide Isles	DI	A-18	Single Family Residential	Approaches or Exceeds	19	Yes	Approaches or Exceeds	28	Yes
		Jacaranda Villas	JV	A-19	Multi-Family Residential (Multi-Story Condominium Buildings)	Below (Maximum 65.2 dBA)	0	No	Approaches or Exceeds	3	Yes
	South of I-595	Nob Hill Palms	NHP	A-20	Residential (Single Family)	Below (Maximum 58.6 dBA)	0	No	Below (Maximum 59.7 dBA)	0	No
		Evergreen Place	EP	A-21	Multi-Family Residential (Multi-Story Condominium Buildings)	Approaches or Exceeds	41	Yes	Approaches or Exceeds	41	Yes
Between Pine Island Road and University Drive	North of I-595	Plantation Colony Apartments	PC	A-22	Multi-Family Residential (Multi-Story Apartment Buildings)	Approaches or Exceeds	1	Yes	Approaches or Exceeds	1	Yes
	South of I-595	Park City Estates	PCE	A-23	Residential (Mobile Home Park)	Approaches or Exceeds	10	Yes	Approaches or Exceeds	19	Yes
		Arrowhead Golf and Tennis Club	AGT	A-24	Multi-Family Residential (Multi-Story Apartment Buildings)	Approaches or Exceeds	9	Yes	Approaches or Exceeds	9	Yes
		Valencia Village	VV	A-25	Multi-Family Residential (Multi-Story Apartment Buildings)	Approaches or Exceeds	9	Yes	Approaches or Exceeds	9	Yes
Between University Drive and Florida's Turnpike	North of I-595	Lake View Estates	LV	A-26	Residential (Single Family)	Approaches or Exceeds	47	Yes	Approaches or Exceeds	54	Yes
		Isla del Sol	IDS	A-27	Residential (Single Family)	Approaches or Exceeds	8	Yes	Approaches or Exceeds	12	Yes
		Sewell Lock Park	SL	A-28	Park (Passive Recreation)	Approaches or Exceeds	1	Yes	Approaches or Exceeds	1	Yes
		Plantation Landings	PL	A-29	Residential (Single Family)	Approaches or Exceeds	6	Yes	Approaches or Exceeds	8	Yes
		Plantation Harbor	PHa	A-30	Residential (Single Family)	Approaches or Exceeds	26	Yes	Approaches or Exceeds	32	Yes
Between Florida's Turnpike and SR 7	North of I-595	Golden Manor	GM	A-31	Residential (Single Family)	Below (Maximum 65.9 dBA)	0	No	Below (Maximum 65.9 dBA)	0	No
		Marshall Court	MC	A-32	Residential (Single Family)	Below (Maximum 61.6 dBA)	0	No	Below (Maximum 61.6 dBA)	0	No
		Golden Court	GC	A-33	Residential (Single Family)	Below (Maximum 60.7 dBA)	0	No	Below (Maximum 60.7 dBA)	0	No
		Coram Gardens	CG	A-34	Multi-Family Residential (Duplexes)	Below (Maximum 59.3 dBA)	0	No	Below (Maximum 59.3 dBA)	0	No
		Lazy Land	LL	A-35	Residential (Mobile Home Park)	Below (Maximum 58.5 dBA)	0	No	Below (Maximum 58.5 dBA)	0	No
Between SR 7 and I-95	North of I-595	Archstone Apartments	AA	A-36	Multi-Family Residential (Multi-Story Apartment Buildings)	Approaches or Exceeds	28	Yes	Approaches or Exceeds	28	Yes
		Hacienda Flores	HF	A-37	Residential (Single Family)	Below (Maximum 65.9 dBA)	0	No	Below (Maximum 65.9 dBA)	0	No
		Lauderdale Isles	LI	A-38	Residential (Single Family)	Below (Maximum 64.3 dBA)	0	No	Below (Maximum 64.3 dBA)	0	No
Between Griffin Road and I-595	West of Florida's Turnpike	Lauderdale Little Ranches	LR	A-39	Residential (Single Family)	Below (Maximum 64.5 dBA)	0	No	Below (Maximum 64.4 dBA)	0	No
		Everglades Lakes	EL	A-40	Residential (Mobile Home Park)	Approaches or Exceeds	32	Yes	Approaches or Exceeds	31	Yes
	East of Florida's Turnpike	Twin Lakes Travel Park	TL	A-41	Residential (Mobile Home Park)	Below (Maximum 65.2 dBA)	0	No	Below (Maximum 65.3 dBA)	0	No
Between I-595 and Peters Road	West of Florida's Turnpike	Plantation Harbor	PHb	A-42	Residential (Single Family)	Below (Maximum 65.2 dBA)	0	No	Approaches or Exceeds	23	Yes
	East of Florida's Turnpike	Plantation Point	PPb	A-43	Residential (Single Family)	Below (Maximum 64.2 dBA)	0	No	Below (Maximum 64.7 dBA)	0	No
		Broadview Park		A-44	Residential (Single Family)						
					Number of Noise Sensitive Sites that Approach or Exceed the Noise Abatement Criteria	--	536		--	672	

I:\595PD&E\Study\Noise Study Report Draft[TableA 5-1_CommunityImpactsSEP800.xls]Sheet1

Area Recommended for Consideration of Noise Abatement Measures

4.5 NOISE ABATEMENT MEASURES

When traffic noise associated with a proposed project is predicted to approach or exceed the NAC at a noise sensitive site, noise abatement measures must be considered. As described in Section 4.4 and presented in Table 4-2, predicted design year traffic noise levels for Alternatives 1B and 2A will approach or exceed the NAC at a number of noise sensitive sites along the project corridor. The areas with noise sensitive sites impacted by the project are presented in Table 4.4-1. As indicated in Section 4.4, with Alternative 1B, 464 noise sensitive sites in 26 of the 46 areas evaluated are predicted to approach or exceed the NAC. With Alternative 2A, 599 noise sensitive sites in 27 of the 44 areas evaluated are predicted to approach or exceed the NAC. Therefore, the feasibility and reasonableness of noise abatement measures were considered for each of these sites. The abatement measures evaluated include traffic management, alignment modification, property acquisition, and noise barriers.

A wide range of criteria was used to evaluate the feasibility and reasonableness of these noise abatement measures. According to FHWA "*Highway Traffic Noise Analysis: Reasonableness and Feasibility of Abatement*" (May 1992), feasibility deals primarily with engineering considerations. For example, given the topography of a particular location, a substantial noise reduction might be achieved given certain access, drainage, safety, or maintenance requirements. Also, other noise sources might be present in the area.

Reasonableness implies that common sense and good judgment were applied in a decision related to noise abatement. Reasonableness includes the consideration of the amount of noise abatement benefit and cost of abatement. For this project, a design goal of at least 10.0 dBA noise reduction with a minimum insertion loss of 5.0 dBA was used in the development and evaluation of noise abatement measures. To aid in the determination of the economic reasonableness of the various noise abatement measures, FDOT's reasonable cost guidelines were used. These guidelines are based on a cost per benefited noise sensitive site. A cost of $35,000 per benefited receiver is considered an upper limit although a higher level of expenditure can be used if justified by other circumstances. A benefited receiver site is defined as a noise sensitive site that will obtain a minimum of 5.0 dBA of noise reduction as a result of a specific noise abatement measure regardless of whether or not they are identified as impacted. Only benefited receiver sites are included in the calculation of reasonable cost of a particular noise abatement measure.

4.5.1 Traffic Management Measures

Traffic management measures such as traffic control devices, prohibition of certain vehicle types, time-use restriction for certain vehicle types, modified speed limits, and exclusive lane designation applied for the purpose of reducing traffic noise levels would impede the operational characteristics of this facility and are not considered reasonable or feasible with this project.

4.5.2 Alignment Modification

Most of the proposed improvements will be constructed within the existing I-595/SR 84 right of way in order to minimize overall impacts of the project. The corridor is surrounded by existing commercial and residential development and by the North New River Canal to the north. Shifting the alignments or modifications to the proposed alignments would directly impact these areas and result in substantial socio-economic effects and project costs. Therefore, alignment modifications are not considered reasonable and were dropped from further consideration.

4.5.3 Property Acquisition

Acquisition of right of way is not proposed from any of the noise sensitive properties impacted by the project. Therefore, no evaluation was conducted to determine if the acquisition of the remaining portion would be less expensive and disruptive than the other noise abatement measures.

4.5.4 Noise Barriers

Noise barriers reduce noise by blocking the sound path between a roadway and a noise sensitive area. To be effective, noise barriers must be long, continuous, and have sufficient height to block the path between the noise source and the receiver site. Three main types of noise barriers include vegetative barriers, earth barriers, and structural barriers. The effectiveness of vegetative barriers for noise attenuation is dependent upon the width and density of vegetation cover. In general, it requires 100 feet to 200 feet of dense, forested landscaping to reduce noise levels by 5.0 to 10.0 dBA. The existing typical sections and proposed right of way limits are insufficient to incorporate a vegetative barrier greater than 100 feet wide would provide the minimum of 5.0 dBA insertion loss. Therefore, vegetative barriers were not considered an effective noise abatement measure at these sites.

The construction of earth barriers would require substantial right of way acquisition (a minimum of 30 feet to 50 feet). The existing typical sections and proposed right of way limits are insufficient to incorporate a 30 foot wide berm. Therefore, earth barriers were not considered feasible as a noise abatement measure and were eliminated from further consideration.

Structural barriers include both ground mounted, also referred to as a concrete post and panel noise barrier, and shoulder mounted barriers which are cast in place along the outside edge of the shoulder. Because ground mounted and shoulder mounted barriers require a minimal amount of right of way, both were evaluated to determine their effectiveness in providing noise abatement to those sites along the project corridor that are affected (i.e., noise sensitive sites with predicted noise levels that approach or exceed the

NAC) by the project alternatives. The purpose of this evaluation was to determine the feasibility and reasonableness of noise barriers at each of these areas.

The reasonableness and feasibility of noise barriers at a specific location were also evaluated. As part of the reasonableness cost analysis, several conceptual barrier designs were evaluated to determine the most effective location with a minimum length to achieve the desirable decibel reduction and to minimize costs. For those areas where site conditions preclude the construction of a noise wall or exceed FDOT's reasonableness cost criteria, no further barrier analysis or consideration of additional reasonableness and feasibility factors was conducted. If barriers have not been excluded because of high costs, the barriers are further evaluated based on the factors listed in Chapter 17 of the PD&E Manual and on Table 4.5-1.

A number of conceptual barrier designs were evaluated for each of the sites predicted to approach or exceed the NAC. The results of the barrier analysis at each of these sites are summarized in Section 5.0.

Table 4.5-1 Traffic Noise Abatement Considerations

Evaluation Criteria	Comment
1. Relationship of future levels to the abatement criterion	Do future noise levels exceed the NAC?
2. Insertion Loss	Is the predicted noise reduction greater than 5 dBA?
3. Safety	Has sight distance and the clear recovery area been considered?
4. Community desires	Does the affected community want a barrier?
5. Accessibility	Would property access be affected?
6. Land use stability	Is the land use expected to change in the future?
7. Local controls	Any land use controls limiting construction of noise sensitive sites adjacent to project corridor?
8. Views of local officials with jurisdiction	What is the view of local politicians?
9. Noise level increase from existing to future build conditions	What is the magnitude of the noise level increase?
10. Noise level change from future build and no project conditions	What is the predicted noise level change from future build and no project conditions?
11. Antiquity	Does the noise sensitive site predate the roadway?
12. Constructability	Are there any physical constraints to construction of the wall?
13. Maintainability	Will there be a problem with maintenance?
14. Aesthetics	Have aesthetics been considered?
15. Right of way needs including access rights, easements for construction and/or maintenance, and additional land	Will additional right of way or access rights/easements be required?
16. Cost	Is the cost less than FDOT's maximum recommended cost of $30,000 per benefited receiver?
17. Utilities	Will any utilities be affected?
18. Drainage	Is drainage a problem?
19. Special land use considerations	Is a special land use involved (e.g., school, church, or park)?
20. Other environmental impacts	Are wetlands involved or listed species?
21. Additional considerations	Any other unusual or extenuating circumstances?

In some areas, noise barriers were evaluated within both FDOT's and SFWMD right of way. A meeting with José Varon of SFWMD was held to discuss placement of noise barriers within and adjacent to properties controlled by SFWMD that are located to the north of I-595/SR 84 along the New River Canal. SFWDM has requested a minimum of 40 ft clearance along the New River Canal for access and maintenance. North of the New River Canal where the SFWMD right of way is greater than 44 ft, the maximum encroachment from the northern canal right of way line is 4.0 ft. This provides for a minimum clearance of 40 ft for SFWMD in these areas (top of bank to the wall) and allows a straight alignment of the noise barrier offset 4.0 ft from the right of way line. SFWMD also requested a 3.0 ft Asphalt Mow Strip (similar to guardrail treatment) in front of the noise barriers. SFWMD indicated that this will assist them in the maintenance of the areas adjacent to the noise barriers. In areas south of the New River Canal where proposed roadway improvements would be located within the 40 ft clearance area, SFWMD requested that bulkheads be used along the canal bank. In some areas, because of the constrained right of way north of I-595/SR 84 and the use of bulkheads along the southern edge of the canal, ground mounted noise barriers were not considered constructible and therefore were not evaluated as part of this noise study. In these areas, shoulder mounted noise barriers represent the only option available.

The number of noise sensitive sites identified as affected within some of the noise barrier summary tables sometimes vary between barrier types (e.g., shoulder versus ground mounted) that are being evaluated. In most cases, the variation is attributed to the differences in the types, heights, and locations of the various noise barriers, which create different refraction points and some variation in predicted noise levels, which may change the total number of sites that are affected. In these circumstances, a range of values are presented in the text to describe the number of affected sites.

Table 5-1 Locations and Areas Evaluated for Noise Barriers

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Name	Area Identifier	Area Identification Number	Type of Noise Sensitive Site	Number of Noise Sensitive Sites Impacted		Noise Barrier Analysis Section
						Alternative 1B	Alternative 2A	
Between 136th Avenue and Flamingo Road	North of I-595	Sunshine City	SC	A-1	Residential (Mobile Home Park)	51	61	5.1
	South of I-595	Sunshine Village	SV	A-5	Residential (Mobile Home Park)	4	4	5.2
		Western Hills	WH	A-6	Residential (Mobile Home Park)	7	7	5.3
		Paradise Village	PV	A-7	Residential (Mobile Home Park)	26	32	5.4
		Kings Manor Estates	KM	A-8	Residential (Mobile Home Park)	37	39	
Between Flamingo Road and Hiatus Road	North of I-595	Plantation Acres	PA	A-9	Residential (Single Family)	24	39	5.5
		Acres South Park	AS	A-10	Park (Passive Recreation)	1	1	
	South of I-595	Village at Pine Lake	VPL	A-11	Multi-Family Residential (Two Story Quadraplexes)	5	10	5.6
Between Hiatus Road and Nob Hill Road	North of I-595	Hawk's Landing	HL	A-13	Residential (Single Family)	13	42	5.7
	South of I-595	The Palms Apartment Homes	PAH	A-14	Multi-Family Residential (Multi-Story Apartment Buildings)	97	104	5.8
Between Nob Hill Road and Pine Island Road	North of I-595	The Trellises Condos	TC	A-17	Multi-Family Residential (Two Story Townhomes)	34	34	5.9
		Davide Isles	DI	A-18	Single Family Residential	19	28	
		Jacaranda Villas	JV	A-19	Multi-Family Residential (Multi-Story Condominium Buildings)	0	3	
	South of I-595	Evergreen Place	EP	A-21	Multi-Family Residential (Multi-Story Condominium Buildings)	41	41	5.10
Between Pine Island Road and University Drive	North of I-595	Plantation Colony Apartments	PC	A-22	Multi-Family Residential (Multi-Story Apartment Buildings)	1	1	5.11
	South of I-595	Park City Estates	PCE	A-23	Residential (Mobile Home Park)	10	19	5.12
		Arrowhead Golf and Tennis Club	AGT	A-24	Multi-Family Residential (Multi-Story Apartment Buildings)	9	9	5.13
		Valencia Village	VV	A-25	Multi-Family Residential (Multi-Story Apartment Buildings)	9	9	
Between University Drive and Florida's Turnpike	North of I-595	Lake View Estates	LV	A-26	Residential (Single Family)	47	54	5.14
		Isla del Sol	IDS	A-27	Residential (Single Family)	8	12	5.15
		Sewell Lock Park	SL	A-28	Park (Passive Recreation)	1	1	
		Plantation Landings	PL	A-29	Residential (Single Family)	6	8	5.16
		Plantation Harbor	PHa	A-30	Residential (Single Family)	26	32	
Between SR 7 and I-95	North of I-595	Archstone Apartments	AA	A-36	Multi-Family Residential (Multi-Story Apartment Buildings)	28	28	5.17
Between Griffin Road and I-595	West of Florida's Turnpike	Everglades Lakes	EL	A-40	Residential (Mobile Home Park)	32	31	5.18
Between I-595 and Peters Road	West of Florida's Turnpike	Plantation Harbor	PHb	A-42	Residential (Single Family)	0	23	5.19
					Number of Noise Sensitive Sites that Approach or Exceed the Noise Abatement Criteria	536	672	--

5.1 Barrier Analysis for Sunshine City

Sunshine City (Area A-1) is a mobile home park located north of I-595 and the North New River Canal and east of SW 136th Avenue. Consideration of noise barriers is warranted for the residences within Sunshine City that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 51 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 65.1 dBA to 69.9 dBA and would be approximately 2.3 dBA higher than existing levels. For Alternative 2A, 61 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 65.6 dBA to 70.1 dBA and would be approximately 3.0 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.1-1 and 5.1-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located north of the North New River Canal, shoulder mounted barriers along SR 84 and I-595, and a combination of ground mounted and shoulder mounted noise barriers were evaluated. Because of right of way constraints and SFWMD's maintenance requirements for the North New River Canal, ground mounted noise barriers within the I-595/SR 84 right of way were not considered constructible and were not evaluated. Also, the limits of the ground mounted noise barrier north of the North New River Canal are constrained by SW 136th Avenue to the west, a north-south canal in the central portion of the development, and West Broward Boulevard to the east.

For Alternative 1B, 11 conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 51 residences predicted to be affected by design year traffic noise. Four of the conceptual designs considered are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. One of the conceptual designs (CD11) is recommended for further consideration and community input. This conceptual design is presented in Figure 5.1-1 and is considered the optimal barrier design. CD11 represents a combination ground mounted noise barrier (22 ft tall and 1,690 ft long) north of the North New River Canal from Station 157+15 to Station 174+80 and a shoulder mounted barrier (8 ft tall and 1,420 ft long) along the elevated section of I-595 from Station 154+20 to Station 168+40. CD11 is considered the optimal design because it provides benefit to the most residences (81), provides an average noise reduction of 7.7 dBA for the benefited residences, and has the lowest cost per benefited residence ($16,716) with an estimated construction cost of $1,353,980. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities. It will be important to obtain public input from the adjacent residences regarding the ground mounted noise barriers north of the North New

River Canal before a decision is made to construct a noise barrier in this location. A ground mounted noise barrier in this area will restrict access and view of the North New River Canal from adjacent properties, which may be perceived as an undesirable situation by adjacent property owners.

For Alternative 2A, 13 conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 61 residences predicted to be affected by design year traffic noise. Five of the conceptual designs considered are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. One of the conceptual designs (CD13) is recommended for further consideration and community input. This conceptual design is presented in Figure 5.1-2 and is considered the optimal barrier design. CD13 represents a combination ground mounted noise barrier (22 ft tall and 1,690 ft long) north of the North New River Canal and a shoulder mounted barrier (8 ft tall and 2,500 ft long) along the elevated section of I-595. CD13 is considered the optimal design because it provides benefit to the most residences (79), provides an average noise reduction of 8.5 dBA for the benefited residences, and has the lowest cost per benefited residence ($22,567) with an estimated construction cost of $1,782,780. In addition, this barrier satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities. It will be important to obtain public input from the adjacent residences regarding the ground mounted noise barriers north of the North New River Canal before a decision is made to construct a noise barrier in this location. A ground mounted noise barrier in this area will restrict access and view of the North New River Canal from adjacent properties, which may be perceived as an undesirable situation by adjacent property owners.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.1-3. None of the conceptual barrier designs for either alternative benefit all of the impacted noise sensitive sites. In this area, the effectiveness of the ground mounted noise barrier is affected by site conditions that restrict the length and ability to have a continuous barrier. A 75 ft gap in the noise barrier is necessary to accommodate the north-south canal in the central portion of the development. Also, because of perpendicular roads, the noise barrier does not extend far enough east and west of the community to protect the end residences. In addition, a ground mounted noise wall is less effective in this area because the vehicles on I-595 are at a higher elevation due to I-595 being elevated above SW 136th Avenue. As a result of this elevation difference, some of the traffic noise is not being blocked, which limits the noise reduction at some of the noise sensitive sites.

The effectiveness of shoulder mounted noise barriers in this area is limited by their height (i.e., 8, 10, 12, or 14 ft) and the distance the residences are set back from I-595/SR 84. Noise barriers are generally less effective at lower heights and as the distance increases between the noise source and the location of the noise barrier. Some of the impacted residences are at least 350 ft from the edge of the nearest SR 84 travel lane, limiting the effectiveness of the shoulder mounted noise barriers.

Table 5.1-1 Noise Barrier Analyses for Sunshine City Located North of I-595 Between SW 136th Avenue and Flamingo Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Sunshine City (SC)	**SR 84 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	1,580	162+00	178+00	51	1.8	0	0	0	---	$669,920	---	---
	CD2	Shoulder Mounted	10	1,580	162+00	178+00	51	2.2	0	0	0	---	$837,400	---	---
	CD3	Shoulder Mounted	12	1,580	162+00	178+00	51	2.5	0	0	0	---	$1,004,880	---	---
	CD4	Shoulder Mounted	14	1,580	162+00	178+00	51	2.8	3	0	3	5.1	$1,172,360	---	---
	I-595 Shoulder Mounted Barrier Alternatives														
	CD5	Shoulder (Mounted on Bridge)	8	340	155+60	159+00	51	1.6	0	0	0	---	$456,480	---	---
		Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60									
		Shoulder (Mounted on MSE Wall)	8	940	159+00	168+40									
	Combination SR 84 Shoulder Mounted Barriers and I-595 Shoulder Mounted Barriers Combination Alternatives														
	CD6	WB 84 Shoulder Mounted	8	1,580	162+00	178+00	51	2.9	0	0	0	---	$1,080,000	---	---
		I-595 Shoulder (Mounted on Bridge)	8	140	155+60	159+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	940	159+00	168+40									
	CD7	WB 84 Shoulder Mounted	14	1,580	162+00	178+00	51	4.2	14	7	21	5.2	$1,511,040	$71,954	Optimal Conceptual Barrier Design Combination of WB 84 Shoulder Mounted Barrier and I-595 Shoulder Mounted Barrier, Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		I-595 Shoulder (Mounted on Bridge)	14	340	155+60	159+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	940	159+00	168+40									
	Ground Mounted Barrier Alternatives														
	CD8	Ground Mounted	20	1,690	157+15	165+50	51	6.8	35	4	39	9.1	$845,000	$21,667	---
					166+25	174+80									
	CD9	Ground Mounted	22	1,690	157+15	165+50	51	7.1	36	8	44	9.0	$929,500	$21,125	Optimal Conceptual Ground Mounted Barrier Design
					166+25	174+80									
	Ground Mounted Barrier and I-595 Shoulder Barrier Alternatives														
	CD10	I-595 Shoulder (Mounted on Bridge)	8	340	155+60	159+00	51	7.6	46	33	79	7.6	$1,269,480	$16,069	---
		I-595 Shoulder (Mounted on MSE Wall)	8	140	154+20	155+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	940	159+00	168+40									
		Ground Mounted	20	1,690	157+15	165+50									
					166+25	174+80									
	CD11	I-595 Shoulder (Mounted on Bridge)	8	340	155+60	159+00	51	7.9	46	35	81	7.7	$1,353,980	$16,716	---
		I-595 Shoulder (Mounted on MSE Wall)	8	140	154+20	155+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	940	159+00	168+40									
		Ground Mounted	22	1,690	157+15	165+50									
					166+25	174+80									

Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

Table 5.1-2 Noise Barrier Analyses for Sunshine City Located North of I-595 Between SW 136th Avenue and Flamingo Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Sunshine City (SC)	**SR 84 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	1,580	162+00	178+00	61	0.6	0	0	0	---	$669,920	---	---
	CD2	Shoulder Mounted	10	1,580	162+00	178+00	61	0.7	0	0	0	---	$837,400	---	---
	CD3	Shoulder Mounted	12	1,580	162+00	178+00	61	0.8	0	0	0	---	$1,004,880	---	---
	CD4	Shoulder Mounted	14	1,580	162+00	178+00	61	1.0	0	0	0	---	$1,172,360	---	---
	WB I-595 Shoulder Barrier Alternatives														
	CD5	Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60	61	3.6	0	0	0	---	$938,080	---	---
		Shoulder (Mounted on Bridge)	8	340	155+60	159+00									
		Shoulder (Mounted on MSE Wall)	8	1,120	159+00	170+00									
		Shoulder Mounted	8	1,000	170+00	180+00									
	CD6	Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60	61	4.3	14	0	14	5.3	$1,203,240	$85,946	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder (Mounted on Bridge)	14	340	155+60	159+00									
		Shoulder (Mounted on MSE Wall)	8	1,120	159+00	170+00									
		Shoulder Mounted	14	1,000	170+00	180+00									
	SR 84 Shoulder Mounted Barrier and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD7	WB 84 Shoulder Mounted	14	1,580	162+00	178+00	61	4.7	35	5	40	5.3	$2,110,440	$52,761	---
		I-595 Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60									
		I-595 Shoulder (Mounted on Bridge)	8	340	155+60	159+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,120	159+00	170+00									
		I-595 Shoulder Mounted	8	1,000	170+00	180+00									
	CD8	WB 84 Shoulder Mounted	14	1,580	162+00	178+00	61	5.5	46	19	65	5.9	$2,413,400	$37,129	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		I-595 Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60									
		I-595 Shoulder (Mounted on Bridge)	14	340	155+60	159+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,120	159+00	170+00									
		I-595 Shoulder Mounted	14	900	170+00	179+00									
	Ground Mounted Barrier Alternatives														
	CD9	Ground Mounted	20	1,690	157+15	165+50	61	6.0	34	0	34	9.7	$845,000	$24,853	Optimal Conceptual Ground Mounted Barrier Design
					166+25	174+80									
	CD10	Ground Mounted	22	1,690	157+15	165+50	61	6.2	34	0	34	10.2	$929,500	$27,338	---
					166+25	174+80									
	Ground Mounted Barrier and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD11	I-595 Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60	61	8.5	53	25	78	8.3	$1,698,280	$21,773	---
		I-595 Shoulder (Mounted on Bridge)	8	340	155+60	159+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,120	159+00	170+00									
		I-595 Shoulder Mounted	8	800	170+00	178+00									
		Ground Mounted	20	1,690	157+15	165+50									
					166+25	174+80									
	CD12	I-595 Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60	61	8.5	47	25	72	8.6	$1,655,580	$22,994	---
		I-595 Shoulder (Mounted on Bridge)	8	340	155+60	159+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,120	159+00	170+00									
		I-595 Shoulder Mounted	8	500	170+00	175+00									
		Ground Mounted	22	1,690	157+15	165+50									
					166+25	174+80									
	CD13	I-595 Shoulder (Mounted on MSE Wall)	8	240	153+20	155+60	61	8.8	54	25	79	8.5	$1,782,780	$22,567	---
		I-595 Shoulder (Mounted on Bridge)	8	340	155+60	159+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,120	159+00	170+00									
		I-595 Shoulder Mounted	8	800	170+00	178+00									
		Ground Mounted	22	1,690	157+15	165+50									
					166+25	174+80									

I:\I-595\PD&E\Study\Barrier\Analysis\Updates\ Analysis Options 1 thru 6\Table 5.1-2 Alternative 2A.xls

Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	SUNSHINE CITY NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.1-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD13 (COMBINATION OF GROUND MOUNTED AND SHOULDER MOUNTED BARRIERS)

1" = 300'

SUNSHINE CITY

SC1 SC2 SC3 SC4 SC5 SC6 SC7 SC8 SC9 SC10 SC11 SC12 SC13 SC14 SC15

8 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD 13)

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVES CD 13)

NORTH NEW RIVER CANAL

145 150 155 160 165 170 175 180 185 1185

U STORE STORAGE

DUNKIN' DONUTS

EXXON

STRIP MALL

MCDONALD'S

SHURGARD STORAGE

BP AMOCO

BB&T

SHENANDOAH SQUARE

WALGREENS

PUBLIX

SUBWAY

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	SUNSHINE CITY NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.1-2

Table 5.1-3 The Predicted Noise Level and Amount of Noise Reduction at Sunshine City with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between SW 136th Avenue and Flamingo Road																			
Sunshine City (North of I-595 between Station 150+60 and Station 170+50)	SC1	157+34	1 (First Row Residence)	227	381	245	378	468	67.0	69.9	70.0	2.9	3.0	Exceeds	Exceeds	66.7	3.2	68.7	1.3
	SC2	158+06	1 (First Row Residence)	210	358	228	355	445	66.2	67.9	67.9	1.7	1.7	Exceeds	Exceeds	62.5	5.4	62.6	5.3
	SC3	158+89	2 (First Row Residences)	210	350	228	347	437	64.8	67.0	67.1	2.2	2.3	Exceeds	Exceeds	58.3	8.7	58.8	8.3
	SC4	158+24	2 (Second Row Residences)	340	487	358	484	574	63.4	65.7	65.8	2.3	2.4	Below	Below	61.8	3.9	61.7	4.1
	SC5	161+24	14 (First Row Residences)	209	331	225	326	418	64.7	67.0	67.1	2.3	2.4	Exceeds	Exceeds	55.4	11.6	56.1	11.0
	SC6	161+30	10 (Second Row Residences)	342	464	358	459	551	62.5	65.5	65.7	3.0	3.2	Below	Below	58.5	7.0	58.7	7.0
	SC7	164+97	4 (First Row Residences)	230	324	251	309	411	65.2	67.6	67.9	2.4	2.7	Exceeds	Exceeds	58.3	9.3	57.7	10.2
	SC8	165+30	4 (Second Row Residences)	349	442	369	427	529	63.3	66.0	66.4	2.7	3.1	Approaches	Approaches	60.5	5.5	61.2	5.2
	SC9	164+70	17 (Third Row Residences)	421	516	442	501	603	62.3	65.2	65.5	2.9	3.2	Below	Below	59.9	5.3	60.2	5.3
	SC10	168+19	1 (Third Row Residence)	437	525	450	511	612	62.6	65.1	65.8	2.5	3.2	Below	Below	60.1	5.0	61.2	4.6
	SC11	170+61	13 (First Row Residences)	226	313	228	299	399	66.5	68.5	69.6	2.0	3.1	Exceeds	Exceeds	56.3	12.2	55.4	14.2
	SC12	170+28	8 (Second Row Residences)	355	442	358	427	527	64.1	66.1	67.3	2.0	3.2	Approaches	Exceeds	59.8	6.3	61.6	5.7
	SC13	173+85	3 (First Row Residences)	230	315	214	311	397	67.0	68.3	70.0	1.3	3.0	Exceeds	Exceeds	58.5	9.8	59.1	10.9
	SC14	173+39	10 (First and Second Row Residences)	354	439	340	436	521	64.3	65.7	67.4	1.4	3.1	Below	Exceeds	60.5	5.2	62.2	5.2
	SC15	174+64	1 (First Row Residence)	233	317	214	287	398	67.1	68.0	70.1	0.9	3.0	Exceeds	Exceeds	61.3	6.7	62.9	7.2
													Number of Noise Sensitive Sites Impacted by Project Alternatives		51	61				

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.2 Barrier Analysis for Sunshine Village

Sunshine Village (Area A-5) is a mobile home park located south of I-595 and east of SW 136th Avenue. Consideration of noise barriers is warranted for the residences within Sunshine Village that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, four residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 61.3 dBA to 71.8 dBA and would be approximately 2.6 dBA higher than existing levels. For Alternative 2A, four residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 61.1 dBA to 71.8 dBA and would be approximately 2.4 dBA higher than existing levels. The low number of residences impacted is attributed to the intervening commercial property building (Shurgard Storage) partially shielding noise from both I-595 and SR 84.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.2-1 and 5.2-2, respectively. For Alternatives 1B and 2A, shoulder mounted noise barriers along I-595 were evaluated. Because a commercial property (Shurgard Storage) is located between these residences and the I-595/SR 84 right of way and because the limits of a ground mounted noise barrier would be constrained by SW 136th Avenue to the west, ground mounted noise barriers were not considered reasonable at this location and were not evaluated.

For Alternative 1B, four conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the four residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual barrier designs considered, CD4 represents the optimal design for this area. CD4 represents a shoulder mounted noise barrier (8 ft to 14 ft tall and 2,260 ft long) along I-595 from Station 150+00 to Station 172+60 (see Figure 5.2-1). However, CD4 with an average noise reduction of 1.5 dBA, does not benefit any residences and has an estimated construction cost of $894,180. Because noise barriers are ineffective in providing at least 5.0 dBA of noise reduction and the cost substantially exceeds the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier is not recommended for further consideration in this area.

For Alternative 2A, four conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the four residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual barrier designs considered, CD4 represents the optimal design for this area. CD4 provides the greatest average noise reduction (2.0 dBA), provides benefits to two residences, and has the lowest cost per benefited residence ($795,990) with

an estimated construction cost of $1,591,980. CD4 represents a shoulder mounted noise barrier (8 ft to 14 ft tall and 3,220 ft long) along I-595 from Station 153+00 to Station 187+00 (see Figure 5.2-2). Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.2-3. None of the conceptual barrier designs for either alternative benefit all of the impacted noise sensitive sites or meet FDOT's reasonable cost criteria. The effectiveness of shoulder mounted noise barriers in this area is limited by the traffic noise from SW 136th Avenue, which is within 100 ft of three sites (Receiver Sites SV1, SV2, and SV3) impacted by design year traffic noise associated with Alternatives 1B and 2A. Also, the effectiveness of shoulder mounted noise barriers are limited by their height (i.e., 8, 10, 12, or 14 ft) and the distance the residences are set back from I-595/SR 84. Noise barriers are generally less effective at lower heights and as the distance increases between the noise source and the location of the noise barrier. Some of the impacted residences are at least 330 ft from the edge of the nearest SR 84 travel lane, limiting the effectiveness of the shoulder mounted noise barriers.

Table 5.2-1 Noise Barrier Analyses for Sunshine Village Located South of I-595 Between SW 136th Avenue and Flamingo Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Sunshine Village (SV)	CD1	Shoulder Mounted (Mounted on MSE Wall)	8	580	150+00	155+80	4	1.0	0	0	0	---	$742,000	---	---
		Shoulder Mounted (Mounted on Bridge)	8	330	155+80	159+10									
		Shoulder Mounted (Mounted on MSE Wall)	8	890	159+10	168+00									
		Shoulder Mounted	8	460	168+00	172+60									
	CD2	Shoulder Mounted (Mounted on MSE Wall)	8	580	150+00	155+80	4	1.2	0	0	0	---	$791,500	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted (Mounted on Bridge)	10	330	155+80	159+10									
		Shoulder Mounted (Mounted on MSE Wall)	8	890	159+10	168+00									
		Shoulder Mounted	10	460	168+00	172+60									
	CD3	Shoulder Mounted (Mounted on MSE Wall)	8	580	150+00	155+80	4	1.4	0	0	0	---	$844,680	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted (Mounted on Bridge)	12	330	155+80	159+10									
		Shoulder Mounted (Mounted on MSE Wall)	8	890	159+10	168+00									
		Shoulder Mounted	12	460	168+00	172+60									
	CD4	Shoulder Mounted (Mounted on MSE Wall)	8	580	150+00	155+80	4	1.5	0	0	0	---	$894,180	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted (Mounted on Bridge)	14	330	155+80	159+10									
		Shoulder Mounted (Mounted on MSE Wall)	8	890	159+10	168+00									
		Shoulder Mounted	14	460	168+00	172+60									

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

Table 5.2-2 Noise Barrier Analyses for Sunshine Village Located South of I-595 Between SW 136th Avenue and Flamingo Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Sunshine Village (SV)	CD1	Shoulder Mounted (Mounted on MSE Wall)	8	280	153+00	155+80	4	1.7	0	0	0	---	$1,180,240	---	---
		Shoulder Mounted (Mounted on Bridge)	8	330	155+80	159+10									
		Shoulder Mounted (Mounted on MSE Wall)	8	890	159+10	168+00									
		Shoulder Mounted	8	460	168+00	172+60									
		Shoulder Mounted	8	1,260	174+40	187+00									
	CD2	Shoulder Mounted (Mounted on MSE Wall)	8	280	153+00	155+80	4	2.0	0	0	0	---	$1,312,900	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted (Mounted on Bridge)	10	330	155+80	159+10									
		Shoulder Mounted (Mounted on MSE Wall)	8	890	159+10	168+00									
		Shoulder Mounted	10	460	168+00	172+60									
		Shoulder Mounted	10	1,260	174+40	187+00									
	CD3	Shoulder Mounted (Mounted on MSE Wall)	8	280	153+00	155+80	4	2.3	0	0	0	---	$1,459,320	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted (Mounted on Bridge)	12	330	155+80	159+10									
		Shoulder Mounted (Mounted on MSE Wall)	8	890	159+10	168+00									
		Shoulder Mounted	12	460	168+00	172+60									
		Shoulder Mounted	12	1,260	174+40	187+00									
	CD4	Shoulder Mounted (Mounted on MSE Wall)	8	280	153+00	155+80	4	2.0	0	2	2	5.3	$1,591,980	$795,990	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted (Mounted on Bridge)	14	330	155+80	159+10									
		Shoulder Mounted (Mounted on MSE Wall)	8	890	159+10	168+00									
		Shoulder Mounted	14	460	168+00	172+60									
		Shoulder Mounted	14	1,260	174+40	187+00									

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD4 (SHOULDER MOUNTED BARRIER)

1" = 300'

8 FT/14 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD4)

NORTH NEW RIVER CANAL

SR-84 WESTBOUND

150 155 160 165 170 175 180 185 190 1185 1190

SV1 SV2 SV3 SV4 SV5 SV6 SV7 SV8 SV9

SUNSHINE VILLAGE

SHURGARD STORAGE

U STORE STORAGE

DUNKIN' DONUTS

EXXON

MCDONALD'S

STRIP MALL

FOR LEASE

BP AMOCO

BB&T

SHENANDOAH SQUARE

WALGREENS

PUBLIX

SUBWAY

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	SUNSHINE VILLAGE NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.2-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD4 (SHOULDER MOUNTED BARRIER)

1" = 300'

8 FT/14 FT TALL SHOULDER MOUNTED BARRIERS (ALTERNATIVE CD4)

NORTH NEW RIVER CANAL

SR-84 WESTBOUND

150 155 160 165 170 175 180 185 1185 190 1190

SV1 SV2 SV3 SV4 SV5 SV6 SV7 SV8 SV9

SUNSHINE VILLAGE

BP AMOCO

BB&T

SHENANDOAH SQUARE

WALGREENS

PUBLIX

SUBWAY

SHURGARD STORAGE

U STORE STORAGE

DUNKIN' DONUTS

EXXON

MCDONALD'S

STRIP MALL

FOR LEASE

Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	SUNSHINE VILLAGE NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.2-2

Table 5.2-3 The Predicted Noise Level and Amount of Noise Reduction at Sunshine Village with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between SW 136th Avenue and Flamingo Road																			
Sunshine Village (South of I-595 between Station 150+80 and Station 170+20)	SV1	158+94	2 (Second Row Residences)	331	476	349	483	582	71.6	71.8	71.8	0.2	0.2	Exceeds	Exceeds	71.0	0.8	71.1	0.7
	SV2	159+25	1 (First Row Residence)	218	363	236	369	468	70.0	68.1	69.3	-1.9	-0.7	Exceeds	Exceeds	64.7	3.4	67.2	2.1
	SV3	159+79	1 (First Row Residence)	221	363	239	370	469	66.3	69.3	68.0	3.0	1.7	Exceeds	Exceeds	66.9	2.4	65.1	2.9
	SV4	160+92	2 (First Row Residences)	233	371	251	378	477	63.1	65.4	65.3	2.3	2.2	Below	Below	60.9	4.5	61.4	3.9
	SV5	160+30	4 (Second Row Residences)	361	502	379	508	607	61.9	64.4	64.4	2.5	2.5	Below	Below	60.0	4.4	60.6	3.8
	SV6	167+96	17 (First Row Residences)	288	385	311	397	490	58.8	61.3	61.1	2.5	2.3	Below	Below	58.6	2.7	58.4	2.7
	SV7	168+49	15 (Second Row Residences)	415	510	439	523	615	58.7	61.5	61.3	2.8	2.6	Below	Below	58.5	3.0	58.3	3.0
	SV8	171+85	4 (First Row Residences)	327	411	348	424	516	61.8	65.7	65.5	3.9	3.7	Below	Below	61.8	3.9	60.2	5.3 (2 Sites) - 4.1 (2 Sites)
	SV9	171+99	2 (Second Row Residences)	438	522	458	534	626	59.9	63.5	63.2	3.6	3.3	Below	Below	60.5	3.0	58.9	4.3
													Number of Noise Sensitive Sites Impacted by Project Alternatives			4	4		

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.3 Barrier Analysis for Western Hills

Western Hills (Area A-6) is a mobile home park located south of I-595 between SW 136th Avenue and Flamingo Road. Consideration of noise barriers is warranted for the residences within Western Hills that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, seven residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 62.9 dBA to 70.1 dBA and would be approximately 2.8 dBA higher than existing levels. For Alternative 2A, seven residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 62.7 dBA to 70.1 dBA and would be approximately 2.7 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.3-1 and 5.3-2, respectively. For Alternatives 1B and 2A, shoulder mounted noise barriers along I-595 were evaluated. Because commercial properties including a strip mall and an Exxon gas station are located between these residences and I-595/SR 84's right of way line and because the limits of a ground mounted noise barrier would be constrained by SW 130th Avenue to the east, ground mounted noise barriers were not considered reasonable at this location and were not evaluated.

