

Draft Noise Study Report
State Road 869 / SW 10th Street Connector
Project Development and Environment (PD&E) Study

SW 10th Street from Florida's Turnpike / Sawgrass
Expressway to I-95 (SR 869/Sawgrass Expressway MP 21.077
to MP 21.835 and SW 10th Street MP 0.00 to 1.427)

ETDM No.: 14291 / FAP No.: TBD
Financial Project ID No. 439891-1-22-02
Broward County, Florida



Prepared for:
FDOT District Four
3400 W. Commercial Blvd.
Ft. Lauderdale, FL 33309

August 2019

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated December 14, 2016 and executed by the Federal Highway Administration and FDOT.

Draft Noise Study Report
State Road 869 / SW 10th Street Connector
Project Development and Environment (PD&E) Study

SW 10th Street from Florida's Turnpike / Sawgrass
Expressway to I-95 (SR 869/Sawgrass Expressway MP 21.077
to MP 21.835 and SW 10th Street MP 0.00 to 1.427)

ETDM No.: 14291 / FAP No.: TBD
Financial Project ID No. 439891-1-22-02
Broward County, Florida



Prepared for:
FDOT District Four
3400 W. Commercial Blvd.
Ft. Lauderdale, FL 33309

Prepared by:
RS&H, Inc.
3125 W. Commercial Blvd., Suite 130
Ft. Lauderdale, FL 33309

August 2019



Noise Study Report
For the SR 869/SW 10th Street Connector PD&E Study

TABLE OF CONTENTS

List of Tables iii
List of Figures..... iii
1.0 Introduction 1-1
1.1 Project Description 1-3
1.2 Purpose and Need..... 1-4
1.2.1 Project Status 1-4
1.2.2 System Linkage..... 1-4
1.2.3 Capacity..... 1-5
1.2.4 Transportation Demand 1-6
1.2.5 Legislation 1-6
1.2.6 Social Demand and Economic Development 1-6
1.2.7 Modal Interrelationships 1-7
1.2.8 Traffic Safety..... 1-7
1.2.9 Roadway Deficiencies 1-8
1.3 Existing Conditions 1-8
1.3.1 Typical Sections 1-8
1.4 Project Alternatives..... 1-11
1.4.1 No Action Alternative 1-11
1.4.2 Build Alternatives..... 1-11
2.0 Methodology 2-1
2.1 Noise Metric..... 2-2
2.2 Traffic Data..... 2-2
2.3 Noise Abatement Criteria 2-3
2.4 Noise Abatement Measures 2-3
2.5 Existing and Future Land Use 2-7





3.0 Traffic Noise Analysis..... 3-1

 3.1 Model Validation 3-1

 3.2 Predicted Noise Levels and Abatement Analysis 3-6

 3.2.1 South of SW 10th Street from Florida’s Turnpike to Waterways Boulevard -
 The Enclave Apartments at Waterways (CNE-E1S) 3-8

 3.2.2 South of SW 10th Street from Waterways Boulevard to Powerline Road –
 Waterways, Independence Bay, and Freedom Square Condominiums (CNE-
 E2S) 3-10

 3.2.3 North of SW 10th Street from Florida’s Turnpike to Waterways Boulevard -
 Quiet Waters Park (CNE-E3N)..... 3-13

 3.2.4 South of SW 10th Street from SW 30th Avenue to SW 24th Avenue - Waterford
 Courtyards, Crystal Heights, and Crystal Heights Park (CNE-E4S)..... 3-15

 3.2.5 North of SW 10th Street from West of SW 30th Avenue to Military Trail -
 Century Village (CNE-E5N)..... 3-20

4.0 Conclusions 4-1

5.0 Construction Noise and Vibration..... 5-1

6.0 Community Coordination 6-1

7.0 References 7-1

List of Tables

Table	Title	Page
Table 2.1-1:	Sound Levels of Typical Noise Sources and Environments.....	2-2
Table 2.3-1:	Noise Abatement Criteria [Hourly A-Weighted Sound Level dB(A)].....	2-4
Table 3.1-1:	Noise Monitoring Data and TNM 2.5 Model Validation Results	3-2
Table 3.2-2:	Summary of Traffic Noise Impacts by Noise Sensitive Area.....	3-7
Table 3.2.1-1:	Noise Barrier Analyses for Common Noise Environment CNE-E1S (The Enclave Apartments at Waterways).....	3-9
Table 3.2.2-1:	Noise Barrier Analyses for Common Noise Environment CNE-E2S (Waterways, Independence Bay, and Freedom Square Communities).....	3-12
Table 3.2.3-1:	Noise Barrier Analyses for Common Noise Environment CNE-E2S (Waterways, Independence Bay, and Freedom Square Communities).....	3-14
Table 3.2.3-2:	Conceptual Noise Barrier Design – Usage Analysis for Quiet Waters Park Recreation Trail (CNE-E3N)	3-16
Table 3.2.4-1:	Noise Barrier Analyses for Common Noise Environment CNE-E4S (Waterford Courtyards and Crystal Heights Communities and Crystal Heights Park)	3-18
Table 3.2.5-1:	Noise Barrier Analyses for Common Noise Environment CNE-E5N (Century Village Community).....	3-21
Table 4-1:	Noise Barrier Evaluation Summary	4-2
Table 6-1:	Design Year (2040) Noise Impact Contours	6-2

List of Figures

Figure	Title	Page
Figure 1.1.1	Project Location Map	1-2
Figure 2.1.1	Existing SW 10 th Street Typical Section - Sawgrass Expressway to Powerline Road.....	1-9
Figure 2.1.2	Existing SW 10 th Street Typical Section - Powerline Road to Quiet Water Business Park Entrance Road.....	1-10
Figure 2.1.3	Existing SW 10 th Street Typical Section - Quiet Water Business Park Entrance Road to Military Trail	1-10
Figure 2.1.4	Existing SW 10 th Street Typical Section - Military Trail to East Newport Center Drive.....	1-10
Figure 2.5.1	Existing Land Use	2-8
Figure 2.5.2	Future Land Use.....	2-9

List of Appendices

APPENDIX A	Table 2.2-1: Traffic Data for SR/869 SW 10 th Street Connector PD&E Noise Study
APPENDIX B	Figure 3.2.1 Noise Analysis Map
APPENDIX C	Table 3.2.1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results

1.0 Introduction

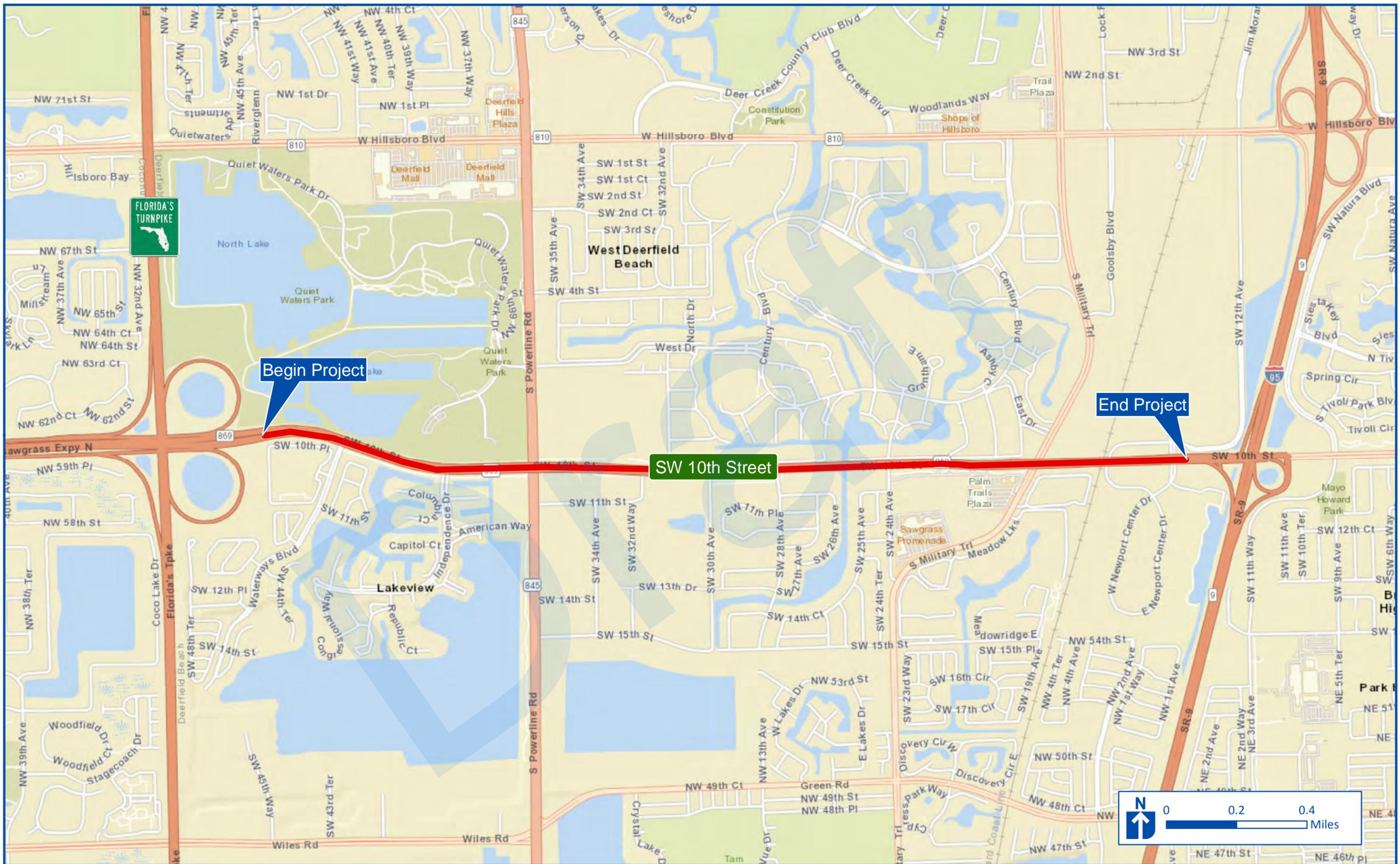
The Florida Department of Transportation (FDOT) is evaluating alternatives to improve SR 869 (SW 10th Street) from Sawgrass Expressway/Florida's Turnpike to west of I-95, a distance of approximately 3.0 miles. The project is in Broward County, Florida and is contained within the City of Deerfield Beach. **Figure 1.1.1** shows the limits of the SW 10th Street Connector PD&E Study. As part of this PD&E Study, a traffic noise study was performed. The traffic noise study was performed in accordance with the Federal Highway Administration's (FHWA) Noise Standard, Title 23 of the Code of Federal Regulations, Part 772 (23 CFR 772), Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2010), the FDOT's PD&E Manual, Part 2, Chapter 18, Highway Traffic Noise (January 14, 2019), and FDOT's Traffic Noise Modeling and Analysis Practitioners Handbook (January 1, 2016).

The primary objectives of this noise study were to:

- Describe the existing site conditions including noise sensitive land uses within the project limits;
- Document the methodology used to conduct the noise assessment;
- Assess the significance of traffic noise levels on noise sensitive sites for the No-Build and Build Alternatives; and
- Evaluate abatement measures for those noise sensitive sites that, under the Build Alternative, approach or exceed the Noise Abatement Criteria (NAC) set forth by the FDOT and FHWA or where a substantial increase occurs.

Secondary objectives of this study included the consideration of construction noise and vibration impacts as well as the development of noise contours, that can be used in the future by local municipal and county government agencies to identify compatible land uses along the project roadways.

The purpose of this Noise Study Report is to present the findings of the traffic noise analysis. This report also provides technical documentation for the findings described in the project's Preliminary Engineering Report (PER) and Type 2 Categorical Exclusion Environmental Determination Form.



State Road 869 / SW 10th Street Connector PD&E Study from Florida's Turnpike /
 Sawgrass Expressway to I-95
 Financial Project ID: 439891-1-22-02, ETDM No: 14291

Figure 1.1.1
 Project Location Map

1.1 Project Description

SW 10th Street currently consists of six lanes (three in each direction) from Florida's Turnpike to SR 845 (Powerline Road), four lanes (two in each direction) from Powerline Road to east of Military Trail, and five lanes (two westbound and three eastbound) from west of Military Trail to I-95. This segment of SW 10th Street is functionally classified as a Divided Urban Principal Arterial and has posted speed limits of 45 miles per hour from Florida's Turnpike to Military Trail, and 40 miles per hour from Military Trail to I-95. The access management classification from Florida's Turnpike to Powerline Road is Class 1. East of Powerline Road, the access management classification is Class 3.

SW 10th Street is an east-west Principal Arterial that connects three limited access facilities: Florida's Turnpike, Sawgrass Expressway, and I-95. SW 10th Street is part of the state's Strategic Intermodal System (SIS) and the National Highway System (NHS). SW 10th Street from Florida's Turnpike to I-95 is a missing link in the existing and planned regional express lanes system network. This study is proposing to add additional lanes in the corridor for the purpose of closing this gap and providing a continuous link in the managed lanes network that will be separate from the local SW 10th Street facility. In addition, SW 10th Street is designated as an evacuation route.

The proposed improvements are intended to reduce the amount of traffic on local SW 10th Street by allowing vehicles to bypass the area by utilizing the managed lane facility. The ability to provide relief for local traffic is an objective of the improved connectivity between the three limited access facilities by providing dual systems (Local Access and Limited Access) within the SW 10th Street right-of-way. Because SW 10th Street is impacted by three major limited access facilities, local traffic relief is necessary before future improvements to the three limited access facilities are implemented. Improvements are planned for the interchange at the Sawgrass Expressway/Florida's Turnpike to the west and I-95 at SW 10th Street interchange to the east as part of separate projects.

Public involvement is essential in this PD&E Study due to the residential developments and local businesses along SW 10th Street, as well as in the surrounding areas, as this segment is a missing link in the south Florida managed lanes network. A Community Oversight Advisory Team (COAT) was formed by the Broward Metropolitan Planning Organization (MPO) and has been working towards building consensus on the future of the SW 10th Street corridor. Public involvement efforts are ongoing with the Broward MPO as a partner, continuing their efforts that began with the establishment of the COAT. Public involvement initiatives, including working directly with the COAT, as well as expanded and full representation from the City of Deerfield Beach, City of Parkland, City of Coral Springs, the

City of Coconut Creek, the Broward MPO, the FDOT and members of the public, are a major part of the PD&E Study.

1.2 Purpose and Need

The purpose of this project is to improve local traffic flow by implementing a separate limited access connection between the Sawgrass Expressway and the I-95 managed lanes, increase capacity, and eliminate various existing operational and safety deficiencies along SW 10th Street between the Sawgrass Expressway, Florida's Turnpike and I-95 while also providing improved connectivity of the regional transportation network.

The primary need for this project is based on capacity and operational deficiencies for local traffic and regional connector traffic, system linkage and safety issues, with secondary considerations for the needs of modal interrelationships, transportation demand, social demands and economic development, and emergency response/evacuation for local traffic and the adjacent communities, as well as regional mobility. The primary and secondary needs for the project are discussed in further detail below.

1.2.1 Project Status

The SW 10th Street Connector project is in the Broward MPO jurisdiction. The Broward MPO Transportation Improvement Program (TIP) Fiscal Year 2020 - 2024 includes funding for the SW 10th Street Connector from Powerline Road to west of Military Trail Project for Preliminary Engineering, Right-of-Way, and Construction. The FDOT State Transportation Improvement Program (STIP) 2018 includes funding for Preliminary Engineering and Right-of-Way in years 2019 to 2021. Funding for a Design-Build method of delivery is included in 2022. The FDOT SIS Adopted Five Year Plan includes funding for the SW 10th Street Connector from Powerline Road to west of Military Trail Project for Preliminary Engineering, Right-of-Way, and Construction.

The TIP, STIP, and Long Range Transportation Plan (LRTP) are consistent in respect to total funding and time frame. However, the TIP, STIP, and LRTP have different physical project limits than the proposed PD&E Study. The planning documents include SW 10th Street from Powerline Road to Military Trail whereas, this PD&E Study extends the limits along SW 10th Street from the Sawgrass Expressway/Florida's Turnpike to I-95. The PD&E study limits originally matched the planning documents; however, the limits were extended in order to provide independent utility and a more logical termini for the project.

1.2.2 System Linkage

SW 10th Street is part of the state's SIS and the NHS. The SIS is an intermodal network of transportation facilities that seamlessly flows from one mode to the next with the goal of

providing the highest degree of mobility for people and goods traveling throughout Florida. The SIS is an integral piece of Florida's goal to enhance economic competitiveness and quality of life for its citizens and visitors. The NHS is a network of strategic highways within the United States, including the Interstate Highway System and other roads serving major airports, ports, rail or truck terminals, railway stations, pipeline terminals and other strategic transport facilities. Thus, the SW 10th Street corridor is an important facility in the transportation network.

The SW 10th Street corridor provides the opportunity for commuters and local residents to connect to three major limited access facilities: Florida's Turnpike, Sawgrass Expressway, and I-95. The ability to provide relief for local traffic is a component of the proposed connectivity improvements between the three limited access facilities by providing dual systems (Local Access and Limited Access) within the SW 10th Street right-of-way. Because SW 10th Street is impacted by these major limited access facilities, local traffic relief is necessary before future improvements to the three limited access facilities are implemented. These facilities are also on the regional freight network as identified in the March 2010 South Florida Regional Freight Plan (Project #269). Florida's Turnpike provides limited access north-south connectivity from Miami-Dade County to Orlando and connects to I-75 northwest of Orlando. The Sawgrass Expressway provides limited access connectivity from the I-75/I-595 Interchange to Florida's Turnpike at SW 10th Street Interchange. I-95 is the primary north-south interstate facility that links all major cities along the Atlantic Seaboard.

SW 10th Street from Florida's Turnpike to I-95 is a Principal Arterial facility serving local residential communities, commercial properties and commuters alike. This section of roadway is considered the missing link in the existing and planned regional express lane network. This project seeks to improve this linkage by reducing congestion and completing the express lane network while reducing operational and safety deficiencies for the local users. The project will consider implementing limited access express lanes along SW 10th Street in the project area.

1.2.3 Capacity

A need exists to improve local and regional traffic operations along the SW 10th Street corridor. Traffic volumes along SW 10th Street between the Sawgrass Expressway/Florida's Turnpike and I-95 have consistently increased over the past 15 years and are expected to continue to grow over the next 20 years. The 2016 Average Annual Daily Traffic (AADT) on SW 10th Street was as follows:

- Sawgrass Expressway/Florida's Turnpike to Powerline Road experienced an AADT of 38,000 vehicles per day (vpd);
- Powerline Road to Military Trail has an AADT of 46,000 vpd; and

- Military Trail to I-95 experienced an AADT of 54,000 vpd.

The existing traffic on SW 10th Street between Powerline Road and I-95 exceeds the current capacity of a four-lane arterial roadway which can accommodate approximately 40,000 vpd. The capacity of SW 10th Street from Sawgrass Expressway/Florida's Turnpike to Powerline Road is 60,000 vpd. With the anticipated growth and the combination of local traffic and those travelers going from one limited access facility to the next, this segment is expected to reach capacity before 2040.

Additionally, five intersections currently fall below acceptable Level of Service (LOS) targets during either the AM or PM peak during the existing conditions:

- SW 10th Street at Powerline Road operates at LOS F in both the AM and PM peak;
- SW 10th Street at SW 20th Avenue operates at LOS F in both the AM and PM peak;
- SW 10th Street at SW 24th Avenue operates at LOS F in both the AM and PM peak;
- SW 10th Street at Military Trail operates at LOS F in both the AM and PM peak; and
- SW 10th Street at the I-95 Northbound ramps operate at LOS D in the AM peak and LOS F in the PM peak.

These conditions are existing concerns and are projected to worsen in the future if no action is taken. Even with an assumed 10 percent travel time savings or reduction in delay from possible traffic signal optimization, the peak hour operations are not anticipated to operate at an acceptable LOS (LOS D or better).

1.2.4 Transportation Demand

The SW 10th Street Connector PD&E Study is currently included in the Broward MPO TIP. The SW 10th Street Connector PD&E Study has been advanced to move forward in coordination with the I-95 from SW 10th Street to Hillsboro Boulevard PD&E Study (FPID: 436964-1) to the east as well as the Sawgrass Expressway widening and interchange PD&E Study (FPID: 435763-1) to the west. Additionally, the 2045 SIS Multi-Modal Unfunded Needs Plan listed adding capacity to this segment of SW 10th Street as a needed improvement.

1.2.5 Legislation

At this time, there is no legislation mandating the implementation of this project.

1.2.6 Social Demand and Economic Development

Social and economic demands on the SW 10th Street corridor will continue to increase as population and employment increase in Broward County, and the greater south Florida region. The University of Florida Bureau of Economic and Business Research (BEBR) high end estimate predicts Broward County's population will grow to 2.3 million by 2040, an

increase of 34 percent from the year 2011. This regional population growth will increase travel demands on the SW 10th Street corridor. Due to the built-out nature of the local area surrounding the SW 10th Street corridor, the growth will occur in the region as a whole, necessitating connections between the limited access facilities.

Multiple residential developments and businesses are located along the SW 10th Street corridor; therefore, this project will consider livability issues as well as vehicular movement. Capacity improvements to SW 10th Street have previously not advanced to design and construction. However, the Broward MPO Board directed its staff to reach out to communities along the corridor and initiate a consensus building effort to evaluate the best way to accommodate the long-term traffic demands as well as the local community considerations. As part of this consensus-building effort, a group of concerned individuals, known as the Community Oversight Advisory Team (COAT), was assembled to represent the communities along the corridor, as well as throughout the greater north Broward County area, to identify the long-term opportunities and vision for the corridor. The COAT developed recommendations for the corridor to be considered by the FDOT in evaluating the improvements in a PD&E Study.

1.2.7 Modal Interrelationships

Sidewalks are located along SW 10th Street's eastbound and westbound lanes from Military Trail to I-95; however, from Waterways Boulevard to Military Trail, sidewalks are only present in the eastbound direction. No Broward County Transit (BCT) services are present along SW 10th Street. However, Military Trail and Powerline Road both have transit options, Tri-Rail and Broward County Bus Route No. 14, respectively. The City of Deerfield Beach has partnered with BCT to provide Express I and II routes which is a community bus service. Express I and II Bus Routes are available Monday through Friday from 8 AM to 4 PM. Express Bus I Route utilizes SW 10th Street from the eastern project limits to Powerline Road. The Express I Route has one stop adjacent to the corridor - Stop 5 (Walmart). Express II Route utilizes SW 10th Street outside of the project limits. Bicycle facilities are not designated along SW 10th Street; however, existing five-foot paved shoulders, which serve as undesignated bicycle lanes, are present in both directions. The Broward MPO assigned a LOS F to the bicycle, pedestrian, and transit services along SW 10th Street. The proposed improvements will provide future accommodations for bicyclists and pedestrians, and transit modes.

1.2.8 Traffic Safety

A need exists to resolve safety issues within the project limits along the existing SW 10th Street corridor. SW 10th Street experienced a total of 896 crashes from 2012 to 2016 in this corridor. There were 342 injury crashes and one fatal crash during the study period. A

majority of crashes were rear end collisions accounting for 490 crashes, followed by angle collisions accounting for 102 crashes, and 97 sideswipe crashes. The total number of crashes has increased over the five year period, with an average of 179 crashes per year. This project seeks to reduce congestion, thus mitigating existing crash patterns, and to enhance safety through the addition of improved bicycle/pedestrian features along the local system.

The project is anticipated to improve emergency evacuation and response capabilities by enhancing capacity and connectivity to major arterials designated on the state evacuation route. SW 10th Street, Florida's Turnpike, Sawgrass Expressway, and I-95 serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management (FDEM) and by Broward County. SW 10th Street moves traffic from the east to I-95, Florida's Turnpike, and the Sawgrass Expressway. Improved travel times would also result in improved emergency response for local residents and for transport to regional facilities. Broward County Fire and Rescue Station 66 is located at 590 South Powerline Road, approximately 0.3 miles to the north of the study area.

1.2.9 Roadway Deficiencies

Currently, SW 10th Street provides FDOT standard width travel and turn lanes. However, as previously mentioned, sidewalk is limited to the south side of SW 10th Street from Waterways Boulevard to Military Trail. Sidewalk is present along SW 10th Street eastbound and westbound from Military Trail to I-95. Bicycle facilities are not designated along SW 10th Street, although existing five-foot paved shoulders, which serve as undesignated bicycle lanes, are present in both directions. No other known roadway deficiencies exist along the corridor. The proposed improvements will address these deficiencies.

1.3 Existing Conditions

1.3.1 Typical Sections

SW 10th Street is a four-lane to six-lane divided, urban principal arterial and is a designated SIS facility. Sidewalk is present on at least one-side of the road for the entire corridor. Bicycle lanes are sporadic along the corridor. The existing SW 10th Street typical sections are shown in **Figures 2.1.1, 2.1.2, 2.1.3** and **2.1.4** located at the end of this section.

SW 10th Street from the end of the Sawgrass Expressway to Powerline Road (~0.8 miles) typical section (see **Figure 2.1.1**) consists of:

- Three to four 12-foot travel lanes in each direction;
- Five-foot sidewalk on the south side of SW 10th Street starting east of Waterways Boulevard;
- Raised median varies from 30 to 65 feet; and

- Right-of-way width of 250 feet.

SW 10th Street from Powerline Road to Quiet Waters Business Park Entrance Road (~0.4 miles) typical section (see **Figure 2.1.2**) consists of:

- Three 12-foot travel lanes in each direction;
- Five-foot paved shoulders that serve as bicycle lanes in both directions;
- Six-foot sidewalk on both sides of SW 10th Street;
- 28-foot wide raised median; and
- Right-of-way width of 316 feet.

SW 10th Street from Quiet Waters Business Park Entrance Road to Military Trail (~1.1 miles) typical section (see **Figure 2.1.3**) consists of:

- Two 12-foot travel lanes in each direction;
- Five-foot paved shoulders that serve as bicycle lanes in both directions;
- Six-foot sidewalk on the south side of SW 10th Street;
- 16-foot wide raised median; and
- Right-of-way width that varies from 215 feet to 300 feet.

SW 10th Street from Military Trail to East Newport Center Drive (~0.4 miles) typical section (see **Figure 2.1.4**) consists of:

- Three 11-foot travel lanes in each direction;
- Three-foot paved shoulder;
- Five-foot curb-line sidewalk on both sides of SW 10th Street;
- Variable width raised median (15 feet to 26 feet); and
- Right-of-way width of approximately 250 feet.

Figure 2.1.1 Existing SW 10th Street Typical Section - Sawgrass Expressway to Powerline Road

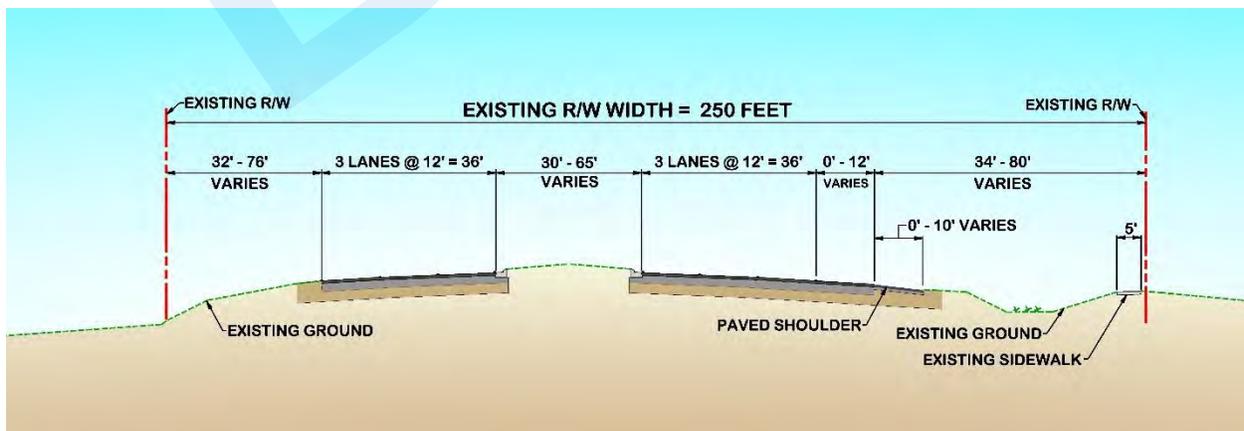


Figure 2.1.2 Existing SW 10th Street Typical Section - Powerline Road to Quiet Water Business Park Entrance Road

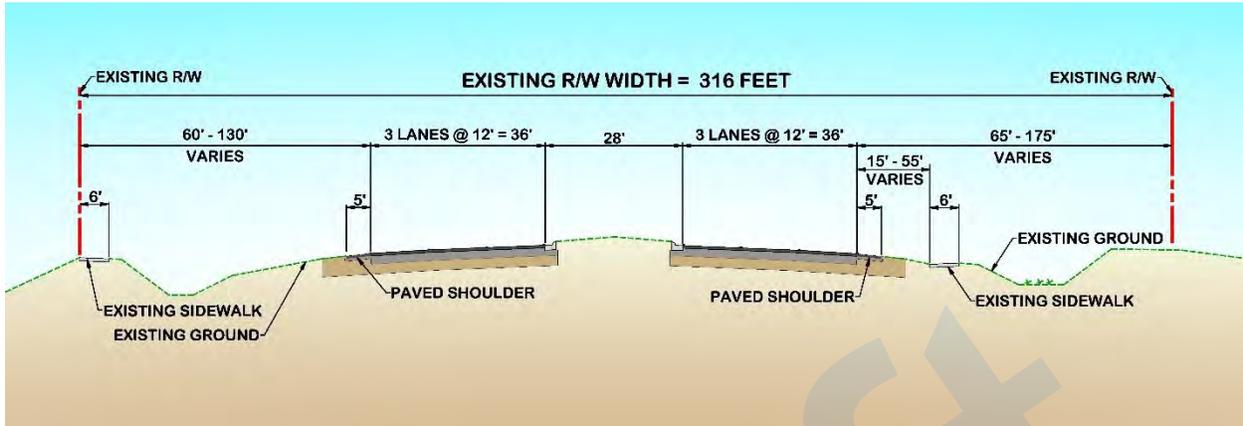


Figure 2.1.3 Existing SW 10th Street Typical Section - Quiet Water Business Park Entrance Road to Military Trail

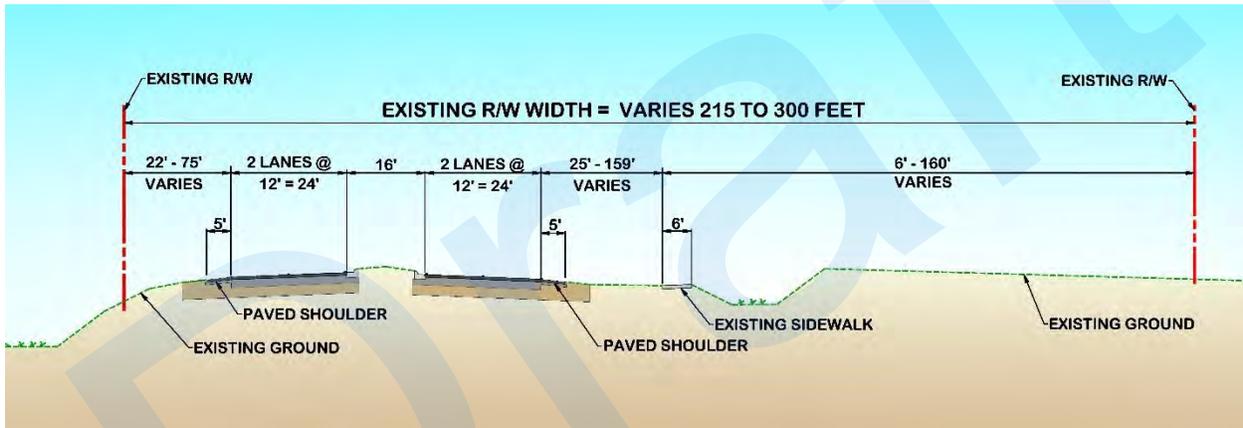
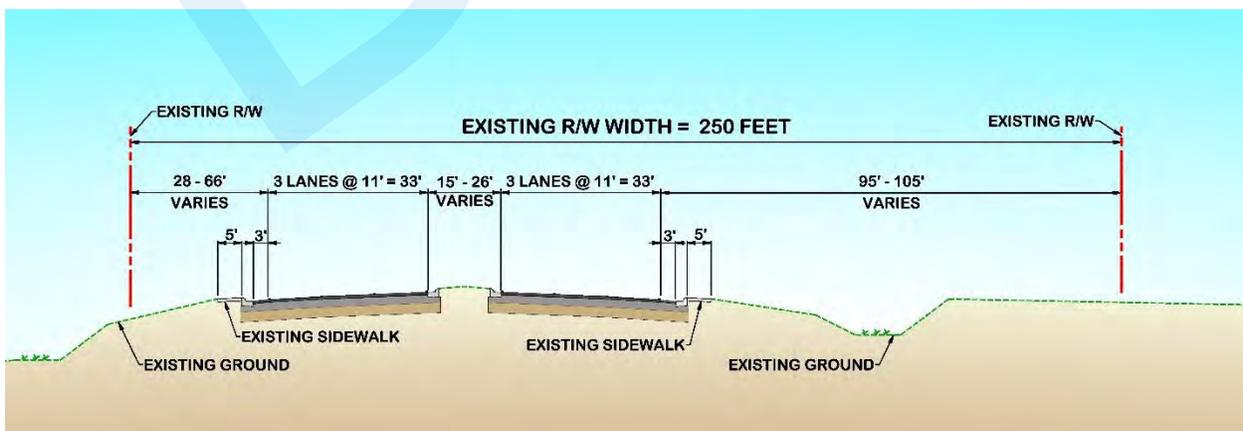


Figure 2.1.4 Existing SW 10th Street Typical Section - Military Trail to East Newport Center Drive



1.4 Project Alternatives

1.4.1 No Action Alternative

The No Action Alternative, as its name implies, retains the existing roadway characteristics. Under this scenario, the existing SW 10th Street corridor would not be improved and conditions would continue to deteriorate. The No Action Alternative has certain advantages and disadvantages. The advantages of the No Action Alternative include:

- No expenditure of public funds;
- No disruption or temporary impacts (air, noise, vibration, and travel patterns) due to construction activities; and
- No right-of-way acquisitions.

