Traffic Noise Study Report

DRAFT

Daniel Webster Western Beltway (SR 429) Widening

From Tilden Road to North of SR 414
Orange County, Florida
CFX Project Numbers: 429-152; 429-153; 429-154

Prepared For:
Central Florida Expressway Authority

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

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ACRONYMS

CFR	Code of Federal Regulations
CFX	Central Florida Expressway Authority
CNE	Common Noise Environment
CR	County Road
dB(A)	Decibel (A-Weighted)
DHV	Design Hourly Volume
EB	Eastbound
EOP	Edge of Pavement
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
HCS	Highway Capacity Software
LOS	Level of Service
MP	Milepost
Mph	Miles Per Hour
NAC	Noise Abatement Criteria
NB	Northbound
NRDG	Noise Reduction Design Goal
NSA	Noise Study Area
NSR	Noise Study Report
PD&E	Project Development & Environment
RCMB	Reedy Creek Mitigation Bank
ROW	Right-of-Way
SB	Southbound
SR	State Road
TNM	Traffic Noise Model
WB	Westbound

1.0 INTRODUCTION

The Danial Webster Western Beltway (SR 429) is a 23-mile long, limited-access toll road that extends from Interstate 4 in Osceola County to US 441 in Orange County. The beltway was initially constructed as a four-lane facility with room for expansion within the existing right-of-way (ROW). The Central Florida Expressway Authority (CFX) is now developing design plans to widen the existing roadway in Orange County, specifically between Tilden Road in Winter Garden to north of the SR 414 interchange in Apopka. The project includes revisions to the SR 438/Plant Street northbound entry/exit ramps. The project study corridor is illustrated as **Figure 1**: Project Location Map on the following page.

The objective of this Traffic Noise Study Report is to summarize the traffic noise study conducted for this widening project. The analysis identifies the noise sensitive receptors within the study corridor and evaluates the noise levels predicted to occur as a result of the widening project. The study corridor consists of three separate CFX projects, referred to in this NSR as corridor segments:

- Segment 429-154: Tilden Road to south of the Florida Turnpike
- Segment 429-152: South of the Florida Turnpike to West Road
- Segment 429-153: West Road to north of SR 414

2.0 ANALYZED ALTERNATIVES

The noise impact analysis compares the predicted traffic noise associated with the proposed Build Alternative, with the existing traffic noise within the study corridor and a No-Build Alternative.

2.1 Existing Conditions

SR 429 is currently a four-lane divided, limited-access roadway within 300 feet of right-of-way (varies). The four travel lanes are 12 feet wide with paved outside shoulders. The posted speed limit is 70 miles per hour (mph). At the time of this study, the new entry/exit ramps, toll facilities, and associated auxiliary lanes at Stoneybrook West Parkway (Segment #429-154) were under construction.

2.2 No-Build Alternative

The noise impact analysis also considers an alternative that assesses what would happen to the environment in the future if this proposed widening project was not built. This alternative, called the No-Build Alternative, consists of the existing roadways within the study area and the routine maintenance improvements to these facilities. While the No-Build Alternative does not meet

project needs, it provides a baseline condition to compare and measure the effects of the proposed project.

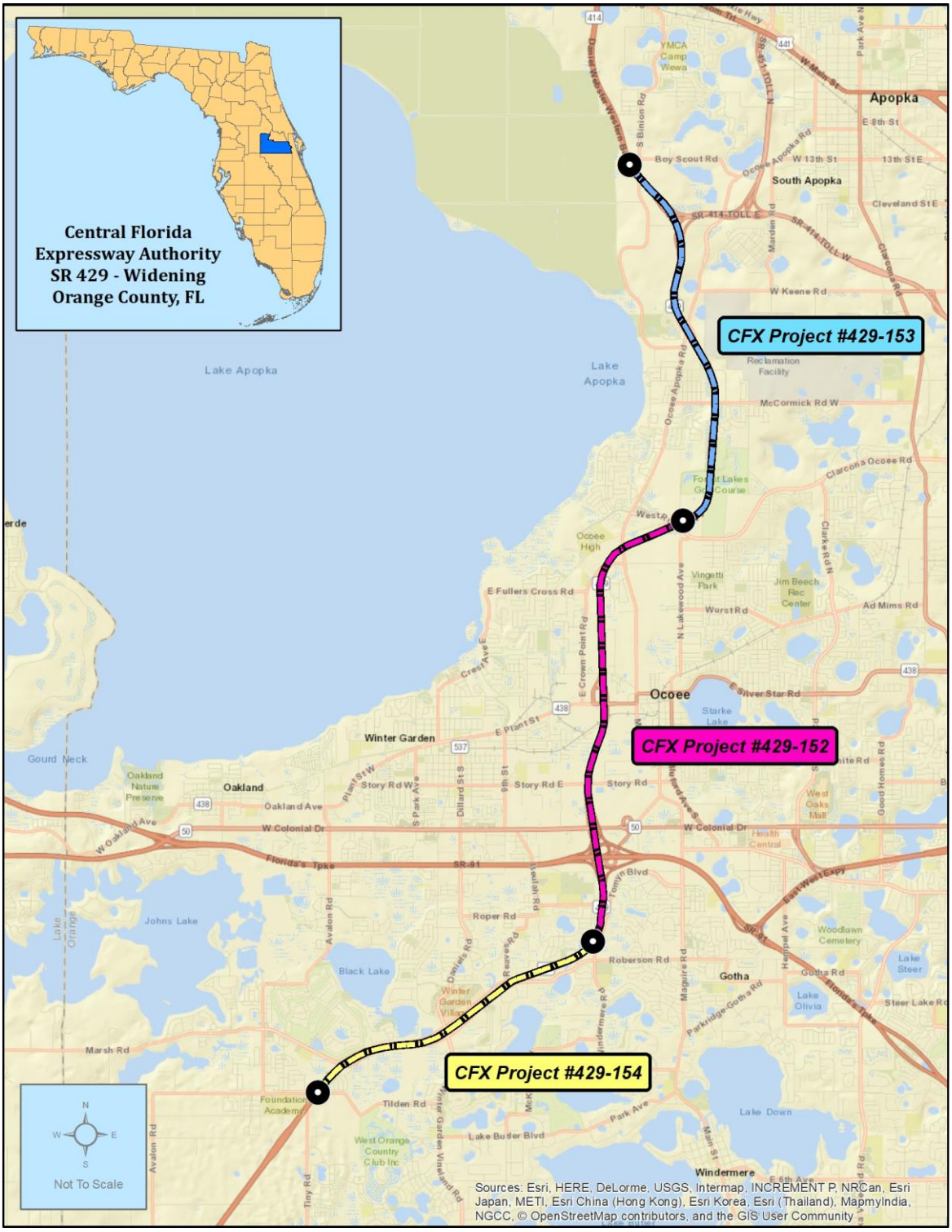

Figure 1: Project Location Map

2.3 Proposed Build Alternative

The proposed project will be constructed with three 12-foot travel lanes in each direction separated by a 14-foot paved median with median barrier. A 12-foot auxiliary lane and 10-foot paved shoulder will be constructed to the outside of the travel lanes in each direction. A 12-foot inside shoulder will be provided for a single Part-Time Shoulder Running (PTSR) in each direction. With the exception of the Tilden Road and Stoneybrook West Parkway overpasses, both in Segment #429-154, and the CR 437A overpass in Segment #429-153, all bridges will be widened to accommodate the proposed typical section, illustrated in **Appendix A: Typical Sections.**

3.0 METHODOLOGY

The traffic noise study conducted for this project is consistent with *Code of Federal Regulations* (C.F.R.), Title 23, § 772[1], Chapter 335, Section 335.17, *Florida Statutes*[2], Part II, Chapter 18 of the Florida Department of Transportation's (FDOT) *Project Development and Environment Manual* [3], and Federal Highway Administration's (FHWA) traffic noise analysis guidelines contained in *FHWA-HEP-10-025*[4].

3.1 Noise Metrics

Traffic noise is a combination of noises produced by the engine, exhaust, and tires and is never constant. The noise metric used to describe this combination of noise is referred to as "Leq." This metric allows for the fluctuations of daily traffic noise to be analyzed in terms of steady noise levels with the same acoustic energy, and thus, is the level of constant sound. Constant sound is quantified by a meter that measures units called decibels (dB). For highway traffic noise, an adjustment or weighting of the high and low-pitched sounds is applied to approximate the way an average person hears. These adjusted sounds are called "A-weighted decibels" and are expressed as "dB(A)."

3.2 Noise Model

The FHWA Traffic Noise Model (TNM) - version 2.5 was used to predict traffic noise levels for this project following guidelines outlined in the FDOT *Traffic Noise Modeling and Analysis Practitioners Handbook*[5]. This program predicts the traffic noise level from a series of roadway segments (the source) at a noise sensitive site (the receptor). The TNM program requires specific data to be entered. These data are noise-influencing variables that include the volume and types of vehicles traveling the roadway, vehicular speed, roadway geometry, and the presence of

[1] Federal Highway Administration, *Code of Federal Regulations*, Title 23 Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", (July 13, 2010)
[2] *Florida Statutes*, Chapter 335, § 335.17
[3] Florida Department of Transportation, *Project Development and Environment Manual,* Part 2, Chapter 18, (July 1, 2020)
[4] FHWA, *FHWA-HEP-10-025: Highway Traffic Noise: Analysis and Abatement Guidance, (*December 2011)
[5] FDOT, *Traffic Noise Modeling and Analysis Practitioners Handbook*, (January 2016)

existing barriers between the road and receptor such as berms and building rows. All input data coordinates were defined using the NAD 1983-2001 State Plane Florida East system.

3.2.1 Elevation Data

Elevation data for SR 429 was obtained from the 30%/60% design plans as well as As-Built Plans for areas where improvements are not planned but need to be included in the noise analysis. Data for the noise receptors and cross streets were obtained from the Florida Geographic Data Library[6], Google Earth[7], and respective Final Development Plans for developments which are underway (e.g., site preparation/clearing) but have yet to receive individual dwelling building permits, such as Oak Pointe/Thompson Hills Estates[8].

3.2.2 Traffic Data

To predict project noise levels, traffic characteristics that contribute to the greatest traffic noise impact for the 2045 design year were used in the TNM. Worst-case noise conditions occur with the maximum amount of traffic traveling at the posted speed. A Level of Service (LOS) C operating condition produces the highest noise level and was used for this project. A summary of the traffic data provided by the CFX traffic consultant is included in **Appendix B: Noise Study Traffic Data.**

3.2.3 Noise Receptor Data

Noise receptor points are used in the TNM to analyze traffic impacts to noise sensitive sites (discussed further in the following section). For residences, traffic noise levels were predicted at the edge of the dwelling unit closest to the nearest primary roadway. For other noise sensitive sites within the study area, traffic noise levels were predicted where the exterior activity occurs. There are no multi-family/multi-story dwellings within the three study segments; therefore, the receptor sites were modeled five feet above the local ground elevation.

The reporting of project noise levels was simplified by using representative receptors within each Noise Study Area (NSA) to represent Common Noise Environments (CNE), which are defined by FDOT as a group of receptors within the same Activity Category that are exposed to similar noise sources and levels; traffic volumes, traffic mix, and speed; and topographic features.

3.2.4 Noise Sensitive Sites

Noise sensitive sites are defined as any property where frequent human use occurs and where a lowered noise level would be of benefit. To determine which land uses within the study corridor are "noise sensitive," this noise impact analysis used the FHWA Noise Abatement Criteria (NAC). Shown on the following page in **Table 1,** these criteria are divided into individual land use activity categories. For each of these categories, the FDOT has established noise levels at which noise abatement must be considered.

[6] University of Florida. Florida Geographic Data Library, https://www.fgdl.org/metadataexplorer/about.html
[7] Google Earth 2020
[8] Evans Engineering Inc. *Final Development Plan for Oak Pointe – South*, (2 Oak Pointe South FDP.pdf)

Table 1: Noise Abatement Criteria

Hourly A-Weighted Sound Level-decibels (dB(A))				Description of Activity Category
Activity Category	Activity Leq(h) [1]		Evaluation Location	
	FHWA	FDOT		
A	57.0	56.0	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]	67.0	66.0	Exterior	Residential.
C[2]	67.0	66.0	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, golf courses, places of worship, playgrounds, public meeting rooms, public/nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52.0	51.0	Interior	Auditoriums, daycare centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public/nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[2]	72.0	71.0	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 design standards for noise abatement measures.

[2] Includes undeveloped lands permitted for this activity category.

One additional criterion for determining project impacts that warrant abatement consideration occurs when project noise levels are below the NAC but show a substantial increase (15.0 dB(A) or more) over existing levels.

An illustration of typical exterior and interior noises and their corresponding sound level is presented in **Table 2**. This table provides the reader with a better understanding of the noise levels discussed herein.

Table 2: Typical Sound Levels

Common Outdoor Activity	dB(A)	Inside Activity
Jet Flyover at 1,000 ft. Gas Lawn Mower at 3 ft.	--110-- --100--	Rock Band
Diesel Truck at 50 ft. (at50 mph) Busy Urban Area Daytime	--90-- --80--	Food Blender at 3 ft. Garbage Disposal at 3 ft.
Gas Mower at 100 ft. Commercial Area Heavy Traffic at 300 ft.	--70-- --60--	Vacuum Cleaner at 10 ft. Normal Speech at 3 ft. Large Business Office
Quiet Urban Daytime Quiet Urban Nighttime Quiet Suburban Nighttime	--50-- --40--	Dishwasher Next Room Theater, Large Conference Room (Background)
Quiet Rural Nighttime	--30-- --20--	Library Bedroom at Night
Lowest Threshold of Human Hearing	--10-- --0--	Lowest Threshold of Human Hearing
Source: California Dept. of Transportation Technical Noise Supplement, Oct. 1998, Pg. 18		

3.3 Noise Abatement Measures

When traffic noise impacts are identified, noise abatement must be considered. The potential abatement alternatives include traffic management techniques, alternative roadway alignments, buffer zones, and noise barriers. The most common type of noise abatement measure is the construction of a noise barrier that reduces traffic noise by blocking the sound path between the roadway and the adjacent noise receptor.

Consistent with the FDOT PD&E Manual – Chapter 18, the following factors must be evaluated to determine if a noise barrier is considered feasible and reasonable:

- To be considered acoustically feasible, the barrier must reduce traffic-related noise levels by at least 5.0 dB(A) for at least two impacted receptors. Consequently, noise barriers are not evaluated for isolated and single receptors. Receptors that receive the 5.0 dB(A) reduction, or higher, are defined as "benefited" by FDOT.
- To be considered acoustically reasonable, the noise barrier must achieve the FDOT noise reduction design goal of 7.0 dB(A) for at least one benefited receptor.
- To be considered cost reasonable, the total cost of a barrier that meets all acoustical criteria should not exceed a cost of $42,000 per benefited receptor. The cost per benefited receptor (CBPR) is calculated by multiplying the barrier total square footage by $30. Per Chapter 18, $30 per/ft^2 is the statewide average used to determine cost reasonableness regardless of barrier type (shoulder/traffic railing mounted, right-of-way post/panel, etc.)

At some locations, noise barriers may provide a benefit to non-impacted residences. Due to design considerations or aesthetics, CFX may propose noise barriers that exceed the cost reasonableness limits. An example would be extending a noise barrier to maintain community continuity (i.e., avoid terminating a noise barrier in the middle of a community).

Consistent with the FDOT Design Manual, Section 264[9], noise barrier heights are limited as follows:

- Noise barriers on bridge and retaining wall structures are limited to a maximum height of 8 feet; unless otherwise specified
- Shoulder-mounted noise barriers at the edge of shoulder pavement are limited to a maximum height of 14 feet
- Non-shoulder mounted noise barriers (i.e., post and panel) located outside the clear recovery zone are limited to a maximum height of 22 feet. If a non-shoulder barrier is to be placed within the clear recovery zone, it must be shielded.

Other factors must also be considered when evaluating a barrier's feasibility, including accessibility, sight distance, and aesthetics. Accessibility refers to the ingress and egress to properties that would be affected by the construction of a noise barrier. Sight distance is a safety issue that refers to the ability of drivers to see far enough in each direction to enter the roadway safely. Aesthetics refers to the physical appearance of the noise barrier from both the highway side and the affected property side.

4.0 TRAFFIC NOISE ANALYSIS

4.1 Model Validation

Existing noise levels are measured in the project corridor to confirm if traffic noise is the primary source of noise. Field measurements are also required to verify the accuracy of the TNM before it can be used to predict noise levels. To accomplish this, a series of three 10-minute measurements were taken on April 17, 2020, at one location adjacent to SR 429 within each of the three project segments. An illustration of the measurement sites is provided in Appendix D: Project Aerials on Pages D1-6 (Site #1), D2-8 (Site #2), and D3-3 (Site #3).

Existing noise levels were measured using an Extech Instruments Model 407780A Type 2 Integrating Sound Level Meter. The sound level meter, calibrated at 114.0 dB(A) with an Extech Instruments Model 407766 calibrator, was adjusted to the A-weighted frequency scale, which approximates the frequency sensitivity of the human ear.