For Alternative 1B, five conceptual barrier designs with varying heights were evaluated to reduce traffic noise levels at the seven residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual barrier designs considered, CD4 represents the optimal design for this area. CD4 provides one of the greatest average noise reductions (5.6 dBA), provides benefits to the seven residences impacted by design year traffic noise levels, and has the lowest cost per benefited residence ($155,820) with an estimated construction cost of $1,090,740. CD4 represents a shoulder mounted noise barrier (14 ft tall and 1,470 ft long) along I-595 from Station 177+30 to Station 192+00 (see Figure 5.3-1). Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

For Alternative 2A, four conceptual barrier designs with varying heights were evaluated to reduce traffic noise levels at the seven residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual barrier designs considered, CD4 represents the optimal design for this area. CD4 provides the greatest average noise reductions (5.4 dBA), provides benefits to eight residences, and has the lowest cost per benefited residence ($138,600) with an estimated construction cost of $1,108,800. CD4 represents a shoulder mounted noise

barrier (14 ft tall and 1,760 ft long) along I-595 from Station 176+40 to Station 194+00 (see Figure 5.3-2). Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.3-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The lowest cost per benefited receiver for the optimal conceptual designs was $155,820 for Alternative 1B (CD4) and $138,600 for Alternative 2A (CD4). The high cost of providing abatement is attributed to the low density of noise sensitive sites in this area.

Table 5.3-1 Noise Barrier Analyses for Western Hills Located South of I-595 Between SW 136th Avenue and Flamingo Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Western Hills (WH)	CD1	Shoulder Mounted	8	1,470	177+30	192+00	7	3.4	0	0	0	---	$623,280	---	---
	CD2	Shoulder Mounted	10	1,470	177+30	192+00	7	3.9	0	0	0	---	$779,100	---	---
	CD3	Shoulder Mounted	12	1,470	177+30	192+00	7	5.0	5	0	5	5.1	$934,920	$186,984	---
	CD4	Shoulder Mounted	14	1,470	177+30	192+00	7	5.6	7	0	7	5.6	$1,090,740	$155,820	---
	CD5	Shoulder Mounted	14	1,960	174+40	194+00	7	5.8	7	1	8	5.6	$1,454,320	$181,790	---

I:\I-595\PD&E\Study\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

Table 5.3-2 Noise Barrier Analyses for Western Hills Located South of I-595 Between SW 136th Avenue and Flamingo Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Western Hills (WH)	CD1	Shoulder Mounted	8	1,760	176+40	194+00	7	3.4	0	0	0	---	$746,240	---	---
	CD2	Shoulder Mounted	10	1,760	176+40	194+00	7	3.8	0	0	0	---	$862,400	---	---
	CD3	Shoulder Mounted	12	1,760	176+40	194+00	7	4.9	3	0	3	5.2	$992,640	$330,880	---
	CD4	Shoulder Mounted	14	1,760	176+40	194+00	7	5.5	7	1	8	5.4	$1,108,800	$138,600	---

I:\I-595\PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD4 (SHOULDER MOUNTED BARRIER)

1" = 300'

14 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD4)

NORTH NEW RIVER CANAL

I-595 WESTBOUND

I-595 EASTBOUND

SHURGARD STORAGE

U STORE STORAGE

MCDONALD'S

DUNKIN' DONUTS

STRIP MALL

EXXON

FOR LEASE

WH1

WH2

WH3

WH4

WH5

WH6

WESTERN HILLS

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	WESTERN HILLS NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.3-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD4 (SHOULDER MOUNTED BARRIER)

1" = 300'

W BROWARD BOULEVARD

SW 2ND STREET

NW 1ST STREET

14 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD4)

NORTH NEW RIVER CANAL

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

SHURGARD STORAGE

U STORE STORAGE

DUNKIN' DONUTS

EXXON

MCDONALD'S

STRIP MALL

FOR LEASE

WH1

WH2

WH3

WH4

WH5

WH6

SW 3RD COURT

SW 4TH STREET

DOGWOOD LANE

SW 5TH STREET

WESTERN HILLS

Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	WESTERN HILLS NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.3-2

Table 5.3-3 The Predicted Noise Level and Amount of Noise Reduction at Western Hills with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between SW 136th Avenue and Flamingo Road																			
Western Hills (South of I-595 between Station 170+20 and Station 180+50)	WH1	173+06	19 (First Row Residences)	493	577	514	588	681	59.1	62.9	62.7	3.8	3.6	Below	Below	62.4	0.5	62.0	0.7
	WH2	181+31	1 (First Row Residence)	282	368	300	373	476	62.4	63.9	63.8	1.5	1.4	Below	Below	59.9	4.0	59.6	4.2
	WH3	182+26	4 (Second Row Residences)	384	470	402	475	579	62.4	63.8	63.7	1.4	1.3	Below	Below	59.9	3.9	59.5	4.2
	WH4	183+82	6 (First Row Residences)	347	334	266	338	442	66.7	68.3	68.4	1.6	1.7	Exceeds	Exceeds	62.7	5.6	63.0	5.4
	WH5	184+20	3 (Second Row Residence)	344	430	363	435	539	63.9	65.4	65.4	1.5	1.5	Below	Below	60.8	4.6	60.6	4.8
	WH6	184+84	1 (First Row Residence)	185	271	204	276	379	68.5	70.1	70.1	1.6	1.6	Exceeds	Exceeds	64.4	5.7	64.2	5.9
												Number of Noise Sensitive Sites Impacted by Project Alternatives		7	7				

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.4 Barrier Analysis for Paradise Village and Kings Manor Estates

Paradise Village (Area A-7) and Kings Manor Estates (Area A-8) are mobile home parks located south of I-595 between SW 136th Avenue and Flamingo Road. Due to their proximity to each other, the barrier analysis considered these communities as one area. Consideration of noise barriers is warranted for the residences within Paradise Village that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 26 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 63.5 dBA to 72.9 dBA and would be approximately 1.8 dBA higher than existing levels. For Alternative 2A, 32 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 63.6 dBA to 72.8 dBA and would be approximately 1.7 dBA higher than existing levels.

Consideration of noise barriers is warranted for the residences within Kings Manor Estates that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 37 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 62.1 dBA to 75.9 dBA and would be approximately 1.2 dBA higher than existing levels. For Alternative 2A, 39 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 62.0 dBA to 75.9 dBA and would be approximately 1.1 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.4-1 and 5.4-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located along the I-595/SR 84 southern right of way line, shoulder mounted barriers along I-595, and a combination of ground mounted and shoulder mounted noise barriers were evaluated.

For Alternative 1B, seven conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 63 residences predicted to be affected by design year traffic noise. Two of the conceptual designs (CD3 and CD4) are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of these conceptual designs, CD4 is recommended for further consideration and community input. The limits of CD4 are depicted on Figure 5.4-1. CD4 represents a ground mounted noise barrier (22 ft tall and 1,540 ft long) from Station 190+00 to Station 206+00. Of the two cost reasonable conceptual designs, CD4 is considered the optimal barrier design. CD4 provides benefit to 43 residences, provides an average noise reduction of 7.3 dBA for the benefited residences, and has the lowest cost per benefited residence ($19,698) with an estimated construction cost of $847,000. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement

measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

For Alternative 2A, seven conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 71 residences predicted to be affected by design year traffic noise. Two of the conceptual designs (CD3 and CD4) are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual barrier designs, CD4 is recommended for further consideration and community input. The limits of CD4 are depicted on Figure 5.4-2. CD4 represents a ground mounted noise barrier (22 ft tall and 1,540 ft long) from Station 190+00 to Station 206+00. Of the two cost reasonable conceptual designs, CD4 is considered the optimal barrier design. CD4 provides benefit to 43 residences, provides an average noise reduction of 7.4 dBA for the benefited residences, and has the lowest cost per benefited residence ($19,698) with an estimated construction cost of $847,000. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.4-3. None of the conceptual barrier designs for either alternative benefit all of the impacted noise sensitive sites. In this area, the effectiveness of the ground mounted noise barrier is affected by site conditions that restrict the length and ability to have a continuous right of way barrier. At least a 60 ft gap in the noise barrier is necessary to accommodate the access road to Paradise Village. In addition, a ground mounted noise wall is less effective in this area because the vehicles on I-595 are at a higher elevation due to I-595 being elevated above Flamingo Road. As a result of this elevation difference, some of the traffic noise is not being blocked, which limits the noise reduction at some of the noise sensitive sites. Also, the use of ground mounted noise barriers on the eastern portion of Kings Manor Estates was not considered reasonable because it would block the view and access to commercial properties along SR 84 and also would be constrained by Flamingo Road to the east.

The effectiveness of shoulder mounted noise barriers in this area is limited by their height (i.e., 8, 10, 12, or 14 ft) and the distance the residences are set back from I-595/SR 84. Noise barriers are generally less effective at lower heights and as the distance increases

between the noise source and the location of the noise barrier. Some of the impacted residences are at least 400 ft from the edge of the nearest SR 84 travel lane, limiting the effectiveness of the shoulder mounted noise barriers. In the eastern portions of Kings Manor Estates, the effectiveness of shoulder mounted noise barriers also is limited by the traffic noise from Flamingo Road and SR 84.

Table 5.4-1 Noise Barrier Analyses for Kings Manor and Paradise Village Located South of I-595 Between SW 136th Avenue and Flamingo Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Kings Manor (KM) and Paradise Village (PV)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	2,630	175+00	196+00	63	2.5	0	0	0	---	$1,694,320	---	---
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	520	215+80	221+00									
		Shoulder Mounted (Mounted on Bridge)	8	400	211+80	215+80									
	CD2	Shoulder Mounted	14	2,630	175+00	196+00	63	3.5	6	0	6	5.5	$2,379,340	$396,557	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	520	215+80	221+00									
		Shoulder Mounted (Mounted on Bridge)	14	400	211+80	215+80									
	Ground Mounted Barrier Alternatives														
	CD3	Ground Mounted	20	1,540	190+00	194+00	63	5.5	37	0	37	7.2	$770,000	$20,811	---
					194+60	206+00									
	CD4	Ground Mounted	22	1,540	190+00	194+00	63	5.9	43	0	43	7.3	$847,000	$19,698	---
					194+60	206+00									
	Ground Mounted Barrier and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD5	Shoulder Mounted	8	2,630	175+00	196+00	63	6.3	43	2	45	7.4	$2,232,960	$49,621	---
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on Bridge)	8	120	211+80	213+00									
		Ground Mounted	20	1,540	190+00	194+00									
					194+60	206+00									
	CD6	Shoulder Mounted	8	2,630	175+00	196+00	63	7.1	44	2	46	8.2	$2,400,520	$52,185	---
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	80	215+80	216+00									
		Shoulder Mounted (Mounted on Bridge)	8	400	211+80	215+80									
		Ground Mounted	22	1,540	190+00	194+00									
					194+60	206+00									
	CD7	Shoulder Mounted	14	2,630	175+00	196+00	63	8.0	45	9	54	8.7	$3,056,700	$56,606	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	220	215+80	218+80									
		Shoulder Mounted (Mounted on Bridge)	14	400	211+80	215+80									
		Ground Mounted	22	1,540	190+00	194+00									
					194+60	206+00									

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Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

Table 5.4-2 Noise Barrier Analyses for Kings Manor and Paradise Village Located South of I-595 Between SW 136th Avenue and Flamingo Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Kings Manor (KM) and Paradise Village (PV)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	2,630	175+00	196+00	71	3.2	0	0	0	---	$1,630,320	---	---
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	320	215+80	219+00									
		Shoulder Mounted (Mounted on Bridge)	8	400	211+80	215+80									
	CD2	Shoulder Mounted	14	2,630	175+00	196+00	71	4.2	21	1	22	5.3	$2,315,340	$105,243	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	320	215+80	219+00									
		Shoulder Mounted (Mounted on Bridge)	14	400	211+80	215+80									
	Ground Mounted Barrier Alternatives														
	CD3	Ground Mounted	20	1,540	190+00	194+00	71	4.8	37	0	37	7.2	$770,000	$20,811	---
					194+60	206+00									
	CD4	Ground Mounted	22	1,540	190+00	194+00	71	5.1	43	0	43	7.4	$847,000	$19,698	---
					194+60	206+00									
	Ground Mounted Barrier and I-595 Shoulder Mounted Barrier Alternatives														
	CD5	Shoulder Mounted	8	2,290	177+00	194+60	71	7.0	54	3	57	8.0	$2,192,160	$38,459	---
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	120	215+80	217+00									
		Shoulder Mounted (Mounted on Bridge)	8	400	211+80	215+80									
		Ground Mounted	20	1,540	190+00	194+00									
					194+60	206+00									
	CD6	Shoulder Mounted	8	2,290	177+00	194+60	71	7.4	54	3	57	8.4	$2,256,360	$39,585	---
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	80	215+80	216+00									
		Shoulder Mounted (Mounted on Bridge)	8	400	211+80	215+80									
		Ground Mounted	22	1,540	190+00	194+00									
					194+60	206+00									
	CD7	Shoulder Mounted	14	2,290	177+00	194+60	71	8.4	56	10	66	9.0	$2,842,500	$43,068	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
					196+50	201+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	1,000	201+80	211+80									
		Shoulder Mounted (Mounted on MSE Wall)	8	220	215+80	218+80									
		Shoulder Mounted (Mounted on Bridge)	14	400	211+80	215+80									
		Ground Mounted	22	1,540	190+00	194+00									
					194+60	206+00									

I:\I-595\PD&E\Study\Noise Study Report\Final\Tables\Final Noise Reduction Tables\Noise Reduction Tables\Noise Reduction Tables-Alt2 Table 5.4-2.

Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD4 (GROUND MOUNTED BARRIERS)

1" = 300'

22 FT TALL GROUND MOUNTED BARRIERS (ALTERNATIVE CD4)

SW 2ND STREET

FLAMINGO ROAD

NORTH NEW RIVER CANAL

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

FOR LEASE

DUNKIN' DONUTS

EXXON

STRIP MALL

MCDONALD'S

SW 4TH STREET

DOGWOOD LANE

SW 5TH STREET

PV1 PV2 PV3 PV4 PV5 PV6 PV7 PV8 PV9 PV10 PV11

KM1 KM2 KM3 KM4 KM5 KM6 KM7 KM8 KM9 KM10 KM11 KM12 KM13

PARADISE VILLAGE

KINGS MANOR ESTATES

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PARADISE VILLAGE AND KINGS MANOR ESTATES NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.4-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD4 (GROUND MOUNTED BARRIERS)

1" = 300'

22 FT TALL GROUND MOUNTED BARRIERS (ALTERNATIVE CD4)

BROWARD BOULEVARD

SW 2ND STREET

FLAMINGO ROAD

NORTH NEW RIVER CANAL

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

FOR LEASE

DUNKIN' DONUTS

EXXON

STRIP MALL

MCDONALD'S

SW 4TH STREET

DOGWOOD LANE

SW 5TH STREET

PV1 PV2 PV3 PV4 PV5 PV6 PV7 PV8 PV9 PV10 PV11

KM1 KM2 KM3 KM4 KM5 KM6 KM7 KM8 KM9 KM10 KM11 KM12 KM13

PARADISE VILLAGE

KINGS MANOR ESTATES

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PARADISE VILLAGE AND KINGS MANOR ESTATES NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.4-2

Table 5.4-3 The Predicted Noise Level and Amount of Noise Reduction at Paradise Village and Kings Manor Estates with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between SW 136th Avenue and Flamingo Road																			
Paradise Village (South of I-595 between Station 180+50 and Station 190+80)	PV1	189+61	6 (First Row Residences)	352	439	371	443	538	62.1	64.3	64.2	2.2	2.1	Below	Below	60.8	3.5	58.9	5.3
	PV2	190+01	11 (Second Row Residences)	443	530	463	534	628	61.5	63.5	63.6	2.0	2.1	Below	Below	60.0	3.5	58.6	5.0
	PV3	191+36	3 (First Row Residences)	304	390	323	395	484	65.5	67.4	67.2	1.9	1.7	Exceeds	Exceeds	61.9	5.5	59.6	7.6
	PV4	191+58	3 (Second Row Residences)	387	474	407	478	566	63.5	65.5	65.4	2.0	1.9	Below	Below	61.0	4.5	59.1	6.3
	PV5	191+88	4 (Third Row Residences)	503	589	522	594	680	62.4	64.7	64.6	2.3	2.2	Below	Below	60.3	4.4	58.5	6.1
	PV6	195+14	6 (First Row Residences)	213	300	232	304	375	68.2	69.9	69.8	1.7	1.6	Exceeds	Exceeds	63.2	6.7	60.9	8.9
	PV7	195+31	6 (Second Row Residences)	276	363	395	367	438	66.6	68.4	68.2	1.8	1.6	Exceeds	Exceeds	62.3	6.1	60.1	8.1
	PV8	195+64	5 (Third Row Residences)	404	490	423	494	563	64.1	66.1	66.0	2.0	1.9	Approaches	Approaches	61.0	5.1	59.0	7.0
	PV9	199+13	5 (First Row Residences)	98	185	117	189	245	71.8	72.9	72.8	1.1	1.0	Exceeds	Exceeds	62.7	10.2	60.4	12.4
	PV10	199+33	4 (Second Row Residences)	177	264	195	267	323	69.5	70.8	70.7	1.3	1.2	Exceeds	Exceeds	62.5	8.3	60.1	10.6
	PV11	199+64	4 (Third Row Residences)	296	383	314	386	441	66.5	68.0	67.8	1.5	1.3	Exceeds	Exceeds	61.7	6.3	59.2	8.6
													Number of Noise Sensitive Sites Impacted by Project Alternatives		26	32				
Kings Manor Estates (South of I-595 between Station 190+80 and Station 210+20)	KM1	199+77	1 (First Row Residence)	65	152	83	155	210	74.3	74.8	74.7	0.5	0.4	Exceeds	Exceeds	64.5	10.3	59.9	14.8
	KM2	199+67	3 (Second Row Residences)	140	227	159	230	286	70.2	71.0	70.8	0.8	0.6	Exceeds	Exceeds	65.6	5.4	60.1	10.7
	KM3	200+27	5 (Third Row Residences)	205	292	223	295	349	68.8	70.0	69.8	1.2	1.0	Exceeds	Exceeds	65.6	4.4	59.9	9.9
	KM4	205+48	1 (First Row Residence)	18	110	35	107	160	75.5	75.9	75.9	0.4	0.4	Exceeds	Exceeds	67.1	8.8	65.9	10.0
	KM5	205+80	2 (Second Row Residences)	83	175	100	171	225	71.0	72.0	71.9	1.0	0.9	Exceeds	Exceeds	68.6	3.4	66.3	5.6
	KM6	205+91	1 (Third Row Residence)	128	221	145	217	270	69.1	70.4	70.3	1.3	1.2	Exceeds	Exceeds	67.7	2.7	64.1	6.2
	KM7	207+21	5 (First Row Residences)	213	307	229	301	354	66.6	68.4	68.3	1.8	1.7	Exceeds	Exceeds	66.9	1.5	62.4	5.9
	KM8	208+50	8 (Second Row Residences)	345	441	361	433	486	64.3	66.6	66.5	2.3	2.2	Approaches	Approaches	65.5	1.1	60.4	6.1
	KM9	209+03	5 (Third Row Residences)	417	513	433	505	559	63.2	65.7	65.6	2.5	2.4	Below	Below	64.7	1.0	59.7	5.9
	KM10	210+21	2 (First Row Residences)	160	256	176	247	301	67.6	62.1	62.0	-5.5	-5.6	Below	Below	61.3	0.8	58.9	3.1
	KM11	211+80	1 (Second Row Residence)	103	198	118	190	244	69.3	69.3	69.3	0.0	0.0	Exceeds	Exceeds	68.0	1.3	66.1	3.2
	KM12	212+53	1 (Second Row Residence)	183	278	198	270	324	68.4	68.9	68.8	0.5	0.4	Exceeds	Exceeds	67.9	1.0	65.8	3.0
	KM13	212+36	3 (Third Row Residences)	322	417	337	409	462	65.9	67.2	67.2	1.3	1.3	Exceeds	Exceeds	66.4	0.8	63.5	3.7
													Number of Noise Sensitive Sites Impacted by Project Alternatives		37	39				

I:\I-595\PD&E\Study\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.5 Barrier Analysis for Plantation Acres

Plantation Acres (Area A-9) is a single family residential subdivision located north of I-595 and the North New River Canal and east of Flamingo Road. Consideration of noise barriers is warranted for the residences within Plantation Acres that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 24 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 61.2 dBA to 69.7 dBA and would be approximately 2.7 dBA higher than existing levels. For Alternative 2A, 39 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 63.0 dBA to 69.8 dBA and would be approximately 3.5 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.5-1 and 5.5-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located north of the North New River Canal, shoulder mounted barriers along SR 84 and I-595, and a combination of ground mounted and shoulder mounted noise barriers were evaluated. Because of right of way constraints and SFWMD's maintenance requirements for the North New River Canal, ground mounted noise barriers within the I-595/SR 84 right of way were not considered constructible and were not evaluated. Also, the limits of the ground mounted noise barrier north of the North New River Canal are constrained by Hiatus Road to the east.

For Alternative 1B, 13 conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 24 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD11 and CD13 have the lowest cost per benefited residence ($81,469 and $77,288, respectively) and benefit all 24 affected residences. Of these two conceptual barrier designs, CD11 has the lowest estimated construction cost ($2,607,000) and is considered the optimal design for this area. CD11 provides an average noise reduction of 8.0 dBA and provides benefits to the 32 residences. CD11 represents a ground mounted noise barrier (22 ft tall and 4,740 ft long) located north of the North New River Canal from Station 217+60 to Station 265+00 (see Figure 5.5-1). Although providing abatement at this community exceeds FDOT's reasonable cost criteria of $35,000 per benefited receiver, a noise barrier is recommended for further consideration and community input at this location. This conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

For Alternative 2A, 12 conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 39 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD10 and CD12 have the lowest cost per benefited residence ($81,353 and $84,097, respectively). CD10 provides benefit 30 of the 39 affected residences and has an estimated construction cost of $2,607,000. CD12 provides benefit to six more affected residences than CD10 (i.e., 36) and has an estimated construction cost of $3,335,480. The cost associated with CD10 to provide benefit to six additional residences is $728,480 or $121,413 per benefited residence associated. Because of the substantial cost associated with CD12 to benefit the additional residences, CD10 is considered the optimal design for this area. CD10 provides an average noise reduction of 8.6 dBA and provides benefits to the 31 residences. CD10 represents a ground mounted noise barrier (22 ft tall and 4,740 ft long) located north of the North New River Canal from Station 217+60 to Station 265+00 (see Figure 5.5-2). Although providing abatement at this community exceeds FDOT's reasonable cost criteria of $35,000 per benefited receiver, a noise barrier is recommended for further consideration and community input at this location. This conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.5-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The high cost of providing abatement is attributed to the low density of noise sensitive sites in this area.

Table 5.5-1 Noise Barrier Analyses for Plantation Acres Located North of I-595 Between Flamingo Road and Hiatus Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Plantation Acres (PA)	**SR 84 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	3,400	224+00	258+00	24	2.3	0	0	0	---	$1,441,600	---	---
	CD2	Shoulder Mounted	10	3,400	224+00	258+00	24	2.9	6	0	6	5.2	$1,802,000	$300,333	---
	CD3	Shoulder Mounted	12	3,400	224+00	258+00	24	3.6	11	4	15	5.7	$2,162,400	$144,160	---
	CD4	Shoulder Mounted	14	3,400	224+00	258+00	24	4.2	15	14	29	5.9	$2,522,800	$86,993	---
	CD5	Shoulder Mounted	14	5,300	216+00	269+00	24	4.5	15	14	29	5.9	$3,932,600	$135,607	---
	I-595 Shoulder Mounted Barrier Alternatives														
	CD6	Shoulder Mounted	8	360	224+00	227+60	24	1.4	0	0	0	---	$840,400	---	---
		Shoulder Mounted	8	300	255+00	258+00									
		Shoulder (Mounted on Bridge)	8	130	214+00	215+30									
		Shoulder (Mounted on Bridge)	8	440	265+60	270+00									
		Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
		Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
	CD7	Shoulder Mounted	14	360	224+00	227+60	24	1.6	0	0	0	5.5	$1,168,820	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted	14	300	255+00	258+00									
		Shoulder (Mounted on Bridge)	14	130	214+00	215+30									
		Shoulder (Mounted on Bridge)	14	440	265+60	270+00									
		Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
		Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
	SR 84 Shoulder Mounted Barrier and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD8	WB 84 Shoulder Mounted	8	3,200	226+00	258+00	24	4.0	0	0	0	---	$2,290,480	---	---
		I-595 Shoulder Mounted	8	360	224+00	227+60									
		I-595 Shoulder Mounted	8	300	255+00	258+00									
		I-595 Shoulder (Mounted on Bridge)	8	130	214+00	215+30									
		I-595 Shoulder (Mounted on Bridge)	8	440	265+60	270+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
	CD9	WB 84 Shoulder Mounted	14	3,200	226+00	258+00	24	5.7	17	17	34	6.2	$3,184,820	$93,671	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		I-595 Shoulder Mounted	14	360	224+00	227+60									
		I-595 Shoulder Mounted	14	300	255+00	258+00									
		I-595 Shoulder (Mounted on Bridge)	14	130	214+00	215+30									
		I-595 Shoulder (Mounted on Bridge)	14	440	265+60	270+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
		I-595 Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
	Ground Mounted Barrier Alternatives														
	CD10	Ground Mounted	20	4,740	217+60	265+00	24	8.4	24	4	28	7.9	$2,370,000	$84,643	---
	CD11	Ground Mounted	22	4,740	217+60	265+00	24	9.0	24	8	32	8.0	$2,607,000	$81,469	---
	Shoulder Mounted Barrier and Ground Mounted Barrier Combination Alternatives														
	CD12	Shoulder Mounted	8	360	224+00	227+60	24	9.3	24	12	36	7.8	$3,086,400	$85,733	---
		Shoulder Mounted	8	300	255+00	258+00									
		Shoulder (Mounted on Bridge)	8	130	214+00	215+30									
		Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
		Shoulder (Mounted on MSE Wall)	8	400	258+00	262+00									
		Ground Mounted	20	4,740	217+60	265+00									
	CD13	Shoulder Mounted	8	360	224+00	227+60	24	9.8	24	19	43	8.0	$3,323,400	$77,288	---
		Shoulder Mounted	8	300	255+00	258+00									
		Shoulder (Mounted on Bridge)	8	130	214+00	215+30									
		Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
		Shoulder (Mounted on MSE Wall)	8	400	258+00	262+00									
		Ground Mounted	22	4,740	217+60	265+00									

I:\595PD&E\Study\Barrier\Analysis\Barrier Analysis Option 1 rev\1595Alt1bPlantation Acre

Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

Table 5.5-2 Noise Barrier Analyses for Plantation Acres Located North of I-595 Between Flamingo Road and Hiatus Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Plantation Acres (PA)	**SR 84 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	4,800	216+00	264+00	39	1.7	0	0	0	---	$2,035,200	---	---
	CD2	Shoulder Mounted	10	4,600	220+00	266+00	39	2.0	0	0	0	---	$2,254,000	---	---
	CD3	Shoulder Mounted	12	4,400	222+00	266+00	39	2.4	0	0	0	---	$2,481,600	---	---
	CD4	Shoulder Mounted	14	5,000	216+00	266+00	39	2.8	0	0	0	---	$3,150,000	---	---
	I-595 Shoulder Mounted Barrier Alternatives														
	CD5	Shoulder Mounted	8	360	224+00	227+60	39	0.9	0	0	0	---	$720,880	---	---
		Shoulder Mounted	8	320	254+80	258+00									
		Shoulder (Mounted on Bridge)	8	130	214+00	215+30									
		Shoulder (Mounted on Bridge)	8	40	265+60	266+00									
		Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
		Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
	CD6	Shoulder Mounted	14	360	224+00	227+60	39	1.3	0	1	1	5.3	$1,098,020	$1,098,020	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted	14	320	254+80	258+00									
		Shoulder (Mounted on Bridge)	14	130	214+00	215+30									
		Shoulder (Mounted on MSE Wall)	14	870	215+30	224+00									
		Shoulder (Mounted on MSE Wall)	14	600	258+00	264+00									
	SR 84 Shoulder Mounted Barrier and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD7	WB 84 Shoulder Mounted	8	2,800	216+00	244+00	39	2.0	0	0	0	---	$1,648,400	---	---
		I-595 Shoulder Mounted	8	360	224+00	227+60									
		I-595 Shoulder (Mounted on Bridge)	8	130	214+00	215+30									
		I-595 Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
	CD8	WB 84 Shoulder Mounted	14	2,800	216+00	244+00	39	2.8	2	0	2	5.1	$2,321,980	$1,160,990	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		I-595 Shoulder Mounted	14	360	224+00	227+60									
		I-595 Shoulder (Mounted on Bridge)	14	130	214+00	215+30									
		I-595 Shoulder (Mounted on MSE Wall)	8	870	215+30	224+00									
	Ground Mounted Barrier Alternatives														
	CD9	Ground Mounted	20	4,740	217+60	265+00	39	7.0	25	0	25	8.7	$2,370,000	$94,800	---
	CD10	Ground Mounted	22	4,740	217+60	265+00	39	7.6	30	1	31	8.6	$2,607,000	$84,097	---
	Shoulder Mounted Barrier and Ground Mounted Barrier Combination Alternatives														
	CD11	Shoulder Mounted	8	300	255+00	258+00	39	7.5	27	0	27	8.7	$3,098,480	$114,759	---
		Shoulder (Mounted on Bridge)	8	440	265+60	270+00									
		Shoulder (Mounted on MSE Wall)	8	800	216+00	224+00									
		Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
		Ground Mounted	20	4,740	217+60	265+00									
	CD12	Shoulder Mounted	8	300	255+00	258+00	39	8.2	36	5	41	8.1	$3,335,480	$81,353	---
		Shoulder (Mounted on Bridge)	8	440	265+60	270+00									
		Shoulder (Mounted on MSE Wall)	8	800	216+00	224+00									
		Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
		Ground Mounted	22	4,740	217+60	265+00									

I:\I-595\PD&E\Study\Barrier\Analysis\Barrier Analysis Update 2 rev10\[Ex.xls]Plantation Acres

Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

LEGEND

EXISTING LIMITED ACCESS RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY
REPRESENTATIVE NOISE RECEIVER SITE

OPTMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION
ALTERNATIVE CD11 (GROUND MOUNTED BARRIER)

1" = 300'

PLANTATION ACRES

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD11)

PA1
PA2
PA3
PA4
PA5
PA6
PA7
PA8
PA9
PA10
PA11
PA12
PA13
PA14
PA15
PA16
PA17
PA18
AS1
AS2
AS3

ACRES SOUTH PARK

NORTH NEW RIVER CANAL

595 PARK OF COMMERCE
GYMNASTICS
MOBIL GAS
LEFTY'S TAVERN AND GRILL
THE PLAZA
84 DINER
CHINA 84
GOODWILL STORE
WINN DIXIE
WALGREENS

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PLANTATION ACRES NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.5-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD10 (GROUND MOUNTED BARRIER)

1" = 400'

PLANTATION ACRES

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD10)

PA1 PA2 PA3 PA4 PA5 PA6 PA7 PA8 PA9 PA10 PA11 PA12 PA13 PA14 PA15 PA16 PA17 PA18

AS1 AS2 AS3

ACRES SOUTH PARK

NORTH NEW RIVER CANAL

595 PARK OF COMMERCE

GYMNASTICS

MOBIL GAS

LEFTY'S TAVERN AND GRILL

THE PLAZA

84 DINER

CHINA 84

GOODWILL STORE

WINN DIXIE

WALGREENS

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PLANTATION ACRES NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.5-2

Table 5.5-3 The Predicted Noise Level and Amount of Noise Reduction at Plantation Acres and Acres South Park with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between Flamingo Road and Hiatus Road																			
Plantation Acres (North of I-595 between Station 210+60 and Station 260+60)	PA1	218+65	1 (First Row Residence)	277	389	293	393	458	63.7	67.0	67.3	3.3	3.6	Exceeds	Exceeds	61.7	5.3	59.5	7.8
	PA2	217+94	1 (Second Row Residence)	373	484	388	488	553	61.5	64.8	65.3	3.3	3.8	Below	Below	59.1	5.7	60.2	5.1
	PA3	217+86	1 (Third Row Residence)	479	590	494	594	659	60.0	63.8	64.2	3.8	4.2	Below	Below	57.7	6.1	60.0	4.2
	PA4	222+07	7 (First Row Residences)	276	376	296	381	445	65.1	68.0	68.3	2.9	3.2	Exceeds	Exceeds	62.9	5.1	59.0	9.3
	PA5	220+49	12 (Second Row Residences)	435	546	450	551	615	62.3	65.7	66.2	3.4	3.9	Below	Approaches	59.3	6.4	60.9	5.3
	PA6	219+64	1 (First Row Residence)	541	652	556	657	721	61.1	64.5	65.1	3.4	4.0	Below	Below	58.3	6.2	61.5	3.6
	PA7	230+63	8 (First Row Residences)	248	347	269	351	415	66.7	69.7	69.8	3.0	3.1	Exceeds	Exceeds	61.9	7.8	58.7	11.1
	PA8	230+12	4 (Second Row Residences)	522	621	542	625	689	62.1	64.7	65.5	2.6	3.4	Below	Below	58.1	6.6	60.3	5.2
	PA9	230+88	3 (Third Row Residences)	614	712	634	716	780	59.2	61.6	63.0	2.4	3.8	Below	Below	54.9	6.7	60.2	2.8
	PA10	241+48	7 (First Row Residences)	252	347	253	352	416	66.9	68.9	69.3	2.0	2.4	Exceeds	Exceeds	61.5	7.4	58.7	10.6
	PA11	241+56	2 (Second Row Residences)	460	556	460	560	624	62.8	64.8	65.8	2.0	3.0	Below	Below	58.4	6.4	62.6	3.2
	PA12	241+56	6 (Third Row Residences)	607	703	607	707	771	59.2	61.2	63.0	2.0	3.8	Below	Below	55.4	5.8	62.1	0.9
	PA13	246+62	5 (First Row Residences)	585	679	576	684	748	60.7	63.1	64.6	2.4	3.9	Below	Below	58.4	4.7	61.1	3.5
	PA14	258+54	2 (First Row Residences)	242	334	234	339	403	64.6	67.3	67.9	2.7	3.3	Exceeds	Exceeds	61.5	5.8	57.3	10.6
	PA15	257+40	2 (Second Row Residences)	451	544	443	549	613	61.7	64.6	65.6	2.9	3.9	Below	Below	58.8	5.8	61.7	3.9
	PA16	257+403	5 (Third Row Residences)	576	669	569	674	738	59.1	62.0	63.4	2.9	4.3	Below	Below	56.8	5.2	63.3	0.1
	PA17	264+04	2 (First Row Residences)	324	416	445	548	612	63.0	65.6	66.5	2.6	3.5	Below	Approaches	61.8	3.8	61.5	5.0
	PA18	263+24	2 (Second Row Residences)	451	543	318	421	485	61.5	64.3	65.2	2.8	3.7	Below	Below	60.1	4.2	62.5	2.7
														Number of Noise Sensitive Sites Impacted by Project Alternatives		24	39				
Acres South Park (North of I-595 between Station 240+40 and Station 250+00)	AS1	247+96	Right of Way	214	308	205	313	377	67.6	70.1	70.2	2.5	2.6	Exceeds	Exceeds	--	--	--	--
	AS2	247+47	Park Center	409	504	400	508	572	63.3	65.9	66.8	2.6	3.5	Below	Approaches	--	--	--	--
	AS3	247+60	Northern Park Boundary	546	641	537	646	710	61.2	63.5	64.9	2.3	3.7	Below	Below	--	--	--	--
														Number of Noise Sensitive Sites Impacted by Project Alternatives		1	1		

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.6 Barrier Analysis for Village at Pine Lake

Village at Pine Lake (Area A-11) is a multi-family residential community comprised of two-story quadraplexes located south of I-595 and east of Flamingo Road. Consideration of noise barriers is warranted for the residences within Village at Pine Lake that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, five residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 60.0 dBA to 70.2 dBA and would not be higher than existing levels. For Alternative 2A, 10 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 61.6 dBA to 70.5 dBA and would be approximately 1.6 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.6-1 and 5.6-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located along I-595/SR 84 southern right of way line, shoulder mounted barriers along I-595, and a combination of ground mounted and shoulder mounted noise barriers were evaluated.

For Alternative 1B, nine conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the five residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. The limits of the lowest cost conceptual barrier design (CD6) are shown on Figure 5.6-1. CD6 is considered the optimal design for this area. CD6 provides an average noise reduction of 5.4 dBA, provides benefits to three residences, has a cost per benefited residence of $132,000, and an estimated construction cost of $396,000. As depicted in Figure 5.6-1, CD6 represents a ground mounted noise barrier which is bisected by SW 121st Avenue. Both ground mounted barrier segments are 22 ft tall. Segment 1 extends 620 ft from Station 225+85 to Station 232+05 and Segment 2 extends 100 ft from Station 233+00 to Station 234+00. Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

For Alternative 2A, nine conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 10 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. The limits of the lowest cost conceptual barrier design (CD6) are shown on Figure 5.6-2. CD6 is considered the optimal design for this area. CD6 provides an average noise reduction of 5.3 dBA, provides benefits to two residences, has a cost per benefited residence of $192,500, and an estimated construction cost of $385,000. As depicted in

Figure 5.6-2, CD6 represents a ground mounted noise barrier which is bisected by SW 121st Avenue. Both ground mounted barrier segments are 22 ft tall. Segment 1 extends 600 ft from Station 226+05 to Station 232+05 and Segment 2 extends 100 ft from Station 233+00 to Station 234+00. Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.6-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The lowest cost per benefited receiver for the optimal conceptual designs was $132,000 for Alternative 1B (CD6) and $192,500 for Alternative 2A (CD6). The high cost of providing abatement is attributed to the low density of noise sensitive sites in this area.

None of the conceptual barrier designs for either alternative benefit all of the impacted noise sensitive sites. In this area, the effectiveness of the ground mounted noise barriers is affected by site conditions that restrict the ability to have a continuous barrier. A 95 ft gap in the noise barrier is necessary to accommodate access to SW 121st Avenue in the eastern side of this development. In addition, a ground mounted noise wall is less effective in this area because the vehicles on I-595 are at a higher elevation due to I-595 being elevated above Flamingo Road. As a result of this elevation difference, some of the traffic noise is not being blocked, which limits the noise reduction at some of the noise sensitive sites.

The effectiveness of shoulder mounted noise barriers in this area is limited by their height (i.e., 8, 10, 12, or 14 ft) and the distance the residences are set back from I-595/SR 84. Noise barriers are generally less effective at lower heights and as the distance increases between the noise source and the location of the noise barrier. Some of the impacted residences are at least 380 ft from the edge of the nearest I-595 travel lane, limiting the effectiveness of the shoulder mounted noise barriers.