The disadvantages of the No Action Alternative include:

- Does not meet the project purpose and need;
- Increased vehicular congestion and delay, which leads to increased travel, time, and delay costs;
- Increased safety concerns;
- Increased emergency response and evacuation time; and
- Decreased air quality.

A noteworthy point is that the No Action Alternative assumes that the adjacent I-95 interchange improvements are implemented, including the proposed flyovers to and from I-95 and SW 10th Street. These flyovers will need to tie into existing SW 10th Street. This scenario would be difficult to implement due to the merging distance needed in advance of the local intersections. In addition, this option requires reconstruction of a portion of SW 10th Street just west of Military Trail to provide space for the ramp terminals and associated mechanical stabilized earth (MSE) walls for the rising flyover ramp profiles.

1.4.2 Build Alternatives

Alternatives developed for the SW 10th Street PD&E Study were influenced by the Community Oversight Advisory Team that the FDOT and the Broward County MPO partnered with during this study and the years preceding it. The goal of the SW 10th Street PD&E Study is to configure a high-speed connection between the Sawgrass Expressway and I-95 such that vehicles exiting the Sawgrass Expressway no longer need to wait at multiple traffic signals when traveling to I-95 or vice versa. However, one of the primary recommendations of the COAT is to “Minimize and attempt to eliminate the use of above-grade overpasses adjacent to residential areas.” A similar recommendation states, “Include a below-grade expressway with at-grade local access roads.”

The SW 10th Street Connector assumes two distinct corridors for travel:

- A low-speed corridor for local SW 10th Street traffic, bicyclists, and pedestrians; and
- A high-speed corridor that operates like an expressway and maintains free-flow, interstate speeds between the Sawgrass Expressway and I-95.

The SW 10th Street PD&E Study had a Public Kickoff Meeting along with two Alternatives Public Workshops, both of which functioned as a “tier” in the alternatives analysis. The first Alternatives Public Workshop offered the Tier 1 Alternatives, and consisted of the following:

- Center Alternative; and
- North Alternative.

The premise of the SW 10th Street Connector typical section is that it must have four managed lanes (two westbound and two eastbound) as well as four local lanes (two westbound and two eastbound). The Center Alternative places the managed lanes in the center of the existing right-of-way and adds a one-way local street system on each side of the managed lanes.

As a counterpart to the Center Alternative, a North Alternative was developed. This alternative places the managed lanes along the north side of the existing right-of-way and relocates the local SW 10th Street to the south side of the right-of-way. In this fashion, the local roadway system is positioned near the sideroads along the south side, such as Waterways Boulevard, Independence Drive, SW 30th Avenue, SW 28th Avenue, and SW 24th Avenue. A local SW 10th Street positioned on the south side of the right-of-way also facilitates direct commercial access to several existing businesses that currently have existing access. By contrast, most of the north side of the existing right-of-way is adjacent to Century Village, which does not have direct access to SW 10th Street, and Quiet Waters Park west of Powerline Road.

In order to mitigate noise and visual impacts as well as facilitate the COAT recommendation of minimizing elevated roadways, the Center and North Alternatives both examined placing the four managed lanes in a depressed, or “below grade” section. The limits of this roadway depression extend from the Independence Drive intersection to the crossing of the C-2 Canal located just west of SW 24th Avenue. This depressed section was located one level below the existing grade and passed beneath the major intersection of Powerline Road.

Subsequent to the first Alternatives Public Workshop (held on April 25, 2018), public comments were analyzed, and additional investigation was performed on the feasibility of a depressed section as well as providing business and sideroad access to local SW 10th Street. As a result of this analysis, the FDOT made a decision to drop the Center Alternative and carry forward three alternatives to the second Alternatives Public Workshop, held on

November 29, 2018. The three “Tier 2” alternatives all featured a “north” alignment of the managed lanes within the existing right-of-way and are named as follows:

- Full Depressed Alternative;
- Partial Depressed Alternative; and
- Non-Depressed/No Managed Lane Access Alternative.

The Full Depressed Alternative is essentially the Tier 1 North Alternative presented at the first Alternative Public Workshop. In response to concerns regarding the feasibility of the Full Depressed Alternative, particularly in regards to Powerline Road, the Partial Depressed Alternative was developed. This alternative has three sub-alternatives:

- Depressed Westbound Exit Ramp Alternative;
- Depressed Eastbound Managed Lanes Alternative; and
- Depressed Eastbound and Westbound Managed Lanes Alternative.

This trio of alternatives all have one distinct feature in common: a reduction in the limits of the depressed section such that it begins east of Powerline Road and ends west of the C-2 Canal (Broward County Water Control District). The difference in these three sub-alternatives is how they accommodate the proposed entrance and exit ramps between the managed and local lanes. Below is a description of the ramp “braiding” for each sub-alternative.

Depressed Westbound Exit Ramp Alternative

This sub-alternative minimizes the extent of a depressed section. The managed lanes remain at-grade, and a westbound exit ramp is formed on the left side of the westbound managed lanes, passes beneath the at-grade eastbound managed lanes, and joins local SW 10th Street as an outer third lane approaching Powerline Road.

Depressed Eastbound Managed Lane Alternative

This sub-alternative is similar to the Depressed Westbound Exit Ramp Alternative except that the profiles are reversed: The eastbound managed lanes pass beneath an at-grade westbound exit ramp located on the left side of the westbound managed lanes. This alternative requires depressing only one side (eastbound) of the managed lanes.

Depressed Eastbound and Westbound Managed Lanes Alternative

The third option for accommodating ramp braiding is similar to the Depressed Eastbound Managed Lanes except that the westbound exit ramp diverges from the right side of the westbound managed lanes, remains at-grade, and passes above the depressed eastbound and westbound managed lanes. With this configuration, both eastbound and westbound managed lanes are depressed, and the exit ramp requires more distance to cross over both sets of lanes.

Non-Depressed/No Managed Lane Access Alternative

In response to questions regarding the inclusion of entrance and exit ramps to and from the managed lanes, this alternative was developed and simply removes the ramps. By eliminating access to the managed lanes, both the managed and local lanes can remain at-grade between Quiet Waters Business Park and just east of 24th Avenue. By eliminating ramps, this alternative required the smallest footprint and offers the most amount of space for landscaping as well as bicycle and pedestrian accommodations as well as minimizing right-of-way acquisition. However, this alternative does not maximize use and benefit of the managed lanes and consequently does not remove sufficient traffic from the local lanes as compared to the other alternatives.

Based on the evaluation matrix that was compiled for the second Alternatives Public Workshop as well as public comments and stakeholder meetings, the FDOT decided to drop the Full Depressed and Non-Depressed/No Managed Lane Access Alternatives and carry forward the Partial Depressed Alternative. Specifically, the Depressed Westbound Exit Ramp Alternative is the Currently Preferred Alternative.

Subsequent to the second Alternatives Public Workshop, the COAT was re-engaged for a series of three meetings along with numerous stakeholder meetings, including meetings with elected officials, neighborhood groups, and businesses. The Broward MPO was also engaged for several meetings and provided input on modifications to the alternatives presented at the second Alternatives Public Workshop. The resulting Currently Preferred Alternative, the Depressed Westbound Exit Ramp Alternative, is essentially the same concept that was presented on November 29, 2018 but with the following modifications:

- Westward shift of overpass at Waterways Boulevard;
- New median opening on north leg of Powerline Road for Quiet Waters Business Park;
- 10-foot shared use path along south side of SW 10th Street between Waterways Boulevard and Powerline Road; and
- Eight-foot sidewalk along south side of SW 10th Street between Powerline Road and Military Trail.

The preliminary roadway concept plan and profile sheets and the proposed typical sections for the Currently Preferred Alternative can be found in the PER in Appendix C and D, respectively. Section 6 of the PER describes the design features of the Currently Preferred Alternative.

2.0 Methodology

This study was conducted based on the methodology described in the FDOT's PD&E Manual, Part 2, Chapter 18, *Highway Traffic Noise* (January 14, 2019) and in accordance with Title 23 CFR Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (July 13, 2010). The noise study involved the following procedures:

- Field Measurement of Noise Levels and Noise Model Validation (see **Section 3.1**);
- Identification of Noise Sensitive Receptor Sites (see **Section 3.2**);
- Prediction of Existing and Future Noise Levels (see **Section 3.2**);
- Assessment of Traffic Noise Impacts (see **Section 3.2**); and
- Consideration of Noise Barriers as a Noise Abatement Measure (see **Sections 3.2.1 through 3.2.5**).

FHWA's Traffic Noise Model (TNM) Version 2.5 (February 2004) is the latest approved model and was used to predict existing and future traffic noise levels and to analyze the effectiveness of noise barriers, where warranted. This model estimates the acoustic intensity at noise sensitive receptor sites from a series of roadway segments (the source). Model-predicted noise levels are influenced by several factors, such as vehicle speed and distribution of vehicle types. Noise levels are also affected by characteristics of the source-to-receptor site path, including the effects of intervening barriers, structures (houses, trees, etc.), ground surface type (hard or soft), and topography.

Representative receptor sites were used as inputs to the TNM 2.5 to estimate noise levels associated with existing and future conditions within the project limits. These sites were chosen based on noise sensitivity, roadway proximity, anticipated impacts from the proposed project, and homogeneity (i.e., the site is representative of other nearby sites). For single-family residences, traffic noise levels were predicted at the edge of the dwelling unit closest to the nearest primary roadway. For other noise sensitive sites that may be impacted, traffic noise levels were predicted where the exterior activity occurs. For the prediction of interior noise levels, receptor sites were placed ten feet inside the building at the edge closest to the roadway. Building noise reduction factors identified in Table 18.3 in Part 2, Chapter 18 of the PD&E Manual and window conditions were used to estimate noise reduction due to the physical structure.

The following sections describe the noise metrics, traffic data, and noise abatement criteria used in this study, as well as the existing and future land uses within the project area.

2.1 Noise Metric

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

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

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

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

2.2 Traffic Data

The traffic data used in the noise analysis is from several traffic reports including: *SW 10th Street PD&E Project Traffic Forecast Memorandum* (January 2019); *SW 10th Street Connector – Toll-Free Project Traffic Forecast Technical Memorandum* (July 2019); and *SW 10th Street Connector PD&E Study Project Traffic Analysis Report* (August 2019). The peak hour traffic volumes for the existing and the future design year (2040) conditions, as well as the LOS C volumes, are presented in **Table 2.2-1 (Appendix A)**. **Table 2.2-1** also summarizes the traffic data used in the prediction of traffic noise levels by vehicle type (cars, medium trucks, heavy trucks, buses, and motorcycles) for the Existing Conditions, the No Build

Alternative, and the Build Alternative. The traffic volumes used to predict noise levels included the lesser of either the traffic capacity of the roadway at LOS C or the projected traffic demand of the roadway. These traffic volumes can be expected to produce the loudest noise traffic conditions likely to occur during the design year.

2.3 Noise Abatement Criteria

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

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

2.4 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 in accordance with 23 CFR Part 772. The most common and effective noise abatement measure for projects such as this is the construction of noise barriers. Noise barriers reduce noise by blocking the sound path between a roadway and a noise sensitive area. To be effective, noise barriers must be long, continuous (i.e., no intermittent openings), and have sufficient height to block the

Table 2.3-1: Noise Abatement Criteria [Hourly A-Weighted Sound Level dB(A)]

Activity Category	Activity Leq(h) ¹		Evaluation Location	Description of Activity Category
	FHWA	FDOT		
A	57	56	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ²	67	66	Exterior	Residential
C ²	67	66	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	51	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E ²	72	71	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-	-	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	-	-	-	Undeveloped lands that are not permitted.

(Based on Table 1 of 23 CFR Part 772)

¹ The Leq(h) Activity Criteria values are for impact determination only, and are not a design standard for noise abatement measures.

² Includes undeveloped lands permitted for this activity category.

Note: FDOT defines that a substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 decibels or more as a result of the transportation improvement project. When this occurs, the requirement for abatement consideration will be followed.

path between the noise source and the receptor site. The FHWA's Analysis and Abatement Guidance (January 2011) indicates the ends of the noise barriers should, in general, extend in each direction four times as far as the distance from the receptor site to the noise barrier.

Other abatement measures that were considered but were determined not to be feasible or reasonable for this project include traffic management, alignment modification, and property acquisition. 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. The project corridor includes existing commercial and residential development on both sides of SW 10th Street. Shifting the alignments or modifications to the proposed alignments would directly impact these areas and result in substantial socio-economic effects and additional project costs. Acquisition of right-of-way from the noise sensitive properties impacted by the project would be more expensive and disruptive than the other noise abatement measures.

For noise abatement measures to be recommended for further consideration in the Final Design phase of the project, they must be determined to be both feasible and reasonable. A wide range of factors are used to evaluate the feasibility and reasonableness of noise abatement measures. Feasibility deals with engineering considerations, including the ability to construct a noise barrier using standard construction methods and techniques as well as with the ability to provide a reduction of at least 5 dB(A) to the impacted receptor sites. For example, given the topography of a location, can the minimum noise reduction [5.0 dB(A)] be achieved given certain access, drainage, utility, safety, and maintenance requirements? In addition, for a noise barrier to be considered acoustically feasible, at least two impacted receptor sites must achieve at least a 5 dB(A) reduction.

Reasonableness implies that common sense and good judgment were applied in a decision related to noise abatement. Reasonableness includes the consideration of the cost of abatement, the amount of noise abatement benefit, and the consideration of the viewpoints of the impacted and benefited property owners and tenants. To be deemed reasonable, the noise barrier, or other noise abatement measure, needs to be equal to or below FDOT's reasonable cost criteria (described below), must attain FDOT's noise reduction design goal of 7 dB(A) at one or more impacted receptor sites, and must be supported by a majority of the property owners and tenants benefited by the proposed abatement measure.

The evaluation of noise barriers for impacted residential (Activity Category B) and non-residential areas (Activity Categories A, C, D, and E) are based on different methods and are evaluated separately. When determining the cost reasonableness of a conceptual noise barrier design for a residential area, \$42,000 per benefited receptor is considered the upper

limit, using the standard construction cost of \$30.00 per square foot. A benefited receptor site is defined as a noise sensitive site that will obtain a minimum of 5.0 dB(A) of noise reduction as a result of a specific noise abatement measure regardless of whether or not they are identified as impacted. Only benefited receptor sites are included in the calculation of reasonable cost for a particular noise abatement measure.

Noise barriers for non-residential areas are assessed using FDOT's "A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations (July 22, 2009)". The cost reasonableness of this method is based on the number of people (i.e., person-hours per day) benefited by a noise barrier under consideration. Using this methodology, to be considered cost reasonable, the cost of the noise barrier must have an Abatement Cost Factor less than \$995,935 per person-hour per square foot. The Abatement Cost Factor represents the upper limit of the cost per person-hour per square foot of noise barrier and does not represent any direct relation to real barrier construction costs such as dollar per square foot of a barrier. The derivation of the Abatement Cost Factor is based on the FDOT's reasonable cost criteria of equal to or less than \$42,000 per benefited receptor site.

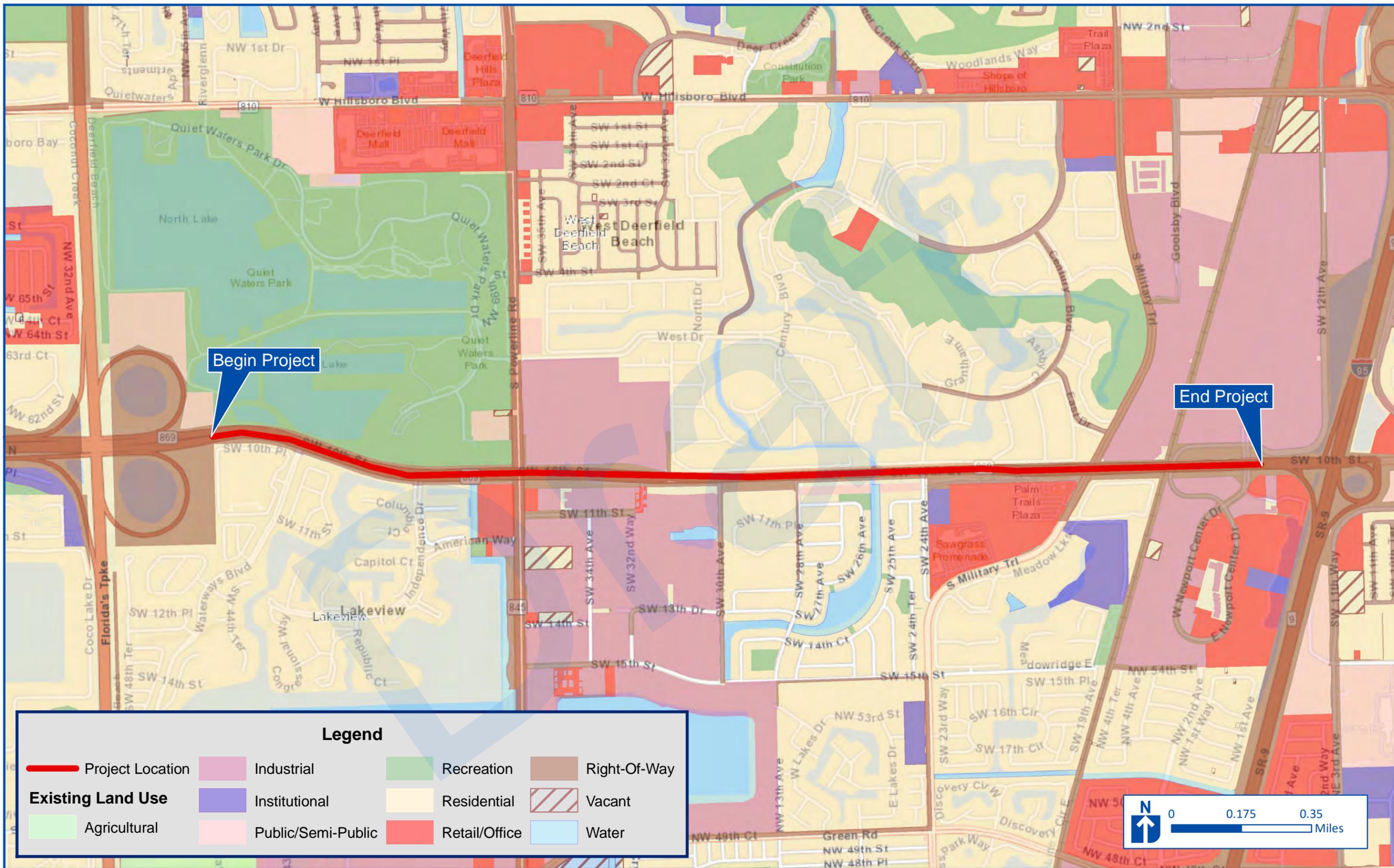
If the noise abatement measure has been determined to be reasonable and feasible, the viewpoint of the impacted and benefited property owners must be considered. During a PD&E Study, the viewpoint of benefited receptors (property owners/tenants) regarding noise abatement is gathered during workshops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

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

2.5 Existing and Future Land Use

Existing and future land uses were reviewed to identify the potential noise sensitive receptor sites in the project area. The primary land uses in the project corridor east of Florida's Turnpike to Military Trail include residential (multi-family and single family), recreational, industrial, and commercial. Major residential developments include: The Enclave Apartments at Waterways, Waterways, Independence Bay, Freedom Square Condominiums, Century Village, Waterford Courtyards, and Crystal Heights. Industrial development includes the Publix Distribution Center. Commercial development includes: the Sports Complex, Shell Gas Station, Med Care Pharmacy, Deerfield Storage, Quiet Waters Business Park, Public Storage, Walmart, Publix, Quorum Business Center, and the Newport Center. Recreational uses along the corridor include Quiet Waters Park and Crystal Heights Park. **Figure 2.5.1** shows the existing land use in the project corridor.

Broward County is mostly built-out in the study area with little undeveloped land in the project corridor. Therefore, significant changes in land use are not anticipated. The Broward County Future Land Use Maps are consistent with the existing land use in the study corridor. The corridor will be mostly residential (multi-family and single family) and commerce. In addition, the Broward County Future Land Use map shows Quiet Waters Park will remain Recreation/Open Space. **Figure 2.5.2** shows the Broward County Future Land Use.

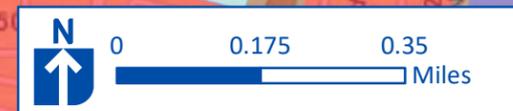


Begin Project

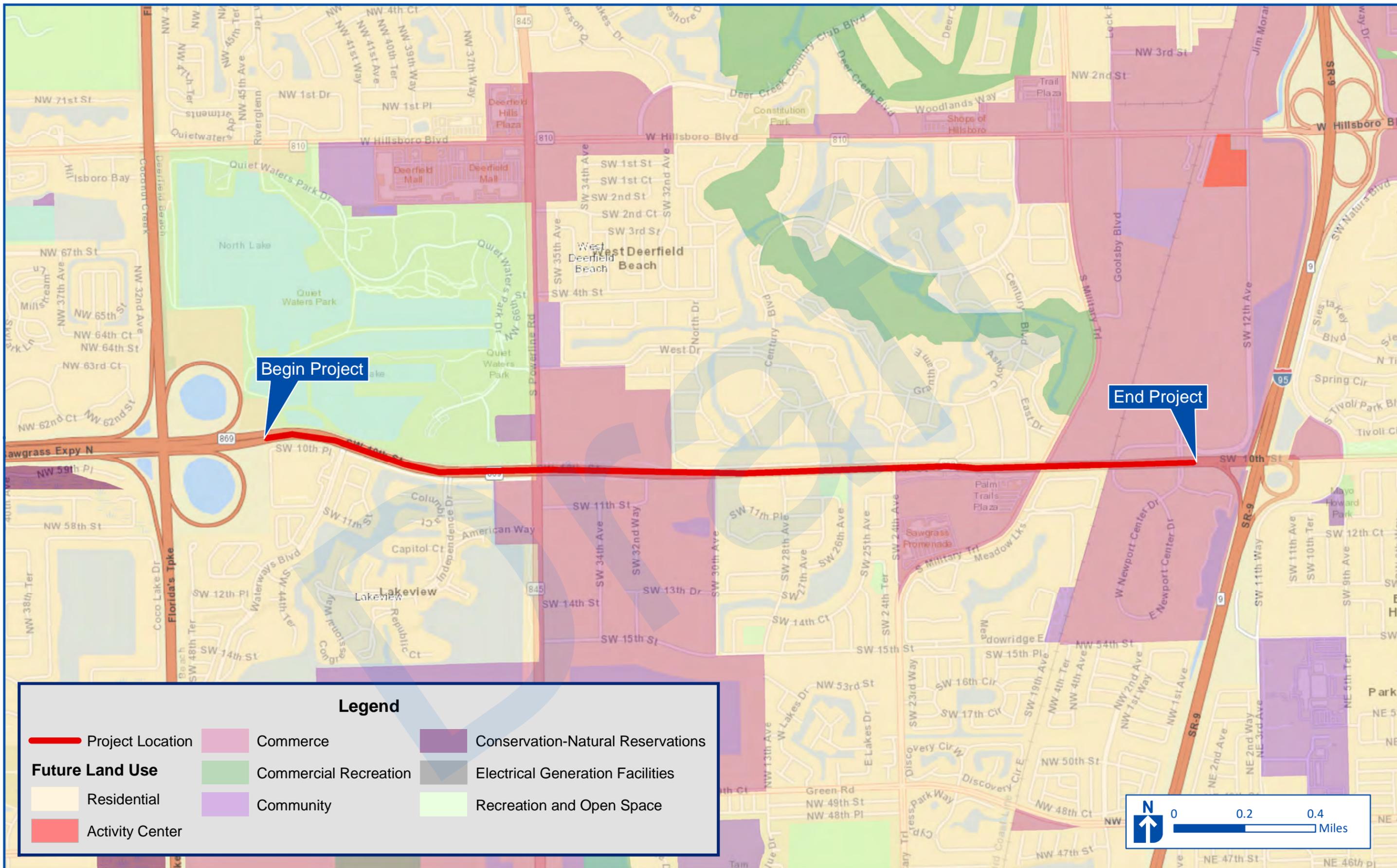
End Project

Legend

Project Location	Industrial	Recreation	Right-Of-Way
Existing Land Use	Institutional	Residential	Vacant
Agricultural	Public/Semi-Public	Retail/Office	Water



State Road 869 / SW 10th Street Connector PD&E Study from Florida's Turnpike / Sawgrass Expressway to I-95
 Financial Project ID: 439891-1-22-02, ETDM No: 14291



Begin Project

End Project

Legend

 Project Location	 Commerce	 Conservation-Natural Reservations
Future Land Use	 Commercial Recreation	 Electrical Generation Facilities
 Residential	 Community	 Recreation and Open Space
 Activity Center		



3.0 Traffic Noise Analysis

3.1 Model Validation

Noise measurements were collected at six representative locations representing 18 monitoring sites (MS1-1 through MS6-2) within the project limits to verify that TNM-predicted existing levels are representative of actual levels along SW 10th Street and to confirm that traffic noise is the main, or dominant, source. Noise measurements at these sites were taken on either April 18th, 2018, April 19th, 2018, July 24th, 2019, or July 25th, 2019. The locations of these monitoring sites are described in **Table 3.1-1**, and depicted in **Figure 3.2-1**, which is in **Appendix B**.

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 Number FHWA-HEP-18-065, Noise Measurement Handbook - Final Report, June 2018. The A-weighted frequency scale was used and the sound meter was calibrated to 114 dB(A) using a Larson-Davis Model CA250 sound-level calibrator. Monitoring was conducted for three 10-minute intervals at each site with the microphone approximately five feet above the land surface. Weather conditions during the noise measurements were within acceptable ranges based on FHWA's established methodology. No precipitation occurred during the noise measurements resulting in dry pavement conditions.

Traffic information, such as the number of passenger cars and trucks, as well as, average speeds, were collected at the time of noise monitoring. A K15-K Doppler Radar Gun was used to obtain average operating speeds for cars, medium trucks, heavy trucks, buses, and motorcycles. Since all noise levels in this report are based on a 1-hour period, the field-recorded traffic volumes were adjusted upward to reflect hourly volumes. The dates, times, traffic data, and the measured noise levels are presented in **Table 3.1-1**.

Traffic noise was the dominant noise source at each of the monitoring sites. To verify the computer noise model, the TNM-predicted noise levels for Monitoring Sites MS1-1 through MS6-2 were compared to measured noise levels. When measured noise levels are within +/- 3.0 dB(A) of the computer-predicted levels, the model is considered validated. All 18 measured noise levels at the six monitoring locations were within +/- 3.0 dB(A) of the TNM-predicted levels (see **Table 3.1-1**). Because the TNM-predicted noise levels are within +/- 3.0 dB(A) of the measured noise levels, the model has been validated and is considered acceptable for predicting existing and future traffic noise levels along SW 10th Street. The average difference between TNM-predicted levels and the monitored levels was 0.4 dB(A).

Table 3.1-1: Noise Monitoring Data and TNM 2.5 Validation Results (Sheet 1 of 4)

General Information		Begin Time	End Time	Travel Lanes - SW 10 th Street	Distance to Nearest Traffic Lane (feet)	Cars		Medium Trucks		Heavy Trucks		Buses		Motorcycles		Monitored Leq (h) dB(A)	TNM Predicted Leq (h) dB(A)	Difference Leq (h) dB(A)	Predicted Levels Within +/- 3 dB(A) of Monitored Levels?
Monitor Site Identification Number	Monitoring Location / Station (Date)					Vehicles per Hour	Speed (mph)												
MS1-1	The Enclave Apartments at Waterways - Unit 101 / Station 50+90 (July 24, 2019)	1:55 PM	2:05 PM	Eastbound	185	756	57	45	52	48	50	6	50	---	---	61.3	59.6	-1.7	YES
				Westbound		876	53	24	35	18	48	---	---	---	---				
		2:05 PM	2:15 PM	Eastbound		996	61	48	52	42	53	---	---	---	---	60.9	60.8	-0.1	YES
				Westbound		1,446	49	36	50	24	55	---	---	6	49				
		2:15 PM	2:25 PM	Eastbound		1,308	56	66	52	12	49	---	---	---	---	61.4	59.9	-1.5	YES
				Westbound		1,074	50	24	55	36	44	---	---	---	---				
MS1-2	The Enclave Apartments at Waterways - Unit 201 / Station 61+30 (July 24, 2019)	1:55 PM	2:05 PM	Eastbound	185	756	57	45	52	48	50	6	50	---	---	64.7	64.6	-0.1	YES
				Westbound		876	53	24	35	18	48	---	---	---	---				
		2:05 PM	2:15 PM	Eastbound		996	61	48	52	42	53	---	---	---	---	64.6	66.1	1.5	YES
				Westbound		1,446	49	36	50	24	55	---	---	6	49				
		2:15 PM	2:25 PM	Eastbound		1,308	56	66	52	12	49	---	---	---	---	64.8	65.5	0.7	YES
				Westbound		1,074	50	24	55	36	44	---	---	---	---				
MS2-1	Waterways - 4243 SW 10 th Court / Station 73+60 (July 25, 2019)	9:02 AM	9:12 AM	Eastbound	110	1,194	51	24	45	12	45	---	---	---	---	60.2	59.9	-0.3	YES
				Westbound		1,764	48	60	39	6	39	---	---	6	48				
		9:12 AM	9:22 AM	Eastbound		1,086	52	60	50	12	46	6	58	---	---	59.9	60.7	0.8	YES
				Westbound		1,950	45	90	42	48	42	12	42	---	---				
		9:22 AM	9:32 AM	Eastbound		1,098	54	150	54	42	49	---	---	---	---	60.2	62.4	2.2	YES
				Westbound		2,070	48	126	43	18	46	12	53	6	45				
MS2-2	Waterways - 1000 SW 42 nd Avenue / Station 74+20 (July 24, 2019)	9:02 AM	9:12 AM	Eastbound	102	1,194	51	24	45	12	45	---	---	---	---	62.5	60.9	-1.6	YES
				Westbound		1,764	48	60	39	6	39	---	---	6	48				
		9:12 AM	9:22 AM	Eastbound		1,086	52	60	50	12	46	6	58	---	---	62.0	61.8	-0.2	YES
				Westbound		1,950	45	90	42	48	42	12	42	---	---				
		9:22 AM	9:32 AM	Eastbound		1,098	54	150	54	42	49	---	---	---	---	62.2	63.4	1.2	YES
				Westbound		2,070	48	126	43	18	46	12	53	6	45				
MS2-3	Waterways - 4243 SW 10 th Court / Station 73+70 (July 25, 2019)	9:02 AM	9:12 AM	Eastbound	172	1,194	51	24	45	12	45	---	---	---	---	57.2	55.6	-1.6	YES
				Westbound		1,764	48	60	39	6	39	---	---	6	48				
		9:12 AM	9:22 AM	Eastbound		1,086	52	60	50	12	46	6	58	---	---	57.3	56.6	-0.7	YES
				Westbound		1,950	45	90	42	48	42	12	42	---	---				
		9:22 AM	9:32 AM	Eastbound		1,098	54	150	54	42	49	---	---	---	---	57.6	58.1	0.5	YES
				Westbound		2,070	48	126	43	18	46	12	53	6	45				

Table 3.1-1: Noise Monitoring Data and TNM 2.5 Validation Results (Sheet 2 of 4)

General Information		Begin Time	End Time	Travel Lanes - SW 10 th Street	Distance to Nearest Traffic Lane (feet)	Cars		Medium Trucks		Heavy Trucks		Buses		Motorcycles		Monitored Leq (h) dB(A)	TNM Predicted Leq (h) dB(A)	Difference Leq (h) dB(A)	Predicted Levels Within +/- 3 dB(A) of Monitored Levels?
Monitor Site Identification Number	Monitoring Location / Station (Date)					Vehicles per Hour	Speed (mph)												
MS3-1	Independence Bay - North of 19 Columbia Court / Station 81+90 (July 25, 2019)	10:20 AM	10:30 AM	Eastbound	90	1,122	49	72	48	36	50	---	---	---	---	66.6	66.5	-0.1	YES
				Westbound		948	50	42	50	42	46	---	---	---	---				
		10:30 AM	10:40 AM	Eastbound		1,254	48	54	47	36	45	---	---	---	---	66.5	66.5	0.0	YES
				Westbound		1,260	50	42	50	42	46	---	---	---	---				
		10:40 AM	10:50 AM	Eastbound		1,296	49	84	45	12	45	---	---	---	---	66.0	66.0	0.0	YES
				Westbound		918	51	12	43	12	44	---	---	---	---				
MS3-2	Independence Bay - 19 Columbia Court / Station 81+90 (July 25, 2019)	10:20 AM	10:30 AM	Eastbound	230	1,122	49	72	48	36	50	---	---	---	---	61.4	61.8	0.4	YES
				Westbound		948	50	42	50	42	46	---	---	---	---				
		10:30 AM	10:40 AM	Eastbound		1,254	48	54	47	36	45	---	---	---	---	60.4	61.9	1.5	YES
				Westbound		948	50	42	50	42	46	---	---	---	---				
		10:40 AM	10:50 AM	Eastbound		1,296	49	84	45	12	12	---	---	---	---	59.2	61.2	2.0	YES
				Westbound		1,260	51	12	43	12	44	---	---	---	---				
MS3-3	Freedom Square Condominiums - 111/201 Freedom Court / Station 87+60 (July 25, 2019)	10:20 AM	10:30 AM	Eastbound	275	1,122	49	72	48	36	50	---	---	---	---	60.5	61.2	0.7	YES
				Westbound		948	50	42	50	42	46	---	---	---	---				
		10:30 AM	10:40 AM	Eastbound		1,254	48	54	47	36	45	---	---	---	---	59.5	61.4	1.9	YES
				Westbound		948	50	42	50	42	46	---	---	---	---				
		10:40 AM	10:50 AM	Eastbound		1,296	49	84	45	12	12	---	---	---	---	60.4	60.6	0.2	YES
				Westbound		1,260	51	12	43	12	44	---	---	---	---				
MS4-1	North of Waterford Courtyards / Station 129+40 (April 18, 2018)	4:34 PM	4:44 PM	Eastbound	75	1,548	46	36	43	36	46	---	---	6	46	65.8	67.9	2.1	YES
				Westbound		1,824	46	60	42	18	40	---	---	6	46				
		4:44 PM	4:54 PM	Eastbound		1,812	48	6	43	30	46	---	---	---	---	66.4	68.4	2.0	YES
				Westbound		1,680	46	48	42	30	40	---	---	18	46				
		4:54 PM	5:04 PM	Eastbound		1,638	49	18	43	36	46	---	---	6	49	67.2	68.7	1.5	YES
				Westbound		2,328	47	30	42	6	40	---	---	6	47				
MS4-2	North of Waterford Courtyards / Station 129+40 (April 18, 2018)	4:34 PM	4:44 PM	Eastbound	162	1,548	46	36	43	36	46	---	---	6	46	64.0	64.1	0.1	YES
				Westbound		1,824	46	60	42	18	40	---	---	6	46				
		4:44 PM	4:54 PM	Eastbound		1,812	48	6	43	30	46	---	---	---	---	64.5	64.5	0.0	YES
				Westbound		1,680	46	48	42	30	40	---	---	18	46				
		4:54 PM	5:04 PM	Eastbound		1,638	49	18	43	36	46	---	---	6	49	64.7	64.9	0.2	YES
				Westbound		2,328	47	30	42	6	40	---	---	6	47				