During each of the 10-minute measurement sessions, traffic data, including vehicle volumes and speeds by type, and meteorological conditions were recorded. The traffic speeds were recorded using a Bushnell Speedster hand-held radar gun. Temperature, wind, and humidity were measured using an Ambient weather WM-3 hand-held meter. The weather conditions at the beginning of the monitoring sessions (9:49 a.m.) were 73° under mostly cloudy skies, 76% humidity, with winds out of the East-Northeast 5 mph. The weather conditions at the close of the monitoring sessions (2:42 p.m.) were 79° under mostly cloudy skies, 78% humidity, with winds out of the East-Southeast 3 mph. No unusual noise events occurred during any of the 10-minute sessions.

[9] FDOT, *FDOT Design Manual*, ***https://www.fdot.gov/roadway/fdm/2019fdm.shtm***

Validation of the TNM occurs when the model-predicted noise levels are within three decibels of the field-measured levels. Since all noise levels in this analysis are based on a one-hour period, each of the 10-minute field-recorded traffic volumes was adjusted upward by a factor of "6" to reflect hourly traffic flow. Once adjusted, these volumes were input into the noise prediction model. As shown in **Table 3,** TNM predicted within the 3.0-decibel acceptance range for each 10-minute session. Consequently, the model is acceptable for predicting noise levels on this project.

Table 3: Field Measurement and TNM Validation Summary

Field Monitor Location	Session	Field Measurement dB(A)	TNM Result dB(A)	Variance
Site #1 (429-154)	#1	72.8	73.0	0.2
	#2	72.2	73.2	1.0
	#3	72.8	74.3	1.5
Site #2 (429-152)	#1	76.9	77.4	0.5
	#2	77.7	77.8	0.1
	#3	77.2	77.5	0.3
Stie #3 (429-153)	#1	74.4	75.6	1.2
	#2	74.0	76.8	2.8
	#3	74.0	73.6	0.4

4.2 Identification of Noise Sensitive Sites

Using **Table 1** as a guide, the majority of the noise sensitive land uses within the study corridor fall under Activity Category B - Residential. The Activity Category C and E land uses evaluated within the project study corridor are as follows:

- Segment #429-154
  - Stoneybrooke West golf course (Category C)
- Segment #429-152
  - Pet Paradise (Category E)
  - Warrior Park (Category C)
  - Southwest Aquatics (Category C)
  - Children's Lighthouse People of Faith Lutheran Church – playground (Category C)
  - West Orange Park (Category C)
  - West Orange YMCA (Category C)
- Segment #429-153
  - Forest Lake golf course (Category C)
  - Orange County/pauper cemetery (Category C)
  - Orlando Memorial Gardens cemetery (Category C)

Analysis of interior (Category D) noise levels was not required for this project as all Category B and C locations have areas of exterior use. There are no land uses in the study corridor that warrant an Activity Category A analysis and no Category E land uses with exterior areas that are noise sensitive.

The remainder of the corridor is Activity Category G undeveloped land. A records search of these parcels, conducted in April 2020, did not identify any active permits for buildings that would be considered noise sensitive.

The noise analysis identified 26 Noise Study Areas (NSA) containing a total of 693 potential noise sensitive sites. A set of project aerials illustrating the entire corridor, the NSAs, all representative receptors, and the analyzed sites are included as Appendix D.

- Appendix D1: Segment #429-154 - NSA's 1 thru 7 – 289 sites
- Appendix D2: Segment #429-152 - NSA's 8 thru 17 – 174 sites
- Appendix D3: Segment #429-153 - NSA's 18 thru 26 – 230 sites

4.3 Predicted Noise Levels

A summary of the noise impact analysis is provided in **Appendix C: Noise Impact Comparison Matrix.** This matrix details the TNM-predicted noise levels for the 2018 Existing condition, the 2045 No-Build Alternative, and the 2045 Build Alternative. A summary of the impact analysis results is provided on page 12 in **Table 4**.

Currently, a total of 133 analyzed receptors experience noise levels that meet or exceed the 66.0 dB(A) Noise Abatement Criterion (NAC) and 130 are predicted to meet or exceed the NAC under the No-Build Alternative. With the traffic increase associated with the Build Alternative, 463 receptor sites are predicted to have traffic noise levels that meet or exceed the NAC. None of the analyzed sites are predicted to experience a substantial increase (15.0 dB(A) or greater) over the existing condition.

Across the study corridor, the noise levels increase an average of 4.5 dB(A) over existing conditions, with the greatest increase being 9.4 dB(A) at receptor 12-1 in NSA 12.

Table 4: Impact Analysis Summary

Project Segment #	Activity Category	2018 Existing	2045 No-Build	2045 Build
429-154	B	59	55	195
	C	1	1	2
	E	0	0	0
	Impacts Subtotal	***60***	***56***	***197***
429-152	B	4	4	83
	C	1	2	4
	E	0	0	0
	Impacts Subtotal	***5***	***6***	***87***
429-153	B	66	66	173
	C	2	2	6
	E	0	0	0
	Impacts Subtotal	***68***	***66***	***179***
Impacts Total		***133***	***130***	***463***

Each of the sites impacted as a result of the Build Alternative requires noise abatement consideration, which is discussed in detail in **Section 4.4**.

4.4 Noise Abatement Consideration

Across the study corridor, 18 noise barriers were evaluated for the potential to provide abatement to the impacted receptors. The criteria discussed in Section 3.3 were utilized to determine if barriers met the applicable acoustic and cost reasonableness parameters utilized by the CFX during the decision-making process. The following barriers are discussed in detail in Section 4.4.1.

- Segment #429-154: Noise Barriers 1 thru 5
- Segment #429-152: Noise Barriers 6 thru 10
- Segment #429-153: Noise Barriers 11 thru 18

4.4.1 Project (Segment) #429-154 Noise Barriers

Noise barriers 1 thru 5 are currently under evaluation for this project segment. The results of the barrier analyses will be incorporated into this NSR at a later date, but prior to the project's public meeting.

4.4.2 Project (Segment) #429-152 Noise Barriers

NSA 9 - Noise Barrier 6

To determine the effectiveness of a noise barrier's ability to provide abatement for the 25 impacted homes and Warrior Park (Category C) in NSA 9 (Westfield Lakes), several barrier scenarios (ROW only, shoulder only, and ROW/shoulder combination) were evaluated. South of the pedestrian trail, SR 429 begins to increase in elevation and continues on elevated embankment to north of Warrior Road. The elevation differences between the receptors and elevated roadway preclude the ability to locate a standard post and panel barrier at or near the ROW line that can meet applicable acoustic criteria (i.e., minimum 5 dB(A) reduction at 2 impacted sites; 7 dB(A) at 1 benefited site).

Of the evaluated scenarios, the option that provides the most effective level of abatement for the homes in Westfield Lakes, from an acoustic and cost perspective, is as follows:

- Option 4 – This barrier combination option is designed to provide a 14-foot tall noise barrier at the edge of southbound shoulder pavement between station 1132+00 and 1158+00. The barrier height is reduced to 8 feet on the bridge structures over the pedestrian trail and Warrior Road. In addition to the shoulder barrier, a 22-foot tall post and panel barrier is located on the southern end of Westfield Lakes, between the existing pond and ROW line from station 1131+15 to 1134+00.

  This scenario meets acoustic abatement criteria for 23 of the 25 impacted residences. Sixteen (16) non-impacted residences are also benefited. This barrier provides an average noise reduction is 6.9 dB(A) with the greatest reduction predicted to be 10.3 dB(A). In addition to meeting acoustic criteria, this option meets cost reasonableness requirements

and is the CFX preferred option to carry forward into the project's final design. An illustration of this barrier is provided in **Appendix D – Page D2-1**. A summary of the Noise Barrier 6 analysis is provided in **Appendix E2 – Page E2-1**.

NSA 11 - Noise Barrier 7

To determine the effectiveness of a noise barrier's ability to provide abatement for the 23 impacted homes in NSA 11, several barrier scenarios were evaluated. It was determined early in the evaluation that the elevation difference between the ROW line and the roadway precluded the ability to position a standard post and panel barrier that could meet applicable acoustic criteria. Therefore, the analysis focused on the available options for placing a noise barrier at the shoulder edge of pavement.

Of the evaluated scenarios, the option that provides the most effective level of abatement from an acoustic and cost perspective is as follows:

- Option 1 – This barrier option is designed to provide a 14-foot tall noise barrier at the edge of southbound shoulder pavement between station 160+00 and 181+80. This option does not require the barrier to continue on structure over the railroad overpass.

This scenario meets acoustic abatement criteria for all twenty-three (23) impacted residences. Two (2) non-impacted residences are also benefited. This barrier provides an average noise reduction of 6.3 dB(A) with the greatest reduction predicted to be 8.0 dB(A). In addition to meeting acoustic criteria, this option meets cost reasonableness requirements and is the CFX preferred option to carry forward into the project's final design. An illustration of this barrier is provided in **Appendix D – Page D2-5**. A summary of the Noise Barrier 7 analysis is provided in **Appendix E2 – Page E2-2**.

NSA 12 and 14- Noise Barrier 8

Noise Barrier 8 was evaluated to provide abatement to the 15 impacted homes in NSA 12 and 4 impactd homes in NSA 14. Due to the reconstruction of the interchange and relocation of the northbound on ramp, a standard post and panel barrier is not a viable option. Therefore, the analysis focused on the available options for placing a noise barrier at the ramp shoulder edge of pavement. Engineering constraints (e.g., slope gradient between the shoulder edge of pavement and adjacent Mechanically Stabilized Earth [MSE] wall) limit the maximum barrier height to 8 feet.

Of the evaluated scenarios, Option 2 provides the most level of abatement from an acoustic and cost perspective, is as follows:

- Option 2 – This barrier option is designed to provide an 8-foot tall noise barrier at the edge of northbound shoulder pavement between ramp station 602+00 and mainline station 210+20 (Palm Drive overpass). This scenario meets the minimum 5 dB(A) noise reduction

criteria for eight (8) of the fifteen (15) impacted residences in NSA 12. Though this option does not meet the 7 dB(A) Noise Reduction Design Goal (NRDG) criteria, it meets the CFX cost reasonableness standards and is the CFX preferred option to carry forward into the project's final design. An illustration of this barrier is provided in **Appendix D – Page D2-6**. A summary of the Noise Barrier 8 options is provided in **Appendix E2 – Page E2-3**.

NSA 15 - Noise Barrier 9

To determine the effectiveness of a noise barrier's ability to provide abatement for the seven (7) impacted homes and the Cornerstone Community Church (Category C) in NSA 15 (scattered single-family, rural residential), several barrier scenarios (ROW only and shoulder only) were evaluated.

- Option 1 – This barrier option evaluated a 14-foot tall shoulder barrier. This barrier provides abatement to four (4) of the impacted homes and far exceeds the CFX cost reasonableness threshold.

At $362,250 this barrier far exceeds the CFX cost reasonableness threshold and has been removed from further consideration. An illustration and summary of the barrier analysis are provided in **Appendix D – Pages D2-7 and D2-8**, and **Appendix E2 – Page E2-4**, respectively.

NSA 16 - Noise Barrier 10

To determine the effectiveness of a noise barrier's ability to provide abatement for the seven (7) impacted homes in NSA 16 (Crown Point Woods) a shoulder barrier scenario was evaluated. The elevation differences between the receptors and elevated roadway preclude the ability to locate a standard post and panel barrier at or near the ROW line that can meet applicable acoustic criteria; hence, there is only one viable placement option, summarized below.

- Option 1 – this barrier option evaluated a 14-foot tall shoulder barrier. This barrier provides abatement to the seven (7) impacted homes but does not meet the 7.0 dB(A) NRDG criteria.

At $115,244, Option 1 far exceeds the CFX cost reasonableness threshold and has been removed from further consideration. An illustration and summary of the barrier options are provided in **Appendix D – Pages D2-7 thru D2-10**, and **Appendix E2 – Page E2-5**, respectively.

4.4.3 Project (Segment) #429-153 Noise Barriers

Noise barriers 11 thru 18 are currently under evaluation for this project segment. The results of the barrier analyses will be incorporated into this NSR at a later date, but prior to the project's public meeting.

4.5 Segment #429-152 Summary and Recommendations

Traffic noise levels were predicted for 174 noise sensitive sites within Project Segment #429-152 for the 2018 existing condition and the 2045 Design Year No-Build and Build Alternatives. Five (5) of the analyzed sites are currently experiencing traffic noise levels that meet or exceed the 66.0 dB(A) NAC. Six (6) sites are predicted to do so with the No-Build Alternative. Due to the increase in traffic volumes attributed to the Build Alternative, noise impacts are predicted for 87 receptors in NSAs 9 through 16. The overall noise increase over existing conditionswithin Segment #429-152, is predicted to be an average of 5.2 dB(A) with the greatest increase at a residence being 9.3 dB(A). Neither of these two values represent a substantial noise increase (ie., greater than 15. 0 dB(A)).

To mitigate for these impacts, several noise barriers were evaluated. The barrier evaluations analyzed several dimension options using the FDOT acoustic feasibility and reasonableness criteria in addition to the established CFX cost reasonableness standards for abatement measures. After careful consideration of all options, CFX is recommending further evaluation of the three noise barrier options summarized below in **Table 5.**

Table 5: Noise Barrier Options Recommended for Further Evaluation (Project #429-152)

Barrier Option	Barrier Height (feet)	Barrier Length (feet)	Approx. Barrier Location (Roadway Stationing)	Number of Impacted Sites	Number of Benefited Sites *1	Noise Reduction dB(A) *2 Average (Max)	Total Estimated Cost *3	Cost per Benefited Receptor
Noise Barrier 6: Option 4 Combo *4	14 (shoulder)	2,556	Sta. 1132+00 to 1158+00	25	39	6.9 (10.3)	$1,384,200	$ 35,492
	22 (ROW)	516	Sta. 1131+15 to 1134+00					
Noise Barrier 7: Option 1	14 (shoulder)	2,162	Sta. 160+00 to 181+80	23	23	6.3 (8.0)	$ 908,040	$ 33,631
Noise Barrier 8: Option 2	8 (shoulder)	1,760	Sta. 602+00 to 210+20	15	8	5.2 (5.4)	$ 422,400	$ 52,800

*1 = Minimum of 5.0 dB(A) required to be considered benefited by noise barrier.
*2 = FDOT Noise Reduction Design Goal is 7.0 dB(A) at a minimum of 1 benefited receptor.
*3 = Based on FDOT Statewide average of $30 per square foot.
*4 = 8ft on bridge structure

Noise barriers 1 thru 5 are currently under evaluation for project segment 429-154. The results of the barrier analyses will be incorporated into this NSR at a later date, but prior to the project's public meeting.

Noise barriers 11 thru 18 are currently under evaluation for project segment 429-153. The results of the barrier analyses will be incorporated into this NSR at a later date, but prior to the project's public meeting.

5.0 CONSTRUCTION NOISE AND VIBRATION IMPACTS

The existing residential and institutional land uses within the limits of this project are considered noise and vibration sensitive. Construction of the proposed roadway improvements is not expected to have any significant noise or vibration impacts. It is anticipated that the application of the *FDOT Standard Specifications for Road and Bridge Construction*[10] will minimize or eliminate most of the potential short-term construction noise and vibration impacts.

Should any noise or vibration issue arise during construction, the Project Engineer, in concert with the CFX Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

6.0 COMMUNITY COORDINATION

6.1 Public Meetings

Prior to making any final decisions on the proposed noise walls, CFX will hold a Sound Wall Information Meeting (SWIM) for each of the three project segments. The proposed barriers, along with other pertinent project construction-related information, will be presented. As part of the SWIM, CFX will also directly solicit the opinions, by conducting a survey, of the property owners and tenants/renters found to be benefited by the proposed noise walls, as identified in the report.

