SELMON EXPRESSWAY

Whiting Street PD&E Study

Noise Study Report

January 2022

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1.0 Project Summary

1.1 Project Description

The Tampa Hillsborough Expressway Authority (THEA), in coordination with the City of Tampa, is conducting a Project Development and Environment (PD&E) Study to evaluate the needs, costs, and effects of extending Whiting Street and reconfiguring the on-ramps of the Selmon Expressway at Jefferson Street and off-ramps at Florida Avenue and Channelside Drive. The study considers extending Whiting Street to North Meridian Avenue and includes improvements and realignment of the existing segment of Whiting Street, from Jefferson Street to North Brush Street. The extension will provide a direct connection of the Whiting Street corridor to North Meridian Avenue which will improve traffic flow and safety for all transportation modes and offer additional connections within the street network.

The study will also evaluate reconfiguring the on-ramp to the Selmon Expressway at Jefferson Street and the off-ramps at Florida Avenue and Channelside Drive. It is anticipated that the Florida Avenue off-ramp will be widened to two lanes, the Channelside Drive off-ramp will be removed, and the new Whiting Street off-ramp will extend from the Selmon Expressway, near Morgan Street, to Nebraska Avenue and intersect with the new Whiting Street alignment to provide a direct connection from the Selmon Expressway. See **Figure 1.1** for the project location map.

Figure 1.1: Project Location Map

1.2 Project Purpose & Need

The purpose of this project is to provide a direct connection of the Whiting Street corridor to North Meridian Avenue to improve traffic flow and safety for all transportation modes and offer additional connections within the street network. The project will also reconfigure the on-ramps to the Selmon Expressway at Jefferson Street and the off-ramps at Florida Avenue and Channelside Drive to improve safety, traffic circulation, and access to Whiting Street and North Meridian Avenue.

The need for the project is based on the following criteria:

System Linkage

Based upon the Tampa Bay Regional Planning Model (TBRPM) Version 8.2, the existing roadway network will be over capacity by the 2045 design year. Additional network connectivity such as the Whiting Street extension and ramp reconfigurations, are necessary to provide additional route choice and access to alleviate the congestion.

Safety

Safety and operational concerns with the Florida Avenue and Channelside Drive off-ramps include a substandard radius and a free-flow merge movement onto Florida Avenue with a sidewalk/crosswalk conflict. The ramp termini onto Channelside Drive terminates into a 5-leg intersection at Channelside Drive and Morgan Street, which is a major pedestrian access point to the Amalie Arena. Six (6) years of data (2013-2018) were reviewed, and 14 crashes have occurred at this ramp. As the Water Street Project builds out to the east of the ramp system, the adverse impact of geometric issues and pedestrian conflicts are expected to be exacerbated. Also, the planned widening of the Selmon Expressway south of the downtown ramps will alleviate congestion issues and result in higher speed, higher volume interactions at this ramp. As such, improving the ramp geometry, eliminating pedestrian conflicts, and redirecting Downtown east traffic beyond the Water Street District is critical to proactively address safety concerns as both the Selmon Expressway and Downtown Tampa continue to develop.

Transportation Demand

Based upon the Tampa Bay Regional Planning Model (TBRPM) Version 8.2, Jefferson Street (39,000 AADT) and Kennedy Boulevard (AADT 34,000) are expected to reach their operational capacity by 2040. As the Water Street Project develops, the vehicle demand is expected to increase. The proposed connection of Whiting Street could carry up to 14,800 AADT, providing valuable route divergence and congestion relief to the parallel facilities.

1.3 Preferred Alternative

THEA has committed to provide a new connection to Meridian Avenue, by extending Whiting Street between Meridian Avenue and Brush Street. In order to construct the extension of Whiting Street, the existing railroad tracks will need to be removed. Removing the railroad tracks and completing the extension to Meridian Avenue will offer an additional connection within the street network, providing additional route choice and alleviating congestion.

The preferred alternative proposes improvements to existing ramp configurations and the existing street network at multiple locations in the Downtown/Channelside area. The improvements can be broken up into four distinct locations. See **Figure 1.2** for each location of proposed improvements.

Figure 1.2: Proposed Improvement Locations

Location A

Whiting Street currently ends at Brush Street, west of the railroad tracks. The preferred alternative proposes to extend Whiting Street, from Brush Street to Meridian Avenue, with a new signal at the T-intersection of Whiting Street and Meridian Avenue. The proposed typical section for the Whiting Street extension includes two 11-foot wide travel lanes in each direction, a 15-foot wide raised median, curb and gutter, and 10-foot wide sidewalks on both the north and south sides of the road. The eastbound approach to Meridian Avenue includes two 11-foot wide dedicated left turn lanes and one 11-foot wide dedicated right turn lane. If necessary, the proposed 15-foot wide raised median can be converted to an additional dedicated left turn lane in the future. The existing grassed median on Meridian Avenue will be split in order to accommodate the proposed signalized intersection. The preferred alternative includes the addition of a southbound dedicated right turn lane and a northbound dedicated left turn lane. The preferred alternative does not propose any other improvements to Meridian Avenue.

Location B

Whiting Street is currently a two-lane roadway with on-street parking on both the north and south sides of the road. East of the Selmon Expressway, Whiting Street is a brick road in much need of repair. The preferred alternative proposes to widen/reconstruct Whiting Street from two to four lanes with two 11-foot wide travel lanes in each direction, curb and gutter, and 10-foot wide sidewalks on both the north and south sides of the road. The preferred alternative also includes installing two new traffic signals; one at the intersection of Whiting Street and the terminus of the proposed Whiting off-ramp, just east of the Selmon

Expressway, and the other at the intersection of Whiting Street and Brush Street. A dedicated eastbound left turn lane is proposed at the intersection of Whiting Street and Brush Street.

Location C

The existing exit ramp 6B provides users the ability to travel east along Channelside Drive, towards Amalie Arena and the Florida Aquarium. The preferred alternative proposes relocating exit ramp 6B approximately 700 feet north and providing a direct connection to Whiting Street. The proposed ramp includes a single 15-foot wide ramp lane, which will remain on structure beyond the existing Jefferson Street on ramp. From this point the ramp profile begins to decrease and the ramp will be supported by Mechanically Stabilized Earth (MSE) wall, which ends approximately 100 feet south of Whiting Street. The ramp widens to three 12-foot wide lanes at the intersection, with one dedicated left turn lane and two dedicated right turn lanes. The proposed ramp will cut off access north, along Nebraska Avenue, and therefore requires a horizontal curve to connect Nebraska Avenue to Finley Street. The existing Jefferson Street on ramp entrance will be shifted to the north to accommodate the new Whiting Street off-ramp.

Location D

The current configuration of exit ramp 6A includes a tight single lane loop ramp that merges onto Florida Avenue under a free-flow condition. The short, tight curve provides little room for vehicles to slow down and queue if there is any backup when trying to merge onto Florida Avenue. The preferred alternative proposes widening the ramp from one to two lanes as well as lengthening the ramp to provide a wider curve. The loop ramp terminates at Florida Avenue at a proposed signalized intersection. The proposed loop ramp includes two 12-foot wide ramp lanes and will remain on structure beyond the existing exit ramp 6B to provide an open area underneath for mixed use and to promote pedestrian travel. Approximately 300 feet north of Florida Avenue, the ramp widens to three lanes to provide more vehicle storage and efficient queue dispersion onto Florida Avenue. The increased ramp length as well as the additional lanes will minimize backup and potential vehicle queueing onto the Selmon Expressway. The preferred alternative includes a 10-foot wide sidewalk on the inside edge of the proposed loop ramp, crossing underneath the ramp at the location of the existing exit ramp 6B. Pedestrians will have the ability to cross the loop ramp, to access Channelside Drive, at a proposed crosswalk. No right of way (ROW) is required to construct the proposed loop ramp.