Table 3.1-1: Noise Monitoring Data and TNM 2.5 Validation Results (Sheet 3 of 4)

General Information		Begin Time	End Time	Travel Lanes - SW 10 th Street	Distance to Nearest Traffic Lane (feet)	Cars		Medium Trucks		Heavy Trucks		Buses		Motorcycles		Monitored Leq (h) dB(A)	TNM Predicted Leq (h) dB(A)	Difference Leq (h) dB(A)	Predicted Levels Within +/- 3 dB(A) of Monitored Levels?
Monitor Site Identification Number	Monitoring Location / Station (Date)					Vehicles per Hour	Speed (mph)												
MS5-1	Century Village Newport Building U First Floor Unit 1114 / Station 139+40 (April 18, 2018)	9:04 AM	9:14 AM	Eastbound	120	1,800	48	42	41	60	31	---	---	---	---	63.8	65.4	1.6	NO
				Westbound		1,056	46	66	44	36	42	6	42	6	42				
		9:14 AM	9:24 AM	Eastbound		2,058	48	48	41	42	31	6	42	---	---	65.2	65.1	-0.1	YES
				Westbound		984	46	60	44	24	42	---	---	---	---				
		9:24 AM	9:34 AM	Eastbound		1,824	48	54	41	78	31	---	---	---	---	65.6	65.5	-0.1	YES
				Westbound		1,212	46	102	44	6	42	6	46	---	---				
MS5-2	Century Village Newport Building U Second Floor Unit 2114 / Station 139+40 (April 18, 2018)	9:04 AM	9:14 AM	Eastbound	120	1,800	48	42	41	60	31	---	---	---	---	66.8	67.6	0.8	YES
				Westbound		1,056	46	66	44	36	42	6	42	6	42				
		9:14 AM	9:24 AM	Eastbound		2,058	48	48	41	42	31	6	42	---	---	67.8	67.5	-0.3	YES
				Westbound		984	46	60	44	24	42	---	---	---	---				
		9:24 AM	9:34 AM	Eastbound		1,824	48	54	41	78	31	---	---	---	---	68.0	67.8	-0.2	YES
				Westbound		1,212	46	102	44	6	42	6	46	---	---				
MS5-3	Century Village Newport Building U Third Floor Unit 3114 / Station 139+40 (April 18, 2018)	9:04 AM	9:14 AM	Eastbound	120	1,800	48	42	41	60	31	---	---	---	---	68.3	67.9	-0.4	YES
				Westbound		1,056	46	66	44	36	42	6	42	6	42				
		9:14 AM	9:24 AM	Eastbound		2,058	48	48	41	42	31	6	42	---	---	68.7	67.8	-0.9	YES
				Westbound		984	46	60	44	24	42	---	---	---	---				
		9:24 AM	9:34 AM	Eastbound		1,824	48	54	41	78	31	---	---	---	---	69.3	68.1	-1.2	YES
				Westbound		1,212	46	102	44	6	42	6	46	---	---				
MS5-4	Century Village Newport Building U Fourth Floor Unit 4114 / Station 139+40 (April 18, 2018)	9:04 AM	9:14 AM	Eastbound	120	1,800	48	42	41	60	31	---	---	---	---	69.7	67.8	-1.9	YES
				Westbound		1,056	46	66	44	36	42	6	42	6	42				
		9:14 AM	9:24 AM	Eastbound		2,058	48	48	41	42	31	6	42	---	---	69.0	67.7	-1.3	YES
				Westbound		984	46	60	44	24	42	---	---	---	---				
		9:24 AM	9:34 AM	Eastbound		1,824	48	54	41	78	31	---	---	---	---	70.4	68.1	-2.3	YES
				Westbound		1,212	46	102	44	6	42	6	46	---	---				

Table 3.1-1: Noise Monitoring Data and TNM 2.5 Validation Results (Sheet 4 of 4)

General Information		Begin Time	End Time	Travel Lanes - SW 10 th Street	Distance to Nearest Traffic Lane (feet)	Cars		Medium Trucks		Heavy Trucks		Buses		Motorcycles		Monitored Leq (h) dB(A)	TNM Predicted Leq (h) dB(A)	Difference Leq (h) dB(A)	Predicted Levels Within +/- 3 dB(A) of Monitored Levels?
Monitor Site Identification Number	Monitoring Location / Station (Date)					Vehicles per Hour	Speed (mph)												
MS6-1	North of Waterford Homes / Station 140+80 (April 19, 2018)	4:22 PM	4:32 PM	Eastbound	75	1,800	48	42	41	60	31	---	---	---	---	64.1	66.0	1.9	YES
				Westbound		1,056	46	66	44	36	42	6	42	6	42				
		4:32 PM	4:42 PM	Eastbound		2,058	48	48	41	42	31	6	42	---	---	63.4	65.9	2.5	YES
				Westbound		984	46	60	44	24	42	---	---	---	---				
		4:42 PM	4:52 PM	Eastbound		1,824	48	54	41	78	31	---	---	---	---	63.3	65.6	2.3	YES
				Westbound		1,212	46	102	44	6	42	6	46	---	---				

MS6-2	North of Waterford Homes / Station 140+80 (April 19, 2018)	4:22 PM	4:32 PM	Eastbound	175	1,800	48	42	41	60	31	---	---	---	---	59.2	61.3	2.1	YES
				Westbound		1,056	46	66	44	36	42	6	42	6	42				
		4:32 PM	4:42 PM	Eastbound		2,058	48	48	41	42	31	6	42	---	---	58.2	61.1	2.9	YES
				Westbound		984	46	60	44	24	42	---	---	---	---				
		4:42 PM	4:52 PM	Eastbound		1,824	48	54	41	78	31	---	---	---	---	58.0	60.7	2.7	YES
				Westbound		1,212	46	102	44	6	42	6	46	---	---				

X:\P\Noise_Studies\SW10th Street\Noise Study Report\Tables\Table_3_1-1_SW10_Noise Monitoring Data Summary_8-8-2019.xlsx\COMBINED

Minimum	57.2	55.6	-2.3
Maximum	70.4	68.7	2.9
Average Difference Between TNM 2.5 Predicted Levels and Monitored Levels			0.4

3.2 Predicted Noise Levels and Abatement Analysis

The project area includes noise sensitive land uses that will be potentially impacted by traffic noise associated with the project. These noise sensitive land uses include single and multi-family residences, education facility, medical facility, recreational areas, and restaurants with outdoor seating. Existing land uses within the project area, as categorized by FHWA's NAC Activity Categories, are depicted in **Figure 3.2.1: Noise Analysis Map in Appendix B**. The locations of the representative sites are also presented in **Figure 3.2.1** and are described in **Table 3.2-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results in Appendix C**. **Table 3.2-1** lists the representative noise sensitive receptors by general area, approximate location, and number of sites represented. Station numbers are also provided in **Table 3.2-1** to facilitate locating receptors sites on **Figure 3.2.1**. Each of the representative receptor sites was given a unique designation (e.g., CV1). The alphanumeric character(s) represents the location of the noise sensitive receptor site. The numerical value represents the unique/sequential receptor site number for that location (e.g., for Century Village, Receptors Sites CV1 through CV105 were used to designate the noise sensitive sites within this residential community). To distinguish non-residential from residential sites, the NAC Activity Category was added to the designation (e.g., CV11-C, representing a pool area within Century Village). **Table 3.2-1** also includes the predicted existing and future design year (2040) No-Build and Build Alternative noise levels.

To facilitate the impact analysis, the predicted noise levels for the noise sensitive areas/sites were summarized by roadway segments in **Table 3.2-1 in Appendix C**. Predicted design year (2040) noise levels for the Build Alternative were compared to the NAC and to existing conditions predicted levels to assess potential noise impacts associated with the proposed project. As identified in **Table 3.2-1** and summarized below in **Table 3.2-2**, traffic noise impacts occur and will require consideration of noise abatement measures (i.e., noise barriers). As presented below, although noise sensitive sites approach or exceed the NAC, the proposed improvements do not result in any substantial noise increases (i.e., greater than 15 dB(A) over existing levels).

Table 3.2-2: Summary of Traffic Noise Impacts by Noise Sensitive Area

Location	Noise Sensitive Area	Number of Impacted Sites		Consideration of Noise Barriers Required?	CNE (Common Noise Environment) Designation
		Residential (NAC B)	Non-Residential (NAC C)		
South of SW 10 th Street from Florida’s Turnpike to Waterways Boulevard	The Enclave Apartments at Waterways	23	---	YES	E1S
South of SW 10 th Street from Waterways Boulevard to Powerline Road	Waterways Residential Community	11	---	YES	E2S
	Independence Bay Residential Community	13	---		
	Freedom Square Condominiums	26	---		
North of SW 10 th Street from Florida’s Turnpike to Powerline Road	Quiet Waters Park Trail	---	2	YES	E3N
South of SW 10 th Street from SW 30 th Avenue to SW 24 th Avenue	Waterford Courtyards Residential Community	8	---	YES	E4S
	Crystal Height Residential Community	12	---		
	Crystal Heights Park	---	1		
North of SW 10 th Street from West of SW 30 th Avenue to Military Trail	Century Village Residential Community	70	2	YES	E5N
Total Impacted Noise Sensitive Sites		163	5	---	---

The following sections (i.e., **3.2.1 through 3.2.5**) describe the predicted noise levels, impacts, and consideration of noise barriers for each of the noise sensitive areas impacted by traffic noise. As indicated in **Table 3.2-2**, the project is anticipated to impact 163 residences (NAC Activity Category B) and five non-residential receptor sites (NAC Activity Category C) along the project corridor that required the consideration of noise abatement measures. The location of the impacted sites (i.e., exceed 66 dB(A)) are also shown as red dots on **Figure 3.2.1** in **Appendix B**. None of the NAC Activity Category D and E noise sensitive sites were predicted to experience design year traffic noise levels that exceeded the NAC (e.g., Receptor Site SFB1-D representing the interior of South Florida Bible College). It should be noted that some developed areas were not evaluated since they do not represent noise sensitive areas or were located beyond the expected area of traffic noise impacts. Only restaurants with outdoor seating represent sensitive commercial land uses; therefore, the restaurants along the corridor that do not have exterior seating were not evaluated. Multi-family residential developments without exteriors areas of use such as patios, balconies, and

community pools were not evaluated. Access hallways associated with multi-family residential developments are not considered noise sensitive.

3.2.1 South of SW 10th Street from Florida's Turnpike to Waterways Boulevard - The Enclave Apartments at Waterways (CNE-E1S)

The Enclave Apartments at Waterways is the only noise sensitive area located on the south side of SW 10th Street between Florida's Turnpike and Waterways Boulevard. The Enclave Apartments at Waterways include residential units with patios as well as second and third floor balconies that are exposed to traffic noise from SW 10th Street. An existing privacy wall extends the length of this community and is located between the north side of the apartment buildings and SW 10th Street. The height of this wall ranges from 6 feet to 7 feet.

One hundred twenty receptor sites (EA1 through EA120) were used to represent the noise sensitive sites within this community (see **Figure 3.2.1** and **Table 3.2-1** in **Appendix B** and **C**, respectively). The predicted design year (2040) noise levels with the proposed improvements range from 49.6 to 71.7 dB(A), approximately 4.4 dB(A) higher than existing levels. Twenty-three residences within this community are predicted to be impacted by design year (2040) noise levels with the Build Alternative. Therefore, noise barriers were considered as a noise abatement measure at this location that is referred to as CNE-E1S.

Five ground mounted conceptual noise barrier designs of varying dimensions were evaluated along the southern right-of-way line of SW 10th Street to reduce traffic noise levels at the 23 residences predicted to be impacted by design year (2040) traffic noise. The results of the noise barrier analysis for this area are summarized in **Table 3.2.1-1**. Four of the five conceptual barrier designs evaluated meet the minimum noise reduction design goal of 7 dB(A) for at least one impacted residence and all five meet the reasonable cost criteria of equal to or less than \$42,000 per benefited receptor site. Conceptual Barrier Design E1S-CD5 was determined to be the most feasible and cost reasonable for this community.

Conceptual Noise Barrier Design E1S-CD5 represents a 22-foot-tall ground mounted noise barrier segment. The barrier extends approximately 1,400 feet, from Station 54+00 to Station 68+60. The recommended noise barrier would benefit 64 residences, including all 23 impacted residences, and would provide an average noise reduction of 7.5 dB(A) at benefited receptor sites with a maximum reduction of 11.0 dB(A). The estimated construction cost of this conceptual barrier design is \$924,000, or \$14,438 per benefited receptor site.

Table 3.2.1-1: Noise Barrier Analyses for Common Noise Environment CNE-E1S (The Enclave Apartments at Waterways)

Noise Sensitive Area (General Location/Station Range)	Conceptual Barrier Design Number	Barrier Type (Segment Name)	Barrier Location	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Impacted Receptor Sites	Number of Impacted/ Benefited Receptor Sites	Number of Benefited Receptor Sites/ Not Impacted	Total Number of Benefited Receptor Sites	Average Noise Reduction for all Benefited Receptor Sites dB(A)	Maximum Noise Reduction for all Benefited Receptor Sites dB(A)	Cost (\$30 per square foot)	Average Cost/Site Benefited	Conceptual Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of \$42,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal	Comments
The Enclave Apartments at Waterways/CNE-E1S (South of SW 10th Street and West of Waterways Boulevard/ Station 57+00 to Station 68+00)	E1S-CD1	Ground Mounted	Southern Right-of-Way Line of SW 10 th Street	14	1,400	54+00	68+60	23	11	10	21	5.9	6.6	\$588,000	\$28,000	NO	---
	E1S-CD2	Ground Mounted	Southern Right-of-Way Line of SW 10 th Street	16	1,400	54+00	68+60	23	13	19	32	6.6	8.7	\$672,000	\$21,000	YES	---
	E1S-CD3	Ground Mounted	Southern Right-of-Way Line of SW 10 th Street	18	1,400	54+00	68+60	23	19	27	46	6.7	9.5	\$756,000	\$16,435	YES	---
	E1S-CD4	Ground Mounted	Southern Right-of-Way Line of SW 10 th Street	20	1,400	54+00	68+60	23	21	38	59	7.1	10.7	\$840,000	\$14,237	YES	---
	E1S-CD5	Ground Mounted	Southern Right-of-Way Line of SW 10 th Street	22	1,400	54+00	68+60	23	23	41	64	7.5	11.0	\$924,000	\$14,438	YES	Represents the optimal Conceptual Noise Barrier Design (E1S-CD5); Recommended for further consideration in the Final Design Phase and for public input

X:\P\Noise_Studies\SW 10th Street Noise Study\Report\Tables\Table_3_2_CX_SW10th_NoiseBarrierAnalysis_8-7-2019.xlsx\IncliveApt_3-27

 Represents the optimal conceptual noise barrier design and is recommended for further consideration in the Final Design Phase and public input.



Conceptual Noise Barrier Design E1S-CD5 is recommended for further consideration and public input during the Final Design phase. Conceptual design E1S-CD5 meets the FDOT's cost reasonableness criteria of equal to or less than \$42,000 per benefited receptor and the noise reduction reasonableness criteria of 7 dB(A) at one or more impacted sites. This conceptual barrier design satisfies the reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety and constructability. The barrier design does not conflict or obstruct any existing, conforming, and legally permitted outdoor advertising signs. Additional noise barrier analysis will be performed during the Final Design phase to confirm the dimensions of the recommended noise barriers at these locations. Final decisions on barrier dimensions are made during the Final Design phase of the project and after determining the support for noise barriers from the benefited noise sensitive sites.

3.2.2 South of SW 10th Street from Waterways Boulevard to Powerline Road – Waterways, Independence Bay, and Freedom Square Condominiums (CNE-E2S)

Three residential developments including Waterways, Independence Bay, and Freedom Square Condominiums are located on the south side of SW 10th Street between Waterways Boulevard and Powerline Road. These three residential developments have residences that are exposed to traffic noise from SW 10th Street. The Waterways is a multi-family development with townhomes with patios facing SW 10th Street. An existing privacy wall extends the length of this community and is located between the north side of the townhomes and SW 10th Street. The height of this wall ranges from 6 feet to 7 feet. Independence Bay development consists of single family homes. Freedom Square Condominiums is a multi-family development with residential units having either a patio or a second-floor balcony and a community pool (Receptor Site FSCP-C) that face towards SW 10th Street. A stormwater pond is located between SW 10th Street and the residences of Independence Bay and Freedom Square Condominiums.

Fifty receptor sites (WW1 through WW14; IBC1 through IBC16; and FSC101F through FSC306) were used to represent the 82 residential noise sensitive sites within these three communities (see **Figure 3.2.1** and **Table 3.2-1** in **Appendix B** and **C**, respectively). For the residences in the Waterways development, the predicted design year noise levels with the proposed improvements range from 58.2 to 66.9 dB(A), approximately 4.5 dB(A) higher than existing levels. Eleven residences within this community are predicted to be impacted by design year (2040) noise levels with the Build Alternative. For the residences in the Independence Bay development, the predicted design year (2040) noise levels with the proposed improvements range from 55.5 to 67.7 dB(A), approximately 4.7 dB(A) higher than existing levels (see **Table 3.2-1**). Thirteen residences within this community are predicted to be impacted by design year (2040) noise levels with the Build Alternative. For the residences

in the Freedom Square Condominiums development, the predicted design year (2040) noise levels with the proposed improvements range from 58.9 to 69.1 dB(A), approximately 4.0 dB(A) higher than existing levels (see **Table 3.2-1**). Twenty-six residences within this community are predicted to be impacted by design year (2040) noise levels with the Build Alternative. Within these three residential communities, 50 residences are predicted to be impacted by design year (2040) noise levels with the Build Alternative. Therefore, noise barriers were considered as a noise abatement measure at this location that is referred to as CNE-E2S. Cross streets (i.e., Waterways Boulevard, and Independence Drive) limit the ability to have a continuous noise barrier at this location.

Five ground mounted conceptual noise barrier designs of varying dimensions were evaluated along the southern right-of-way line of SW 10th Street to reduce traffic noise levels at the 50 residences predicted to be impacted by design year traffic noise. The results of the noise barrier analysis for this area are summarized in **Table 3.2.2-1**. All five conceptual barrier designs evaluated meet the minimum noise reduction design goal of 7 dB(A) for at least one impacted residence and meet the reasonable cost criteria of equal to or less than \$42,000 per benefited receptor site. Conceptual Barrier Design E2S-CD5 was determined to be the most feasible and cost reasonable for this community.

Conceptual Barrier Design E2S-CD5 represents two 22-foot-tall ground mounted noise barrier segments. One of the segments is located west of Independence Drive and extends approximately 1,540 feet, from Station 69+50 to Station 84+40. The second barrier segment is located east of Independence Drive and extends approximately 720 feet, from Station 85+40 to Station 92+60. The recommended noise barriers would benefit 56 residences, including 48 of the 50 impacted residences, and would provide an average noise reduction of 7.5 dB(A) at benefited receptor sites with a maximum reduction of 10.3 dB(A). Receptor Sites IBC9 and FSC301S located at the ends of the recommended noise barrier are not benefited. The estimated construction cost of this conceptual barrier design is \$1,491,600, or \$26,636 per benefited receptor site.

Conceptual Noise Barrier Design E2S-CD5 is recommended for further consideration and public input during the Final Design phase. Conceptual design E2S-CD5 meets the FDOT's cost reasonableness criteria of equal to or less than \$42,000 per benefited receptor and the noise reduction reasonableness criteria of 7 dB(A) at one or more impacted sites. Except for potential conflicts with overhead electric utilities, this conceptual barrier design satisfies the reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety and constructability. The height of the noise walls at this location could be affected by the overhead electric lines if they remain in place. Therefore, coordination with the overhead utility company will be required during the Final Design Phase of the

Table 3.2.2-1: Noise Barrier Analyses for Common Noise Environment CNE-E2S (Waterways, Independence Bay, and Freedom Square Communities)

Noise Sensitive Area (General Location/Station Range)	Conceptual Barrier Design Number	Barrier Type (Segment Name)	Barrier Location	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Impacted Receptor Sites	Number of Impacted/Benefited Receptor Sites	Number of Benefited Receptor Sites/ Not Impacted	Total Number of Benefited Receptor Sites	Average Noise Reduction for all Benefited Receptor Sites dB(A)	Maximum Noise Reduction for all Benefited Receptor Sites dB(A)	Cost (\$30 per square foot)	Average Cost/Site Benefited	Conceptual Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of \$42,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal	Comments
Waterways, Independence Bay, Freedom Square Communities/CNE-E2S (South of SW 10 th Street and West of Waterways Boulevard/Station 70+00 to 92+00)	E2S-CD1	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street and West of Independence Drive	14	1,540	69+50	84+40	50	26	5	31	5.9	7.8	\$949,200	\$30,619	NO	---
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street and East of Independence Drive	14	720	85+40	92+60										
	E2S-CD2	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street and West of Independence Drive	16	1,540	69+50	84+40	50	32	5	37	6.5	8.6	\$1,084,800	\$29,319	YES	---
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street and East of Independence Drive	16	720	85+40	92+60										
	E2S-CD3	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street and West of Independence Drive	18	1,540	69+50	84+40	50	32	5	37	7.1	9.3	\$1,220,400	\$32,984	NO	---
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street and East of Independence Drive	18	720	85+40	92+60										
	E2S-CD4	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street and West of Independence Drive	20	1,540	69+50	84+40	50	43	5	48	7.3	9.8	\$1,356,000	\$28,250	YES	---
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street and East of Independence Drive	20	720	85+40	92+60										
	E2S-CD5	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street and West of Independence Drive	22	1,540	69+50	84+40	50	48	8	56	7.5	10.3	\$1,491,600	\$26,636	YES	Represents the optimal Conceptual Noise Barrier Design (E2S-CD5); Recommended for further consideration in the Final Design Phase and for public input
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street and East of Independence Drive	22	720	85+40	92+60										

X:\P\Noise_Studies\SW 10th Street\Noise Study Report\Tables\Table_3_2_2_CX_SW 10th_NoiseBarrierAnalysis_5-7-2019.xlsx\Waterways\libay_7-30

 Represents the optimal conceptual noise barrier design and is recommended for further consideration in the Final Design Phase and public input.

project to address potential conflicts and issues with constructing a noise barrier at this location. The barrier design does not conflict or obstruct any existing, conforming, and legally permitted outdoor advertising signs. Additional noise barrier analysis will be performed during the Final Design phase to confirm the dimensions of the recommended noise barriers at these locations. Final decisions on barrier dimensions are made during the Final Design phase of the project and after determining the support for noise barriers from the benefited noise sensitive sites.

3.2.3 North of SW 10th Street from Florida's Turnpike to Waterways Boulevard - Quiet Waters Park (CNE-E3N)

The Quiet Waters Park is the only noise sensitive area located on the north side of SW 10th Street between the Florida's Turnpike and Waterways Boulevard. Quiet Waters Park is a 431.4-acre regional park owned and managed by Broward County Parks and Recreation. Amenities include a marina, mountain bike trails, cable skiing, fishing, campgrounds, nature trails, restrooms and showers, volleyball and basketball courts, food concessions, picnic shelters and open picnic areas, a park and campground office, a maintenance facility, and a butterfly and bird sanctuary building. Of these amenities, a series of recreational/mountain bike trails, a lake used for skiing, a water park (Splash Adventure), and the maintenance building are adjacent to the SW 10th Street corridor. The recreational areas adjacent to SW 10th Street represent the noise sensitive sites exposed to traffic noise from SW 10th Street.

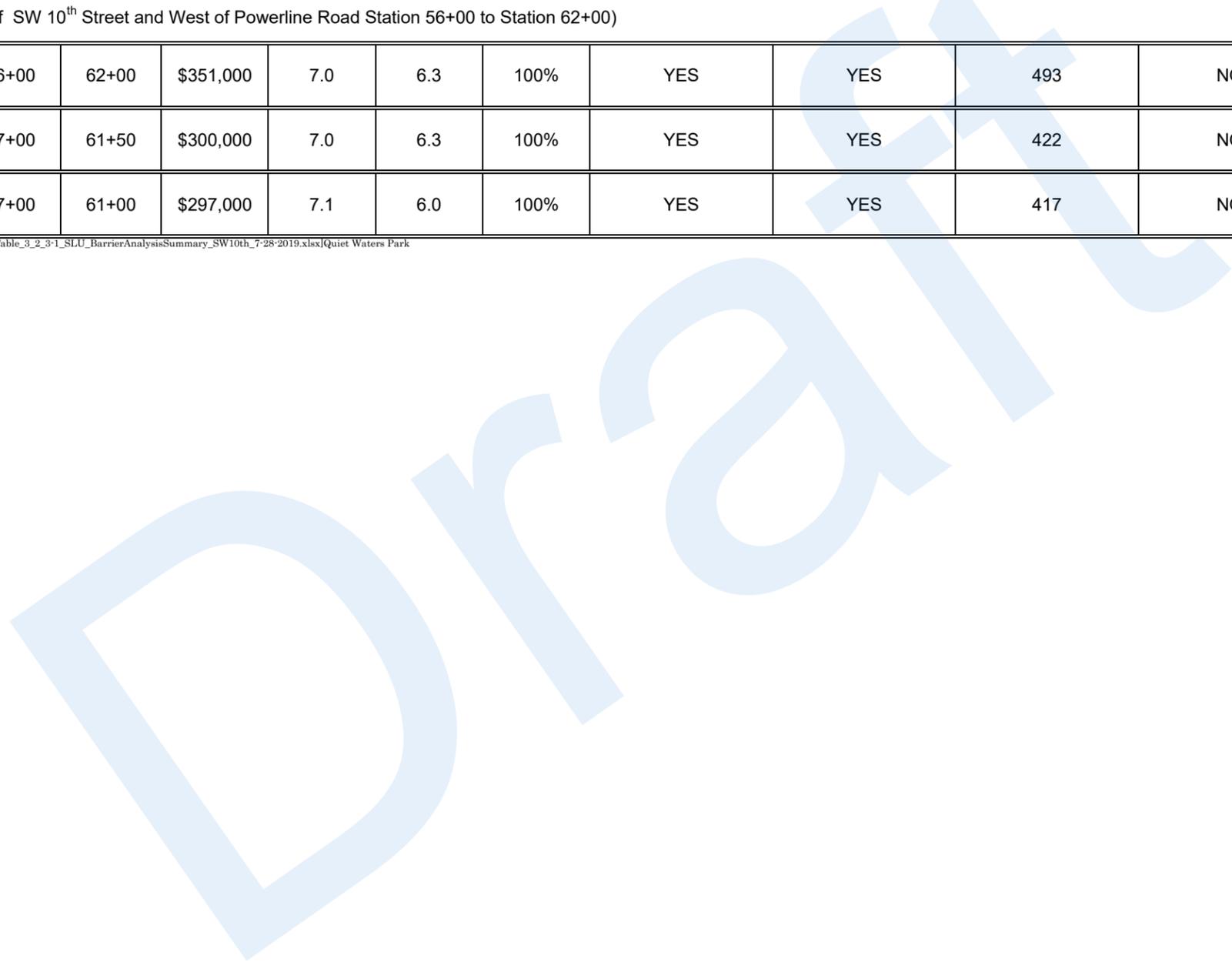
Fourteen receptor sites (QWP Trail 1 through QWP14) were used to represent the noise sensitive recreation sites within the Quiet Waters Park (see **Figure 3.2.1** and **Table 3.2-1** in **Appendix B** and **C**, respectively). The predicted design year noise levels with the proposed improvements range from 60.6 to 66.1 dB(A), approximately 2.8 dB(A) higher than existing levels. Two of the receptor sites associated with ~300 feet of the recreational/bike trails (i.e., QWP Trail 1 and 2) are predicted to be impacted by design year (2040) noise levels with the Build Alternative. Therefore, noise barriers were considered as a noise abatement measure at this location that is referred to as CNE-E3N.

Three ground mounted conceptual noise barrier designs of varying dimensions were evaluated along the northern right-of-way line of SW 10th Street to reduce traffic noise levels at the two receptor sites predicted to be impacted by design year traffic noise. The results of the noise barrier analysis for this area are summarized in **Table 3.2.3-1**. All three conceptual noise barrier designs meet the minimum noise reduction design goal of 7 dB(A) for at least one impacted site and provide at least 5 dB(A) reduction to the impacted receptors.

Table 3.2.3-1: Noise Barrier Analyses for Common Noise Environment CNE-E3N (Quiet Waters Park Recreational Trail)

Noise Barrier Descriptions						Total Estimated Cost	Maximum Noise Reduction dB(A)	Average Noise Reduction dB(A)	Percent of Impacted Area Benefited	Does Barrier Design Meet 7 dB(A) Reduction Goal At Any Site?	Does Barrier Design Provide 5 dB(A) Reduction For Entire Exterior Area of Use Impacted?	Usage Required to be Cost Reasonable (Person Hours per Day)	Actual Usage Likely to Exceed Required Usage to be Cost Reasonable	Does Barrier Design Meet FDOT's Noise Reduction and Cost Reasonableness Criteria?	Conceptual Noise Barrier Design Recommended for further Consideration and Public Input?
Noise Barrier Conceptual Design	Type	Height (Feet)	Length (feet)	Begin Station	End Station										
Quiet Waters Park Recreational Trail / CNE-E3N (North of SW 10 th Street and West of Powerline Road Station 56+00 to Station 62+00)															
E3N-CD1	Ground Mounted	18	650	56+00	62+00	\$351,000	7.0	6.3	100%	YES	YES	493	NO	NO	NO
E3N-CD2	Ground Mounted	20	500	57+00	61+50	\$300,000	7.0	6.3	100%	YES	YES	422	NO	NO	NO
E3N-CD3	Ground Mounted	22	450	57+00	61+00	\$297,000	7.1	6.0	100%	YES	YES	417	NO	NO	NO

\\rsandh.com\files\Transportation\Noise_Studies\SW10th Street\Noise Study Report\Tables\Table_3_2_3-1_SLU_BarrierAnalysisSummary_SW10th_7-28-2019.xlsx\Quiet Waters Park



Of the three conceptual barrier designs evaluated, E3N-CD3 is the lowest cost conceptual barrier design. Conceptual Noise Barrier Design E3N-CD3 represents a 22-foot-tall ground mounted noise barrier. The barrier extends approximately 450 feet, from Station 57+00 to Station 61+00. This barrier would benefit 100 percent of the impacted area, providing an average noise reduction of 6.0 dB(A) and a maximum noise reduction of 7.1 dB(A). The estimated construction cost of this conceptual barrier design is \$297,000.

The FDOT's special land use methodology was used to determine if the cost of conceptual design E3N-CD3 would be reasonable, based on the level of activity expected at this facility. The required daily usage rate (i.e., person-hours per day) for E3N-CD3 is 417 persons per day, each spending a minimum of one hour along this trail adjacent to SW 10th Street (see **Table 3.2.3-2**). Since the impacted area is a short segment of a trail (~300 feet), people are likely to move through this area and not congregate in the area exposed to high traffic noise levels. Consequently, it is not reasonable to assume that this area would experience this level of use on a typical day (i.e., 417 persons hours). Therefore, noise barriers are not considered cost reasonable at this location and are not recommended for further consideration at this location.

3.2.4 South of SW 10th Street from SW 30th Avenue to SW 24th Avenue - Waterford Courtyards, Crystal Heights, and Crystal Heights Park (CNE-E4S)

Two residential developments including Waterford Courtyards and Crystal Heights and a community park (Crystal Heights Park) are located on the south side of SW 10th Street between SW 30th Avenue and SW 24th Avenue. The recreational areas (i.e., playground) of the park and the residences of these two residential developments are exposed to traffic noise from SW 10th Street. The Waterford Courtyards is a multi-family development with two-story dwelling units with both patios and balconies facing SW 10th Street. Crystal Heights development consists of single family homes. Crystal Heights Park is a 1.37-acre community park associated with the Crystal Heights subdivision. The park includes open grassed areas, a children's playground, covered picnic table with grill and an open-air picnic table.

One-hundred and two receptor sites were used to represent the residential and non-residential noise sensitive sites within these two communities (see **Figure 3.2.1** and **Table 3.2-1** in **Appendix B** and **C**, respectively). For Waterford Courtyards, 72 receptor sites were used to represent the 48 residences with patios and balconies adjacent to SW 10th Street (WC1 through WC48). For Crystal Heights, 32 receptor sites were used to represent the 29 residences adjacent to SW 10th Street (CH1 through CH32). One receptor site (i.e., CH33-C) was used to represent the recreational areas associated with Crystal Heights Park.