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7.0 REFERENCES

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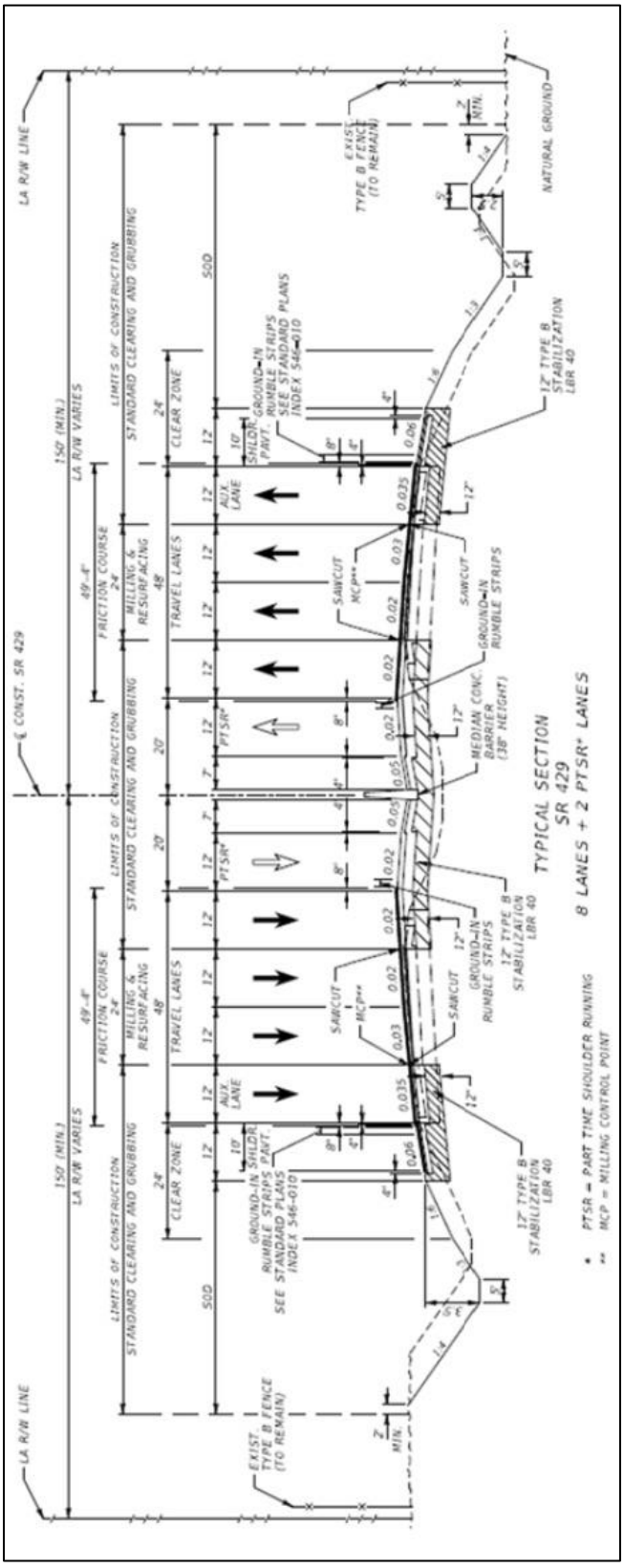
Appendix A:
Typical Sections


TYPICAL SECTION
SR 429
8 LANES + 2 PTSR* LANES
* PTSR = PART TIME SHOULDER RUNNING
** MCP = MILLING CONTROL POINT
℄ CONST. SR 429
LA R/W LINE
150' (MIN.)
LA R/W VARIES
49'-4"
FRICTION COURSE
24'
MILLING & RESURFACING
48'
TRAVEL LANES
12'
AUX. LANE
10' SHLDR. PAVT.
CLEAR ZONE
24'
LIMITS OF CONSTRUCTION
STANDARD CLEARING AND GRUBBING
SOD
PTSR*
SAWCUT MCP**
GROUND-IN RUMBLE STRIPS SEE STANDARD PLANS INDEX 546-010
12" TYPE B STABILIZATION LBR 40
12" MEDIAN CONC. BARRIER (38" HEIGHT)
EXIST. TYPE B FENCE (TO REMAIN)
NATURAL GROUND
2' MIN.

Appendix B:
Noise Study Traffic Data

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: **SR 429 Mainline**

Data (Directional)	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**			
Year	2018	2045	2045			
Number of Lanes/**Direction**	2	2	2	3	4	5
LOS C Peak Hour Directional Volume *1	3020	3020	3020	4580	6080	7680
Posted Speed	70	70	70	70	70	70
D%*2	47	47	47	47	47	47
Tpeak (DHV%)*3	7.0	7.0	7.0	7.0	7.0	7.0
MT(DHV%)*3	4.31	4.31	4.31	4.31	4.31	4.31
HT (DHV%)*3	2.69	2.69	2.69	2.69	2.69	2.69
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = Volumes provided by Dewberry Engineering, 3/13/2020 and based on FDOT Generalized LOS Tables

*2 = SR 429 Widening Program Design Traffic Analysis, CDM Smith. October 23, 2019

*3 = Axel Counts for AVI Data through the Forest Lake Toll Plaza - 3/8/19 to 3/14/19

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: **SR 429 Slip Ramps at Stoneybrook Pkwy S. of CR 535 (#429-154)**

	NB ON fr Stoneybrook EB (Ramp C)			SB OFF to Stoneybrook WB (Ramp D)		
Data	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2018	2045	2045	2018	2045	2045
Number of Lanes	n/a	n/a	1	n/a	n/a	1
Demand Peak Hour Directional Volume *1	n/a	n/a	625	n/a	n/a	760
Posted or Design Speed	n/a	n/a	45	n/a	n/a	45
Tpeak (DHV%)*2	n/a	n/a	7.0	n/a	n/a	7.0
MT(DHV%)*2	n/a	n/a	4.3	n/a	n/a	4.3
HT (DHV%)*2	n/a	n/a	2.7	n/a	n/a	2.7
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = SR 429 Widening Program Design Traffic Analysis, CDM Smith. October 23, 2019

*2 = Axel Counts for AVI Data through the Forest Lake Toll Plaza - 3/8/19 to 3/14/19

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: SR 429 Ramps at CR 535/Winter Garden Vineland

	NB/EB OFF to CR 535 via Stoneybrook (Ramp B)			SB/WB ON fr CR 535 via Stoneybrook (Ramp A)			NB/EB ON fr CR 535 via Stoneybrook (Ramp C)			SB/WB OFF to CR 535 via Stoneybrook (Ramp D)		
Data	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2018	2045	2045	2018	2045	2045	2018	2045	2045	2018	2045	2045
Number of Lanes	1	1	1	1	1	1	2	2	2	1	1	1
Demand Peak Hour Directional Volume *1	453	1075	1075	359	880	880	1157	1460	1460	1165	1785	1785
Posted or Design Speed	35	35	35	50	50	50	35	35	35	35	35	35
Tpeak (DHV%)*2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
MT(DHV%)*2	4.31	4.3	4.3	4.31	4.3	4.3	4.31	4.3	4.3	4.31	4.3	4.3
HT (DHV%)*2	2.69	2.7	2.7	2.69	2.7	2.7	2.69	2.7	2.7	2.69	2.7	2.7
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = SR 429 Widening Program Design Traffic Analysis, CDM Smith. October 23, 2019

*2 = Axel Counts for AVI Data through the Forest Lake Toll Plaza - 3/8/19 to 3/14/19

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: SR 429 Ramps at Turnpike (#429-152)

	NB OFF to Turnpike EB (Ramp B)			SB ON fr Turnpike (Ramp D)		
Data	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2018	2045	2045	2018	2045	2045
Number of Lanes	1	1	1	1	1	1
Demand Peak Hour Directional Volume *1	1696	2690	2690	1686	4030	4030
Posted or Design Speed	50	50	50	50	50	50
Tpeak (DHV%)*2	7.0	7.0	7.0	7.0	7.0	7.0
MT(DHV%)*2	4.31	4.3	4.3	4.31	4.3	4.3
HT (DHV%)*2	2.69	2.7	2.7	2.69	2.7	2.7
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = SR 429 Widening Program Design Traffic Analysis, CDM Smith. October 23, 2019

*2 = Axel Counts for AVI Data through the Forest Lake Toll Plaza - 3/8/19 to 3/14/19

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: SR 429 Ramps at SR 438 (Plant St./Franklin St.) (#429-152)

	NB OFF (Ramp A)			NB ON (Ramp D)			SB OFF (Ramp C)			SB ON (Ramp B)		
Data	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2018	2045	2045	2018	2045	2045	2018	2045	2045	2018	2045	2045
Number of Lanes	2	2	2	1	1	1	1	1	1	1	1	1
Demand Peak Hour Directional Volume *1	575	1405	1405	287	605	605	250	740	740	489	1150	1150
Posted or Design Speed	35	35	35	50	50	50	50	50	50	25	25	25
Tpeak (DHV%)*2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
MT(DHV%)*2	4.31	4.3	4.3	4.31	4.3	4.3	4.31	4.3	4.3	4.31	4.3	4.3
HT (DHV%)*2	2.69	2.7	2.7	2.69	2.7	2.7	2.69	2.7	2.7	2.69	2.7	2.7
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = SR 429 Widening Program Design Traffic Analysis, CDM Smith. October 23, 2019

*2 = Axel Counts for AVI Data through the Forest Lake Toll Plaza - 3/8/19 to 3/14/19

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: SR 429 Ramps at Clarcona-Ocoee Rd (#429-152 & 153)

	NB OFF (Ramp F)			NB ON (Ramp G)			SB OFF (Ramp H)			SB ON (Ramp E)		
Data	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2018	2045	2045	2018	2045	2045	2018	2045	2045	2018	2045	2045
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Demand Peak Hour Directional Volume *1	549	1170	1170	123	325	325	140	270	270	664	1430	1430
Posted or Design Speed	35	35	35	50	50	50	50	50	50	35	35	35
Tpeak (DHV%)*2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
MT(DHV%)*2	4.31	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
HT (DHV%)*2	2.69	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = SR 429 Widening Program Design Traffic Analysis, CDM Smith. October 23, 2019

*2 = Axel Counts for AVI Data through the Forest Lake Toll Plaza - 3/8/19 to 3/14/19

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: SR 429 Ramps at Ocoee Apopka Rd (CR 437) (#429-153)

	NB OFF (Ramp B)			NB ON (Ramp C)			SB OFF (Ramp D)			SB ON (Ramp A)		
Data	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2018	2045	2045	2018	2045	2045	2018	2045	2045	2018	2045	2045
Number of Lanes	1	1	1	2	2	2	2	2	2	1	1	1
Demand Peak Hour Directional Volume *1	282	355	355	95	200	200	101	245	245	292	290	290
Posted or Design Speed	50	50	50	35	35	35	35	35	35	50	50	50
Tpeak (DHV%)*2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
MT(DHV%)*2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
HT (DHV%)*2	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = SR 429 Widening Program Design Traffic Analysis, CDM Smith. October 23, 2019

*2 = Axel Counts for AVI Data through the Forest Lake Toll Plaza - 3/8/19 to 3/14/19

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: SR 429 Ramps at SR 414 Ramps (#429-153)

	NB OFF to EB 414			SB OFF to EB 414			SB ON fr WB 414		
Data	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2018	2045	2045	2018	2045	2045	2018	2045	2045
Number of Lanes	2	2	2	2	2	2	2	2	2
Demand Peak Hour Directional Volume *1	1622	2535	2535	956	2480	2480	1743	3095	3095
Posted or Design Speed	50	50	50	50	50	50	50	50	50
Tpeak (DHV%)*2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
MT(DHV%)*2	4.31	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
HT (DHV%)*2	2.69	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = SR 429 Widening Program Design Traffic Analysis, CDM Smith. October 23, 2019

*2 = Axel Counts for AVI Data through the Forest Lake Toll Plaza - 3/8/19 to 3/14/19

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: Tilden Rd (#429-154)

Data	Existing Facility	No-Build (Design Year)	Build (Design Year)
Year	2018	2045	2045
Total Number of Lanes	2	2	2
LOS C Peak Hour 2-Way Volume *1	1359	1359	1359
Posted Speed	45	45	45
Tpeak (DHV%)*2	1.9	1.9	1.9
MT(DHV%)*2	n/a	n/a	n/a
HT (DHV%)*2	n/a	n/a	n/a
Buses (DHV%)	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a

Data Sources:

*1 = 2012 FDOT Quality/Level of Service Handbook:Table 4: Generalized Peak Hour 2-Way Volumes for Florida's Urbanized Areas

*2 = Portable Traffic Monitoring Site: 758177. FDOT Traffic Online .

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: Stoneybrook W. Parkway (#429-154)

	SB 1-way (W. of SR 429)			NB 1-way (E of SR 429)			2-Way Segment		
Data	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2018	2045	2045	2018	2045	2045	2018	2045	2045
Number of Lanes/**Direction**	2	2	2	2	2	2	2	2	2
LOS C Peak Hour Directional Volume *[1]	2063	2063	2063	2063	2063	2063	3078	3078	3078
Posted Speed	45	45	45	45	45	45	45	45	45
Tpeak (DHV%)*[2]	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
MT(DHV%)*[2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
HT (DHV%)*[2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Buses (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Data Sources:

*1 = 2012 FDOT Quality/Level of Service Handbook: 1-Way Pair: Table 7: Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas; 2-Way Segment: Table 4:Generalized Peak Hour Two-Way Volumes for Florida's Urbanized Areas.

*2 = Portable Traffic Monitoring Site: 758385 & 758075. FDOT Traffic Online .

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: **Winter Garden-Vineland Rd (CR 535) S. of SR 429 (#429-154)**

Data	Existing Facility	No-Build (Design Year)	Build (Design Year)
Year	2018	2045	2045
Number of Lanes/**Direction**	2	2	2
LOS C Peak Hour Directional Volume *[1]	1719	1719	1719
Posted Speed	40	40	40
Tpeak (DHV%)*[2]	2.1	2.1	2.1
MT(DHV%)*[2]	n/a	n/a	n/a
HT (DHV%)*[2]	n/a	n/a	n/a
Buses (DHV%)	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a

Data Sources:

*1 = 2012 FDOT Quality/Level of Service Handbook:Table 7: Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas

*2 = Portable Traffic Monitoring Site: 758330. FDOT Traffic Online .

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: **Windermere Rd W. of SR 429 (#429-154)**

Data	Existing Facility	No-Build (Design Year)	Build (Design Year)
Year	2018	2045	2045
Total Number of Lanes	2	2	2
LOS C Peak Hour 2-Way Volume *1	1359	1359	1359
Posted Speed	35	35	35
Tpeak (DHV%)*2	1.9	1.9	1.9
MT(DHV%)*2	n/a	n/a	n/a
HT (DHV%)*2	n/a	n/a	n/a
Buses (DHV%)	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a

Data Sources:

*1 = 2012 FDOT Quality/Level of Service Handbook:Table 4: Generalized Peak Hour 2-Way Volumes for Florida's Urbanized Areas

*2 = Portable Traffic Monitoring Site: 758075. FDOT Traffic Online .

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: **W. Franklin St. (SR 438) E. of SR 429 (#429-152)**

Data	Existing Facility	No-Build (Design Year)	Build (Design Year)
Year	2018	2045	2045
Total Number of Lanes	2	2	2
LOS C Peak Hour 2-Way Volume *1	660	660	660
Posted Speed	35	35	35
Tpeak (DHV%)*2	5.3	5.3	5.3
MT(DHV%)*2	3.73	3.73	3.73
HT (DHV%)*2	1.57	1.57	1.57
Buses (DHV%)	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a

Data Sources:

*1 = 2012 FDOT Quality/Level of Service Handbook:Table 4: Generalized Peak Hour 2-Way Volumes for Florida's Urbanized Areas

*2 = Portable Traffic Monitoring Site: 750662. FDOT Traffic Online .

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: Clarcona Ocoee Rd E. of SR 429 (#429-152 & 153)

Data	Existing Facility	No-Build (Design Year)	Build (Design Year)
Year	2018	2045	2045
Number of **Lanes/Direction**	2	2	2
LOS C Peak Hour Directional Volume *1	1719	1719	1719
Posted Speed	45	45	45
Tpeak (DHV%)*2	1.9	1.9	1.9
MT(DHV%)*2	n/a	n/a	n/a
HT (DHV%)*2	n/a	n/a	n/a
Buses (DHV%)	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a

Data Sources:

*1 = 2012 FDOT Quality/Level of Service Handbook:Table 7: Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas

*2 = Portable Traffic Monitoring Site: 758390. FDOT Traffic Online .

TRAFFIC DATA FOR NOISE STUDIES

Project Description: SR 429 from Tilden Rd to SR 429/SR 414 Interchange

CFX Project #: 429-154; 429-152; 429-153

Segment Description: Ocoee Apopka Rd (CR 437A) SW of SR 429 (#429-153)

Data	Existing Facility	No-Build (Design Year)	Build (Design Year)
Year	2018	2045	2045
Total Number of Lanes	2	2	2
LOS C Peak Hour 2-Way Volume *1	1359	1359	1359
Posted Speed	45	45	45
Tpeak (DHV%)*2	1.9	1.9	1.9
MT(DHV%)*2	n/a	n/a	n/a
HT (DHV%)*2	n/a	n/a	n/a
Buses (DHV%)	n/a	n/a	n/a
Motorcycles (DHV%)	n/a	n/a	n/a

Data Sources:

*1 = 2012 FDOT Quality/Level of Service Handbook:Table 4: Generalized Peak Hour 2-Way Volumes for Florida's Urbanized Areas

*2 = Portable Traffic Monitoring Site: 7552000. FDOT Traffic Online .