Table 5.6-1 Noise Barrier Analyses for the Village at Pine Lake Located South of I-595 Between Flamingo Road and Hiatus Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Village at Pine Lake (VP)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	1,320	224+00	231+00	5	3.0	0	0	0	---	$585,280	---	---
					230+00	236+20									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
	CD2	Shoulder Mounted	10	1,320	224+00	231+00	5	3.8	0	0	0	---	$672,400	---	Design Variance Required for Shoulder Mounted Barrier on MSE Walls or Bridges Taller than 8 ft
					230+00	236+20									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
	CD3	Shoulder Mounted	12	1,320	224+00	231+00	5	4.6	1	0	1	5.2	$770,080	$770,080	Design Variance Required for Shoulder Mounted Barrier on MSE Walls or Bridges Taller than 8 ft
					230+00	236+20									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
	CD4	Shoulder Mounted	14	1,320	224+00	231+00	5	5.0	3	1	4	5.3	$857,200	$214,300	Design Variance Required for Shoulder Mounted Barrier on MSE Walls or Bridges Taller than 8 ft
					230+00	236+20									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
	Ground Mounted Barrier Alternatives														
	CD5	Ground Mounted	20	720	225+85	232+05	5	4.4	2	0	2	5.3	$360,000	$180,000	---
					233+00	234+00									
	CD6	Ground Mounted	22	720	225+85	232+05	5	4.7	2	1	3	5.4	$396,000	$132,000	---
					233+00	234+00									
	Combination Shoulder and Ground Mounted Barrier Alternatives														
	CD7	Shoulder Mounted	8	1,000	224+00	230+00	5	5.7	3	2	5	6.0	$784,000	$156,800	---
					230+00	234+00									
		Ground Mounted	20	720	225+85	232+05									
					233+00	234+00									
	CD8	Shoulder Mounted	8	1,320	224+00	231+00	5	6.3	4	2	6	6.3	$945,280	$157,547	---
					230+00	236+20									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
		Ground Mounted	20	720	225+85	232+05									
					233+00	234+00									
	CD9	Shoulder Mounted	8	1,320	224+00	231+00	5	6.4	4	3	7	6.2	$981,280	$140,183	---
					230+00	236+20									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
		Ground Mounted	22	720	225+85	232+05									
					233+00	234+00									

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Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

Table 5.6-2 Noise Barrier Analyses for the Village at Pine Lake Located South of I-595 Between Flamingo Road and Hiatus Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Village at Pine Lake (PV)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	1,200	224+00	231+00	10	1.5	0	0	0	---	$534,400	---	---
					230+00	235+00									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
	CD2	Shoulder Mounted	10	1,200	224+00	231+00	10	1.9	0	0	0	---	$613,600	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
					230+00	235+00									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
	CD3	Shoulder Mounted	12	1,200	224+00	231+00	10	2.3	0	0	0	---	$702,400	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
					230+00	235+00									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
	CD4	Shoulder Mounted	14	1,200	224+00	231+00	10	2.5	0	0	0	---	$781,600	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
					230+00	235+00									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
	Ground Mounted Barrier Alternatives														
	CD5	Ground Mounted	20	700	226+05	232+05	10	2.2	0	0	0	---	$350,000	---	---
					233+00	234+00									
	CD6	Ground Mounted	22	700	226+05	232+05	10	2.5	2	0	2	5.3	$385,000	$192,500	---
					233+00	234+00									
	Shoulder Mounted and Ground Mounted Barrier Combination Alternatives														
	CD7	Shoulder Mounted	8	1,200	224+00	231+00	10	6.3	2	0	2	5.7	$884,400	$442,200	---
					230+00	235+00									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
		Ground Mounted	20	700	226+05	232+05									
					233+00	234+00									
	CD8	Shoulder Mounted	8	1,200	224+00	231+00	10	3.4	2	0	2	6.4	$919,400	$459,700	---
					230+00	235+00									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
		Ground Mounted	22	700	226+05	232+05									
					233+00	234+00									
	CD9	Shoulder Mounted	14	1,200	224+00	231+00	10	4.1	2	0	2	7.5	$1,166,600	$583,300	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
					230+00	235+00									
		Shoulder Mounted on MSE Wall	8	80	223+20	224+00									
		Ground Mounted	22	700	226+05	232+05									
					233+00	234+00									

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD6 (GROUND MOUNTED BARRIERS)

1" = 300'

TARA DRIVE

TARA DRIVE

NORTH NEW RIVER CANAL

SR-84 WESTBOUND

220 225 230 235 240 245 250 255 260

1220 1225 1230 1235 1240 1245 1250 1255 1260

SR-84 EASTBOUND

SW 7TH STREET

VP1 VP2 VP3 VP4 VP5 VP6 VP7 VP8 VP9

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD6)

595 PARK OF COMMERCE

MOBIL GAS

LEFTY'S TAVERN AND GRILL

GYMNASTICS

84 DINER

CHINA 84

GOODWILL STORE

VILLAGE AT PINE LAKE

FLAMINGO ROAD

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	VILLAGE AT PINE LAKE NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.6-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD6 (GROUND MOUNTED BARRIERS)

1" = 300'

NORTH NEW RIVER CANAL

220 225 230 235 240 245 250 255 260

1220 1225 1230 1235 1240 1245 1250 1255 1260

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD6)

VP1 VP2 VP3 VP4 VP5 VP6 VP7 VP8 VP9

595 PARK OF COMMERCE

MOBIL GAS

LEFTY'S TAVERN AND GRILL

GYMNASTICS

84 DINER

CHINA 84

GOODWILL STORE

VILLAGE AT PINE LAKE

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	VILLAGE AT PINE LAKE NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.6-2

Table 5.6-3 The Predicted Noise Level and Amount of Noise Reduction at the Village at Pine Lake with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)									
Between Flamingo Road and Hiatus Road																				
Village at Pine Lake (South of I-595 between Station 220+70 and Station 240+00)	VP1	227+96.32	2 (First Row Residences)	114	210	132	224	264	70.5	70.2	70.5	-0.3	0.0	Exceeds	Exceeds	62.8	7.4	63.3	7.2
	VP2	227+73	1 (Second Row Residence)	193	289	211	402	343	66.2	66.3	67.1	0.1	0.9	Approaches	Exceeds	60.4	5.9	62.2	4.9
	VP3	227+73	2 (Third Row Residences)	278	373	296	387	428	64.7	64.7	66.4	0.0	1.7	Below	Approaches	59.8	4.9	63.6	2.8
	VP4	228+41	4 (Fourth Row Residences)	336	432	354	447	487	61.2	61.1	62.9	-0.1	1.7	Below	Below	57.1	4.0	60.6	2.3
	VP5	229+65	2 (First Row Residences)	268	364	286	380	421	65.0	64.9	66.4	-0.1	1.4	Below	Approaches	59.9	5.0	63.5	2.9
	VP6	230+30	5 (Second Row Residences)	340	436	358	452	494	59.8	60.0	61.6	0.2	1.8	Below	Below	56.7	3.3	59.5	2.1
	VP7	231+69	2 (First Row Residences)	223	319	241	335	379	67.0	67.0	67.9	0.0	0.9	Exceeds	Exceeds	62.1	4.9	64.5	3.4
	VP8	323+63	1 (First Row Residence)	276	372	294	388	433	65.0	65.1	66.5	0.1	1.5	Below	Approaches	61.7	3.4	64.3	2.2
	VP9	234+09	3 (Second Row Residences)	368	464	386	480	527	61.8	62.0	64.9	0.2	3.1	Below	Below	59.8	2.2	63.9	1.0
														Number of Noise Sensitive Sites Impacted by Project Alternatives		5	10			

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.7 Barrier Analysis for Hawk's Landing

Hawk's Landing (Area A-13) is a single family residential subdivision located north of I-595 and the New River Canal between Hiatus Road and Nob Hill Road. Consideration of noise barriers is warranted for the residences within Hawk's Landing that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 13 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 57.3 dBA to 66.3 dBA and would be approximately 3.3 dBA higher than existing levels. For Alternative 2A, 42 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 58.0 dBA to 66.9 dBA and would be approximately 3.6 dBA higher than existing levels. Traffic noise levels and the number of sites impacted are being minimized by an existing 8 ft tall privacy wall that is located along the southern property line of this community (see Figure 5.7-1).

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.7-1 and 5.7-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located north of the New River Canal, shoulder mounted barriers along SR 84 and I-595, and a combination of ground mounted and shoulder mounted noise barriers were evaluated. Because of right of way constraints and SFWMD's maintenance requirements for the North New River Canal, ground mounted noise barriers within the I-595/SR 84 right of way were not considered constructible and were not evaluated. Also, the limits of a ground mounted noise barrier north of the North New River Canal would be constrained by Hiatus Road to the west and Nob Hill Road to the east.

For Alternative 1B, eight conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 13 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Three of the conceptual designs (CD6, CD7 and CD8) provide some benefit to the 13 residences affected by traffic noise. CD8 has the lowest cost per benefited receiver ($48,422) and benefits 11 of the 13 affected residences with an estimated construction cost of $3,147,400. CD7 benefits 10 of the 13 affected residences with an estimated construction cost of $2,695,000 or $50,849 per benefited receiver. Although CD8 has the lowest cost per benefited receiver, the additional cost of $452,400 above CD7 to benefit one more affected residence is not cost justifiable. CD6 also has a lower cost per benefited receiver ($49,000) than CD7 but provides benefit to three less residences (50 versus 53 benefited residences). Because of the additional cost associated with CD8 and the fewer residences benefited by CD6, CD7 is considered the optimal barrier design at this location. CD7 represents a ground mounted noise barrier (22 ft tall and 4,900 ft long) from Station 269+00 to 318+00 (see Figure 5.7-1). CD7 provides an average noise reduction of 6.7 dBA and provides benefits to 53 residences. Because providing abatement at this

community does not substantially exceed FDOT's reasonable cost criteria of $35,000 per benefited receiver, a noise barrier is recommended for further consideration and community input at this location.

For Alternative 2A, eight conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 42 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD5 and CD6, both ground mounted noise barriers, have the lowest cost per benefited receiver ($49,000) with an estimated cost of $2,450,000 and $2,695,000, respectively. CD5 provides benefits to 50 residences. CD6 provides benefits to 55 residences, five more than CD5. CD8 has the second lowest cost per benefited receiver of $52,848 with an estimated construction cost of $3,012,320. CD 8 benefits 57 residences, two more than CD6. Although CD8 benefits the most residences, the additional cost of $317,320 above CD6 to benefit three additional residences is not cost justifiable. Because of the high cost of CD8 and the fewer benefits of CD5, CD6 is considered the optimal design for this area. CD6 provides an average noise reduction of 7.2 dBA and represents a ground mounted noise barrier (22 ft tall and 4,900 ft long) located north of the North New River Canal from Station 269+00 to Station 318+00 (see Figure 5.7-2). Because providing abatement at this community does not substantially exceed FDOT's reasonable cost criteria of $35,000 per benefited receiver, a noise barrier is recommended for further consideration and community input at this location.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.7-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The lowest cost per benefited receiver for the optimal conceptual designs was $48,422 for Alternative 1B (CD8) and $49,000 for Alternative 2A (CD5 and CD6). The high cost of providing abatement is attributed to the low density of noise sensitive sites in this area that are affected by design year traffic noise levels and the low number of sites that are benefited by noise barriers. Most of the second row residences (e.g., Sites HL4, HL6, and HL15) are not benefited by either of the 22 ft tall ground mounted noise barrier conceptual designs. The predicted design year noise levels for the second and third row residences are minimized by shielding from the first row residences and from the existing 8 ft tall privacy wall located along the southern property line of this community. Because many of the residences are already being shielded from traffic noise, the conceptual noise barrier designs that were evaluated are less effective and benefit fewer residences in the community.

Table 5.7-1 Noise Barrier Analyses for Hawk's Landing Located North of I-595 Between Hiatus Road and Nob Hill Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Hawk's Landing (HL)	**SR 84 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	5,100	269+00	320+00	13	0.1	0	0	0	---	$2,158,584	---	---
	CD2	Shoulder Mounted	10	5,100	224+00	258+00	13	0.1	0	0	0	---	$2,494,590	---	---
	CD3	Shoulder Mounted	12	5,100	224+00	258+00	13	0.3	0	0	0	---	$2,871,324	---	---
	CD4	Shoulder Mounted	14	5,100	224+00	258+00	13	0.5	0	0	0	---	$3,207,330	---	---
	I-595 Shoulder Mounted Barrier Alternatives														
	CD5	Shoulder Mounted	8	205	305+75	307+80	13	2.8	0	0	0	---	$956,200	---	---
		Shoulder (Mounted on Bridge)	8	390	266+00	269+90									
		Shoulder (Mounted on Bridge)	8	350	319+10	322+60									
		Shoulder (Mounted on MSE Wall)	8	610	269+90	276+00									
		Shoulder (Mounted on MSE Wall)	8	1,130	307+80	319+10									
		Shoulder (Mounted on MSE Wall)	8	440	322+60	327+00									
	Ground Mounted Barrier Alternatives														
	CD6	Ground Mounted	20	4,900	269+00	318+00	13	4.2	9	41	50	6.3	$2,450,000	$49,000	---
	CD7	Ground Mounted	22	4,900	269+00	318+00	13	4.6	10	43	53	6.7	$2,695,000	$50,849	---
	Ground Mounted Barrier and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD8	Shoulder (Mounted on Bridge)	8	350	319+10	322+60	13	5.9	11	54	65	6.6	$3,147,400	$48,422	---
		Shoulder (Mounted on MSE Wall)	8	910	310+00	319+10									
		Shoulder (Mounted on MSE Wall)	8	40	322+60	323+00									
		Ground Mounted	22	4,900	269+00	318+00									

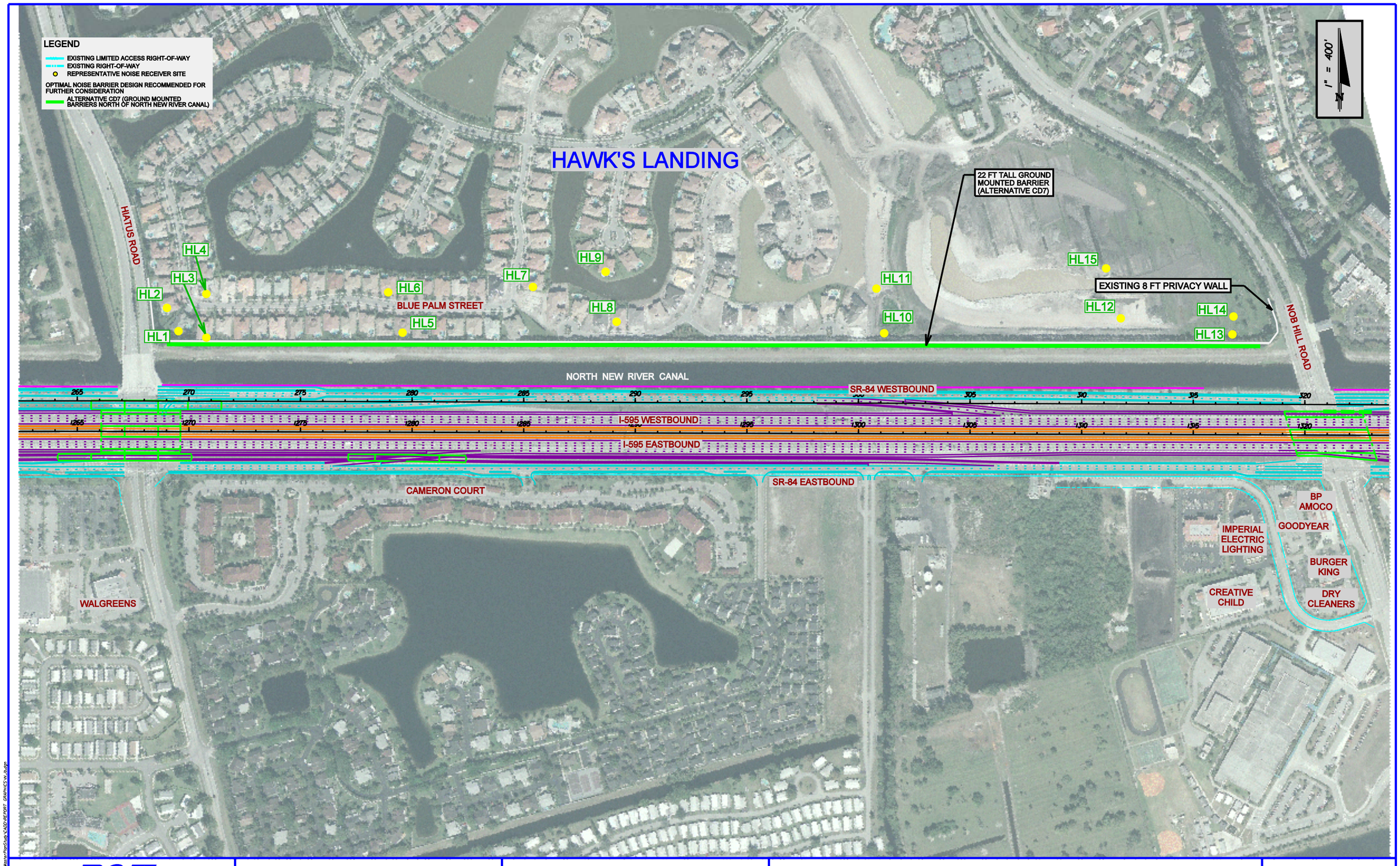
I:\I-595\PD&E\Study\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.5

Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

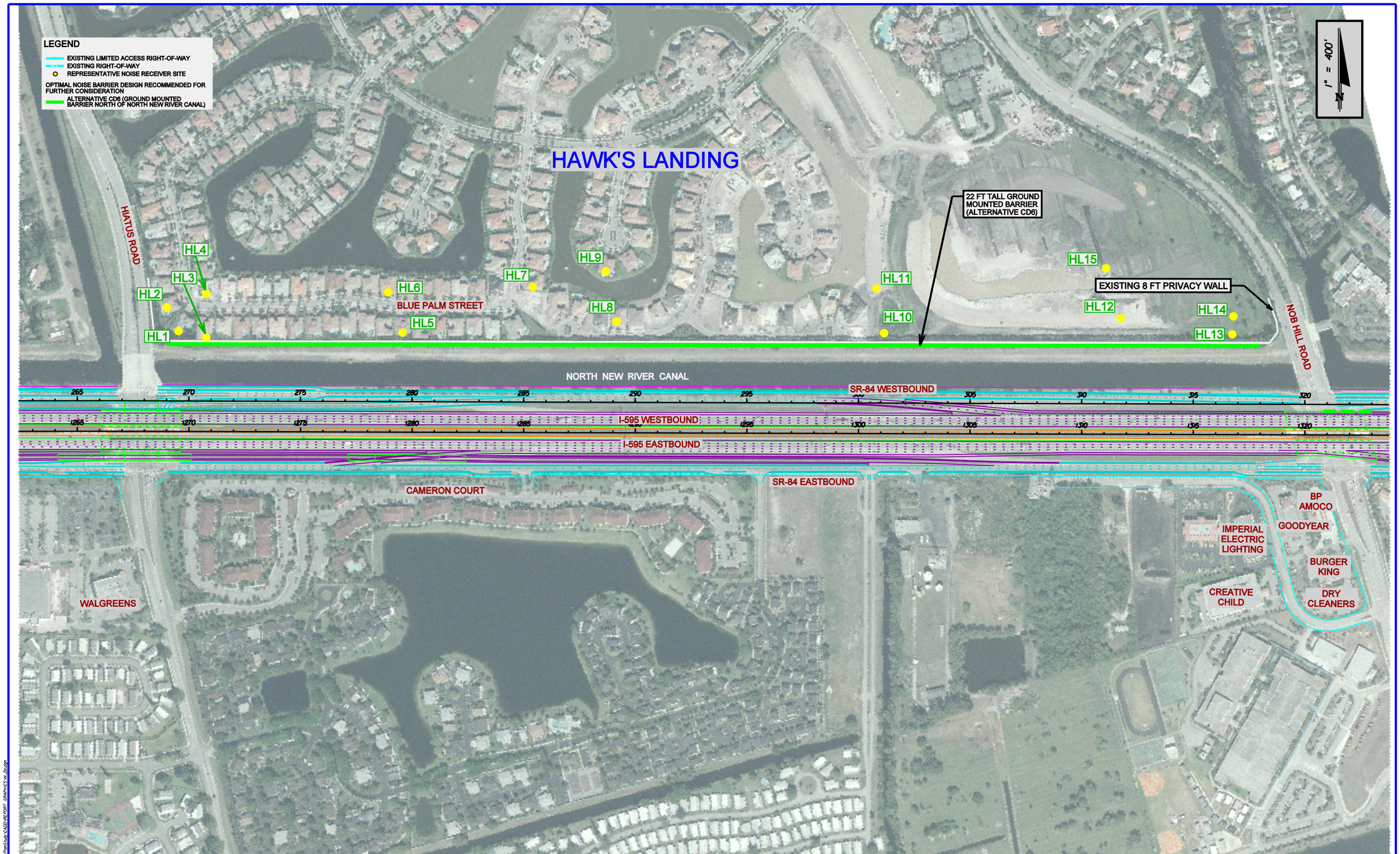
Table 5.7-2 Noise Barrier Analyses for Hawk's Landing Located North of I-595 Between Hiatus Road and Nob Hill Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Hawk's Landing (HL)	**SR 84 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	5,100	269+00	320+00	42	0.4	0	0	0	---	$2,162,400	---	---
	CD2	Shoulder Mounted	14	5,100	269+00	320+00	42	0.8	0	0	0	---	$3,213,000	---	---
	I-595 Shoulder Mounted Barrier Alternatives														
	CD3	Shoulder Mounted	14	205	305+75	307+80	42	1.2	0	0	0	---	$1,634,630	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder (Mounted on Bridge)	14	430	265+60	269+90									
		Shoulder (Mounted on Bridge)	14	350	319+10	322+60									
		Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
		Shoulder (Mounted on MSE Wall)	8	1,085	269+90	280+75									
		Shoulder (Mounted on MSE Wall)	8	1,130	307+80	319+10									
		Shoulder (Mounted on MSE Wall)	8	740	322+60	330+00									
	SR 84 Shoulder Mounted and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD4	I-595 Shoulder Mounted	14	205	305+75	307+80	42	2.6	0	0	0	---	$4,847,630	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		I-595 Shoulder (Mounted on Bridge)	14	430	265+60	269+90									
		I-595 Shoulder (Mounted on Bridge)	14	350	319+10	322+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,085	269+90	280+75									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,130	307+80	319+10									
		I-595 Shoulder (Mounted on MSE Wall)	8	740	322+60	330+00									
		WB 84 Shoulder Mounted	14	5,100	269+00	320+00									
	Ground Mounted Barrier Alternatives														
	CD5	Ground Mounted	20	4,900	269+00	318+00	42	5.0	34	16	50	6.7	$2,450,000	$49,000	---
	CD6	Ground Mounted	22	4,900	269+00	318+00	42	5.7	36	19	55	7.2	$2,695,000	$49,000	---
	Ground Mounted and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD7	I-595 Shoulder Mounted	8	205	305+75	307+80	42	6.5	38	19	57	7.5	$4,151,680	$72,836	---
		I-595 Shoulder (Mounted on Bridge)	8	430	265+60	269+90									
		I-595 Shoulder (Mounted on Bridge)	8	350	319+10	322+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	760	258+00	265+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,085	269+90	280+75									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,130	307+80	319+10									
		I-595 Shoulder (Mounted on MSE Wall)	8	740	322+60	330+00									
		Ground Mounted	22	4,900	269+00	318+00									
	CD8	I-595 Shoulder Mounted	8	205	305+75	307+80	42	6.0	38	19	57	7.2	$3,012,320	$52,848	Optimal Conceptual Barrier Design Combination of Gound Mounted and I-595 Shoulder Mounted Barriers
		I-595 Shoulder (Mounted on MSE Wall)	8	720	307+80	315+00									
		Ground Mounted	22	4,900	269+00	318+00									

Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	HAWK'S LANDING NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.7-1



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	HAWK'S LANDING NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.7-2

Table 5.7-3 The Predicted Noise Level and Amount of Noise Reduction at Hawk's Landing with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)									
Between Hiatus Road and Nob Hill Road																				
Hawk's Landing (North of I-595 between Station 260+80 and Station 300+00)	HL1	269+53	5 (First Row Residence)	259	362	249	368	432	63.0	65.8	66.8	2.8	3.8	Below	Approaches	61.4	4.4 (1 Site) - 8.2 (4 Sites)	61.8	5.0 (1 Site) - 9.2 (4 Sites)
	HL2	269+02	2 (Second Row Residences)	363	467	354	472	536	62.2	64.7	65.4	2.5	3.2	Below	Below	64.1	0.6	64.8	0.6
	HL3	270+78	6 (First Row Residences)	230	334	221	340	404	59.7	62.8	63.3	3.1	3.6	Below	Below	56.0	6.8	56.1	7.2
	HL4	270+78	2 (Second Row Residences)	426	530	417	535	599	57.8	60.6	61.0	2.8	3.2	Below	Below	60.2	0.4	60.7	0.3
	HL5	279+57	9 (First Row Residences)	270	359	362	364	428	62.3	64.6	65.8	2.3	3.5	Below	Below	56.4	8.2	56.6	9.2
	HL6	278+93	13 (Second Row Residences)	450	539	442	545	609	55.8	58.8	59.3	3.0	3.5	Below	Below	57.0	1.8	58.0	1.3
	HL7	285+42	4 (Second Row Residences)	475	566	468	571	635	58.4	61.8	63.5	3.4	5.1	Below	Below	57.9	3.9	58.9	4.6
	HL8	289+16	12 (First Row Residences)	321	411	313	416	480	61.5	64.9	66.4	3.4	4.9	Below	Approaches	58.5	6.4	58.9	7.5
	HL9	288+67	8 (Third Row Residences)	544	635	537	640	704	54.4	57.3	58.0	2.9	3.6	Below	Below	54.8	2.5	56.3	1.7
	HL10	301+15	12 (First Row Residences)	272	363	266	368	432	61.4	64.8	66.4	3.4	5.0	Below	Approaches	57.6	7.2	57.9	8.5
	HL11	300+80	2 (Second Row Residences)	472	563	466	568	632	59.9	63.7	65.4	3.8	5.5	Below	Below	58.8	4.9	60.3	5.1
	HL12	311+75	8 (First Row Residences)	339	433	340	426	502	61.8	66.1	66.7	4.3	4.9	Approaches	Approaches	59.4	6.7	60.1	6.6
	HL13	316+75	2 (First Row Residences)	267	363	278	356	432	62.5	66.3	66.9	3.8	4.4	Approaches	Approaches	60.8	5.5	61.3	5.6
	HL14	316+80	3 (Second Row Residences)	347	443	358	436	512	62.5	66.1	66.7	3.6	4.2	Approaches	Approaches	62.6	3.5	63.5	3.2
	HL15	311+10	18 (Second Row Residences)	562	657	563	650	726	59.8	64.0	58.0	4.2	-1.8	Below	Below	60.2	3.8	56.8	1.2
														13	42				

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* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.8 Barrier Analysis for The Palms Apartment Homes

The Palms Apartment Homes (Area A-14) is a multi-family community comprised of multi-story apartment buildings located south of I-595 and east of Hiatus Road. Consideration of noise barriers is warranted for the residences within The Palms Apartment Homes that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 79 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 62.8 dBA to 72.4 dBA and would be approximately 2.2 dBA lower than existing levels. For Alternative 2A, 104 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 63.9 dBA to 72.5 dBA and would be approximately 1.2 dBA lower than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.8-1 and 5.8-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located along the I-595/SR 84 southern right of way line, shoulder mounted barriers along I-595, and a combination of ground mounted and shoulder mounted noise barriers were evaluated. However, the conceptual barrier designs that include ground mounted noise barriers currently are not considered constructible due to right of way constraints. Therefore, these conceptual designs are presented but are not recommended for further consideration.

For Alternative 1B, nine conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 79 residences predicted to be affected by design year traffic noise. None of the shoulder mounted conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD2 represents the conceptual barrier design for shoulder mounted barriers with the lowest cost per benefited receiver and is considered the optimal shoulder mounted barrier design for this area. CD2 provides an average noise reduction of 5.0 dBA, provides benefits to 10 residences, has a cost per benefited residence of $165,812, and has an estimated construction cost of $1,658,120. CD2 represents a shoulder mounted noise barrier (8 ft to 14 ft tall and 3,900 ft long) along I-595 from Station 265+00 to Station 304+00 (see Figure 5.8-1). Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

For Alternative 2A, six conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 104 residences predicted to be affected by design year traffic noise. Of the shoulder mounted conceptual designs considered, CD2 is considered the optimal barrier design for this area. None of the shoulder mounted conceptual designs considered benefit any noise sensitive sites. CD2 has an estimated construction cost of $1,658,120. CD2 represents a shoulder mounted noise barrier (8 ft to 14 ft tall and 3,900 ft long) along I-595 from Station 265+00 to Station 304+00 (see Figure

5.8-2). Because no noise sensitive receivers are benefited, a noise barrier was not recommended for further consideration in this area.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.8-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The lowest cost per benefited receiver for the optimal conceptual designs was $165,812 for Alternative 1B (CD2). The high cost of providing abatement is attributed to the low density of benefited noise sensitive sites in this area.

In this area, the effectiveness of shoulder mounted noise barriers is limited by the traffic noise from SR 84, by their height (i.e., 8, 10, 12, or 14 ft), the distance the residences are set back from I-595/SR 84, and the elevation of the second and third floor balconies. Noise barriers are generally less effective at lower heights and as the distance increases between the noise source and the location of the noise barrier. Some of the impacted residences are at least 290 ft from the edge of the nearest I-595 travel lane, limiting the effectiveness of the shoulder mounted noise barriers.

Table 5.8-1 Noise Barrier Analyses for The Palms Apartment Homes and Scarborough Located South of I-595 Between Hiatus Road and Nob Hill Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
The Palms Apartment Homes (PAH) and Scarborough (S)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder (Mounted on Bridge)	8	495	265+00	269+95	79	2.2	0	0	0	---	$1,266,400	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	8	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1,120	282+40	293+60									
		Shoulder Mounted	8	1,040	293+60	304+00									
	CD2	Shoulder (Mounted on Bridge)	14	495	265+00	269+95	79	2.7	10	0	10	5.0	$1,658,120	$165,812	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	14	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1,120	282+40	293+60									
		Shoulder Mounted	14	1,040	293+60	304+00									
	Ground Mounted Barrier Alternatives														
	CD3	Ground Mounted	18	1,350	271+00	284+50	79	2.2	35	0	35	5.2	$675,000	$19,286	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
				150	285+50	287+00									
	CD4	Ground Mounted	20	1,350	271+00	284+50	79	3.7	37	12	49	5.4	$1,300,000	$26,531	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
				950	285+50	295+00									
				300	296+00	299+00									
	CD5	Ground Mounted	22	1,350	271+00	284+50	79	4.0	39	18	57	5.4	$1,430,000	$25,088	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
				950	285+50	295+00									
				300	296+00	299+00									
	Ground Mounted Barrier and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD6	Shoulder (Mounted on Bridge)	8	495	265+00	269+95	79	6.3	79	17	96	6.8	$2,526,400	$26,317	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	8	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1,120	282+40	293+60									
		Shoulder Mounted	8	1,040	293+60	304+00									
		Ground Mounted	18	1,450	270+00	284+50									
				950	285+50	295+00									
				400	296+00	300+00									
	CD7	Shoulder (Mounted on Bridge)	8	395	266+00	269+95	79	6.9	79	33	112	7.2	$2,698,400	$24,093	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	8	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1,120	282+40	293+60									
		Shoulder Mounted	8	840	293+60	302+00									
		Ground Mounted	22	1,450	270+00	284+50									
				950	285+50	295+00									
				400	296+00	300+00									
	CD8	Shoulder (Mounted on Bridge)	14	295	267+00	269+95	79	7.1	79	47	126	7.2	$2,665,920	$21,158	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	14	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1,120	282+40	293+60									
		Shoulder Mounted	14	840	293+60	302+00									
		Ground Mounted	18	1,450	270+00	284+50									
				950	285+50	295+00									
				300	296+00	299+00									
	CD9	Shoulder (Mounted on Bridge)	14	195	268+00	269+95	79	7.2	79	59	138	7.2	$2,856,320	$20,698	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	14	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1,120	282+40	293+60									
		Shoulder Mounted	14	1,040	293+60	304+00									
		Ground Mounted	22	1,450	270+00	284+50									
				950	285+50	295+00									

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Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

Table 5.8-2 Noise Barrier Analyses for The Palms Apartment Homes and Scarborough Located South of I-595 Between Hiatus Road and Nob Hill Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
The Palms Apartment Homes (PAH) and Scarborough (S)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder (Mounted on Bridge)	8	495	265+00	269+95	104	1.8	0	0	0	---	$1,266,400	---	---
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	8	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1120	282+40	293+60									
		Shoulder Mounted	8	1040	293+60	304+00									
	CD2	Shoulder (Mounted on Bridge)	14	495	265+00	269+95	104	2.1	0	0	0	---	$1,658,120	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	14	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1120	282+40	293+60									
		Shoulder Mounted	14	1,040	265+00	304+00									
	Ground Mounted Barrier Alternatives														
	CD3	Ground Mounted	20	1,550	269+00	284+50	104	2.7	0	0	0	---	$1,450,000	---	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
				950	285+50	295+00									
				400	296+00	300+00									
	CD4	Ground Mounted	22	1,550	269+00	284+50	104	2.8	2	0	2	5.2	$1,595,000	$797,500	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
				950	285+50	295+00									
				400	296+00	300+00									
	Ground Mounted Barrier and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD5	Shoulder Mounted	8	300	262+00	265+00	104	5.0	73	24	97	6.1	$2,636,800	$27,184	Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
		Shoulder (Mounted on Bridge)	8	495	265+00	269+95									
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	8	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1120	282+40	293+60									
		Shoulder Mounted	8	340	293+60	297+00									
		Ground Mounted	22	1,450	270+00	284+50									
				950	285+50	295+00									
				400	296+00	300+00									
	CD6	Shoulder (Mounted on Bridge)	14	495	265+00	269+95	104	6.2	92	36	128	6.9	$2,568,120	$20,063	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges; Ground Mounted Barrier Requires Constructability Review Due to Insufficient Right of Way
		Shoulder (Mounted on MSE Wall)	8	720	269+95	277+15									
		Shoulder (Mounted on Bridge)	14	525	277+15	282+40									
		Shoulder (Mounted on MSE Wall)	8	1120	282+40	293+60									
		Shoulder Mounted	14	40	293+60	294+00									
		Ground Mounted	22	1,450	270+00	284+50									
				950	285+50	295+00									
				400	296+00	300+00									

I:\I-595\PD&E\Study\BarrierAnalysis\[Barrier_Analysis_Option 2_rev110305.xls]Village at Pine Lake

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD2 (SHOULDER MOUNTED BARRIER WITHIN I-595 RIGHT-OF-WAY)

1" = 300'

NORTH NEW RIVER CANAL

265 270 275 280 285 290 295 300 305

1265 1270 1275 1280 1285 1290 1295 1300 1305

PAH1 PAH2 PAH3 PAH4 PAH5 PAH6 PAH7 PAH8 PAH9

THE PALMS APARTMENT HOMES

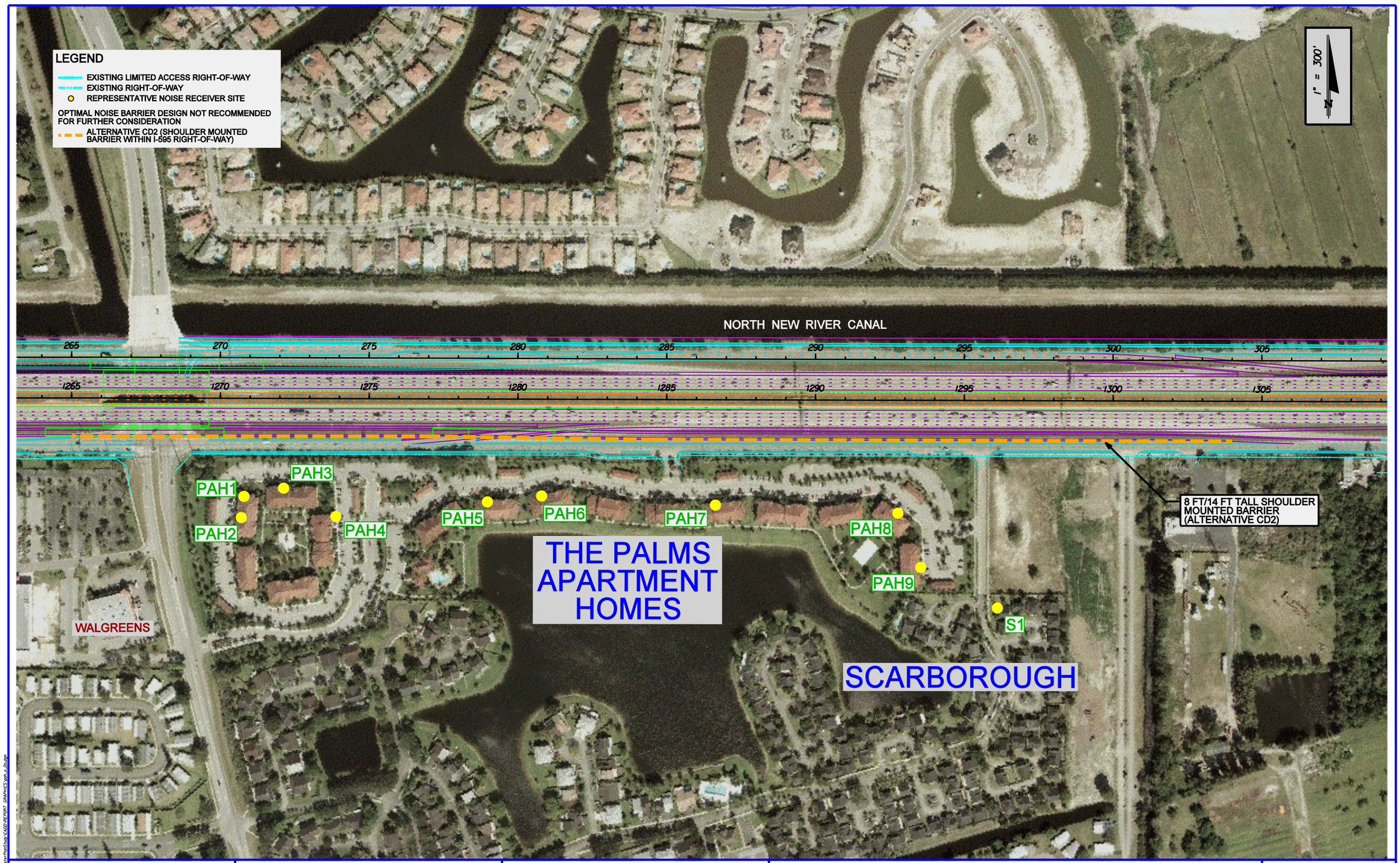
WALGREENS

SCARBOROUGH

S1

8 FT/14 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD2)

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	THE PALMS APARTMENT HOMES AND SCARBOROUGH NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.8-1



Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	THE PALMS APARTMENT HOMES AND SCARBOROUGH NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.8-2

Table 5.8-3 The Predicted Noise Level and Amount of Noise Reduction at the Palms Apartment Homes with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between Hiatus Road and Nob Hill Road																			
The Palms Apartment Homes (South of I-595 between Station270+00 and Station 290+40)	PAH1f	270+79	1 (First Row Residence, First Floor Patio)	146	245	151	247	311	65.9	65.6	67.1	-0.3	1.2	Below	Exceeds	65.6	0.0	66.5	0.6
	PAH1s	270+79	1 (First Row Residence, Second Floor Balcony)	146	245	151	247	311	68.9	69.0	69.8	0.1	0.9	Exceeds	Exceeds	69.0	0.0	69.4	0.4
	PAH1t	270+79	1 (First Row Residence, Third Floor Balcony)	146	245	151	247	311	70.2	70.3	70.9	0.1	0.7	Exceeds	Exceeds	70.2	0.1	70.5	0.4
	PAH2f	270+70	2 (Second Row Residences, First Floor Patio)	217	316	222	318	382	63.5	63.3	64.8	-0.2	1.3	Below	Below	63.3	0.0	64.7	0.1
	PAH2s	270+70	2 (Second Row Residences, Second Floor Balcony)	217	316	222	318	382	66.2	66.8	67.6	0.6	1.4	Approaches	Exceeds	66.8	0.0	67.6	0.0
	PAH2t	270+70	2 (Second Row Residences, Third Floor Balcony)	217	316	222	318	382	67.2	68.1	68.7	0.9	1.5	Exceeds	Exceeds	68.0	0.1	68.6	0.1
	PAH3f	272+12	4 (First Row Residences, First Floor Patio)	119	217	124	219	283	66.6	66.9	68.1	0.3	1.5	Approaches	Exceeds	66.9	0.0	67.3	0.8
	PAH3s	272+12	4 (First Row Residences, Second Floor Balcony)	119	217	124	219	283	69.7	69.6	70.4	-0.1	0.7	Exceeds	Exceeds	69.6	0.0	69.7	0.7
	PAH3t	272+12	4 (First Row Residences, Third Floor Balcony)	119	217	178	219	283	70.8	70.4	71.1	-0.4	0.3	Exceeds	Exceeds	70.3	0.1	70.4	0.7
	PAH4f	273+88	4 (First Row Residences, First Floor Patio)	214	311	219	314	378	65.0	62.9	64.5	-2.1	-0.5	Below	Below	62.8	0.1	61.5	3.0
	PAH4s	273+88	4 (First Row Residences, Second Floor Balcony)	214	311	219	314	378	67.0	65.4	66.6	-1.6	-0.4	Below	Approaches	65.3	0.1	64.7	1.9
	PAH4t	273+88	4 (First Row Residences, Third Floor Balcony)	214	311	219	314	378	68.8	67.4	68.4	-1.4	-0.4	Exceeds	Exceeds	67.3	0.1	66.5	1.9
	PAH5f	278+97	12 (First Row Residences, First Floor Patio)	162	260	170	263	327	68.1	63.1	64.4	-5.0	-3.7	Below	Below	63.0	0.1	62.0	2.4
	PAH5s	278+97	12 (First Row Residences, Second Floor Balcony)	162	260	170	263	327	70.6	66.3	67.5	-4.3	-3.1	Approaches	Exceeds	66.2	0.1	65.4	2.1
	PAH5t	278+97	9 (First Row Residences, Third Floor Balcony)	162	260	170	263	327	72.3	67.8	69.0	-4.5	-3.3	Exceeds	Exceeds	67.6	0.2	66.9	2.1
	PAH6f	280+79	8 (First Row Residences, First Floor Patio)	141	240	150	243	307	69.5	63.9	64.7	-5.6	-4.8	Below	Below	63.6	0.3	62.7	2.0
	PAH6s	280+79	8 (First Row Residences, Second Floor Balcony)	141	240	150	243	307	72.2	67.5	68.5	-4.7	-3.7	Exceeds	Exceeds	67.3	0.2	66.6	1.9
	PAH6t	280+79	6 (First Row Residences, Third Floor Balcony)	141	240	150	243	307	73.2	68.7	69.7	-4.5	-3.5	Exceeds	Exceeds	68.2	0.5	67.5	2.2
	PAH7f	286+63	12 (First Row Residences, First Floor Patio)	171	269	181	260	336	67.2	64.2	65.8	-3.0	-1.4	Below	Below	61.8	2.4	62.1	3.7
	PAH7s	286+63	12 (First Row Residences, Second Floor Balcony)	171	269	181	260	336	69.9	68.1	69.4	-1.8	-0.5	Exceeds	Exceeds	65.0	3.1	65.3	4.1
	PAH7t	286+63	10 (First Row Residences, Third Floor Balcony)	171	269	181	260	336	72.2	71.7	72.0	-0.5	-0.2	Exceeds	Exceeds	66.5	5.2	67.0	5.0
	PAH8f	292+77	4 (First Row Residences, First Floor Patio)	198	294	208	285	361	66.0	65.1	66.1	-0.9	0.1	Below	Approaches	61.5	3.6	63.1	3.0
	PAH8s	292+77	4 (First Row Residences, Second Floor Balcony)	198	294	208	285	361	69.0	69.5	70.0	0.5	1.0	Exceeds	Exceeds	69.5	0.0	66.6	3.4
	PAH8t	292+77	4 (First Row Residences, Third Floor Balcony)	198	294	208	285	361	71.5	72.4	72.5	0.9	1.0	Exceeds	Exceeds	67.1	5.3	68.4	4.1
	PAH9fo	293+53	4 (Second Row Residences, First Floor Patio)	380	476	390	467	543	60.5	62.8	63.9	2.3	3.4	Below	Below	58.9	3.9	62.3	1.6
	PAH9s	293+53	4 (Second Row Residences, Second Floor Balcony)	380	476	390	467	543	64.3	66.1	66.2	1.8	1.9	Approaches	Approaches	61.8	4.3	63.8	2.4
	PAH9t	293+53	4 (Second Row Residences, Third Floor Balcony)	380	476	390	467	543	66.3	67.6	67.8	1.3	1.5	Exceeds	Exceeds	63.0	4.6	64.5	3.3
														Number of Noise Sensitive Sites Impacted by Project Alternatives		97	104			

I:\I-595\PD&E\Study\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.8-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.9 Barrier Analysis for The Trellises Condos, Davide Isles, and Jacaranda Villas

The Trellises Condos (Area A-17) is a multi-family residential community comprised of two-story townhomes. Davide Isles (Area A-18) is a single family residential subdivision. Jacaranda Villas (Area A-19) is a multi-family residential community comprised of multi-story condominium buildings. All three adjacent communities are located north of I-595, the North New River Canal Road, and the North New River Canal and are between Nob Hill Road and Pine Island Road. Due to their proximity to each other, the barrier analysis considered these communities as one area. Consideration of noise barriers is warranted for the residences within these three communities that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 53 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 45.7 dBA to 68.5 dBA and would be approximately 1.2 dBA higher than existing levels. For Alternative 2A, 65 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 46.1 dBA to 68.9 dBA and would be approximately 2.1 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.9-1 and 5.9-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located north of the North New River Canal were evaluated. Because of right of way constraints and SFWMD's maintenance requirements for the North New River Canal, ground mounted noise barriers within the I-595/SR 84 right of way were not considered constructible and were not evaluated. Also, the limits of the ground mounted noise barrier north of the North New River Canal are constrained by Nob Hill Road to the west and Pine Island to the east.