Table 3.2.3-2: Conceptual Noise Barrier Design - Usage Analysis for Quiet Waters Park Recreational Trail (CNE-E3N)

Item	Criteria	Actual Usage	Needed Usage to Meet FDOT's Cost Reasonableness Criteria (Input Data)			Units
			Conceptual Noise Barrier Design Number			
			E3N-CD1	E3N-CD2	E3N-CD3	
1	Enter Length of Proposed Noise Barrier	---	650	500	450	feet
2	Enter Height of Proposed Noise Barrier	---	18	20	22	feet
3	Total Square Feet of Proposed Noise Barrier (Multiply item 1 by Item 2)	---	11,700	10,000	9,900	feet ²
4	Enter the average amount of time that a person stays at the site per visit	Unknown	1	1	1	hours
5	Enter the average number of people that use this site per day that will receive at least 5 dB(A) benefit from abatement at the site	Unknown	493	422	417	persons
6	Total Person Hours per Day Benefited by Noise Barrier (Multiply Item 4 by Item 5)	---	493	422	417	person-hours
7	Average Square Foot of Noise Barrier per Person Hour (Divide Item 3 by Item 6)	---	23.71	23.71	23.71	feet ² /person-hours
8	Cost per Person Hour per Square Foot of Noise Barrier (Multiply Item 7 by \$42,000)	N/A	\$995,935	\$995,935	\$995,935	\$/person-hours/ft ²
9	Does item 8 exceed the "abatement cost factor" of: \$995,935/person-hour/ft ² ?	N/A	No	No	No	Yes/No
10	If item 9 is no, abatement is cost reasonable.	N/A	N/A	N/A	N/A	---
11	If item 9 is yes, abatement is not cost reasonable.	N/A	N/A	N/A	N/A	---

\\rsandh.com\files\Transportation\Noise_Studies\SW10th Street\Noise Study Report\Tables\Table_3_2_3-2_SLU Worksheet_SW10th_7-27-2019.xlsx\Woodland Cemetery

Source: FDOT Report - A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations (2009)

For the residences in the Waterford Courtyards development, the predicted design year noise levels with the proposed improvements range from 51.2 to 71.2 dB(A), approximately 5.5 dB(A) higher than existing levels (see **Table 3.2-1**). The patios of eight residences and the balconies of 16 residences within this community are predicted to be impacted by design year (2040) noise levels with the Build Alternative. The predicted noise levels for the balconies at these residences were provided for comparison purposes to the patio areas that were considered the area of frequent human use for these residences. The balconies were considered too small to represent areas of frequent human use compared to the first floor patios. For the residences in the Crystal Heights development, the predicted design year noise levels, with the proposed improvements, range from 56.1 to 67.3 dB(A), approximately 6.1 dB(A) higher than existing levels (see **Table 3.2-1**). Twelve residences within this community are predicted to be impacted by design year (2040) noise levels with the Build Alternative. The predicted design year noise levels with the proposed improvements at Crystal Heights Park (i.e., Receptor Site CH33-C) was 67.1 dB(A), approximately 7.3 dB(A) higher than existing levels. Therefore, the recreational areas of Crystal Heights Park are predicted to be impacted by design year (2040) noise levels with the Build Alternative. Since the recreational areas of Crystal Height Park and 20 residences (i.e., backyards and patios) are predicted to be to be impacted by design year (2040) noise levels with the Build Alternative, noise barriers were considered as a noise abatement measure at this location that is referred to as CNE-E4S. Cross streets (i.e., SW 30th Street, SW 28th Street, and SW 24th Street) and the C-2 Canal in the vicinity of Station 145+00 limit the ability to have a continuous noise barrier at this location.

Eight ground mounted conceptual noise barrier designs of varying dimensions were evaluated along the southern right-of-way line of SW 10th Street to reduce traffic noise levels at the 20 residences and recreational area (Receptor Site CH33-C) predicted to be impacted by design year traffic noise. The results of the noise barrier analysis for this area are summarized in **Table 3.2.4-1**. Seven of the eight conceptual barrier designs evaluated meet the minimum noise reduction design goal of 7 dB(A) for at least one impacted residence and meet the reasonable cost criteria of equal to or less than \$42,000 per benefited receptor site. In addition, all conceptual barrier designs provided at least 5 dB(A) of noise reduction to the Crystal Height Park. Crystal Height Park represents a special land use but was not evaluated separately since it would be incidentally benefited by the noise barriers being evaluated for the impacted residences in Crystal Heights. Conceptual Barrier Design E4S-CD8 was determined to be the most feasible and cost reasonable for this community.

Table 3.2.4-1: Noise Barrier Analyses for Common Noise Environment CNE-E4S (Waterford Courtyard and Crystal Heights Communities and Crystal Heights Park)

Noise Sensitive Area (General Location/Station Range)	Conceptual Barrier Design Number	Barrier Type (Segment Name)	Barrier Location	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Impacted Receptor Sites	Number of Impacted/ Benefited Receptor Sites	Number of Benefited Receptor Sites/ Not Impacted	Total Number of Benefited Receptor Sites	Average Noise Reduction for all Benefited Receptor Sites dB(A)	Maximum Noise Reduction for all Benefited Receptor Sites dB(A)	Cost (\$30 per square foot)	Average Cost/Site Benefited	Conceptual Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of \$42,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal	Comments
Waterford Courtyards, Crystal Heights, and Crystal Heights Park/CNE-E4S (South of SW 10th Street and East of SW 30th Avenue/Station 125+00 to Station 152+00)	E4S-CD1	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street	8	960	125+00	134+60	20	8	3	11	5.6	6.6	\$583,200	\$53,018	NO	Conceptual Barrier Design E4S-CD1 does not FDOT Reasonable Cost Criteria or Noise Reduction Design Goal
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street	8	920	135+40	144+60										
		Ground Mounted (Segment 3)	Southern Right-of-Way Line of SW 10 th Street	8	550	145+60	151+10										
	E4S-CD2	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street	10	960	125+00	134+60	20	9	14	23	6.9	8.2	\$729,000	\$31,696	Yes	Conceptual Barrier Design E4S-CD2 does not maximized the number of impacted and benefited receptor sites
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street	10	920	135+40	144+60										
		Ground Mounted (Segment 3)	Southern Right-of-Way Line of SW 10 th Street	10	550	145+60	151+10										
	E4S-CD3	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street	12	960	125+00	134+60	20	16	14	30	7.2	9.0	\$874,800	\$29,160	Yes	Conceptual Barrier Design E4S-CD3 does not maximized the number of impacted and benefited receptor sites
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street	12	920	135+40	144+60										
		Ground Mounted (Segment 3)	Southern Right-of-Way Line of SW 10 th Street	12	550	145+60	151+10										
	E4S-CD4	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street	14	960	125+00	134+60	20	18	14	32	7.6	10.1	\$1,020,600	\$31,894	Yes	---
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street	14	920	135+40	144+60										
		Ground Mounted (Segment 3)	Southern Right-of-Way Line of SW 10 th Street	14	550	145+60	151+10										
	E4S-CD5	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street	16	960	125+00	134+60	20	18	17	35	7.8	10.9	\$1,166,400	\$33,326	Yes	---
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street	16	920	135+40	144+60										
		Ground Mounted (Segment 3)	Southern Right-of-Way Line of SW 10 th Street	16	550	145+60	151+10										
	E4S-CD6	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street	18	960	125+00	134+60	20	18	25	43	8.3	11.9	\$1,312,200	\$30,516	Yes	---
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street	18	920	135+40	144+60										
		Ground Mounted (Segment 3)	Southern Right-of-Way Line of SW 10 th Street	18	550	145+60	151+10										
	E4S-CD7	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street	20	960	125+00	134+60	20	18	27	45	8.9	12.6	\$1,458,000	\$32,400	Yes	---
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street	20	920	135+40	144+60										
		Ground Mounted (Segment 3)	Southern Right-of-Way Line of SW 10 th Street	20	550	145+60	151+10										
	E4S-CD8	Ground Mounted (Segment 1)	Southern Right-of-Way Line of SW 10 th Street	22	960	125+00	134+60	20	18	29	47	9.3	13.2	\$1,603,800	\$34,123	Yes	Represents the optimal Conceptual Noise Barrier Design (E4S-CD8); Recommended for further consideration in the Final Design Phase and for public input
		Ground Mounted (Segment 2)	Southern Right-of-Way Line of SW 10 th Street	22	920	135+40	144+60										
		Ground Mounted (Segment 3)	Southern Right-of-Way Line of SW 10 th Street	22	550	145+60	151+10										

\\sandh.com\files\Transportation\Noise_Studies\SW 10th Street Noise Study Report Tables\Tables_3_2_X-X_SW 10th_NoiseBarrierAnalysis_8-7-2019.xlsx\Waterways\Hwy_7-30

 Represents the optimal conceptual noise barrier design and is recommended for further consideration in the Final Design Phase and public input.

Conceptual Barrier Design E4S-CD8 represents three 22-foot-tall ground mounted noise barrier segments. One of the segments is located between SW 30th Avenue and SW 28th Avenue and extends approximately 960 feet, from Station 125+00 to Station 134+60. The second barrier segment is located between SW 28th Avenue and the west side of the C-2 Canal at Station ~144+80 and extends approximately 920 feet, from Station 135+40 to Station 144+60. The third barrier segment is located between the east side of the C-2 Canal at Station ~145+50 and SW 24th Avenue and extends approximately 550 feet, from Station 145+60 to Station 151+10. The recommended noise barriers would benefit Crystal Height Park and 47 residences, including 18 of the 20 impacted residences, and would provide an average noise reduction of 9.3 dB(A) at benefited receptor sites with a maximum reduction of 13.2 dB(A). Receptor Sites CH1 and CH28 located at the ends of the recommended noise barrier are not benefited. The estimated construction cost of this conceptual barrier design is \$1,603,800, or \$34,123 per benefited receptor site.

Conceptual Noise Barrier Design E4S-CD8 is recommended for further consideration and public input during the Final Design phase. Conceptual design E4S-CD8 meets the FDOT's cost reasonableness criteria of equal to or less than \$42,000 per benefited receptor and the noise reduction reasonableness criteria of 7 dB(A) at one or more impacted sites. Except for potential conflicts with overhead electric utilities and possibly the maintenance area adjacent to the C-2 Canal, this conceptual barrier design satisfies the reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety and constructability. The height of the noise walls at this location could be affected by the overhead electric lines if they remain in place. In addition, the C-2 Canal and maintenance access may limit the extent of the noise barriers in this area. Therefore, coordination with the overhead utility company and Broward County Water Control District will be required during the Final Design Phase of the project to address potential conflicts and issues with constructing a noise barrier at this location. The barrier design does not conflict or obstruct any existing, conforming, and legally permitted outdoor advertising signs. Additional noise barrier analysis will be performed during the Final Design phase to confirm the dimensions of the recommended noise barriers at these locations. Final decisions on barrier dimensions are made during the Final Design phase of the project and after determining the support for noise barriers from the benefited noise sensitive sites.

3.2.5 North of SW 10th Street from West of SW 30th Avenue to Military Trail - Century Village (CNE-E5N)

Century Village is the only noise sensitive area located on the north side of SW 10th Street between the entrance road to Quiet Waters Business Park and Military Trail. Century Village is a multi-family residential development with two-story and five-story residential buildings. Only the two-story buildings have patios and balconies that are exposed to traffic noise from SW 10th Street.

One hundred and five receptor sites (CV1 through CV105) were used to represent the 124 residences and seven non-residential noise sensitive sites within this community (see **Figure 3.2.1** and **Table 3.2-1** in **Appendix B** and **C**, respectively). The predicted design year noise levels with the proposed improvements range from 54.8 to 75.8 dB(A), approximately 3.6 dB(A) higher than existing levels. Seventy residences and two of the non-residential receptor sites (i.e., C34-C and CV45-C both representing a park bench) within this community are predicted to be impacted by design year (2040) noise levels with the Build Alternative. Therefore, noise barriers were considered as a noise abatement measure at this location that is referred to as CNE-E5N. Cross streets (i.e., Military Trail and the entrance road to Quiet Waters Business Park) limit the length of the noise barrier at this location. The C-2 Canal in the vicinity of Station 145+00 may limit the ability to have a continuous noise barrier at this location.

Seven conceptual noise barrier designs of varying dimensions were evaluated to reduce traffic noise levels at the 70 residences and two non-residential uses predicted to be impacted by design year traffic noise. All the conceptual barrier designs extend the limits of Century Village residential development. The conceptual barrier designs evaluated included a combination of ground mounted noise barriers along the northern SW 10th Street and western Military Trail right-of-way lines and a shoulder mounted noise barrier along the outside shoulder of the proposed SW 10th Street westbound managed lanes in the vicinity of Military Trail. The two non-residential noise receptor sites (i.e., park benches) represent a special land use but were not evaluated separately since it would be incidentally benefited by the noise barriers being evaluated for the impacted residences in Century Village. The results of the noise barrier analysis for this area are summarized in **Table 3.2.5-1**. All seven conceptual barrier designs evaluated meet the minimum noise reduction design goal of 7 dB(A) for at least one impacted residence and meet the reasonable cost criteria of equal to or less than \$42,000 per benefited receptor site. Conceptual Barrier Design E5N-CD7 was determined to be the most feasible and cost reasonable for this community.

Table 3.2.5-1: Noise Barrier Analyses for Common Noise Environment CNE-E5N (Century Village Community)

Noise Sensitive Area (General Location/Station Range)	Conceptual Barrier Design Number	Barrier Type (Segment Name)	Barrier Location	Height (feet)	Length (feet)	Begin Station Number	End Station Number	Number of Impacted Receptor Sites	Number of Impacted/ Benefited Receptor Sites	Number of Benefited Receptor Sites/ Not Impacted	Total Number of Benefited Receptor Sites	Average Noise Reduction for all Benefited Receptor Sites dB(A)	Maximum Noise Reduction for all Benefited Receptor Sites dB(A)	Cost (\$30 per square foot)	Average Cost/Site Benefited	Conceptual Barrier Design Meets FDOT's Reasonable Noise Abatement Cost Criteria of \$42,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal	Comments
Century Village/CNE-E5N (North of SW 10th Street and West of Military Trail/ Station 118+00 to Station 174+00)	E5N-CD1	Ground Mounted (Segment 1)	Northern Right-of-Way Line of SW 10 th Street	14	4,560	118+40	164+00	70	69	34	103	7.1	12.9	\$2,492,400	\$24,198	Yes	---
		Ground Mounted (Segment 2)	Northern Right-of-Way Line of SW 10 th Street	14	60	173+00	173+60										
		Ground Mounted (Segment 3)	Western Right-of-way Line of Military Trail	14	400	173+60 / 1000+00	175+60 / 1004+00										
		Shoulder Mounted	Westbound Managed Lanes Along Outside Shoulder	8	1,600	162+40	178+40										
	E5N-CD2	Ground Mounted (Segment 1)	Northern Right-of-Way Line of SW 10 th Street	16	4,560	118+40	164+00	70	69	36	105	7.5	13.9	\$2,742,000	\$26,114	Yes	---
		Ground Mounted (Segment 2)	Northern Right-of-Way Line of SW 10 th Street	14	60	173+00	173+60										
		Ground Mounted (Segment 3)	Western Right-of-way Line of Military Trail	14	400	173+60 / 1000+00	175+60 / 1004+00										
		Shoulder Mounted	Westbound Managed Lanes Along Outside Shoulder	8	1,500	163+40	178+40										
	E5N-CD3	Ground Mounted (Segment 1)	Northern Right-of-Way Line of SW 10 th Street	16	4,560	118+40	164+00	70	69	36	105	7.6	13.9	\$2,769,600	\$26,377	Yes	---
		Ground Mounted (Segment 2)	Northern Right-of-Way Line of SW 10 th Street	16	60	173+00	173+60										
		Ground Mounted (Segment 3)	Western Right-of-way Line of Military Trail	16	400	173+60 / 1000+00	175+60 / 1004+00										
		Shoulder Mounted	Westbound Managed Lanes Along Outside Shoulder	8	1,500	163+40	178+40										
	E5N-CD4	Ground Mounted (Segment 1)	Northern Right-of-Way Line of SW 10 th Street	18	4,660	118+40	165+00	70	69	38	107	8.2	14.9	\$3,124,800	\$29,204	Yes	---
		Ground Mounted (Segment 2)	Northern Right-of-Way Line of SW 10 th Street	18	60	173+00	173+60										
		Ground Mounted (Segment 3)	Western Right-of-way Line of Military Trail	18	400	173+60 / 1000+00	175+60 / 1004+00										
		Shoulder Mounted	Westbound Managed Lanes Along Outside Shoulder	8	1,500	163+40	178+40										
	E5N-CD5	Ground Mounted (Segment 1)	Northern Right-of-Way Line of SW 10 th Street	20	4,660	118+40	165+00	70	70	40	110	8.6	15.8	\$3,408,000	\$30,982	Yes	---
		Ground Mounted (Segment 2)	Northern Right-of-Way Line of SW 10 th Street	20	60	173+00	173+60										
		Ground Mounted (Segment 3)	Western Right-of-way Line of Military Trail	20	400	173+60 / 1000+00	175+60 / 1004+00										
		Shoulder Mounted	Westbound Managed Lanes Along Outside Shoulder	8	1,400	164+40	178+40										
	E5N-CD6	Ground Mounted (Segment 1)	Northern Right-of-Way Line of SW 10 th Street	22	4,760	118+40	166+00	70	70	40	110	9.0	16.4	\$3,757,200	\$34,156	Yes	---
		Ground Mounted (Segment 2)	Northern Right-of-Way Line of SW 10 th Street	22	60	173+00	173+60										
		Ground Mounted (Segment 3)	Western Right-of-way Line of Military Trail	22	400	173+60 / 1000+00	175+60 / 1004+00										
		Shoulder Mounted	Westbound Managed Lanes Along Outside Shoulder	8	1,300	165+40	178+40										
	E5N-CD7	Ground Mounted (Segment 1)	Northern Right-of-Way Line of SW 10 th Street	22	4,760	118+40	166+00	70	70	40	110	8.7	16.4	\$3,646,800	\$33,153	Yes	Represents the optimal Conceptual Noise Barrier Design (E5N-CD7). Recommended for further consideration in the Final Design Phase and for public input
		Ground Mounted (Segment 2)	Northern Right-of-Way Line of SW 10 th Street	14	60	173+00	173+60										
		Ground Mounted (Segment 3)	Western Right-of-way Line of Military Trail	14	400	173+60 / 1000+00	175+60 / 1004+00										
		Shoulder Mounted	Westbound Managed Lanes Along Outside Shoulder	8	1,300	165+40	178+40										

\\nas01b.com\files\Transportation\Noise_Studios\SW10th Street Noise Study Report\Figures\Tables\Table_3_2_X-X_SW10th_NoiseBarrierAnalysis_8-7-2019.xlsx\Waterways\Hwy_7-30

 Represents the optimal conceptual noise barrier design and is recommended for further consideration in the Final Design Phase and public input.

Conceptual Noise Barrier Design E5N-CD7 includes a barrier system with multiple segments including three ground mounted barrier segments and an 8-foot-tall shoulder mounted noise barrier. Two of the ground mounted noise barrier segments are proposed to be located along the northern SW 10th Street right-of-way line. Segment 1 represents a 22-foot tall ground mounted noise barrier that extends approximately 4,760 feet, from Station 118+40 to Station 166+00. Segment 2 represents a 14-foot-tall ground mounted noise barrier that extends 60 feet, from 173+00 to 173+60. Segment 3 connects to Segment 2 and is located on the western right-of-way line of Military Trail and represents a 14-foot tall ground mounted noise barrier that extends 400 feet from Station 173+60 (1000+00) to 175+60 (1004+00). The 8-foot-tall shoulder mounted noise barrier extends 1,300 feet from Station 165+40 to 178+40 and would be located along the proposed outside shoulder of the SW 10th Street westbound managed lanes that will be elevated in the vicinity of Military Trail. The recommended noise barrier would benefit 110 residences including all 70 the impacted residences and the two non-residential receptor sites. The recommended noise barrier would provide an average noise reduction of 8.7 dB(A) at benefited receptor sites with a maximum reduction of 16.4 dB(A). The estimated construction cost of this conceptual barrier design is \$3,646,800 or \$33,153 per benefited receptor site.

Conceptual Noise Barrier Design E5N-CD7 is recommended for further consideration and public input during the Final Design phase. Conceptual design E5N-CD7 meets the FDOT's cost reasonableness criteria of equal to or less than \$42,000 per benefited receptor and the noise reduction reasonableness criteria of 7 dB(A) at one or more impacted sites. Except for potential conflicts with overhead electric utilities and possibly with C-2 Canal, this conceptual barrier design satisfies the reasonableness and feasibility factors considered in the evaluation of noise abatement measures including safety and constructability. The height of the noise walls at this location could be affected by the two overhead electric lines if they remain in place. In addition, the C-2 Canal and maintenance access may limit the ability to construct a continuous noise barrier in this area as recommended. Therefore, coordination with the overhead utility company and Broward County Water Control District will be required during the Final Design Phase of the project to address potential conflicts and issues with constructing a noise barrier at this location. The barrier design does not conflict or obstruct any existing, conforming, and legally permitted outdoor advertising signs. Additional noise barrier analysis will be performed during the Final Design phase to confirm the dimensions of the recommended noise barriers at these locations. Final decisions on barrier dimensions are made during the Final Design phase of the project and after determining the support for noise barriers from the benefited noise sensitive sites.

4.0 Conclusions

A traffic noise study was performed in accordance with 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2010), the FDOT's PD&E Manual, Part 2, Chapter 18, Highway Traffic Noise (January 14, 2019), and FDOT's Traffic Noise Modeling and Analysis Practitioners Handbook (January 1, 2016). Design year traffic (2040) noise levels for the Build Alternative will approach or exceed the NAC at 163 residences and five special land use sites within the project limits. Consequently, the feasibility and reasonableness of noise barriers were considered for those noise sensitive sites predicted to be impacted.

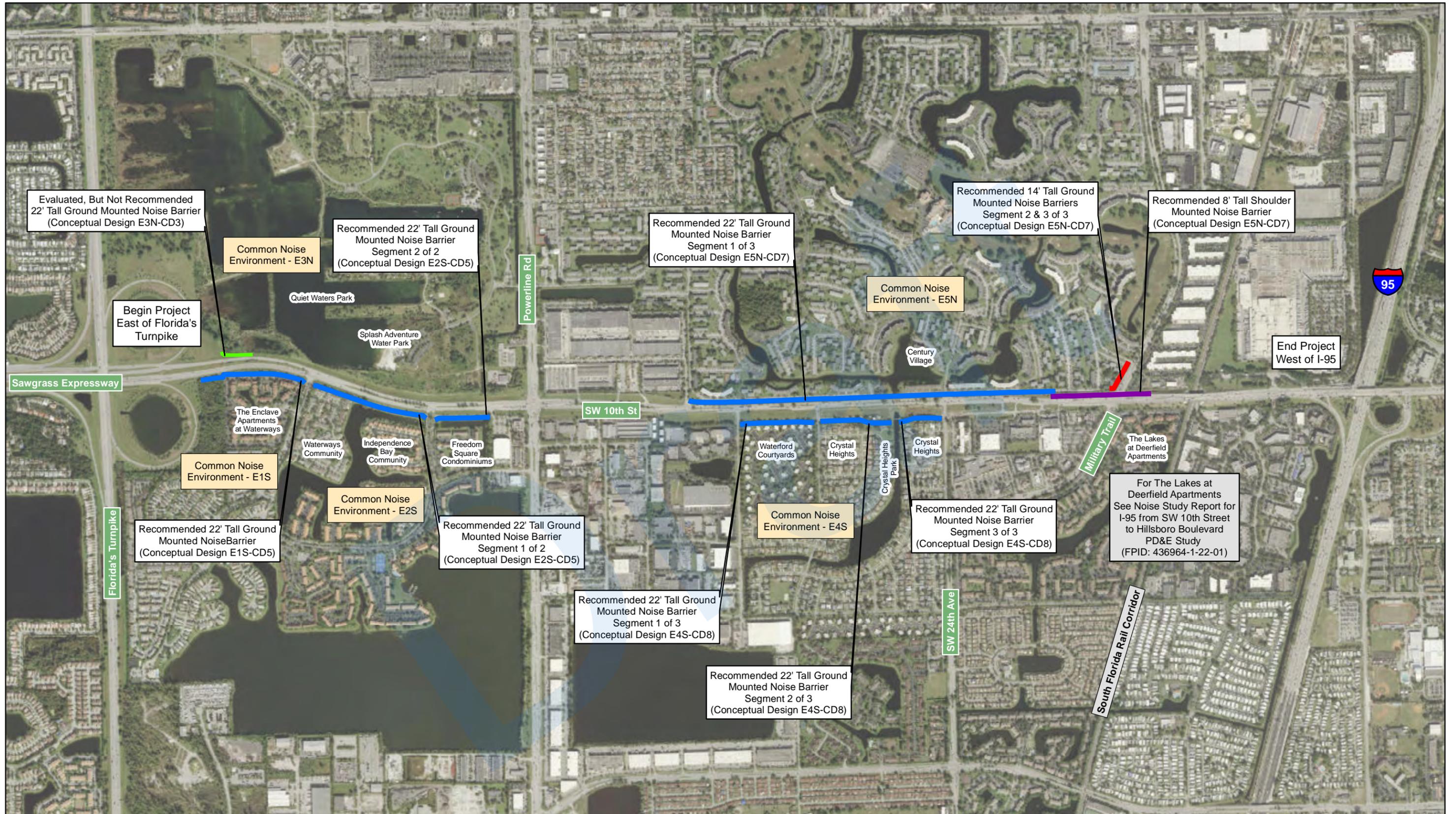
Five separate CNEs were used to assess noise barriers for the noise sensitive sites that approach or exceed the NAC:

- E1S - Represents the 23 impacted residences in the Enclave Apartments at Waterways;
- E2S - Represents the 50 impacted residences in the Waterways, Independence Bay, and Freedom Square residential developments;
- E3N - Represents a ~300-foot segment of a recreation trail within Quiet Waters Park;
- E4S - Represents the 20 impacted residences within the Waterford Courtyards and Crystal Heights Communities and a non-residential site (i.e., Crystal Heights Park); and
- E5N - Represents the 70 impacted residences and two non-residential sites (i.e., park benches) within Century Village.

Table 4-1 summarizes the results of the noise barrier analyses and recommendations for each of the locations where noise barriers were evaluated. Noise barriers at four of the CNEs (E1S, E2S, E4S, and E5N) were determined to be feasible and cost reasonable and are recommended for further consideration during the design phase and for public input. The locations of the recommended noise barriers are depicted on **Figure 4.1**. The cost per benefited site of the recommended conceptual noise barrier designs are within FDOT's noise barrier cost criteria of equal to or less than \$42,000 per benefited site and they will meet FDOT's noise reduction reasonableness criteria of 7 dB(A) at one or more impacted sites. The recommended noise barriers are expected to reduce traffic noise by at least 5 dB(A) at 277 residences including 159 of the 163 impacted residences. The estimated cost of the recommended barriers is \$7,666,200. Additional noise barrier analysis will be performed during the Final Design phase to confirm the dimensions of the recommended noise barriers at these locations. Final decisions on barrier dimensions are made during the Final Design phase of the project and after determining the support for noise barriers from the benefited noise sensitive sites.

Table 4-1: Noise Barrier Evaluation Summary

Noise Sensitive Area (General Location)	Common Noise Environment (CNE) Identification Number	Optimal Conceptual Noise Barrier Design Identification	Noise Barrier Type	Height (Feet)	Length (Feet)	Begin Station Number	End Station Number	Number of Impacted Receptor Sites	Maximum Noise Reduction for Impacted Receptor Sites dB(A)	Number of Impacted/ Benefited Receptor Sites	Total Number of Benefited Receptor Sites	Average Noise Reduction for all Benefited Receptor Sites	Estimated Cost (\$30.00 per square foot)	Average Cost per Site Benefited	Does Optimal Barrier Design Meet FDOT's Reasonable Noise Abatement Criteria of \$42,000 per Benefited Receptor Site and 7.0 dB(A) Noise Reduction Design Goal?	Noise Barrier Recommended for Further Consideration and Public Input?
East of Florida's Turnpike to Powerline Road																
The Enclave Apartments at Waterways (South of SW 10 th Street and West of Waterways Boulevard)	E1S	E1S-CD5	Ground Mounted	22	1,400	54+00	68+60	23	11.0	23	64	7.5	\$924,000	\$14,438	YES	YES
Waterways, Independence Bay, and Freedom Square Communities (South of SW 10 th Street and East/ West of Independence Boulevard)	E2S	E2S-CD5	Ground Mounted (Segment 1)	22	1,540	69+50	84+40	50	10.3	48	56	7.5	\$1,491,600	\$26,636	YES	YES
			Ground Mounted (Segment 2)	22	720	85+40	92+60									
Quiet Waters Park Recreational Trail (North of SW 10 th Street and West of Power Line Road)	E3N	E3N-CD3	Ground Mounted	22	450	57+00	61+00	Special Land Use	7.1	---	---	---	\$297,000	---	No (Usage of Facility Less Than Required to be Cost Reasonable)	NO
Powerline Road to Military Trail																
Waterford Courtyards, Crystal Heights, and Crystal Heights Park (South of SW 10 th Street and East of SW 30 th Avenue)	E4S	E4S-CD8	Ground Mounted (Segment 1)	22	960	125+00	134+60	20	13.2	18	47	9.3	\$1,603,800	\$34,123	YES	YES
			Ground Mounted (Segment 2)	22	920	135+40	144+60									
			Ground Mounted (Segment 3)	22	550	145+60	151+10									
Century Village (North of SW 10 th Street and West of Military Trail)	E5N	E5N-CD7	Ground Mounted (Segment 1)	22	4,760	118+40	166+00	70	16.4	70	110	8.7	\$3,646,800	\$33,153	YES	YES
			Ground Mounted (Segment 2)	14	60	173+00	173+60									
			Ground Mounted (Segment 3)	14	400	173+60	175+60									
			Shoulder Mounted	8	1,300	165+40	178+40									



Florida Department of Transportation
 SR 869/SW 10th Street Connector PD&E Study
 Financial Project ID: 439891-1-22-02
 Broward County, Florida

DATE: AUGUST 2019

Recommended Noise Barriers — Non Recommended Noise Barrier
Height
— 8 Feet
— 14 Feet
— 22 Feet

0 500 1,000 2,000 Feet



Figure 4-1
 Noise Barrier
 Recommendation Map

Noise barriers were not found to be cost reasonable at the Quiet Waters Park recreational trails (CNE-E3N). The usage of this trail was less than required to be cost reasonable; therefore, a noise barrier is not recommended for further consideration or construction at this location. Based on the noise analyses performed to date, there appears to be no apparent solutions available to mitigate the noise impacts at this recreational area or the four impacted residences not benefited (i.e., Receptor Sites IBC9, FSC301S, CH1, and CH28) that are located at the ends of the recommended noise barriers. The traffic noise impacts to these noise sensitive sites are an unavoidable consequence of the project.

Statement of Likelihood

FDOT is committed to the construction of feasible noise abatement measures at the noise impacted locations identified in **Table 4-1** and **Figure 4.1** upon the following conditions:

- Final recommendations on the construction of abatement measures is determined during the project's Final Design and through the public involvement process;
- Detailed noise analyses during the Final Design process support the need, feasibility and reasonableness of providing abatement;
- Cost analysis indicates that the cost of the noise barrier(s) will not exceed the cost reasonable criterion;
- Community input supporting types, heights, and locations of the noise barrier(s) is provided to the District Office; and
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.

It is likely that the noise abatement measures for the identified locations will be constructed if found feasible based on the 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.

5.0 Construction Noise and Vibration

During construction of the project, there is the potential for noise impacts to be substantially greater than those resulting from normal traffic operations because heavy equipment is typically used to build roadways. In addition, construction activities may result in vibration impacts. Therefore, early identification of potential noise/vibration sensitive sites along the project corridor is important in minimizing noise and vibration impacts. The project area does include residential, commercial, and institutional land uses. Construction noise and vibration impacts to these sites will be minimized by adherence to the controls listed in the latest edition of the FDOT's Standard Specifications for Road and Bridge Construction. A reassessment of the project corridor for additional sites particularly sensitive to construction noise and/or vibration will be performed during design to ensure that impacts to such sites are minimized.

Draft

6.0 Community Coordination

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.

To aid in promoting land use compatibility, a copy of the Noise Study Report, which provides information that can be used to protect future land development from becoming incompatible with anticipated traffic noise levels, will be provided to the City of Deerfield Beach and Broward County. In addition, generalized future noise impact contours for the properties in the immediate vicinity of the project have been developed for Noise Abatement Activity Categories B/C and E (i.e., residential and other sensitive land uses, and sensitive commercial land uses, respectively). These contours represent the approximate distance from the edge of the nearest proposed travel lane of SW 10th Street to the limits of the area predicted to approach [i.e., within 1 dB(A)] or exceed the NAC in the design year (2040). The contours do not consider any shielding of noise provided by structures between the receptor and the proposed travel lanes. Within the project corridor, the distance between the proposed edge of the outside travel lane and the contour at various locations are presented in **Table 6-1**. To minimize the potential for incompatible land use, noise sensitive land uses should be located beyond this distance.

Table 6-1: Design Year (2040) Noise Impact Contours

Roadway Segment	Distance from Proposed Nearest Travel Lane to Noise Contour (Feet)	
	66 dB(A) - Activity Category B/C	71 dB(A) - Activity Category E
South of SW 10 th Street from Florida's Turnpike to Waterways Boulevard	250	115
South of SW 10 th Street from Waterways Boulevard to Independence Drive	250	90
South of SW 10 th Street from Independence Drive to Military Trail	145	30
North of SW 10 th Street from Florida's Turnpike to Waterways Boulevard	160	25
North of SW 10 th Street from Waterways Boulevard to Powerline Road	110	20
North of SW 10 th Street from Powerline Road to Military Trail	125	20

7.0 References

- 23 CFR Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", Federal Register, Vol. 75, No. 133, Tuesday, July 13, 2010; pages 39834-39839.
- Federal Highway Administration Report FHWA-HEP-10-025, "Highway Traffic Noise: Analysis and Abatement Guidance", June 2010 (revised December 2010); 76 pages.
- Federal Highway Administration Report FHWA-PD-96-009, "FHWA Traffic Noise Model, Version 1.0 User's Guide", January 1998; 192 pages + supplements.
- Federal Highway Administration Report FHWA-HEP-18-065, "Noise Measurement Handbook - Final Report", June 2018; 205 pages.
- Federal Highway Administration Report FHWA-HEP-06-015, "FHWA Highway Construction Noise Handbook: Final Report", August 2006; 185 pages.
- A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations, Roger L. Wayson and John M. MacDonald, University of Central Florida; Updated July 22, 2009; 64 pages.
- Florida Department of Transportation. "Noise Analysis", Part 2, Chapter 18. Project Development and Environment Manual, Florida Department of Transportation, Tallahassee, January 14, 2019.
- Florida Department of Transportation. "Design Manual" (Topic No. 625-000-002, Part 2, Section 264, Noise Walls and Perimeter Walls), January 2018.
- Florida Department of Transportation "Standard Specifications for Road and Bridge Construction", January 2018.