Appendix C:
Noise Impact Comparison Matrix

Project Segment #429-154 Receptors– Pages C2-1 thru C2-7
Project Segment #429-152 Receptors – Pages C2-7 thru C2-13
Project Segment # 429-153 Receptors – Pages C2-13 thru C2-20

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
PROJECT SEGMENT #429-154							
NSA 1: (South) - Illustrated on Page D1-1 and D1-2 - Appendix D							
1-1	1	66.0	67.6	67.8	68.3	0.7	*YES*
1-2	1	66.0	65.6	65.8	66.9	1.3	*YES*
1-3	1	66.0	65.5	65.6	67.0	1.5	*YES*
1-4	1	66.0	65.4	65.5	67.2	1.8	*YES*
1-5	1	66.0	65.1	65.2	67.1	2.0	*YES*
1-6	1	66.0	62.1	61.9	64.2	2.1	-
1-7	15	66.0	65.8	65.9	68.0	2.2	*YES*
1-8	1	66.0	66.0	65.8	68.5	2.5	*YES*
1-9	1	66.0	66.1	65.8	68.6	2.5	*YES*
1-10	1	66.0	66.1	65.8	68.6	2.5	*YES*
1-11	1	66.0	66.2	66.0	68.6	2.4	*YES*
1-12	1	66.0	66.1	65.7	68.5	2.4	*YES*
1-13	1	66.0	65.8	65.2	68.1	2.3	*YES*
1-14	1	66.0	65.1	64.3	67.2	2.1	*YES*
1-15	2	66.0	65.2	65.0	67.6	2.4	*YES*
1-16	2	66.0	65.0	64.6	67.5	2.5	*YES*
1-17	2	66.0	65.1	64.6	67.7	2.6	*YES*
1-18	1	66.0	64.8	64.6	67.0	2.2	*YES*
1-19	1	66.0	63.1	63.0	65.4	2.3	-
1-20	2	66.0	63.5	62.9	66.0	2.5	*YES*
1-21	2	66.0	63.7	62.7	66.1	2.4	*YES*
1-22	1	66.0	64.9	64.1	67.3	2.4	*YES*
1-23	1	66.0	64.5	64.3	67.1	2.6	*YES*
1-24	1	66.0	64.1	64.1	65.7	1.6	-
1-25	1	66.0	64.6	64.4	66.5	1.9	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
1-26	1	66.0	62.9	62.6	65.3	2.4	-
1-27	1	66.0	63.1	62.7	65.4	2.3	-
1-28	1	66.0	63.3	62.6	65.7	2.4	-
1-29	2	66.0	63.0	62.4	65.5	2.5	-
1-30	1	66.0	64.3	64.1	66.1	1.8	*YES*
1-31	1	66.0	62.6	62.3	65.0	2.4	-
1-32	1	66.0	63.0	62.8	65.4	2.4	-
1-33	1	66.0	62.4	62.6	65.0	2.6	-
1-34	2	66.0	62.7	62.5	65.0	2.3	-
1-35	1	66.0	63.2	62.9	65.9	2.7	-
1-36	1	66.0	61.0	60.6	63.7	2.7	-
1-37	1	66.0	64.2	64.3	65.7	1.5	-
1-38	1	66.0	64.1	64.0	65.9	1.8	-
1-39	1	66.0	62.8	62.7	65.0	2.2	-
1-40	1	66.0	63.1	63.2	65.5	2.4	-
1-41	1	66.0	63.8	63.9	65.5	1.7	-
1-42	1	66.0	62.1	62.2	64.6	2.5	-
1-43	1	66.0	62.8	63.2	65.4	2.6	-
1-44	1	66.0	62.2	62.6	65.0	2.8	-
1-45	2	66.0	62.0	61.6	64.9	2.9	-
1-46	4	66.0	63.4	63.2	66.6	3.2	*YES*
1-47	1	66.0	63.6	63.7	65.2	1.6	-
1-48	1	66.0	62.7	62.8	64.8	2.1	-
1-49	1	66.0	62.8	62.9	65.3	2.5	-
1-50	1	66.0	62.9	62.2	65.0	2.1	-
1-51	1	66.0	63.0	62.1	65.0	2.0	-
1-52	1	66.0	62.2	61.3	64.6	2.4	-
1-53	1	66.0	62.8	61.9	65.2	2.4	-

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
1-54	1	66.0	61.5	60.7	64.2	2.7	-
NSA Summary (Totals/Averages)	***79***		***63.9***	***63.7***	***66.2***	***2.3***	***46***
NSA 2: (North) - Illustrated on Page D1-2 and D1-3 - Appendix D							
2-1	7	66.0	62.9	62.9	65.5	2.6	-
2-1.1	1	66.0	63.8	63.8	66.5	2.7	*YES*
2-1.2	1	66.0	63.5	63.5	66.1	2.6	*YES*
2-1.3	1	66.0	63.0	63.0	65.7	2.7	-
2-1.4	1	66.0	62.7	62.7	65.4	2.7	-
2-1.4	1	66.0	62.8	62.8	65.5	2.7	-
2-1.6	1	66.0	62.5	62.5	65.1	2.6	-
2-1.7	1	66.0	62.3	62.3	65.0	2.7	-
2-1.8	1	66.0	62.6	62.6	65.1	2.5	-
2-1.9	1	66.0	62.5	62.5	64.8	2.3	-
2-2	3	66.0	63.9	63.9	66.7	2.8	*YES*
2-2.1	1	66.0	63.6	63.6	66.3	2.7	*YES*
2-2.2	1	66.0	63.3	63.4	66.0	2.7	*YES*
2-3	4	66.0	65.2	65.2	68.3	3.1	*YES*
2-4	1	66.0	65.7	65.7	68.8	3.1	*YES*
2-5	1	66.0	64.9	64.9	67.9	3.0	*YES*
2-6	1	66.0	63.8	63.8	67.0	3.2	*YES*
2-7	1	66.0	62.0	62.0	65.1	3.1	-
2-8	1	66.0	63.3	63.3	66.3	3.0	*YES*
2-9	1	66.0	64.3	64.3	67.3	3.0	*YES*
2-10	1	66.0	66.0	66.0	68.9	2.9	*YES*
2-11	7	66.0	68.6	68.6	71.3	2.7	*YES*
2-12	7	66.0	69.5	69.5	71.9	2.4	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
2-13	6	66.0	69.2	69.2	71.9	2.7	*YES*
2-14	5	66.0	69.8	69.8	72.6	2.8	*YES*
2-15	1	66.0	68.9	69.0	72.0	3.1	*YES*
2-16	1	66.0	66.6	66.6	69.8	3.2	*YES*
2-17	1	66.0	65.1	65.1	68.6	3.5	*YES*
2-18	1	66.0	63.9	64.0	67.8	3.9	*YES*
2-19	1	66.0	61.4	61.5	64.7	3.3	-
2-20	6	66.0	63.7	63.7	66.6	2.9	*YES*
2-21	7	66.0	63.7	63.7	66.5	2.8	*YES*
2-22	5	66.0	63.9	63.9	66.8	2.9	*YES*
2-23	1	66.0	59.3	59.4	62.4	3.1	-
2-24	1	66.0	64.6	64.6	67.6	3.0	*YES*
2-25	1	66.0	63.4	63.4	66.5	3.1	*YES*
2-26	1	66.0	63.1	63.1	66.0	2.9	*YES*
2-27	1	66.0	61.1	61.1	64.1	3.0	-
2-28	1	66.0	61.5	61.5	64.4	2.9	-
2-29	1	66.0	60.1	60.1	63.2	3.1	-
2-30 Cat C	1	66.0	68.6	68.6	71.4	2.8	*YES*
2-31 Cat C	1	66.0	64.9	64.9	66.6	1.7	*YES*
NSA Summary (Totals/Averages)	***89***		***64.2***	***64.2***	***67.0***	***2.9***	***69***
NSA 3: (South) - Illustrated on Page D1-4 - Appendix D							
3-1	1	66.0	60.5	60.7	63.2	2.7	-
NSA Summary (Totals/Averages)	***1***		***60.5***	***60.7***	***63.2***	***2.7***	***0***
NSA 4: (South) - Illustrated on Page D1-4 thru D1-6 - Appendix D							
4-1	1	66.0	64.2	64.4	68.4	4.2	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
4-2	1	66.0	63.2	63.4	67.3	4.1	*YES*
4-3	1	66.0	62.0	62.3	66.5	4.5	*YES*
4-4	1	66.0	61.0	61.2	65.7	4.7	-
4-5	1	66.0	60.4	60.7	65.2	4.8	-
4-6	1	66.0	62.1	62.4	66.5	4.4	*YES*
4-7	1	66.0	60.4	60.7	65.0	4.6	-
4-8	1	66.0	59.6	59.9	64.3	4.7	-
4-9	1	66.0	60.1	60.4	64.9	4.8	-
4-10	1	66.0	60.2	60.6	65.0	4.8	-
4-11	1	66.0	61.2	61.6	65.8	4.6	-
4-12	1	66.0	62.8	63.2	67.1	4.3	*YES*
4-13	1	66.0	63.1	63.5	67.1	4.0	*YES*
4-14	1	66.0	62.4	62.9	66.4	4.0	*YES*
4-15	1	66.0	61.7	62.2	65.8	4.1	-
4-16	1	66.0	70.1	70.5	72.1	2.0	*YES*
4-17	1	66.0	67.6	68.1	70.2	2.6	*YES*
4-18	1	66.0	68.2	68.6	70.9	2.7	*YES*
4-19	1	66.0	67.4	67.9	70.5	3.1	*YES*
4-20	1	66.0	66.2	66.6	69.5	3.3	*YES*
4-21	1	66.0	65.0	65.4	68.4	3.4	*YES*
4-22	1	66.0	62.5	62.9	66.2	3.7	*YES*
4-23	1	66.0	63.2	63.6	66.9	3.7	*YES*
4-24	1	66.0	62.7	63.1	66.5	3.8	*YES*
4-25	1	66.0	62.4	62.8	66.3	3.9	*YES*
4-26	1	66.0	61.5	61.9	65.4	3.9	-
4-27	1	66.0	61.8	62.2	65.7	3.9	-
4-28	1	66.0	62.2	62.5	66.0	3.8	*YES*
4-29	1	66.0	62.2	62.5	65.9	3.7	-

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
4-30	1	66.0	62.2	62.5	66.0	3.8	*YES*
4-31	1	66.0	62.0	62.3	65.7	3.7	-
4-32	1	66.0	61.6	61.9	65.5	3.9	-
4-33	1	66.0	62.5	62.8	66.1	3.6	*YES*
4-34	1	66.0	63.1	63.4	66.7	3.6	*YES*
4-35	1	66.0	63.9	64.1	67.4	3.5	*YES*
4-36	1	66.0	64.8	65.0	68.2	3.4	*YES*
4-37	1	66.0	64.9	65.1	67.8	2.9	*YES*
4-38	1	66.0	67.8	67.9	70.6	2.8	*YES*
4-39	1	66.0	68.1	68.2	71.1	3.0	*YES*
4-40	1	66.0	69.6	69.7	72.0	2.4	*YES*
4-41	1	66.0	62.8	62.9	66.8	4.0	*YES*
4-42	1	66.0	61.9	62.1	66.0	4.1	*YES*
4-43	1	66.0	70.3	70.3	71.8	1.5	*YES*
4-44	1	66.0	66.2	66.2	68.6	2.4	*YES*
4-45	1	66.0	63.8	63.9	66.7	2.9	*YES*
4-46	1	66.0	62.9	62.9	66.3	3.4	*YES*
4-47	1	66.0	62.2	62.2	65.8	3.6	-
4-48	1	66.0	61.3	61.4	65.1	3.8	-
NSA Summary (Totals/Averages)	***48***		***63.5***	***63.8***	***67.2***	***3.7***	***33***
NSA 5: (West) - Illustrated on Page D1-5 - Appendix D							
5-1	1	66.0	66.8	66.8	69.6	2.8	*YES*
5-2	1	66.0	63.4	63.5	66.8	3.4	*YES*
5-3	1	66.0	60.8	60.8	64.7	3.9	-
NSA Summary (Totals/Averages)	***3***		***63.7***	***63.7***	***67.0***	***3.4***	***2***

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
NSA 6: (East) - Illustrated on Page D1-5 thru D1-6 - Appendix D							
6-1	1	66.0	66.8	66.8	73.2	6.4	*YES*
6-2	10	66.0	67.1	67.1	72.3	5.2	*YES*
6-3	1	66.0	64.4	64.4	70.4	6.0	*YES*
6-4	1	66.0	68.7	68.7	71.6	2.9	*YES*
6-5	1	66.0	66.4	66.4	70.0	3.6	*YES*
6-6	1	66.0	66.3	66.3	69.4	3.1	*YES*
6-7	1	66.0	65.6	65.6	68.8	3.2	*YES*
6-8	1	66.0	65.8	65.8	68.5	2.7	*YES*
6-9	1	66.0	61.9	61.9	64.4	2.5	-
6-10	1	66.0	61.0	61.0	65.3	4.3	-
6-11	1	66.0	59.2	59.2	63.2	4.0	-
6-12	1	66.0	61.3	61.4	65.9	4.6	-
6-13	1	66.0	61.4	61.4	65.7	4.3	-
6-14	1	66.0	61.4	61.4	65.7	4.3	-
6-15	1	66.0	61.7	61.7	65.9	4.2	-
6-16	1	66.0	61.6	61.6	65.9	4.3	-
6-17	1	66.0	61.5	61.5	65.2	3.7	-
6-18	1	66.0	61.0	61.1	64.9	3.9	-
6-19	1	66.0	60.5	60.5	64.4	3.9	-
NSA Summary (Totals/Averages)	***28***		***63.3***	***63.4***	***67.4***	***4.1***	***17***
NSA 7: (West) - Illustrated on Page D1-5 thru D1-6 - Appendix D							
7-1	9	66.0	63.8	63.8	72.0	8.2	*YES*
7-2	1	66.0	62.4	62.4	70.4	8.0	*YES*
7-3	1	66.0	61.9	61.9	70.6	8.7	*YES*
7-4	1	66.0	61.1	61.1	68.8	7.7	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
7-5	1	66.0	61.0	61.0	69.7	8.7	*YES*
7-6	1	66.0	60.2	60.2	68.8	8.6	*YES*
7-7	5	66.0	60.8	60.8	68.3	7.5	*YES*
7-8	1	66.0	60.8	60.8	68.7	7.9	*YES*
7-9	1	66.0	60.8	60.8	68.5	7.7	*YES*
7-10	1	66.0	59.9	59.9	67.1	7.2	*YES*
7-11	1	66.0	58.1	58.1	65.9	7.8	-
7-12	1	66.0	58.4	58.4	66.2	7.8	*YES*
7-13	1	66.0	56.4	56.5	63.7	7.3	-
7-14	1	66.0	57.0	57.0	65.1	8.1	-
7-15	1	66.0	59.2	59.2	67.3	8.1	*YES*
7-16	1	66.0	59.4	59.4	67.8	8.4	*YES*
7-17	1	66.0	57.6	57.6	65.7	8.1	-
7-18	1	66.0	57.7	57.7	65.8	8.1	-
7-19	1	66.0	57.8	57.8	66.0	8.2	*YES*
7-20	1	66.0	56.3	56.3	64.4	8.1	-
7-21	1	66.0	58.5	58.5	66.8	8.3	*YES*
7-22	1	66.0	58.0	58.0	66.5	8.5	*YES*
7-23	1	66.0	57.1	57.1	64.8	7.7	-
7-24	1	66.0	56.5	56.5	65.0	8.5	-
7-25	1	66.0	57.2	57.2	65.5	8.3	-
7-26	1	66.0	55.2	55.2	63.2	8.0	-
7-27	1	66.0	57.7	57.7	65.8	8.1	-
7-28	1	66.0	57.6	57.6	66.0	8.4	*YES*
7-29	1	66.0	60.7	60.7	67.5	6.8	*YES*
NSA Summary (Totals/Averages)	***41***		***58.9***	***58.9***	***67.0***	***8.0***	***30***

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
PROJECT SEGMENT #429-152							
NSA 8: (East) - Illustrated on Page D2-2 and D2-3 - Appendix D							
8-1 Cat. E	1	71.0	65.5	65.5	68.0	2.5	-
8-2 Cat. C	1	66.0	61.2	61.7	63.8	2.6	-
8-3	1	66.0	64.6	64.9	65.4	0.8	-
NSA Summary (Totals/Averages)	***3***		***63.8***	***64.0***	***65.7***	***2.0***	***0***
NSA 9: (West) - Illustrated on Page D2-2 - Appendix D							
9-1	1	66.0	65.1	65.1	71.6	6.5	*YES*
9-2	1	66.0	66.5	66.5	72.3	5.8	*YES*
9-3	1	66.0	65.7	65.7	71.5	5.8	*YES*
9-4	1	66.0	64.9	64.9	70.8	5.9	*YES*
9-5	1	66.0	64.1	64.2	70.2	6.1	*YES*
9-6	1	66.0	63.3	63.4	69.4	6.1	*YES*
9-7	1	66.0	62.4	62.5	68.1	5.7	*YES*
9-8	1	66.0	62.1	62.3	67.8	5.7	*YES*
9-9	1	66.0	61.9	62.1	67.0	5.1	*YES*
9-10	1	66.0	61.9	62.1	66.7	4.8	*YES*
9-11	1	66.0	62.0	62.2	66.4	4.4	*YES*
9-12	1	66.0	62.1	62.3	66.3	4.2	*YES*
9-13	1	66.0	62.1	62.4	65.9	3.8	-
9-14	1	66.0	62.1	62.5	65.8	3.7	-
9-15	1	66.0	61.9	62.3	65.6	3.7	-
9-16	1	66.0	63.8	63.8	70.2	6.4	*YES*
9-17	1	66.0	63.4	63.4	69.3	5.9	*YES*
9-18	1	66.0	62.8	62.9	68.4	5.6	*YES*
9-19	1	66.0	61.8	61.9	67.6	5.8	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
9-20	1	66.0	61.5	61.6	66.7	5.2	*YES*
9-21	1	66.0	61.4	61.6	66.5	5.1	*YES*
9-22	1	66.0	61.3	61.5	66.2	4.9	*YES*
9-23	1	66.0	61.1	61.3	65.9	4.8	-
9-24	1	66.0	61.0	61.2	65.7	4.7	-
9-25	1	66.0	61.1	61.4	65.4	4.3	-
9-26	1	66.0	60.8	61.1	65.4	4.6	-
9-27	1	66.0	60.7	61.2	65.0	4.3	-
9-28	1	66.0	62.3	62.2	68.9	6.6	*YES*
9-29	1	66.0	62.1	61.6	68.3	6.2	*YES*
9-30	1	66.0	61.3	61.1	67.4	6.1	*YES*
9-31	1	66.0	60.4	60.5	66.2	5.8	*YES*
9-32	1	66.0	58.2	58.4	63.4	5.2	-
9-33	1	66.0	59.2	59.3	64.8	5.6	-
9-34	1	66.0	61.1	61.0	67.8	6.7	*YES*
9-35	1	66.0	60.8	59.4	67.1	6.3	*YES*
9-36	1	66.0	58.8	58.9	64.9	6.1	
9-37	1	66.0	59.6	59.6	65.7	6.1	-
9-38	1	66.0	58.9	59.0	64.3	5.4	-
9-39	1	66.0	60.0	59.8	66.7	6.7	*YES*
9-40	1	66.0	59.5	57.7	65.9	6.4	-
9-41	1	66.0	57.7	57.8	63.8	6.1	-
9-42	1	66.0	58.7	58.6	64.8	6.1	-
9-43	1	66.0	58.3	58.5	63.5	5.2	-
9-44	1	66.0	58.9	58.7	65.6	6.7	-
9-45	1	66.0	58.4	56.4	64.8	6.4	-
9-46	1	66.0	56.7	56.8	62.8	6.1	-