2.0 Methodology

The highway traffic noise analysis results presented in this Noise Study Report (NSR) were prepared in accordance with all applicable guidelines as stated within both Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) and Chapter 18 of the FDOT's PD&E Manual (the FDOT's Noise Policy). The analysis was performed using the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM, Version 2.5). Both 23 CFR 772 and the FDOT's Noise Policy require the use of the TNM for the evaluation of highway traffic noise for roadway improvement projects for which the regulations, policies and guidelines within 23 CFR 772 and the Noise Policy are applicable.

2.1 Noise Metrics

The predicted highway traffic noise levels presented in this report are expressed in decibels on the "A"-weighted scale (dB(A)). This scale most closely approximates the response characteristics of the human ear to traffic noise. All traffic noise levels are reported as equivalent levels (Leq(h)). Levels reported as Leq(h) are equivalent steady-state sound levels that contain the same acoustic energy as time-varying sound levels over a period of one hour.

2.2 Traffic Data

Traffic noise levels are low when traffic volumes are low and operating conditions are good (level of service [LOS] A or B) and when traffic is so congested that movement is slow (LOS D, E, or F). Generally, the maximum hourly noise level occurs between these two conditions (i.e., LOS C). Because the traffic analysis prepared in support of the project indicates that in the existing year (2019) peak hour demand volumes would be less than the roadway's design LOS C volume, demand traffic volumes were used in the analysis. For the future year (2046) with and without the proposed improvements, the traffic analysis indicates that the LOS C volumes would be less than the demand volumes. Therefore, for the existing year demand traffic was used and for the future year analysis LOS C traffic data was used for both the No-Build and Build Alternatives. The traffic data that was used to evaluate highway traffic noise for the proposed alternatives are provided in **Appendix A** of this NSR.

2.3 Noise Abatement Criteria

For the purpose of evaluating traffic noise, the FHWA established Noise Abatement Criteria (NAC). As shown in **Table 2.1**, these criteria vary according to a properties' activity category (i.e. land use). For comparative purposes, typical noise levels for common indoor and outdoor activities are provided in **Table 2.2**. The TNM is used to predict worst-case highway traffic noise for both existing conditions and future conditions both with and without proposed alternatives. The predictions are made at discrete representative locations on the properties for which there are NAC. These TNM-modeled locations are referred to as "receptors".

FHWA regulations also state that a traffic noise impact is predicted to occur when predicted traffic noise levels with a proposed improvement substantially exceed existing levels. The FDOT considers that a substantial increase in highway traffic noise occurs when traffic noise levels are predicted to increase 15 dB(A) or more above existing conditions as a direct result of a transportation improvement project.

Table 2.1: FHWA Noise Abatement Criteria

Activity Category	Description of Activity Category	Activity Leq(h)[1] (dB(A))	
		FHWA	FDOT
A	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.	57 (Exterior)	56 (Exterior)
B2	Residential	67 (Exterior)	66 (Exterior)
C[2]	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.	67 (Exterior)	66 (Exterior)
D	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.	52 (Interior)	51 (Interior)
E[2]	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F.	72 (Exterior)	71 (Exterior)
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.	--	--

Sources: Table 1 of 23 CFR Part 772 and Table 18.1 of Chapter 18 of the FDOT's PD&E Manual (dated July 1, 2020).
[1] The Leq(h) activity criteria values are for impact determination only. The values are not design standards for noise abatement measures.
[2] Includes undeveloped lands permitted for this activity category.
Note: FDOT defines that a substantial traffic 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, there is a requirement to consider noise abatement.

Table 2.2: Typical Sound Levels

Common Outdoor Activities	Sound Level dB(A)	Common Indoor Activities
	110	← Rock band
Jet flyover (at 1,000 feet) →		
	100	
Gas lawnmower (at 3 feet) →		
	90	
Diesel truck (at 50 feet at 50 mph) →		← Food blender (at 3 feet)
	80	← Garbage disposal (at 3 feet)
Noisy urban area (daytime) →		
Gas lawnmower (at 100 feet) →	**70**	← Vacuum cleaner (at 10 feet)
Commercial area →		← Normal speech (at 3 feet)
Heavy traffic (at 300 feet) →	**60**	
		← Large business office
Quiet urban (daytime) →	**50**	← Dishwasher (in next room)
Quiet urban (nighttime) →	**40**	← Theater, large conference room (background)
Quiet suburban (nighttime) →		
	30	← Library
Quiet rural (nighttime) →		← Bedroom (at night), concert hall (background)
	20	
		← Broadcast/recording studio
	10	
	0	

Source: California Dept. of Transportation Technical Noise Supplement, Sep. 2013, Page 2-20.

2.4 Noise Abatement Measures

When traffic noise impacts are predicted, noise abatement measures are considered for the impacted receptors and the feasibility and reasonableness of providing abatement is evaluated. Feasibility factors relate to the acoustical and engineering properties of an abatement measure while reasonableness factors relate to social, economic, and environmental properties.

The FDOT has two acoustical requirements to consider a noise abatement measure both a feasible and reasonable measure when evaluating the level of reduction in traffic noise. First, to be considered acoustically feasible, the measure must provide at least a 5 dB(A) reduction in traffic noise for two or more impacted receptors. Receptors that receive a noise reduction of at least 5 dB(A) from an abatement measure are considered benefited. The FDOT's second acoustical requirement, which indicates if a measure is acoustically reasonable, is that the measure must provide at least a 7 dB(A) reduction for at least one

benefited receptor. A reduction of 7 dB(A) is the FDOT's noise reduction design goal (NRDG) for all receptors impacted by traffic noise with a roadway improvement project.

If an evaluation indicates that a noise abatement measure would not reduce traffic noise at least a 5 dB(A) for at least two impacted receptors, the measure is not considered to be an acoustically feasible abatement measure. If a measure provides a reduction of 5 dB(A) for at least two impacted receptors but not a reduction of at least 7 dB(A) for one benefited receptor, the measure is not considered to be an acoustically reasonable abatement measure. If a noise abatement measure is determined to not be acoustically feasible and reasonable, it is not considered further.

The cost of an abatement measure is also a reasonableness consideration. Based on FDOT's Noise Policy, the cost of an abatement measure should not exceed $42,000 per benefited receptor. For the purpose of estimating the cost of materials and labor to construct a noise barrier, the FDOT assumes a square foot cost of $30. If the estimated cost to provide or construct a noise abatement measure is greater than the cost-effective criteria, the measure is not considered to be cost reasonable. If a noise abatement measure is determined to not be cost reasonable, the measure is not considered further.

The following subsections discuss the four noise abatement measures for reducing traffic noise impacts that are typically considered for roadway improvement projects.

2.4.1 Traffic Management

Some types of traffic management reduce motor vehicle noise levels. For example, trucks can be prohibited from certain streets and roads, or be permitted to only use certain streets and roads during daylight hours. The timing of traffic lights can also be changed to smooth out the flow of traffic and eliminate the need for frequent stops and starts. Speed limits can also be reduced.