APPENDIX A

**Table 2.2-1: Traffic Data for SR/869 SW 10th Street
Connector PD&E Noise Study**

**TRAFFIC DATA FOR STATE ROAD (SR) 869/SW 10TH STREET CONNECTOR
PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) NOISE STUDY**

**FPID Number(s): 439891-1-22-02
Road Name: SW 10th Street (SR 869)**

Table 2.2-1: Traffic Data for Noise Modeling (Sheet 1 of 4) - Existing Conditions

Roadway Segment	Speed Limit	2016 Existing Traffic (vph) ¹		Number of Lanes	Median	Exclusive Left	Exclusive Right	Median and Turn Lane Adjustments	Non-State Signalized Roadway Adjustment	LOS C Volume*	Highest Peak Volume	Volume used in TNM	Percent Heavy Trucks	Percent Medium Trucks	Percent Buses	Percent Motorcycles	Volume used in TNM	Cars per lane	Heavy Trucks per lane	Medium Trucks per Lane	Buses per lane	Motorcycles per lane	
		AM	PM																				
Eastbound / Northbound																							
Florida Turnpike Interchange Ramps	EB Sawgrass Expressway Ramp to NB FL Turnpike	35	1,920	1,390	1	-	-	-	0%	0%	1,220	1,920	1,220	2.64%	2.01%	0.84%	0.38%	1,220	1,148	32	25	10	5
	EB Sawgrass Expressway Ramp to EB SW 10th St	45	240	135	1	-	-	-	0%	0%	1,340	240	240	0.96%	0.73%	0.30%	0.38%	240	234	2	2	1	1
SW 10th St (SR 869)	EB Sawgrass Expressway Mainline to FL Turnpike Ramps	45	2,540	1,400	3	D	N	N	0%	0%	2,940	2,540	2,540	0.96%	0.73%	0.30%	0.38%	2,540	827	8	6	3	3
	FL Turnpike Ramps to Waterways Blvd	45	2,780	1,535	4	D	N	Y	5%	0%	4,169	2,780	2,780	0.96%	0.73%	0.30%	0.38%	2,780	678	7	5	2	3
	Waterways Blvd to Independence Dr	45	3,105	1,635	4	D	N	Y	5%	0%	4,169	3,105	3,105	0.96%	0.73%	0.30%	0.38%	3,105	757	8	6	2	3
	Independence Dr to Powerline Rd	45	3,155	1,665	3	D	Y	Y	5%	0%	3,087	3,155	3,087	0.96%	0.73%	0.30%	0.38%	3,087	1,004	10	8	3	4
	Powerline Rd to Quiet Waters Business Park Driveway	45	2,580	1,660	3	D	Y	N	0%	0%	2,940	2,580	2,580	0.96%	0.73%	0.30%	0.38%	2,580	840	8	6	3	3
	Quiet Waters Business Park Driveway to SW 30th Ave	45	2,505	1,725	2	D	N	Y	5%	0%	2,006	2,505	2,006	0.96%	0.73%	0.30%	0.38%	2,006	978	10	8	3	4
	SW 30th Ave to SW 28th Ave	45	2,505	1,850	2	D	N	Y	5%	0%	2,006	2,505	2,006	0.96%	0.73%	0.30%	0.38%	2,006	978	10	8	3	4
	SW 28th Ave to SW 24th Ave	45	2,535	1,795	2	D	N	Y	5%	0%	2,006	2,535	2,006	0.96%	0.73%	0.30%	0.38%	2,006	978	10	8	3	4
	SW 24th Ave to South Florida Bible College Driveway	45	2,400	1,725	2	D	N	Y	5%	0%	2,006	2,400	2,006	0.96%	0.73%	0.30%	0.38%	2,006	978	10	8	3	4
	South Florida Bible College Driveway to Walmart Driveway	45	2,395	1,785	2	D	N	Y	5%	0%	2,006	2,395	2,006	0.96%	0.73%	0.30%	0.38%	2,006	978	10	8	3	4
	Walmart Driveway to S Military Trail	45	2,450	1,890	3	D	Y	Y	5%	0%	3,087	2,450	2,450	0.96%	0.73%	0.30%	0.38%	2,450	798	8	6	2	3
	S Military Trail to E Newport Center Dr	40	3,085	1,950	3	D	Y	N	0%	0%	2,940	3,085	2,940	0.96%	0.73%	0.30%	0.38%	2,940	957	9	7	3	4
Powerline Rd (SR 845)	Northbound Approach to SW 10th St Intersection	45	1,660	1,880	3	D	Y	Y	5%	0%	3,087	1,880	1,880	0.73%	1.07%	0.20%	0.34%	1,880	612	5	7	1	2
S Military Trail	Northbound Approach to SW 10th St Intersection	40	1,495	1,015	2	D	Y	Y	5%	-10%	1,805	1,495	1,495	0.63%	1.11%	0.27%	0.60%	1,495	727	5	9	2	5
Westbound / Southbound																							
S Military Trail	Southbound Approach to SW 10th St Intersection	40	1,215	1,440	2	D	Y	Y	5%	-10%	1,805	1,440	1,440	0.63%	1.11%	0.27%	0.60%	1,440	700	5	8	2	5
Powerline Rd (SR 845)	Southbound Approach to SW 10th St Intersection	45	1,720	1,880	3	D	Y	Y	5%	0%	3,087	1,880	1,880	0.73%	1.07%	0.20%	0.34%	1,880	612	5	7	1	2
SW 10th St (SR 869)	E Newport Center Dr to S Military Trail	40	1,835	2,795	3	D	Y	Y	5%	0%	3,087	2,795	2,795	0.96%	0.73%	0.30%	0.38%	2,795	909	9	7	3	4
	S Military Trail to Walmart Driveway	45	1,670	2,590	2	D	Y	N	0%	0%	1,910	2,590	1,910	0.96%	0.73%	0.30%	0.38%	1,910	932	9	7	3	4
	Walmart Driveway to South Florida Bible College Driveway	45	1,615	2,530	2	D	Y	N	0%	0%	1,910	2,530	1,910	0.96%	0.73%	0.30%	0.38%	1,910	932	9	7	3	4
	South Florida Bible College Driveway to SW 24th Ave	45	1,580	2,505	2	D	Y	N	0%	0%	1,910	2,505	1,910	0.96%	0.73%	0.30%	0.38%	1,910	932	9	7	3	4
	SW 24th Ave to SW 28th Ave	45	1,605	2,535	2	D	Y	N	0%	0%	1,910	2,535	1,910	0.96%	0.73%	0.30%	0.38%	1,910	932	9	7	3	4
	SW 28th Ave to SW 30th Ave	45	1,715	2,525	2	D	Y	N	0%	0%	1,910	2,525	1,910	0.96%	0.73%	0.30%	0.38%	1,910	932	9	7	3	4
	SW 30th Ave to Quiet Waters Business Park Driveway	45	1,635	2,515	2	D	N	Y	5%	0%	2,006	2,515	2,006	0.96%	0.73%	0.30%	0.38%	2,006	978	10	8	3	4
	Quiet Waters Business Park Driveway to Powerline Rd	45	1,620	2,560	3	D	Y	Y	5%	0%	3,087	2,560	2,560	0.96%	0.73%	0.30%	0.38%	2,560	833	8	6	3	3
	Powerline Rd to Independence Dr	45	1,690	3,260	3	D	Y	N	0%	0%	2,940	3,260	2,940	0.96%	0.73%	0.30%	0.38%	2,940	957	9	7	3	4
	Independence Dr to Waterways Blvd	45	1,700	3,205	3	D	Y	N	0%	0%	2,940	3,205	2,940	0.96%	0.73%	0.30%	0.38%	2,940	957	9	7	3	4
	Waterways Blvd to FL Turnpike Ramps	45	1,730	2,925	3	D	N	N	0%	0%	2,940	2,925	2,925	0.96%	0.73%	0.30%	0.38%	2,925	952	9	7	3	4
	FL Turnpike Ramps to Sawgrass Expressway Mainline Merge Point	45	1,500	2,590	2	D	N	N	0%	0%	1,910	2,590	1,910	0.96%	0.73%	0.30%	0.38%	1,910	932	9	7	3	4
Florida Turnpike Interchange Ramps	WB SW 10th St On Ramp to Lyons Rd	45	230	335	1	-	-	-	0%	0%	1,340	335	335	0.96%	0.73%	0.30%	0.38%	335	328	3	2	1	1
	NB FL Turnpike to WB Sawgrass Expressway	35	480	990	1	-	-	-	0%	0%	1,220	990	990	2.64%	2.01%	0.84%	0.38%	990	932	26	20	8	4

* LOS "C" volumes obtained from Table 7 of FDOT's Level of Service Handbook (2013) and HCM 2000 (Volume adjustments have been applied as appropriate)
¹ Volumes from Figure 2.15 - 2.20

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

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

Date: 8/8/2019

TRAFFIC DATA FOR STATE ROAD (SR) 869/SW 10TH STREET CONNECTOR
PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) NOISE STUDY

FPID Number(s): 439891-1-22-02
Road Name: SW 10th Street (SR 869)

Table 2.2-1: Traffic Data for Noise Modeling (Sheet 2 of 4) - No Build Conditions

Roadway Segment	Speed Limit	2040 No Build Traffic (vph) ¹		Number of Lanes	Median	Exclusive Left	Exclusive Right	Median and Turn Lane Adjustments	Non-Signalized Roadway Adjustment	LOS C Volume*	Highest Peak Volume	Volume used in TNM	Percent Heavy Trucks	Percent Medium Trucks	Percent Buses	Percent Motorcycles	Volume used in TNM	Total Cars	Total Heavy Trucks	Total Medium Trucks	Total Buses	Total Motorcycles	Cars per lane	Heavy Trucks per lane	Medium Trucks per Lane	Buses per lane	Motorcycles per lane	
		AM	PM																									
Eastbound / Northbound																												
Florida Turnpike Interchange Ramps	EB Sawgrass Expressway Ramp to NB FL Turnpike	35	2,870	2,240	1	-	-	-	0%	0%	1,220	2,870	1,220	2.64%	2.01%	0.84%	0.38%	1,220	1,148	32	25	10	5	1,148	32	25	10	5
	EB Sawgrass Expressway Ramp to EB SW 10th St	45	520	480	1	-	-	-	0%	0%	1,340	520	520	0.96%	0.73%	0.30%	0.38%	520	507	5	4	2	2	507	5	4	2	2
SW 10th St (SR 869)	EB Sawgrass Expressway Mainline to FL Turnpike Ramps	45	2,970	1,780	3	D	N	N	0%	0%	2,940	2,970	2,940	0.96%	0.73%	0.30%	0.38%	2,940	2,870	28	22	9	11	957	9	7	3	4
	FL Turnpike Ramps to Waterways Blvd	45	3,490	2,240	4	D	N	Y	5%	0%	4,169	3,490	3,490	0.96%	0.73%	0.30%	0.38%	3,490	3,406	34	26	11	13	851	9	7	3	3
	Waterways Blvd to Independence Dr	45	3,815	2,340	4	D	N	Y	5%	0%	4,169	3,815	3,815	0.96%	0.73%	0.30%	0.38%	3,815	3,724	37	28	12	14	931	9	7	3	4
	Independence Dr to Powerline Rd	45	3,865	2,370	3	D	Y	Y	5%	0%	3,087	3,865	3,087	0.96%	0.73%	0.30%	0.38%	3,087	3,013	30	23	9	12	1,004	10	8	3	4
	Powerline Rd to Quiet Waters Business Park Driveway	45	3,010	2,135	3	D	Y	N	0%	0%	2,940	3,010	2,940	0.96%	0.73%	0.30%	0.38%	2,940	2,870	28	22	9	11	957	9	7	3	4
	Quiet Waters Business Park Driveway to SW 30th Ave	45	2,935	2,190	2	D	N	Y	5%	0%	2,006	2,935	2,006	0.96%	0.73%	0.30%	0.38%	2,006	1,958	19	15	6	8	978	10	8	3	4
	SW 30th Ave to SW 28th Ave	45	2,935	2,305	2	D	N	Y	5%	0%	2,006	2,935	2,006	0.96%	0.73%	0.30%	0.38%	2,006	1,958	19	15	6	8	978	10	8	3	4
	SW 28th Ave to SW 24th Ave	45	2,965	2,235	2	D	N	Y	5%	0%	2,006	2,965	2,006	0.96%	0.73%	0.30%	0.38%	2,006	1,958	19	15	6	8	978	10	8	3	4
	SW 24th Ave to South Florida Bible College Driveway	45	2,835	2,165	2	D	N	Y	5%	0%	2,006	2,835	2,006	0.96%	0.73%	0.30%	0.38%	2,006	1,958	19	15	6	8	978	10	8	3	4
	South Florida Bible College Driveway to Walmart Driveway	45	2,830	2,225	2	D	N	Y	5%	0%	2,006	2,830	2,006	0.96%	0.73%	0.30%	0.38%	2,006	1,958	19	15	6	8	978	10	8	3	4
	Walmart Driveway to S Military Trail	45	2,885	2,330	3	D	Y	Y	5%	0%	3,087	2,885	2,885	0.96%	0.73%	0.30%	0.38%	2,885	2,816	28	21	9	11	939	9	7	3	4
	S Military Trail to E Newport Center Dr	40	3,515	2,380	3	D	Y	N	0%	0%	2,940	3,515	2,940	0.96%	0.73%	0.30%	0.38%	2,940	2,870	28	22	9	11	957	9	7	3	4
Powerline Rd (SR 845)	Northbound Approach to SW 10th St Intersection	45	2,040	2,270	3	D	Y	Y	5%	0%	3,087	2,270	2,270	0.73%	1.07%	0.20%	0.34%	2,270	2,216	17	24	5	8	738	6	8	2	3
S Military Trail	Northbound Approach to SW 10th St Intersection	40	1,690	1,225	2	D	Y	Y	5%	-10%	1,805	1,690	1,690	0.63%	1.11%	0.27%	0.60%	1,690	1,646	11	19	4	10	822	6	10	2	5
Westbound / Southbound																												
S Military Trail	Southbound Approach to SW 10th St Intersection	40	1,375	1,635	2	D	Y	Y	5%	-10%	1,805	1,635	1,635	0.63%	1.11%	0.27%	0.60%	1,635	1,593	10	18	4	10	797	5	9	2	5
Powerline Rd (SR 845)	Southbound Approach to SW 10th St Intersection	45	2,015	2,235	3	D	Y	Y	5%	0%	3,087	2,235	2,235	0.73%	1.07%	0.20%	0.34%	2,235	2,182	16	24	5	8	727	5	8	2	3
SW 10th St (SR 869)	E Newport Center Dr to S Military Trail	40	2,240	3,310	3	D	Y	Y	5%	0%	3,087	3,310	3,087	0.96%	0.73%	0.30%	0.38%	3,087	3,013	30	23	9	12	1,004	10	8	3	4
	S Military Trail to Walmart Driveway	45	2,040	3,065	2	D	Y	N	0%	0%	1,910	3,065	1,910	0.96%	0.73%	0.30%	0.38%	1,910	1,865	18	14	6	7	932	9	7	3	4
	Walmart Driveway to South Florida Bible College Driveway	45	1,985	3,000	2	D	Y	N	0%	0%	1,910	3,000	1,910	0.96%	0.73%	0.30%	0.38%	1,910	1,865	18	14	6	7	932	9	7	3	4
	South Florida Bible College Driveway to SW 24th Ave	45	1,950	2,975	2	D	Y	N	0%	0%	1,910	2,975	1,910	0.96%	0.73%	0.30%	0.38%	1,910	1,865	18	14	6	7	932	9	7	3	4
	SW 24th Ave to SW 28th Ave	45	1,975	3,005	2	D	Y	N	0%	0%	1,910	3,005	1,910	0.96%	0.73%	0.30%	0.38%	1,910	1,865	18	14	6	7	932	9	7	3	4
	SW 28th Ave to SW 30th Ave	45	2,105	3,000	2	D	Y	N	0%	0%	1,910	3,000	1,910	0.96%	0.73%	0.30%	0.38%	1,910	1,865	18	14	6	7	932	9	7	3	4
	SW 30th Ave to Quiet Waters Business Park Driveway	45	2,025	2,990	2	D	N	Y	5%	0%	2,006	2,990	2,006	0.96%	0.73%	0.30%	0.38%	2,006	1,958	19	15	6	8	978	10	8	3	4
	Quiet Waters Business Park Driveway to Powerline Rd	45	2,010	3,035	3	D	Y	Y	5%	0%	3,087	3,035	3,035	0.96%	0.73%	0.30%	0.38%	3,035	2,963	29	22	9	12	988	10	7	3	4
	Powerline Rd to Independence Dr	45	2,200	3,825	3	D	Y	N	0%	0%	2,940	3,825	2,940	0.96%	0.73%	0.30%	0.38%	2,940	2,870	28	22	9	11	957	9	7	3	4
	Independence Dr to Waterways Blvd	45	2,210	3,770	3	D	Y	N	0%	0%	2,940	3,770	2,940	0.96%	0.73%	0.30%	0.38%	2,940	2,870	28	22	9	11	957	9	7	3	4
	Waterways Blvd to FL Turnpike Ramps	45	2,240	3,490	3	D	N	N	0%	0%	2,940	3,490	2,940	0.96%	0.73%	0.30%	0.38%	2,940	2,870	28	22	9	11	957	9	7	3	4
	FL Turnpike Ramps to Sawgrass Expressway Mainline Merge Point	45	1,760	2,910	2	D	N	N	0%	0%	1,910	2,910	1,910	0.96%	0.73%	0.30%	0.38%	1,910	1,865	18	14	6	7	932	9	7	3	4
Florida Turnpike Interchange Ramps	WB SW 10th St On Ramp to Lyons Rd	45	480	580	1	-	-	-	0%	0%	1,340	480	480	0.96%	0.73%	0.30%	0.38%	480	566	6	4	2	2	566	6	4	2	2
	NB FL Turnpike to WB Sawgrass Expressway	35	1,110	2,270	1	-	-	-	0%	0%	1,220	2,270	1,220	2.64%	2.01%	0.84%	0.38%	1,220	1,148	32	25	10	5	1,148	32	25	10	5

* LOS "C" volumes obtained from Table 7 of FDOT's Level of Service Handbook (2013) and HCM 2000 (Volume adjustments have been applied as appropriate)
¹ Volumes from Figure 5.13 - 5.17

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

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

Date: 8/8/2019

TRAFFIC DATA FOR STATE ROAD (SR) 869/SW 10TH STREET CONNECTOR
PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) NOISE STUDY

FPID Number(s): 439891-1-22-02
Road Name: SW 10th Street (SR 869)

Table 2.2-1: Traffic Data for Noise Modeling (Sheet 3 of 4) - 2040 Build Conditions (Local Lanes)

Roadway Segment	Speed Limit	2040 Build Traffic (vph ¹)		Number of Lanes	Median	Exclusive Left	Exclusive Right	Median and Turn Lane Adjustments	Non-Signalized Roadway Adjustment	LOS C Volume*	Highest Peak Volume	Volume used in TNM	Percent Heavy Trucks	Percent Medium Trucks	Percent Buses	Percent Motorcycles	Volume used in TNM	Total Cars	Total Heavy Trucks	Total Medium Trucks	Total Buses	Total Motorcycles	Cars per lane	Heavy Trucks per lane	Medium Trucks per Lane	Buses per lane	Motorcycles per lane	
		AM	PM																									
Eastbound / Northbound																												
Florida Turnpike Interchange Ramps	EB Sawgrass Expressway Ramp to NB FL Turnpike	35	1,220	1,220	1	-	-	0%	0%	1,220	1,220	1,220	2.64%	2.01%	0.84%	0.38%	1,220	1,148	32	25	10	5	1,148	32	25	10	5	
	EB Sawgrass Expressway Ramp to EB SW 10th St	45	1,340	1,340	1	-	-	0%	0%	1,340	1,340	1,340	2.00%	1.40%	0.60%	0.38%	1,340	1,281	27	19	8	5	1,281	27	19	8	5	
Local lanes on SW 10th St (SR 869)	EB Sawgrass Expressway Mainline to SW 10th St Local Lanes/Connector Lanes Split	35	1,610	1,610	4	D	N	N	0%	0%	1,610	1,610	1,610	2.00%	1.40%	0.60%	0.38%	1,610	1,539	32	23	10	6	384	8	6	3	2
	SW 10th St Local Lanes/Connector Lanes Split to Sawgrass Ramp	35	730	730	2	D	N	N	0%	0%	730	730	730	2.00%	1.40%	0.60%	0.38%	730	698	15	10	4	3	348	8	5	2	2
	Sawgrass Ramp to Waterways Blvd	35	2,750	1,950	3	D	N	Y	5%	0%	1,229	2,750	1,229	2.00%	1.40%	0.60%	0.38%	1,229	1,119	81	17	7	5	373	27	6	2	2
	Waterways Blvd to Independence Dr	35	2,975	1,930	3	D	N	Y	5%	0%	1,229	2,975	1,229	2.00%	1.40%	0.60%	0.38%	1,229	1,119	81	17	7	5	373	27	6	2	2
	Independence Dr to Powerline Rd	35	2,995	1,885	3	D	Y	Y	5%	0%	1,229	2,995	1,229	2.00%	1.40%	0.60%	0.38%	1,229	1,119	81	17	7	5	373	27	6	2	2
	Powerline Rd to Connector Lanes On Ramp	35	1,710	1,955	3	D	N	N	0%	0%	1,170	1,955	1,170	1.70%	1.30%	0.40%	0.38%	1,170	1,078	68	15	5	4	359	23	5	2	1
	Connector Lanes On Ramp to SW 30th Ave	35	690	725	2	D	N	Y	5%	0%	767	725	725	1.40%	1.40%	0.60%	0.38%	725	656	52	10	4	3	328	26	5	2	2
	SW 30th Ave to SW 28th Ave	35	680	805	2	D	N	Y	5%	0%	767	805	767	1.40%	1.40%	0.60%	0.38%	767	720	28	11	5	3	358	14	6	3	2
	SW 28th Ave to SW 24th Ave	35	730	740	2	D	N	Y	5%	0%	767	740	740	1.40%	1.40%	0.60%	0.38%	740	659	64	10	4	3	329	32	5	2	2
	SW 24th Ave to South Florida Bible College Driveway	35	690	760	2	D	N	Y	5%	0%	767	760	760	1.40%	1.40%	0.60%	0.38%	760	676	65	11	5	3	336	33	6	3	2
	South Florida Bible College Driveway to Walmart Driveway	35	650	795	2	D	N	Y	5%	0%	767	795	767	1.40%	1.40%	0.60%	0.38%	767	683	65	11	5	3	339	33	6	3	2
	Walmart Driveway to S Military Trail	35	650	835	2	D	Y	Y	5%	0%	767	835	767	1.40%	1.40%	0.60%	0.38%	767	683	65	11	5	3	339	33	6	3	2
	S Military Trail to Connector Lanes Off Ramp	35	1,375	1,150	2	D	N	N	0%	0%	730	1,375	730	3.30%	1.40%	0.60%	0.38%	730	645	68	10	4	3	322	34	5	2	2
	Connector Lanes Off Ramp to E Newport Center Dr	35	2,975	2,500	3	D	Y	Y	5%	0%	1,229	2,975	1,229	3.30%	1.40%	0.60%	0.38%	1,229	1,159	41	17	7	5	386	14	6	2	2
	Powerline Rd (SR 845)	Northbound Approach to SW 10th St Intersection	45	1,860	2,290	3	D	Y	Y	5%	0%	3,087	2,290	2,290	0.73%	1.07%	0.20%	0.34%	2,290	2,236	17	24	5	8	744	6	8	2
S Military Trail	Northbound Approach to SW 10th St Intersection	40	1,520	1,260	2	D	Y	Y	5%	-10%	1,805	1,520	1,520	0.63%	1.11%	0.27%	0.60%	1,520	1,480	10	17	4	9	739	5	9	2	5
Westbound / Southbound																												
S Military Trail	Southbound Approach to SW 10th St Intersection	40	1,330	1,885	2	D	Y	Y	5%	-10%	1,805	1,885	1,805	0.63%	1.11%	0.27%	0.60%	1,805	1,738	11	20	5	11	877	6	10	3	6
Powerline Rd (SR 845)	Southbound Approach to SW 10th St Intersection	45	1,920	2,370	3	D	Y	Y	5%	0%	3,087	2,370	2,370	0.73%	1.07%	0.20%	0.34%	2,370	2,315	17	25	5	8	771	6	8	2	3
Local lanes on SW 10th St (SR 869)	E Newport Center Dr to Connector Lanes On Ramp	35	2,455	2,955	3	D	N	Y	5%	0%	1,229	2,955	1,229	2.50%	1.30%	0.50%	0.38%	1,229	1,127	75	16	6	5	376	25	5	2	2
	Connector Lanes On Ramp to S Military Trail	35	1,195	1,375	3	D	Y	Y	5%	0%	1,229	1,375	1,229	2.50%	1.30%	0.50%	0.38%	1,229	1,138	64	16	6	5	380	21	5	2	2
	S Military Trail to Walmart Driveway	35	835	1,240	2	D	N	N	0%	0%	730	1,240	730	1.90%	1.30%	0.60%	0.38%	730	675	39	9	4	3	336	20	5	2	2
	Walmart Driveway to South Florida Bible College Driveway	35	835	1,240	2	D	N	N	0%	0%	730	1,240	730	1.90%	1.30%	0.60%	0.38%	730	633	81	9	4	3	315	41	5	2	2
	South Florida Bible College Driveway to SW 24th Ave	35	835	1,240	2	D	Y	N	0%	0%	730	1,240	730	1.90%	1.30%	0.60%	0.38%	730	633	81	9	4	3	315	41	5	2	2
	SW 24th Ave to SW 28th Ave	35	770	1,180	2	D	Y	N	0%	0%	730	1,180	730	1.90%	1.30%	0.60%	0.38%	730	633	81	9	4	3	315	41	5	2	2
	SW 28th Ave to SW 30th Ave	35	960	1,125	2	D	Y	N	0%	0%	730	1,125	730	1.90%	1.30%	0.60%	0.38%	730	680	34	9	4	3	339	17	5	2	2
	SW 30th Ave to Connector Lanes Off Ramp	35	945	1,245	2	D	N	N	0%	0%	730	1,245	730	1.90%	1.30%	0.60%	0.38%	730	646	68	9	4	3	322	34	5	2	2
	Connector Lanes Off Ramp to Industrial Park Access	35	2,015	1,955	3	D	Y	Y	5%	0%	1,229	2,015	1,229	1.40%	1.40%	0.60%	0.38%	1,229	1,143	57	17	7	5	381	19	6	2	2
	Industrial Park Access to Powerline Rd	35	2,000	2,000	3	D	N	N	0%	0%	1,170	2,000	1,170	1.40%	1.40%	0.60%	0.38%	1,170	1,087	56	16	7	4	363	19	5	2	1
	Powerline Rd to Independence Dr	35	1,780	2,890	3	D	Y	N	0%	0%	1,170	2,890	1,170	1.30%	1.20%	0.50%	0.38%	1,170	1,094	52	14	6	4	365	17	5	2	1
	Independence Dr to Waterways Blvd	35	1,820	2,910	3	D	Y	N	0%	0%	1,170	2,910	1,170	1.30%	1.20%	0.50%	0.38%	1,170	1,094	52	14	6	4	365	17	5	2	1
	Waterways Blvd to Merge with Connector Lanes	35	1,950	2,750	3	D	N	N	0%	0%	1,170	2,750	1,170	1.30%	1.20%	0.50%	0.38%	1,170	1,094	52	14	6	4	365	17	5	2	1
	Merge with Connector Lanes to FL Turnpike Ramps	35	3,190	5,590	4	D	N	N	0%	0%	1,610	5,590	1,610	1.30%	1.20%	0.50%	0.38%	1,610	1,556	21	19	8	6	389	5	5	2	2
	FL Turnpike Ramps to Sawgrass Expressway Mainline Merge Point	35	1,170	1,170	3	D	N	N	0%	0%	1,170	1,170	1,170	1.30%	1.20%	0.50%	0.38%	1,170	1,131	15	14	6	4	377	5	5	2	1
Florida Turnpike Interchange Ramps	WB SW 10th St On Ramp to Lyons Rd	45	1,340	1,340	1	-	-	0%	0%	1,340	1,340	1,340	1.30%	1.20%	0.50%	0.38%	1,340	1,295	17	16	7	5	1,295	17	16	7	5	
	NB FL Turnpike to WB Sawgrass Expressway	35	1,220	1,220	1	-	-	0%	0%	1,220	1,220	1,220	2.64%	2.01%	0.84%	0.38%	1,220	1,148	32	25	10	5	1,148	32	25	10	5	

*LOS "C" volumes obtained from Table 7 of FDOT's Level of Service Handbook (2013) and HCM 2000 (Volume adjustments have been applied as appropriate)
¹ Volumes from Figure 3.1.5 Build Alternative* No Toll with Trucks in Connector Lanes; No Volumes for cells in blue, assuming LOS C Volumes

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

Prepared By: Rein Kirkpatrick, P.E. Date: 8/8/2019
 Pine Name

**TRAFFIC DATA FOR STATE ROAD (SR) 869/SW 10TH STREET CONNECTOR
PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) NOISE STUDY**

FPID Number(s): 439891-1-22-02
Road Name: SW 10th Street (SR 869)

Table 2.2-1: Traffic Data for Noise Modeling (Sheet 4 of 4) - 2040 Build Conditions (Connector Lanes)

Roadway Segment	2040 Build Traffic (vph) ¹		Number of Lanes	LOS C Volume*	Highest Peak Volume	Volume used in TNM	Percent Heavy Trucks	Percent Medium Trucks	Percent Buses	Percent Motorcycles	Volume used in TNM	Cars per lane	Heavy Trucks per lane	Medium Trucks per Lane	Buses per lane	Motorcycles per lane	
	AM	PM															
Eastbound / Northbound																	
Connector Lanes along SW 10th St (SR 869)	Diverge from SW 10th St to Waterways Blvd	2,840	1,240	2	3,020	2,840	2,840	2.00%	1.40%	0.60%	0.38%	2,840	1,356	29	20	9	6
	Waterways Blvd to Independence Dr	2,840	1,240	2	3,020	2,840	2,840	2.00%	1.40%	0.60%	0.38%	2,840	1,356	29	20	9	6
	Independence Dr to Powerline Rd	2,840	1,240	2	3,020	2,840	2,840	2.00%	1.40%	0.60%	0.38%	2,840	1,356	29	20	9	6
	Powerline Rd to Connector Lanes On Ramp	2,840	1,240	2	3,020	2,840	2,840	2.00%	1.40%	0.60%	0.38%	2,840	1,356	29	20	9	6
	Connector Lanes On Ramp to SW 30th Ave	3,860	2,470	2	3,020	3,860	3,020	1.90%	1.40%	0.60%	0.38%	3,020	1,445	29	21	9	6
	EB On Ramp at SW 30th Ave	1,020	1,230	1	1,340	1,230	1,230	1.90%	1.40%	0.60%	0.38%	1,230	1,178	23	17	7	5
	SW 30th Ave to SW 28th Ave	3,860	2,470	2	4,020	3,860	3,860	1.90%	1.40%	0.60%	0.38%	3,860	1,846	37	27	12	8
	SW 28th Ave to SW 24th Ave	3,860	2,470	2	4,020	3,860	3,860	1.90%	1.40%	0.60%	0.38%	3,860	1,846	37	27	12	8
	SW 24th Ave to South Florida Bible College Driveway	3,860	2,470	2	4,020	3,860	3,860	1.90%	1.40%	0.60%	0.38%	3,860	1,846	37	27	12	8
	South Florida Bible College Driveway to Walmart Driveway	3,860	2,470	2	4,020	3,860	3,860	1.90%	1.40%	0.60%	0.38%	3,860	1,846	37	27	12	8
	EB Off Ramp North of Walmart	1,600	1,350	1	1,340	1,600	1,340	3.30%	1.40%	0.60%	0.38%	1,340	1,264	44	19	8	5
	Walmart Driveway to S Military Trail	2,260	1,120	2	3,020	2,260	2,260	1.90%	1.40%	0.60%	0.38%	2,260	1,080	22	16	7	5
	S Military Trail to System Ramps at S. Florida Rail/CSX Railroad	2,260	1,120	2	3,020	2,260	2,260	1.90%	1.40%	0.60%	0.38%	2,260	1,080	22	16	7	5
	System to System Ramp (to SB I-95)	590	220	1	1,450	590	590	1.90%	1.40%	0.60%	0.38%	590	565	11	8	4	2
System to System Ramp (to NB I-95)	1,670	900	1	1,450	1,670	1,450	1.90%	1.40%	0.60%	0.38%	1,450	1,387	28	20	9	6	
Westbound / Southbound																	
Connector Lanes along SW 10th St (SR 869)	System to System Ramp (from SB I-95)	760	1,130	1	1,450	1,130	1,130	1.10%	1.20%	0.50%	0.38%	1,130	1,094	12	14	6	4
	System to System Ramp (from NB I-95)	260	650	1	1,450	650	650	1.10%	1.20%	0.50%	0.38%	650	630	7	8	3	2
	E Newport Center Dr to WB On Ramp West of Newport Center	1,020	1,780	2	3,020	1,780	1,780	1.10%	1.20%	0.50%	0.38%	1,780	860	10	11	5	4
	Loop Ramp from SW 12th Ave	30	190	1	1,220	190	190	1.10%	1.20%	0.50%	0.38%	190	184	2	2	1	1
	WB On Ramp West of Newport Center	1,260	1,580	1	1,340	1,580	1,340	1.10%	1.20%	0.50%	0.38%	1,340	1,297	15	16	7	5
	WB On Ramp West of Newport Center to Military Trail	2,310	3,550	2	3,020	3,550	3,020	1.10%	1.20%	0.50%	0.38%	3,020	1,461	17	18	8	6
	Military Trail to Walmart Driveway	2,310	3,550	2	4,020	3,550	3,550	1.10%	1.20%	0.50%	0.38%	3,550	1,717	20	22	9	7
	Walmart Driveway to South Florida Bible College Driveway	2,310	3,550	2	4,020	3,550	3,550	1.10%	1.20%	0.50%	0.38%	3,550	1,717	20	22	9	7
	South Florida Bible College Driveway to SW 24th Ave	2,310	3,550	2	4,020	3,550	3,550	1.10%	1.20%	0.50%	0.38%	3,550	1,717	20	22	9	7
	WB Off Ramp at SW 24th Ave	1,070	710	1	1,340	1,070	1,070	1.40%	1.40%	0.60%	0.38%	1,070	1,030	15	15	6	4
	SW 24th Ave to SW 28th Ave	1,240	2,840	2	3,020	2,840	2,840	1.00%	1.20%	0.50%	0.38%	2,840	1,376	14	17	7	6
	SW 28th Ave to SW 30th Ave	1,240	2,840	2	3,020	2,840	2,840	1.00%	1.20%	0.50%	0.38%	2,840	1,376	14	17	7	6
	SW 30th Ave to Powerline Rd	1,240	2,840	2	3,020	2,840	2,840	1.00%	1.20%	0.50%	0.38%	2,840	1,376	14	17	7	6
	Powerline Rd to Independence Dr	1,240	2,840	2	3,020	2,840	2,840	1.00%	1.20%	0.50%	0.38%	2,840	1,376	14	17	7	6
Independence Dr to Waterways Blvd	1,240	2,840	2	3,020	2,840	2,840	1.00%	1.20%	0.50%	0.38%	2,840	1,376	14	17	7	6	
Waterways Blvd to Merge with SW 10th St Local Lanes	1,240	2,840	2	3,020	2,840	2,840	1.00%	1.20%	0.50%	0.38%	2,840	1,376	14	17	7	6	