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
9-47	1	66.0	57.7	57.7	63.8	6.1	-
9-48 (Cat C)	1	66.0	67.4	67.4	73.5	6.1	*YES*
9-49 (Cat C)	1	66.0	65.8	65.9	68.4	2.6	*YES*
NSA Summary (Totals/Averages)	**49**		**61.4**	**61.4**	**66.9**	**5.5**	**28**
NSA 10: (West) - Illustrated on Page D2-2 and D2-3 - Appendix D							
10-1 Cat C	1	66.0	65.3	66.4	68.6	3.3	*YES*
10-2 Cat C	1	66.0	61.5	62.3	65.9	4.4	-
10-3 Cat C	1	66.0	59.9	60.9	64.2	4.3	-
10-4 Cat C	1	66.0	59.9	61.5	63.5	3.6	-
10-5 Cat C	1	66.0	58.6	60.6	62.1	3.5	-
NSA Summary (Totals/Averages)	***5***		***61.0***	***62.3***	***64.9***	***3.8***	***1***
NSA 11: (East) - Illustrated on Page D2-6 - Appendix D							
11-1	2	66.0	66.8	66.9	72.6	5.8	*YES*
11-2	1	66.0	64.5	64.5	72.4	7.9	*YES*
11-3	2	66.0	63.3	63.4	71.2	7.9	*YES*
11-4	1	66.0	62.6	62.6	69.8	7.2	*YES*
11-5	1	66.0	62.8	62.8	68.6	5.8	*YES*
11-6	1	66.0	61.9	62.0	69.3	7.4	*YES*
11-7	1	66.0	61.3	61.5	68.5	7.2	*YES*
11-8	1	66.0	61.1	61.2	68.5	7.4	*YES*
11-9	1	66.0	61.3	61.4	68.2	6.9	*YES*
11-10	1	66.0	61.1	61.2	67.1	6.0	*YES*
11-11	2	66.0	60.7	60.8	68.1	7.4	*YES*
11-12	1	66.0	60.3	60.4	67.4	7.1	*YES*
11-13	1	66.0	60.7	60.8	67.1	6.4	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
11-14	2	66.0	60.1	60.3	67.1	7.0	*YES*
11-15	1	66.0	60.5	60.6	66.1	5.6	*YES*
11-16	1	66.0	59.5	59.6	66.2	6.7	*YES*
11-17	1	66.0	59.1	59.2	66.0	6.9	*YES*
11-18	1	66.0	59.0	59.1	66.1	7.1	*YES*
11-19	1	66.0	59.2	59.3	66.2	7.0	*YES*
11-21	1	66.0	59.2	59.4	65.7	6.5	-
11-22	3	66.0	58.3	58.4	65.5	7.2	-
NSA Summary (Totals/Averages)	***27***		***61.1***	***61.2***	***68.0***	***6.9***	***23***
NSA 12: (East) - Illustrated on Page D2-7 - Appendix D							
12-1	1	66.0	59.9	60.2	69.3	9.4	*YES*
12-2	1	66.0	59.6	59.9	68.7	9.1	*YES*
12-3	1	66.0	59.5	59.8	68.4	8.9	*YES*
12-4	1	66.0	59.6	59.9	68.1	8.5	*YES*
12-5	1	66.0	59.5	59.7	67.7	8.2	*YES*
12-6	1	66.0	59.5	59.8	67.5	8.0	*YES*
12-7	1	66.0	59.5	59.8	67.1	7.6	*YES*
12-8	1	66.0	59.4	59.7	67.0	7.6	*YES*
12-9	1	66.0	59.2	59.4	66.6	7.4	*YES*
12-10	1	66.0	59.0	59.3	66.3	7.3	*YES*
12-11	1	66.0	59.2	59.4	65.9	6.7	-
12-12	1	66.0	59.2	59.4	65.5	6.3	-
12-13	1	66.0	59.1	59.3	65.0	5.9	-
12-14	1	66.0	59.0	59.3	64.7	5.7	-
12-15	1	66.0	59.1	59.3	64.6	5.5	-
12-16	1	66.0	59.0	59.2	64.4	5.4	-

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
12-17	1	66.0	59.0	59.2	64.2	5.2	-
12-18	1	66.0	59.6	59.8	65.3	5.7	-
12-19	1	66.0	60.5	60.7	66.0	5.5	*YES*
12-20	1	66.0	61.4	61.7	65.5	4.1	-
12-21	1	66.0	61.6	61.9	65.6	4.0	-
12-22	1	66.0	62.1	62.3	65.5	3.4	-
12-23	1	66.0	62.3	62.5	65.5	3.2	-
12-24	1	66.0	62.5	62.7	65.5	3.0	-
12-25	1	66.0	62.6	62.8	65.5	2.9	-
12-26	1	66.0	62.6	62.8	65.6	3.0	-
12-27	1	66.0	62.6	62.8	65.6	3.0	-
12-28	1	66.0	62.9	63.1	65.8	2.9	-
12-29	1	66.0	62.9	63.1	65.6	2.7	-
12-30	1	66.0	62.9	63.1	65.8	2.9	-
12-31	1	66.0	63.0	63.2	66.2	3.2	*YES*
12-32	1	66.0	62.9	63.1	66.2	3.3	*YES*
12-33	1	66.0	63.1	63.3	66.5	3.4	*YES*
12-34	1	66.0	60.7	60.9	65.3	4.6	-
12-35	1	66.0	60.7	60.9	65.1	4.4	-
12-36	1	66.0	60.8	61.0	65.0	4.2	-
12-37	1	66.0	61.0	61.2	65.0	4.0	-
12-38	1	66.0	61.3	61.5	64.8	3.5	-
12-39	1	66.0	61.3	61.5	64.8	3.5	-
12-40	1	66.0	61.5	61.6	65.2	3.7	-
12-41	1	66.0	59.7	60.0	65.1	5.4	-
12-42	1	66.0	58.5	58.9	66.1	7.6	*YES*
12-43	1	66.0	58.2	58.5	65.6	7.4	-
12-44	1	66.0	58.4	58.7	65.1	6.7	-

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** *Red = Noise Level above NAC*				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
12-45	1	66.0	58.5	58.7	64.9	6.4	-
12-46	1	66.0	58.7	58.9	65.0	6.3	-
12-47	1	66.0	58.5	58.7	64.6	6.1	-
12-48	1	66.0	58.5	58.7	64.3	5.8	-
NSA Summary (Totals/Averages)	***48***		***60.4***	***60.7***	***65.8***	***5.4***	***15***
NSA 13: (West) - Illustrated on Page D2-7 - Appendix D							
13-1	1	66.0	62.4	62.8	66.3	3.9	*YES*
NSA Summary (Totals/Averages)	***1***		***62.4***	***62.8***	***66.3***	***3.9***	***1***
NSA 14: (East) - Illustrated on Page D2-7 and D2-8 - Appendix D							
14-1	1	66.0	63.8	64.2	66.6	2.8	*YES*
14-2	1	66.0	62.8	63.7	66.6	3.8	*YES*
14-3	1	66.0	62.7	62.9	66.3	3.6	*YES*
14-4	1	66.0	61.6	62.8	66.3	4.7	*YES*
14-5	1	66.0	61.0	61.7	65.1	4.1	-
14-6	1	66.0	61.2	61.0	64.9	3.7	-
14-7	1	66.0	60.8	60.6	65.3	4.5	-
14-8	1	66.0	60.5	60.9	64.7	4.2	-
14-9	1	66.0	60.0	60.6	64.2	4.2	-
14-10	1	66.0	59.5	60.0	63.4	3.9	-
14-11	1	66.0	59.7	59.5	63.2	3.5	-
NSA Summary (Totals/Averages)	***11***		***61.2***	***61.6***	***65.1***	***3.9***	***4***
NSA 15: (West) - Illustrated on Page D2-8 and D2-9 - Appendix D							
15-1	1	66.0	65.8	65.8	69.8	4.0	*YES*
15-2	1	66.0	61.7	61.7	66.2	4.5	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
15-3	1	66.0	60.8	60.8	66.1	5.3	*YES*
15-4	1	66.0	61.3	61.3	66.6	5.3	*YES*
15-5 Cat C	1	66.0	62.8	62.8	67.5	4.7	*YES*
15-6	1	66.0	65.0	65.0	70.3	5.3	*YES*
15-7	1	66.0	64.9	64.9	70.0	5.1	*YES*
15-8	1	66.0	59.5	59.5	64.9	5.4	-
15-9	1	66.0	60.9	60.9	66.0	5.1	*YES*
NSA Summary (Totals/Averages)	***9***		***62.5***	***62.5***	***67.5***	***5.0***	***8***
NSA 16: (East) - Illustrated on Page D2-8 thru D2-10 - Appendix D							
16-1	1	66.0	61.9	61.9	65.8	3.9	-
16-2	1	66.0	61.7	61.7	65.8	4.1	-
16-3	1	66.0	61.4	61.4	65.6	4.2	-
16-4	1	66.0	60.8	60.8	65.1	4.3	-
16-5	1	66.0	61.1	61.1	65.5	4.4	-
16-6	1	66.0	61.5	61.5	65.8	4.3	-
16-7	1	66.0	62.1	62.1	66.5	4.4	*YES*
16-8	1	66.0	62.3	62.3	66.9	4.6	*YES*
16-9	1	66.0	62.9	62.9	67.9	5.0	*YES*
16-10	1	66.0	63.2	63.2	68.5	5.3	*YES*
16-11	1	66.0	63.7	63.7	69.0	5.3	*YES*
16-12	1	66.0	66.0	66.0	70.9	4.9	*YES*
16-13	1	66.0	62.6	62.6	68.0	5.4	*YES*
16-14	1	66.0	59.4	59.4	64.2	4.8	-
16-15	1	66.0	59.1	59.1	64.3	5.2	-
16-16	1	66.0	59.4	59.4	64.7	5.3	-
16-17	1	66.0	60.3	60.3	65.8	5.5	-
16-18	1	66.0	59.6	59.6	65.0	5.4	-