2.4.2 Alignment Modifications

Modifying the horizontal and/or vertical alignment of a roadway can also be an effective traffic noise abatement measure. Such as when the horizontal alignment is shifted (i.e., moved) away from a noise sensitive receptor or when the vertical alignment is shifted below (i.e., placing the roadway below the elevation of a noise sensitive land use) or above a noise sensitive receptor.

2.4.3 Buffer Zones

Providing a buffer between a roadway and noise sensitive land uses is an abatement measure that can minimize/eliminate noise impacts. To abate traffic noise at an existing noise sensitive land use, the property would be acquired to create a buffer zone.

2.4.4 Noise Barriers

The most common noise abatement measure is providing a noise barrier. Noise barriers have the potential to reduce traffic noise levels by interrupting the sound path between the motor vehicles on the roadway (i.e., the source of the sound) and the noise sensitive land uses adjacent to the roadway. In order to effectively reduce traffic noise, a noise barrier must be relatively long, continuous (without intermittent openings) and sufficiently tall.

Notably, if the results of the preliminary analysis indicate that a noise barrier would meet the acoustical and cost requirements, additional abatement feasibility and reasonableness factors are considered. These factors relate to barrier design and construction (i.e., given site-specific details, can a barrier actually be constructed), safety, access to and from adjacent properties, ROW requirements, maintenance, and impacts on utilities and drainage. The viewpoint of the impacted property owners (and renters if applicable) who may, or may not, desire a noise barrier, is also considered.

2.5 Model Validation

For the purpose of verifying that the TNM accurately predicts existing traffic noise levels, field measurements of sound levels are taken. During each measurement period, average vehicle travel speeds, vehicle count and fleet identification (i.e., automobiles, trucks, buses, and motorcycles), site conditions (i.e., typography, distance from the roadway(s)) and sources of sound other than motor vehicles (e.g., aircraft flyovers, birds, barking dogs) are noted. The motor vehicle data and site conditions are used to create input for the TNM and the model is executed. Following FDOT's Noise Policy, the TNM is considered valid to predict existing conditions if the field measured sound levels are within 3 dB(A) of the TNM predicted highway traffic noise levels.

The field measurements were conducted in accordance with the FHWA's Noise Measurement Handbook. The measurements were obtained using a Larson Davis sound level meter Model 831. The sound level meter was calibrated before and after each monitoring period with a Larson Davis calibrator Model CAL200. The observed traffic conditions (e.g., volume of motor vehicles, motor vehicle fleet, and vehicle speed) during each measurement period are provided in **Appendix B** of this NSR.

The location at which the measurements were obtained, the east side of Meridian Avenue between Whiting Street and Washington Street, is depicted on the project aerials in **Appendix C**. **Table 2.3** provides the field measurements and the validation results. As shown, the ability of the model to predict noise levels within the FDOT threshold of plus or minus 3.0 dBA was confirmed.

Table 2.3: TNM Validation Data

Measurement Period	Measured Sound (dB(A))	Modeled Traffic Noise (dB(A))	Difference (dB(A))
1	62.6	61.2	1.4
2	61.0	62.3	-1.3
3	62.6	63.9	-1.3

3.0 Traffic Noise Analysis Results

The locations of the receptors that were evaluated are shown on the project aerials in Appendix C. Forty-seven receptors were evaluated within two Common Noise Environments (CNEs). A CNE is comprised of a group of receptors within the same activity category that are exposed to similar noise sources and levels; traffic volumes, traffic mix, speed, and topographic features. Forty-six of the 47 receptors were residences in The Slade at Channelside apartment complex (an eight-story building) and one is a school (Carlton Academy Day School). Error! Reference source not found. lists the number of receptors that were evaluated within the two CNEs.

Table 3.4: Common Noise Environments

CNE	Location	Activity Category	Number of Receptors
1	Carlton Academy Day School	C – School/Exterior	1
2	The Slade at Channelside Apartments	B – Residential	46
Total			47

Following the FDOT's Noise Policy, the residences were evaluated as Activity Category "B" and the school was evaluated as Activity Category "C". Therefore, abatement was considered if the predicted future traffic noise level with the proposed build alternative was 66 dB(A) or greater.

3.1 Predicted Traffic Noise Levels

The predicted traffic noise levels for the existing condition (year 2019) and for future conditions (year 2046) without the proposed improvements (No-Build) and with the proposed improvements (Build) for each evaluated receptor are provided in **Appendix D**. **Table 3.2** provides the range of predicted traffic noise levels and the maximum increase in highway traffic noise when compared to existing levels. As shown, traffic noise levels are not predicted to approach, meet, or exceed the NAC at the school but levels are predicted to approach, meet, or exceed the NAC at some of the evaluated residences, and the maximum increase in traffic noise with the build alternative when compared to existing levels among all receptors is 5.7 dB(A)—an increase that is not considered to be substantial.

Forty-two of the 46 evaluated residences are predicted to be impacted by traffic noise in the future (year 2046) with the proposed improvements. As shown in Table 3.2, predicted levels with the Build Alternative are essentially the same as the levels predicted for the No-Build Alternative. Differences are a result of a forecast change in the directional distribution of motor vehicles on Meridian Avenue during the peak hour with the proposed improvements.

Table 3.2: Summary of the Traffic Noise Analysis

CNE	Activity Category	Number of Evaluated Receptors	NAC (dB(A))	Predicted Traffic Noise Levels (dB(A))			Maximum Increase in Traffic Noise when Compared to Existing Levels (dB(A))		Number of receptors Impacted with the Build Alternative
				Existing (2019)	No-Build (2046)	Build (2046)	No-Build	Build	
1	C – School/ Exterior	1	66	55.8	61.3	61.5	5.5	5.7	0
2	B – Residential	46	66	59.9-69.2	64.4-73.9	64.4-73.8	4.8	4.7	42

Note: Impacted receptors are defined as receptors with a future design year, build alternative traffic noise level that is predicted to approach, meet, or exceed the NAC for its respective activity category or will experience an increase in noise levels of 15 dB(A) or more in the design year when compared to the existing traffic noise level.

4.0 Abatement Considerations

As previously stated, when traffic noise impacts are predicted, noise abatement measures are considered for the impacted receptors. The following discusses the consideration of measures to reduce predicted highway traffic noise with the proposed improvements.

4.1 Traffic Management

Reducing traffic speeds and/or the traffic volume or changing the motor vehicle fleet on any of the roadways within the project limits is inconsistent with the goal of improving the ability of the roadway to handle the forecast traffic volume. Therefore, traffic management measures were not considered to be a reasonable highway traffic noise abatement measure.

4.2 Alignment Modifications

A change in the horizontal or vertical alignment of a roadway may reduce noise levels at noise sensitive receptors. The proposed alternatives would be constructed to follow the existing roadway alignment. Because shifting the alignment horizontally would require substantial ROW acquisitions and, because noise sensitive land uses are located on both sides of the roadway, a modification to the roadway alignments for the purpose of reducing traffic noise impacts is not considered to be a reasonable noise abatement measure. Suppressing the roadway's vertical alignment to create a natural berm between the highway and receivers or raising the vertical alignment is not considered to be reasonable due to the cost associated with such a measure.