\\CF\Noise_Studies\SW 10th Street\Traffic\10thSt_Traffic_2040_Build_Conditions_Traffic_Table_KPIW_Build4474502397\Build_Traffic_Connector Lanes

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

¹ Volumes from Figure 3.1.5 Build Alternative* No Toll with Trucks in Connector Lanes

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

Prepared By:

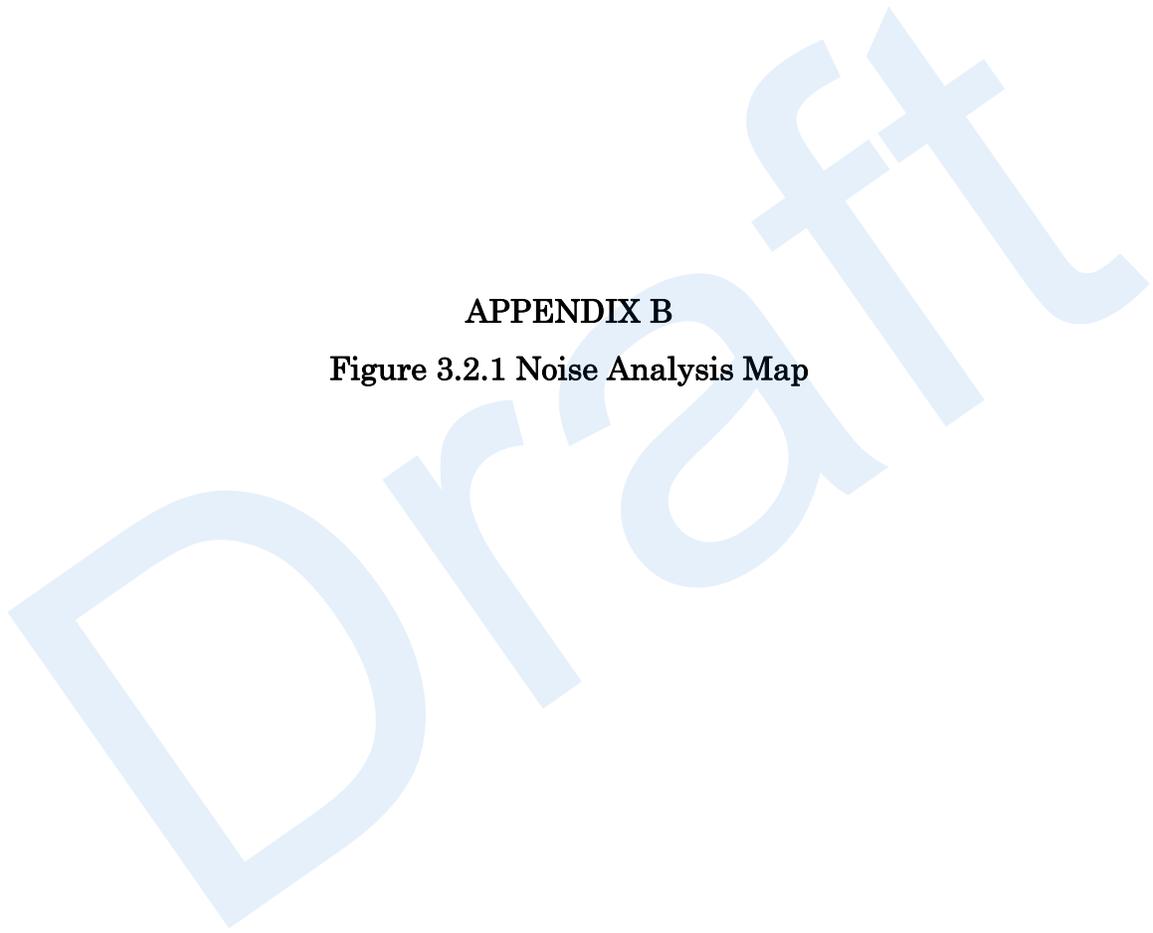
Brian Kirkpatrick, P.E.

Print Name

Date: 8/8/2019

APPENDIX B

Figure 3.2.1 Noise Analysis Map





Florida Department of Transportation
 SR 869/SW 10th Street Connector PD&E Study
 Financial Project ID: 439891-1-22-02
 Broward County, Florida

DATE: AUGUST 2019

Receptor Sites

- < 66.0 dB(A)
- > 66.0 dB(A)

Recommended Noise Barriers

- Height
- 8 Feet
- 14 Feet
- 22 Feet

Non Recommended Noise Barrier

- 8 Feet
- 14 Feet
- 22 Feet

Land Use by Noise Activity Category

- B: Residential
- C: Other Sensitive Land Use
- D: Institutional (Interior)

Land Use by Noise Activity Category

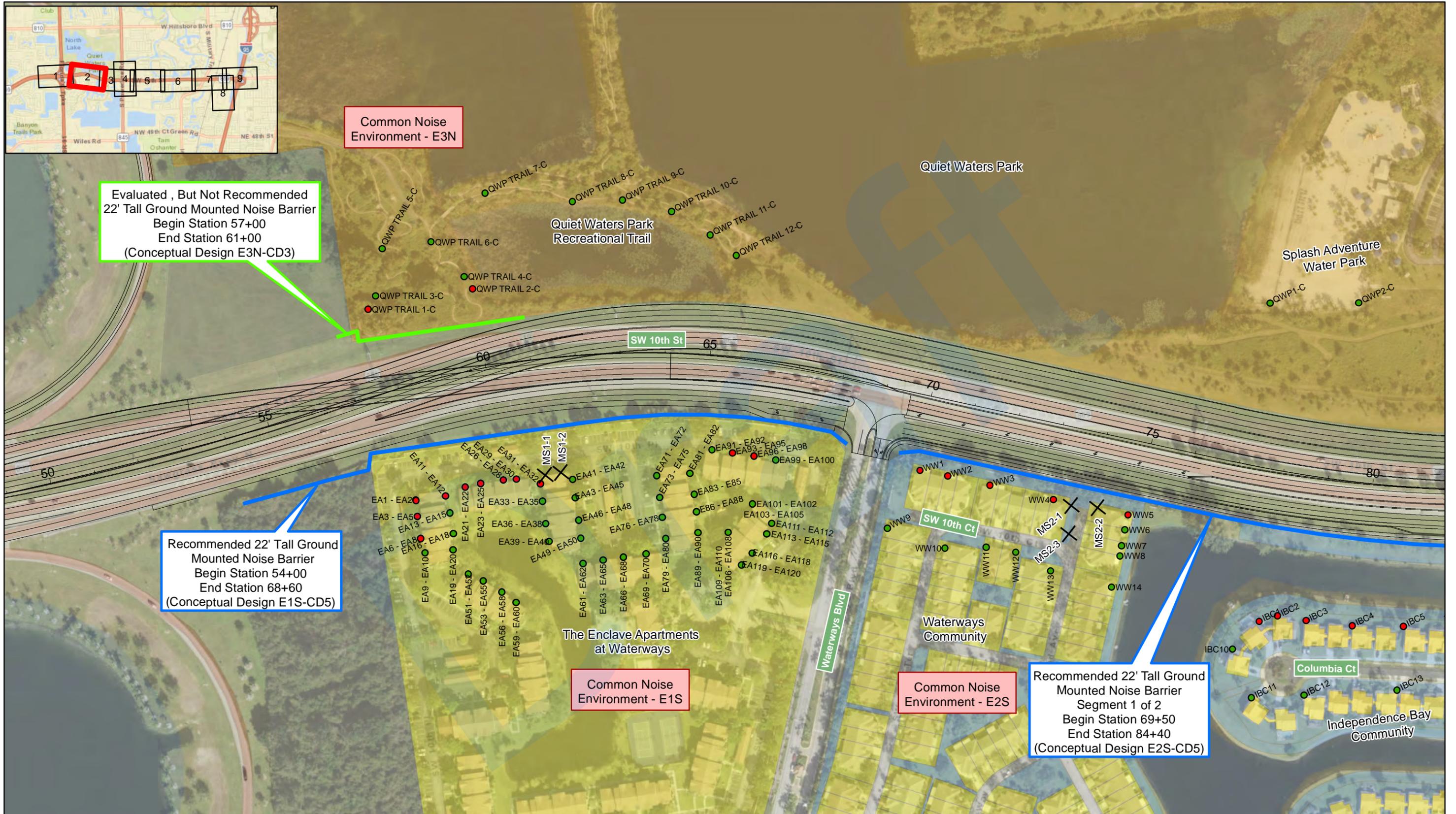
- E: Sensitive Commercial
- F: Non-Sensitive Commercial
- G: Vacant

Proposed Design

- Proposed Design
- ✗ Noise Monitoring Sites



Figure 3.2.1
 Sheet 1 of 9
 Noise Analysis Map



Common Noise Environment - E3N

Evaluated , But Not Recommended
22' Tall Ground Mounted Noise Barrier
Begin Station 57+00
End Station 61+00
(Conceptual Design E3N-CD3)

Recommended 22' Tall Ground Mounted Noise Barrier
Begin Station 54+00
End Station 68+60
(Conceptual Design E1S-CD5)

Common Noise Environment - E1S

Common Noise Environment - E2S

Recommended 22' Tall Ground Mounted Noise Barrier
Segment 1 of 2
Begin Station 69+50
End Station 84+40
(Conceptual Design E2S-CD5)



Florida Department of Transportation
SR 869/SW 10th Street Connector PD&E Study
Financial Project ID: 439891-1-22-02
Broward County, Florida

DATE: AUGUST 2019

Receptor Sites

- < 66.0 dB(A)
- > 66.0 dB(A)
- Non Recommended Noise Barrier
- 8 Feet
- 14 Feet
- 22 Feet

Land Use by Noise Activity Category

- B: Residential
- C: Other Sensitive Land Use
- D: Institutional (Interior)

Proposed Design

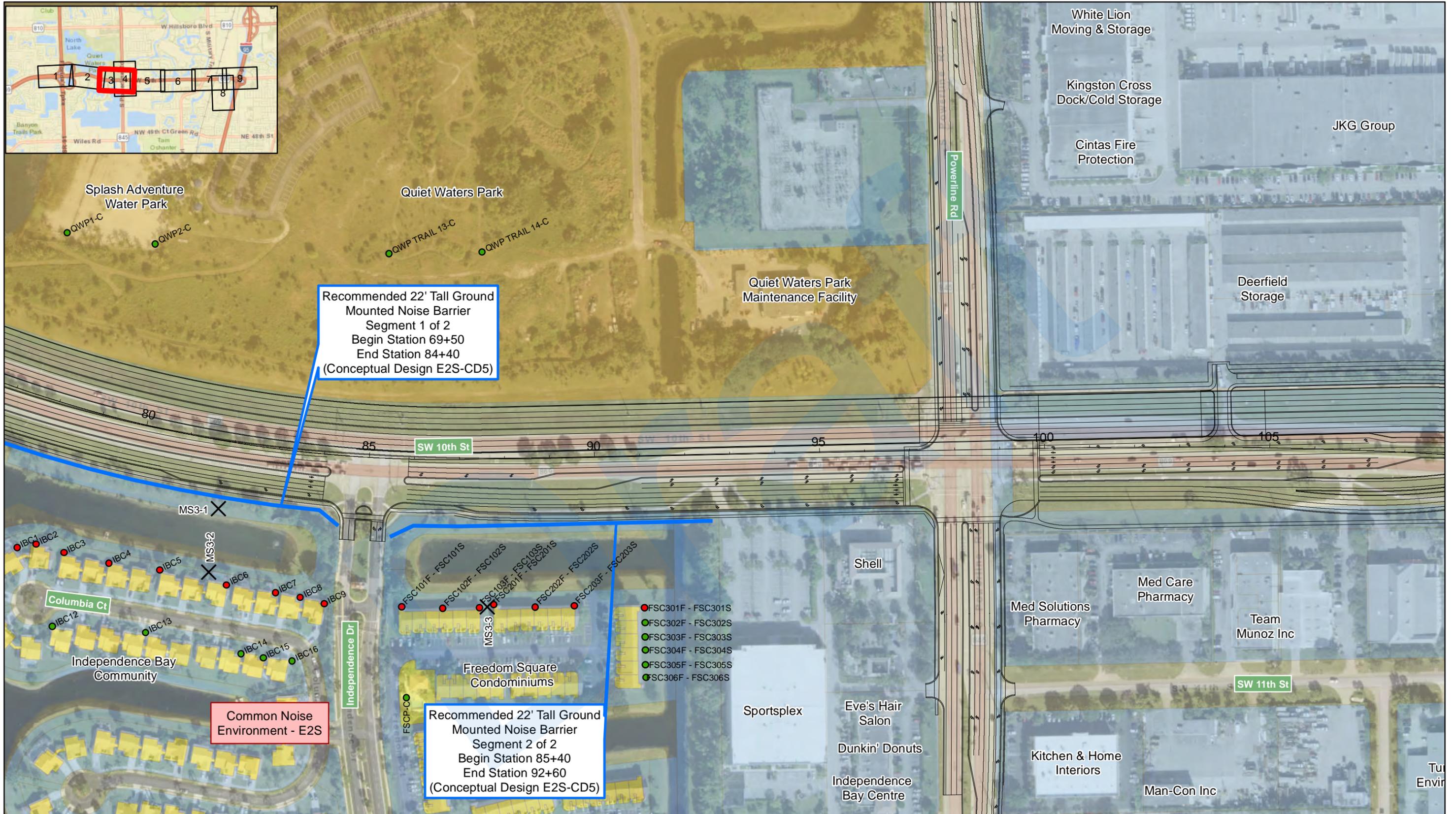
- E: Sensitive Commercial
- F: Non-Sensitive Commercial
- G: Vacant

Noise Monitoring Sites

- X Noise Monitoring Sites



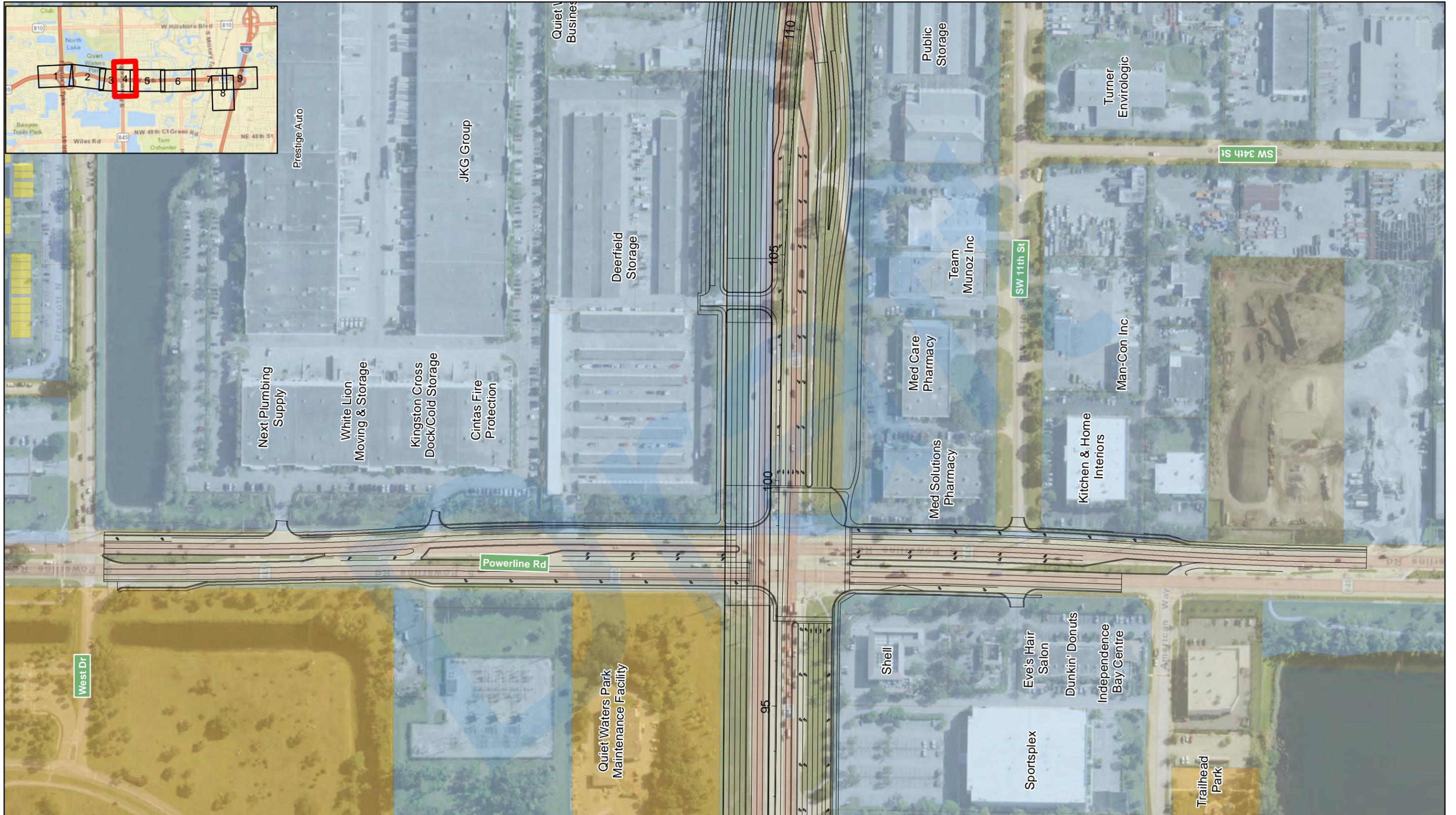
Figure 3.2.1
Sheet 2 of 9
Noise Analysis Map



Florida Department of Transportation
 SR 869/SW 10th Street Connector PD&E Study
 Financial Project ID: 439891-1-22-02
 Broward County, Florida

DATE: AUGUST 2019

Figure 3.2.1
 Sheet 3 of 9
 Noise Analysis Map



Florida Department of Transportation
 SR 869/SW 10th Street Connector PD&E Study
 Financial Project ID: 439891-1-22-02
 Broward County, Florida

DATE: AUGUST 2019

Receptor Sites

- < 66.0 dB(A)
- > 66.0 dB(A)

Recommended Noise Barriers

- Height**
- 8 Feet
 - 14 Feet
 - 22 Feet

Land Use by Noise Activity Category

- B: Residential
- C: Other Sensitive Land Use
- D: Institutional (Interior)

Land Use by Noise Activity Category

- E: Sensitive Commercial
- F: Non-Sensitive Commercial
- G: Vacant

Proposed Design

- Proposed Design
- X Noise Monitoring Sites



Figure 3.2.1
 Sheet 4 of 9
 Noise Analysis Map



Florida Department of Transportation
 SR 869/SW 10th Street Connector PD&E Study
 Financial Project ID: 439891-1-22-02
 Broward County, Florida

DATE: AUGUST 2019

Receptor Sites

- Predicted Noise Levels**
 ● < 66.0 dB(A)
 ● > 66.0 dB(A)
- Recommended Noise Barriers**
 Height
 ● 8 Feet
 ● 14 Feet
 ● 22 Feet

Land Use by Noise Activity Category

- B: Residential
 ● C: Other Sensitive Land Use
 ● D: Institutional (Interior)

Proposed Design

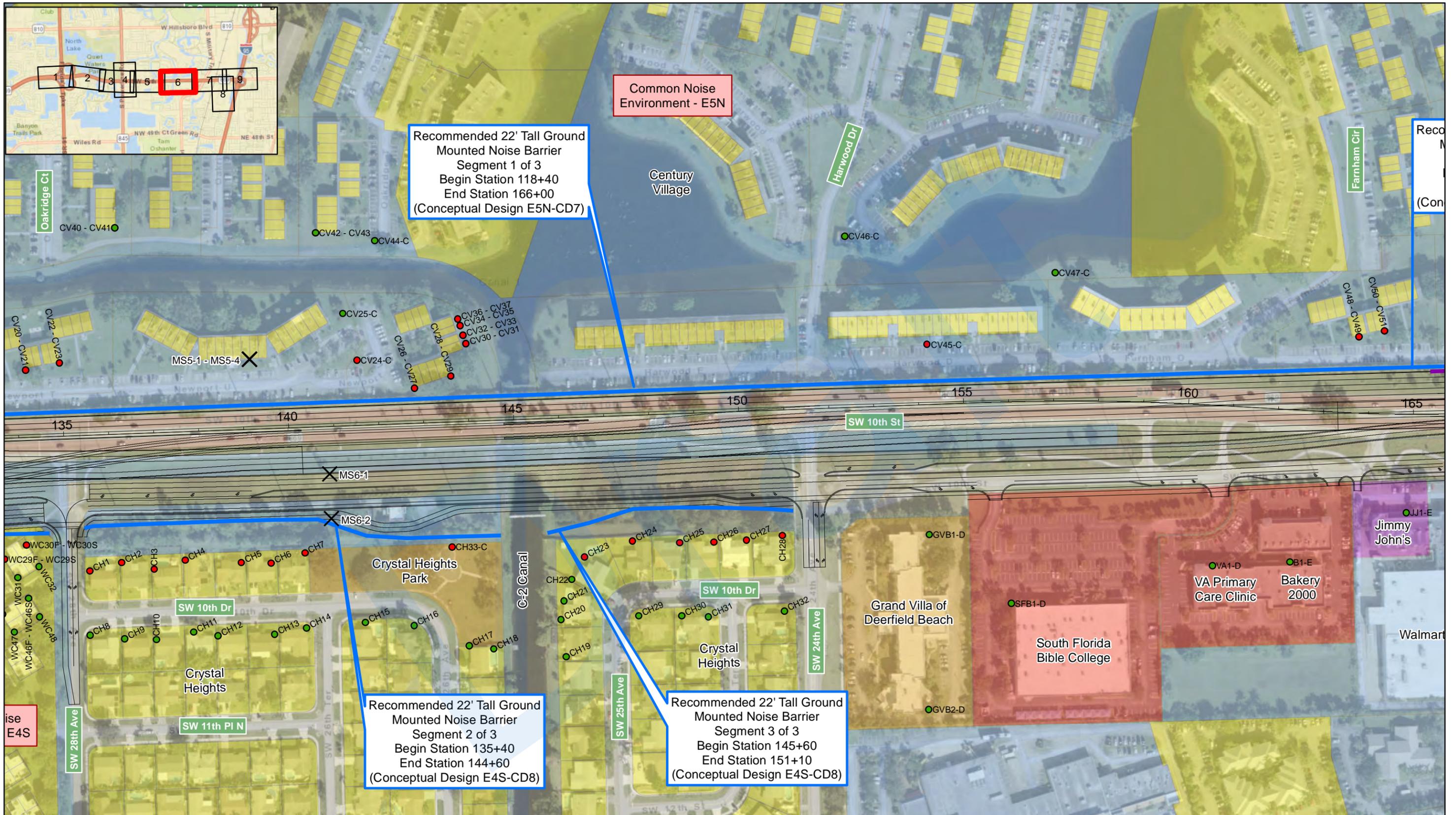
- E: Sensitive Commercial
 ● F: Non-Sensitive Commercial
 ● G: Vacant

Noise Monitoring Sites

- MS4-1
 ● MS4-2



Figure 3.2.1
 Sheet 5 of 9
 Noise Analysis Map



Florida Department of Transportation
 SR 869/SW 10th Street Connector PD&E Study
 Financial Project ID: 439891-1-22-02
 Broward County, Florida

DATE: AUGUST 2019

Receptor Sites

- < 66.0 dB(A)
- > 66.0 dB(A)

Recommended Noise Barriers

- Height
- 8 Feet
- 14 Feet
- 22 Feet

Land Use by Noise Activity Category

- B: Residential
- C: Other Sensitive Land Use
- D: Institutional (Interior)

Proposed Design

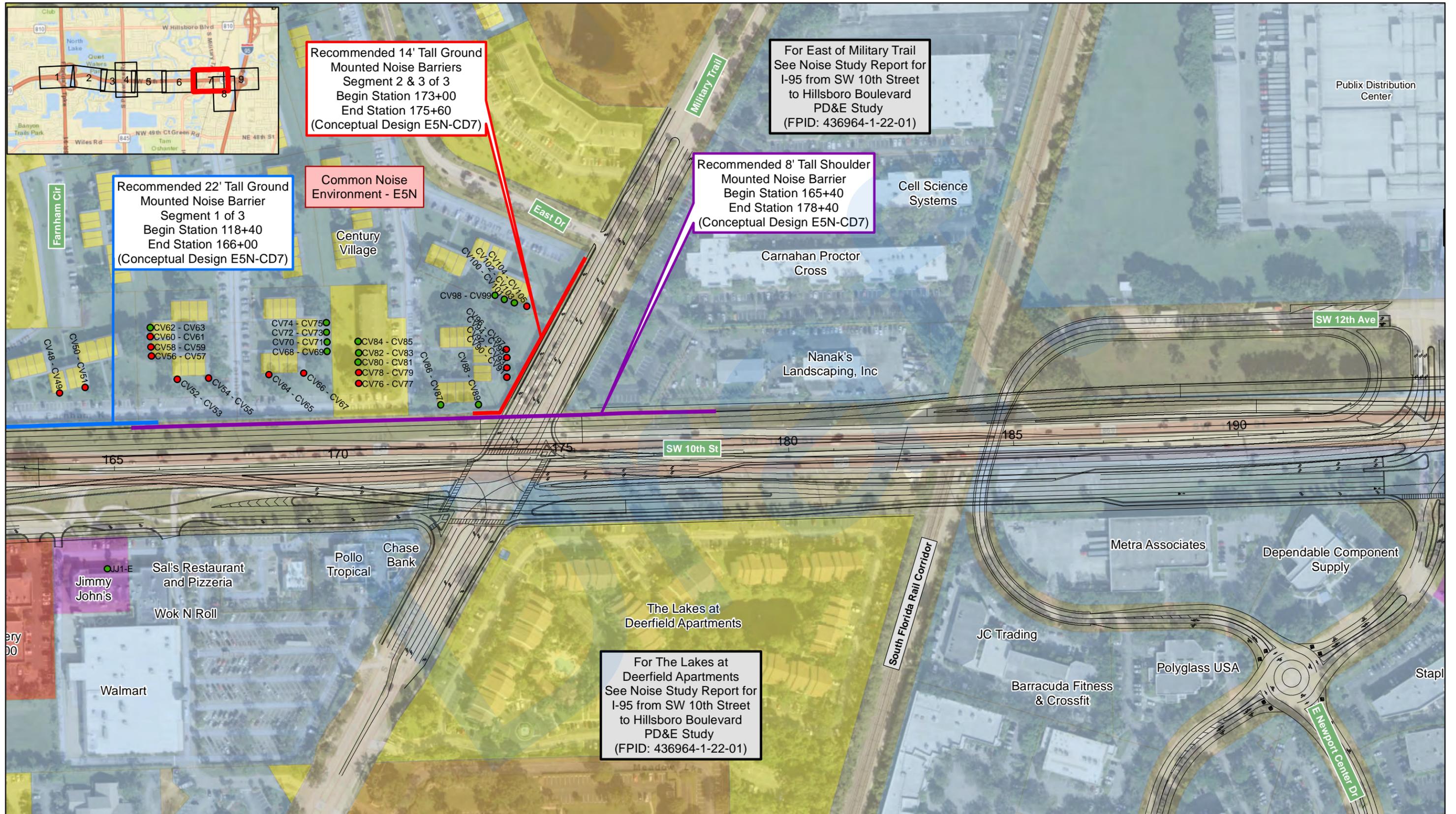
- E: Sensitive Commercial
- F: Non-Sensitive Commercial
- G: Vacant

Noise Monitoring Sites

- X Noise Monitoring Sites



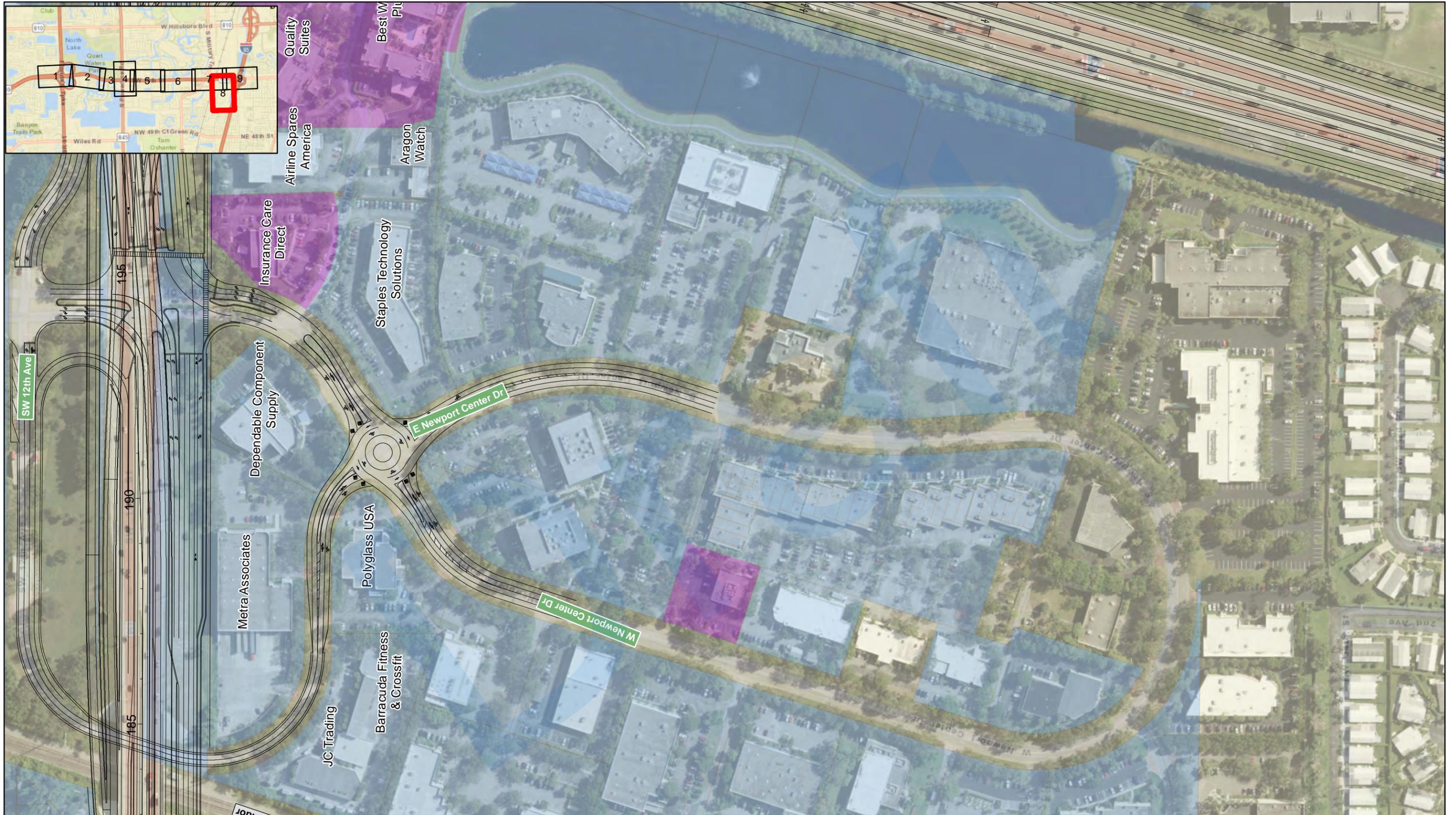
Figure 3.2.1
 Sheet 6 of 9
 Noise Analysis Map



Florida Department of Transportation
SR 869/SW 10th Street Connector PD&E Study
Financial Project ID: 439891-1-22-02
Broward County, Florida

DATE: AUGUST 2019

Figure 3.2.1
Sheet 7 of 9
Noise Analysis Map



Florida Department of Transportation
 SR 869/SW 10th Street Connector PD&E Study
 Financial Project ID: 439891-1-22-02
 Broward County, Florida

DATE: AUGUST 2019

Receptor Sites

- < 66.0 dB(A)
- > 66.0 dB(A)

Recommended Noise Barriers

- 8 Feet
- 14 Feet
- 22 Feet

Land Use by Noise Activity Category

- B: Residential
- C: Other Sensitive Land Use
- D: Institutional (Interior)