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
NSA Summary (Totals/Averages)	***18***		***61.6***	***61.6***	***66.4***	***4.8***	***7***
NSA 17: (South) - Illustrated on Page D2-11 - Appendix D							
17-1 Cat C	1	66.0	58.3	58.4	64.3	6.0	-
17-2	1	66.0	59.8	60.4	65.2	5.4	-
17-3	1	66.0	58.0	58.6	62.9	4.9	-
NSA Summary (Totals/Averages)	***3***		***58.7***	***59.1***	***64.1***	***5.4***	***0***
PROJECT SEGMENT #429-153							
NSA 18: (East) - Illustrated on Page D3-1 and D3-2 - Appendix D							
18-1 Cat C	1	66.0	61.1	61.4	63.2	2.1	-
18-2 Cat C	1	66.0	59.6	60.0	62.2	2.6	-
18-3 Cat C	1	66.0	60.9	61.3	64.0	3.1	-
18-4 Cat C	1	66.0	59.3	59.6	62.8	3.5	-
18-5 Cat C	1	66.0	63.6	64.0	65.7	2.1	-
18-6 Cat C	1	66.0	60.7	61.0	63.8	3.1	-
NSA Summary (Totals/Averages)	***6***		***60.9***	***61.2***	***63.6***	***2.7***	***0***
NSA 19: (West) - Illustrated on Page D3-1 and D3-2 - Appendix D							
19-1	1	66.0	70.9	71.1	75.7	4.8	*YES*
19-2	1	66.0	70.0	70.1	75.0	5.0	*YES*
19-3	1	66.0	69.1	69.3	74.3	5.2	*YES*
19-4	1	66.0	68.3	68.5	73.6	5.3	*YES*
19-5	1	66.0	67.6	67.7	72.8	5.2	*YES*
19-6	1	66.0	67.0	67.1	72.2	5.2	*YES*
19-7	1	66.0	64.2	64.3	69.6	5.4	*YES*
19-8	1	66.0	63.7	63.9	69.2	5.5	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
19-9	1	66.0	63.3	63.5	68.8	5.5	*YES*
19-10	1	66.0	62.9	63.1	68.4	5.5	*YES*
19-11	1	66.0	62.4	62.6	68.0	5.6	*YES*
19-12	1	66.0	62.1	62.3	67.7	5.6	*YES*
19-13	1	66.0	61.4	61.6	67.0	5.6	*YES*
19-14	1	66.0	61.1	61.3	66.7	5.6	*YES*
19-15	1	66.0	60.9	61.0	66.4	5.5	*YES*
19-16	1	66.0	60.6	60.8	66.2	5.6	*YES*
19-17	1	66.0	60.4	60.6	66.0	5.6	*YES*
19-18	1	66.0	60.2	60.4	65.8	5.6	*YES*
19-19	1	66.0	63.1	63.3	68.9	5.8	*YES*
19-20	1	66.0	62.4	62.6	68.3	5.9	*YES*
19-21	1	66.0	62.0	62.2	67.8	5.8	*YES*
19-22	1	66.0	61.7	61.8	67.5	5.8	*YES*
19-23	1	66.0	61.1	61.3	66.9	5.8	*YES*
19-24	1	66.0	60.8	61.0	66.5	5.7	*YES*
19-25	1	66.0	60.3	60.5	66.0	5.7	*YES*
19-26	1	66.0	59.9	60.1	65.5	5.6	-
19-27	1	66.0	59.3	59.4	64.8	5.5	-
19-28	1	66.0	59.5	59.7	65.0	5.5	-
19-29	1	66.0	59.8	60.0	65.3	5.5	-
19-30	1	66.0	60.2	60.4	65.6	5.4	-
19-31	1	66.0	60.6	60.8	66.1	5.5	*YES*
19-32	1	66.0	61.1	61.3	66.6	5.5	*YES*
19-33	1	66.0	61.6	61.8	67.0	5.4	*YES*
19-34	1	66.0	59.1	59.4	65.1	6.0	-
19-35	1	66.0	59.9	60.2	66.2	6.3	*YES*
19-36	1	66.0	60.4	60.7	66.7	6.3	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
19-37	1	66.0	61.0	61.3	67.1	6.1	*YES*
19-38	1	66.0	61.6	61.8	67.5	5.9	*YES*
19-39	1	66.0	62.2	62.4	68.1	5.9	*YES*
19-40	1	66.0	62.7	63.0	68.4	5.7	*YES*
19-41	1	66.0	63.7	63.9	69.2	5.5	*YES*
19-42	1	66.0	64.3	64.5	69.8	5.5	*YES*
19-43	1	66.0	65.1	65.3	70.3	5.2	*YES*
19-44	1	66.0	65.9	66.1	70.8	4.9	*YES*
19-45	1	66.0	66.7	67.0	71.4	4.7	*YES*
19-46	1	66.0	67.6	67.8	72.0	4.4	*YES*
19-47 Cat C	1	66.0	68.0	68.3	72.4	4.4	*YES*
19-48 Cat C	1	66.0	62.5	62.8	66.3	3.8	*YES*
19-49 Cat C	1	66.0	64.4	64.8	67.0	2.6	*YES*
19-50 Cat C	1	66.0	64.1	64.4	67.1	3.0	*YES*
19-51 Cat C	1	66.0	64.0	64.1	67.4	3.4	*YES*
NSA Summary (Totals/Averages)	***51***		***63.0***	***63.2***	***68.3***	***5.3***	***44***
NSA 20: (East) - Illustrated on Page D3-2 - Appendix D							
20-1 Cat C	1	66.0	66.9	67.0	70.7	3.8	-
NSA Summary (Totals/Averages)	***1***		***66.9***	***67.0***	***70.7***	***3.8***	***1***
NSA 21: (East) - Illustrated on Page D3-2 and D3-3 - Appendix D							
21-1	3	66.0	67.1	67.1	72.8	5.7	*YES*
21-2	4	66.0	68.9	68.9	73.9	5.0	*YES*
21-3	1	66.0	68.3	68.3	73.4	5.1	*YES*
21-4	1	66.0	69.3	69.3	74.0	4.7	*YES*
21-5	1	66.0	64.9	64.9	69.4	4.5	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
21-6	1	66.0	63.5	63.5	69.4	5.9	*YES*
21-7	1	66.0	63.7	63.7	69.8	6.1	*YES*
21-8	1	66.0	62.9	62.9	67.9	5.0	*YES*
21-9	1	66.0	61.0	61.1	67.4	6.4	*YES*
21-10	1	66.0	61.5	61.5	67.9	6.4	*YES*
21-11	1	66.0	60.9	60.9	67.3	6.4	*YES*
21-12	1	66.0	63.1	63.1	69.1	6.0	*YES*
21-13	1	66.0	63.3	63.3	69.2	5.9	*YES*
21-14	1	66.0	62.4	62.4	68.2	5.8	*YES*
21-15	1	66.0	59.9	59.9	66.5	6.6	*YES*
21-16	1	66.0	59.7	59.7	66.3	6.6	*YES*
21-17	1	66.0	59.0	59.0	65.2	6.2	-
21-18	1	66.0	60.1	60.1	67.1	7.0	*YES*
21-19	1	66.0	60.1	60.1	67.0	6.9	*YES*
21-20	1	66.0	60.2	60.2	67.0	6.8	*YES*
21-21	1	66.0	59.1	59.1	65.8	6.7	-
21-22	1	66.0	60.6	60.6	66.8	6.2	*YES*
21-23	1	66.0	61.1	61.1	67.0	5.9	*YES*
21-24	1	66.0	60.6	60.6	66.8	6.2	*YES*
21-25	1	66.0	59.0	59.0	65.5	6.5	-
21-26	1	66.0	59.8	59.8	65.8	6.0	-
21-27	1	66.0	59.6	59.6	65.3	5.7	-
21-28	1	66.0	59.9	59.9	65.8	5.9	-
21-29	1	66.0	60.5	60.5	66.4	5.9	*YES*
21-30	1	66.0	60.6	60.6	66.7	6.1	*YES*
21-31	1	66.0	60.6	60.6	67.0	6.4	*YES*
21-32	1	66.0	60.7	60.7	67.1	6.4	*YES*
21-33	1	66.0	61.2	61.2	67.4	6.2	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** *Red = Noise Level above NAC*				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
21-34	1	66.0	61.4	61.4	67.4	6.0	*YES*
21-35	1	66.0	61.9	61.9	67.9	6.0	*YES*
21-36	1	66.0	61.7	61.7	67.5	5.8	*YES*
21-37	1	66.0	61.6	61.6	67.6	6.0	*YES*
21-38	1	66.0	62.1	62.1	67.9	5.8	*YES*
21-39	1	66.0	61.4	61.4	67.2	5.8	*YES*
NSA Summary (Totals/Averages)	**44**		**61.9**	**61.9**	**67.9**	**6.0**	**38**
NSA 22: (West) - Illustrated on Page D3-2 and D3-3 - Appendix D							
22-1	1	66.0	61.4	61.4	65.5	4.1	-
22-2	1	66.0	62.2	62.2	66.1	3.9	*YES*
22-2.1	1	66.0	62.4	62.4	66.4	4.0	*YES*
22-2.2	1	66.0	61.8	61.8	66.5	4.7	*YES*
22-2.3	1	66.0	61.2	61.2	66.8	5.6	*YES*
22-2.4	1	66.0	60.8	60.8	66.4	5.6	*YES*
22-2.5	1	66.0	60.7	60.7	66.7	6.0	*YES*
22-3	1	66.0	60.3	60.3	66.6	6.3	*YES*
22-3.1	1	66.0	60.0	60.0	66.5	6.5	*YES*
22-3.2	1	66.0	60.1	60.1	66.6	6.5	*YES*
22-3.3	1	66.0	60.0	60.1	66.5	6.5	*YES*
22-4	1	66.0	61.6	61.6	65.5	3.9	-
22-5	1	66.0	58.5	58.5	61.6	3.1	-
22-6	1	66.0	58.6	58.6	61.4	2.8	-
NSA Summary (Totals/Averages)	**14**		**60.7**	**60.7**	**65.7**	**5.0**	**10**
NSA 23: (West) - Illustrated on Page D3-3 and D3-4 - Appendix D							
23-1	1	66.0	63.6	63.6	66.3	2.7	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** *Red = Noise Level above NAC*				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
23-2	1	66.0	62.3	62.3	65.2	2.9	-
23-3	1	66.0	60.5	60.5	63.5	3.0	-
23-4	1	66.0	59.8	59.8	62.8	3.0	-
23-5	1	66.0	60.8	60.8	64.7	3.9	-
23-6	1	66.0	64.5	64.5	70.7	6.2	*YES*
23-7	1	66.0	67.6	67.6	73.0	5.4	*YES*
NSA Summary (Totals/Averages)	**7**		**62.7**	**62.7**	**66.6**	**3.9**	**3**
NSA 24: (East) - Illustrated on Page D3-3 and D3-4 - Appendix D							
24-1.1	1	66.0	66.0	66.0	69.9	3.9	*YES*
24-1.2	1	66.0	66.5	66.5	70.2	3.7	*YES*
24-1.3	1	66.0	66.6	66.6	70.4	3.8	*YES*
24-1.4	1	66.0	66.6	66.6	70.5	3.9	*YES*
24-1.5	1	66.0	66.7	66.7	70.5	3.8	*YES*
24-1.6	1	66.0	66.5	66.5	70.3	3.8	*YES*
24-1.7	1	66.0	66.2	66.2	70.0	3.8	*YES*
24-1.8	1	66.0	66.0	66.0	69.8	3.8	*YES*
24-1.9	1	66.0	64.4	64.4	68.4	4.0	*YES*
24-1.10	1	66.0	65.5	65.5	69.4	3.9	*YES*
24-1.11	1	66.0	65.1	65.1	69.0	3.9	*YES*
24-1.13	1	66.0	64.8	64.8	68.8	4.0	*YES*
24-1.14	1	66.0	64.6	64.6	68.7	4.1	*YES*
24-1.15	1	66.0	64.6	64.6	68.7	4.1	*YES*
24-1.16	1	66.0	65.0	65.0	68.8	3.8	*YES*
24-1.17	1	66.0	66.2	66.2	70.1	3.9	*YES*
24-1.18	1	66.0	66.6	66.6	70.7	4.1	*YES*
24-2.1	1	66.0	65.1	65.1	69.6	4.5	*YES*
24-2.2	1	66.0	63.2	63.2	67.7	4.5	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
24-2.3	1	66.0	62.4	62.4	66.6	4.2	*YES*
24-2.4	1	66.0	61.6	61.6	65.4	3.8	-
24-2.5	1	66.0	61.5	61.5	65.2	3.7	-
24-2.6	1	66.0	60.1	60.1	64.0	3.9	-
24-2.7	1	66.0	61.2	61.2	65.2	4.0	-
24-2.8	1	66.0	59.4	59.4	63.4	4.0	-
24-2.9	1	66.0	59.2	59.2	63.9	4.7	-
24-2.10	1	66.0	61.0	61.0	65.9	4.9	-
24-3.1	1	66.0	61.2	61.2	65.5	4.3	-
24-3.2	1	66.0	60.8	60.8	65.2	4.4	-
24-3.3	1	66.0	59.7	59.7	63.5	3.8	-
24-3.4	1	66.0	59.4	59.4	63.0	3.6	-
24-3.5	1	66.0	57.4	57.4	61.4	4.0	-
24-3.6	1	66.0	57.5	57.5	61.3	3.8	-
24-3.7	1	66.0	57.4	57.4	62.3	4.9	-
24-3.8	1	66.0	58.4	58.4	63.8	5.4	-
24-4.1	1	66.0	72.5	72.5	77.2	4.7	*YES*
24-4.2	1	66.0	72.2	72.2	77.0	4.8	*YES*
24-4.3	1	66.0	71.3	71.3	76.1	4.8	*YES*
24-4.4	1	66.0	70.4	70.4	75.0	4.6	*YES*
24-4.5	1	66.0	70.4	70.4	75.2	4.8	*YES*
24-4.6	1	66.0	69.9	69.9	74.5	4.6	*YES*
24-4.7	1	66.0	69.7	69.7	74.2	4.5	*YES*
24-4.8	1	66.0	69.2	69.2	73.9	4.7	*YES*
24-4.9	1	66.0	68.5	68.5	73.4	4.9	*YES*
24-4.10	1	66.0	68.4	68.4	73.0	4.6	*YES*
24-4.11	1	66.0	69.9	69.9	74.7	4.8	*YES*
24-4.12	1	66.0	69.7	69.7	74.4	4.7	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			Predicted Noise Levels (dB(A)) *Red = Noise Level above NAC*				
Receptor ID	# Sites Represented	NAC Impact Criterion (dB(A))	2018 Existing	2045 No-Build Alternative	2045 Build Alternative	Build Change From Existing	*Consider Abatement*
24-4.13	1	66.0	69.1	69.1	74.0	4.9	*YES*
24-4.14	1	66.0	68.5	68.5	73.3	4.8	*YES*
24-4.15	1	66.0	68.2	68.2	72.8	4.6	*YES*
24-4.16	1	66.0	68.0	68.0	72.4	4.4	*YES*
24-4.17	1	66.0	72.0	72.0	77.1	5.1	*YES*
24-4.18	1	66.0	71.0	71.0	77.1	6.1	*YES*
24-4.19	1	66.0	70.2	70.2	76.5	6.3	*YES*
24-4.20	1	66.0	69.6	69.6	74.3	4.7	*YES*
24-4.21	1	66.0	68.6	68.6	73.8	5.2	*YES*
24-4.22	1	66.0	68.3	68.3	73.0	4.7	*YES*
24-4.23	1	66.0	72.3	72.3	77.2	4.9	*YES*
24-4.24	1	66.0	71.7	71.7	77.2	5.5	*YES*
24-4.25	1	66.0	70.8	70.8	77.2	6.4	*YES*
24-4.26	1	66.0	70.2	70.2	76.2	6.0	*YES*
24-4.27	1	66.0	69.0	69.0	74.4	5.4	*YES*
24-4.28	1	66.0	68.5	68.5	73.8	5.3	*YES*
24-5.1	1	66.0	62.9	62.9	67.9	5.0	*YES*
24-5.2	1	66.0	62.8	62.8	67.7	4.9	*YES*
24-5.3	1	66.0	62.7	62.7	67.7	5.0	*YES*
24-5.4	1	66.0	62.5	62.5	67.6	5.1	*YES*
24-5.5	1	66.0	62.7	62.7	67.8	5.1	*YES*
24-5.6	1	66.0	62.6	62.6	67.7	5.1	*YES*
24-5.7	1	66.0	62.4	62.4	67.6	5.2	*YES*
24-5.8	1	66.0	62.2	62.2	67.5	5.3	*YES*
24-6.1	1	66.0	62.8	62.8	68.3	5.5	*YES*
24-6.2	1	66.0	62.5	62.5	67.9	5.4	*YES*
24-6.3	1	66.0	61.9	61.9	67.4	5.5	*YES*
24-7.1	1	66.0	63.8	63.8	69.1	5.3	*YES*

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** ***Red = Noise Level above NAC***				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
24-7.2	1	66.0	62.7	62.7	67.8	5.1	*YES*
24-7.3	1	66.0	61.9	61.9	67.1	5.2	*YES*
24-7.4	1	66.0	61.3	61.3	66.5	5.2	*YES*
NSA Summary (Totals/Averages)	***78***		***65.4***	***65.4***	***70.0***	***4.6***	***63***
NSA 25: (East) - Illustrated on Page D3-5 - Appendix D							
25-1	1	66.0	66.2	66.2	68.6	2.4	*YES*
25-2	1	66.0	66.7	66.7	69.0	2.3	*YES*
25-3	1	66.0	66.2	66.2	68.4	2.2	*YES*
25-4	1	66.0	65.6	65.6	67.7	2.1	*YES*
25-5	1	66.0	65.4	65.4	67.9	2.5	*YES*
25-6	1	66.0	66.5	66.5	68.7	2.2	*YES*
25-7	1	66.0	65.8	65.8	68.3	2.5	*YES*
25-8	1	66.0	65.0	65.0	67.5	2.5	*YES*
25-9	1	66.0	64.6	64.6	67.1	2.5	*YES*
25-10	1	66.0	65.0	65.0	67.6	2.6	*YES*
25-11	1	66.0	65.6	65.6	68.0	2.4	*YES*
25-12	1	66.0	64.3	64.3	67.2	2.9	*YES*
25-13	1	66.0	68.9	68.9	71.1	2.2	*YES*
25-14	1	66.0	69.2	69.2	71.5	2.3	*YES*
25-15	1	66.0	66.0	66.0	68.9	2.9	*YES*
25-16	1	66.0	70.2	70.2	72.7	2.5	*YES*
25-17	1	66.0	69.7	69.7	73.2	3.5	*YES*
25-18	1	66.0	66.4	66.4	69.9	3.5	*YES*
25-19	1	66.0	64.9	64.9	68.8	3.9	*YES*
25-20	1	66.0	63.4	63.4	66.7	3.3	*YES*
25-21	1	66.0	62.3	62.3	65.3	3.0	-
25-22	1	66.0	60.0	60.0	63.0	3.0	-

Noise Impact Comparison Matrix							
Noise Sensitive Sites			**Predicted Noise Levels (dB(A))** *Red = Noise Level above NAC*				
Receptor ID	**# Sites Represented**	**NAC Impact Criterion (dB(A))**	**2018 Existing**	**2045 No-Build Alternative**	**2045 Build Alternative**	**Build Change From Existing**	***Consider Abatement***
25-23	1	66.0	61.1	61.1	64.3	3.2	-
25-24	1	66.0	62.4	62.4	65.3	2.9	-
25-25	1	66.0	62.7	62.7	65.5	2.8	-
25-26	1	66.0	61.1	61.1	64.1	3.0	-
25-27	1	66.0	61.5	61.5	64.5	3.0	-
25-28	1	66.0	61.0	61.0	64.0	3.0	-
NSA Summary (Totals/Averages)	***28***		***64.9***	***64.9***	***67.7***	***2.8***	***20***
NSA 26: (East) - Illustrated on Page D3-9 - Appendix D							
26-1	1	66.0	57.5	57.5	58.1	0.6	-
NSA Summary (Totals/Averages)	***1***		***57.5***	***57.5***	***58.1***	***0.6***	***0***

Appendix D1:

Segment #429-154 Project Aerials

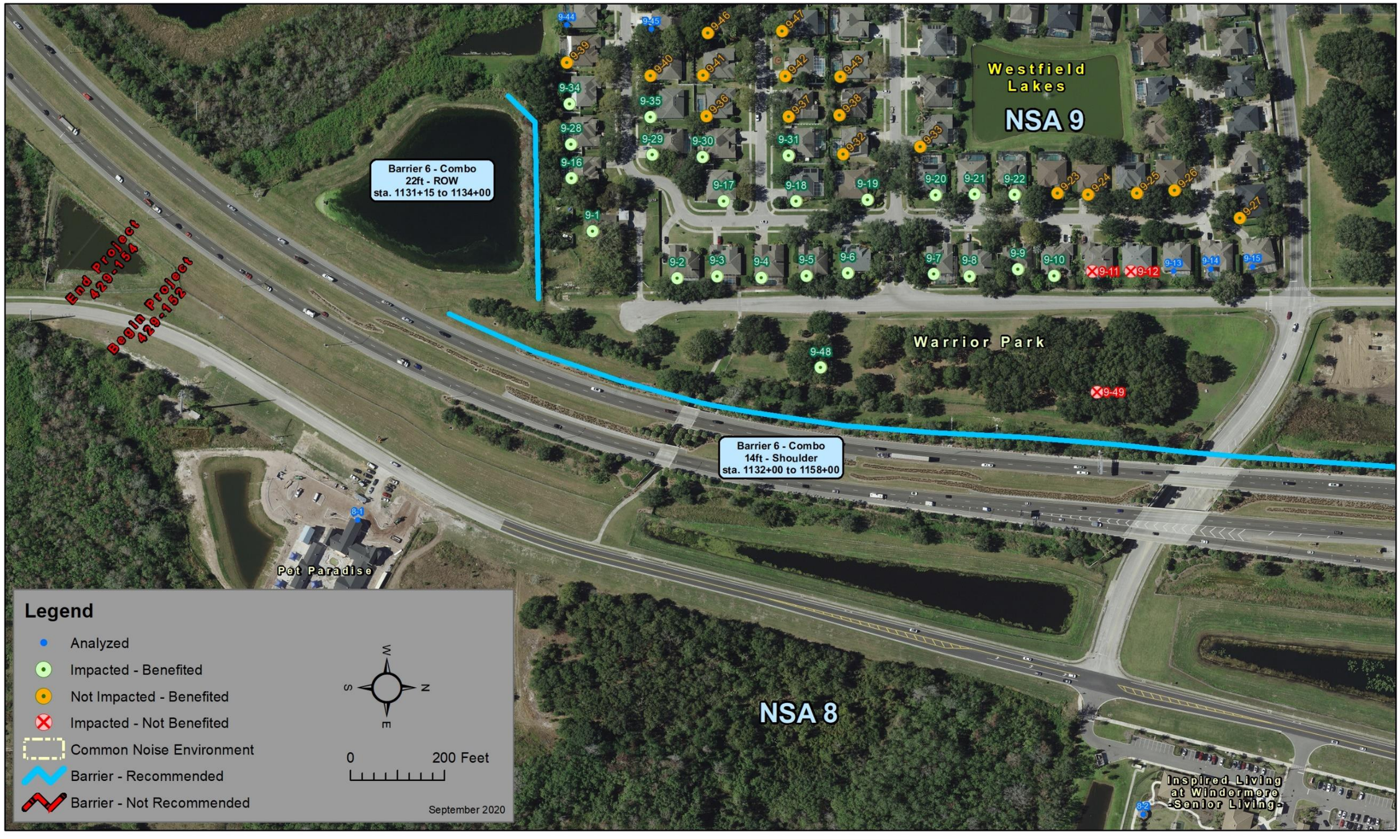
NSA 1 thru 7
Barriers 1 thru 5

Noise barriers 1 thru 5, for NSA's 1 thru 7, are under evaluation for this project segment. The results of the barrier analyses will be incorporated at a later date, prior to the project's public meeting.