4.3 Buffer Zone

As previously stated, to abate predicted traffic noise at an existing noise sensitive land use, the property would have to be acquired. The same cost-effective limit that applies to noise barriers (i.e., $42,000 per benefited noise sensitive receptor) would apply to the purchase price of any impacted noise sensitive property. A review of data from the Hillsborough Property Appraiser indicates that the cost to acquire the developed properties adjacent to the project exceeds the cost-effective limit. Therefore, creating a buffer zone by acquiring existing properties for which there are NAC exceedances is not considered to be a reasonable noise abatement measure.

4.4 Noise Barrier

TNM was used to evaluate the ability of a noise barrier to reduce traffic noise levels for the 42 impacted receptors within CNE 2 (The Slade at Channelside Apartments) with the build alternative. The residences are located on the east side of Meridian Avenue between Washington Street and Kennedy Boulevard.

The noise barrier was evaluated on the shoulder of Meridian Avenue. The length of the barrier was optimized in an attempt to benefit all of the impacted receptors. Once optimized, the reduction in traffic noise at each impacted receptor was reviewed to determine if the acoustic feasibility requirement (i.e., a reduction of at least 5 dB(A) for two impacted receptors) and the acoustic reasonableness requirement, or the NRDG (i.e., a reduction of at least 7 dB(A) for one benefitted receptor) could be achieved.

Additional factors considered for the evaluation of abatement for the apartment building were:

- A sidewalk approximately 30 feet wide seperates the building's façade from the edge of the nearest travel lane on Meridian Avenue. Therefore, the only location at which a barrier could potentially be constructed is at the location of the roadway's curb (i.e., a shoulder barrier).
- A noise barrier at the curb, which also denotes the ROW for Meridian Avenue, limits the height of a noise barrier to a maximum of 14 feet.

The results of the evaluation indicate that, although acoustically feasible, a shoulder barrier would not reduce predicted traffic noise such that the NRDG would be achieved at any of the benefited residences. As such, a noise barrier is not considered a reasonable noise abatement measure for the impacted residences at The Slade at Channelside Apartments.

5.0 Construction Noise and Vibration

There are land uses adjacent to the project limits that are both noise- and vibration-sensitive (e.g., residences). It is anticipated that construction of the proposed roadway improvements would not have a significant noise or vibration effect. Additionally, the application of the FDOT Standard Specifications for Road and Bridge Construction may minimize or eliminate potential issues. Should noise or vibration issues arise during the construction process, the Project Engineer, in coordination with THEA, will investigate additional methods of controlling such impacts.

6.0 References

FHWA. U.S. Department of Transportation. July 13, 2010. Title 23 CFR, Part 772. *Procedures for Abatement of Highway Traffic Noise and Construction Noise*.

FHWA. February 2004. *Traffic Noise Model*, Version 2.5.

FHWA. December 2011. Highway Traffic Noise: Analysis and Abatement Guidance.

FHWA. June 1, 2018. *Noise Measurement Handbook*. FHWA-HEP-18-065.

FDOT. July 1, 2020. *Project Development and Environment Manual*, Part 2, Chapter 18 – Highway Traffic Noise.

FDOT. July 1, 2013. *Plans Preparation Manual*, Volume 1, Chapter 32 – Sound Barriers.

FDOT. July 2018. Standard Specifications for Road and Bridge Construction.

FDOT. Environmental Management Office. January 1, 2016. *Traffic Noise Modeling and Analysis Practitioners Handbook*.

California Department of Transportation. September 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.

Appendices

Appendix A

Traffic Data

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project:	Whting Street PD&E Study	Date:	12/14/2021
State Project Number(s):	THEA Project Number HI-0141	Prepared By:	Caleb Van Nostrand, P.E.
Work Program Number(s):	N/A	Data Sheet	Whiting St Seg 1
Federal Aid Number(s):	N/A		
Segment Description:	Whiting St Seg 1 - Florida Ave to Morgan St		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	4	Lanes:	4	Lanes:	4
Year:	2019	Year:	2046	Year:	2046
ADT: LOS (C)	9425	ADT: LOS (C)	9425	ADT: LOS (C)	9425
Demand	6800	Demand	17500	Demand	19000
Posted Spd:	25 mph / 40 kmh	Posted Spd:	25 mph / 40 kmh	Posted Spd:	25 mph / 40 kmh
K=	9.0 %	K=	9.0 %	K=	9.0 %
D=	68.9 %	D=	58.2 %	D=	69.6 %
T=	2.2 % for 24 hrs.	T=	2.2 % for 24 hrs.	T=	2.2 % for 24 hrs.
T=	2.0 % Design hr	T=	2.0 % Design hr	T=	2.0 % Design hr
1.00	% Medium Trucks DHV	1.00	% Medium Trucks DHV	1.00	% Medium Trucks DHV
1.00	% Heavy Trucks DHV	1.00	% Heavy Trucks DHV	1.00	% Heavy Trucks DHV
0.00	% Buses DHV	0.00	% Buses DHV	0.00	% Buses DHV
0.00	% Motorcycles DHV	0.00	% Motorcycles DHV	0.00	% Motorcycles DHV

TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		LOS (C)	Build (Design Year) Model:		LOS (C)
LOS (C)			LOS (C)			LOS (C)		
Peak:	Autos	573	Peak:	Autos	484	Peak:	Autos	578
	Med Trucks	6		Med Trucks	5		Med Trucks	6
	Hvy Trucks	6		Hvy Trucks	5		Hvy Trucks	6
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Off Peak:	Autos	259	Off Peak:	Autos	347	Off Peak:	Autos	253
	Med Trucks	3		Med Trucks	4		Med Trucks	3
	Hvy Trucks	3		Hvy Trucks	4		Hvy Trucks	3
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Demand			Demand			Demand		
Peak:	Autos	413	Peak:	Autos	899	Peak:	Autos	1166
	Med Trucks	4		Med Trucks	9		Med Trucks	12
	Hvy Trucks	4		Hvy Trucks	9		Hvy Trucks	12
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Off Peak:	Autos	187	Off Peak:	Autos	645	Off Peak:	Autos	510
	Med Trucks	2		Med Trucks	7		Med Trucks	5
	Hvy Trucks	2		Hvy Trucks	7		Hvy Trucks	5
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project:	Whting Street PD&E Study	Date:	12/14/2021
State Project Number(s):	THEA Project Number HI-0141	Prepared By:	Caleb Van Nostrand, P.E.
Work Program Number(s):	N/A	Data Sheet	Whiting St Seg 2
Federal Aid Number(s):	N/A		
Segment Description:	Whiting St Seg 2 - Morgan St to Jefferson St		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	6		Lanes:	6		Lanes:	6	
Year:	2019		Year:	2046		Year:	2046	
ADT: LOS (C)	12815		ADT: LOS (C)	12815		ADT: LOS (C)	12815	
Demand	6700		Demand	20500		Demand	18500	
Posted Spd:	25	mph	Posted Spd:	25	mph	Posted Spd:	25	mph
	40	kmh		40	kmh		40	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	76.6	%	D=	66.1	%	D=	60.2	%
T=	2.2	% for 24 hrs.	T=	2.2	% for 24 hrs.	T=	2.2	% for 24 hrs.
T=	2.0	% Design hr	T=	2.0	% Design hr	T=	2.0	% Design hr
1.00	% Medium Trucks DHV		1.00	% Medium Trucks DHV		1.00	% Medium Trucks DHV	
1.00	% Heavy Trucks DHV		1.00	% Heavy Trucks DHV		1.00	% Heavy Trucks DHV	
0.00	% Buses DHV		0.00	% Buses DHV		0.00	% Buses DHV	
0.00	% Motorcycles DHV		0.00	% Motorcycles DHV		0.00	% Motorcycles DHV	

TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		LOS (C)	Build (Design Year) Model:		LOS (C)
LOS (C)			LOS (C)			LOS (C)		
Peak:	Autos	866	Peak:	Autos	747	Peak:	Autos	680
	Med Trucks	9		Med Trucks	8		Med Trucks	7
	Hvy Trucks	9		Hvy Trucks	8		Hvy Trucks	7
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Off Peak:	Autos	264	Off Peak:	Autos	383	Off Peak:	Autos	450
	Med Trucks	3		Med Trucks	4		Med Trucks	5
	Hvy Trucks	3		Hvy Trucks	4		Hvy Trucks	5
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Demand			Demand			Demand		
Peak:	Autos	453	Peak:	Autos	1195	Peak:	Autos	982
	Med Trucks	5		Med Trucks	12		Med Trucks	10
	Hvy Trucks	5		Hvy Trucks	12		Hvy Trucks	10
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Off Peak:	Autos	138	Off Peak:	Autos	613	Off Peak:	Autos	650
	Med Trucks	1		Med Trucks	6		Med Trucks	7
	Hvy Trucks	1		Hvy Trucks	6		Hvy Trucks	7
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project:	Whting Street PD&E Study	Date:	12/14/2021
State Project Number(s):	THEA Project Number HI-0141	Prepared By:	Caleb Van Nostrand, P.E.
Work Program Number(s):	N/A	Data Sheet	Whiting St Seg 3
Federal Aid Number(s):	N/A		
Segment Description:	Whiting St Seg 3 - Jefferson St to Brush St (to Meridian Ave in Build)		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2019	Year:	2046	Year:	2046
ADT: LOS (C)	5110	ADT: LOS (C)	5110	ADT: LOS (C)	10150
Demand	3800	Demand	13500	Demand	25000
Posted Spd:	25 mph / 40 kmh	Posted Spd:	25 mph / 40 kmh	Posted Spd:	25 mph / 40 kmh
K=	9.0 %	K=	9.0 %	K=	9.0 %
D=	50.7 %	D=	55.9 %	D=	61.3 %
T=	2.2 % for 24 hrs.	T=	2.2 % for 24 hrs.	T=	2.2 % for 24 hrs.
T=	2.0 % Design hr	T=	2.0 % Design hr	T=	2.0 % Design hr
1.00	% Medium Trucks DHV	1.00	% Medium Trucks DHV	1.00	% Medium Trucks DHV
1.00	% Heavy Trucks DHV	1.00	% Heavy Trucks DHV	1.00	% Heavy Trucks DHV
0.00	% Buses DHV	0.00	% Buses DHV	0.00	% Buses DHV
0.00	% Motorcycles DHV	0.00	% Motorcycles DHV	0.00	% Motorcycles DHV

TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:	Demand	No-Build (Design Year) Model:	LOS (C)	Build (Design Year) Model:	LOS (C)
LOS (C)		LOS (C)		LOS (C)	
Peak: Autos	228	Peak: Autos	252	Peak: Autos	549
Med Trucks	2	Med Trucks	3	Med Trucks	6
Hvy Trucks	2	Hvy Trucks	3	Hvy Trucks	6
Buses	0	Buses	0	Buses	0
Motorcycles	0	Motorcycles	0	Motorcycles	0
Off Peak: Autos	222	Off Peak: Autos	199	Off Peak: Autos	347
Med Trucks	2	Med Trucks	2	Med Trucks	4
Hvy Trucks	2	Hvy Trucks	2	Hvy Trucks	4
Buses	0	Buses	0	Buses	0
Motorcycles	0	Motorcycles	0	Motorcycles	0
Demand		Demand		Demand	
Peak: Autos	170	Peak: Autos	665	Peak: Autos	1352
Med Trucks	2	Med Trucks	7	Med Trucks	14
Hvy Trucks	2	Hvy Trucks	7	Hvy Trucks	14
Buses	0	Buses	0	Buses	0
Motorcycles	0	Motorcycles	0	Motorcycles	0
Off Peak: Autos	165	Off Peak: Autos	526	Off Peak: Autos	853
Med Trucks	2	Med Trucks	5	Med Trucks	9
Hvy Trucks	2	Hvy Trucks	5	Hvy Trucks	9
Buses	0	Buses	0	Buses	0
Motorcycles	0	Motorcycles	0	Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project:	Whting Street PD&E Study	Date:	12/14/2021
State Project Number(s):	THEA Project Number HI-0141	Prepared By:	Caleb Van Nostrand, P.E.
Work Program Number(s):	N/A	Data Sheet	Washington St
Federal Aid Number(s):	N/A		
Segment Description:	Washington St - Jefferson Ave to Nebraska Ave (to Meridian in Build)		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	2
Year:	2019	Year:	2046	Year:	2046
ADT: LOS (C)	5110	ADT: LOS (C)	5110	ADT: LOS (C)	5110
Demand	2800	Demand	8200	Demand	9300
Posted Spd:	25 mph / 40 kmh	Posted Spd:	25 mph / 40 kmh	Posted Spd:	25 mph / 40 kmh
K=	9.0 %	K=	9.0 %	K=	9.0 %
D=	98.0 %	D=	51.6 %	D=	54.6 %
T=	2.2 % for 24 hrs.	T=	2.2 % for 24 hrs.	T=	2.2 % for 24 hrs.
T=	2.0 % Design hr	T=	2.0 % Design hr	T=	2.0 % Design hr
1.00	% Medium Trucks DHV	1.00	% Medium Trucks DHV	1.00	% Medium Trucks DHV
1.00	% Heavy Trucks DHV	1.00	% Heavy Trucks DHV	1.00	% Heavy Trucks DHV
0.00	% Buses DHV	0.00	% Buses DHV	0.00	% Buses DHV
0.00	% Motorcycles DHV	0.00	% Motorcycles DHV	0.00	% Motorcycles DHV

TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		LOS (C)	Build (Design Year) Model:		LOS (C)
LOS (C)			LOS (C)			LOS (C)		
Peak:	Autos	442	Peak:	Autos	233	Peak:	Autos	246
	Med Trucks	5		Med Trucks	2		Med Trucks	3
	Hvy Trucks	5		Hvy Trucks	2		Hvy Trucks	3
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Off Peak:	Autos	9	Off Peak:	Autos	218	Off Peak:	Autos	204
	Med Trucks	0		Med Trucks	2		Med Trucks	2
	Hvy Trucks	0		Hvy Trucks	2		Hvy Trucks	2
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Demand			Demand			Demand		
Peak:	Autos	242	Peak:	Autos	373	Peak:	Autos	448
	Med Trucks	2		Med Trucks	4		Med Trucks	5
	Hvy Trucks	2		Hvy Trucks	4		Hvy Trucks	5
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Off Peak:	Autos	5	Off Peak:	Autos	350	Off Peak:	Autos	372
	Med Trucks	0		Med Trucks	4		Med Trucks	4
	Hvy Trucks	0		Hvy Trucks	4		Hvy Trucks	4
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project:	Whting Street PD&E Study	Date:	12/14/2021
State Project Number(s):	THEA Project Number HI-0141	Prepared By:	Caleb Van Nostrand, P.E.
Work Program Number(s):	N/A	Data Sheet	Meridian Ave
Federal Aid Number(s):	N/A		
Segment Description:	Meridian Ave - Channelside Dr to Kennedy Blvd		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	6		Lanes:	6		Lanes:	6	
Year:	2019		Year:	2046		Year:	2046	
ADT: LOS (C)	52560		ADT: LOS (C)	52560		ADT: LOS (C)	52560	
Demand	20500		Demand	59500		Demand	60500	
Posted Spd:	40	mph	Posted Spd:	40	mph	Posted Spd:	40	mph
	64	kmh		64	kmh		64	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	57.2	%	D=	85.8	%	D=	81.7	%
T=	2.2	% for 24 hrs.	T=	2.2	% for 24 hrs.	T=	2.2	% for 24 hrs.
T=	2.0	% Design hr	T=	2.0	% Design hr	T=	2.0	% Design hr
1.00	% Medium Trucks DHV		1.00	% Medium Trucks DHV		1.00	% Medium Trucks DHV	
1.00	% Heavy Trucks DHV		1.00	% Heavy Trucks DHV		1.00	% Heavy Trucks DHV	
0.00	% Buses DHV		0.00	% Buses DHV		0.00	% Buses DHV	
0.00	% Motorcycles DHV		0.00	% Motorcycles DHV		0.00	% Motorcycles DHV	

TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		LOS (C)	Build (Design Year) Model:		LOS (C)
LOS (C)			LOS (C)			LOS (C)		
Peak:	Autos	2654	Peak:	Autos	3980	Peak:	Autos	3787
	Med Trucks	27		Med Trucks	41		Med Trucks	39
	Hvy Trucks	27		Hvy Trucks	41		Hvy Trucks	39
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Off Peak:	Autos	1982	Off Peak:	Autos	656	Off Peak:	Autos	849
	Med Trucks	20		Med Trucks	7		Med Trucks	9
	Hvy Trucks	20		Hvy Trucks	7		Hvy Trucks	9
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Demand			Demand			Demand		
Peak:	Autos	1035	Peak:	Autos	4505	Peak:	Autos	4359
	Med Trucks	11		Med Trucks	46		Med Trucks	44
	Hvy Trucks	11		Hvy Trucks	46		Hvy Trucks	44
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Off Peak:	Autos	773	Off Peak:	Autos	743	Off Peak:	Autos	977
	Med Trucks	8		Med Trucks	8		Med Trucks	10
	Hvy Trucks	8		Hvy Trucks	8		Hvy Trucks	10
	Buses	0		Buses	0		Buses	0
	Motorcycles	0		Motorcycles	0		Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project:	Whting Street PD&E Study	Date:	12/14/2021
State Project Number(s):	THEA Project Number HI-0141	Prepared By:	Caleb Van Nostrand, P.E.
Work Program Number(s):	N/A	Data Sheet	Proposed Off Ramp
Federal Aid Number(s):	N/A		
Segment Description:	Proposed Off Ramp - From Eastbound Selmon Expressway		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	N/A		Lanes:	N/A		Lanes:	1	
Year:	2019		Year:	2046		Year:	2046	
ADT: LOS (C)	N/A		ADT: LOS (C)	N/A		ADT: LOS (C)	N/A	
Demand	0		Demand	0		Demand	16000	
Posted Spd:	N/A	mph	Posted Spd:	N/A	mph	Posted Spd:	30	mph
	N/A	kmh		N/A	kmh		48	kmh
K=	N/A	%	K=	N/A	%	K=	9.0	%
D=	N/A	%	D=	N/A	%	D=	100.0	%
T=	N/A	% for 24 hrs.	T=	N/A	% for 24 hrs.	T=	2.2	% for 24 hrs.
T=	N/A	% Design hr	T=	N/A	% Design hr	T=	2.0	% Design hr
#VALUE!	% Medium Trucks DHV		#VALUE!	% Medium Trucks DHV		1.00	% Medium Trucks DHV	
#VALUE!	% Heavy Trucks DHV		#VALUE!	% Heavy Trucks DHV		1.00	% Heavy Trucks DHV	
0.00	% Buses DHV		0.00	% Buses DHV		0.00	% Buses DHV	
0.00	% Motorcycles DHV		0.00	% Motorcycles DHV		0.00	% Motorcycles DHV	

TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		Demand	Build (Design Year) Model:		Demand
LOS (C)			LOS (C)			LOS (C)		
Peak:	Autos	N/A	Peak:	Autos	N/A	Peak:	Autos	N/A
	Med Trucks	N/A		Med Trucks	Seg6		Med Trucks	N/A
	Hvy Trucks	N/A		Hvy Trucks	N/A		Hvy Trucks	N/A
	Buses	N/A		Buses	N/A		Buses	N/A
	Motorcycles	N/A		Motorcycles	N/A		Motorcycles	N/A
Off Peak:	Autos	N/A	Off Peak:	Autos	N/A	Off Peak:	Autos	N/A
	Med Trucks	N/A		Med Trucks	N/A		Med Trucks	N/A
	Hvy Trucks	N/A		Hvy Trucks	N/A		Hvy Trucks	N/A
	Buses	N/A		Buses	N/A		Buses	N/A
	Motorcycles	N/A		Motorcycles	N/A		Motorcycles	N/A
Demand			Demand			Demand		
Peak:	Autos	N/A	Peak:	Autos	N/A	Peak:	Autos	1411
	Med Trucks	N/A		Med Trucks	N/A		Med Trucks	14
	Hvy Trucks	N/A		Hvy Trucks	N/A		Hvy Trucks	14
	Buses	N/A		Buses	N/A		Buses	0
	Motorcycles	N/A		Motorcycles	N/A		Motorcycles	0
Off Peak:	Autos	N/A	Off Peak:	Autos	N/A	Off Peak:	Autos	0
	Med Trucks	N/A		Med Trucks	N/A		Med Trucks	0
	Hvy Trucks	N/A		Hvy Trucks	N/A		Hvy Trucks	0
	Buses	N/A		Buses	N/A		Buses	0
	Motorcycles	N/A		Motorcycles	N/A		Motorcycles	0

Appendix B

Validation Data

NOISE MEASUREMENT DATA SHEET

Measurements Taken By: Wayne Arner and Evan Howard Date: 7/29/21

Time Study Started: 0945 Time Study Ended: 1056

Project Identification:

Financial Project ID: _____

Project Location: Whiting Street, Tampa

Site Identification: East side of Meridian Avenue between Whiting Street and Washington Street.