For Alternative 1B, four conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 53 residences predicted to be affected by design year traffic noise. Only one of the conceptual designs (CD2) is within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD2 represents a ground mounted noise barrier (18 ft tall and 5,000 ft long) from Station 322+00 to Station 372+00 (see Figure 5.9-1). CD2 provides benefit to 70 residences, provides an average noise reduction of 6.4 dBA for the benefited residences, and has the lowest cost per benefited residence ($32,143) with an estimated construction cost of $2,250,000. CD2 is considered the optimal barrier design of those considered and is recommended for further consideration and community input. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities. It will be important to obtain public input from the

adjacent residences regarding the ground mounted noise barriers north of the North New River Canal before a decision is made to construct a noise barrier in this location. A ground mounted noise barrier in this area will restrict access and view of the North New River Canal from adjacent properties, which may be perceived as undesirable by adjacent property owners.

For Alternative 2A, four conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 65 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. The limits of the lowest cost conceptual barrier design for a ground mounted noise barrier north of the North New River Canal (CD4) are shown on Figure 5.9-2. CD4 has the lowest cost per benefited receiver ($42,969) and is considered the optimal design for this area. CD4 provides an average noise reduction of 7.0 dBA, provides benefits to 64 residences and has an estimated construction cost of $2,750,000. CD4 represents a ground mounted noise barrier (22 ft tall and 5,000 ft long) located north of the North New River Canal from Station 322+00 to Station 372+00. Because providing abatement at this community does not substantially exceed FDOT's reasonable cost criteria of $35,000 per benefited receiver, a noise barrier is recommended for further consideration and community input at this location. This conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.9-3. For Alternative 2A, several factors are contributing to the ineffectiveness of the ground mounted noise barriers in this area. The primary factor appears to be the traffic noise from the elevated reversible lanes associated with this alternative. Ground mounted noise walls are less effective in this area because the vehicles on the reversible lanes are at a higher elevation, approximately 24 feet above existing ground. As a result of this elevation difference, some of the traffic noise is not being blocked by the maximum height 22 ft tall ground mounted noise barrier. Because less noise is being blocked, the noise reduction at some of the noise sensitive sites, especially to the second row residences, is minimal. Also in this area, the second and third row residences are relatively far from the location of the ground mounted noise barrier. In part, this is due to North New River Canal Road, which creates at least a 70 ft gap between the noise barrier and the nearest first row residence. Generally, the closer the noise sensitive site is to the noise barrier, the more effective it will be in reducing traffic noise levels. The nearest second row residences are between 150 ft and 200 ft from where the noise barrier would be constructed. This

distance appears to be a factor limiting the effectiveness of ground mounted noise barriers with both alternatives. Some of the second row residences are not being benefited by the maximum ground mounted barrier height (i.e., 22 ft tall). The predicted design year noise levels for the second row residences also are being minimized by shielding from the first row residences. Because many of the residences are already being shielded from traffic noise levels, the conceptual noise barrier designs that were evaluated are less effective and benefit fewer residences in the community.

Table 5.9-1 Noise Barrier Analyses for the Trellises Condos, Davide Isles, and Jacaranda Villas Located North of I-595 Between Nob Hill Road and Pine Island Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
The Trellises Condos (TC), Davide Isles (DI), and Jacaranda Villas (JV)	**Ground Mounted Barrier Alternatives**														
	CD1	Ground Mounted	16	5,000	322+00	372+00	53	5.4	40	12	52	6.1	$2,000,000	$38,462	---
	CD2	Ground Mounted	18	5,000	322+00	372+00	53	6.1	53	17	70	6.4	$2,250,000	$32,143	---
	CD3	Ground Mounted	20	5,000	322+00	372+00	53	6.9	53	17	70	7.1	$2,500,000	$35,714	---
	CD4	Ground Mounted	22	5,000	322+00	372+00	53	7.2	53	17	70	7.3	$2,750,000	$39,286	---

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Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

Table 5.9-2 Noise Barrier Analyses for the Trellises Condos, Davide Isles, and Jacaranda Villas Located North of I-595 Between Nob Hill Road and Pine Island Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
The Trellises Condos (TC), Davide Isles (DI), and Jacaranda Villas (JV)	**Ground Mounted Barrier Alternatives**														
	CD1	Ground Mounted	16	5,000	322+00	372+00	65	3.6	19	0	19	6.7	$2,000,000	$105,263	---
	CD2	Ground Mounted	18	5,000	322+00	372+00	65	4.4	22	0	22	7.3	$2,250,000	$102,273	---
	CD3	Ground Mounted	20	5,000	322+00	372+00	65	5.3	44	3	47	6.9	$2,500,000	$53,191	---
	CD4	Ground Mounted	22	5,000	322+00	372+00	65	6.2	57	7	64	7.0	$2,750,000	$42,969	---

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Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

LEGEND

EXISTING LIMITED ACCESS RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY
REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION
ALTERNATIVE CD2 (GROUND MOUNTED BARRIER NORTH OF NORTH NEW RIVER CANAL)

1" = 400'

MANARANDA VILLAGE CONDOS

THE TRELLISES CONDOS

DAVIDE ISLES

JACARANDA VILLAS

18 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD2)

MVC1
TC1
TC2
TC3
TC4
TC5
DI1
DI2
DI3
DI4
DI5
DI6
JV1
JV2
JV3
JV4
JV5
JV6

NOB HILL ROAD

NORTH NEW RIVER CANAL ROAD

NORTH NEW RIVER CANAL ROAD

PINE ISLAND ROAD

NORTH NEW RIVER CANAL

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

BP AMOCO

GOODYEAR

BURGER KING

DRY CLEANERS

TOWN OF DAVIE POLICE DEPT.

TIRE & AUTO CENTER

METRO PCS

VIENNA CAFE

CHAR HUT

AMC THEATER

PINE ISLAND PLAZA

PINE RIDGE DRIVE

SCRUBY'S BARBEQUE

BROWARD SCHOOLS CREDIT UNION

KFC

WACHOVIA

MOBIL

EXPO DESIGN CENTER

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	MANARANDA VILLAGE CONDOS, TRELLISES CONDOS, DAVIDE ISLES, AND JACARANDA VILLAS NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.9-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD4 (GROUND MOUNTED BARRIER NORTH OF NORTH NEW RIVER CANAL)

1" = 400'

MANARANDA VILLAGE CONDOS

THE TRELLISES CONDOS

DAVIDE ISLES

JACARANDA VILLAS

22FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD4)

MVC1 TC1 TC2 TC3 TC4 TC5 DI1 DI2 DI3 DI4 DI5 DI6 JV1 JV2 JV3 JV4 JV5 JV6

NORTH NEW RIVER CANAL

I-595 WESTBOUND

I-595 EASTBOUND

BP AMOCO
GOODYEAR
BURGER KING
DRY CLEANERS
TOWN OF DAVIE POLICE DEPT.
TIRE & AUTO CENTER
METRO PCS
VIENNA CAFE
CHAR HUT
AMC THEATER
PINE ISLAND PLAZA
SCRUBY'S BARBEQUE
BROWARD SCHOOLS CREDIT UNION
KFC
WACHOVIA
MOBIL
EXPO DESIGN CENTER

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	MANARANDA VILLAGE CONDOS, TRELLISES CONDOS, DAVIDE ISLES, AND JACARANDA VILLAS NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A

FIGURE 5.9-2

Table 5.9-3 The Predicted Noise Level and Amount of Noise Reduction at the Trellises Condos, Davide Isles, and Jacaranda Villas with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between Nob Hill Road and Pine Island Road																			
The Trellises Condos (North of I-595 between Station 320+60 and Station 330+80)	TC1	331+25	13 (First Row Residences)	310	410	328	400	464	63.5	66.2	67.1	2.7	3.6	Approaches	Exceeds	60.0	6.2	61.0	6.1
	TC2	332+26	2 (Second Row Residences)	481	577	492	564	644	54.5	55.5	57.1	1.0	2.6	Below	Below	53.8	1.7	55.4	1.7
	TC3	334+56	18 (First Row Residences)	398	490	402	473	558	64.1	66.9	67.6	2.8	3.5	Approaches	Exceeds	59.6	7.3	60.9	6.7
	TC4	336+51	3 (First Row Residences)	346	434	345	415	503	64.5	67.3	67.9	2.8	3.4	Exceeds	Exceeds	59.6	7.7	60.5	7.4
	TC5	336+51	2 (Second Row Residences)	466	554	466	536	624	60.6	63.3	64.2	2.7	3.6	Below	Below	56.8	6.5	58.1	6.1
													Number of Noise Sensitive Sites Impacted by Project Alternatives			34	34			
Davide Isles (North of I-595 between Station 330+80 and Station 350+80)	DI1	339+56	6 (First Row Residences)	306	388	298	371	459	66.0	68.4	68.8	2.4	2.8	Exceeds	Exceeds	59.5	8.9	60.1	8.7
	DI2	339+47	6 (Second Row Residences)	395	478	388	461	549	62.3	64.7	65.5	2.4	3.2	Below	Below	57.4	7.3	60.0	5.5 (5 Sites) - 4.8 (1 Site)
	DI3	347+09	5 (First Row Residences)	314	398	304	378	466	66.5	68.5	68.9	2.0	2.4	Exceeds	Exceeds	59.6	8.9	60.1	8.8
	DI4	347+29	9 (Second Row Residences)	416	499	406	479	567	63.0	65.3	66.3	2.3	3.3	Below	Approaches	58.4	6.9	61.8	4.5
	DI5	356+24	2 (Second Row Residences)	382	465	371	469	532	62.0	64.7	65.4	2.7	3.4	Below	Below	61.7	3.0	64.5	0.9
	DI6	359+96	8 (First Row Residences)	309	391	297	395	459	65.9	68.5	68.9	2.6	3.0	Exceeds	Exceeds	59.3	9.2	60.0	8.9
													Number of Noise Sensitive Sites Impacted by Project Alternatives			19	28			
Jacaranda Villas (North of I-595 between Station 350+80 and Station 370+00)	JV1	361+67	1 (First Row Residence, First Floor Patio)	413	495	401	499	563	45.0	46.7	46.9	1.7	1.9	Below	Below	46.7	0.0	46.9	0.0
	JV2	365+47	1 (First Row Residence, First Floor Patio)	443	525	430	529	593	44.5	45.7	46.1	1.2	1.6	Below	Below	45.7	0.0	46.0	0.1
	JV3f	366+30	1 (First Row Residence, First Floor Patio)	382	463	369	467	531	63.5	62.8	64.9	-0.7	1.4	Below	Below	58.3	4.5	60.4	4.5
	JV3s	366+30	1 (First Row Residence, Second Floor Balcony)	382	463	369	467	531	65.4	64.9	66.2	-0.5	0.8	Below	Approaches	60.8	4.1	64.0	2.2
	JV4f	367+32	2 (First Row Residences, First Floor Patio)	327	409	317	413	477	64.1	63.2	65.1	-0.9	1.0	Below	Below	58.9	4.3	60.3	4.8
	JV4s	367+32	2 (First Row Residences, Second Floor Balcony)	327	409	317	413	477	66.1	65.2	66.6	-0.9	0.5	Below	Approaches	61.6	3.6	64.6	2.0
	JV5f	367+53	3 (Second Row Residences, First Floor Patio)	368	450	358	454	518	59.7	58.5	60.7	-1.2	1.0	Below	Below	55.8	2.7	59.2	1.5
	JV5s	367+53	3 (Second Row Residences, Second Floor Balcony)	368	450	358	454	518	61.6	60.1	62.0	-1.5	0.4	Below	Below	59.4	0.7	61.6	0.4
	JV6f	369+55	3 (First Row Residences, First Floor Patio)	380	462	383	466	530	63.1	62.2	64.4	-0.9	1.3	Below	Below	59.3	2.9	61.9	2.5
	JV6s	369+55	3 (First Row Residences, Second Floor Balcony)	380	462	383	466	530	65.1	63.9	65.6	-1.2	0.5	Below	Below	62.0	1.9	64.6	1.0
													Number of Noise Sensitive Sites Impacted by Project Alternatives			0	3			

I:\I-595\PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.10 Barrier Analysis for Evergreen Place

Evergreen Place (Area A-21) is a multi-family community comprised of four-story condominium buildings located south of I-595 between Nob Hill Road and Pine Island Road. Consideration of noise barriers is warranted for the residences within Evergreen Place that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 41 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 55.8 dBA to 75.6 dBA and would be approximately 1.5 dBA higher than existing levels. For Alternative 2A, 41 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 55.7 dBA to 75.4 dBA and would be approximately 1.6 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.10-1 and 5.10-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located along the I-595/SR 84 southern right of way line were evaluated.

For Alternative 1B, six conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 41 residences predicted to be affected by design year traffic noise. Four of the conceptual designs (CD3 through CD6) are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD6 has the lowest cost per benefited receiver ($20,862) and benefits 29 residences including 23 of the 41 affected residences with an estimated construction cost of $605,000. CD3 benefits a total of 25 residences, four less than CD6, and has an estimated construction cost of $815,000. CD4 and CD5 also benefit 23 of the 41 affected residences. CD4 and CD5 benefit a total of 33 residences, four more than CD6, and have an estimated construction cost of $896,500 and $770,000, respectively. Although CD4 and CD5 benefit four more residences than CD6, these additional residences are not impacted by the project so expending at least an additional cost of $165,000 is not cost justifiable. Because of the additional cost associated with CD4 and CD5 and the fewer residences benefited by CD3, CD6 is considered the optimal barrier design at this location. CD6 represents a ground mounted noise barrier (22 ft tall and 1,100 ft long) from Station 340+00 to Station 351+00 (see Figure 5.10-1). CD6 provides an average noise reduction of 7.4 dBA for the benefited residences and is recommended for further consideration and community input. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

For Alternative 2A, six conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 41 residences predicted to be affected by

design year traffic noise. Only one of the conceptual designs (CD6) is within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD6 represents a ground mounted noise barrier (22 ft tall and 1,100 ft long) from Station 340+00 to Station 351+00 (see Figure 5.10-2). CD6 provides benefit to 19 residences, provides an average noise reduction of 5.7 dBA for the benefited residences, and has the lowest cost per benefited residence ($31,842) with an estimated construction cost of $605,000. CD6 is considered the optimal barrier design of those considered and is recommended for further consideration and community input. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.10-3. None of the conceptual barrier designs for either alternative benefit all of the impacted noise sensitive sites. There are several factors are contributing to the ineffectiveness of the ground mounted noise barriers in this area. For both alternatives, the maximum height (22 ft tall) ground mounted noise barrier is less effective in shielding noise to the second, third, and fourth floor balconies in this development. For Alternative 2A, another factor appears to be the traffic noise from the elevated reversible lanes associated with this alternative. Ground mounted noise walls are less effective in this area because the vehicles on the reversible lanes are at a higher elevation, approximately 24 feet above existing ground. As a result of this elevation difference, some of the traffic noise is not being blocked by the maximum height 22 ft tall ground mounted noise barrier. Because less noise is being blocked, the noise reduction at some of the noise sensitive sites, especially the second, third and fourth floor balconies, is minimal (e.g., Sites EP1t and EP1fo).

Table 5.10-1 Noise Barrier Analyses for Evergreen Place Located South of I-595 Between Nob Hill Road and Pine Island Road for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Evergreen Place (EP)	CD1	Ground Mounted	16	1,630	336+00	352+30	41	2.6	13	1	14	6.1	$652,000	$46,571	---
	CD2	Ground Mounted	18	1,630	336+00	352+30	41	3.4	18	1	19	6.5	$733,500	$38,605	---
	CD3	Ground Mounted	20	1,630	336+00	352+30	41	4.8	19	6	25	7.2	$815,000	$32,600	---
	CD4	Ground Mounted	22	1,630	336+00	352+30	41	5.9	23	10	33	7.5	$896,500	$27,167	---
	CD5	Ground Mounted	22	1,400	337+00	351+00	41	5.8	23	10	33	7.5	$770,000	$23,333	Extends 300 ft West of Western Property Limits
	CD6	Ground Mounted	22	1,100	340+00	351+00	41	5.4	23	6	29	7.4	$605,000	$20,862	Extends Across Limits of Property

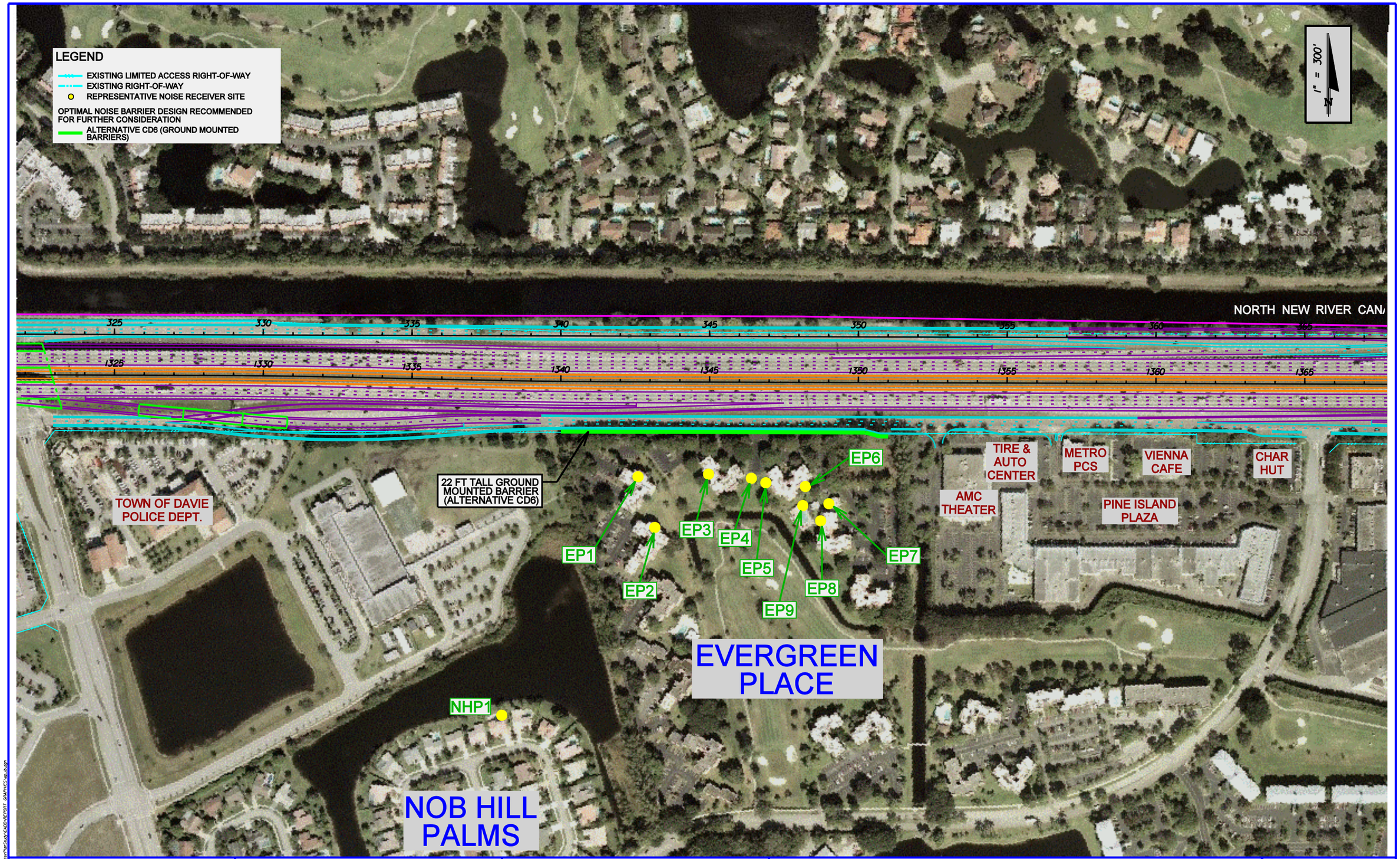
I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

Table 5.10-2 Noise Barrier Analyses for Evergreen Place Located South of I-595 Between Nob Hill Road and Pine Island Road for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Evergreen Place (EP)	**Ground Mounted Barrier Alternatives**														
	CD1	Ground Mounted	16	1,630	336+00	352+30	41	2.0	0	0	0	---	$652,000	---	---
	CD2	Ground Mounted	18	1,630	336+00	352+30	41	2.6	0	0	0	---	$733,500	---	---
	CD3	Ground Mounted	20	1,630	336+00	352+30	41	3.6	14	0	14	5.5	$815,000	$58,214	---
	CD4	Ground Mounted	22	1,630	336+00	352+30	41	4.6	19	0	19	6.3	$896,500	$47,184	---
	CD5	Ground Mounted	22	1,400	337+00	351+00	41	4.5	19	0	19	6.3	$770,000	$40,526	Extends 300 ft West of Western Property Limits
	CD6	Ground Mounted	22	1,100	340+00	351+00	41	4.3	19	0	19	5.7	$605,000	$31,842	Extends Across Limits of Property

Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	EVERGREEN PLACE NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.10-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD6 (GROUND MOUNTED BARRIERS)

1" = 300'

NORTH NEW RIVER CAN

325 330 335 340 345 350 355 360

1325 1330 1335 1340 1345 1350 1355 1360 1365

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD6)

TOWN OF DAVIE POLICE DEPT.

EP1 EP2 EP3 EP4 EP5 EP6 EP7 EP8 EP9

NHP1

EVERGREEN PLACE

NOB HILL PALMS

TIRE & AUTO CENTER

METRO PCS

VIENNA CAFE

CHAR HUT

AMC THEATER

PINE ISLAND PLAZA

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	EVERGREEN PLACE NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.10-2

Table 5.10-3 The Predicted Noise Level and Amount of Noise Reduction at Evergreen Place with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between Nob Hill Road and Pine Island Road																			
Evergreen Place (South of I-595 between Station 340+00 and Station 360+40)	EP1f	342+59	4 (First Row Residence, First Floor Patio)	152	234	165	249	301	70.5	71.6	71.9	1.1	1.4	Exceeds	Exceeds	63.9	7.7	65.6	6.3
	EP1s	342+59	3 (First Row Residences, Second Floor Balcony)	152	234	165	249	301	72.3	73.6	73.8	1.3	1.5	Exceeds	Exceeds	66.5	7.1	68.5	5.3
	EP1t	342+59	1 (First Row Residence, Third Floor Balcony)	152	234	165	249	301	73.4	75.0	75.0	1.6	1.6	Exceeds	Exceeds	69.9	5.1	70.7	4.3
	EP1fo	342+59	2 (First Row Residences, Fourth Floor Balcony)	152	234	165	249	301	73.7	75.6	75.4	1.9	1.7	Exceeds	Exceeds	74.0	1.6	73.6	1.8
	EP2f	343+15	4 (Second Row Residences, First Floor Patio)	323	404	335	419	471	61.3	62.7	63.7	1.4	2.4	Below	Below	57.9	4.8	61.0	2.7
	EP2s	343+15	4 (Second Row Residences, Second Floor Balcony)	323	404	335	419	471	64.2	65.2	65.6	1.0	1.4	Below	Below	60.2	5.0	62.0	3.6
	EP2t	343+15	3 (Second Row Residences, Third Floor Balcony)	323	404	335	419	471	65.1	66.4	66.6	1.3	1.5	Approaches	Approaches	62.3	4.1	63.5	3.1
	EP2fo	343+15	4 (Second Row Residences, Fourth Floor Balcony)	323	404	335	419	471	65.9	67.6	67.6	1.7	1.7	Exceeds	Exceeds	64.4	3.2	64.9	2.7
	EP3f	344+95	3 (First Row Residence, First Floor Patio)	143	224	155	239	291	66.1	67.1	67.6	1.0	1.5	Exceeds	Exceeds	59.9	7.2	61.6	6.0
	EP3s	344+95	3 (First Row Residences, Second Floor Balcony)	143	224	155	239	291	67.8	69.4	69.5	1.6	1.7	Exceeds	Exceeds	62.7	6.7	64.5	5.0
	EP3t	344+95	2 (First Row Residences, Third Floor Balcony)	143	224	155	239	291	68.8	70.6	70.5	1.8	1.7	Exceeds	Exceeds	66.1	4.5	66.7	3.8
	EP3fo	344+95	2 (First Row Residences, Fourth Floor Balcony)	143	224	155	239	291	69.3	71.3	71.1	2.0	1.8	Exceeds	Exceeds	69.9	1.4	69.5	1.6
	EP4f	346+40	1 (First Row Residence, First Floor Patio)	157	237	169	253	405	63.5	64.6	63.7	1.1	0.2	Below	Below	56.5	8.1	58.8	4.9
	EP4s	346+40	1 (First Row Residence, Second Floor Balcony)	157	237	169	253	405	61.9	63.2	62.9	1.3	1.0	Below	Below	56.6	6.6	58.6	4.3
	EP4t	346+40	1 (First Row Residence, Third Floor Balcony)	157	237	169	253	405	53.7	55.8	55.7	2.1	2.0	Below	Below	55.1	0.7	55.1	0.6
	EP4fo	346+40	1 (First Row Residence, Fourth Floor Balcony)	157	237	169	253	405	58.3	60.8	60.8	2.5	2.5	Below	Below	60.1	0.7	60.1	0.7
	EP5s	346+89	4 (First Row Residence, First/Second Floor Units)	172	252	184	268	320	67.7	68.8	69.0	1.1	1.3	Exceeds	Exceeds	59.9	8.9	62.7	6.3
	EP5t	346+89	2 (First Row Residence, Third Floor Balcony)	172	252	184	268	320	68.4	70.0	69.9	1.6	1.5	Exceeds	Exceeds	63.9	6.1	64.8	5.1
	EP5fo	346+89	2 (First Row Residence, Fourth Floor Balcony)	172	252	184	268	320	68.4	70.3	70.0	1.9	1.6	Exceeds	Exceeds	68.3	2.0	67.7	2.3
	EP6f	348+13	1 (First Row Residence, First Floor Patio)	184	264	196	266	332	61.3	63.1	62.3	1.8	1.0	Below	Below	61.3	1.8	61.0	1.3
	EP6s	348+13	1 (First Row Residence, Second Floor Balcony)	184	264	196	266	332	57.0	59.1	59.3	2.1	2.3	Below	Below	58.9	0.2	59.1	0.2
	EP6t	348+13	1 (First Row Residence, Third Floor Balcony)	184	264	196	266	332	64.8	66.5	66.2	1.7	1.4	Approaches	Approaches	65.2	1.3	65.2	1.0
	EP6fo	348+13	1 (First Row Residence, Fourth Floor Balcony)	184	264	196	266	332	68.9	70.8	70.4	1.9	1.5	Exceeds	Exceeds	69.4	1.4	69.0	1.4
	EP7f	348+21	2 (First Row Residences, First Floor Patio)	241	322	253	325	389	66.0	67.2	67.1	1.2	1.1	Exceeds	Exceeds	58.7	8.5	63.0	4.1
	EP8t	348+73	1 (Second Row Residence, Third Floor Balcony)	299	379	311	383	447	66.6	67.9	67.5	1.3	0.9	Exceeds	Exceeds	61.8	6.1	63.2	4.3
	EP8fo	348+73	1 (Second Row Residence, Fourth Floor Balcony)	299	379	311	383	447	67.3	69.0	68.8	1.7	1.5	Exceeds	Exceeds	65.3	3.7	65.7	3.1
	EP9	349+00	Pool Area	248	328	260	330	396	63.2	64.4	64.8	1.2	1.6	Below	Below	60.0	4.4	62.7	2.1
													Number of Noise Sensitive Sites Impacted by Project Alternatives			41	41		

I:\I-595\PD&E\Study\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.11 Barrier Analysis for Plantation Colony Apartments

Plantation Colony Apartments (Area A-22) is a multi-family community comprised of two-story apartment buildings located north of I-595 and the North New River Canal and east of Pine Island Road. Consideration of noise barriers is warranted for the residences within Plantation Colony Apartments that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, one residence is predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 53.8 dBA to 66.2 dBA and would be approximately 1.6 dBA higher than existing levels. For Alternative 2A, one residence is predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 54.6 dBA to 66.5 dBA and would be approximately 2.4 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.11-1 and 5.11-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located north of the North New River Canal and shoulder mounted barriers along SR 84 were evaluated. Because of right of way constraints and SFWMD's maintenance requirements for the North New River Canal, ground mounted noise barriers within the I-595/SR 84 right of way were not considered constructible and were not evaluated.

For Alternative 1B, seven conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the residence predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. The limits of the most effective ground mounted conceptual barrier design (CD7) are shown on Figure 5.11-1. CD7 has the lowest cost per benefited receiver and is considered the optimal design for this area. CD7 provides an average noise reduction of 6.1 dBA, provides benefits to six residences in the community including the one impacted by design year traffic noise levels, has a cost per benefited receiver of $107,250, and has an estimated construction cost of $643,500. CD7 represents a ground mounted noise barrier (22 ft tall and 1,170 ft long) from Station 391+90 to Station 403+60. Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

For Alternative 2A, four conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the residence predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. The limits of the most effective ground mounted conceptual barrier design (CD4) are shown on Figure 5.11-2. CD4 has the lowest cost per benefited receiver and is

considered the optimal design for this area. CD4 provides an average noise reduction of 5.9 dBA, provides benefits to five residences in the community, has a cost per benefited receiver of $129,800, and has an estimated construction cost of $649,000. CD4 represents a ground mounted noise barrier (22 ft tall and 1,180 ft long) from Station 391+80 to Station 403+60 (see Figure 5.11-2). Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.11-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The lowest cost per benefited receiver for the optimal conceptual designs was $107,250 for Alternative 1B (CD7) and $129,800 for Alternative 2A (CD4). The high cost of providing abatement is attributed to the low density of noise sensitive sites in this area that are benefited. Most of the noise sensitive areas (i.e., patios and balconies) associated with this complex are on the back side of the apartment buildings facing way from I-595/SR 84.

Table 5.11-1 Noise Barrier Analyses for Plantation Colony Apartments North of I-595 Between Pine Island Road and University Drive for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Plantation Colony Apartments (PC)	**SR 84 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	1,110	388+90	400+00	1	0.7	0	0	0	---	$470,640	---	---
	CD2	Shoulder Mounted	10	1,110	388+90	400+00	1	1.2	0	0	0	---	$543,900	---	---
	CD3	Shoulder Mounted	12	1,110	388+90	400+00	1	1.9	0	0	0	---	$626,040	---	---
	CD4	Shoulder Mounted	14	1,110	388+90	400+00	1	2.6	0	0	0	---	$699,300	---	---
	CD5	Shoulder Mounted	14	1,820	388+90	407+10	1	2.6	0	0	0	---	$1,146,600	---	---
	Ground Mounted Barrier Alternatives North of New River Canal														
	CD6	Ground Mounted	20	1,170	391+90	403+60	1	4.2	0	5	5	5.7	$585,000	$117,000	---
	CD7	Ground Mounted	22	1,170	391+90	403+60	1	5.3	1	5	6	6.1	$643,500	$107,250	---

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and i**not recommended** for further consideration.

Table 5.11-2 Noise Barrier Analyses for Plantation Colony Apartments Located South of I-595 Between Pine Island Road and University Drive for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Plantation Colony Apartments (PC)	**SR 84 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	1,840	388+70	407+10	1	0.6	0	0	0	---	$780,160	---	---
	CD2	Shoulder Mounted	14	1,840	388+70	407+10	1	1.9	0	0	0	---	$1,159,200	---	---
	Ground Mounted Barrier Alternatives North of New River Canal														
	CD3	Ground Mounted	20	1,180	391+80	403+60	1	3.3	0	2	2	5.8	$590,000	$295,000	---
	CD4	Ground Mounted	22	1,180	391+80	403+60	1	4.4	0	5	5	5.9	$649,000	$129,800	---

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD7 (GROUND MOUNTED BARRIERS NORTH OF NORTH NEW RIVER CANAL)

1" = 300'

PLANTATION COLONY APARTMENTS

PC1
PC2
PC3
PC4
PC5
PC6

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD7)

375 380 385 390 395 400

1375 1380 1385 1390 1395 1400 405 410 415

7 ELEVEN
MOBIL
CITY FURNITURE
AMF DAVIE LANES BOWLING
METRO PCS

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PLANTATION COLONY APARTMENTS NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.11-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD4 (GROUND MOUNTED BARRIERS NORTH OF NORTH NEW RIVER CANAL)

PLANTATION COLONY APARTMENTS

1" = 300'

PC1
PC2
PC3
PC4
PC5
PC6

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD4)

375 380 385 390 395 400

1375 1380 1385 1390 1395 1400 405 410 415

7 ELEVEN

MOBIL

CITY FURNITURE

AMF DAVIE LANES BOWLING

METRO PCS

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PLANTATION COLONY APARTMENTS NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.11-2

Table 5.11-3 The Predicted Noise Level and Amount of Noise Reduction at Plantation Colony Apartments with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between Pine Island Road and University Drive																			
Plantation Colony Apartments (North of I-595 between Station 390+20 and Station 400+20)	PC1f	394+35	1 (First Row Residence, First Floor Patio)	331	411	326	415	479	62.2	64.8	65.4	2.6	3.2	Below	Below	59.1	5.7	59.7	5.7
	PC1s	394+35	1 (First Row Residence, Second Floor Balcony)	331	411	326	415	479	64.7	66.2	66.5	1.5	1.8	Approaches	Approaches	60.9	5.3	62.1	4.4
	PC2f	394+54	1 (First Row Residence, First Floor Patio)	368	449	363	453	517	50.8	53.8	53.6	3.0	2.8	Below	Below	50.9	2.9	51.7	1.9
	PC2s	394+54	1 (First Row Residence, Second Floor Balcony)	368	449	363	453	517	58.0	59.8	59.9	1.8	1.9	Below	Below	54.9	4.9	55.3	4.6
	PC3f	396+52	1 (First Row Residence, First Floor Patio)	392	472	380	476	540	58.0	59.5	60.1	1.5	2.1	Below	Below	53.3	6.2	54.1	6.0
	PC3s	396+52	1 (First Row Residence, Second Floor Balcony)	392	472	380	476	540	61.0	62.0	62.1	1.0	1.1	Below	Below	56.2	5.8	56.7	5.4
	PC4f	396+78	1 (Second Row Residence, First Floor Patio)	484	565	472	569	633	55.2	56.9	58.0	1.7	2.8	Below	Below	54.2	2.7	55.0	3.0
	PC4s	396+78	1 (Second Row Residence, Second Floor Balcony)	484	565	472	569	633	57.3	58.3	59.3	1.0	2.0	Below	Below	56.0	2.3	57.0	2.3
	PC5f	398+51	1 (First Row Residence, First Floor Patio)	483	564	465	568	632	57.9	59.6	60.6	1.7	2.7	Below	Below	54.9	4.7	56.4	4.2
	PC5s	398+51	1 (First Row Residence, Second Floor Balcony)	483	564	465	568	632	60.2	61.7	62.0	1.5	1.8	Below	Below	56.9	4.8	58.7	3.3
	PC6f	400+17	1 (First Row Residence, First Floor Patio)	384	466	363	470	534	62.2	63.3	64.2	1.1	2.0	Below	Below	56.3	7.0	57.3	6.9
	PC6s	400+17	1 (First Row Residence, Second Floor Balcony)	384	466	363	470	534	63.8	64.6	64.9	0.8	1.1	Below	Below	57.9	6.7	59.5	5.4
													Number of Noise Sensitive Sites Impacted by Project Alternatives		1	1				

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* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.12 Barrier Analysis for Park City Estates

Park City Estates (Area A-23) is a mobile home park located south of I-595 and east of Pine Island Road. Consideration of noise barriers is warranted for the residences within Park City Estates that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 10 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 61.3 dBA to 69.8 dBA and would be approximately 2.3 dBA higher than existing levels. For Alternative 2A, 19 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 61.9 dBA to 70.1 dBA and would be approximately 3.0 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.12-1 and 5.12-2, respectively. For Alternatives 1B and 2A, shoulder mounted noise barriers along I-595 were evaluated. Because commercial properties (Park City Plaza) are located between these residences and the I-595/SR 84 right of way and because the limits of a ground mounted noise barrier would be constrained by Pine Island Road to the west and bisected by SW 86th Avenue and several access drives to the commercial properties, ground mounted noise barriers were not considered reasonable at this location and were not evaluated.