Appendix D2:

Segment #429-152 Project Aerials

NSA 8 thru 17
Barriers 6 thru 10


Barrier 6 - Combo
22ft - ROW
sta. 1131+15 to 1134+00
Barrier 6 - Combo
14ft - Shoulder
sta. 1132+00 to 1158+00
Westfield Lakes
NSA 9
NSA 8
Warrior Park
Pot Paradise
Inspired Living at Windermere -Senior Living-
End Project 429-154
Begin Project 429-152
9-1
9-2
9-3
9-4
9-5
9-6
9-7
9-8
9-9
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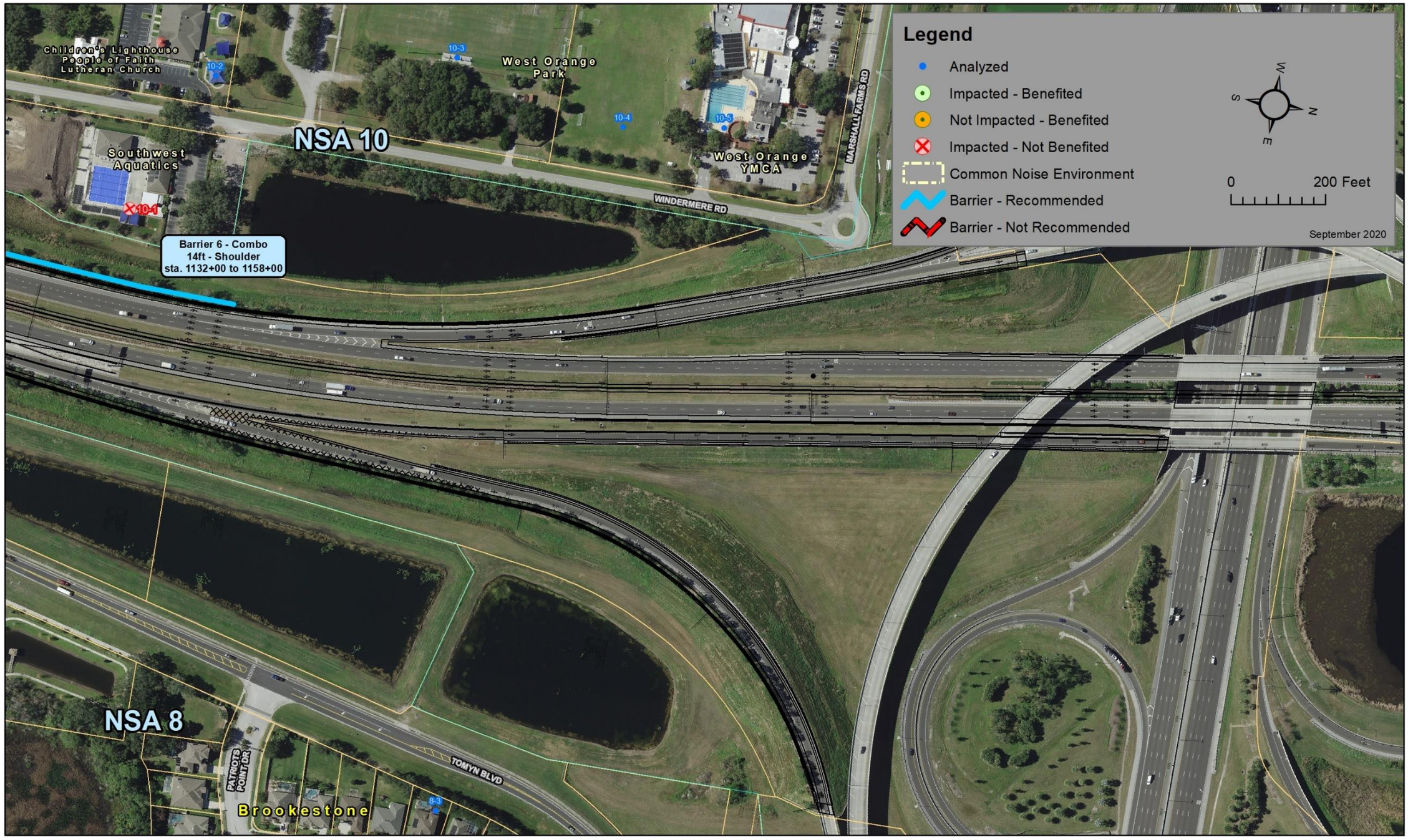
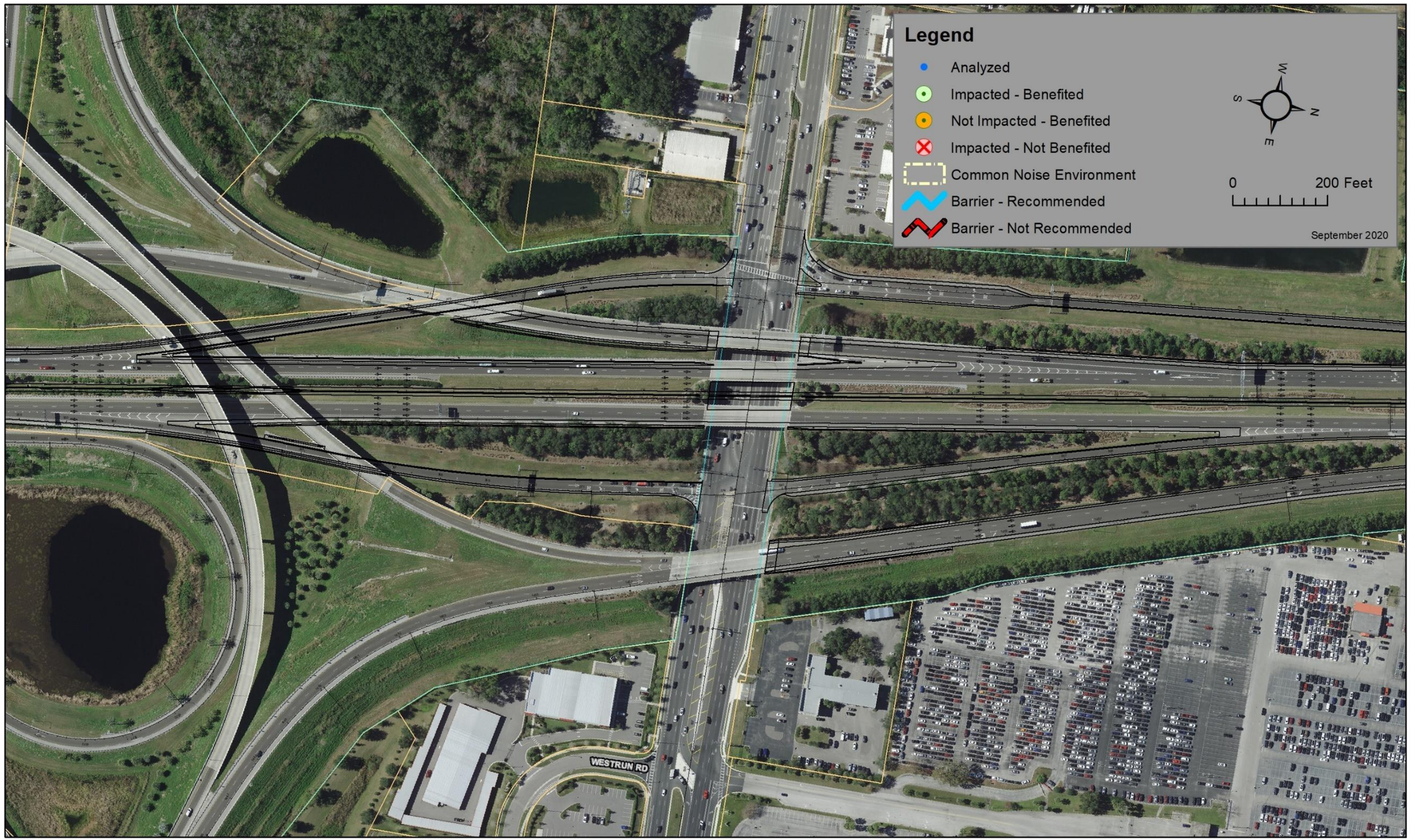
9-40
9-41
9-42
9-43
9-44
9-45
9-46
9-47
9-48
9-49
8-1
8-2
Legend
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
W
S
N
E
0
200 Feet
September 2020


Children's Lighthouse
People of Faith
Lutheran Church
10-2
10-3
West Orange
Park
10-4
10-5
West Orange
YMCA
MARSHALL FARMS RD
NSA 10
Southwest
Aquatics
10-1
WINDERMERE RD
Barrier 6 - Combo
14ft - Shoulder
sta. 1132+00 to 1158+00
Legend
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
N
S
E
W
0
200 Feet
September 2020
NSA 8
PATRIOTS POINT DR
TOMYN BLVD
Brookestone
8-3


Legend
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
W
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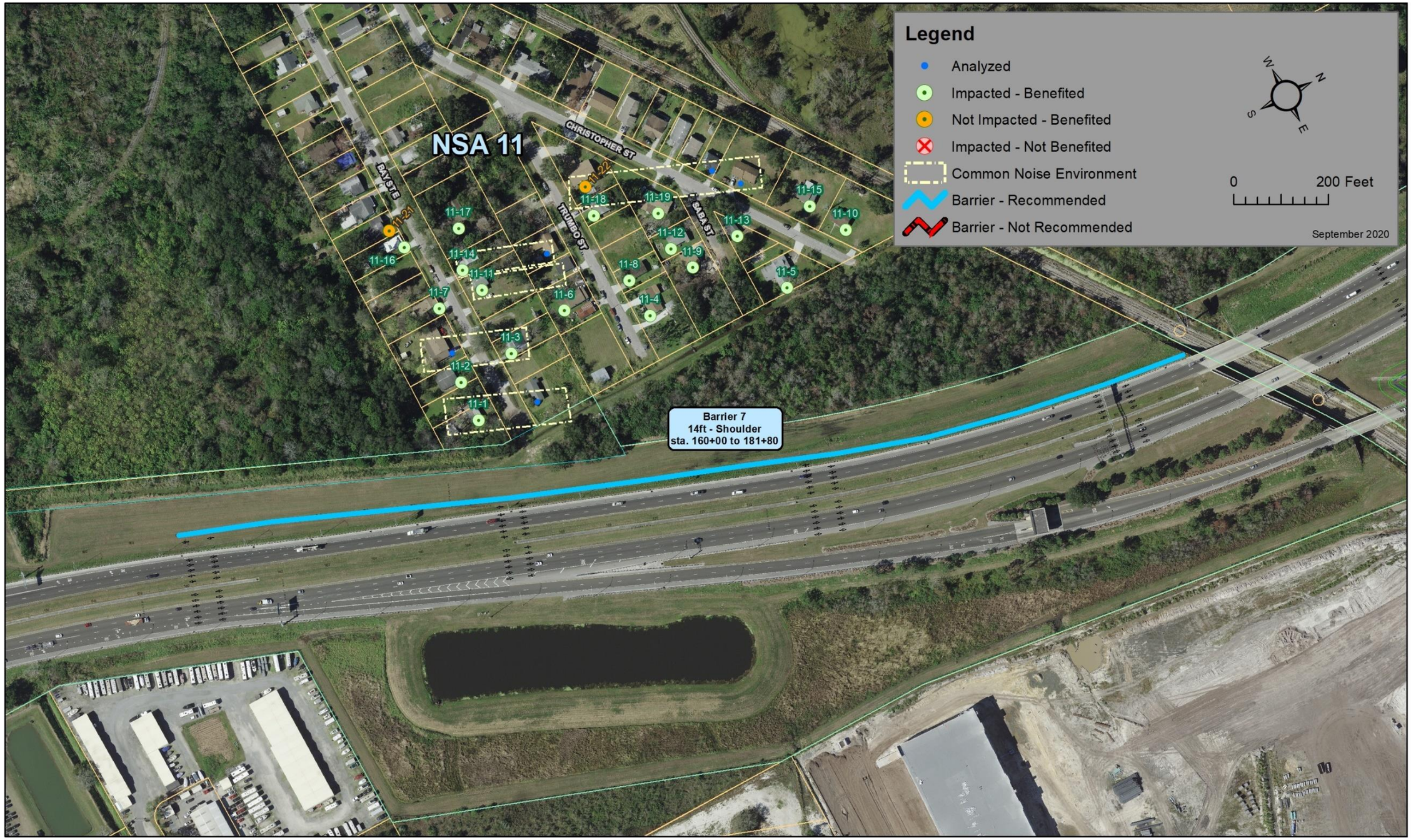
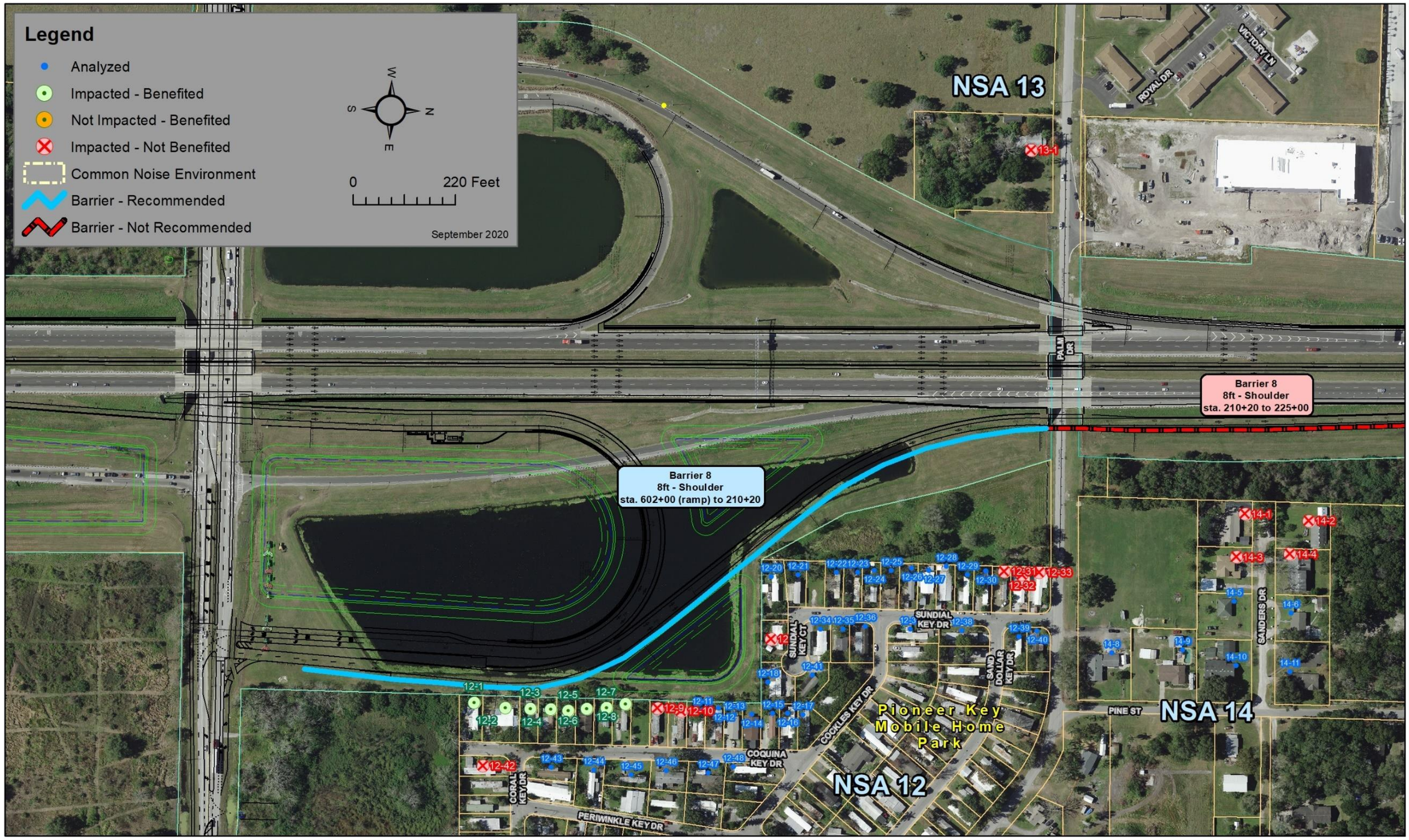
N
E
0
200 Feet
September 2020
WESTRUN RD


Legend
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
N
S
E
W
0
200 Feet
September 2020
STORY RD E
STORY RD