Land Use by Noise Activity Category

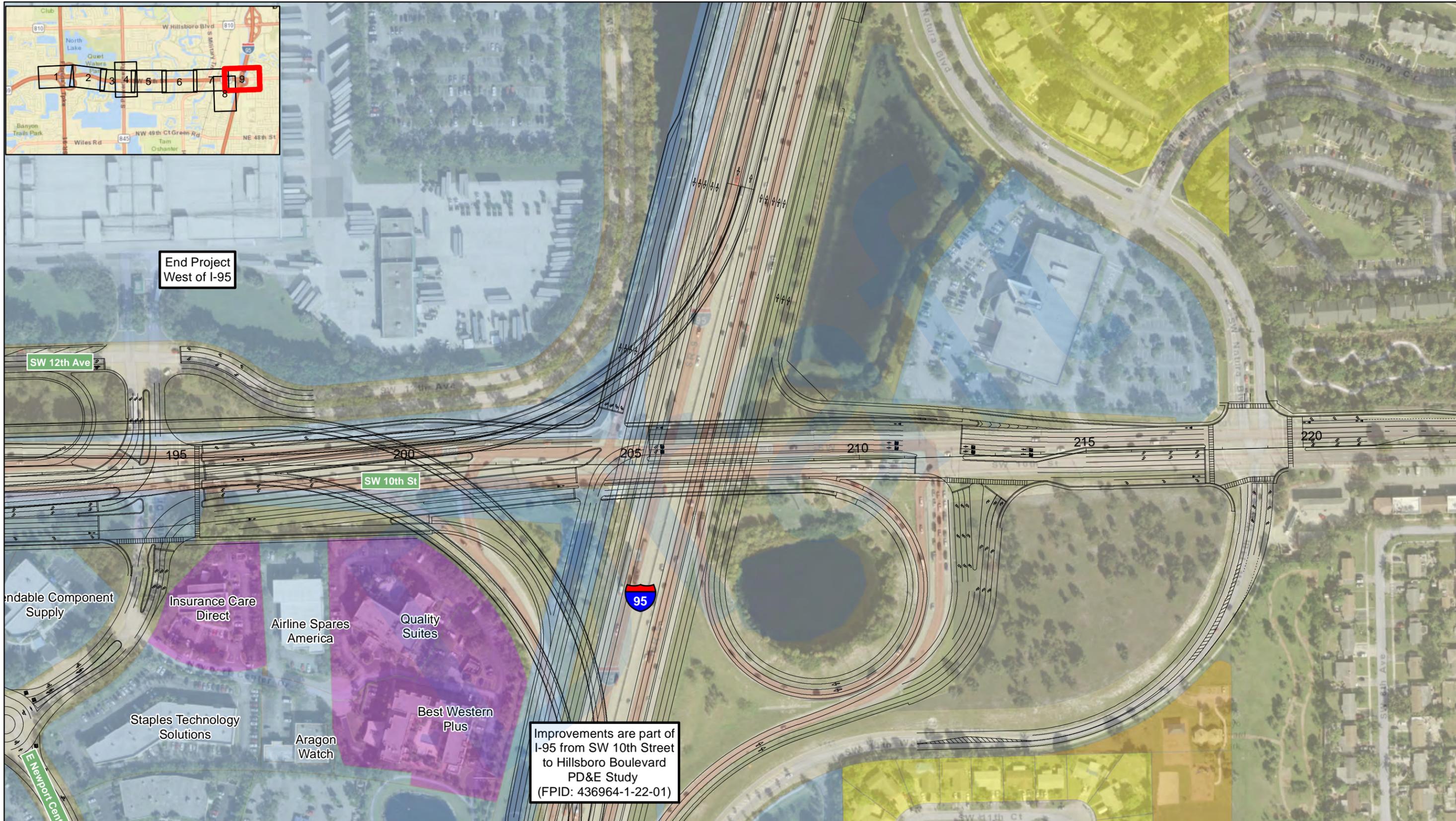
- E: Sensitive Commercial
- F: Non-Sensitive Commercial
- G: Vacant

Proposed Design

- Proposed Design
- X Noise Monitoring Sites



Figure 3.2.1
 Sheet 8 of 9
 Noise Analysis Map



Florida Department of Transportation
 SR 869/SW 10th Street Connector PD&E Study
 Financial Project ID: 439891-1-22-02
 Broward County, Florida

DATE: AUGUST 2019

Receptor Sites

- < 66.0 dB(A)
- > 66.0 dB(A)

Recommended Noise Barriers

- Height
- 8 Feet
- 14 Feet
- 22 Feet

Land Use by Noise Activity Category

- B: Residential
- C: Other Sensitive Land Use
- D: Institutional (Interior)

Land Use by Noise Activity Category

- E: Sensitive Commercial
- F: Non-Sensitive Commercial
- G: Vacant

Proposed Design

- Proposed Design
- X Noise Monitoring Sites



Figure 3.2.1
 Sheet 9 of 9
 Noise Analysis Map

APPENDIX C

**Table 3.2.-1: Location and Description of Representative Noise Sensitive
Receptor Sites and Noise Analysis Results**

Table 3.2-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 1 of 7)

Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Center of Nearest Existing/Proposed Travel Lane - SW 10 th Street/Managed Lanes (Feet)	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative
					Existing Conditions	Design Year (2040)				
						No-Build Alternative	Build Alternative			
South of SW 10 th Street between Florida's Turnpike and Powerline Road - The Enclave at Waterways Apartments [Residential NAC B Exterior - 66 dB(A)] (see Figure 3.3.1 Sheet 2)										
EA1	First Row First Floor Multi-Family Residence - Patio	1	57+50	176/134	61.2	61.9	67.2	Exceeds	0.7	6.0
EA2	First Row Second Floor Multi-Family Residence - Balcony	1	57+50	176/134	65.4	66.1	70.0	Exceeds	0.7	4.6
EA3	Second Row First Floor Multi-Family Residence - Patio	1	57+50	205/169	59.6	60.4	65.2	Below	0.8	5.6
EA4	Second Row Second Floor Multi-Family Residence - Balcony	1	57+50	205/169	62.6	63.4	67.8	Exceeds	0.8	5.2
EA5	Second Row Third Floor Multi-Family Residence - Balcony	1	57+50	205/169	64.2	65.0	69.2	Exceeds	0.8	5.0
EA6	Second Row First Floor Multi-Family Residence - Patio	1	57+30	255/218	58.7	59.4	64.1	Below	0.7	5.4
EA7	Second Row Second Floor Multi-Family Residence - Balcony	1	57+30	255/218	61.0	61.8	66.3	Approaches	0.8	5.3
EA8	Second Row Third Floor Multi-Family Residence - Balcony	1	57+30	255/218	62.8	63.5	67.6	Exceeds	0.7	4.8
EA9	Second Row First Floor Multi-Family Residence - Patio	1	57+00	292/251	58.0	58.7	63.1	Below	0.7	5.1
EA10	Second Row Second Floor Multi-Family Residence - Balcony	1	57+00	292/251	60.3	61.0	65.3	Below	0.7	5.0
EA11	Second Row First Floor Multi-Family Residence - Patio	1	58+20	176/134	57.4	58.1	64.0	Below	0.7	6.6
EA12	Second Row Second Floor Multi-Family Residence - Balcony	1	58+20	176/134	64.1	64.8	67.8	Exceeds	0.7	3.7
EA13	Second Row First Floor Multi-Family Residence - Patio	1	58+30	205/169	52.5	53.1	58.7	Below	0.6	6.2
EA14	Second Row Second Floor Multi-Family Residence - Balcony	1	58+30	205/139	58.4	59.0	62.7	Below	0.6	4.3
EA15	Second Row Third Floor Multi-Family Residence - Balcony	1	58+30	205/139	60.4	61.0	64.5	Below	0.6	4.1
EA16	Second Row First Floor Multi-Family Residence - Patio	1	58+30	255/218	49.8	50.4	55.8	Below	0.6	6.0
EA17	Second Row Second Floor Multi-Family Residence - Balcony	1	58+30	255/218	53.9	54.4	59.1	Below	0.5	5.2
EA18	Second Row Third Floor Multi-Family Residence - Balcony	1	58+30	255/218	56.8	57.5	60.6	Below	0.7	3.8
EA19	Second Row First Floor Multi-Family Residence - Patio	1	58+10	292/251	48.5	49.0	54.5	Below	0.5	6.0
EA20	Second Row Second Floor Multi-Family Residence - Balcony	1	58+10	292/251	52.1	52.6	57.2	Below	0.5	5.1
EA21	First Row First Floor Multi-Family Residence - Patio	1	58+60	177/134	60.8	61.5	66.8	Approaches	0.7	6.0
EA22	First Row Second Floor Multi-Family Residence - Balcony	1	58+60	177/134	66.3	67.0	70.3	Exceeds	0.7	4.0
EA23	First Row First Floor Multi-Family Residence - Patio	1	59+50	177/134	60.7	61.4	66.6	Approaches	0.7	5.9
EA24	First Row Second Floor Multi-Family Residence - Balcony	1	59+50	177/134	66.3	67.0	70.3	Exceeds	0.7	4.0
EA25	First Row Third Floor Multi-Family Residence - Balcony	1	59+50	177/134	67.2	67.9	71.7	Exceeds	0.7	4.5
EA26	First Row First Floor Multi-Family Residence - Patio	1	59+50	177/134	60.4	61.1	65.8	Below	0.7	5.4
EA27	First Row Second Floor Multi-Family Residence - Balcony	1	59+50	177/134	66.1	66.9	69.9	Exceeds	0.8	3.8
EA28	First Row Third Floor Multi-Family Residence - Balcony	1	59+50	177/134	67.1	67.8	71.4	Exceeds	0.7	4.3
EA29	First Row First Floor Multi-Family Residence - Patio	1	60+20	177/134	60.6	61.3	66.5	Approaches	0.7	5.9
EA30	First Row Second Floor Multi-Family Residence - Balcony	1	60+20	177/134	66.1	66.8	69.8	Exceeds	0.7	3.7
EA31	First Row First Floor Multi-Family Residence - Patio	1	60+90	208/157	56.2	56.9	62.4	Below	0.7	6.2
EA32	First Row Second Floor Multi-Family Residence - Balcony	1	60+90	208/157	62.7	63.4	66.1	Approaches	0.7	3.4
EA33	Second Row First Floor Multi-Family Residence - Patio	1	60+90	249/196	51.9	52.5	57.9	Below	0.6	6.0
EA34	Second Row Second Floor Multi-Family Residence - Balcony	1	60+90	249/196	58.1	58.8	61.1	Below	0.7	3.0
EA35	Second Row Third Floor Multi-Family Residence - Balcony	1	60+90	249/196	59.3	59.9	63.0	Below	0.6	3.7
EA36	Second Row First Floor Multi-Family Residence - Patio	1	60+90	299/246	49.8	50.4	55.3	Below	0.6	5.5
EA37	Second Row Second Floor Multi-Family Residence - Balcony	1	60+90	299/246	54.4	54.9	57.9	Below	0.5	3.5
EA38	Second Row Third Floor Multi-Family Residence - Balcony	1	60+90	299/246	56.1	56.7	59.5	Below	0.6	3.4
EA39	Second Row First Floor Multi-Family Residence - Patio	1	60+90	339/286	48.8	49.3	53.8	Below	0.5	5.0
EA40	Second Row Second Floor Multi-Family Residence - Balcony	1	61+60	339/286	52.2	52.6	56.1	Below	0.4	3.9
EA41	First Row First Floor Multi-Family Residence - Patio	1	61+60	208/157	57.3	57.9	63.0	Below	0.6	5.7
EA42	First Row Second Floor Multi-Family Residence - Balcony	1	61+60	208/157	63.4	64.1	65.9	Below	0.7	2.5
EA43	Second Row First Floor Multi-Family Residence - Patio	1	61+60	249/196	55.5	56.1	61.1	Below	0.6	5.6
EA44	Second Row Second Floor Multi-Family Residence - Balcony	1	61+60	249/196	60.7	61.3	63.6	Below	0.6	2.9
EA45	Second Row Third Floor Multi-Family Residence - Balcony	1	61+60	249/196	62.6	63.2	65.3	Below	0.6	2.7
EA46	Second Row First Floor Multi-Family Residence - Patio	1	61+60	299/246	52.6	53.2	59.0	Below	0.6	6.4
EA47	Second Row Second Floor Multi-Family Residence - Balcony	1	61+60	299/246	57.2	57.7	61.7	Below	0.5	4.5
EA48	Second Row Third Floor Multi-Family Residence - Balcony	1	61+60	299/246	60.8	61.5	63.4	Below	0.7	2.6
EA49	Second Row First Floor Multi-Family Residence - Patio	1	61+60	339/286	50.8	51.4	57.4	Below	0.6	6.6
EA50	Second Row Second Floor Multi-Family Residence - Balcony	1	61+60	339/286	55.0	55.5	60.2	Below	0.5	5.2
EA51	Second Row First Floor Multi-Family Residence - Patio	1	62+40	350/325	53.0	53.5	56.2	Below	0.5	3.2
EA52	Second Row Second Floor Multi-Family Residence - Balcony	1	62+40	350/325	55.2	55.7	59.0	Below	0.5	3.8
EA53	Second Row First Floor Multi-Family Residence - Patio	1	62+90	384/347	52.7	53.3	55.8	Below	0.6	3.1
EA54	Second Row Second Floor Multi-Family Residence - Balcony	1	62+90	384/347	54.7	55.2	58.5	Below	0.5	3.8
EA55	Second Row Third Floor Multi-Family Residence - Balcony	1	62+90	384/347	56.1	56.6	60.2	Below	0.5	4.1
EA56	Second Row First Floor Multi-Family Residence - Patio	1	63+40	423/380	52.4	53.0	55.4	Below	0.6	3.0
EA57	Second Row Second Floor Multi-Family Residence - Balcony	1	63+40	423/380	54.3	54.8	58.2	Below	0.5	3.9
EA58	Second Row Third Floor Multi-Family Residence - Balcony	1	63+40	423/380	55.6	56.1	59.8	Below	0.5	4.2
EA59	Second Row First Floor Multi-Family Residence - Patio	1	63+90	439/409	52.3	52.9	55.3	Below	0.6	3.0
EA60	Second Row Second Floor Multi-Family Residence - Balcony	1	63+90	439/409	54.3	54.9	58.4	Below	0.6	4.1
EA61	Second Row First Floor Multi-Family Residence - Patio	1	61+60	392/344	50.3	50.8	56.1	Below	0.5	5.8
EA62	Second Row Second Floor Multi-Family Residence - Balcony	1	61+60	392/344	53.6	54.1	58.7	Below	0.5	5.1
EA63	Second Row First Floor Multi-Family Residence - Patio	1	62+00	392/344	50.4	50.9	56.5	Below	0.5	6.1
EA64	Second Row Second Floor Multi-Family Residence - Balcony	1	62+00	392/344	53.4	53.8	58.7	Below	0.4	5.3
EA65	Second Row Third Floor Multi-Family Residence - Balcony	1	62+00	392/344	58.2	58.8	61.6	Below	0.6	3.4

Table 3.2-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 2 of 7)

Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Center of Nearest Existing/Proposed Travel Lane - SW 10 th Street/Managed Lanes (Feet)	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative
					Existing Conditions	Design Year (2040)				
						No-Build Alternative	Build Alternative			
EA66	Second Row First Floor Multi-Family Residence - Patio	1	62+50	392/344	50.1	50.7	55.8	Below	0.6	5.7
EA67	Second Row Second Floor Multi-Family Residence - Balcony	1	62+50	392/344	53.3	53.7	58.6	Below	0.4	5.3
EA68	Second Row Third Floor Multi-Family Residence - Balcony	1	62+50	392/344	58.4	59.0	61.9	Below	0.6	3.5
EA69	Second Row First Floor Multi-Family Residence - Patio	1	63+00	392/344	49.9	50.5	56.1	Below	0.6	6.2
EA70	Second Row Second Floor Multi-Family Residence - Balcony	1	63+00	392/344	53.2	53.7	58.6	Below	0.5	5.4
EA71	First Row First Floor Multi-Family Residence - Patio	1	63+50	209/168	56.6	57.3	63.0	Below	0.7	6.4
EA72	First Row Second Floor Multi-Family Residence - Balcony	1	63+50	209/168	62.5	63.2	65.6	Below	0.7	3.1
EA73	Second Row First Floor Multi-Family Residence - Patio	1	63+50	261/217	54.0	54.6	60.2	Below	0.6	6.2
EA74	Second Row Second Floor Multi-Family Residence - Balcony	1	63+50	261/217	59.1	59.8	62.9	Below	0.7	3.8
EA75	Second Row Third Floor Multi-Family Residence - Balcony	1	63+50	261/217	61.5	62.1	64.9	Below	0.6	3.4
EA76	Second Row First Floor Multi-Family Residence - Patio	1	63+50	300/261	51.7	52.3	58.0	Below	0.6	6.3
EA77	Second Row Second Floor Multi-Family Residence - Balcony	1	63+50	300/261	56.2	56.7	60.8	Below	0.5	4.6
EA78	Second Row Third Floor Multi-Family Residence - Balcony	1	63+50	300/261	60.0	60.7	63.2	Below	0.7	3.2
EA79	Second Row First Floor Multi-Family Residence - Patio	1	63+50	345/391	49.9	50.5	56.3	Below	0.6	6.4
EA80	Second Row Second Floor Multi-Family Residence - Balcony	1	63+50	345/391	54.3	54.7	59.0	Below	0.4	4.7
EA81	First Row First Floor Multi-Family Residence - Patio	1	64+20	209/168	54.3	54.9	58.5	Below	0.6	4.2
EA82	First Row Second Floor Multi-Family Residence - Balcony	1	64+20	209/168	61.1	61.8	62.5	Below	0.7	1.4
EA83	Second Row First Floor Multi-Family Residence - Patio	1	64+20	261/217	52.0	52.6	56.1	Below	0.6	4.1
EA84	Second Row Second Floor Multi-Family Residence - Balcony	1	64+20	261/217	56.8	57.4	59.1	Below	0.6	2.3
EA85	Second Row Third Floor Multi-Family Residence - Balcony	1	64+20	261/217	59.0	59.6	60.7	Below	0.6	1.7
EA86	Second Row First Floor Multi-Family Residence - Patio	1	64+20	300/261	50.5	51.1	54.6	Below	0.6	4.1
EA87	Second Row Second Floor Multi-Family Residence - Balcony	1	64+20	300/261	54.1	54.6	57.2	Below	0.5	3.1
EA88	Second Row Third Floor Multi-Family Residence - Balcony	1	64+20	300/261	56.9	57.5	58.3	Below	0.6	1.4
EA89	Second Row First Floor Multi-Family Residence - Patio	1	64+20	345/391	48.2	48.7	52.4	Below	0.5	4.2
EA90	Second Row Second Floor Multi-Family Residence - Balcony	1	64+20	345/391	51.3	51.8	54.2	Below	0.5	2.9
EA91	First Row First Floor Multi-Family Residence - Patio	1	65+40	143/105	61.1	61.7	65.5	Below	0.6	4.4
EA92	First Row Second Floor Multi-Family Residence - Balcony	1	65+40	143/105	67.9	68.6	70.6	Exceeds	0.7	2.7
EA93	First Row First Floor Multi-Family Residence - Patio	1	65+90	143/105	60.9	61.5	65.3	Below	0.6	4.4
EA94	First Row Second Floor Multi-Family Residence - Balcony	1	65+90	143/105	67.8	68.5	70.3	Exceeds	0.7	2.5
EA95	Second Row Third Floor Multi-Family Residence - Balcony	1	65+90	143/105	68.4	69.1	71.5	Exceeds	0.7	3.1
EA96	First Row First Floor Multi-Family Residence - Patio	1	66+40	143/105	60.8	61.4	65.5	Below	0.6	4.7
EA97	First Row Second Floor Multi-Family Residence - Balcony	1	66+40	143/105	67.8	68.4	70.3	Exceeds	0.6	2.5
EA98	First Row Third Floor Multi-Family Residence - Balcony	1	66+40	143/105	68.4	69.1	71.6	Exceeds	0.7	3.2
EA99	First Row First Floor Multi-Family Residence - Patio	1	66+90	143/105	60.7	61.3	65.9	Below	0.6	5.2
EA100	First Row Second Floor Multi-Family Residence - Balcony	1	66+90	143/105	67.7	68.4	70.4	Exceeds	0.7	2.7
EA101	Second Row First Floor Multi-Family Residence - Patio	1	68+30	250/203	47.5	48.0	51.2	Below	0.5	3.7
EA102	Second Row Second Floor Multi-Family Residence - Balcony	1	68+30	250/203	46.6	47.1	50.3	Below	0.5	3.7
EA103	Second Row First Floor Multi-Family Residence - Patio	1	68+30	278/234	46.5	47.0	50.2	Below	0.5	3.7
EA104	Second Row Second Floor Multi-Family Residence - Balcony	1	68+30	278/234	46.0	46.4	49.6	Below	0.4	3.6
EA105	Second Row Third Floor Multi-Family Residence - Balcony	1	68+30	278/234	47.9	48.4	51.9	Below	0.5	4.0
EA106	Second Row First Floor Multi-Family Residence - Patio	1	68+30	322/286	46.7	47.2	51.3	Below	0.5	4.6
EA107	Second Row Second Floor Multi-Family Residence - Balcony	1	68+30	322/286	48.3	48.8	52.8	Below	0.5	4.5
EA108	Second Row Third Floor Multi-Family Residence - Balcony	1	68+30	322/286	50.4	51.0	54.1	Below	0.6	3.7
EA109	Second Row First Floor Multi-Family Residence - Patio	1	68+40	354/322	46.8	47.2	51.6	Below	0.4	4.8
EA110	Second Row Second Floor Multi-Family Residence - Balcony	1	68+40	354/322	49.2	49.6	53.6	Below	0.4	4.4
EA111	Second Row First Floor Multi-Family Residence - Patio	1	69+00	289/241	53.6	54.1	58.1	Below	0.5	4.5
EA112	Second Row Second Floor Multi-Family Residence - Balcony	1	69+00	289/241	58.6	59.0	63.0	Below	0.4	4.4
EA113	Second Row First Floor Multi-Family Residence - Patio	1	69+10	278/266	53.2	53.6	57.7	Below	0.4	4.5
EA114	Second Row Second Floor Multi-Family Residence - Balcony	1	69+10	278/266	58.0	58.5	62.4	Below	0.5	4.4
EA115	Second Row Third Floor Multi-Family Residence - Balcony	1	69+10	278/266	59.9	60.4	63.9	Below	0.5	4.0
EA116	Second Row First Floor Multi-Family Residence - Patio	1	69+10	348/312	51.5	51.9	56.2	Below	0.4	4.7
EA117	Second Row Second Floor Multi-Family Residence - Balcony	1	69+10	348/312	56.0	56.4	60.5	Below	0.4	4.5
EA118	Second Row Third Floor Multi-Family Residence - Balcony	1	69+10	348/312	58.1	58.6	62.3	Below	0.5	4.2
EA119	Second Row First Floor Multi-Family Residence - Patio	1	69+00	390/340	50.3	50.8	54.9	Below	0.5	4.6
EA120	Second Row Second Floor Multi-Family Residence - Balcony	1	69+00	390/340	55.0	55.4	59.5	Below	0.4	4.5
				Minimum	46.0	46.4	49.6	---	0.4	1.4
				Maximum	68.4	69.1	71.7	---	0.8	6.6
				Average	56.6	57.2	61.0	---	0.6	4.4
				Total Number of Residential Sites Equal to or Greater than 66.0 dB(A)	12	13	23	---	---	---

Table 3.2-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 3 of 7)

Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Center of Nearest Existing/Proposed Travel Lane - SW 10 th Street/Managed Lanes (Feet)	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative
					Existing Conditions	Design Year (2040)				
						No-Build Alternative	Build Alternative			
South of SW 10 th Street between Florida's Turnpike and Powerline Road - Waterways Community [Residential NAC B Exterior - 66 dB(A)] (see Figure 3.3.1 Sheet 2)										
WW1	First Row Residence	2	70+10	107/73	62.4	63.0	66.9	Approaches	0.6	4.5
WW2	First Row Residence	2	70+80	107/73	62.6	63.1	66.9	Approaches	0.5	4.3
WW3	First Row Residence	3	71+80	107/73	62.7	63.2	66.9	Approaches	0.5	4.2
WW4	First Row Residence	3	73+20	107/73	62.5	63.1	66.8	Approaches	0.6	4.3
WW5	First Row Residence	1	74+90	107/73	62.1	62.7	66.4	Approaches	0.6	4.3
WW6	Second Row Residence	1	74+90	140/109	58.9	59.5	63.3	Below	0.6	4.4
WW7	First Row Residence	1	74+90	177/145	58.9	59.4	63.2	Below	0.5	4.3
WW8	First Row Residence	1	74+90	199/167	58.6	59.1	63.1	Below	0.5	4.5
WW9	Second Row Residence	1	69+80	244/213	56.9	57.4	62.0	Below	0.5	5.1
WW10	Second Row Residence	1	71+00	264/231	54.5	55.0	59.2	Below	0.5	4.7
WW11	Second Row Residence	1	71+90	244/213	54.1	54.7	58.6	Below	0.6	4.5
WW12	Second Row Residence	1	72+70	244/213	53.9	54.4	58.2	Below	0.5	4.3
WW13	Second Row Residence	1	73+50	264/231	54.5	55.0	58.9	Below	0.5	4.4
WW14	Second Row Residence	1	74+90	264/231	58.2	58.7	62.8	Below	0.5	4.6
				Minimum	53.9	54.4	58.2	---	0.5	4.2
				Maximum	62.7	63.2	66.9	---	0.6	5.1
				Average	58.6	59.2	63.1	---	0.5	4.5
				Total Number of Residential Sites Equal to or Greater than 66.0 dB(A)	0	0	11	---	---	---
South of SW 10 th Street between Florida's Turnpike and Powerline Road - Independence Bay Community [Residential NAC B Exterior - 66 dB(A)] (see Figure 3.3.1 Sheets 2 and 3)										
IBC1	First Row Residence	1	78+10	275/250	61.8	62.3	66.3	Approaches	0.5	4.5
IBC2	First Row Residence	1	78+50	256/234	62.6	63.1	67.0	Exceeds	0.5	4.4
IBC3	First Row Residence	2	78+90	256/233	62.5	63.1	67.1	Exceeds	0.6	4.6
IBC4	First Row Residence	2	79+90	256/233	62.8	63.4	67.3	Exceeds	0.6	4.5
IBC5	First Row Residence	2	81+00	256/233	63.2	63.7	67.7	Exceeds	0.5	4.5
IBC6	First Row Residence	2	82+40	256/233	63.0	63.5	67.5	Exceeds	0.5	4.5
IBC7	First Row Residence	1	83+50	256/233	62.1	62.6	67.0	Exceeds	0.5	4.9
IBC8	First Row Residence	1	83+90	256/233	61.6	62.0	66.6	Approaches	0.4	5.0
IBC9	First Row Residence	1	84+30	256/233	61.3	61.7	66.3	Approaches	0.4	5.0
IBC10	First Row Residence	1	78+00	348/322	56.5	57.1	61.4	Below	0.6	4.9
IBC11	Second Row Residence	1	78+20	446/420	51.0	51.4	55.5	Below	0.4	4.5
IBC12	Second Row Residence	3	79+10	424/400	52.2	52.6	56.8	Below	0.4	4.6
IBC13	Second Row Residence	4	81+00	404/369	51.6	52.0	56.1	Below	0.4	4.5
IBC14	Second Row Residence	2	82+90	404/369	53.4	53.7	57.8	Below	0.3	4.4
IBC15	Second Row Residence	1	83+20	404/369	53.8	54.0	58.8	Below	0.2	5.0
IBC16	Second Row Residence	1	83+90	399/369	54.5	54.7	59.5	Below	0.2	5.0
				Minimum	51.0	51.4	55.5	---	0.2	4.4
				Maximum	63.2	63.7	67.7	---	0.6	5.0
				Average	58.4	58.8	63.0	---	0.4	4.7
				Total Number of Residential Sites Equal to or Greater than 66.0 dB(A)	0	0	13	---	---	---
South of SW 10 th Street between Florida's Turnpike and Powerline Road - Freedom Square Condominiums [Residential NAC B Exterior - 66 dB(A)] (see Figure 3.3.1 Sheet 3)										
FSC101F	First Row First Floor Multi-Family Residence - Patio	2	85+90	278/239	62.0	62.2	66.8	Approaches	0.2	4.8
FSC101S	First Row Second Floor Multi-Family Residence - Balcony	2	85+90	278/239	64.4	64.5	68.7	Exceeds	0.1	4.3
FSC102F	First Row First Floor Multi-Family Residence - Patio	2	86+70	278/239	62.8	63.0	67.1	Exceeds	0.2	4.3
FSC102S	First Row Second Floor Multi-Family Residence - Balcony	2	86+70	278/239	64.6	64.8	68.9	Exceeds	0.2	4.3
FSC103F	First Row First Floor Multi-Family Residence - Patio	2	87+50	278/239	63.1	63.3	67.3	Exceeds	0.2	4.2
FSC103S	First Row Second Floor Multi-Family Residence - Balcony	2	87+50	278/239	64.8	64.9	69.0	Exceeds	0.1	4.2
FSC201F	First Row First Floor Multi-Family Residence - Patio	2	87+50	278/239	63.4	63.5	67.5	Exceeds	0.1	4.1
FSC201S	First Row Second Floor Multi-Family Residence - Balcony	2	87+90	278/239	65.0	65.1	69.1	Exceeds	0.1	4.1
FSC202F	First Row First Floor Multi-Family Residence - Patio	2	88+90	278/239	63.3	63.4	67.3	Exceeds	0.1	4.0
FSC202S	First Row Second Floor Multi-Family Residence - Balcony	2	88+90	278/239	64.8	64.9	68.9	Exceeds	0.1	4.1
FSC203F	First Row First Floor Multi-Family Residence - Patio	2	89+50	278/239	63.4	63.5	67.4	Exceeds	0.1	4.0
FSC203S	First Row Second Floor Multi-Family Residence - Balcony	2	89+50	278/239	64.9	65.0	68.9	Exceeds	0.1	4.0
FSC301F	First Row First Floor Multi-Family Residence - Patio	1	91+10	276/225	63.1	63.2	67.0	Exceeds	0.1	3.9
FSC301S	First Row Second Floor Multi-Family Residence - Balcony	1	91+10	276/225	64.6	64.7	68.5	Exceeds	0.1	3.9
FSC302F	Second Row First Floor Multi-Family Residence - Patio	1	91+10	310/259	60.3	60.3	63.8	Below	0.0	3.5
FSC302S	Second Row Second Floor Multi-Family Residence - Balcony	1	91+10	310/259	61.5	61.6	65.5	Below	0.1	4.0
FSC303F	Second Row First Floor Multi-Family Residence - Patio	1	91+10	339/290	59.5	59.5	62.9	Below	0.0	3.4
FSC303S	Second Row Second Floor Multi-Family Residence - Balcony	1	91+10	339/290	60.7	60.8	64.8	Below	0.1	4.1
FSC304F	Second Row First Floor Multi-Family Residence - Patio	1	91+10	371/319	58.9	59.0	62.2	Below	0.1	3.3
FSC304S	Second Row Second Floor Multi-Family Residence - Balcony	1	91+10	371/319	60.2	60.2	64.2	Below	0.0	4.0
FSC305F	Second Row First Floor Multi-Family Residence - Patio	1	91+10	403/352	58.3	58.4	61.6	Below	0.1	3.3
FSC306S	Second Row Second Floor Multi-Family Residence - Balcony	1	91+10	403/352	59.6	59.7	63.7	Below	0.1	4.1

Table 3.2-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 4 of 7)

Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Center of Nearest Existing/Proposed Travel Lane - SW 10 th Street/Managed Lanes (Feet)	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative
					Existing Conditions	Design Year (2040)				
						No-Build Alternative	Build Alternative			
FSC306F	Second Row First Floor Multi-Family Residence - Patio	1	91+10	430/380	57.9	58.0	61.1	Below	0.1	3.2
FSC306S	Second Row Second Floor Multi-Family Residence - Balcony	1	91+10	430/380	59.1	59.2	63.1	Below	0.1	4.0
FSCP-C	Pool	1 (Special Land Use)	86+00	482/440	53.9	54.1	58.9	Below	0.2	5.0
Minimum					53.9	54.1	58.9	---	0.0	3.2
Maximum					65.0	65.1	69.1	---	0.2	5.0
Average					61.8	61.9	65.8	---	0.1	4.0
Total Number of Residential Sites Equal to or Greater than 66.0 dB(A)					0	0	26	---	---	---
North of SW 10 th Street between Florida's Turnpike and Powerline Road - Quiet Waters Park [Recreational NAC C Exterior - 66 dB(A)] (see Figure 3.3.1 Sheets 2 and 3)										
QWP TRAIL 1	Recreational - Trail	1 (Special Land Use)	57+50	61/84	65.6	66.1	66.1	Approaches	0.5	0.5
QWP TRAIL 2	Recreational - Trail	1 (Special Land Use)	60+10	45/48	66.1	66.4	66.0	Approaches	0.3	-0.1
QWP TRAIL 3	Recreational - Trail	1 (Special Land Use)	58+10	143/164	64.1	64.5	64.7	Below	0.4	0.6
QWP TRAIL 4	Recreational - Trail	1 (Special Land Use)	60+00	139/145	64.0	64.2	64.5	Below	0.2	0.5
QWP TRAIL 5	Recreational - Trail	1 (Special Land Use)	58+50	240/274	60.3	60.8	62.1	Below	0.5	1.8
QWP TRAIL 6	Recreational - Trail	1 (Special Land Use)	59+50	229/240	60.7	61.1	62.6	Below	0.4	1.9
QWP TRAIL 7	Recreational - Trail	1 (Special Land Use)	60+70	315/320	57.7	58.2	60.6	Below	0.5	2.9
QWP TRAIL 8	Recreational - Trail	1 (Special Land Use)	62+30	278/256	58.7	59.1	61.7	Below	0.4	3.0
QWP TRAIL 9	Recreational - Trail	1 (Special Land Use)	63+40	278/256	58.5	58.9	61.7	Below	0.4	3.2
QWP TRAIL 10	Recreational - Trail	1 (Special Land Use)	64+30	254/218	59.2	59.7	62.6	Below	0.5	3.4
QWP TRAIL 11	Recreational - Trail	1 (Special Land Use)	65+00	207/172	60.7	61.1	64.0	Below	0.4	3.3
QWP TRAIL 12	Recreational - Trail	1 (Special Land Use)	65+30	169/128	62.3	62.7	65.7	Below	0.4	3.4
QWP TRAIL 13	Recreational - Trail	1 (Special Land Use)	85+00	402/349	56.6	56.7	61.4	Below	0.1	4.8
QWP TRAIL 14	Recreational - Trail	1 (Special Land Use)	87+40	408/356	57.7	57.8	61.7	Below	0.1	4.0
QWP1	Recreational - Pool	1 (Special Land Use)	77+00	307/254	57.3	57.7	62.6	Below	0.4	5.3
QWP2	Recreational - Pool	1 (Special Land Use)	78+90	340/288	56.4	56.9	61.9	Below	0.5	5.5
Minimum					56.4	56.7	60.6	---	0.1	-0.1
Maximum					66.1	66.4	66.1	---	0.5	5.5
Average					60.4	60.7	63.1	---	0.4	2.8
Total Number of Recreational Sites Equal to or Greater than 66.0 dB(A)					1	2	2	---	---	---
North of SW 10 th Street between Powerline Road and South Military Trail - Century Village [Residential NAC B Exterior - 66 dB(A)] / [Recreational NAC C Exterior - 66 dB(A)] (see Figure 3.3.1 Sheets 5, 6, and 7)										
CV1	Second Row First Floor Multi-Family Residence - Patio	1	119+60	252/246	55.7	55.7	60.6	Below	0.0	4.9
CV2	Second Row Second Floor Multi-Family Residence - Balcony	1	119+60	252/246	58.8	58.8	64.5	Below	0.0	5.7
CV3	Second Row First Floor Multi-Family Residence - Patio	1	119+60	272/266	53.4	53.4	58.3	Below	0.0	4.9
CV4	Second Row First Floor Multi-Family Residence - Patio	1	119+60	272/266	56.3	56.3	62.0	Below	0.0	5.7
CV5	Second Row Second Floor Multi-Family Residence - Balcony	1	119+60	292/285	51.8	51.8	56.7	Below	0.0	4.9
CV6	Second Row Second Floor Multi-Family Residence - Balcony	1	119+60	292/285	54.6	54.6	60.0	Below	0.0	5.4
CV7	Second Row First Floor Multi-Family Residence - Patio	1	119+60	312/303	50.7	50.7	55.6	Below	0.0	4.9
CV8	Second Row Second Floor Multi-Family Residence - Balcony	1	119+60	312/303	53.3	53.4	58.7	Below	0.1	5.4
CV9	Second Row First Floor Multi-Family Residence - Patio	2	120+10	304/305	51.9	51.9	56.5	Below	0.0	4.6
CV10	Second Row Second Floor Multi-Family Residence - Balcony	2	120+10	304/305	54.9	54.9	60.6	Below	0.0	5.7
CV11-C	Recreational - Pool	1 (Special Land Use)	125+00	293/295	54.8	54.8	58.9	Below	0.0	4.1
CV12	First Row First Floor Multi-Family Residence - Patio	1	126+00	112/115	67.0	67.0	71.1	Exceeds	0.0	4.1
CV13	First Row Second Floor Multi-Family Residence - Balcony	1	126+00	112/115	68.3	68.3	72.7	Exceeds	0.0	4.4
CV14	First Row First Floor Multi-Family Residence - Patio	1	126+30	112/114	67.0	67.0	71.1	Exceeds	0.0	4.1
CV15	First Row Second Floor Multi-Family Residence - Balcony	1	126+30	112/114	68.3	68.3	72.7	Exceeds	0.0	4.4
CV16	First Row First Floor Multi-Family Residence - Patio	1	126+50	112/114	67.1	67.1	71.2	Exceeds	0.0	4.1
CV17	First Row Second Floor Multi-Family Residence - Balcony	1	126+50	112/114	68.3	68.3	72.7	Exceeds	0.0	4.4
CV18	First Row First Floor Multi-Family Residence - Patio	1	126+90	112/114	67.1	67.1	71.2	Exceeds	0.0	4.1
CV19	First Row Second Floor Multi-Family Residence - Balcony	1	126+90	112/114	68.3	68.3	72.7	Exceeds	0.0	4.4
CV20	First Row First Floor Multi-Family Residence - Patio	2	134+10	117/122	65.9	65.9	70.9	Exceeds	0.0	5.0
CV21	First Row Second Floor Multi-Family Residence - Balcony	2	134+10	117/122	68.1	68.1	72.7	Exceeds	0.0	4.6
CV22	First Row First Floor Multi-Family Residence - Patio	2	134+90	132/148	65.3	65.3	70.1	Exceeds	0.0	4.8
CV23	First Row Second Floor Multi-Family Residence - Balcony	2	134+90	132/148	67.4	67.4	72.0	Exceeds	0.0	4.6
CV24-C	Recreational - Bench	1 (Special Land Use)	141+50	113/114	65.2	65.2	70.2	Exceeds	0.0	5.0
CV25-C	Recreational - Bench	1 (Special Land Use)	141+20	214/218	59.0	59.0	65.1	Below	0.0	6.1
CV26	First Row First Floor Multi-Family Residence - Patio	2	142+90	40/47	70.7	70.7	75.4	Exceeds	0.0	4.7
CV27	First Row Second Floor Multi-Family Residence - Balcony	2	142+90	40/47	71.5	71.5	75.8	Exceeds	0.0	4.3
CV28	First Row First Floor Multi-Family Residence - Patio	2	143+70	66/71	68.3	68.3	73.3	Exceeds	0.0	5.0
CV29	First Row Second Floor Multi-Family Residence - Balcony	2	143+70	66/71	70.2	70.2	74.4	Exceeds	0.0	4.2
CV30	Second Row First Floor Multi-Family Residence - Patio	1	144+00	139/147	62.0	62.0	67.6	Exceeds	0.0	5.6
CV31	Second Row Second Floor Multi-Family Residence - Balcony	1	144+00	139/147	64.8	64.8	69.5	Exceeds	0.0	4.7
CV32	Second Row First Floor Multi-Family Residence - Patio	1	133+90	161/168	60.0	60.0	66.0	Approaches	0.0	6.0
CV33	Second Row Second Floor Multi-Family Residence - Balcony	1	133+90	161/168	62.9	62.9	67.9	Exceeds	0.0	5.0
CV34	Second Row First Floor Multi-Family Residence - Patio	1	133+80	182/188	58.8	58.8	64.8	Below	0.0	6.0

Table 3.2-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 5 of 7)

Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Center of Nearest Existing/Proposed Travel Lane - SW 10 th Street/Managed Lanes (Feet)	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative
					Existing Conditions	Design Year (2040)				
						No-Build Alternative	Build Alternative			
CV35	Second Row Second Floor Multi-Family Residence - Balcony	1	133+80	182/188	61.8	61.8	66.9	Approaches	0.0	5.1
CV36	Second Row First Floor Multi-Family Residence - Patio	1	133+70	193/198	57.9	57.9	63.7	Below	0.0	5.8
CV37	Second Row Second Floor Multi-Family Residence - Balcony	1	133+70	193/198	60.9	60.9	66.0	Approaches	0.0	5.1
CV38	Second Row First Floor Multi-Family Residence - Patio	1	133+00	387/389	50.0	50.1	54.8	Below	0.1	4.8
CV39	Second Row Second Floor Multi-Family Residence - Balcony	1	133+00	387/389	51.8	51.9	57.7	Below	0.1	5.9
CV40	Second Row First Floor Multi-Family Residence - Patio	1	136+20	422/427	51.4	51.4	55.2	Below	0.0	3.8
CV41	Second Row Second Floor Multi-Family Residence - Balcony	1	136+20	422/427	53.2	53.2	58.3	Below	0.0	5.1
CV42	Second Row First Floor Multi-Family Residence - Patio	1	140+60	395/399	51.7	51.7	56.6	Below	0.0	4.9
CV43	Second Row Second Floor Multi-Family Residence - Balcony	1	140+60	395/399	53.5	53.5	59.3	Below	0.0	5.8
CV44-C	Recreational - Bench	1 (Special Land Use)	142+00	373/377	54.3	54.3	59.0	Below	0.0	4.7
CV45-C	Recreational -Bench	1 (Special Land Use)	154+20	100/105	67.4	67.4	72.1	Exceeds	0.0	4.7
CV46-C	Recreational - Bench	1 (Special Land Use)	152+40	350/349	51.9	51.9	57.8	Below	0.0	5.9
CV47-C	Recreational - Bench	1 (Special Land Use)	157+00	251/255	54.6	54.6	61.4	Below	0.0	6.8
CV48	First Row First Floor Multi-Family Residence - Patio	2	164+90	132/93	65.4	65.5	72.9	Exceeds	0.1	7.5
CV49	First Row Second Floor Multi-Family Residence - Balcony	2	164+90	132/193	67.3	67.3	73.7	Exceeds	0.0	6.4
CV50	First Row First Floor Multi-Family Residence - Patio	2	164+50	132/103	65.1	65.2	71.2	Exceeds	0.1	6.1
CV51	First Row Second Floor Multi-Family Residence - Balcony	2	164+50	132/103	66.9	66.9	73.4	Exceeds	0.0	6.5
CV52	First Row Second Floor Multi-Family Residence - Balcony	2	165+40	169/117	66.3	66.3	72.7	Exceeds	0.0	6.4
CV53	First Row First Floor Multi-Family Residence - Patio	2	165+40	169/117	64.6	64.7	67.8	Exceeds	0.1	3.2
CV54	First Row Second Floor Multi-Family Residence - Balcony	2	166+00	169/117	66.3	66.4	72.5	Exceeds	0.1	6.2
CV55	First Row First Floor Multi-Family Residence - Patio	2	166+00	169/117	64.7	64.8	67.4	Exceeds	0.1	2.7
CV56	Second Row First Floor Multi-Family Residence - Patio	1	165+90	223/170	61.2	61.3	65.7	Below	0.1	4.5
CV57	Second Row Second Floor Multi-Family Residence - Balcony	1	165+90	223/170	63.3	63.3	70.2	Exceeds	0.0	6.9
CV58	Second Row First Floor Multi-Family Residence - Patio	1	165+90	243/191	59.0	59.0	64.2	Below	0.0	5.2
CV59	Second Row Second Floor Multi-Family Residence - Balcony	1	165+90	243/191	61.2	61.2	68.4	Exceeds	0.0	7.2
CV60	Second Row First Floor Multi-Family Residence - Patio	1	165+90	263/214	57.3	57.3	63.0	Below	0.0	5.7
CV61	Second Row Second Floor Multi-Family Residence - Balcony	1	165+90	263/214	59.5	59.5	67.0	Exceeds	0.0	7.5
CV62	Second Row First Floor Multi-Family Residence - Patio	1	165+90	283/234	56.1	56.1	62.2	Below	0.0	6.1
CV63	Second Row Second Floor Multi-Family Residence - Balcony	1	165+90	283/234	58.3	58.3	65.8	Below	0.0	7.5
CV64	First Row First Floor Multi-Family Residence - Patio	2	168+50	167/121	64.6	64.8	67.2	Exceeds	0.2	2.6
CV65	First Row Second Floor Multi-Family Residence - Balcony	2	169+30	167/121	66.2	66.4	69.5	Exceeds	0.2	3.3
CV66	First Row First Floor Multi-Family Residence - Patio	2	169+30	167/121	64.4	64.7	66.8	Approaches	0.3	2.4
CV67	First Row Second Floor Multi-Family Residence - Balcony	2	169+30	167/121	66.1	66.3	68.7	Exceeds	0.2	2.6
CV68	First Row First Floor Multi-Family Residence - Patio	1	169+80	214/170	61.0	61.4	64.2	Below	0.4	3.2
CV69	First Row Second Floor Multi-Family Residence - Balcony	1	169+80	214/170	63.0	63.3	65.5	Below	0.3	2.5
CV70	First Row First Floor Multi-Family Residence - Patio	1	169+80	236/191	58.6	59.0	62.0	Below	0.4	3.4
CV71	First Row Second Floor Multi-Family Residence - Balcony	1	169+80	236/191	60.6	61.0	63.4	Below	0.4	2.8
CV72	Second Row First Floor Multi-Family Residence - Patio	1	169+80	258/212	56.9	57.4	60.5	Below	0.5	3.6
CV73	Second Row Second Floor Multi-Family Residence - Balcony	1	169+80	258/212	59.0	59.4	62.0	Below	0.4	3.0
CV74	Second Row First Floor Multi-Family Residence - Patio	1	169+80	280/233	55.7	56.2	59.6	Below	0.5	3.9
CV75	Second Row Second Floor Multi-Family Residence - Balcony	1	169+80	280/233	57.8	58.2	61.3	Below	0.4	3.5
CV76	First Row First Floor Multi-Family Residence - Patio	1	170+40	140/96	65.8	66.1	66.1	Approaches	0.3	0.3
CV77	First Row Second Floor Multi-Family Residence - Balcony	1	170+40	140/96	67.1	67.4	68.5	Exceeds	0.3	1.4
CV78	First Row First Floor Multi-Family Residence - Patio	1	170+80	160/120	62.7	63.0	64.6	Below	0.3	1.9
CV79	First Row Second Floor Multi-Family Residence - Balcony	1	170+80	160/120	64.4	64.6	66.8	Approaches	0.2	2.4
CV80	First Row First Floor Multi-Family Residence - Patio	1	170+80	180/144	61.1	61.4	64.1	Below	0.3	3.0
CV81	First Row Second Floor Multi-Family Residence - Balcony	1	170+80	180/144	63.0	63.3	65.8	Below	0.3	2.8
CV82	Second Row First Multi-Family Residence - Patio	1	170+80	200/168	59.7	60.0	63.2	Below	0.3	3.5
CV83	Second Row Second Floor Multi-Family Residence - Balcony	1	170+80	200/168	61.9	62.2	64.9	Below	0.3	3.0
CV84	Second Row First Floor Multi-Family Residence - Patio	1	170+80	220/192	58.5	58.8	62.4	Below	0.3	3.9
CV85	Second Row Second Floor Multi-Family Residence - Balcony	1	170+80	220/192	60.8	61.0	63.8	Below	0.2	3.0
CV86	First Row First Floor Multi-Family Residence - Patio	2	172+20	85/41	68.6	68.9	61.3	Below	0.3	-7.3
CV87	First Row Second Floor Multi-Family Residence - Balcony	2	172+20	85/41	69.6	69.9	63.9	Below	0.3	-5.7
CV88	First Row First Floor Multi-Family Residence - Patio	2	173+10	85/41	69.6	69.9	64.3	Below	0.3	-5.3
CV89	First Row Second Floor Multi-Family Residence - Balcony	2	173+10	85/41	70.4	70.7	65.5	Below	0.3	-4.9
CV90	Second Row First Floor Multi-Family Residence - Patio	1	174+80	150/101	69.2	69.7	68.4	Exceeds	0.5	-0.8
CV91	Second Row Second Floor Multi-Family Residence - Balcony	1	174+80	150/101	69.7	70.1	69.2	Exceeds	0.4	-0.5
CV92	Second Row First Floor Multi-Family Residence - Patio	1	174+80	170/121	68.1	68.6	68.1	Exceeds	0.5	0.0
CV93	Second Row Second Floor Multi-Family Residence - Balcony	1	174+80	170/121	68.6	69.1	68.8	Exceeds	0.5	0.2
CV94	Second Row First Floor Multi-Family Residence - Patio	1	174+80	190/141	67.2	67.7	67.6	Exceeds	0.5	0.4
CV95	Second Row Second Floor Multi-Family Residence - Balcony	1	174+80	190/141	67.9	68.4	68.4	Exceeds	0.5	0.5
CV96	Second Row First Floor Multi-Family Residence - Patio	1	174+80	210/161	66.5	67.0	66.9	Approaches	0.5	0.4
CV97	Second Row Second Floor Multi-Family Residence - Balcony	1	174+80	210/161	67.4	67.9	68.0	Exceeds	0.5	0.6
CV98	Second Row First Floor Multi-Family Residence - Patio	1	173+50	325/283	60.9	61.4	62.5	Below	0.5	1.6
CV99	Second Row Second Floor Multi-Family Residence - Balcony	1	173+50	325/283	62.4	62.9	64.0	Below	0.5	1.6

Table 3.2-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 6 of 7)

Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Center of Nearest Existing/Proposed Travel Lane - SW 10 th Street/Managed Lanes (Feet)	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative
					Existing Conditions	Design Year (2040)				
						No-Build Alternative	Build Alternative			
CV100	Second Row First Floor Multi-Family Residence - Patio	1	173+70	325/283	62.1	62.6	63.6	Below	0.5	1.5
CV101	Second Row Second Floor Multi-Family Residence - Balcony	1	173+70	325/283	63.4	63.9	64.8	Below	0.5	1.4
CV102	Second Row First Floor Multi-Family Residence - Patio	1	173+90	325/283	63.3	63.8	64.6	Below	0.5	1.3
CV103	Second Row Second Floor Multi-Family Residence - Balcony	1	173+90	325/283	64.5	65.0	65.8	Below	0.5	1.3
CV104	Second Row First Floor Multi-Family Residence - Patio	1	174+20	325/283	65.3	65.9	66.7	Approaches	0.6	1.4
CV105	Second Row Second Floor Multi-Family Residence - Balcony	1	174+20	325/283	66.4	67.0	67.7	Exceeds	0.6	1.3
Minimum					50.0	50.1	54.8	---	0.0	-7.3
Maximum					71.5	71.5	75.8	---	0.6	7.5
Average					62.2	62.4	65.8	---	0.2	3.6
Total Number of Residential / Recreational Sites Equal to or Greater than 66.0 dB(A)					50 / 2	51 / 2	70 / 2	---	---	---
South of SW 10 th Street between Powerline Road and South Military Trail - Waterford Courtyards [Residential NAC B Exterior - 66 dB(A)] (see Figure 3.3.1 Sheet 5)										
WC1F	First Row First Floor Multi-Family Residence - Patio	1	125+60	238/210	60.8	60.8	65.2	Below	0.0	4.4
WC1S	First Row Second Floor Multi-Family Residence - Balcony	0	125+60	238/210	63.1	63.1	67.7	Exceeds	0.0	4.6
WC2F	First Row First Floor Multi-Family Residence - Patio	1	126+40	203/153	62.9	62.9	68.1	Exceeds	0.0	5.2
WC2S	First Row Second Floor Multi-Family Residence - Balcony	0	126+40	203/153	65.0	65.0	70.7	Exceeds	0.0	5.7
WC3	First Row First Floor Multi-Family Residence - Balcony	1	125+90	282/232	54.5	54.6	59.6	Below	0.1	5.1
WC4	First Row First Floor Multi-Family Residence - Balcony	1	126+50	250/200	59.3	59.3	63.3	Below	0.0	4.0
WC5F	First Row First Floor Multi-Family Residence - Patio	1	127+00	238/188	59.3	59.3	63.5	Below	0.0	4.2
WC5S	First Row Second Floor Multi-Family Residence - Balcony	0	127+00	238/188	61.8	61.8	66.6	Approaches	0.0	4.8
WC6F	First Row First Floor Multi-Family Residence - Patio	1	127+50	209/159	62.5	62.5	67.7	Exceeds	0.0	5.2
WC6S	First Row Second Floor Multi-Family Residence - Balcony	0	127+50	209/159	64.8	64.8	70.2	Exceeds	0.0	5.4
WC7	First Row First Floor Multi-Family Residence - Patio	1	127+30	283/234	51.5	51.5	56.8	Below	0.0	5.3
WC8	First Row First Floor Multi-Family Residence - Patio	1	128+90	253/204	58.7	58.7	62.9	Below	0.0	4.2
WC9F	First Row First Floor Multi-Family Residence - Patio	1	128+00	236/186	60.2	60.2	64.4	Below	0.0	4.2
WC9S	First Row Second Floor Multi-Family Residence - Balcony	0	128+00	236/186	62.5	62.5	67.2	Exceeds	0.0	4.7
WC10F	First Row First Floor Multi-Family Residence - Patio	1	128+60	203/152	62.6	62.6	68.2	Exceeds	0.0	5.6
WC10S	First Row Second Floor Multi-Family Residence - Balcony	0	128+60	203/152	64.9	64.9	70.5	Exceeds	0.0	5.6
WC11	First Row First Floor Multi-Family Residence - Patio	1	128+30	280/234	52.1	52.1	56.6	Below	0.0	4.5
WC12	First Row First Floor Multi-Family Residence - Patio	1	128+90	251/199	58.2	58.2	63.4	Below	0.0	5.2
WC13F	First Row First Floor Multi-Family Residence - Patio	1	129+40	238/184	59.2	59.2	63.4	Below	0.0	4.2
WC13S	First Row Second Floor Multi-Family Residence - Balcony	0	129+40	238/184	61.6	61.6	66.6	Approaches	0.0	5.0
WC14F	First Row First Floor Multi-Family Residence - Patio	1	129+90	208/155	61.8	61.8	67.9	Exceeds	0.0	6.1
WC14S	First Row Second Floor Multi-Family Residence - Balcony	0	129+90	208/155	64.4	64.4	70.3	Exceeds	0.0	5.9
WC15	First Row First Floor Multi-Family Residence - Patio	1	129+80	281/227	51.2	51.2	55.4	Below	0.0	4.2
WC16	First Row First Floor Multi-Family Residence - Patio	1	130+10	259/204	56.4	56.4	62.4	Below	0.0	6.0
WC17F	First Row First Floor Multi-Family Residence - Patio	1	130+50	233/178	59.2	59.2	64.6	Below	0.0	5.4
WC17S	First Row Second Floor Multi-Family Residence - Balcony	0	130+50	233/178	62.0	62.0	67.5	Exceeds	0.0	5.5
WC18	First Row First Floor Multi-Family Residence - Patio	1	130+90	201/145	62.0	62.0	68.9	Exceeds	0.0	6.9
WC18S	First Row Second Floor Multi-Family Residence - Balcony	0	130+90	201/145	64.7	64.7	71.2	Exceeds	0.0	6.5
WC19	First Row First Floor Multi-Family Residence - Patio	1	130+70	281/225	52.5	52.5	56.8	Below	0.0	4.3
WC20	First Row First Floor Multi-Family Residence - Patio	1	131+20	245/188	57.3	57.3	64.0	Below	0.0	6.7
WC21F	First Row First Floor Multi-Family Residence - Patio	1	131+50	226/182	57.4	57.4	63.4	Below	0.0	6.0
WC21S	First Row Second Floor Multi-Family Residence - Balcony	0	131+50	226/182	60.6	60.6	66.6	Approaches	0.0	6.0
WC22F	First Row First Floor Multi-Family Residence - Patio	1	132+00	192/155	61.5	61.5	68.3	Exceeds	0.0	6.8
WC22S	First Row Second Floor Multi-Family Residence - Balcony	0	132+00	192/155	64.3	64.3	70.7	Exceeds	0.0	6.4
WC23	First Row First Floor Multi-Family Residence - Patio	1	131+90	264/225	51.1	51.1	56.6	Below	0.0	5.5
WC24	First Row First Floor Multi-Family Residence - Patio	1	132+20	234/198	57.8	57.8	64.5	Below	0.0	6.7
WC25F	First Row First Floor Multi-Family Residence - Patio	1	132+50	221/185	58.9	58.9	65.5	Below	0.0	6.6
WC25S	First Row Second Floor Multi-Family Residence - Balcony	0	132+50	221/185	62.3	62.3	68.5	Exceeds	0.0	6.2
WC26F	First Row First Floor Multi-Family Residence - Patio	1	133+10	189/158	62.0	62.0	68.8	Exceeds	0.0	6.8
WC26S	First Row Second Floor Multi-Family Residence - Balcony	0	133+10	189/158	64.6	64.7	71.2	Exceeds	0.1	6.6
WC27	First Row First Floor Multi-Family Residence - Patio	1	132+90	263/226	50.7	50.7	58.0	Below	0.0	7.3
WC28	First Row First Floor Multi-Family Residence - Patio	1	133+40	231/203	57.3	57.3	64.0	Below	0.0	6.7
WC29F	First Row First Floor Multi-Family Residence - Patio	1	133+70	221/192	57.1	57.1	64.1	Below	0.0	7.0
WC29S	First Row Second Floor Multi-Family Residence - Balcony	0	133+70	221/192	60.6	60.6	67.1	Exceeds	0.0	6.5
WC30F	First Row First Floor Multi-Family Residence - Patio	1	134+20	193/161	61.7	61.7	68.5	Exceeds	0.0	6.8
WC30S	First Row Second Floor Multi-Family Residence - Balcony	0	134+20	193/161	64.4	64.4	71.1	Exceeds	0.0	6.7
WC31	First Row First Floor Multi-Family Residence - Patio	1	134+00	264/233	51.0	51.0	58.2	Below	0.0	7.2
WC32	First Row First Floor Multi-Family Residence - Patio	1	134+50	239/204	58.9	58.9	65.2	Below	0.0	6.3
WC33F	Second Row First Floor Multi-Family Residence - Patio	1	125+60	355/326	55.9	55.9	59.6	Below	0.0	3.7
WC33S	Second Row Second Floor Multi-Family Residence - Balcony	0	125+60	355/326	58.8	58.9	62.6	Below	0.1	3.8
WC34F	Second Row First Floor Multi-Family Residence - Patio	1	126+10	326/276	55.2	55.2	59.7	Below	0.0	4.5
WC34S	Second Row Second Floor Multi-Family Residence - Balcony	0	126+10	326/276	58.1	58.1	62.5	Below	0.0	4.4
WC35	Second Row First Floor Multi-Family Residence - Patio	1	125+90	395/345	52.1	52.2	55.8	Below	0.1	3.7
WC36	Second Row First Floor Multi-Family Residence - Patio	1	126+40	369/320	52.1	52.1	56.4	Below	0.0	4.3
WC37F	Second Row First Floor Multi-Family Residence - Patio	1	128+60	392/340	52.3	52.3	56.5	Below	0.0	4.2

Table 3.2-1: Location and Description of Representative Noise Sensitive Receptor Sites and Noise Analysis Results (Sheet 7 of 7)

Representative Noise Receptor Site Designation	Noise Sensitive Site Description	Number of Noise Sensitive Sites Represented	Station Number	Distance from the Center of Nearest Existing/Proposed Travel Lane - SW 10 th Street/Managed Lanes (Feet)	TNM Predicted Noise Levels (dBA)			Noise Abatement Criteria Status	Difference Between Existing Conditions and No-Build Alternative	Difference Between Existing Conditions and Build Alternative
					Existing Conditions	Design Year (2040)				
						No-Build Alternative	Build Alternative			
WC37S	Second Row Second Floor Multi-Family Residence - Balcony	0	128+60	392/340	55.2	55.2	59.5	Below	0.0	4.3
WC38F	Second Row First Floor Multi-Family Residence - Patio	1	129+30	365/312	53.1	53.1	57.9	Below	0.0	4.8
WC38S	Second Row Second Floor Multi-Family Residence - Balcony	0	129+30	365/312	56.1	56.1	60.5	Below	0.0	4.4
WC39	Second Row First Floor Multi-Family Residence - Patio	1	128+90	438/386	47.1	47.2	52.3	Below	0.1	5.2
WC40	Second Row First Floor Multi-Family Residence - Patio	1	129+50	406/353	51.4	51.4	56.5	Below	0.0	5.1
WC41F	Second Row First Floor Multi-Family Residence - Patio	1	131+10	397/340	51.4	51.5	56.7	Below	0.1	5.3
WC41S	Second Row Second Floor Multi-Family Residence - Balcony	0	131+10	397/340	55.0	55.0	60.2	Below	0.0	5.2
WC42F	Second Row First Floor Multi-Family Residence - Patio	1	131+60	347/306	52.1	52.2	58.5	Below	0.1	6.4
WC42S	Second Row Second Floor Multi-Family Residence - Balcony	0	131+60	347/306	55.7	55.7	61.7	Below	0.0	6.0
WC43	Second Row First Floor Multi-Family Residence - Patio	1	131+30	431/380	45.9	45.9	51.2	Below	0.0	5.3
WC44	Second Row First Floor Multi-Family Residence - Patio	1	131+90	390/351	49.8	49.8	56.3	Below	0.0	6.5
WC45F	Second Row First Floor Multi-Family Residence - Patio	1	133+70	344/314	51.1	51.1	57.6	Below	0.0	6.5
WC45S	Second Row Second Floor Multi-Family Residence - Balcony	0	133+70	344/314	54.9	54.9	61.0	Below	0.0	6.1
WC46F	Second Row First Floor Multi-Family Residence - Patio	1	134+30	313/278	56.0	56.0	61.7	Below	0.0	5.7
WC46S	Second Row Second Floor Multi-Family Residence - Balcony	0	134+30	313/278	58.8	58.8	64.5	Below	0.0	5.7
WC47	Second Row First Floor Multi-Family Residence - Patio	1	134+00	384/353	46.2	46.2	52.6	Below	0.0	6.4
WC48	Second Row First Floor Multi-Family Residence - Patio	1	134+50	353/319	55.1	55.1	60.3	Below	0.0	5.2
Minimum					45.9	45.9	51.2	---	0.0	3.7
Maximum					65.0	65.0	71.2	---	0.1	7.3
Average					57.5	57.5	63.0	---	0.0	5.5
Total Number of Residential Sites (i.e., Patios) Equal to or Greater than 66.0 dB(A)					0	0	8	---	---	---
South of SW 10 th Street between Powerline Road and South Military Trail - Crystal Heights [Residential NAC B Exterior - 66 dB(A)] / [Recreational NAC C Exterior - 66 dB(A)] (see Figure 3.3.1 Sheet 6)										
CH1	First Row Residence	1	135+50	273/218	59.8	59.8	66.2	Approaches	0.0	6.4
CH2	First Row Residence	1	136+20	256/201	60.4	60.4	67.0	Exceeds	0.0	6.6
CH3	First Row Residence	1	137+00	273/219	60.0	60.0	66.5	Approaches	0.0	6.5
CH4	First Row Residence	1	137+80	256/204	60.5	60.5	67.2	Exceeds	0.0	6.7
CH5	First Row Residence	1	138+90	266/217	60.0	60.0	66.8	Approaches	0.0	6.8
CH6	First Row Residence	1	139+50	266/220	59.9	59.9	66.8	Approaches	0.0	6.9
CH7	First Row Residence	1	140+30	256/200	60.2	60.2	67.3	Exceeds	0.0	7.1
CH8	Second Row Residence	1	135+50	414/360	53.4	53.4	58.9	Below	0.0	5.5
CH9	Second Row Residence	1	136+20	424/357	51.7	51.7	57.1	Below	0.0	5.4
CH10	Second Row Residence	1	137+00	424/364	50.8	50.8	56.4	Below	0.0	5.6
CH11	Second Row Residence	1	137+90	414/352	50.5	50.5	56.1	Below	0.0	5.6
CH12	Second Row Residence	1	138+40	427/365	50.9	50.9	56.6	Below	0.0	5.7
CH13	Second Row Residence	1	139+50	427/365	52.7	52.7	58.6	Below	0.0	5.9
CH14	Second Row Residence	1	140+30	414/354	54.1	54.1	59.9	Below	0.0	5.8
CH15	Second Row Residence	1	141+80	406/347	56.1	56.1	62.1	Below	0.0	6.0
CH16	Second Row Residence	1	142+80	416/357	56.0	56.0	61.9	Below	0.0	5.9
CH17	Second Row Residence	1	144+00	468/407	54.7	54.7	61.3	Below	0.0	6.6
CH18	Residential - Pool	0	144+50	479/415	54.4	54.4	61.0	Below	0.0	6.6
CH19	Second Row Residence	1	146+10	505/440	52.5	52.5	58.7	Below	0.0	6.2
CH20	Second Row Residence	1	146+00	421/358	54.1	54.1	60.3	Below	0.0	6.2
CH21	Residential - Pool	0	146+10	379/314	56.0	56.0	62.6	Below	0.0	6.6
CH22	First Row Residence	1	146+20	331/269	57.2	57.2	63.8	Below	0.0	6.6
CH23	Residential - Pool	0	146+50	282/221	59.8	59.8	66.3	Approaches	0.0	6.5
CH24	First Row Residence	1	147+50	252/191	60.4	60.4	67.2	Exceeds	0.0	6.8
CH25	First Row Residence	1	148+70	260/201	60.3	60.3	66.8	Approaches	0.0	6.5
CH26	First Row Residence	1	149+40	260/204	60.7	60.7	66.7	Approaches	0.0	6.0
CH27	First Row Residence	1	150+10	260/204	61.1	61.1	66.7	Approaches	0.0	5.6
CH28	First Row Residence	1	160+00	252/200	61.2	61.3	66.6	Approaches	0.1	5.4
CH29	Second Row Residence	1	147+80	421/358	51.4	51.5	57.8	Below	0.1	6.4
CH30	Second Row Residence	1	148+70	421/363	51.1	51.1	57.0	Below	0.0	5.9
CH31	Second Row Residence	1	149+30	421/368	51.1	51.1	57.0	Below	0.0	5.9
CH32	Second Row Residence	1	160+00	421/367	55.1	55.1	59.4	Below	0.0	4.3
CH33-C	Recreational - Crystal Height Park	1 (Special Land Use)	143+70	249/199	59.8	59.8	67.1	Exceeds	0.0	7.3
Minimum					50.5	50.5	56.1	---	0.0	4.3
Maximum					61.2	61.3	67.3	---	0.1	7.3
Average					56.3	56.3	62.5	---	0.0	6.1
Total Number of Residential / Recreational Sites Equal to or Greater than 66.0 dB(A)					0 / 0	0 / 0	12 / 1	---	---	---
South of SW 10 th Street between Powerline Road and South Military Trail (see Figure 3.3.1 Sheets 6 and 7)										
GVB1-C	Renaissance Nursing Home [NAC C - Exterior 66 dB(A)]	1	154+10	253/218	61.0	61.0	65.6	Below	0.0	4.6
GVB2-C	Renaissance Nursing Home [NAC C - Exterior 66 dB(A)]	1	154+10	645/606	49.2	49.2	54.4	Below	0.0	5.2
SFB1-D	South Florida Bible College [NAC D - Interior 51 dB(A)]	1	156+00	400/377	32.9	32.9	36.4	Below	0.0	3.5
VA1-D	VA Outpatient Clinic [NAC D - Interior 51 dB(A)]	1	160+50	326/297	34.0	34.1	37.4	Below	0.1	3.4
B1-E	Bakery 2000 [NAC E - Exterior 71 dB(A)]	1	162+30	291/303	52.3	52.4	57.1	Below	0.1	4.8
JJ1-E	Jimmy John's [NAC E - Exterior 71 dB(A)]	1	164+90	189/199	63.7	63.8	66.9	Below	0.1	3.2