For Alternative 1B, five conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 10 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver or benefit all of the affected receivers. CD3, CD4, and CD5 benefit the most receivers (i.e., only two residences). Of these conceptual designs, CD5 provides the most average noise reduction (5.6 dBA). Because CD5 provides the most reduction, it is considered the optimal design for this area. CD5 has a cost per benefited residence of $631,990, and an estimated construction cost of $1,263,980. As depicted in Figure 5.12-1, CD5 represents a shoulder mounted barrier along I-595 that is bisected by an exit ramp. The height of the two shoulder mounted barrier segments is 14 ft except on MSE wall where the height is 8 ft. Because of constructability issues, the height of shoulder mounted barrier on MSE wall is limited to 8 ft. Segment 1 extends 1,420 ft from Station 375+50 to Station 389+70 and Segment 2 extends 1,240 ft from Station 388+70 to Station 401+10. Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

For Alternative 2A, four conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 19 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum

5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver or benefit any noise sensitive sites. Of these conceptual designs, CD4 provides the most average noise reduction (2.1 dBA). Because CD4 provides the most reduction, it is considered the optimal design for this area. CD4 has an estimated construction cost of $1,537,760. As depicted in Figure 5.12-2, CD4 represents a shoulder mounted barrier along I-595 that is bisected by an exit ramp. The height of the two shoulder mounted barrier segments is 14 ft except on MSE wall where the height is 8 ft. Because of constructability issues, the height of shoulder mounted barrier on MSE wall is limited to 8 ft. Segment 1 extends 1,450 ft from Station 375+20 to Station 389+70 and Segment 2 extends 1,240 ft from Station 388+70 to Station 401+10. Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.12-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The lowest cost per benefited receiver for the optimal conceptual designs was $541,780 for Alternative 1B (CD3) and at least $1,276,150 for Alternative 2A (CD4). The high cost of providing abatement is attributed to the low density of noise sensitive sites in this area that are benefited.

None of the conceptual barrier designs for either alternative benefit all of the affected noise sensitive sites. For both alternatives, the effectiveness of shoulder mounted noise barriers in this area is limited by the traffic noise from Pine Island Road and SR 84. Also, the effectiveness of shoulder mounted noise barriers is limited by their height (i.e., 8, 10, 12, or 14 ft) and the distance the residences are set back from I-595/SR 84. Noise barriers are generally less effective at lower heights and as the distance increases between the noise source and the location of the noise barrier. Some of the impacted residences are at least 350 ft from the edge of the nearest I-595 travel lane, limiting the effectiveness of the shoulder mounted noise barriers.

Table 5.12-1 Noise Barrier Analyses for Park City Estates Located South of I-595 Between Pine Island Road and University Drive for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Park City Estates (PCE)	CD1	Shoulder Mounted on Bridge (Ramp Lane)	8	280	376+00	378+80	10	1.7	0	0	0	---	$892,880	---	---
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	8	1,130	388+70	400+00									
	CD2	Shoulder Mounted on Bridge (Ramp Lane)	10	280	376+00	378+80	10	2.0	0	0	0	---	$983,700	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	10	1,130	388+70	400+00									
	CD3	Shoulder Mounted on Bridge (Ramp Lane)	12	280	376+00	378+80	10	2.3	2	0	2	5.1	$1,083,560	$541,780	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	12	1,130	388+70	400+00									
	CD4	Shoulder Mounted on Bridge (Ramp Lane)	14	280	376+00	378+80	10	2.5	2	0	2	5.5	$1,174,380	$587,190	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	14	1,130	388+70	400+00									
	CD5	Shoulder Mounted on Bridge (Ramp Lane)	14	330	375+50	378+80	10	2.8	2	0	2	5.6	$1,263,980	$631,990	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	14	1,240	388+70	401+10									

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Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and i**not recommended** for further consideration.

Table 5.12-2 Noise Barrier Analyses for Park City Estates Located South of I-595 Between Pine Island Road and University Drive for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Park City Estates (PCE)	CD1	Shoulder Mounted on Bridge (Ramp Lane)	8	360	375+20	378+80	19	1.6	0	0	0	---	$958,080	---	---
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	8	1,240	388+70	401+10									
	CD2	Shoulder Mounted on Bridge (Ramp Lane)	10	360	375+20	378+80	19	1.7	0	0	0	---	$1,060,800	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	10	1,240	388+70	401+10									
	CD3	Shoulder Mounted on Bridge (Ramp Lane)	12	360	375+20	378+80	19	2.0	0	0	0	---	$1,173,440	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	12	1,240	388+70	401+10									
	CD4	Shoulder Mounted on Bridge (Ramp Lane)	14	360	375+20	378+80	19	2.1	0	0	0	---	$1,276,160	---	Design Variance Required for Shoulder Mounted Barriers Taller than 8 ft on Bridges
		Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70									
		Shoulder Mounted (I-595 Mainline)	14	1,240	388+70	401+10									

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and i**not recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD5 (SHOULDER MOUNTED BARRIERS WITHIN I-595 RIGHT-OF-WAY)

1" = 300'

8 FT/14 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD5)

14 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD5)

375 380 385 390 395 400 405 410 415

1375 1380 1385 1390 1395 1400

7 ELEVEN

MOBIL

PCE1 PCE2 PCE3 PCE4 PCE5 PCE6 PCE7 PCE8 PCE9 PCE10 PCE11 PCE12

CITY FURNITURE

AMF DAVIE LANES BOWLING

METRO PCS

PARK CITY ESTATES

Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PARK CITY ESTATES NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.12-1

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PARK CITY ESTATES NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.12-2

Table 5.12-3 The Predicted Noise Level and Amount of Noise Reduction at Park City Estates with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between Pine Island Road and University Drive																			
Park City Estates (South of I-595 between Station 370+80 and Station 400+00)	PCE1	378+18	1 (First Row Residence)	207	291	209	295	359	69.4	69.8	70.1	0.4	0.7	Exceeds	Exceeds	69.1	0.7	69.6	0.5
	PCE2	378+69	2 (First Row Residences)	272	356	274	360	424	66.7	67.3	68.0	0.6	1.3	Exceeds	Exceeds	66.5	0.8	67.5	0.5
	PCE3	379+64	1 (First Row Residence)	387	370	288	374	438	62.5	63.8	65.4	1.3	2.9	Below	Below	62.6	1.2	64.7	0.7
	PCE4	381+86	11 (First Row Residences)	203	384	201	287	351	60.5	63.2	63.8	2.7	3.3	Below	Below	61.6	1.6	62.7	1.1
	PCE5	383+78	2 (First Row Residences)	217	297	215	301	365	63.0	65.2	66.0	2.2	3.0	Below	Approaches	63.4	1.8	64.6	1.4
	PCE6	385+77	2 (First Row Residences)	235	315	233	319	383	63.8	66.1	66.8	2.3	3.0	Approaches	Approaches	64.6	1.5	65.6	1.2
	PCE7	386+80	3 (First Row Residences)	210	290	208	294	358	62.2	64.4	65.1	2.2	2.9	Below	Below	62.9	1.5	63.8	1.3
	PCE8	389+45	6 (First Row Residences)	210	290	212	294	358	59.0	61.3	61.9	2.3	2.9	Below	Below	59.1	2.2	60.5	1.4
	PCE9	392+78	2 (First Row Residence)	223	303	232	307	371	64.0	67.6	68.0	3.6	4.0	Exceeds	Exceeds	62.0	5.6	64.1	3.9
	PCE10	392+93	3 (First Row Residences)	273	353	282	357	421	62.7	65.9	66.7	3.2	4.0	Below	Approaches	61.0	4.9	63.7	3.0
	PCE11	397+23	4 (First Row Residences)	273	353	282	356	420	63.4	65.7	66.6	2.3	3.2	Below	Approaches	61.8	3.9	64.2	2.4
	PCE12	398+16	3 (First Row Residences)	217	296	226	300	364	64.6	66.7	67.3	2.1	2.7	Approaches	Exceeds	62.9	3.8	64.8	2.5
														10	19				

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.13 Barrier Analysis for Arrowhead Golf and Tennis Club and Valencia Village

Arrowhead Golf and Tennis Club (Area A-24) and Valencia Village (Area A-25) are multi-family residential communities comprised of multi-story apartment buildings. These adjacent communities are located south of I-595 and west of University Drive. Consideration of noise barriers is warranted for the residences within Arrowhead Golf and Tennis Club and Valencia Village that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 18 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 60.4 dBA to 73.4 dBA and would be approximately 1.6 dBA higher than existing levels. For Alternative 2A, 18 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 61.4 dBA to 73.5 dBA and would be approximately 2.3 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.13-1 and 5.13-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located along the I-595/SR 84 southern right of way line, shoulder mounted barriers along I-595, and a combination of ground mounted and shoulder mounted noise barriers were evaluated.

For Alternative 1B, four conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 18 residences predicted to be affected by design year traffic noise. Two of the conceptual designs (CD2 and CD3) are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD3 is considered the optimal design for this area and is recommended for further consideration and community input. CD3 provides an average noise reduction of 7.8 dBA, provides benefits to 23 residences, has a cost per benefited residence of $22,239, and an estimated construction cost of $511,500. As depicted in Figure 5.13-1, CD3 represents a ground mounted noise barrier which is bisected by the access road into Arrowhead Golf and Tennis Club. Both ground mounted barrier segments are 22 ft tall. Segment 1 extends 330 ft from Station 410+20 to Station 413+50 and Segment 2 extends 600 ft from Station 414+40 to Station 420+40. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

For Alternative 2A, four conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 18 to 21 residences predicted to be affected by design year traffic noise. Two of the conceptual designs (CD2 and CD3) are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. CD3 is considered the

optimal design for this area and is recommended for further consideration and community input. CD3 provides an average noise reduction of 7.8 dBA, provides benefits to 23 residences, has a cost per benefited residence of $22,239, and an estimated construction cost of $511,500. As depicted in Figure 5.13-2, CD3 represents a ground mounted noise barrier which is bisected by the access road into Arrowhead Golf and Tennis Club. Both ground mounted barrier segments are 22 ft tall. Segment 1 extends 330 ft from Station 410+20 to Station 413+50 and Segment 2 extends 600 ft from Station 414+40 to Station 420+40. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.13-3. The optimal conceptual barrier designs (CD3 for Alternative 1B and CD3 for Alternative 2A) provide benefits to all of the affected noise sensitive sites.

Table 5.13-1 Noise Barrier Analyses for Arrowhead Golf and Tennis Club and Valencia Village Located South of I-595 Between Pine Island Road and University Drive for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Arrowhead Golf and Tennis Club (AGT) and Valencia Village (VV)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	400	412+00	416+00	18	2.9	0	0	0	---	$489,600	---	---
		Shoulder Mounted on MSE Wall	8	1,000	416+00	426+00									
	Ground Mounted Barrier Alternatives														
	CD2	Ground Mounted	20	330	410+20	413+50	18	7.4	18	5	23	7.2	$465,000	$20,217	---
		Ground Mounted	20	600	414+40	420+40									
	CD3	Ground Mounted	22	330	410+20	413+50	18	8.0	18	5	23	7.8	$511,500	$22,239	---
		Ground Mounted	22	600	414+40	420+40									
	I-595 Shoulder Mounted and Ground Mounted Barrier Combination Alternatives														
	CD4	Ground Mounted	20	330	410+20	413+50	18	9.5	18	9	27	9.7	$1,478,360	$54,754	---
		Ground Mounted	20	600	414+40	420+40									
		Shoulder Mounted	8	2,390	408+10	432+00									

Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

Table 5.13-2 Noise Barrier Analyses for Arrowhead Golf and Tennis Club and Valencia Village Located South of I-595 Between Pine Island Road and University Drive for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Arrowhead Golf and Tennis Club (AGT) and Valencia Village (VV)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	400	412+00	416+00	18	2.0	0	0	0	---	$489,600	---	---
		Shoulder Mounted on MSE Wall	8	1,000	416+00	426+00									
	Ground Mounted Barrier Alternatives														
	CD2	Ground Mounted	20	330	410+20	413+50	21	6.9	18	2	20	7.1	$465,000	$23,250	---
		Ground Mounted	20	600	414+40	420+40									
	CD3	Ground Mounted	22	330	410+20	413+50	21	7.9	21	2	23	7.8	$511,500	$22,239	---
		Ground Mounted	22	600	414+40	420+40									
	I-595 Shoulder Mounted and Ground Mounted Barrier Combination Alternatives														
	CD4	Ground Mounted	22	330	410+20	413+50	21	9.4	21	2	23	9.2	$1,524,860	$66,298	---
		Ground Mounted	22	600	414+40	420+40									
		Shoulder Mounted	8	2,390	408+10	432+00									

Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD3 (GROUND MOUNTED BARRIERS SOUTH OF SR 84)

1" = 300'

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD3)

395 400 1395 1400 405 410 415 420 425 430 435

CITY FURNITURE

AMF DAVIE LANES BOWLING

METRO PCS

AGT1 AGT2 AGT3 AGT4 AGT5 AGT6 AGT7

VV1 VV2 VV3

BED BATH & BEYOND

SPEE DEE OIL CHANGE &TUNE UP

BIG K-MART

ARROWHEAD GOLF AND TENNIS CLUB

VALENCIA VILLAGE

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	ARROWHEAD GOLF AND TENNIS CLUB AND VALENCIA VILLAGE NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.13-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD3 (GROUND MOUNTED BARRIERS SOUTH OF SR 84)

1" = 300'

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD3)

395 400 1395 1400 405 410 415 420 425 430 435

CITY FURNITURE

AMF DAVIE LANES BOWLING

METRO PCS

AGT1 AGT2 AGT3 AGT4 AGT5 AGT6 AGT7

VV1 VV2 VV3

BED BATH & BEYOND

SPEE DEE OIL CHANGE &TUNE UP

BIG K-MART

ARROWHEAD GOLF AND TENNIS CLUB

VALENCIA VILLAGE

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	ARROWHEAD GOLF AND TENNIS CLUB AND VALENCIA VILLAGE NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.13-2

Table 5.13-3 The Predicted Noise Level and Amount of Noise Reduction at Arrowhead Golf and Tennis Club and Valencia Village with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)									
Between Pine Island Road and University Drive																				
Arrowhead Golf and Tennis Club (South of I-595 between Station 400+60 and Station 410+60); Predicted Noise Levels with Existing 8 ft Tall Privacy Wall South of I-595 Right of Way Line (Station 414+60 to 417+00 ~240 ft Long)	AGT1	412+43	3 (Second Row Residences)	257	371	274	376	440	59.5	61.7	62.5	2.2	3.0	Below	Below	57.7	4.0	59.0	3.5
	AGT2	412+71	2 (First Row Residences)	156	273	174	278	342	63.3	64.2	64.9	0.9	1.6	Below	Below	57.5	6.7	58.4	6.5
	AGT3	713+82	3 (Second Row Residences)	277	400	296	405	469	61.0	61.5	62.5	0.5	1.5	Below	Below	59.4	2.1	61.1	1.4
	AGT4	415+69	6 (First Row Residences)	42	176	60	182	246	65.4	69.7	70.2	4.3	4.8	Exceeds	Exceeds	60.4	9.3	60.9	9.3
	AGT5	416+94	3 (First Row Residences)	42	184	60	190	254	63.8	68.1	69.0	4.3	5.2	Exceeds	Exceeds	60.1	8.0	60.3	8.7
	AGT6	417+43	3 (First Row Residences)	168	313	186	319	383	61.4	65.3	66.0	3.9	4.6	Below	Approaches	58.9	6.4	60.2	5.8
	AGT7	417+36	2 (Second Row Residences)	256	401	274	406	470	61.8	62.7	63.4	0.9	1.6	Below	Below	58.1	4.6	60.7	2.7
											Number of Noise Sensitive Sites Impacted by Project Alternatives			9	9				
Valencia Village (South of I-595 between Station 410+80 and Station 420+20); Predicted Noise Levels with Existing 6 ft Tall Privacy Wall South of I-595 Right of Way Line (Station 417+00 to 420+40 ~340 ft Long)	VV1	418+90	3 (First Row Residences, First Floor Patios)	65	218	83	223	286	67.6	68.2	69.0	0.6	1.4	Exceeds	Exceeds	60.5	7.7	60.7	8.3
			2 (Second Floor Balcony)						73.4	73.4	73.5	0.0	0.1			63.7	9.7	64.1	9.4
	VV2	418+10	2 (First Row Residences, First Floor Patios)	202	351	220	356	420	58.8	60.4	61.4	1.6	2.6	Below	Below	56.2	4.2	57.8	3.6
			2 (Second Floor Balcony)						62.6	64.0	64.6	1.4	2.0			59.6	4.4	61.8	2.8
	VV3	420+25	6 (First Row Residences, First Floor Patios)	48	207	66	212	276	67.5	67.8	68.8	0.3	1.3	Exceeds	Exceeds	61.6	6.2	62.1	6.7
			5 (Second Floor Balcony)						73.3	73.2	73.5	-0.1	0.2			66.2	7.0	66.5	7.0
											Number of Noise Sensitive Sites Impacted by Project Alternatives			9	9				

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.14 Barrier Analysis for Lake View Estates

Lake View Estates (Area A-26) is a single family residential subdivision located north of I-595 and the North New River Canal and east of University Drive. Consideration of noise barriers is warranted for the residences within Lake View Estates that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 50 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 60.2 dBA to 68.6 dBA and would be approximately 1.6 dBA higher than existing levels. For Alternative 2A, 68 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 61.4 dBA to 69.7 dBA and would be approximately 2.7 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.14-1 and 5.14-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located north of the North New River Canal and shoulder mounted barriers along SR 84 and I-595 were evaluated. Because of right of way constraints and SFWMD's maintenance requirements for the North New River Canal, ground mounted noise barriers within I-595/SR 84 right of way were not considered constructible and were not evaluated. Also, the limits of the ground mounted noise barrier north of the North New River Canal are constrained by Hiatus Road to the west and a north-south canal on the east.

For Alternative 1B, six conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 47 to 50 residences predicted to be affected by design year traffic noise. Four ground mounted conceptual designs are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of these, CD5 benefits the most residences (96). CD5 represents a ground mounted noise barrier (22 ft tall and 5,400 ft long) that extends from Station 431+00 to Station 485+00 (see Figure 5.14-1). CD5 provides an average noise reduction of 8.2 dBA for the 96 benefited residences, has a cost per benefited residence of $30,938, and has an estimated construction cost of $2,970,000. CD5 is considered the optimal barrier design of those considered and is recommended for further consideration and community input. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities. It will be important to obtain public input from the adjacent residences regarding the ground mounted noise barriers north of the North New River Canal before a decision is made to construct a noise barrier in this location. A ground mounted noise barrier in this area may be perceived as undesirable by adjacent property owners because it will restrict access to the canal and to a number of existing docks. In addition, it will block the view of the canal from adjacent properties.

For Alternative 2A, five conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 54 residences predicted to be affected by design year traffic noise. Three ground mounted conceptual designs are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of these, CD4 maximizes the average reduction to benefited receivers (8.5 dBA). CD4 represents a ground mounted noise barrier (22 ft tall and 5,400 ft long) that extends from Station 431+00 to Station 485+00 (see Figure 5.14-2). CD4 provides benefits to 86 residences, has a cost per benefited residence of $34,535, and has an estimated construction cost of $2,970,000. CD4 is considered the optimal barrier design of those considered and is recommended for further consideration and community input. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities. It will be important to obtain public input from the adjacent residences regarding the ground mounted noise barriers north of the North New River Canal before a decision is made to construct a noise barrier in this location. A ground mounted noise barrier in this area may be perceived as undesirable by adjacent property owners because it will restrict access to the canal and to a number of existing docks. In addition, it will block the view of the canal from adjacent properties.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.14-3. The optimal conceptual barrier designs (CD5 for Alternative 1B and CD4 for Alternative 2A) provide benefits to all but two of the impacted noise sensitive sites (i.e., Site LV1 which is representative of two single family residences). In the vicinity of Site LV1, the effectiveness of noise barriers along the southern property line of this development is limited because it does not shield the traffic noise from University Drive which is located directly west of this site.

Table 5.14-1 Noise Barrier Analyses for Lake View Estates Located North of I-595 Between University Drive and Florida's Turnpike for Alternative 1B

Community Identifer(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Lake View Estates (LVE)	**SR 84 Shoulder and I-595 Shoulder Mounted Barrier Combination Alternatives**														
	CD1	I-595 Shoulder Mounted	8	260	440+40	443+00	47	3.8	0	0	0	5.1	$2,914,480	---	---
		I-595 Shoulder (Mounted on MSE Wall)	8	60	425+00	425+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,110	429+30	440+40									
		I-595 Shoulder (Mounted on Bridge)	8	280	425+60	429+30									
		I-595 Shoulder (Mounted on MSE Wall)	8	210	476+00	478+10									
		I-595 Shoulder (Mounted on MSE Wall)	8	300	483+00	486+00									
		I-595 Shoulder (Mounted on Bridge)	8	490	478+10	483+00									
		SR-84 Shoulder Mounted	8	5,800	438+00	496+00									
	CD2	I-595 Shoulder Mounted	8	260	440+40	443+00	47	5.9	40	49	89	6.1	$4,228,480	$47,511	---
		I-595 Shoulder (Mounted on MSE Wall)	8	60	425+00	425+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,110	429+30	440+40									
		I-595 Shoulder (Mounted on Bridge)	8	280	425+60	429+30									
		I-595 Shoulder (Mounted on MSE Wall)	8	210	476+00	478+10									
		I-595 Shoulder (Mounted on MSE Wall)	8	300	483+00	486+00									
		I-595 Shoulder (Mounted on Bridge)	8	490	478+10	483+00									
		SR-84 Shoulder Mounted	14	5,400	438+00	492+00									
	Ground Mounted Barrier Alternatives														
	CD3	Ground Mounted	16	5,400	431+00	485+00	47	8.9	47	47	92	7.0	$2,160,000	$23,478	---
	CD4	Ground Mounted	18	5,400	431+00	485+00	47	9.6	47	48	92	7.6	$2,430,000	$26,413	---
	CD5	Ground Mounted	20	5,400	431+00	485+00	47	10.1	47	47	94	7.9	$2,700,000	$28,723	---
	CD6	Ground Mounted	22	5,400	431+00	485+00	47	10.7	47	49	96	8.2	$2,970,000	$30,938	---

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Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

Table 5.14-2 Noise Barrier Analyses for Lake View Estates Located North of I-595 Between University Drive and Florida's Turnpike for Alternative 2A

Community Identifer(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Lake View Estates (LVE)	**SR 84 Shoulder Mounted and I-595 Shoulder Mounted Barrier Combination Alternatives**														
	CD1	I-595 Shoulder Mounted	8	460	440+40	445+00	54	2.2	0	0	0	---	$4,300,720	---	---
		I-595 Shoulder (Mounted on MSE Wall)	8	660	420+00	426+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,100	429+40	440+40									
		I-595 Shoulder (Mounted on Bridge)	8	280	426+60	429+40									
		I-595 Shoulder Mounted	8	760	462+00	469+60									
		I-595 Shoulder (Mounted on MSE Wall)	8	850	469+60	478+10									
		I-595 Shoulder (Mounted on MSE Wall)	8	970	483+00	492+70									
		I-595 Shoulder (Mounted on Bridge)	8	490	478+10	483+00									
		SR-84 Shoulder Mounted	8	5,800	438+00	496+00									
	Ground Mounted Barrier Alternatives														
	CD2	Ground Mounted	16	5,400	431+00	485+00	54	7.7	52	0	52	8.5	$2,160,000	$41,538	---
	CD3	Ground Mounted	18	5,400	431+00	485+00	54	8.3	52	24	76	8.0	$2,430,000	$31,974	---
	CD4	Ground Mounted	20	5,400	431+00	485+00	54	8.8	52	40	85	8.0	$2,700,000	$31,765	---
	CD5	Ground Mounted	22	5,400	431+00	485+00	54	9.3	52	34	86	8.5	$2,970,000	$34,535	---

I:\I-595PD&EStudy\BarrierAnalysis\[Barrier Analysis Option 1 rev110305.xls]Lake View Est Rev

Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

LEGEND

EXISTING LIMITED ACCESS RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY
REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION
ALTERNATIVE CD5 (GROUND MOUNTED BARRIER NORTH OF NORTH NEW RIVER CANAL)

1" = 500'

20 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD5)

LAKE VIEW ESTATES

LV1 LV2 LV3 LV4 LV5 LV6 LV7 LV8 LV9 LV10 LV11 LV12 LV13 LV14 LV15 LV16 LV17

NORTH NEW RIVER CANAL

BED BATH & BEYOND
SPEE DEE OIL CHANGE &TUNE UP
BIG K-MART
COSTCO
HOMESTEAD SUITES HOTEL
TIRES PLUS
CAR MAX
METRO PCS
RESTAURANT DEPOT
STORAGE
SIGNATURE GRAND
NATIONS RENT

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LAKE VIEW ESTATES NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.14-1

LEGEND

EXISTING LIMITED ACCESS RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY
REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION
ALTERNATIVE CD4 (GROUND MOUNTED BARRIER NORTH OF NORTH NEW RIVER CANAL)

1" = 500'

20 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD4)

LAKE VIEW ESTATES

LV1 LV2 LV3 LV4 LV5 LV6 LV7 LV8 LV9 LV10 LV11 LV12 LV13 LV14 LV15 LV16 LV17

NORTH NEW RIVER CANAL

BED BATH & BEYOND
SPEE DEE OIL CHANGE &TUNE UP
BIG K-MART
COSTCO
HOMESTEAD SUITES HOTEL
TIRES PLUS
CAR MAX
METRO PCS
RESTAURANT DEPOT
STORAGE
SIGNATURE GRAND
NATIONS RENT

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LAKE VIEW ESTATES NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.14-2

Table 5.14-3 The Predicted Noise Level and Amount of Noise Reduction at Lake View Estates with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)									
Between University Drive and Florida's Turnpike																				
Lake View Estates (North of I-595 between Station 430+00 and Station 480+40)	LV1	431+16	2 (First Row Residences)	314	505	328	512	576	64.7	65.3	66.9	0.6	2.2	Below	Approaches	63.1	2.2	64.4	2.5
	LV2	432+17	2 (First Row Residences)	365	452	279	459	523	64.6	65.4	67.3	0.8	2.7	Below	Exceeds	58.9	6.5	59.4	7.9
	LV3	432+69	3 (Second Row Residences)	425	609	438	615	679	62.9	63.4	65.3	2.4	2.4	Below	Below	59.8	3.6	61.3	4.0
	LV4	434+10	7 (Third Row Residences)	531	704	541	710	774	60.4	61.0	63.1	2.7	2.7	Below	Below	58.4	2.6	61.5	1.6
	LV5	437+31	7 (First Row Residences)	284	427	284	433	497	64.8	66.3	68.0	3.2	3.2	Approaches	Exceeds	55.9	10.4	56.7	11.3
	LV6	443+12	9 (First Row Residences)	258	383	277	388	452	66.4	67.4	68.6	1.0	2.2	Exceeds	Exceeds	56.6	10.8	57.5	11.1
	LV7	448+39	16 (Second Row Residences)	397	515	417	520	584	63.8	64.2	65.7	0.4	1.9	Below	Below	56.8	7.4	58.6	7.1
	LV8	448+50	7 (Third Row Residences)	508	626	528	631	695	60.8	61.2	62.8	0.4	2.0	Below	Below	55.9	5.3	58.8	4.0
	LV9	455+44	9 (First Row Residences)	233	349	251	343	419	66.6	68.5	69.6	1.9	3.0	Exceeds	Exceeds	57.2	11.3	58.2	11.4
	LV10	455+99	2 (Second Row Residences)	414	530	432	525	600	63.3	64.3	65.6	1.0	2.3	Below	Below	56.8	7.5	58.6	7.0
	LV11	455+53	4 (Third Row Residences)	521	637	539	631	707	60.8	61.0	62.6	0.2	1.8	Below	Below	55.9	5.1	58.5	4.1
	LV12	465+80	20 (First Row Residences)	222	339	220	345	409	66.6	66.7	68.4	0.1	1.8	Approaches	Exceeds	56.4	10.3	57.5	10.9
	LV13	466+80	13 (Second Row Residences)	408	525	402	531	594	62.8	62.6	64.6	-0.2	1.8	Below	Below	56.0	6.6	58.0	6.6
	LV14	466+37	7 (Third Row Residences)	494	611	489	616	680	58.9	59.1	60.6	0.2	1.7	Below	Below	54.9	4.2	57.3	3.3
	LV15	482+69	3 (First Row Residences)	242	358	227	358	428	66.1	65.1	66.6	-1.0	0.5	Below	Approaches	57.6	7.5	59.1	7.5
	LV16	481+41	2 (Second Row Residences)	413	529	398	529	598	62.9	63.6	64.9	0.7	2.0	Below	Below	56.9	6.7	58.5	6.4
	LV17	479+79	3 (Third Row Residences)	519	636	505	636	706	61.7	62.3	63.6	0.6	1.9	Below	Below	57.0	5.3	59.1	4.5
														Number of Noise Sensitive Sites Impacted by Project Alternatives		45		52	

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.15 Barrier Analysis for Isla del Sol

Isla del Sol (Area A-27) is a single family residential subdivision located north of I-595 and the North New River Canal and east of University Drive. Consideration of noise barriers is warranted for the residences within Isla del Sol that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 19 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 62.4 dBA to 69.2 dBA and would be approximately 2.5 dBA higher than existing levels. For Alternative 2A, 26 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 63.9 dBA to 69.9 dBA and would be approximately 3.6 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.15-1 and 5.15-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers located north of the North New River Canal and a combination of ground mounted and shoulder mounted noise barriers were evaluated. The limits of the ground mounted noise barrier north of the North New River Canal are constrained by north-south canals on either side of the development. In addition, ground mounted noise barriers within the I-595/SR 84 right of way were not considered constructible and were not evaluated because of right of way constraints and SFWMD's maintenance requirements for the North New River Canal and Sewell Lock. For these reasons, noise barriers north of Sewell Lock (Station 497+00 to 501+40) were not considered constructible within SFWMD's right of way or evaluated. An easement from the adjacent property owners would be required to construct a noise barrier north of Sewell Lock. During the Design Phase of the project, FDOT will evaluate the effectiveness and the potential of obtaining easements from the adjacent property owners necessary for the construction of a noise barrier in this area.

For Alternative 1B, nine conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the eight to 14 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual designs, CD1 has the lowest cost per benefited receiver ($64,167) and is considered the optimal conceptual barrier design for this area. CD1 provides an average noise reduction of 7.4 dBA, provides benefits to six residences, and has an estimated construction cost of $385,000. CD1 represents a ground mounted barrier (14 ft tall and 1,100 ft long) that extends from Station 486+00 to Station 497+00 (see Figure 5.15-1). Although providing abatement at this community exceeds FDOT's reasonable cost criteria of $35,000 per benefited receiver, a noise barrier is recommended for further consideration and community input at this location. This conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be

constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

For Alternative 2A, eight conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 12 to 26 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual designs, CD1 has one of the lowest costs per benefited receiver ($55,000) and is considered the optimal conceptual barrier design for this area. CD1 provides an average noise reduction of 7.4 dBA, provides benefits to seven residences, and has an estimated construction cost of $385,000. CD1 represents a ground mounted barrier (14 ft tall and 1,100 ft long) that extends from Station 486+00 to Station 497+00 (see Figure 5.15-2). Although providing abatement at this community exceeds FDOT's reasonable cost criteria of $35,000 per benefited receiver, a noise barrier is recommended for further consideration and community input at this location. This conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.15-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The high cost of providing abatement is attributed to the low density of benefited noise sensitive sites in this area.

For both alternatives, several factors are contributing to the ineffectiveness of the ground and shoulder mounted noise barriers in this area. The primary factor is attributed to site conditions that restrict the length and the location of the noise barrier so that SR 84 traffic noise is not being shielded in the eastern portion of the development. Also, because of perpendicular canals on the western end of the development, the noise barrier does not extend far enough west of the community to protect the end residences. In addition, a ground mounted noise wall is less effective in this area because the vehicles on I-595 are at a higher elevation due to I-595 being elevated above Davie Road. As a result of this elevation difference, some of the traffic noise is not being blocked, which limits the noise reduction at some of the noise sensitive sites. The effectiveness of shoulder mounted noise barriers in this area is limited by their height (i.e., 8, 10, 12, or 14 ft) and the distance the residences are set back from I-595/SR 84. Noise barriers are generally less effective at lower heights and as the distance increases between the noise source and the location of the noise barrier. Some of the impacted residences are at least 460 ft from the edge of the nearest I-595 travel lane, limiting the effectiveness of the shoulder mounted noise barriers.

Table 5.15-1 Noise Barrier Analyses for Isla del Sol Located North of I-595 Between University Drive and Florida's Turnpike for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Isla del Sol (IDS)	**Ground Mounted Barrier Alternatives**														
	CD1	Ground Mounted	14	1,100	486+00	497+00	8	4.1	4	2	6	7.4	$385,000	$64,167	---
	CD2	Ground Mounted	16	1,100	486+00	497+00	8	4.5	4	2	6	8.2	$440,000	$73,333	---
	CD3	Ground Mounted	18	1,100	486+00	497+00	8	4.8	4	3	7	8.4	$495,000	$70,714	---
	CD4	Ground Mounted	20	1,100	486+00	497+00	8	5.1	4	4	8	8.5	$550,000	$68,750	---
	CD5	Ground Mounted	22	1,100	486+00	497+00	8	5.4	4	5	9	8.6	$605,000	$67,222	---
	Ground Mounted and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD6	Ground Mounted	20	930	486+00	495+30	14	5.3	6	1	7	8.8	$1,905,480	$272,211	---
		I-595 Shoulder (Mounted on MSE Wall)	8	260	475+50	478+10									
		I-595 Shoulder (Mounted on MSE Wall)	8	970	483+00	492+70									
		I-595 Shoulder (Mounted on Bridge)	8	490	478+10	483+00									
		I-595 Shoulder Mounted	8	560	491+50	497+10									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,080	497+10	507+90									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,000	509+20	519+20									
		I-595 Shoulder (Mounted on Bridge)	8	130	507+90	509+20									
	Ground Mounted and SR 84 Shoulder Mounted Barrier Combination Alternatives														
	CD7	Ground Mounted	20	930	486+00	495+30	14	3.0	6	0	6	8.2	$1,821,800	$303,633	---
		Shoulder Mounted along SR-84	8	2,740	468+60	496+00									
		Shoulder Mounted along SR-84	8	460	493+00	497+60									
	CD8	Ground Mounted	20	930	486+00	495+30	14	3.3	6	0	6	8.3	$2,481,000	$413,500	---
		Shoulder Mounted along SR-84	14	2,740	468+60	496+00									
		Shoulder Mounted along SR-84	14	460	493+00	497+60									
	CD9	Ground Mounted	20	930	486+00	495+30	14	2.5	6	0	6	7.7	$1,599,000	$266,500	---
		Shoulder Mounted along SR-84	14	1,800	478+00	496+00									

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Optimal conceptual noise barrier design but not recommended for further consideration because it substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver.

Table 5.15-2 Noise Barrier Analyses for Isla del Sol Located North of I-595 Between University Drive and Florida's Turnpike for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Isla del Sol (IDS)	**Ground Mounted Barrier Alternatives**														
	CD1	Ground Mounted	14	1,100	486+00	497+00	12	4.2	6	1	7	7.4	$385,000	$55,000	---
	CD2	Ground Mounted	16	1,100	486+00	497+00	12	4.7	6	1	7	8.3	$440,000	$62,857	---
	CD3	Ground Mounted	18	1,100	486+00	497+00	12	5.0	6	1	7	8.9	$495,000	$70,714	---
	CD4	Ground Mounted	20	1,100	486+00	497+00	12	5.4	6	3	9	8.6	$550,000	$61,111	---
	CD5	Ground Mounted	22	1,100	486+00	497+00	12	5.6	6	3	9	9.2	$605,000	$67,222	---
	Ground Mounted and I-595 Shoulder Mounted Barrier Combination Alternatives														
	CD6	Ground Mounted	22	930	486+00	495+30	26	3.5	6	0	6	8.5	$2,415,260	$402,543	---
		Shoulder Mounted along I-595	8	1,720	475+50	492+70									
		Shoulder Mounted along I-595	8	2,770	491+50	519+20									
	Ground Mounted and SR 84 Shoulder Mounted Barrier Combination Alternatives														
	CD7	Ground Mounted	22	930	486+00	495+30	26	2.5	6	0	6	8.0	$1,868,300	$311,383	---
		Shoulder Mounted along SR-84	8	2,740	468+60	496+00									
		Shoulder Mounted along SR-84	8	460	493+00	497+60									
	CD8	Ground Mounted	22	930	486+00	495+30	26	3.0	6	0	6	8.4	$2,527,500	$421,250	---
		Shoulder Mounted along SR-84	14	2,740	468+60	496+00									
		Shoulder Mounted along SR-84	14	460	493+00	497+60									

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Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

LEGEND

EXISTING LIMITED ACCESS RIGHT-OF-WAY

EXISTING RIGHT-OF-WAY

REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

ALTERNATIVE CD1 (GROUND MOUNTED BARRIER)

1" = 300'

ISLA DEL SOL

IDS3

IDS2

IDS6

IDS5

IDS4

IDS1

14 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD1)

SW 21ST STREET

SEWELL LOCK PARK

SL1

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

480 485 490 495 500 505 510 515 520

NATIONS RENT

FOREST LAWN CEMETERY

DAVIE ROAD

RS&H Reynolds, Smith and Hills, Inc. ARCHITECTURE, ENGINEERING AND PLANNING	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	ISLA DEL SOL NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.15-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD1 (GROUND MOUNTED BARRIER)

1" = 300'

ISLA DEL SOL

IDS3
IDS2
IDS6
IDS5
IDS4
IDS1

14 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD1)

SEWELL LOCK PARK

SL1

480 485 490 495 500 505 510 515 520

NATIONS RENT

FOREST LAWN CEMETERY

DAVIE ROAD

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	ISLA DEL SOL NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.15-2

Table 5.15-3 The Predicted Noise Level and Amount of Noise Reduction at Isla del Sol and Sewell Lock Park with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Between University Drive and Florida's Turnpike																			
Isla del Sol (North of I-595 between Station 480+40 and Station 500+20)	IDS1	494+33	4 (First Row Residences)	290	361	286	366	445	66.0	67.0	68.3	1.0	2.3	Exceeds	Exceeds	57.6	9.4	59.6	8.7
	IDS2	494+33	2 (Second Row Residences)	441	512	437	518	596	63.0	64.3	65.7	1.3	2.7	Below	Below	59.3	5.0	63.1	2.6
	IDS3	494+13	4 (Third Row Residences)	529	614	525	608	686	61.2	62.4	63.9	1.2	2.7	Below	Below	58.5	3.9	62.0	1.9
	IDS4	497+09	7 (First Row Residences)	300	360	299	366	443	65.7	69.2	69.9	3.5	4.2	Exceeds	Exceeds	63.6	5.6	67.5	2.4
	IDS5	497+46	4 (Second Row Residences)	466	525	465	531	608	62.5	65.9	66.9	3.4	4.4	Below	Approaches	60.2	5.7	64.5	2.4
	IDS6	496+31	4 (Third Row Residences)	515	577	512	582	660	60.8	63.7	64.7	2.9	3.9	Below	Below	57.8	5.9	62.4	2.3
	IDS7	501+40	2 (Second Row Residences)	460	505	410	511	580	63.1	66.8	67.7	3.7	4.6	Approaches	Exceeds	62.6	4.2	65.5	2.2
												Number of Noise Sensitive Sites Impacted by Project Alternatives		19	26				
Sewell Lock Park (North of I-595 between Station 490+60 and Station 500+20)	SL1	499+05	Central Portion of Park (Picnic Table)	110	171	100	165	235	69.2	72.1	73.0	3.8	3.8	Exceeds	Exceeds	--	--	--	--
												Number of Noise Sensitive Sites Impacted by Project Alternatives		1	1				

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* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.16 Barrier Analysis for Plantation Landings and Plantation Harbor

Plantation Landings (Area A-29) and Plantation Harbor (Area A-30) are single family residential subdivisions located north of I-595 and the North New River Canal and west of Florida's Turnpike. Consideration of noise barriers is warranted for the residences within Plantation Landings and Plantation Harbor that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed.