Weather Conditions:

Sky: Clear X Partly Cloudy ____ Cloudy ____ Other _____

Temperature 88F Wind Speed 1mph Wind Direction S Humidity 75%

Equipment:

Sound Level Meter:

Type: Larson Davis 831 Serial Number(s): 1285

Did you check the batteries? Yes X No ____

Calibration Readings: Start 114.0 End 114.0

Response Settings: Fast ____ Slow X

Weighting: A X Other ____

Calibrator:

Type: Larson Davis CAL 200 Serial Number: 5592

Did you check the battery? Yes X No ____

TRAFFIC DATA

Roadway Identification	Meridian Avenue NB		Meridian Avenue SB	
Vehicle Type	Volume (hr)	Speed (mph)	Volume (hr)	Speed (mph)
Autos	162-174-186	33-35-34	258-234-270	36-32-31
Medium Trucks (MT)	0-12-0	NA-35-NA	12-0-6	36-NA-20
Heavy Trucks (HT)	0-0-6	NA-NA-17	0-0-0	NA-NA-NA
Buses	0-0-0	NA-NA-NA	0-0-6	NA-NA-33
Motorcycles (MC)	0-0-6	NA-NA-34.4	0-0-6	NA-NA-31
Duration	Three 10 minute runs		Three 10 minute runs	

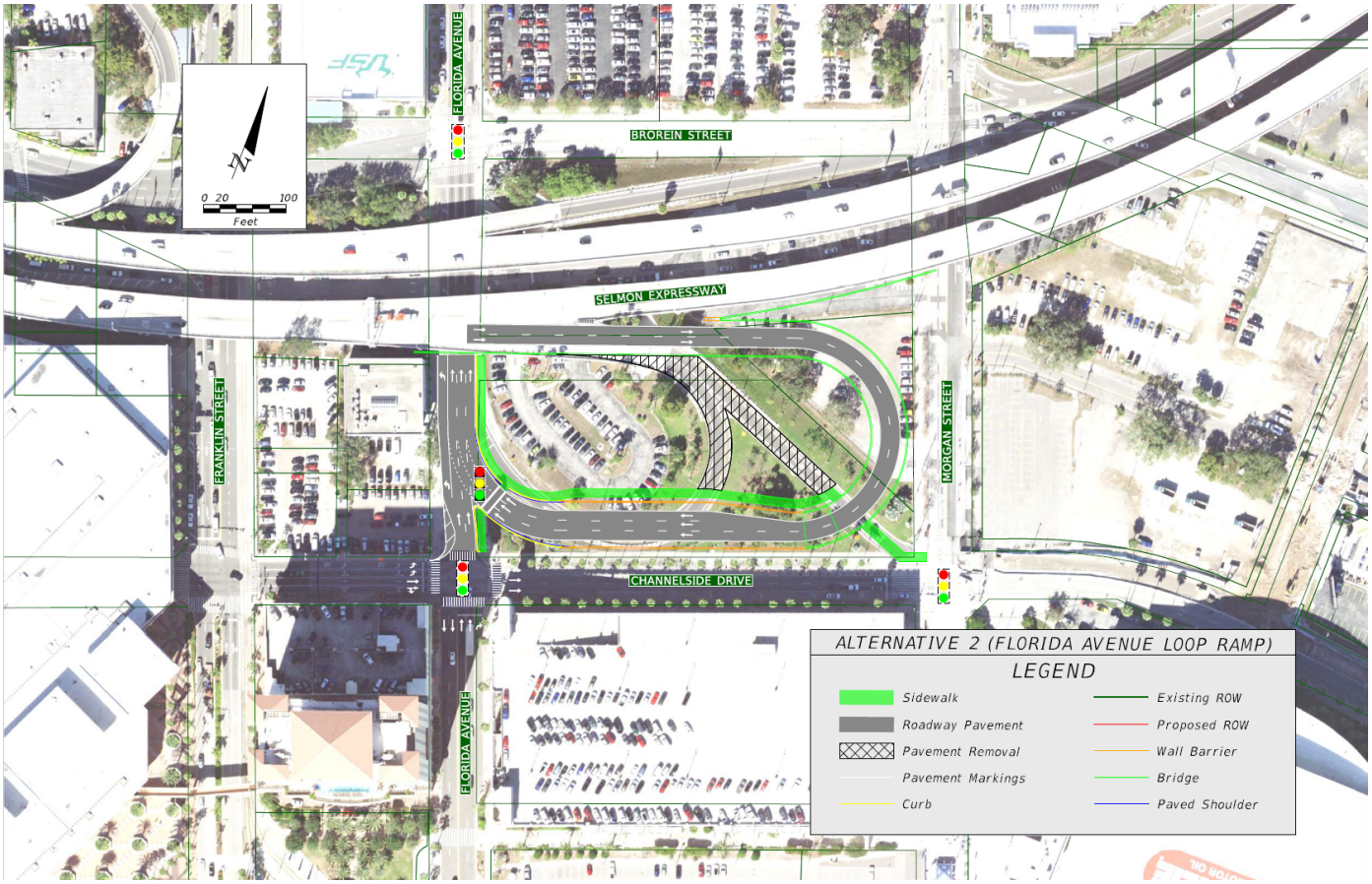
RESULTS [dB(A)]: 62.6-61.0-62.6

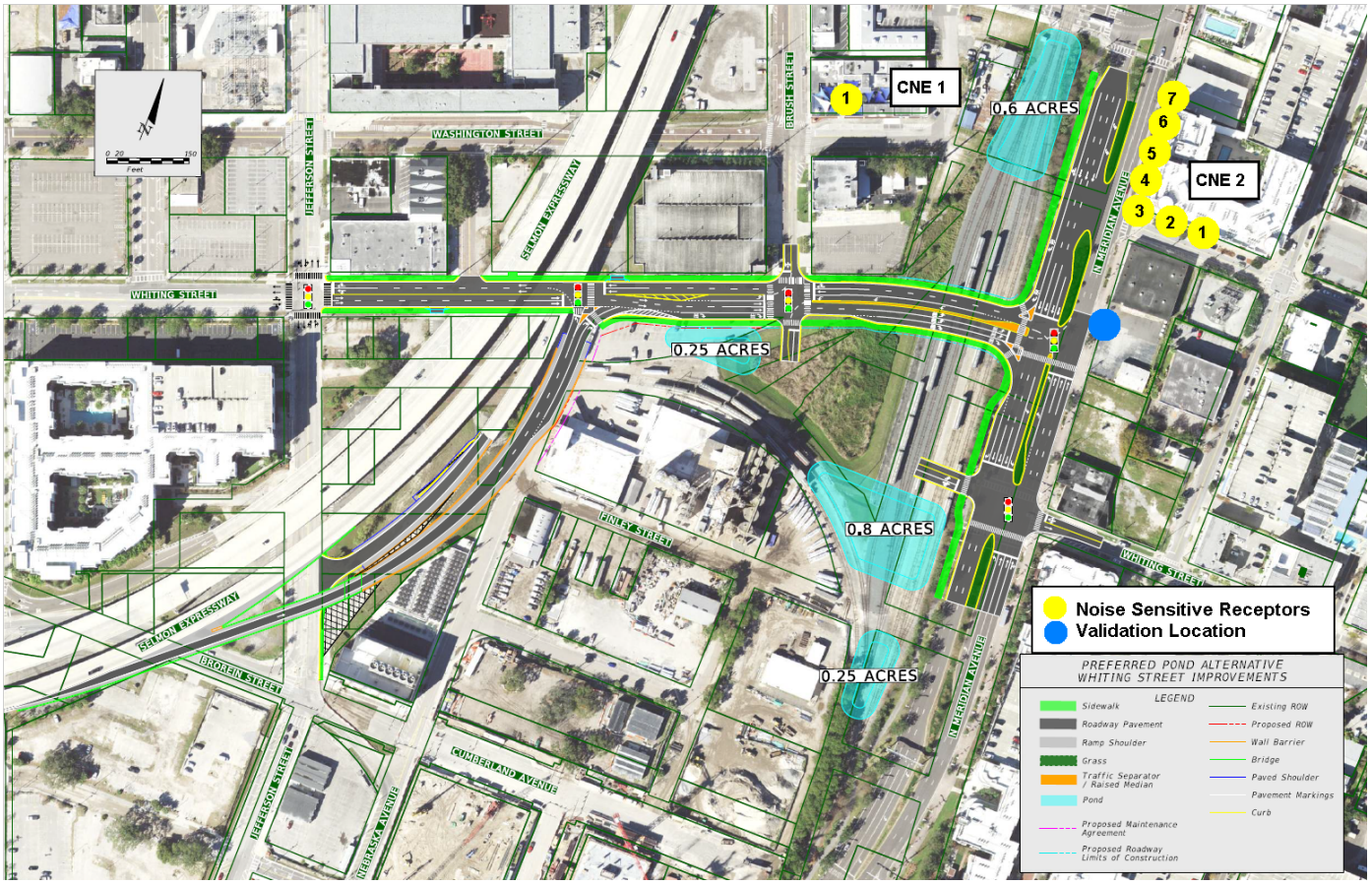
Background Noise: Loud MC during Run 1, machinery and train noises from the Tampa Mill.