For Alternative 1B, six residences within Plantation Landings are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 65.1 dBA to 68.8 dBA and would be approximately 3.6 dBA higher than existing levels. Within Plantation Harbor, 26 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels ranged from 56.9 dBA to 69.9.9 dBA and would be approximately 2.7 dBA higher than existing levels.

For Alternative 2A, eight residences within Plantation Landings are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 65.9 dBA to 69.9 dBA and would be approximately 4.5 dBA higher than existing levels. Within Plantation Harbor, 32 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels ranged from 57.9 dBA to 70.2 dBA and would be approximately 3.3 dBA higher than existing levels.

Due to the proximity to each other, the barrier analysis considered these communities as one area. The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.16-1 and 5.16-2, respectively. For Alternatives 1B and 2A, shoulder mounted noise barriers along I-595 and SR 84 were evaluated. Because of right of way constraints, SFWMD's maintenance requirements for the North New River Canal, and access and constructability issues, ground mounted noise barriers within the I-595/SR 84 right of way were not considered constructible and were not evaluated. The limits of ground mounted noise barriers north of the North New River Canal also are constrained by north-south canals. In addition, the length of shoulder barriers toward the western end of this development is restricted because of conflicts with the operation and maintenance of Sewell Lock.

For Alternative 1B, five conceptual barrier designs with varying heights were evaluated to reduce traffic noise levels at the 32 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual barrier designs considered, CD5 represents the optimal design for this area. CD5 provides benefits to 35 residences, provides an average noise reduction of 6.4 dBA to the benefited residences, and has the lowest cost per benefited residence of $87,863 with an estimated construction cost of $3,075,200. As depicted in Figure 5.16-1,

CD5 represents a shoulder mounted barrier along both I-595 and SR 84. The shoulder mounted barrier segment along I-595 is 8 ft tall and extends 2,700 ft from Station 491+50 to Station 519+20. The segment along SR 84 is 14 ft tall and extends 3,400 ft from Station 502+00 to Station 536+00. Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

For Alternative 2A, five conceptual barrier designs with varying heights were evaluated to reduce traffic noise levels at the 40 residences predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual barrier designs considered, CD5 represents the optimal design for this area. CD5 provides benefits to three residences, provides an average noise reduction of 5.0 dBA to the benefited residences, and has the lowest cost per benefited residence of $1,025,067 with an estimated construction cost of $3,075,200. As depicted in Figure 5.16-2, CD5 represents a shoulder mounted barrier along both I-595 and SR 84. The shoulder mounted barrier segment along I-595 is 8 ft tall and extends 2,700 ft from Station 491+50 to Station 519+20. The segment along SR 84 is 14 ft tall and extends 3,400 ft from Station 502+00 to Station 536+00. Because construction costs substantially exceed the reasonableness cost criteria of $35,000 per benefited receiver, a noise barrier was not recommended for further consideration in this area.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.16-3. None of the conceptual barrier designs for either alternative provide a minimum 5.0 dBA of noise reduction within the FDOT's reasonable cost criteria of $35,000 per benefited receiver. The high cost of providing abatement is attributed to the low density of noise sensitive sites in this area.

In this area, the effectiveness of shoulder mounted noise barriers is limited by the traffic noise from SR 84, by their height (i.e., 8 ft or 14 ft), and by the distances the residences are set back from I-595/SR 84. Noise barriers are generally less effective at lower heights and as the distance increases between the noise source and the location of the noise barrier. Some of the impacted residences are at least 440 ft from the edge of the nearest I-595 travel lane, limiting the effectiveness of the shoulder mounted noise barriers. Also, because of Sewell Lock Park on the western end of the development, the shoulder mounted noise barrier does not extend far enough west of the community to protect the end residences.

For Alternative 2A, the effectiveness of shoulder mounted barriers along I-595 and SR 84 also is minimized because of the elevated reversible lanes associated with this alternative.

Shoulder mounted noise walls are less effective in this area because the vehicles on the reversible lanes are at a higher elevation, approximately 24 feet above existing ground, and because of the elevated segment of I-595 above Davie Road. As a result of this elevation difference, some of the traffic noise is not being blocked by the maximum height 8 ft/14 ft tall shoulder mounted noise barrier. As a result, the noise reduction at most of the noise sensitive sites in these communities is minimal.

Table 5.16-1 Noise Barrier Analyses for Plantation Landings and Plantation Harbor Located North of I-595 Between University Drive and Florida's Turnpike for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Plantation Landings (PL) and Plantation Harbor (PHa)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	I-595 Shoulder Mounted	8	560	491+50	497+10	32	1.7	0	0	0	---	$933,200	---	---
		I-595 Shoulder (Mounted on MSE Wall)	8	1,080	497+10	507+90									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,000	509+20	519+20									
		I-595 Shoulder (Mounted on Bridge)	8	130	507+90	509+20									
	SR 84 Shoulder Mounted Barrier Alternatives														
	CD2	SR 84 Shoulder Mounted	8	4,000	501+50	541+50	32	2.5	7	1	8	5.3	$1,696,000	$212,000	---
	CD3	SR 84 Shoulder Mounted	14	4,000	501+50	541+50	32	4.1	14	8	22	5.1	$2,520,000	$114,545	Design Variance Required for Shoulder Mounted Barrier on MSE Walls or Bridges Taller than 8 ft
	I-595 and SR 84 Shoulder Mounted Barrier Combination Alternatives														
	CD4	I-595 Shoulder Mounted	8	560	491+50	497+10	32	4.8	17	6	23	5.4	$2,629,200	$114,313	---
		I-595 Shoulder (Mounted on MSE Wall)	8	1,080	497+10	507+90									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,000	509+20	519+20									
		I-595 Shoulder (Mounted on Bridge)	8	130	507+90	509+20									
		SR 84 Shoulder Mounted	8	4,000	501+50	541+50									
	CD5	I-595 Shoulder Mounted	8	560	491+50	497+10	32	6.0	24	11	35	6.4	$3,075,200	$87,863	Design Variance Required for Shoulder Mounted Barrier on MSE Walls or Bridges Taller than 8 ft
		I-595 Shoulder (Mounted on MSE Wall)	8	1,080	497+10	507+90									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,000	509+20	519+20									
		I-595 Shoulder (Mounted on Bridge)	8	130	507+90	509+20									
		SR 84 Shoulder Mounted	14	3,400	502+00	536+00									

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Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

Table 5.16-2 Noise Barrier Analyses for Plantation Landings and Plantation Harbor Located North of I-595 Between University Drive and Florida's Turnpike for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Plantation Landings (PL) and Plantation Harbor (PHa)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	I-595 Shoulder Mounted	8	560	491+50	497+10	40	1.1	0	0	0	---	$933,200	---	---
		I-595 Shoulder (Mounted on MSE Wall)	8	1,080	497+10	507+90									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,000	509+20	519+20									
		I-595 Shoulder (Mounted on Bridge)	8	130	507+90	509+20									
	SR 84 Shoulder Mounted Barrier Alternatives														
	CD2	SR 84 Shoulder Mounted	8	4,000	501+50	541+50	40	1.6	0	0	0	---	$1,696,000	---	---
	CD3	SR 84 Shoulder Mounted	14	4,000	501+50	541+50	40	2.4	2	0	2	5.0	$2,520,000	$1,260,000	---
	I-595 and SR 84 Shoulder Mounted Barrier Combination Alternatives														
	CD4	I-595 Shoulder Mounted	8	560	491+50	497+10	40	2.9	0	0	0	---	$2,629,200	---	---
		I-595 Shoulder (Mounted on MSE Wall)	8	1,080	497+10	507+90									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,000	509+20	519+20									
		I-595 Shoulder (Mounted on Bridge)	8	130	507+90	509+20									
		SR 84 Shoulder Mounted	8	4,000	501+50	541+50									
	CD5	I-595 Shoulder Mounted	8	560	491+50	497+10	40	3.5	3	0	3	5.0	$3,075,200	$1,025,067	---
		I-595 Shoulder (Mounted on MSE Wall)	8	1,080	497+10	507+90									
		I-595 Shoulder (Mounted on MSE Wall)	8	1,000	509+20	519+20									
		I-595 Shoulder (Mounted on Bridge)	8	130	507+90	509+20									
		SR 84 Shoulder Mounted	14	3,400	502+00	536+00									

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Optimal conceptual noise barrier design at this location substantially exceeds FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **not recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD5 (SHOULDER MOUNTED BARRIERS)

1" = 300'

ISLA DEL SOL

PLANTATION LANDINGS

PLANTATION HARBOR

IDS1
IDS2
IDS3
IDS4
IDS5
IDS6

PL1
PL2
PL3
PL4

PHa1
PHa2
PHa3
PHa4
PHa5
PHa6
PHa7
PHa8
PHa9

SEWELL LOCK PARK

SL1

8 FT/14 FT TALL SHOULDER MOUNTED BARRIERS (ALTERNATIVE CD5)

SW 21ST STREET

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

495 500 505 510 515 520 525 530 535

DAVIE ROAD

REESE ROAD

FOREST LAWN CEMETERY

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PLANTATION LANDINGS AND PLANTATION HARBOR NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.16-1

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN NOT RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD5 (SHOULDER MOUNTED BARRIERS)

1" = 300'

ISLA DEL SOL

PLANTATION LANDINGS

PLANTATION HARBOR

IDS1
IDS2
IDS3
IDS4
IDS5
IDS6

PL1
PL2
PL3
PL4

PHa1
PHa2
PHa3
PHa4
PHa5
PHa6
PHa7
PHa8
PHa9

SEWELL LOCK PARK

SL1

8 FT/14 FT TALL SHOULDER MOUNTED BARRIERS (ALTERNATIVE CD5)

SW 21ST STREET

SR-84 WESTBOUND

I-595 WESTBOUND

I-595 EASTBOUND

SR-84 EASTBOUND

495 500 505 510 515 520 525 530 535

DAVIE ROAD

REESE ROAD

FOREST LAWN CEMETERY

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PLANTATION LANDINGS AND PLANTATION HARBOR NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.16-2

Table 5.16-3 The Predicted Noise Level and Amount of Noise Reduction at Plantation Landings and Plantation Harbor with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)									
Between University Drive and Florida's Turnpike																				
Plantation Landings (North of I-595 between Station 500+10 and Station 500+80)	PL1	505+33	4 (First Row Residences)	286	370	262	376	452	65.2	68.8	69.9	3.6	4.7	Exceeds	Exceeds	64.3	4.5	67.3	2.6
	PL2	505+14	2 (Second Row Residences)	446	528	422	535	611	62.4	66.0	66.7	3.6	4.3	Approaches	Approaches	61.2	4.8	63.9	2.8
	PL3	504+34	2 (Second Row Residences)	525	582	382	495	571	62.0	65.7	66.3	3.7	4.3	Below	Approaches	61.1	4.6	63.6	2.7
	PL4	504+94	1 (Third Row Residence)	537	617	512	624	700	61.6	65.1	65.9	3.5	4.3	Below	Below	60.6	4.5	63.5	2.4
												Number of Noise Sensitive Sites Impacted by Project Alternatives		6	8				
Plantation Harbor (North of I-595 between Station 500+80 and Station 530+20)	Pha1	509+16	4 (First Row Residences)	262	381	268	387	463	64.5	67.9	69.0	3.4	4.5	Exceeds	Exceeds	63.1	4.8 (1 Site) - 5.4 (3 Sites)	66.2	2.8
	Pha2	508+58	3 (Second Row Residences)	376	491	379	497	573	63.5	66.6	67.3	3.1	3.8	Approaches	Exceeds	61.8	4.8 (1 Site) - 5.0 (2 Sites)	64.6	2.7
	Pha3	508+72	5 (Third Row Residences)	474	589	477	596	672	62.6	65.6	66.4	3.0	3.8	Below	Approaches	60.9	4.8 (1 Site) - 5.0 (5 Sites)	63.7	2.7
	Pha4	521+66	6 (First Row Residences)	296	353	240	359	417	67.5	69.9	70.2	2.4	2.7	Exceeds	Exceeds	62.2	7.7	65.2	4.7 (3 Sites) - 5.0 (3 Sites)
	Pha5	521+66	6 (Second Row Residences)	381	438	325	444	502	64.4	66.9	67.4	2.5	3.0	Approaches	Exceeds	60.3	6.6	63.3	4.1
	Pha6	521+66	2 (Third Row Residences)	478	536	422	541	600	61.0	63.7	64.5	2.7	3.5	Below	Below	57.9	5.8	61.0	3.5
	Pha7	528+52	7 (First Row Residences)	361	361	260	372	266	66.3	68.9	69.1	2.6	2.8	Exceeds	Exceeds	61.6	7.3	64.5	4.6
	Pha8	528+66	5 (Second Row Residences)	538	538	438	549	431	62.8	65.5	65.9	2.7	3.1	Below	Below	59.0	6.5	62.2	3.7
	Pha9	528+31	3 (Third Row Residences)	652	652	552	663	551	54.4	56.9	57.9	2.5	3.5	Below	Below	55.4	1.5	56.9	1.0
												Number of Noise Sensitive Sites Impacted by Project Alternatives		26	32				

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.16-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.17 Barrier Analysis for Archstone Apartments

Archstone Apartments (Area A-36) is a multi-family community comprised of multi-story apartment buildings located north of I-595 and east of SR 7. Consideration of noise barriers is warranted for the residences within this complex that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternatives 1B and 2A, which have the same roadway geometry along this segment of I-595, 28 residences are predicted to be impacted by design year traffic volumes on I-595/SR 84. Predicted design year noise levels for this alternative ranged from 56.0 dBA to 71.0 dBA and would be approximately 0.4 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Table 5.17-1. Ground mounted noise barriers located along the I-595/SR 84 northern right of way line, shoulder mounted barriers along I-595, and a combination of ground mounted and shoulder mounted noise barriers were evaluated. Residences in the nearby Hacienda Flores and Lauderdale Isles developments are not predicted to be impacted by either alternative. However, due to the proximity to Archstone Apartments, the residences in these communities were included in the barrier analysis because they would likely receive some benefit from the proposed conceptual barrier designs.

Five conceptual barrier designs with varying heights were evaluated to reduce traffic noise levels at the 28 dwelling units in Archstone Apartments that are predicted to be affected by design year traffic noise. None of the conceptual designs considered provide the minimum 5.0 dBA of noise reduction within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of the conceptual barrier designs considered, CD4 represents the optimal design for this area. CD4 provides benefits to 43 residences, provides an average noise reduction of 6.9 dBA to the benefited residences, and has the lowest cost per benefited residence of $40,837 with an estimated construction cost of $1,756,000. As depicted in Figure 5.17-1, CD4 represents a ground mounted noise barrier (22 ft tall and 2,960 ft long) that extends from Station 595+40 to Station 626+80 and a shoulder mounted noise barrier (8 ft tall and 400 ft long) along I-595 from Station 624+00 to Station 628+00. Although CD4 exceeds FDOT's reasonable cost criteria, the difference is not considered substantial. Therefore, CD4 is recommended for further consideration and community input. In addition, the optimal conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.17-2. None of the conceptual barrier designs for either alternative benefit all of the

impacted noise sensitive sites. There are several factors contributing to the ineffectiveness of the ground mounted noise barriers and shoulder mounted barriers in this area. The maximum height (22 ft tall) of the ground mounted noise barrier is less effective in shielding noise to the second, third, and fourth floor balconies in this development. In addition, a ground mounted noise wall is less effective in this area because the vehicles on the I-595 main line and ramps are at a higher elevation due to the elevated roadways in this area. As a result of this elevation difference, some of the traffic noise is not being blocked, which limits the noise reduction at some of the noise sensitive sites and especially to the second, third, and fourth floor balconies.

In this area, the effectiveness of shoulder mounted noise barriers is limited by the traffic noise from SR 84, their height (i.e., 8 ft), the distance the residences are set back from I-595/SR 84, and the elevation of the second, third, and fourth floor balconies. Noise barriers are generally less effective at lower heights and as the distance increases between the noise source and the location of the noise barrier. Some of the impacted residences are at least 500 ft from the edge of the nearest I-595 travel lane, limiting the effectiveness of the shoulder mounted noise barriers.

Table 5.17-1 Noise Barrier Analyses for Archstone Apartments, Hacienda Flores, and Lauderdale Isles Located North of I-595 Between SR 7 and I-95 for Alternatives 1B and 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Archstone Apartments (AA), Hacienda Flores (HF) and Lauderdale Isles (LI)	**I-595 Shoulder Mounted Barrier Alternatives**														
	CD1	Shoulder Mounted	8	1,120	623+00	634+20	28	0.0	0	0	0	---	$474,880	---	---
	Ground Mounted Barrier Alternatives														
	CD2	Ground Mounted	20	2,960	595+40	626+80	28	2.7	8	18	26	6.7	$1,480,000	$56,923	---
	CD3	Ground Mounted	22	2,960	595+40	626+80	28	3.1	10	28	38	6.9	$1,628,000	$42,842	---
	I-595 Shoulder and Ground Mounted Barrier Combination Alternatives														
	CD4	Shoulder Mounted on MSE Wall	8	400	624+00	628+00	28	3.2	10	33	43	6.9	$1,756,000	$40,837	---
		Ground Mounted	22	2,960	595+40	626+80									
	CD5	Shoulder Mounted on MSE Wall	8	1,120	623+00	634+20	28	3.2	10	33	43	6.9	$1,986,400	$46,195	---
		Ground Mounted	22	2,960	595+40	626+80									

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

LEGEND

EXISTING LIMITED ACCESS RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY
REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

ALTERNATIVE CD4 (COMBINATION OF GROUND MOUNTED AND SHOULDER MOUNTED BARRIERS)

1" = 300'

ARCHSTONE APARTMENTS

HACIENDA FLORES

LAUDERDALE ISLES

AA1 AA2 AA3 AA4 AA5 AA6 AA7 AA8 AA9 AA10 AA11 AA12 AA13 AA14 AA15 AA16 AA17 AA18 AA19 AA20 AA21

HF1 HF2 HF3

LI1 LI2 LI3 LI4

22 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD4)

8 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD4)

I-595 WESTBOUND

I-595 EASTBOUND

590 595 600 605 610 615 620 625 630 635

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	ARCHSTONE APARTMENTS, HACIENDA FLORES, AND LAUDERDALE ISLES NOISE BARRIER EVALUATION SITE ALTERNATIVES 1B AND 2A	FIGURE 5.17-1

Table 5.17-2 The Predicted Noise Level and Amount of Noise Reduction at Archstone Apartments with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
I-595 Between SR 7 and I-95																			
Archstone Apartments (North of I-595 between Station 590+40 and Station 610+60)	AA1f	598+57	2 (First Row Residences, First Floor Patio)	545	592	472	582	--	61.4	62.0	62.0	0.6	0.6	Below	Below	55.8	6.2	55.8	6.2
	AA1s	598+57	2 (First Row Residences, Second Floor Balcony)	545	592	472	582	--	65.7	65.9	65.9	0.2	0.2	Below	Below	58.0	7.9	58.0	7.9
	AA1t	598+57	1 (First Row Residence, Third Floor Balcony)	545	592	472	582	--	67.5	67.7	67.7	0.2	0.2	Exceeds	Exceeds	66.0	1.7	66.0	1.7
	AA2f	599+35	2 (First Row Residences, First Floor Patio)	482	532	421	523	--	63.9	64.4	64.4	0.5	0.5	Below	Below	56.1	8.3	56.1	8.3
	AA2s	599+35	2 (First Row Residences, Second Floor Balcony)	482	532	421	523	--	68.3	68.3	68.3	0.0	0.0	Exceeds	Exceeds	58.3	10.0	58.3	10.0
	AA2t	599+35	1 (First Row Residence, Third Floor Balcony)	482	532	421	523	--	69.3	69.5	69.5	0.2	0.2	Exceeds	Exceeds	68.1	1.4	68.1	1.4
	AA3f	598+38	2 (First Row Residences, First Floor Patio)	642	688	565	678	--	58.6	59.5	59.5	0.9	0.9	Below	Below	56.6	2.9	56.6	2.9
	AA3s	598+38	2 (First Row Residences, Second Floor Balcony)	642	688	565	678	--	62.2	63.0	63.0	0.8	0.8	Below	Below	58.7	4.3	58.7	4.3
	AA3t	598+38	2 (First Row Residences, Third Floor Balcony)	642	688	565	678	--	64.2	65.1	65.1	0.9	0.9	Below	Below	64.2	0.9	64.2	0.9
	AA4f	599+25	2 (Second Row Residences, First Floor Patio)	716	766	652	757	--	56.8	58.0	58.0	1.2	1.2	Below	Below	55.7	2.3	55.7	2.3
	AA4s	599+25	2 (Second Row Residences, Second Floor Balcony)	716	766	652	757	--	59.8	60.7	60.7	0.9	0.9	Below	Below	57.9	2.8	57.9	2.8
	AA4t	599+25	2 (Second Row Residences, Third Floor Balcony)	716	766	652	757	--	61.7	62.7	62.7	1.0	1.0	Below	Below	61.9	0.8	61.9	0.8
	AA5f	599+92	2 (Second Row Residences, First Floor Patio)	530	583	476	574	--	58.2	58.8	58.8	0.6	0.6	Below	Below	54.1	4.7	54.1	4.7
	AA5s	599+92	2 (Second Row Residences, Second Floor Balcony)	530	583	476	574	--	62.2	62.4	62.4	0.2	0.2	Below	Below	56.3	6.1	56.3	6.1
	AA5t	599+92	1 (Second Row Residence, Third Floor Balcony)	530	583	476	574	--	63.9	64.3	64.3	0.4	0.4	Below	Below	62.7	1.6	62.7	1.6
	AA6f	599+15	2 (Second Row Residences, First Floor Patio)	603	652	539	643	--	55.3	56.0	56.0	0.7	0.7	Below	Below	53.2	2.8	53.2	2.8
	AA6s	599+15	2 (Second Row Residences, Second Floor Balcony)	603	652	539	643	--	58.8	59.2	59.2	0.4	0.4	Below	Below	55.6	3.6	55.6	3.6
	AA6t	599+15	1 (Second Row Residence, Third Floor Balcony)	603	652	539	643	--	61.0	61.6	61.6	0.6	0.6	Below	Below	60.6	1.0	60.6	1.0
	AA7f	601+48	2 (First Row Residences, First Floor Patio)	596	656	564	648	--	60.4	61.1	61.1	0.7	0.7	Below	Below	57.0	4.1	57.0	4.1
	AA7s	601+48	2 (First Row Residences, Second Floor Balcony)	596	656	564	648	--	64.3	64.7	64.7	0.4	0.4	Below	Below	60.0	4.7	60.0	4.7
	AA7t	601+48	2 (First Row Residences, Third Floor Balcony)	596	656	564	648	--	66.3	66.9	66.9	0.6	0.6	Approaches	Approaches	65.7	1.2	65.7	1.2
	AA8f	602+26	2 (Second Row Residences, First Floor Patio)	655	719	632	711	--	58.0	59.1	59.1	1.1	1.1	Below	Below	55.7	3.4	55.7	3.4
	AA8s	602+26	2 (Second Row Residences, Second Floor Balcony)	655	719	632	711	--	61.8	62.2	62.2	0.4	0.4	Below	Below	58.4	3.8	58.4	3.8
	AA8t	602+26	2 (Second Row Residences, Third Floor Balcony)	655	719	632	711	--	63.7	64.5	64.5	0.8	0.8	Below	Below	63.6	0.9	63.6	0.9
	AA9f	602+66	3 (First Row Residences, First Floor Patio)	591	656	572	649	--	60.5	61.2	61.2	0.7	0.7	Below	Below	57.1	4.1	57.1	4.1
	AA9s	602+66	2 (First Row Residences, Second Floor Balcony)	591	656	572	649	--	64.2	64.8	64.8	0.6	0.6	Below	Below	60.0	4.8	60.0	4.8
	AA9t	602+66	2 (First Row Residences, Third Floor Balcony)	591	656	572	649	--	66.3	67.0	67.0	0.7	0.7	Exceeds	Exceeds	65.9	1.1	65.9	1.1
	AA10f	604+96	3 (First Row Residences, First Floor Patio)	572	649	570	641	--	60.7	61.3	61.3	0.6	0.6	Below	Below	57.2	4.1	57.2	4.1
	AA10s	604+96	2 (First Row Residences, Second Floor Balcony)	572	649	570	641	--	64.5	65.1	65.1	0.6	0.6	Below	Below	60.1	5.0	60.1	5.0
	AA10t	604+96	2 (First Row Residences, Third Floor Balcony)	572	649	570	641	--	66.6	66.9	66.9	0.3	0.3	Approaches	Approaches	65.9	1.0	65.9	1.0
	AA11f	606+52	2 (First Row Residences, First Floor Patio)	679	770	692	763	--	59.0	59.7	59.7	0.7	0.7	Below	Below	56.8	2.9	56.8	2.9
	AA11s	606+52	2 (First Row Residences, Second Floor Balcony)	679	770	692	763	--	62.8	63.1	63.1	0.3	0.3	Below	Below	59.2	3.9	59.2	3.9
	AA11t	606+52	1 (First Row Residence, Third Floor Balcony)	679	770	692	763	--	64.5	64.5	64.5	0.0	0.0	Below	Below	63.8	0.7	63.8	0.7
	AA12f	606+62	2 (Second Row Residences, First Floor Patio)	781	874	795	866	--	57.8	58.5	58.5	0.7	0.7	Below	Below	56.3	2.2	56.3	2.2
	AA12s	606+62	2 (Second Row Residences, Second Floor Balcony)	781	874	795	866	--	61.3	61.6	61.6	0.3	0.3	Below	Below	59.0	2.6	59.0	2.6
	AA12t	606+62	1 (Second Row Residence, Third Floor Balcony)	781	874	795	866	--	62.8	62.8	62.8	0.0	0.0	Below	Below	62.3	0.5	62.3	0.5
	AA13f	608+71	2 (First Row Residences, First Floor Patio)	528	631	546	624	--	60.4	60.8	60.8	0.4	0.4	Below	Below	56.7	4.1	56.7	4.1
	AA13s	608+71	2 (First Row Residences, Second Floor Balcony)	528	631	546	624	--	64.3	64.6	64.6	0.3	0.3	Below	Below	59.3	5.3	59.3	5.3
	AA13t	608+71	1 (First Row Residence, Third Floor Balcony)	528	631	546	624	--	66.5	66.4	66.4	-0.1	-0.1	Approaches	Approaches	65.5	0.9	65.5	0.9

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

Table 5.17-2 The Predicted Noise Level and Amount of Noise Reduction at Archstone Apartments with and without the Optimal Conceptual Noise Barrier Design (Continued)

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)									
I-595 Between SR 7 and I-95																				
Archstone Apartments (North of I-595 between Station 590+40 and Station 610+60)	AA14f	609+41	2 (First Row Residences, First Floor Patio)	451	558	469	552	--	61.5	61.6	61.6	0.1	0.1	Below	Below	56.5	5.1	56.5	5.1
	AA14s	609+41	2 (First Row Residences, Second Floor Balcony)	451	558	469	552	--	65.4	65.6	65.6	0.2	0.2	Below	Below	59.0	6.6	59.0	6.6
	AA14t	609+41	1 (First Row Residence, Third Floor Balcony)	451	558	469	552	--	67.9	67.6	67.6	-0.3	-0.3	Exceeds	Exceeds	66.7	0.9	66.7	0.9
	AA15f	610+06	2 (First Row Residences, First Floor Patio)	377	488	395	482	--	63.6	63.9	63.9	0.3	0.3	Below	Below	57.0	6.9	57.0	6.9
	AA15s	610+06	2 (First Row Residences, Second Floor Balcony)	377	488	395	482	--	68.0	68.1	68.1	0.1	0.1	Exceeds	Exceeds	59.0	9.1	59.0	9.1
	AA15t	610+06	1 (First Row Residence, Third Floor Balcony)	377	488	395	482	--	70.0	69.8	69.8	-0.2	-0.2	Exceeds	Exceeds	68.7	1.1	68.7	1.1
	AA16f	610+91	2 (First Row Residences, First Floor Patio)	421	539	439	535	--	62.1	62.4	62.4	0.3	0.3	Below	Below	57.4	5.0	57.4	5.0
	AA16s	610+91	2 (First Row Residences, Second Floor Balcony)	421	539	439	535	--	65.8	66.1	66.1	0.3	0.3	Approaches	Approaches	59.8	6.3	59.8	6.3
	AA16t	610+91	1 (First Row Residence, Third Floor Balcony)	421	539	439	535	--	68.3	68.1	68.1	-0.2	-0.2	Exceeds	Exceeds	67.2	0.9	67.2	0.9
	AA17f	613+92	2 (First Row Residences, First Floor Patio)	386	530	404	529	--	61.3	62.0	62.0	0.7	0.7	Below	Below	57.8	4.2	57.8	4.2
	AA17s	613+92	2 (First Row Residences, Second Floor Balcony)	386	530	404	529	--	65.0	65.4	65.4	0.4	0.4	Below	Below	60.3	5.1	60.3	5.1
	AA17t	613+92	2 (First Row Residences, Third Floor Balcony)	386	530	404	529	--	67.6	67.8	67.8	0.2	0.2	Exceeds	Exceeds	66.9	0.9	66.9	0.9
	AA18f	613+98	2 (Second Row Residences, First Floor Patio)	413	570	431	570	--	60.1	60.5	60.5	0.4	0.4	Below	Below	57.3	3.2	57.3	3.2
	AA18s	613+98	2 (Second Row Residences, Second Floor Balcony)	413	570	431	570	--	63.7	64.0	64.0	0.3	0.3	Below	Below	59.9	4.1	59.9	4.1
	AA18t	613+98	2 (Second Row Residences, Third Floor Balcony)	413	570	431	570	--	66.3	66.3	66.3	0.0	0.0	Approaches	Approaches	65.5	0.8	65.5	0.8
	AA19f	614+66	2 (Second Row Residences, First Floor Patio)	440	608	458	609	--	60.2	60.5	60.5	0.3	0.3	Below	Below	57.2	3.3	57.2	3.3
	AA19s	614+66	2 (Second Row Residences, Second Floor Balcony)	440	608	458	609	--	63.4	63.6	63.6	0.2	0.2	Below	Below	59.6	4.0	59.6	4.0
	AA19t	614+66	2 (Second Row Residences, Third Floor Balcony)	440	608	458	609	--	65.8	65.5	65.5	-0.3	-0.3	Below	Below	64.5	1.0	64.5	1.0
	AA20f	614+86	2 (First Row Residences, First Floor Patio)	220	388	238	389	--	65.3	65.5	65.5	0.2	0.2	Below	Below	55.4	10.1	55.4	10.1
	AA20s	614+86	2 (First Row Residences, Second Floor Balcony)	220	388	238	389	--	68.8	68.8	68.8	0.0	0.0	Exceeds	Exceeds	59.7	9.1	59.7	9.1
	AA20t	614+86	1 (First Row Residence, Third Floor Balcony)	220	388	238	389	--	70.7	71.0	71.0	0.3	0.3	Exceeds	Exceeds	69.6	1.4	69.6	1.4
	AA21f	615+76	2 (First Row Residences, First Floor Patio)	256	438	274	440	--	63.5	64.0	64.0	0.5	0.5	Below	Below	57.2	6.8	57.2	6.8
	AA21s	615+76	2 (First Row Residences, Second Floor Balcony)	256	438	274	440	--	67.2	67.2	67.2	0.0	0.0	Exceeds	Exceeds	60.0	7.2	60.0	7.2
	AA21t	615+76	1 (First Row Residence, Third Floor Balcony)	256	438	274	440	--	69.3	69.6	69.6	0.3	0.3	Exceeds	Exceeds	67.9	1.7	67.9	1.7
													Number of Noise Sensitive Sites Impacted by Project Alternatives			28	28			
Hacienda Flores (North of I-595 between Station 610+60 and Station 620+10)	HF1	618+79	3 (Second Row Residences)	374	603	392	605	--	63.2	62.7	62.7	-0.5	-0.5	Below	Below	58.5	4.2	58.5	4.2
	HF2	619+48	1 (First Row Residence)	256	495	274	496	--	64.3	64.4	64.4	0.1	0.1	Below	Below	58.7	5.7	58.7	5.7
	HF3	620+65	1 (First Row Residence)	167	420	185	419	--	66.1	65.9	65.9	-0.2	-0.2	Below	Below	58.7	7.2	58.7	7.2
													Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0			
Lauderdale Isles (North of I-595 between Station 590+40 and Station 650+00)	LI1	621+45	3 (First Row Residences)	343	604	361	601	--	63.9	63.3	63.3	-0.6	-0.6	Below	Below	58.3	5.0	58.3	5.0
	LI2	623+94	2 (First Row Residences)	292	556	310	550	--	65.2	64.3	64.3	-0.9	-0.9	Below	Below	59.1	5.2	59.1	5.2
	LI3	625+68	2 (First Row Residences)	367	630	385	624	--	62.9	61.7	61.7	-1.2	-1.2	Below	Below	58.8	2.9	58.8	2.9
	LI4	627+86	3 (First Row Residences)	458	707	476	712	--	63.1	61.5	61.5	-1.6	-1.6	Below	Below	58.7	2.8	58.7	2.8
													Number of Noise Sensitive Sites Impacted by Project Alternatives			0	0			

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* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.18 Barrier Analysis for Everglades Lakes Mobile Home Park

Everglades Lakes Mobile Home Park (Area A-40) is located south of I-595 and west of Florida's Turnpike. Consideration of noise barriers is warranted for the residences within this community that are predicted to be impacted by design year traffic volumes if either of the project alternatives is constructed. For Alternative 1B, 33 residences are predicted to be impacted by design year traffic volumes on Florida's Turnpike. Predicted design year noise levels for this alternative ranged from 63.9 dBA to 70.6 dBA and would be approximately 4.0 dBA higher than existing levels. For Alternative 2A, 31 residences are predicted to be impacted by design year traffic volumes. Predicted design year noise levels for this alternative ranged from 63.0 dBA to 70.6 dBA and would be approximately 3.8 dBA higher than existing levels.

The results of the barrier analysis for Alternatives 1B and 2A are summarized in Tables 5.18-1 and 5.18-2, respectively. For Alternatives 1B and 2A, ground mounted noise barriers along the proposed western right of way of the Florida's Turnpike and a combination of ground mounted and shoulder mounted noise barriers were evaluated. With Alternatives 1B and 2A, the first row of mobile homes adjacent to Florida's Turnpike will be acquired as well as a 16 ft tall ground mounted noise barrier that is planned as part of a separate project to widen Florida's Turnpike (Financial Project ID 405094-1). Figure 4-1 (Sheet 14 of 15) shows the limits of the planned noise barrier. This community is also in the flight path of aircraft arriving to and departing from to Fort Lauderdale International Airport. The noise barrier analysis did not incorporate or consider noise from aircraft in the barrier analysis.

For Alternative 1B, 12 conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 33 residences predicted to be affected by design year traffic noise. Eleven of the conceptual designs considered are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of these eleven, CD10 is considered the optimal design and is recommended for further consideration and community input. CD10 represents a combination ground mounted noise barrier (20 ft tall and 1,820 ft long) that extends from Station 4752+00 to Station 4769+00 and a shoulder mounted barrier (8 ft tall and 1,100 ft long) along the elevated section of Florida's Turnpike from Station 4762+00 to Station 4773+00. CD10 is considered the optimal design because it provides benefit to 44 residences including all 33 affected residences, provides an average noise reduction of 8.8 dBA for the benefited residences, and has a cost per benefited residence of $31,282 with an estimated construction cost of $1,376,400. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

For Alternative 2A, 12 conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 31 residences predicted to be affected by design year traffic noise. Eleven of the conceptual designs considered are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Of these eleven, CD10 is considered the optimal design and is recommended for further consideration and community input. CD10 represents a combination ground mounted noise barrier (20 ft tall and 1,780 ft long) that extends from Station 4752+00 to Station 4769+00 and a shoulder mounted barrier (8 ft tall and 1,090 ft long) along the elevated section of Florida's Turnpike from Station 4761+00 to Station 4772+00. CD10 is considered the optimal design because it provides benefit to 43 residences including all 31 affected residences, provides an average noise reduction of 8.6 dBA for the benefited residences, and has a cost per benefited residence of $31,446 with an estimated construction cost of $1,352,160. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in Table 5.18-3. The optimal conceptual barrier designs (CD10 for Alternative 1B and CD10 for Alternative 2A) provide benefits to all of the impacted noise sensitive sites.

Table 5.18-1 Noise Barrier Analyses for Everglades Lakes Mobile Home Park Located South of I-595 and West of Florida's Turnpike for Alternative 1B

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Everglades Lakes Mobile Home Park (EL)	**Ground Mounted Barrier Alternatives Along Florida's Turnpike Western Right of Way Line**														
	CD1	Ground Mounted	16	1,870	4751+50	4769+00	33	6.7	30	0	30	7.0	$748,000	$24,933	---
	CD2	Ground Mounted	18	1,870	4751+50	4769+00	33	7.5	31	0	31	7.7	$841,500	$27,145	---
	CD3	Ground Mounted	18	2,220	4749+00	4770+00	33	7.5	32	0	32	7.6	$999,000	$31,219	---
	CD4	Ground Mounted	20	1,870	4751+50	4769+00	33	8.1	33	1	34	8.0	$935,000	$27,500	---
	CD5	Ground Mounted	20	2,220	4749+00	4770+00	33	8.1	33	1	34	8.1	$1,110,000	$32,647	---
	CD6	Ground Mounted	22	1,820	4752+00	4769+00	33	8.7	33	2	35	8.5	$1,001,000	$28,600	---
	CD7	Ground Mounted	22	2,220	4749+00	4770+00	33	8.7	33	2	35	8.5	$1,221,000	$34,886	---
	Shoulder and Ground Mounted Barrier Combination Alternatives														
	CD8	Shoulder Mounted	8	1,100	4762+00	4773+00	33	8.4	32	5	37	8.2	$1,194,400	$32,281	---
		Ground Mounted	16	1,820	4752+00	4769+00									
	CD9	Shoulder Mounted	8	1,100	4762+00	4773+00	33	9.1	32	9	41	8.6	$1,285,400	$31,351	---
		Ground Mounted	18	1,820	4752+00	4769+00									
	CD10	Shoulder Mounted	8	1,100	4762+00	4773+00	33	9.6	33	11	44	8.8	$1,376,400	$31,282	---
		Ground Mounted	20	1,820	4752+00	4769+00									
	CD11	Shoulder Mounted	8	1,100	4762+00	4773+00	33	10.0	33	12	45	9.1	$1,467,400	$32,609	---
		Ground Mounted	22	1,820	4752+00	4769+00									
	CD12	Shoulder Mounted	14	1,190	4761+00	4773+00	33	11.0	33	14	47	10.0	$1,750,700	$37,249	---
		Ground Mounted	22	1,820	4752+00	4769+00									

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Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

Table 5.18-2 Noise Barrier Analyses for Everglades Lakes Mobile Home Park Located South of I-595 and West of Florida's Turnpike for Alternative 2A

Community Identifier(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Everglades Lakes Mobile Home Park (EL)	**Ground Mounted Barrier Alternatives Along Florida's Turnpike Western Right of Way Line**														
	CD1	Ground Mounted	16	1,830	4751+50	4769+00	31	6.8	29	0	29	7.0	$732,000	$25,241	---
	CD2	Ground Mounted	18	1,830	4751+50	4769+00	31	7.5	30	1	31	7.6	$823,500	$26,565	---
	CD3	Ground Mounted	18	2,200	4749+00	4769+50	31	7.6	31	1	32	7.5	$990,000	$30,938	---
	CD4	Ground Mounted	20	2,200	4749+00	4769+50	31	8.2	31	1	32	8.1	$1,100,000	$34,375	---
	CD5	Ground Mounted	20	1,830	4751+50	4769+00	31	8.1	31	1	32	8.1	$915,000	$28,594	---
	CD6	Ground Mounted	22	2,200	4749+00	4769+50	31	8.7	31	3	34	8.4	$1,210,000	$35,588	---
	CD7	Ground Mounted	22	1,780	4752+00	4769+00	31	8.6	31	3	34	8.3	$979,000	$28,794	---
	Shoulder and Ground Mounted Barrier Combination Alternatives														
	CD8	Shoulder Mounted	8	1,180	4761+00	4773+00	31	8.5	30	5	35	8.2	$1,212,320	$34,638	---
		Ground Mounted	16	1,780	4749+00	4769+50									
	CD9	Shoulder Mounted	8	1,180	4761+00	4773+00	31	9.1	30	10	40	8.5	$1,301,320	$32,533	---
		Ground Mounted	18	1,780	4749+00	4769+50									
	CD10	Shoulder Mounted	8	1,090	4761+00	4772+00	31	9.5	31	12	43	8.6	$1,352,160	$31,446	---
		Ground Mounted	20	1,780	4752+00	4769+00									
	CD11	Shoulder Mounted	8	1,090	4761+00	4772+00	31	9.8	31	14	45	8.7	$1,441,160	$32,026	---
		Ground Mounted	22	1,780	4752+00	4769+00									
	CD12	Shoulder Mounted	14	1,000	4762+00	4772+00	31	10.4	31	15	46	9.2	$1,609,000	$34,978	---
		Ground Mounted	22	1,780	4752+00	4769+00									

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Optimal conceptual noise barrier design at this location meets FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

EVERGLADES LAKES

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPOSED LIMITED ACCESS RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD10 (COMBINATION OF GROUND MOUNTED AND SHOULDER MOUNTED BARRIERS)

1" = 300'

EL4a
EL4
EL6a
EL6
EL7b
EL7a
EL7
EL2a
EL2

SW 51ST AVE
SW 50TH LN
SW 50TH TER
SW 50TH RD
REESE RD
SW 53RD AVE
SW 34TH PL
HACIENDA BLVD
SW 49TH WAY

20 FT TALL GROUND MOUNTED BARRIER (ALTERNATIVE CD10)

8 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD10)

FIRST ROW OF MOBILE HOMES TO BE ACQUIRED AS PART OF THIS PROJECT

4740 4745 4750 4755 4760 4765 4770 4775 4780

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	EVERGLADES LAKES NOISE BARRIER EVALUATION SITE ALTERNATIVE 1B	FIGURE 5.18-1

RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	EVERGLADES LAKES NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.18-2

Table 5.18-3 The Predicted Noise Level and Amount of Noise Reduction at Everglades Lakes with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)									
Florida's Turnpike Between Griffin Road and I-595																				
Everglades Lakes (West of Florida's Turnpike between Station 4747+00 and Station 4770+00); Predicted Noise Levels for Existing/No Build Conditions with Planned 16 ft Tall Ground Mounted Noise Barrier (Station 4752+20 to 4767+18 ~1,510 ft Long)	EL1	4753+00	2 (First Row Residences)	--	80	--	Relocated	Relocated	58.4	--	--	--	--	--	--	--	--	--	--	--
	EL2	4753+10	1 (Second Row Residence)	--	180	--	95	100	64.4	70.6	70.6	6.2	6.2	Exceeds	Exceeds	60.7	9.9	60.7	9.9
	EL2a	4753+10	3 (Third Row Residences)	--	230	--	165	170	63.0	67.9	67.9	4.9	4.9	Exceeds	Exceeds	61.7	6.2	61.7	6.2
	EL3	4759+70	22 (First Row Residences)	--	80	--	Relocated	Relocated	60.0	--	--	--	--	--	--	--	--	--	--
	EL4	4759+70	12 (Second Row Residences)	--	190	--	110	115	61.0	69.1	69.1	8.1	8.1	Exceeds	Exceeds	61.0	8.1	60.9	8.2
	EL4a	4759+70	18 (Third Row Residences)	--	290	--	220	220	60.0	64.5	64.2	4.5	4.2	Below	Below	60.4	4.1	60.2	4.0
	EL5	4766+50	3 (First Row Residences)	--	65	--	Relocated	Relocated	57.9	--	--	--	--	--	--	--	--	--	--
	EL6	4764+80	11 (Second Row Residences)	--	140	--	90	90	61.2	69.1	68.5	7.9	7.3	Exceeds	Exceeds	57.5	11.6	57.5	11.0
	EL6a	4764+80	3 (Third Row Residences)	--	205	--	260	260	59.0	63.9	63.5	4.9	4.5	Below	Below	57.7	6.2	57.8	5.7
	EL7	4764+80	1 (First Row Residence)	--	130	--	70	70 (230 EL)	65.5	69.3	69.1	3.8	3.6	Exceeds	Exceeds	53.6	15.7	53.6	15.5
	EL7a	4768+00	3 (Second Row Residences)	--	230	--	170	170 (330 EL)	63.9	67.4	67.4	3.5	3.5	Exceeds	Exceeds	53.5	13.9	53.8	13.6
	EL7b	4767+00	2 (Third Row Residences)	--	240	--	190	190 (350 EL)	61.6	66.5	65.9	4.9	4.3	Approaches	Below	57.0	9.5	57.3	8.6
														33	31				

I:\I-595PD&EStudy\Noise Study Report Draft\Individual Noise Reduction Tables\[Noise Reduction Tables110305.xls]Table 5.9-3

* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

5.19 Barrier Analysis for Plantation Harbor (West of Florida's Turnpike)
Plantation Harbor (Area A-42) is a single family subdivision located north of I-595 and west of Florida's Turnpike. Unlike Alternative 1B, Alternative 2A will require a 12 ft tall shoulder mounted noise barrier that is planned to be removed as part of a separate project to widen Florida's Turnpike (Financial Project ID 405094-1). Figure 4-1 (Sheet 15 of 15) shows the limits of the planned noise barrier. Therefore, consideration of noise barriers is warranted for the residences within this community that are predicted to be impacted by design year traffic volumes if Alternative 2A is constructed. Without the planned noise barrier, 23 residences are predicted to be impacted by design year traffic volumes on Florida's Turnpike. Predicted design year noise levels for this alternative ranged from 61.5 dBA to 76.7 dBA and would be approximately 8.5 dBA higher than existing levels.

The results of the barrier analysis for Alternative 2A are summarized in Table 5.19-1. Only shoulder mounted barriers are considered viable in this area. Construction of a ground mounted noise barrier in this area would require filling in a drainage ditch adjacent to the right of way line which would adversely impact the existing stormwater facilities. Therefore, ground mounted noise barriers along the right of way line are not considered constructible.

The results of the barrier analysis for Alternative 2A are summarized in Table 5.19-1. Six conceptual barrier designs with varying heights and lengths were evaluated to reduce traffic noise levels at the 23 residences predicted to be affected by design year traffic noise. None of the shoulder mounted conceptual designs considered are within FDOT's reasonable cost criteria of $35,000 per benefited receiver. Therefore, the conceptual design (CD3) that matches the planned noise barrier that will be removed as part of this project was recommended for further consideration and community input. Cost reasonableness is not the primary consideration in the decision to recommend a noise barrier at this location because it represents a replacement barrier of the same dimensions as the planned noise barrier. CD3 represents a shoulder mounted barrier (12 ft tall and 2,625 ft long) along Florida's Turnpike from Station 4815+00 to Station 4841+25. CD3 is considered the optimal design and provides benefit to 29 residences, including all of the impacted sites, provides an average noise reduction of 8.8 dBA for the benefited residences, and has a cost per benefited residence of $51,052 with an estimated construction cost of $1,480,500. In addition, this conceptual barrier design satisfies the other reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety, constructability, utilities, and drainage. This conceptual barrier design does not have any sight distance issues, can be constructed using standard construction methods, and does not appear to have substantial conflicts with utilities or drainage facilities.

Predicted noise levels, the amount of noise reduction at each of the representative noise sensitive sites with and without the optimal conceptual noise barrier designs, and the number of sites benefited (i.e., receiving more than 5.0 dBA of reduction) are presented in

Table 5.19-2. The optimal conceptual barrier design (CD3) provides benefits to all of the impacted noise sensitive sites.

Table 5.19-1 Noise Barrier Evaluation Summary for Plantation Harbor Located West of Florida's Turnpike Between I-595 and Peters Road for Alternative 2A

Community Identifer(s)	Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Comments
Plantation Harbor (PHb)	**Shoulder Mounted Barrier Alternatives Along Florida's Turnpike**														
	CD1	Shoulder Mounted	8	2,925	4812+00	4841+25	23	7.1	23	0	23	7.1	$1,240,200	$53,922	---
	CD2	Shoulder Mounted	10	2,725	4814+00	4841+25	23	8.2	23	0	23	8.2	$1,335,250	$58,054	---
	CD3	Shoulder Mounted	12	2,625	4815+00	4841+25	23	9.2	23	6	29	8.8	$1,480,500	$51,052	Same dimensions as the Florida's Turnpike's planned shoulder mounted noise barrier
	CD4	Shoulder Mounted	12	2,825	4813+00	4841+25	23	9.3	23	7	30	8.8	$1,593,300	$53,110	---
	CD5	Shoulder Mounted	14	2,625	4815+00	4841+25	23	10.1	23	12	35	9.1	$1,653,750	$47,250	---
	CD6	Shoulder Mounted	14	2,925	4812+00	4841+25	23	10.2	23	16	39	8.9	$1,842,750	$47,250	---

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Optimal conceptual noise barrier design at this location exceeds but is not substantially greater than FDOT's Noise Abatement Cost Criteria of $35,000 per benefited receiver and is **recommended** for further consideration.

LEGEND

- EXISTING LIMITED ACCESS RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- REPRESENTATIVE NOISE RECEIVER SITE

OPTIMAL NOISE BARRIER DESIGN RECOMMENDED FOR FURTHER CONSIDERATION

- ALTERNATIVE CD3 (SHOULDER MOUNTED BARRIERS WITHIN FLORIDA'S TURNPIKE RIGHT-OF-WAY)

1" = 300'

SW 53RD AVE

PLANTATION HARBOR

SW 54TH AVE

PHb1

PHb2

PHb3

PHb4

PHb5

PHb6

PHb7

PHb8

SW 51ST TER

SW 52ND WAY

SW 52ND TER

12 FT TALL SHOULDER MOUNTED BARRIER (ALTERNATIVE CD3)

SOUTH PLANTATION HIGH SCHOOL

4810 4815 4820 4825 4830 4835 4840 4845 4850 48

SW 50TH TER

SW 52ND AVE

PLANTATION POINT

BROADVIEW PARK

RS&H Reynolds, Smith and Hills, Inc. ARCHITECTURE, ENGINEERING AND PLANNING	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	PLANTATION HARBOR NOISE BARRIER EVALUATION SITE ALTERNATIVE 2A	FIGURE 5.19-1

Table 5.19-2 The Predicted Noise Level and Amount of Noise Reduction at Plantation Harbor with and without the Optimal Conceptual Noise Barrier Design

Residential Development/Area (General Location - I-595/Florida's Turnpike Station Range); Comments	Representative Noise Receiver Designation	Location	Number of Noise Sensitive Sites Represented (Location)	Distance from the Nearest Existing Travel Lane SR 84 (Feet)*	Distance from the Nearest Existing Travel Lane I-595/Florida's Turnpike (Feet)*	Distance from the Nearest Proposed Travel Lane SR 84 (Feet)*	Distance from the Nearest Proposed Travel Lane I-595 (Alternative 1B or 2A)/Florida's Turnpike (Alternative 1B) (Feet)*	Alternative 2A - Distance from the Nearest Proposed Elevated Travel Lane I-595 or Florida's Turnpike (Feet)*	TNM Predicted Noise Levels (dBA)			Difference Between Existing/No Build and Alternative 1B (dBA)	Difference Between Existing/No Build and Alternative 2A (dBA)	Noise Abatement Criteria Status for Alternative 1B	Noise Abatement Criteria Status for Alternative 2A	Alternative 1B Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 1B Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Levels with Optimal Conceptual Barrier Design (dBA)	Alternative 2A Predicted Noise Reduction from Optimal Conceptual Barrier Design (dBA)
									Existing and No Build (Design Year 2034)	Alternative 1B (Design Year 2034)	Alternative 2A (Design Year 2034)								
Florida's Turnpike Between I-595 and Peters Road																			
Plantation Harbor (West of Florida's Turnpike between Station 4802+00 and Station 4837+00); Predicted Noise Levels for Alternative 1B with Planned 12 ft Tall Shoulder Mounted Noise Barrier (Station 4815+00 to 4841+25 ~2,625 ft Long)	PHb1	4819+10	4 (First Row Residences)	--	340	--	340	295 (ML)/370 (EL)	61.8	62.0	67.5	0.2	5.7	Below	Exceeds	---	---	62.3	5.2
	PHb2	4824+00	4 (First Row Residences)	--	180	--	180	130 (ML)/210 (EL)	63.3	63.3	73.2	0.0	9.9	Below	Exceeds	---	---	63.6	9.6
	PHb3	4826+00	4 (Second Row Residences)	--	300	--	300	250 (ML)/325 (EL)	56.2	56.3	61.5	0.1	5.3	Below	Below	---	---	56.8	4.7
	PHb4	4829+00	1 (First Row Residence)	--	160	--	160	125 (ML)/205 (EL)	64.1	64.1	74.9	0.0	10.8	Below	Exceeds	---	---	64.4	10.5
	PHb5	4829+50	2 (Second Row Residences)	--	260	--	260	230 (ML)/310 (EL)	61.0	61.0	69.8	0.0	8.8	Below	Exceeds	---	---	61.4	8.4
	PHb6	4835+50	11 (First Row Residences)	--	100	--	100	90 (ML)/190 (EL)	65.2	65.2	76.7	0.0	11.5	Below	Exceeds	---	---	65.5	11.2
	PHb7	4835+50	5 (Second Row Residences)	--	270	--	270	260 (ML)/350 (EL)	56.3	56.3	61.6	0.0	5.3	Below	Below	---	---	56.1	5.5
	PHb8	4837+20	1 (Second Row Residence)	--	280	--	280	270 (ML)/370 (EL)	60.3	60.3	67.6	0.0	7.3	Below	Exceeds	---	---	60.5	7.1
													Number of Noise Sensitive Sites Impacted by Project Alternatives		0	23			

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* Distance to nearest travel lane of I-595 or Florida's Turnpike

Noise Sensitive Receiver Sites that Approach (i.e., within 1 dBA) or Exceed the Noise Abatement Criteria of 67 dBA

Noise Sensitive Receiver Sites that are Benefited (i.e., Predicted to Receive 5 dBA or greater Noise Reduction) by the Optimal Conceptual Barrier Design

6.0 SUMMARY OF NOISE ABATEMENT MEASURES

In accordance with FHWA's and FDOT's traffic noise study requirements, noise abatement measures were evaluated for each of the noise sensitive sites that have predicted design year noise levels (2034) which approach or exceed the NAC for Alternatives 1B and 2A. For Alternative 1B, 536 noise sensitive sites in 24 of the 44 areas evaluated are predicted to approach or exceed the NAC. For Alternative 2A, 672 noise sensitive sites in 26 of the 44 areas evaluated are predicted to approach or exceed the NAC. Following analysis of abatement alternatives, available right of way, safety criteria, and constructability and maintenance issues associated with providing noise abatement along this project corridor, construction of noise barriers was determined to be the most reasonable and feasible abatement alternative. A design goal of 10.0 dBA noise reduction with a minimum reduction of 5.0 dBA was used in the development and evaluation of the noise barriers. FDOT's cost guideline of $35,000 per benefited receiver site was used to determine the cost reasonableness.

To facilitate the barrier analysis, noise sensitive areas contiguous with other areas were grouped together. For Alternative 1B, noise barriers were evaluated at 18 locations representing the 25 areas where predicted noise levels approach or exceed the NAC. For Alternative 2A, noise barriers were evaluated at 19 locations representing the 26 areas where predicted noise levels approach or exceed the NAC.

Tables 6-1 and 6-2 summarize the results of the noise barrier analyses and recommendations for Alternatives 1B and 2A for each of the locations where barriers were evaluated. For Alternative 1B, noise barriers at 11 locations are recommended for further consideration and public input. The locations of these noise barriers are depicted in Figure 6-1. These 11 noise barriers are expected to reduce traffic noise levels by at least 5.0 dBA at 518 residences along the project corridor. The estimated total cost of these barriers is approximately $16,456,880.

For Alternative 2A, noise barriers at 12 locations are recommended for further consideration and public input, including the replacement of a planned noise barrier associated with the widening of Florida's Turnpike. The locations of these noise barriers are depicted in Figure 6-2. These 12 noise barriers are expected to reduce traffic noise levels by at least 5.0 dBA at 541 residences along the project corridor. The estimated total cost of these barriers is approximately $19,471,940.

For both alternatives, the cost to construct noise barriers in the remaining locations that were evaluated substantially exceeded FDOT's reasonable cost criteria of $35,000 per benefited residence (see Tables 6-1 and 6-2). Therefore, noise barriers are not recommended for further consideration or construction at these locations because they are not cost reasonable.

Table 6-1 Noise Barrier Evaluation Summary and Recommendations for Alternative 1B

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Community Name	Area ID Number	Type of Noise Sensitive Site	Optimal Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/ Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Optimal Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of $35,000 per Benefited Receiver Site	Noise Barrier Recommended for Further Consideration and Community Input	Estimated Cost of Noise Barriers	Total Number of Benefited Receivers	Average Cost per Site Benefited
Between SW 136th Avenue and Flamingo Road	North of I-595	Sunshine City	A-1	Residential (Mobile Home Park)	CD11	Shoulder Mounted on Bridge (I-595)	8	340	155+60	159+00	51	7.9	46	35	81	7.7	$1,353,980	$16,716	Yes	Yes	$1,353,980	81	$16,716
						Shoulder Mounted on MSE Wall (I-595)	8	140	154+20	155+60													
						Shoulder Mounted on MSE Wall (I-595)	8	940	159+00	168+40													
						Ground Mounted	22	1,690	157+15	165+50													
									166+25	174+80													
	South of I-595	Sunshine Village	A-5	Residential (Mobile Home Park)	CD4	Shoulder Mounted on MSE Wall	8	580	150+00	155+80	4	1.5	0	0	0	---	$894,180	---	No	No	---	---	---
						Shoulder Mounted on Bridge	14	330	155+80	159+10													
						Shoulder Mounted on MSE Wall	8	890	159+10	168+00													
						Shoulder Mounted	14	460	168+00	172+60													
		Western Hills	A-6	Residential (Mobile Home Park)	CD4	Shoulder Mounted	14	1,470	177+30	192+00	7	5.6	7	0	7	5.6	$1,090,740	$155,820	No	No	---	---	---
		Paradise Village	A-7	Residential (Mobile Home Park)	CD4	Ground Mounted	22	1,540	190+00	194+00	63	5.9	43	0	43	7.3	$847,000	$19,698	Yes	Yes	$847,000	43	$19,698
		Kings Manor Estates	A-8	Residential (Mobile Home Park)					194+60	206+00													
Between Flamingo Road and Hiatus Road	North of I-595	Plantation Acres	A-9	Residential (Single Family)	CD11	Ground Mounted	22	4,740	217+60	265+00	24	9.0	24	8	32	8.0	$2,607,000	$81,469	No	Yes	$2,607,000	32	$81,469
		Acres South Park	A-10	Park (Passive Recreation)																			
	South of I-595	Village at Pine Lake	A-11	Multi-Family Residential (Two Story Quadraplexes)	CD6	Ground Mounted	22	720	225+85	232+05	5	4.7	2	1	3	5.4	$396,000	$132,000	No	No	---	---	---
									233+00	234+00													
Between Hiatus Road and Nob Hill Road	North of I-595	Hawks Landing	A-13	Residential (Single Family)	CD7	Ground Mounted	22	4,900	269+00	318+00	13	4.6	10	43	53	6.7	$2,695,000	$50,849	No	Yes	$2,695,000	53	$50,849
	South of I-595	The Palms Apartment Homes	A-14	Multi-Family Residential (Multi-Story Apartment Buildings)	CD2	Shoulder Mounted	8/14	3,900	265+00	304+00	79	2.7	10	0	10	5.0	$1,658,120	$165,812	No	No	---	---	---
Between Nob Hill Road and Pine Island Road	North of I-595	The Trellises Condos	A-17	Multi-Family Residential (Two Story Townhomes)	CD2	Ground Mounted	18	5,000	322+00	372+00	53	6.1	53	17	70	6.4	$2,250,000	$32,143	Yes	Yes	$1,350,000	70	$32,143
		Davide Isles	A-18	Single Family Residential																			
		Jacaranda Villas	A-19	Multi-Family Residential (Multi-Story Condominium Buildings)																			
	South of I-595	Evergreen Place	A-21	Multi-Family Residential (Multi-Story Condominium Buildings)	CD6	Ground Mounted	22	1,100	340+00	351+00	41	5.4	23	6	29	7.4	$605,000	$20,862	Yes	Yes	$605,000	29	$20,862
Between Pine Island Road and University Drive	North of I-595	Plantation Colony Apartments	A-22	Multi-Family Residential (Multi-Story Apartment Buildings)	CD7	Ground Mounted	22	1,170	391+90	403+60	1	5.3	1	5	6	6.1	$643,500	$107,250	No	No	---	---	---
	South of I-595	Park City Estates	A-23	Residential (Mobile Home Park)	CD5	Shoulder Mounted on Bridge (Ramp Lane)	14	330	375+50	378+80	10	2.8	2	0	2	5.6	$1,263,980	$631,990	No	No	---	---	---
						Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70													
						Shoulder Mounted (I-595 Mainline)	14	1,240	388+70	401+10													
		Arrowhead Golf and Tennis Club	A-24	Multi-Family Residential (Multi-Story Apartment Buildings)	CD3	Ground Mounted	22	330	410+20	413+50	18	8.0	18	5	23	7.8	$511,500	$22,239	Yes	Yes	$511,500	23	$22,239
		Valencia Village	A-25	Multi-Family Residential (Multi-Story Apartment Buildings)		Ground Mounted	22	600	414+40	420+40													
Between University Drive and Florida's Turnpike	North of I-595	Lake View Estates	A-26	Residential (Single Family)	CD5	Ground Mounted	20	5,400	431+00	485+00	47	10.1	47	47	94	7.9	$2,700,000	$28,723	Yes	Yes	$2,970,000	94	$28,723
		Isla del Sol	A-27	Residential (Single Family)	CD1	Ground Mounted	14	1,100	486+00	497+00	8	4.1	4	2	6	7.4	$385,000	$64,167	No	Yes	$385,000	6	$64,167
		Sewell Lock Park	A-28	Park (Passive Recreation)																			
		Plantation Landings	A-29	Residential (Single Family)	CD5	Shoulder	8	560	491+50	497+10	32	6.0	24	11	35	6.4	$3,075,200	$87,863	No	No	---	---	---
						Shoulder Mounted on MSE	8	1,080	497+10	507+90													
						Shoulder Mounted on MSE	8	1,000	509+20	519+20													
		Plantation Harbor	A-30	Residential (Single Family)		Shoulder Mounted on Bridge	8	130	507+90	509+20													
						Shoulder Mounted	14	3,400	502+00	536+00													
Between SR 7 and I-95	North of I-595	Archstone Apartments	A-36	Multi-Family Residential (Multi-Story Apartment Buildings)	CD4	Shoulder Mounted on MSE Wall	8	400	624+00	628+00	28	3.2	10	33	43	6.9	$1,756,000	$40,837	No	Yes	$1,756,000	43	$40,837
						Ground Mounted	22	2,960	595+40	626+80													
Between Griffin Road and I-595	West of Florida's Turnpike	Everglades Lakes	A-40	Residential (Mobile Home Park)	CD10	Shoulder Mounted	8	1,100	4762+00	4773+00	33	9.6	33	11	44	8.8	$1,376,400	$31,282	Yes	Yes	$1,376,400	44	$31,282
						Ground Mounted	20	1,820	4752+00	4769+00													

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Conceptual noise barrier design that meets FDOT's reasonable cost criteria

Conceptual noise barrier design that does not meet FDOT's reasonable cost criteria but considered a priority location for cost averaging

Table 6-2 Noise Barrier Summary Evaluation Summary and Recommendations for Alternative 2A

General Location (Cross Streets)	Relative Location to I-595 or Florida's Turnpike	Community Name	Area ID Number	Type of Noise Sensitive Site	Optimal Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Optimal Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of $35,000 per Benefited Receiver Site	Noise Barrier Recommended for Further Consideration and Community Input	Estimated Cost of Noise Barriers	Total Number of Benefited Receivers	Average Cost per Site Benefited
Between SW 136th Avenue and Flamingo Road	North of I-595	Sunshine City	A-1	Residential (Mobile Home Park)	CD13	Shoulder Mounted on MSE Wall (I-595)	8	240	153+20	155+60	61	8.8	54	25	79	8.5	$1,782,780	$22,567	Yes	Yes	$1,782,780	79	$22,567
						Shoulder Mounted on Bridge (I-595)	8	340	155+60	159+00													
						Shoulder Mounted on MSE Wall (I-595)	8	1,120	159+00	170+00													
						Shoulder Mounted (I-595)	8	800	170+00	178+00													
						Ground Mounted	22	1,690	157+15	165+50													
									166+25	174+80													
	South of I-595	Sunshine Village	A-5	Residential (Mobile Home Park)	CD4	Shoulder Mounted on MSE Wall	8	280	153+00	155+80	4	2.0	0	2	2	5.3	$1,591,980	$795,990	No	No	---	---	---
						Shoulder Mounted on Bridge	14	330	155+80	159+10													
						Shoulder Mounted on MSE Wall	8	890	159+10	168+00													
						Shoulder Mounted	14	460	168+00	172+60													
						Shoulder Mounted	14	1,260	174+40	187+00													
		Western Hills	A-6	Residential (Mobile Home Park)	CD4	Shoulder Mounted	14	1,760	176+40	194+00	7	5.5	7	1	8	5.4	$1,108,800	$138,600	No	No	---	---	---
		Paradise Village	A-7	Residential (Mobile Home Park)	CD4	Ground Mounted	22	1,540	190+00	194+00	71	5.1	43	0	43	7.4	$847,000	$19,698	Yes	Yes	$847,000	43	$19,698
		Kings Manor Estates	A-8	Residential (Mobile Home Park)					194+60	206+00													
Between Flamingo Road and Hiatus Road	North of I-595	Plantation Acres	A-9	Residential (Single Family)	CD10	Ground Mounted	22	4,740	217+60	265+00	39	7.6	30	1	31	8.6	$2,607,000	$84,097	No	Yes	$2,607,000	31	$84,097
		Acres South Park	A-10	Park (Passive Recreation)																			
	South of I-595	Village at Pine Lake	A-11	Multi-Family Residential (Two Story Quadraplexes)	CD6	Ground Mounted	22	700	226+05	232+05	10	2.5	2	0	2	5.3	$385,000	$192,500	No	No	---	---	---
									233+00	234+00													
Between Hiatus Road and Nob Hill Road	North of I-595	Hawks Landing	A-13	Residential (Single Family)	CD6	Ground Mounted	22	4,900	269+00	318+00	42	5.7	36	19	55	7.2	$2,695,000	$49,000	No	Yes	$2,695,000	55	$49,000
	South of I-595	The Palms Apartment Homes	A-14	Multi-Family Residential (Multi-Story Apartment Buildings)	CD2	Shoulder Mounted	8/14	3,900	265+00	304+00	104	2.1	0	0	0	---	$1,658,120	---	No	No	---	---	---
Between Nob Hill Road and Pine Island Road	North of I-595	The Trellises Condos	A-17	Multi-Family Residential (Two Story Townhomes)	CD4	Ground Mounted	22	5,000	322+00	372+00	65	6.2	57	7	64	7.0	$2,750,000	$42,969	No	Yes	$2,750,000	64	$42,969
		Davide Isles	A-18	Single Family Residential																			
		Jacaranda Villas	A-19	Multi-Family Residential (Multi-Story Condominium Buildings)																			
	South of I-595	Evergreen Place	A-21	Multi-Family Residential (Multi-Story Condominium Buildings)	CD6	Ground Mounted	22	1,100	340+00	351+00	41	4.3	19	0	19	5.6	$605,000	$31,842	Yes	Yes	$605,000	19	$31,842
Between Pine Island Road and University Drive	North of I-595	Plantation Colony Apartments	A-22	Multi-Family Residential (Multi-Story Apartment Buildings)	CD4	Ground Mounted	22	1,180	391+80	403+60	1	4.4	0	5	5	5.9	$649,000	$129,800	No	No	---	---	---
	South of I-595	Park City Estates	A-23	Residential (Mobile Home Park)	CD4	Shoulder Mounted on Bridge (Ramp Lane)	14	360	375+20	378+80	19	2.1	0	0	0	---	$1,276,160	---	No	No	---	---	---
						Shoulder Mounted on MSE Wall (Ramp Lane)	8	1,090	378+80	389+70													
						Shoulder Mounted (I-595 Mainline)	14	1,240	388+70	401+10													
		Arrowhead Golf and Tennis Club	A-24	Multi-Family Residential (Multi-Story Apartment Buildings)	CD3	Ground Mounted	22	330	410+20	413+50	21	7.9	21	2	23	7.8	$511,500	$22,239	Yes	Yes	$511,500	23	$22,239
		Valencia Village	A-25	Multi-Family Residential (Multi-Story Apartment Buildings)		Ground Mounted	22	600	414+40	420+40													
Between University Drive and Florida's Turnpike	North of I-595	Lake View Estates	A-26	Residential (Single Family)	CD4	Ground Mounted	20	5,400	431+00	485+00	54	8.8	52	33	85	8.0	$2,700,000	$31,765	Yes	Yes	$2,700,000	85	$31,765
		Isla del Sol	A-27	Residential (Single Family)	CD1	Ground Mounted	14	1,100	486+00	497+00	12	4.2	6	1	7	7.4	$385,000	$55,000	No	Yes	$385,000	7	$55,000
		Sewell Lock Park	A-28	Park (Passive Recreation)																			
		Plantation Landings	A-29	Residential (Single Family)	CD5	Shoulder	8	560	491+50	497+10	40	3.5	3	0	3	5.0	$3,075,200	$1,025,067	No	No	---	---	---
						Shoulder Mounted on MSE	8	1,080	497+10	507+90													
						Shoulder Mounted on MSE	8	1,000	509+20	519+20													
		Plantation Harbor	A-30	Residential (Single Family)		Shoulder Mounted on Bridge	8	130	507+90	509+20													
						Shoulder Mounted	14	3,400	502+00	536+00													
Between SR 7 and I-95	North of I-595	Archstone Apartments	A-36	Multi-Family Residential (Multi-Story Apartment Buildings)	CD4	Shoulder Mounted on MSE Wall	8	400	624+00	628+00	28	3.2	10	33	43	6.9	$1,756,000	$40,837	No	Yes	$1,756,000	43	$40,837
						Ground Mounted	22	2,960	595+40	626+80													
Between Griffin Road and I-595	West of Florida's Turnpike	Everglades Lakes	A-40	Residential (Mobile Home Park)	CD10	Shoulder Mounted	8	1,090	4761+00	4772+00	31	9.5	31	12	43	8.6	$1,352,160	$31,446	Yes	Yes	$1,352,160	43	$31,446
						Ground Mounted	20	1,780	4752+00	4769+00													
Between I-595 and Peters Road	West of Florida's Turnpike	Plantation Harbor	A-42	Residential (Single Family)	CD3	Shoulder Mounted	12	2,625	4815+00	4841+25	23	9.2	23	6	29	8.8	$1,480,500	$51,052	No	Yes	$1,480,500	29	$51,052

I:\I-595PD&E\Study\Noise Study Report Draft\[Table6-1_NoiseBarrier Summary Table110505.xls]Alt 2A

Conceptual noise barrier design that meets FDOT's reasonable cost criteria

Conceptual noise barrier design that does not meet FDOT's reasonable cost criteria but considered a priority location for cost averaging

LEGEND

NOISE BARRIERS ANALYZED

- GROUND MOUNTED NOISE BARRIER
- SHOULDER MOUNTED NOISE BARRIER

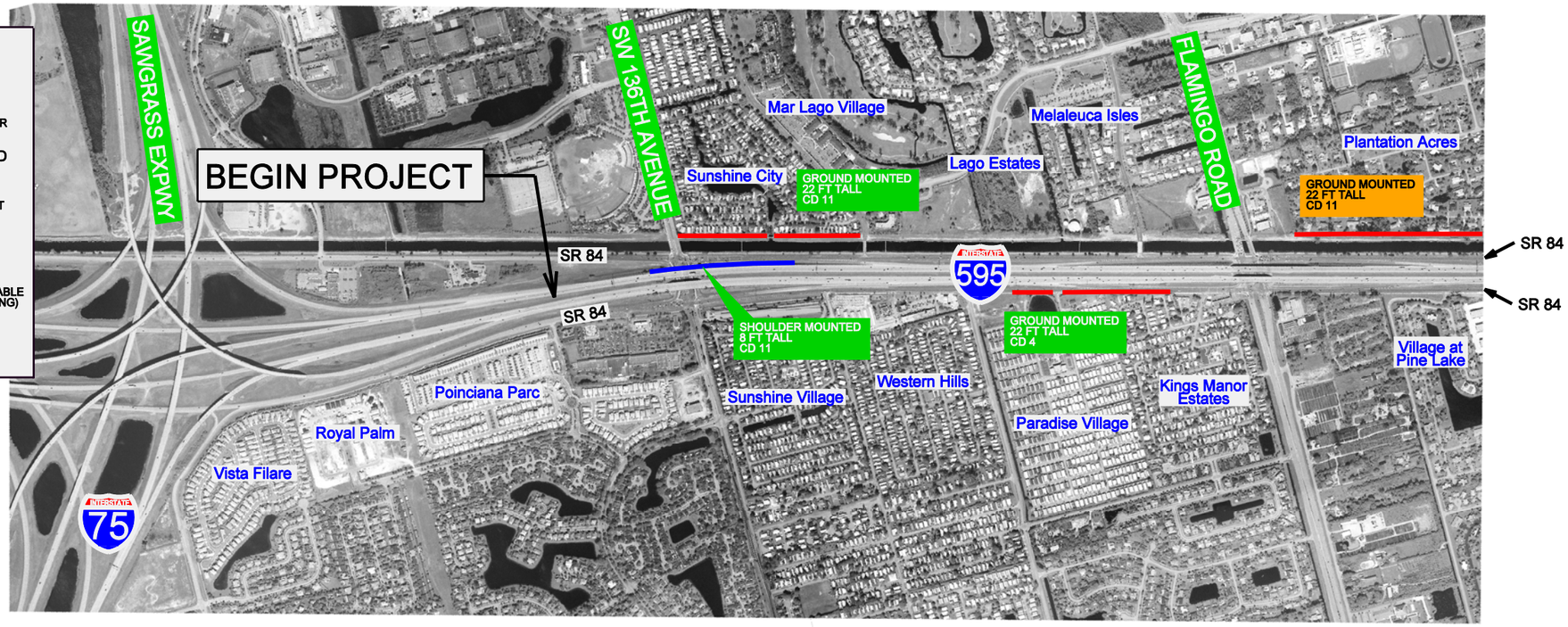
NOISE BARRIER LOCATION RECOMMENDED FOR FURTHER CONSIDERATION AND COMMUNITY INPUT

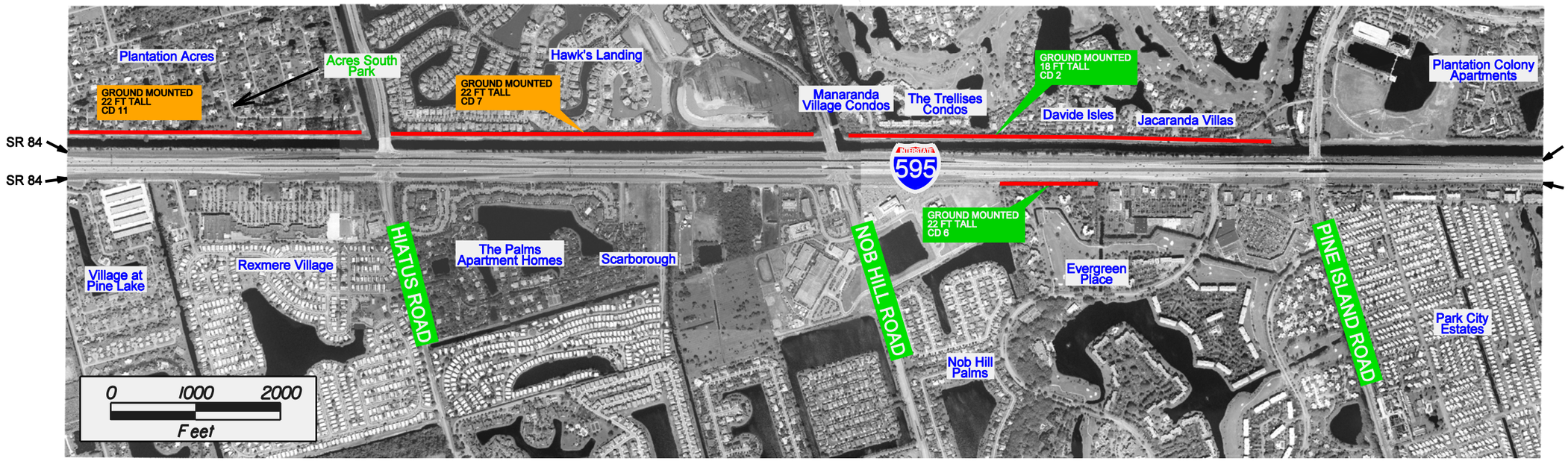
BARRIER DESIGN MEETS FDOT'S REASONABLE COST CRITERIA

BARRIER TYPE
BARRIER HEIGHT
CONCEPTUAL DESIGN NUMBER

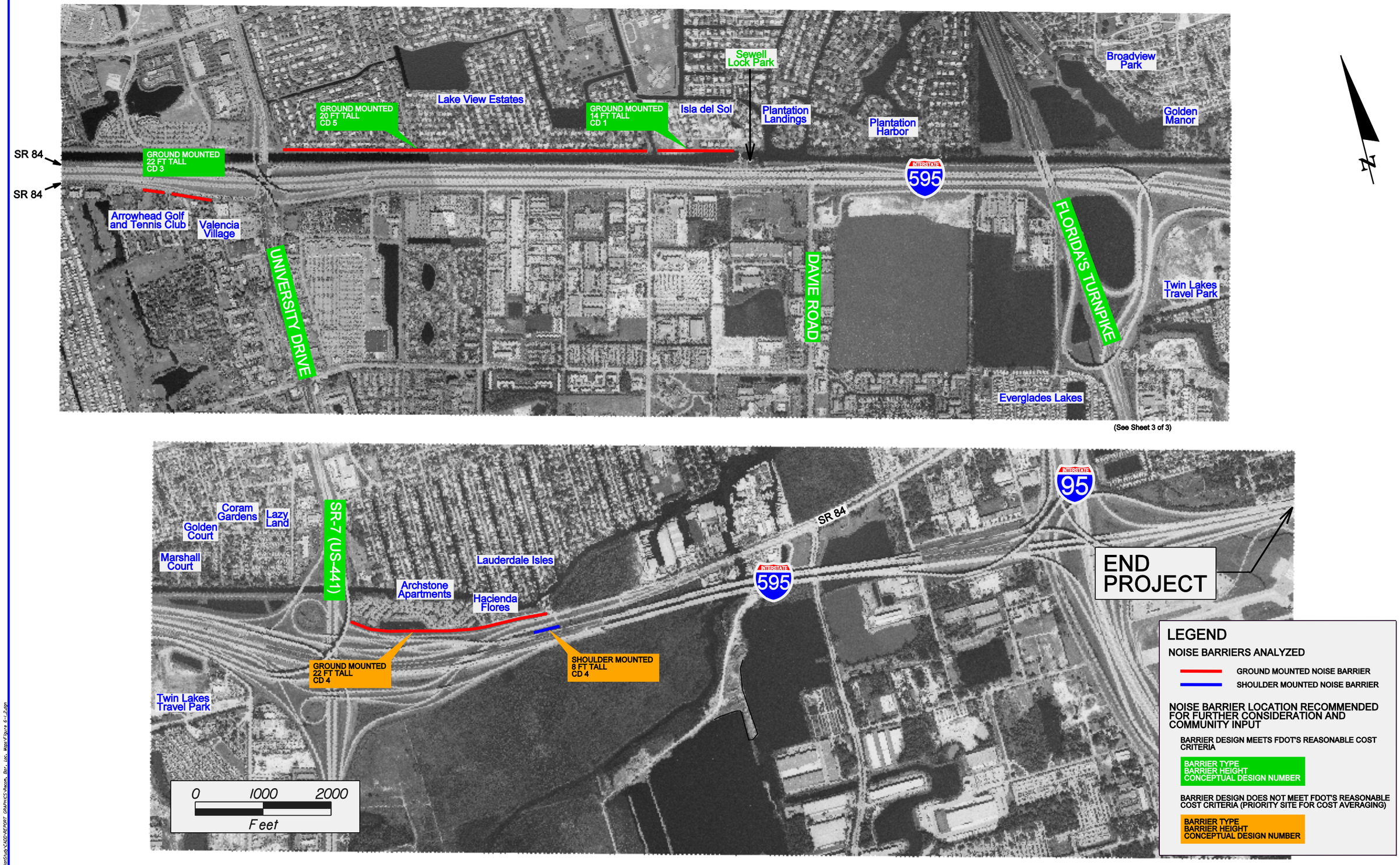
BARRIER DESIGN DOES NOT MEET FDOT'S REASONABLE COST CRITERIA (PRIORITY SITE FOR COST AVERAGING)

BARRIER TYPE
BARRIER HEIGHT
CONCEPTUAL DESIGN NUMBER





RS&H Reynolds, Smith and Hills, Inc. ARCHITECTURE, ENGINEERING AND PLANNING	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LOCATION MAP OF ALL OPTIMAL NOISE BARRIER DESIGNS RECOMMENDED FOR FURTHER CONSIDERATION ALTERNATIVE 1B	FIGURE 6.1 1 of 3