Major Sources: Meridian Avenue

Appendix C

Project Aerials


FLORIDA AVENUE
BROREIN STREET
SELMON EXPRESSWAY
FRANKLIN STREET
MORGAN STREET
CHANNELSIDE DRIVE
FLORIDA AVENUE
0 20 100
Feet
ALTERNATIVE 2 (FLORIDA AVENUE LOOP RAMP)
LEGEND
Sidewalk
Roadway Pavement
Pavement Removal
Pavement Markings
Curb
Existing ROW
Proposed ROW
Wall Barrier
Bridge
Paved Shoulder


CNE 1
CNE 2
0.6 ACRES
0.25 ACRES
0.8 ACRES
0.25 ACRES
WASHINGTON STREET
WHITING STREET
FINLEY STREET
CUMBERLAND AVENUE
BROREIN STREET
SELMON EXPRESSWAY
JEFFERSON STREET
NEBRASKA AVENUE
N MERIDIAN AVENUE
Noise Sensitive Receptors
Validation Location
PREFERRED POND ALTERNATIVE
WHITING STREET IMPROVEMENTS
LEGEND
Sidewalk
Roadway Pavement
Ramp Shoulder
Grass
Traffic Separator / Raised Median
Pond
Proposed Maintenance Agreement
Proposed Roadway Limits of Construction
Existing ROW
Proposed ROW
Wall Barrier
Bridge
Paved Shoulder
Pavement Markings
Curb

Appendix D

Predicted Traffic Noise Levels

CNE	ReceptorID#	Activity Category	Description of Activity Category	No. of Noise Sensitive Sites Represented	Predicted Traffic Noise Level (Leq(h)) [Expressed as dB(A)]				
					Existing (2019)	No-Build (2046)	Build (2046)	Increase from Existing	Build Approaches, Meets, or Exceeds the NAC?
1	1	C	Carlton Academy Day School	1	55.8	61.3	61.5	5.7	
2	1	B	The Slade at Channelside Apts 1B	1	59.9	64.4	64.4	4.5	
		B	The Slade at Channelside Apts 1C	1	60.5	64.8	64.9	4.4	
		B	The Slade at Channelside Apts 1D	1	61.1	65.1	65.3	4.2	
		B	The Slade at Channelside Apts 1E	1	61.4	65.4	65.5	4.1	
		B	The Slade at Channelside Apts 1F	1	61.7	65.9	66.0	4.3	yes
		B	The Slade at Channelside Apts 1G	1	61.9	66.2	66.3	4.4	yes
		B	The Slade at Channelside Apts 1H	1	61.9	66.2	66.3	4.4	yes
	2	B	The Slade at Channelside Apts 2B	1	63.2	67.7	67.7	4.5	yes
		B	The Slade at Channelside Apts 2C	1	63.2	67.5	67.5	4.3	yes
		B	The Slade at Channelside Apts 2D	1	63.5	67.7	67.8	4.3	yes
		B	The Slade at Channelside Apts 2E	1	63.6	68.0	68.1	4.5	yes
		B	The Slade at Channelside Apts 2F	1	63.7	68.1	68.2	4.5	yes
		B	The Slade at Channelside Apts 2G	1	63.6	68.0	68.1	4.5	yes
		B	The Slade at Channelside Apts 2H	1	63.5	67.9	68.0	4.5	yes
	3	B	The Slade at Channelside Apts 3B	1	68.3	72.9	72.9	4.6	yes
		B	The Slade at Channelside Apts 3C	1	68.1	72.7	72.7	4.6	yes
		B	The Slade at Channelside Apts 3D	1	68.0	72.5	72.4	4.4	yes
		B	The Slade at Channelside Apts 3E	1	67.9	72.4	72.4	4.5	yes
		B	The Slade at Channelside Apts 3F	1	67.7	72.3	72.3	4.6	yes
		B	The Slade at Channelside Apts 3G	1	67.7	72.3	72.2	4.5	yes
		B	The Slade at Channelside Apts 3H	1	67.7	72.3	72.3	4.6	yes
	4	B	The Slade at Channelside Apts 4B	1	68.4	73.0	72.9	4.5	yes
		B	The Slade at Channelside Apts 4C	1	68.2	72.8	72.7	4.5	yes
		B	The Slade at Channelside Apts 4D	1	68.1	72.6	72.6	4.5	yes
		B	The Slade at Channelside Apts 4E	1	67.9	72.4	72.4	4.5	yes
		B	The Slade at Channelside Apts 4F	1	67.8	72.4	72.4	4.6	yes
		B	The Slade at Channelside Apts 4G	1	67.8	72.4	72.4	4.6	yes
		B	The Slade at Channelside Apts 4H	1	67.8	72.4	72.3	4.5	yes
	5	B	The Slade at Channelside Apts 5B	1	68.6	73.2	73.2	4.6	yes
		B	The Slade at Channelside Apts 5C	1	68.4	73.0	73.0	4.6	yes
		B	The Slade at Channelside Apts 5D	1	68.3	72.9	72.8	4.5	yes
		B	The Slade at Channelside Apts 5E	1	68.1	72.7	72.7	4.6	yes
		B	The Slade at Channelside Apts 5F	1	68.0	72.7	72.6	4.6	yes
		B	The Slade at Channelside Apts 5G	1	68.0	72.6	72.6	4.6	yes
	6	B	The Slade at Channelside Apts 6B	1	68.7	73.3	73.3	4.6	yes
		B	The Slade at Channelside Apts 6C	1	68.5	73.1	73.1	4.6	yes
		B	The Slade at Channelside Apts 6D	1	68.3	72.9	72.9	4.6	yes
		B	The Slade at Channelside Apts 6E	1	68.3	72.9	72.8	4.5	yes
		B	The Slade at Channelside Apts 6F	1	68.2	72.8	72.8	4.6	yes
		B	The Slade at Channelside Apts 6G	1	68.1	72.7	72.7	4.6	yes
	7	B	The Slade at Channelside Apts 7B	1	69.2	73.9	73.8	4.6	yes
		B	The Slade at Channelside Apts 7C	1	68.9	73.7	73.5	4.6	yes
		B	The Slade at Channelside Apts 7D	1	68.8	73.5	73.5	4.7	yes
		B	The Slade at Channelside Apts 7E	1	68.7	73.4	73.3	4.6	yes
		B	The Slade at Channelside Apts 7F	1	68.6	73.4	73.3	4.7	yes
		B	The Slade at Channelside Apts 7G	1	68.5	73.3	73.2	4.7	yes

Note: For CNE 2, the letters under the "Description of Activity Category" column corresponds to which floor the receptor is located (e.g., B is the second floor, C is the third floor, etc.).