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LOCATION MAP OF ALL OPTIMAL NOISE BARRIER DESIGNS RECOMMENDED FOR FURTHER CONSIDERATION ALTERNATIVE 1B	FIGURE 6.1 2 of 3

RS&H Reynolds, Smith and Hills, Inc. ARCHITECTURE, ENGINEERING AND PLANNING	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LOCATION MAP OF ALL OPTIMAL NOISE BARRIER DESIGNS RECOMMENDED FOR FURTHER CONSIDERATION ALTERNATIVE 1B	FIGURE 6.1 3 of 3

LEGEND

NOISE BARRIERS ANALYZED

- GROUND MOUNTED NOISE BARRIER
- SHOULDER MOUNTED NOISE BARRIER

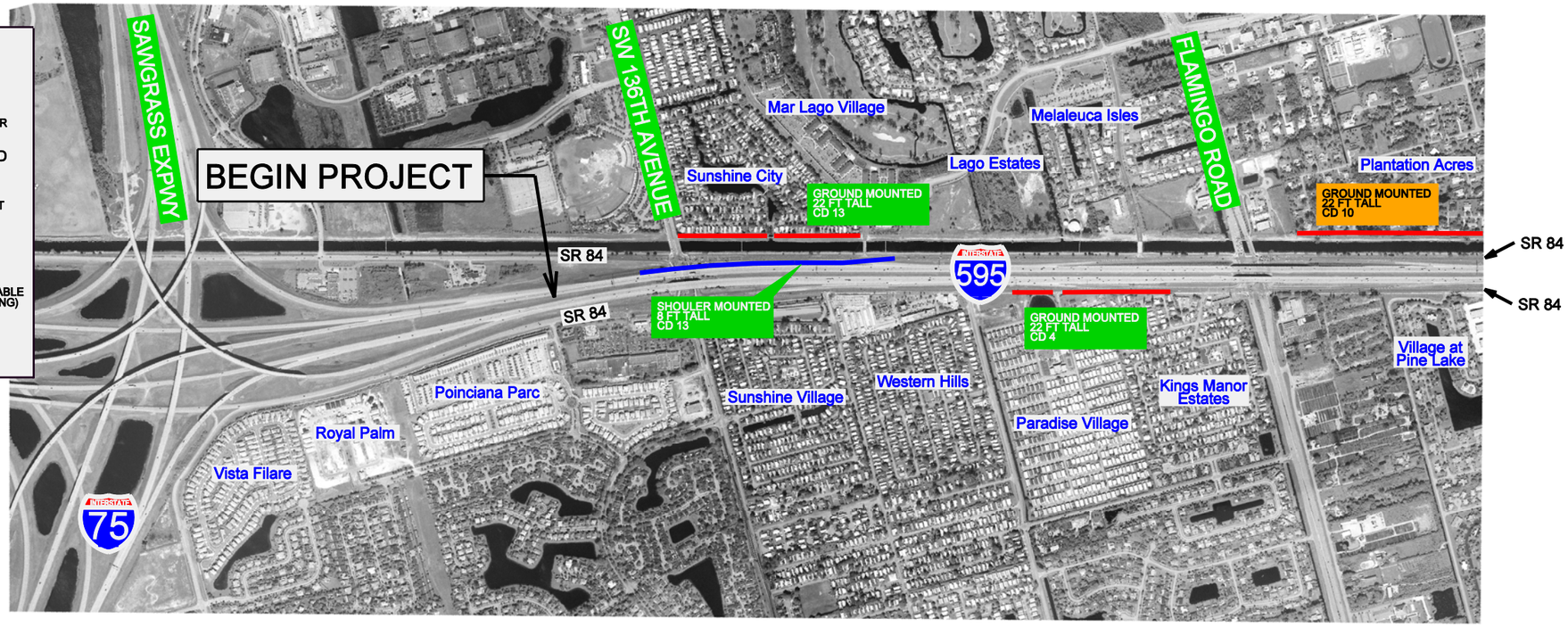
NOISE BARRIER LOCATION RECOMMENDED FOR FURTHER CONSIDERATION AND COMMUNITY INPUT

BARRIER DESIGN MEETS FDOT'S REASONABLE COST CRITERIA

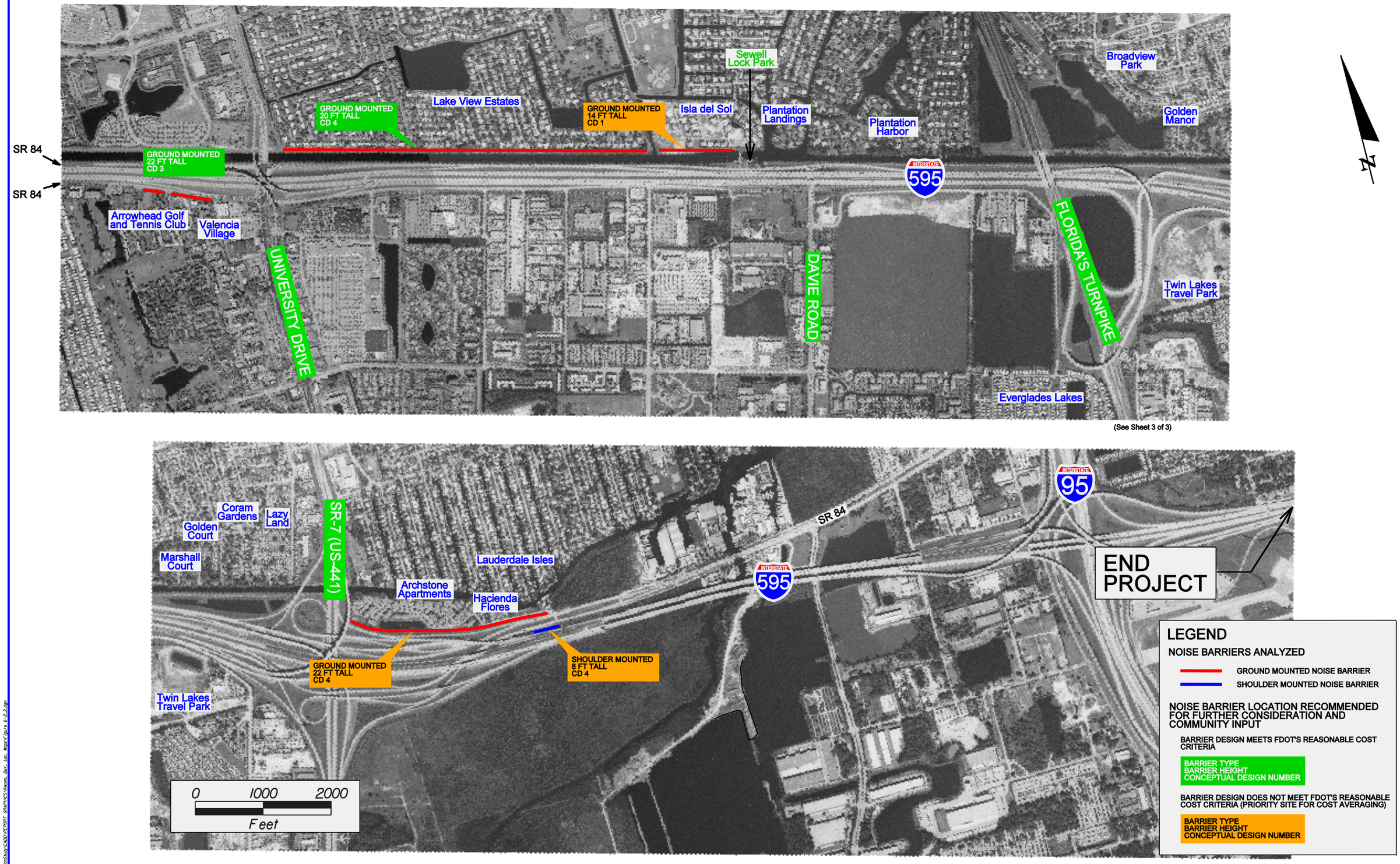
BARRIER TYPE
BARRIER HEIGHT
CONCEPTUAL DESIGN NUMBER

BARRIER DESIGN DOES NOT MEET FDOT'S REASONABLE COST CRITERIA (PRIORITY SITE FOR COST AVERAGING)

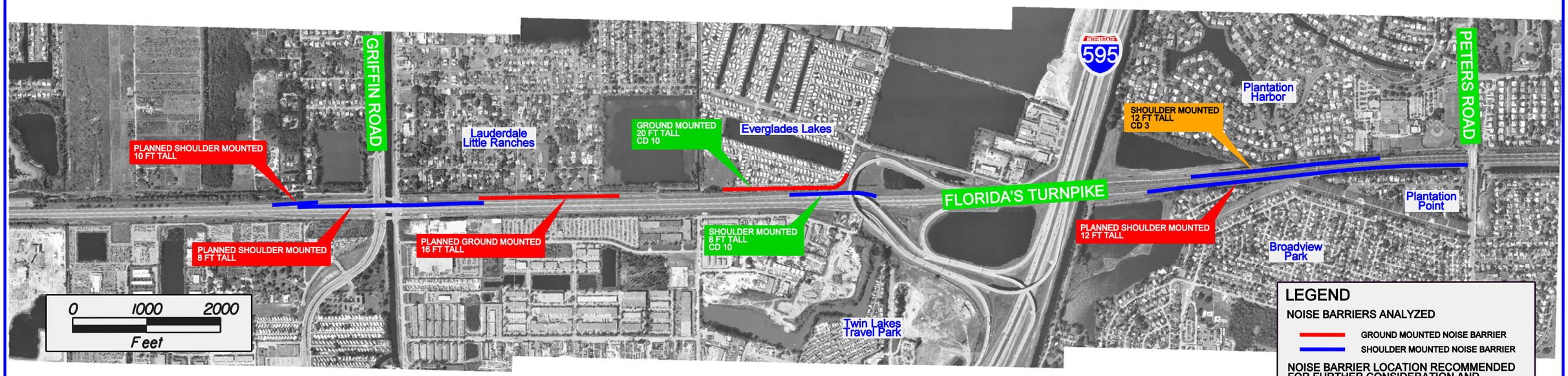
BARRIER TYPE
BARRIER HEIGHT
CONCEPTUAL DESIGN NUMBER



RS&H Reynolds, Smith and Hills, Inc. ARCHITECTURE, ENGINEERING AND PLANNING	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LOCATION MAP OF ALL OPTIMAL NOISE BARRIER DESIGNS RECOMMENDED FOR FURTHER CONSIDERATION ALTERNATIVE 2A	FIGURE 6.2 1 of 3



RS&H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LOCATION MAP OF ALL OPTIMAL NOISE BARRIER DESIGNS RECOMMENDED FOR FURTHER CONSIDERATION ALTERNATIVE 2A	FIGURE 6.2 2 of 3



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Reynolds, Smith and Hills, Inc.
ARCHITECTURE, ENGINEERING AND PLANNING

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

I-595 PD&E STUDY

LOCATION MAP OF ALL OPTIMAL NOISE BARRIER DESIGNS RECOMMENDED FOR FURTHER CONSIDERATION ALTERNATIVE 2A

FIGURE 6.2
3 of 3

7.0 CONCLUSIONS AND RECOMMENDATIONS

Following the I-595 PD&E Study Public Hearing, which was held on November 29, 2005, and further engineering evaluation and additional coordination with FDOT and Florida's Turnpike Enterprise, Alternative 2A was selected as the recommended alternative to proceed to the Design phase of the project. Alternative 2A maximizes the efficiency of the corridor by: 1) providing a regional direct connection between I-75, Florida's Turnpike, and I-95; 2) providing additional capacity within the corridor by a third reversible lane; 3) minimizing impacts to adjacent properties by locating the improvements within the existing right of way and in the center of the corridor; and 4) supporting Transit New Start.

For Alternative 2A, noise barriers at 12 of the 19 locations (including the replacement of a planned noise barrier associated with the widening of Florida's Turnpike) are recommended for further consideration during the Final Design phase of the project when more detailed information is available. The general location, dimensions, and costs of the noise barriers recommended for further consideration are summarized in Table 7-1. Figure 7.1 depicts the general location of these noise barriers. Noise barriers at these 12 locations would provide benefit to 17 of the 26 noise sensitive areas affected by traffic noise. These 12 noise barriers are expected to reduce traffic noise levels by at least 5.0 dBA at 541 residences along the project corridor. The number of benefited residences includes 394 of the 672 that are affected by traffic noise. The estimated total cost of these barriers is approximately $19,471,940 based on standard per square foot construction costs presented in Section *5.0 Noise Barrier Analysis*. The estimated total cost of these barriers based on the FDOT Long Range Estimate (LRE) method is approximately $17 million (see Section 9.17.4 of the PER).

FDOT is committed to the construction of feasible noise abatement measures at the locations where noise barriers have been recommended for further consideration during the Final Design phase, contingent upon the following conditions:

- Detailed noise analyses during the final design process supports the need for abatement;
- Reasonable cost analyses indicate that the economic cost of the barrier(s) will not exceed the guidelines;
- Community input regarding desires, types, heights, and locations of barriers has been solicited by the FDOT;
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses, has been noted;
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed; and
- Any other mitigating circumstances found in Section 17-4.6.1 of FDOT's PD&E Manual have been analyzed.

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

In addition to the coordination with the property owners adjacent to the noise barriers recommended for further consideration in the Final Design phase, FDOT will also coordinate with the property owners/residents of north of Sewell Lock in the community of Isla del Sol. Because of SFWMD's maintenance requirements for the North New River Canal and Sewell Lock, a ground mounted noise barrier north of Sewell Lock (Station 497+00 to 501+40) was not considered constructible within SFWMD's right of way. An easement from the adjacent property owners would be required to construct a noise barrier north of Sewell Lock. During the Design Phase of the project, FDOT will evaluate the effectiveness of noise barriers and potential of obtaining easements from the adjacent property owners necessary for the construction of a noise barrier in this area.

The cost to construct noise barriers at the remaining seven of 19 locations that were evaluated substantially exceeded FDOT's reasonable cost criteria of $35,000 per benefited residence. Therefore, noise barriers are not recommended for further consideration or construction at these locations because they are not cost reasonable. Based on the noise analyses performed to date, there appears to be no apparent solutions available to mitigate the noise impacts at the remaining noise sensitive sites along the project corridor. The traffic noise impacts to the 278 of 672 noise sensitive sites affected by the project are an unavoidable consequence of the project. Because of the relatively low number of impacted sites, the traffic noise impacts associated with this project are not considered significant.

Table 7-1 Locations Recommended for Further Consideration for Noise Barriers During the Final Design Phase of the Project (Alternative 2A)

Noise Barrier Number (Area ID Number)	General Location	Community Name (Area ID Number)	Type of Noise Sensitive Site	Optimal Conceptual Barrier Design Number	Barrier Type	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Affected Receivers	Average Noise Reduction for Affected Receivers (dBA)	Number of Affected/ Benefited Receivers	Number of Benefited Receivers/Not Affected	Total Number of Benefited Receivers	Average Noise Reduction for all Benefited Receivers (dBA)	Cost	Average Cost/Site Benefited	Optimal Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of $35,000 per Benefited Receiver Site	Noise Barrier Recommended for Further Consideration and Community Input	Estimated Cost of Noise Barriers	Total Number of Benefited Receivers	Average Cost per Site Benefited
B-1 (A-1)	Between SW 136th Avenue and Flamingo Road - North of I-595	Sunshine City (A-1)	Residential (Mobile Home Park)	CD13	Shoulder Mounted on MSE Wall (I-595)	8	240	153+20	155+60	61	8.8	54	25	79	8.5	$1,782,780	$22,567	Yes	Yes	$1,782,780	79	$22,567
					Shoulder Mounted on Bridge (I-595)	8	340	155+60	159+00													
					Shoulder Mounted on MSE Wall (I-595)	8	1,120	159+00	170+00													
					Shoulder Mounted (I-595)	8	800	170+00	178+00													
					Ground Mounted	22	1,690	157+15	165+50													
								166+25	174+80													
B-2 (A-7, A-8)	Between SW 136th Avenue and Flamingo Road - South of I-595	Paradise Village (A-7)	Residential (Mobile Home Park)	CD4	Ground Mounted	22	1,540	190+00	194+00	71	5.1	43	0	43	7.4	$847,000	$19,698	Yes	Yes	$847,000	43	$19,698
		Kings Manor Estates (A-8)	Residential (Mobile Home Park)					194+60	206+00													
B-3 (A-9, A-10)	Between Flamingo Road and Hiatus Road - North of I-595	Plantation Acres (A-9)	Residential (Single Family)	CD10	Ground Mounted	22	4,740	217+60	265+00	39	7.6	30	1	31	8.6	$2,607,000	$84,097	No	Yes	$2,607,000	31	$84,097
		Acres South Park (A-10)	Park (Passive Recreation)																			
B-4 (A-13)	Between Hiatus Road and Nob Hill Road - North of I-595	Hawks Landing (A-13)	Residential (Single Family)	CD6	Ground Mounted	22	4,900	269+00	318+00	42	5.7	36	19	55	7.2	$2,695,000	$49,000	No	Yes	$2,695,000	55	$49,000
B-5 (A-17, A-18, A-19)	Between Nob Hill Road and Pine Island Road - North of I-595	The Trellises Condos (A-17)	Multi-Family Residential (Two Story Townhomes)	CD4	Ground Mounted	22	5,000	322+00	372+00	65	6.2	57	7	64	7.0	$2,750,000	$42,969	No	Yes	$2,750,000	64	$42,969
		Davide Isles (A-18)	Single Family Residential																			
		Jacaranda Villas (A-19)	Multi-Family Residential (Multi-Story Condominium Buildings)																			
B-6 (A-21)	Between Nob Hill Road and Pine Island Road - South of I-595	Evergreen Place (A-21)	Multi-Family Residential (Multi-Story Condominium Buildings)	CD6	Ground Mounted	22	1,100	340+00	351+00	41	4.3	19	0	19	5.6	$605,000	$31,842	Yes	Yes	$605,000	19	$31,842
B-7 (A-24, A-25)	Between Pine Island Road and University Drive - South of I-595	Arrowhead Golf and Tennis Club (A-24)	Multi-Family Residential (Multi-Story Apartment Buildings)	CD3	Ground Mounted	22	330	410+20	413+50	21	7.9	21	2	23	7.8	$511,500	$22,239	Yes	Yes	$511,500	23	$22,239
		Valencia Village (A-25)	Multi-Family Residential (Multi-Story Apartment Buildings)		Ground Mounted	22	600	414+40	420+40													
B-8 (A-26)	Between University Drive and Florida's Turnpike - North of I-595	Lake View Estates (A-26)	Residential (Single Family)	CD4	Ground Mounted	20	5,400	431+00	485+00	54	8.8	52	33	85	8.0	$2,700,000	$31,765	Yes	Yes	$2,700,000	85	$31,765
B-9 (A-27)	Between University Drive and Florida's Turnpike - North of I-595	Isla del Sol (A-27)	Residential (Single Family)	CD1	Ground Mounted	14	1,100	486+00	497+00	12	4.2	6	1	7	7.4	$385,000	$55,000	No	Yes	$385,000	7	$55,000
B-10 (A-36)	Between SR 7 and I-95 - North of I-595	Archstone Apartments (A-36)	Multi-Family Residential (Multi-Story Apartment Buildings)	CD4	Shoulder Mounted on MSE Wall	8	400	624+00	628+00	28	3.2	10	33	43	6.9	$1,756,000	$40,837	No	Yes	$1,756,000	43	$40,837
					Ground Mounted	22	2,960	595+40	626+80													
B-11 (A-40)	Between Griffin Road and I-595 - West of Florida's Turnpike	Everglades Lakes (A-40)	Residential (Mobile Home Park)	CD10	Shoulder Mounted	8	1,090	4761+00	4772+00	31	9.5	31	12	43	8.6	$1,352,160	$31,446	Yes	Yes	$1,352,160	43	$31,446
					Ground Mounted	20	1,780	4752+00	4769+00													
B-12 (A-42)	Between I-595 and Peters Road - West of Florida's Turnpike	Plantation Harbor (A-42)	Residential (Single Family)	CD3	Shoulder Mounted	12	2,625	4815+00	4841+25	23	9.2	23	6	29	8.8	$1,480,500	$51,052	No	Yes	$1,480,500	29	$51,052

I:\I-595PD&EStudy\Noise Study Report Draft\NSR_PostPublicHearing\[Table7-1_NoiseBarrier Summary Table021206.xls]Table7.1

Conceptual noise barrier design that meets FDOT's reasonable cost criteria and recommended for further consideration during the Final Design phase of the project

Conceptual noise barrier design that does not meet FDOT's reasonable cost criteria but considered a priority location for cost averaging during the Final Design phase of the project

LEGEND

NOISE BARRIERS ANALYZED

- GROUND MOUNTED NOISE BARRIER
- SHOULDER MOUNTED NOISE BARRIER

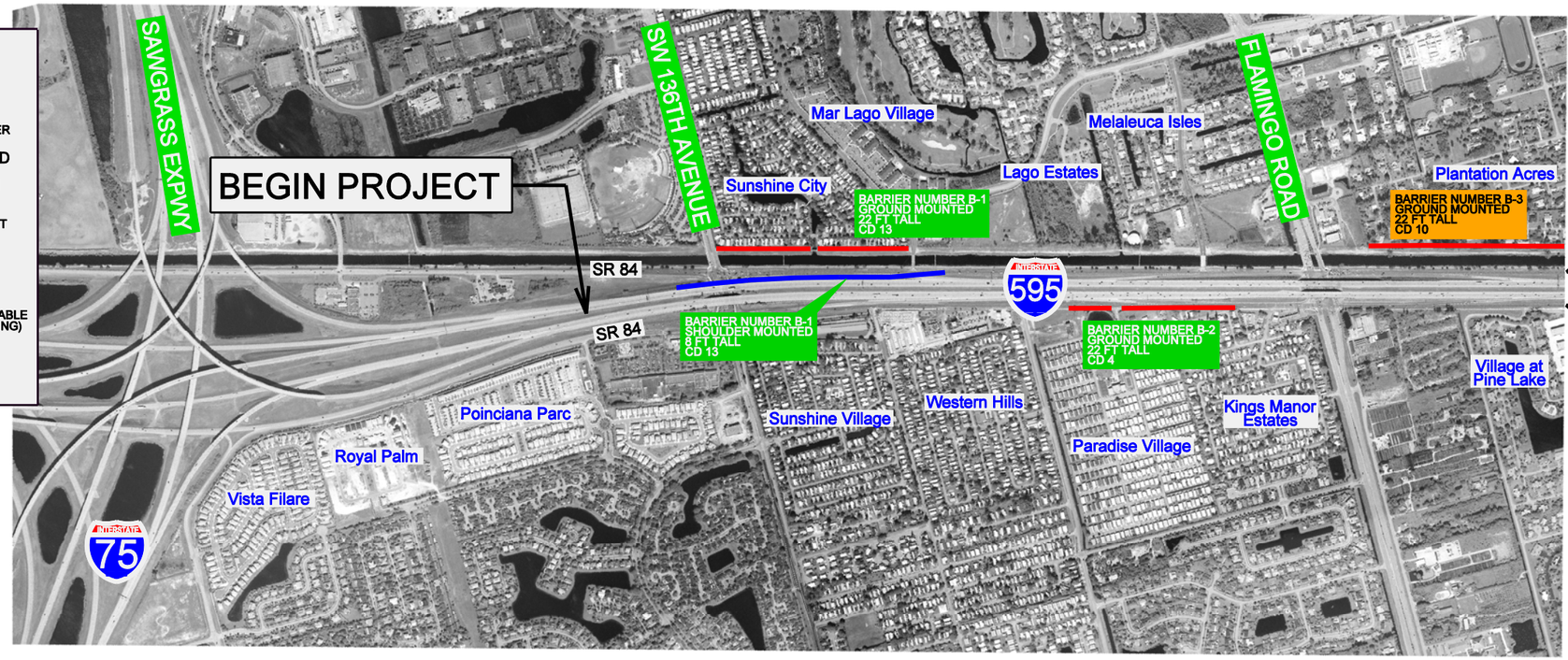
NOISE BARRIER LOCATION RECOMMENDED FOR FURTHER CONSIDERATION AND COMMUNITY INPUT DURING FINAL DESIGN PHASE

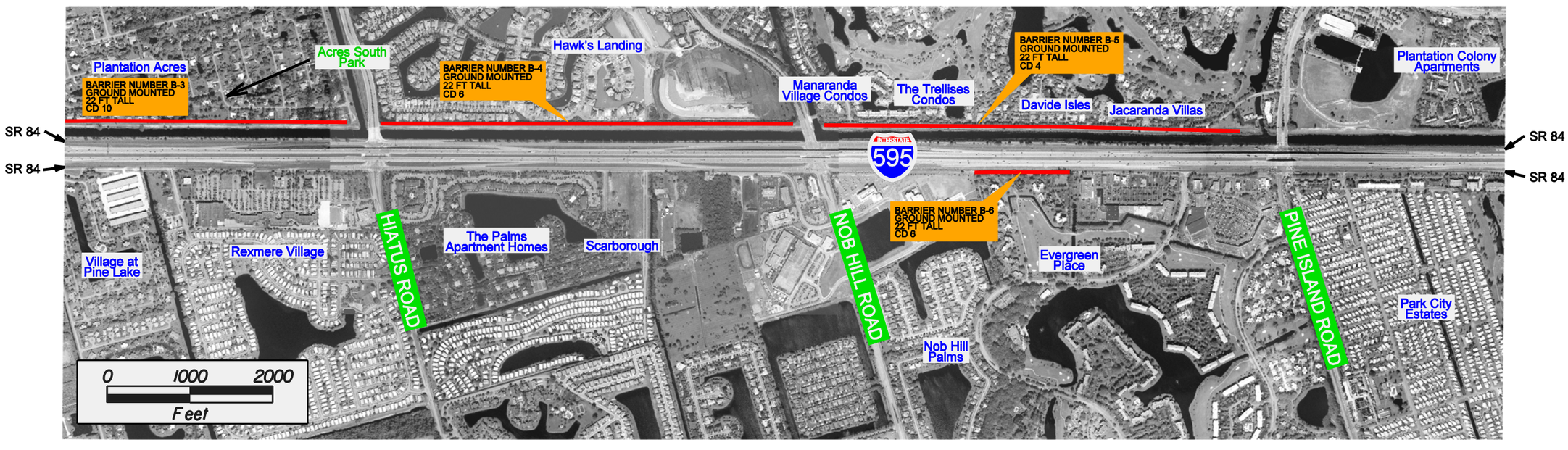
BARRIER DESIGN MEETS FDOT'S REASONABLE COST CRITERIA

BARRIER NUMBER
BARRIER TYPE
BARRIER HEIGHT
CONCEPTUAL DESIGN NUMBER

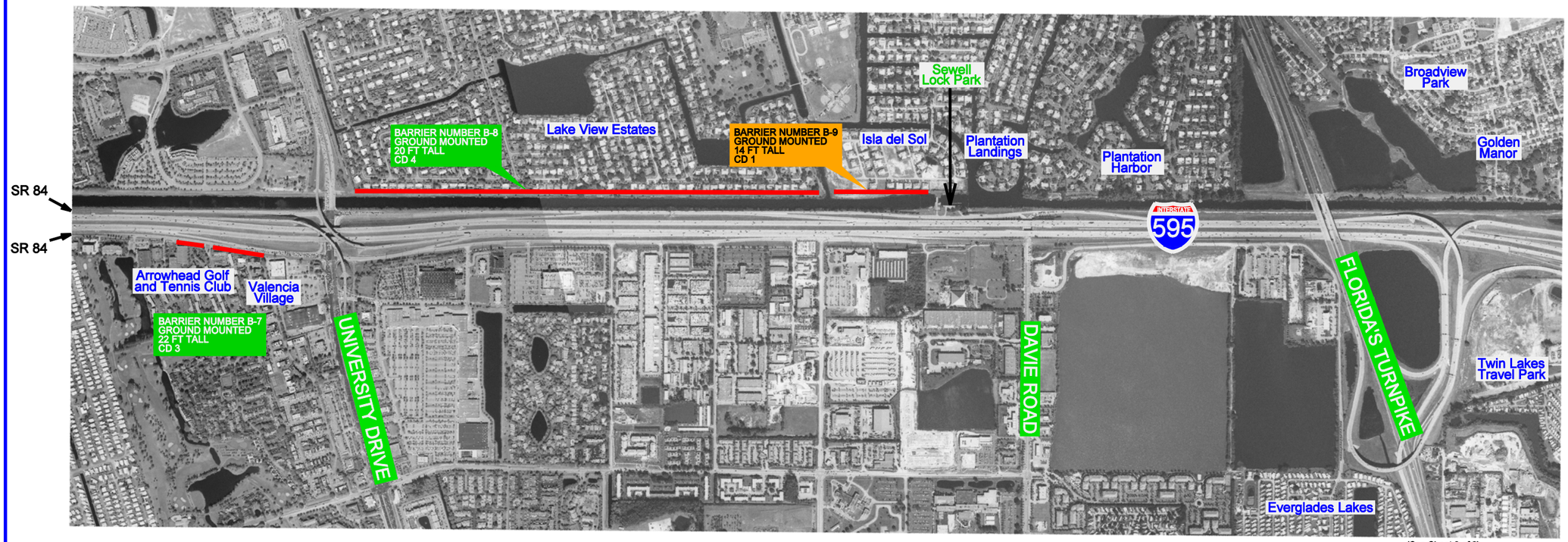
BARRIER DESIGN DOES NOT MEET FDOT'S REASONABLE COST CRITERIA (PRIORITY SITE FOR COST AVERAGING)

BARRIER NUMBER
BARRIER TYPE
BARRIER HEIGHT
CONCEPTUAL DESIGN NUMBER

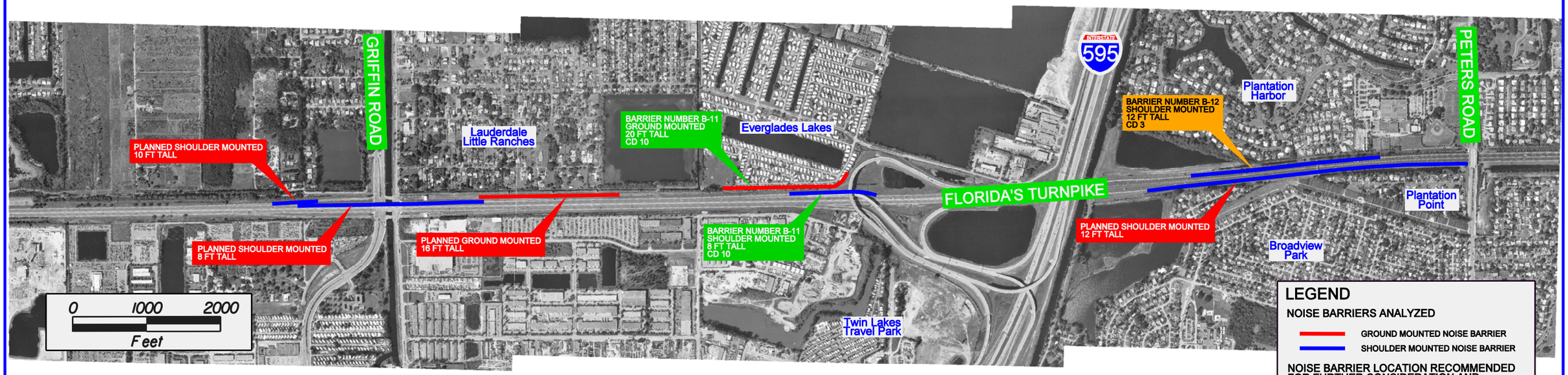




RS&H Reynolds, Smith and Hills, Inc. ARCHITECTURE, ENGINEERING AND PLANNING	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LOCATIONS RECOMMENDED FOR FURTHER CONSIDERATION FOR NOISE BARRIERS DURING THE FINAL DESIGN PHASE OF THE PROJECT	FIGURE 7.1 1 of 3



RS&H Reynolds, Smith and Hills, Inc. ARCHITECTURE, ENGINEERING AND PLANNING	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LOCATIONS RECOMMENDED FOR FURTHER CONSIDERATION FOR NOISE BARRIERS DURING THE FINAL DESIGN PHASE OF THE PROJECT	FIGURE 7.1 2 of 3



RS&H Reynolds, Smith and Hills, Inc. ARCHITECTURE, ENGINEERING AND PLANNING	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	I-595 PD&E STUDY	LOCATIONS RECOMMENDED FOR FURTHER CONSIDERATION FOR NOISE BARRIERS DURING THE FINAL DESIGN PHASE OF THE PROJECT	FIGURE 7.1 3 of 3

8.0 CONSTRUCTION AND VIBRATION

During construction of the project, there is the potential for noise impacts to be substantially greater than those resulting from normal traffic operations because heavy equipment is typically used to build roadways. In addition, construction activities may result in vibration impacts. Therefore, early identification of potential noise/vibration sensitive sites along the project corridor is important in minimizing noise and vibration impacts. The project area does include residential areas that may be affected by noise and vibration associated with construction activities. Construction noise and vibration impacts to these sites will be minimized by adherence to the controls listed in the latest edition of the FDOT's Standard Specifications for Road and Bridge Construction.

9.0 COORDINATION WITH LOCAL OFFICALS

Coordination with local agencies and officials has been accomplished during the development of this project. In addition, local and community officials have had the opportunity to comment on the proposed project at the public meetings.

FDOT is responsible for taking measures that are prudent and feasible to assure that location and design of highways are compatible with existing and planned land uses. This report provides information that can be used by local communities to protect future land development from becoming incompatible with anticipated high traffic noise levels.

To aid Broward County in promoting land use compatibility, generalized future noise impact contours for the properties in the immediate vicinity of the project have been developed. These contours represent the approximate distance from the edge of the nearest travel lane of I-595/SR 84 to the limits of the area predicted to approach or exceed the NAC of 67 dBA. The distances to the 66-dBA contour are summarized by project segment in Table 9-1. These contours do not include or assume any traffic noise shielding effects of vegetation or other obstructions such as buildings. To minimize the potential for land use incompatibility, noise sensitive land uses (e.g., residential) should be located beyond these distances.

NOISE STUDY REPORT

Table 9-1 Distance to 66 dBA Noise Contour for the Build Alternatives 1B and 2A (Design Year 2034)

Representative Roadway Segment	Proposed Number of Lanes					Distance from Nearest Edge-of-Pavement to 66 dBA Noise Level (feet)
	I-595			SR 84		
	Westbound	Eastbound	Reversible Lanes	Westbound	Eastbound	
Alternative 1B						
SW 136th Avenue to Flamingo Road	4	5	2	3	2	310
Nob Hill Road to Pine Island Road	6	4	2	3	3	515
Alternative 2A						
SW 136th Avenue to Flamingo Road	6	5	2	3	2	410
Nob Hill Road to Pine Island Road	6	4	3	3	3	550

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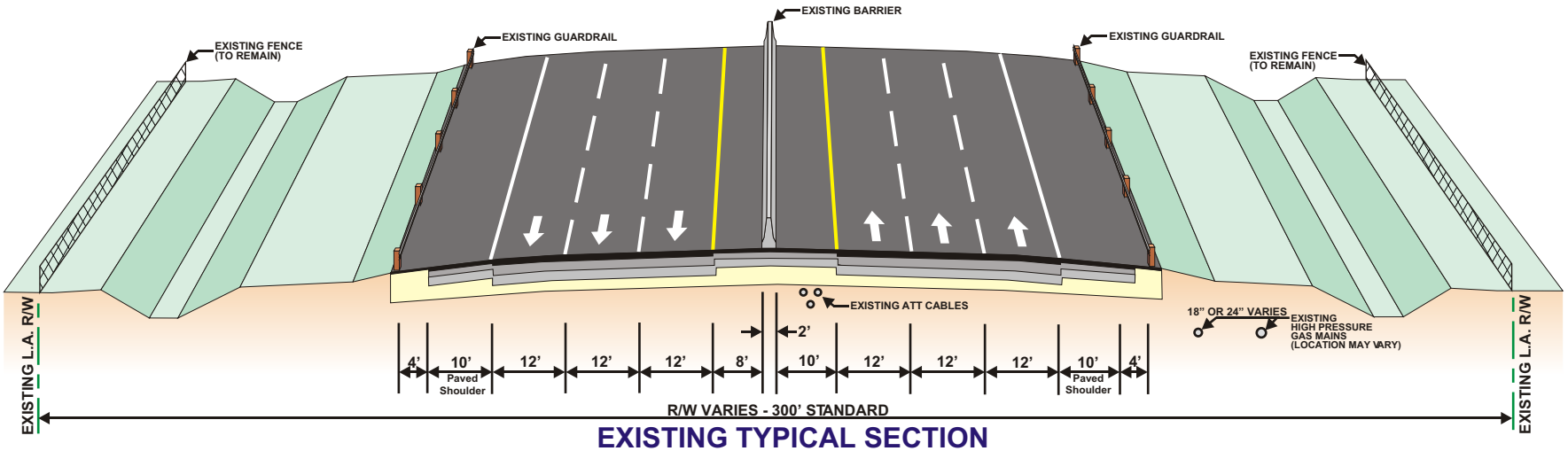
APPENDIX A

EXISTING AND PROPOSED TYPICAL SECTIONS
WIDENING FLORIDA'S TURNPIKE PROJECT FROM GRIFFIN ROAD
TO NORTH OF SUNRISE BOULEVARD
FINANCIAL PROJECT ID NO.: 406094-1
NOISE STUDY REPORT (JULY 8, 2005)

FLORIDA'S TURNPIKE FROM GRIFFIN ROAD TO NORTH OF SUNRISE BOULEVARD
LOOKING NORTH



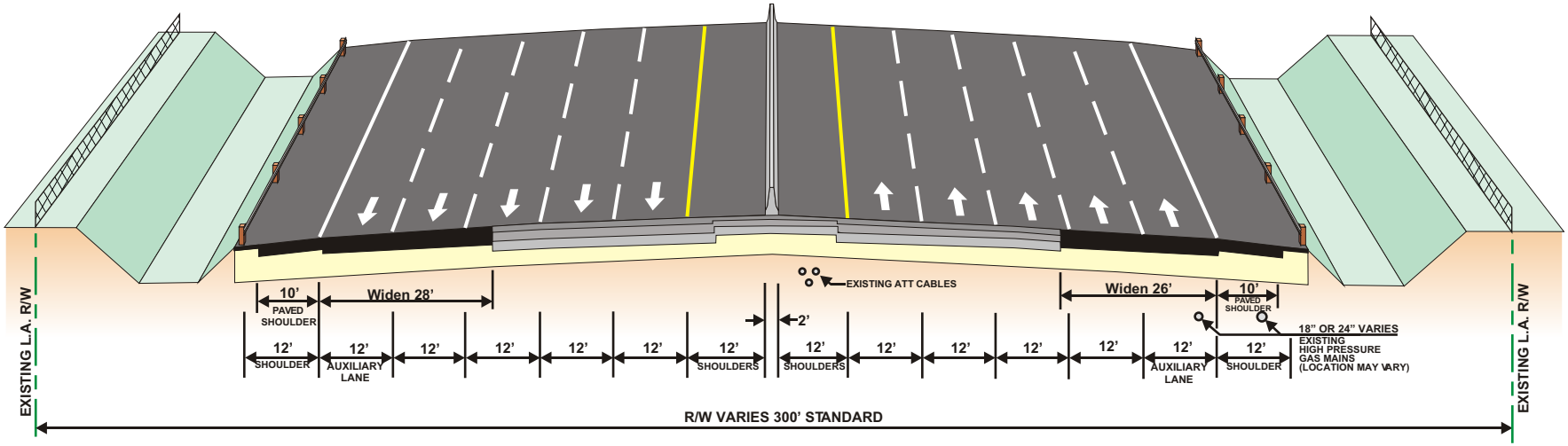
EXISTING TYPICAL SECTION
SIX LANES

WIDENING FLORIDA'S TURNPIKE FROM GRIFFIN ROAD TO NORTH OF SUNRISE BOULEVARD FINANCIAL PROJECT NO.: 406094-1

FIGURE 2-1. FLORIDA'S TURNPIKE EXISTING TYPICAL SECTION

O:\\1043335.000\Griffin to Sunrise\SEIR\graphix\turnpike existing.cdr

FLORIDA'S TURNPIKE FROM GRIFFIN ROAD TO NORTH OF SUNRISE BOULEVARD
LOOKING NORTH



PROPOSED TYPICAL SECTION
EIGHT LANES WITH TWO AUXILIARY LANES

WIDENING FLORIDA'S TURNPIKE FROM GRIFFIN ROAD TO NORTH OF SUNRISE BOULEVARD FINANCIAL PROJECT NO.: 406094-1

FIGURE 2-3. FLORIDA'S TURNPIKE PROPOSED TYPICAL SECTION

O:\\1043335.000\Griffin to Sunrise\SEIR\graphix\turnpike proposed.cdr