NSA 11
CHRISTOPHER ST
BAYSTE
TRUMBO ST.
SABA ST
11-1
11-2
11-3
11-4
11-5
11-6
11-7
11-8
11-9
11-10
11-11
11-12
11-13
11-14
11-15
11-16
11-17
11-18
11-19
11-21
11-22
Barrier 7
14ft - Shoulder
sta. 160+00 to 181+80
Legend
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
N
S
E
0
200 Feet
September 2020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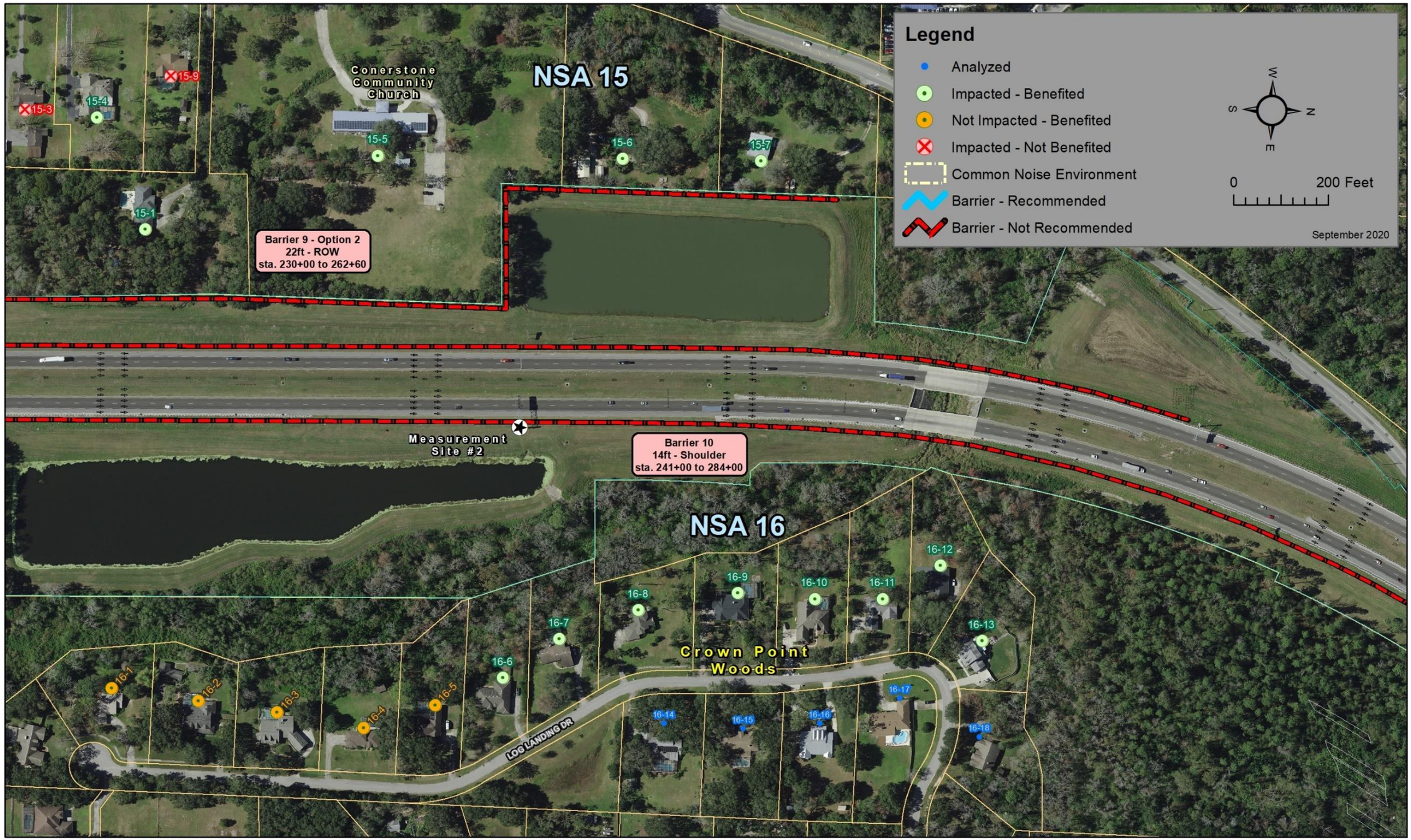
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
W
S
N
E
0
220 Feet
September 2020
NSA 13
13-1
ROYAL DR
VICTORY LN
PALM DR
Barrier 8
8ft - Shoulder
sta. 210+20 to 225+00
Barrier 8
8ft - Shoulder
sta. 602+00 (ramp) to 210+20
SUNDIAL KEY CT
SUNDIAL KEY DR
SAND DOLLAR KEY DR
COCKLES KEY DR
COQUINA KEY DR
CORAL KEY DR
PERIWINKLE KEY DR
Pioneer Key Mobile Home Park
NSA 12
PINE ST
NSA 14
SANDERS DR


Legend
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
W
S
N
E
0
200 Feet
September 2020
15-8
15-2
15-3
Barrier 9
22ft - ROW
sta. 230+00 to 262+60
NSA 15
Barrier 8
8ft - Shoulder
sta. 210+20 to 225+00
Barrier 10
14ft - Shoulder
sta. 241+00 to 284+00
14-7
NSA 14
PINE ST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Analyzed
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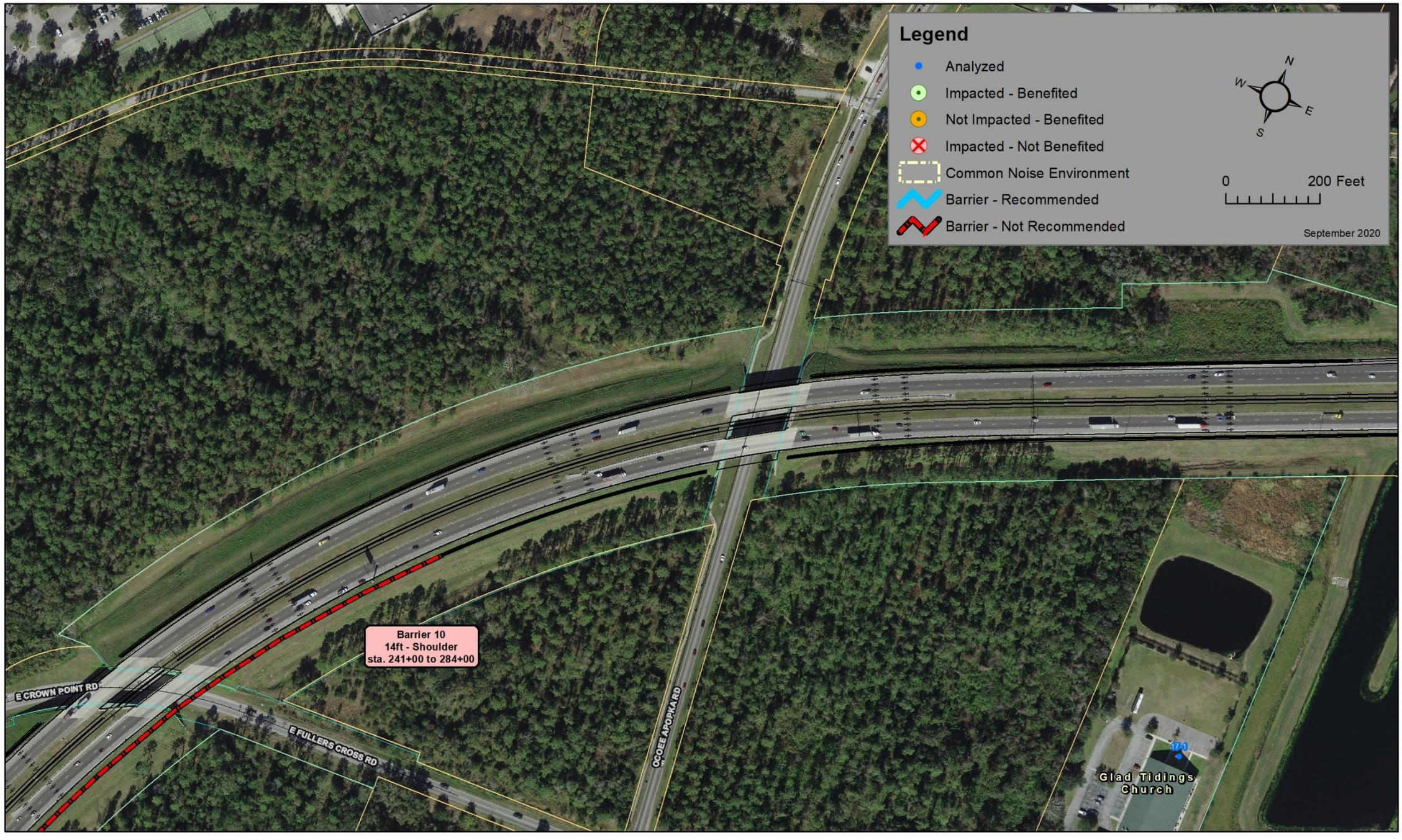
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
W
S
N
E
0
200 Feet
September 2020
Conerstone Community Church
NSA 15
15-1
15-3
15-4
15-5
15-6
15-7
15-9
Barrier 9 - Option 2
22ft - ROW
sta. 230+00 to 262+60
Measurement Site #2
Barrier 10
14ft - Shoulder
sta. 241+00 to 284+00
NSA 16
Crown Point Woods
LOG LANDING DR
16-1
16-2
16-3
16-4
16-5
16-6
16-7
16-8
16-9
16-10
16-11
16-12
16-13
16-14
16-15
16-16
16-17
16-18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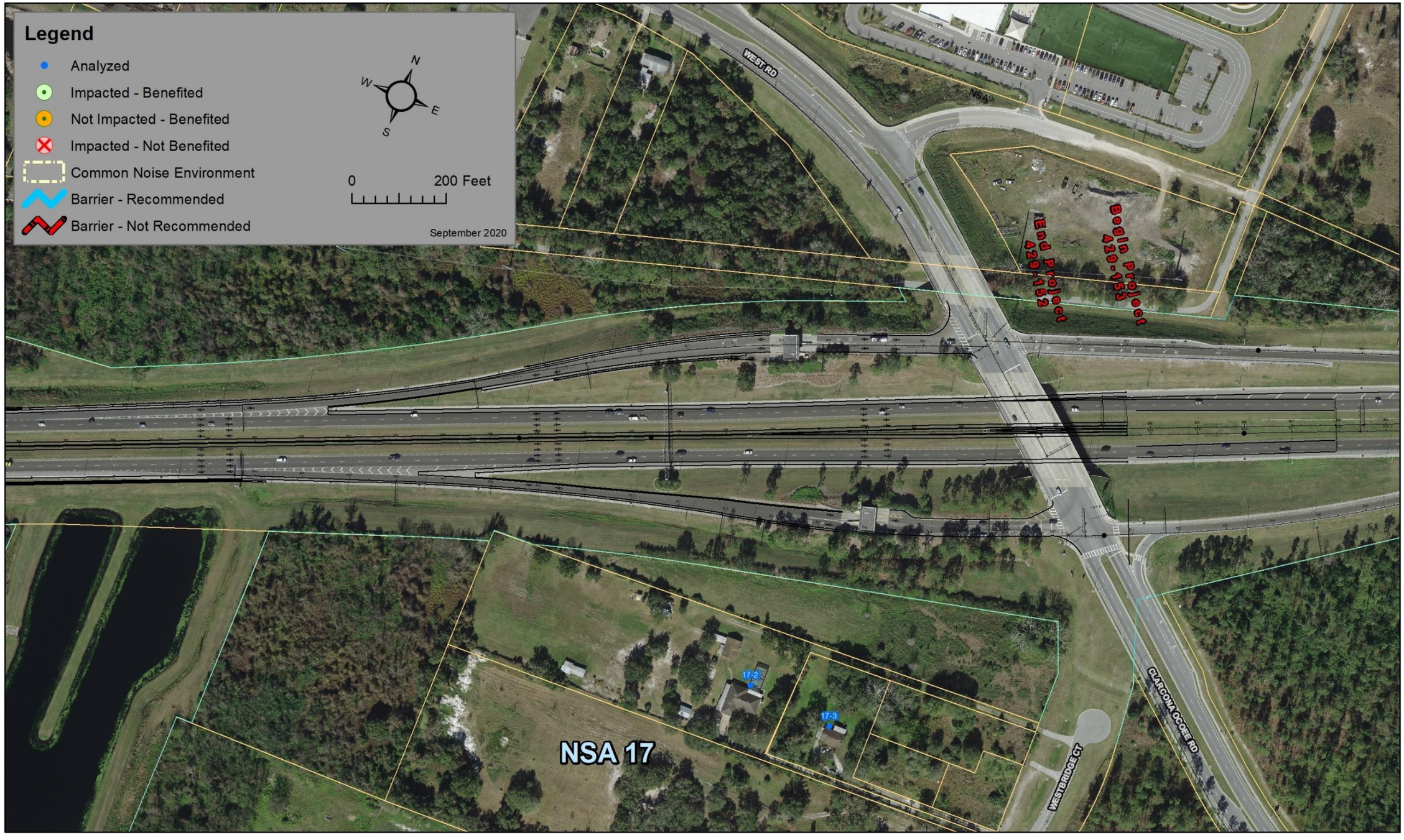
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
N
W
E
S
0
200 Feet
September 2020
Barrier 10
14ft - Shoulder
sta. 241+00 to 284+00
E CROWN POINT RD
E FULLERS CROSS RD
OCOEE APOPKA RD
17-1
Glad Tidings Church


Legend
Analyzed
Impacted - Benefited
Not Impacted - Benefited
Impacted - Not Benefited
Common Noise Environment
Barrier - Recommended
Barrier - Not Recommended
N
W
E
S
0
200 Feet
September 2020
WEST RD
NSA
End Project 429-152
Begin Project 429-153
17-2
17-3
NSA 17
WESTBRIDGE CT
CLARCONA OCOEE RD

Appendix D3:

Segment #429-153 Project Aerials

NSA 11 thru 26
Barriers 11 thru 18

Noise barriers 11 thru 18, for NSA's 11 thru 26, are under evaluation for this project segment. The results of the barrier analyses will be incorporated at a later date, prior to the project's public meeting.

Appendix E1:

Segment #429-154
Noise Barrier Evaluation Tables

NSA 1 thru 7
Barriers 1 thru 5

Noise barriers 1 thru 5, for NSA's 1 thru 7, are under evaluation for this project segment. The results of the barrier analyses will be incorporated at a later date, prior to the project's public meeting.

Appendix E2:

Segment #429-152
Noise Barrier Evaluation Tables

NSA 9 thru 17
Barriers 6 thru 10

Noise Barrier 6 Evaluation Summary

Evaluated Barrier Options					Number of Impacted Sites	Number of Impacted Sites Within a Noise Reduction Range			Number of Benefited Sites [*1]				Total Estimated Cost [*4]	Cost per Benefited Receptor [*5]
Option	Barrier Type	Height (feet)	Length (feet)	Approx. Location (Roadway Stationing)		5-5.9 dB(A)	6-6.9 dB(A)	≥ 7.0 dB(A) [*2]	Impacted	Other [*3]	Total	Noise Reduction dB(A) Average (Max)		
Option 1	Shoulder (8' on both bridges)	14	4,203	Sta. 1119+00 to 1162+00	25	2	8	13	23	20	43	6.7 (8.4)	$1,735,380	$ 40,358
Option 2	Shoulder (8' on both bridges)	14	3,428	Sta. 1123+00 to 1158+00		2	9	12	23	17	40	6.5 (8.3)	$1,409,880	$ 35,247
Option 3	Shoulder (no barriers on bridges)	14	3,262	Sta. 1123+00 to 1158+00		1	8	12	21	14	35	6.5 (8.1)	$1,370,040	$ 39,144
Option 4 Combo	Shoulder (8' on both bridges)	14	2,556	Sta. 1132+00 to 1158+00		2	5	16	23	16	39	6.9 (10.3)	$1,384,200	$ 35,492
	ROW	22	516	Sta. 1131+15 to 1134+00										

*1 = Minimum of 5.0 dB(A) required to be considered benefited by noise barrier.
*2 = FDOT Noise Reduction Design Goal is 7.0 dB(A) at a minimum of 1 benefited receptor.
*3 = Refers to non-impacted noise-sensitive sites.
*4 = Based on FDOT Statewide average of $30 per square foot.
*5 = FDOT Reasonable Cost Guideline is $42,000.

Noise Barrier 7 Evaluation Summary

Evaluated Barrier Options					Number of Impacted Sites	Number of Impacted Sites Within a Noise Reduction Range			Number of Benefited Sites [*1]				Total Estimated Cost [*4]	Cost per Benefited Receptor [*5]
Option	Barrier Type	Height (feet)	Length (feet)	Approx. Location (Roadway Stationing)		5-5.9 dB(A)	6-6.9 dB(A)	≥ 7.0 dB(A) [*2]	Impacted	Other [*3]	Total	Noise Reduction dB(A) Average (Max)		
Option 1	Shoulder	14	2,162	Sta. 160+00 to 181+80	23	10	7	6	23	4	27	6.3 (8.0)	$ 908,040	$ 33,631
Option 2	Shoulder (8' on bridge)	12	2,380	Sta. 160+00 to 183+00		12	5	6	23	1	24	6.0 (7.5)	$ 778,320	$ 32,430
Option 3	Shoulder (8' on bridge)	10	2,881	Sta. 156+00 to 185+00		13	6	1	20	3	23	5.7 (7.4)	$ 770,700	$ 33,509

*1 = Minimum of 5.0 dB(A) required to be considered benefited by noise barrier.
*2 = FDOT Noise Reduction Design Goal is 7.0 dB(A) at a minimum of 1 benefited receptor.
*3 = Refers to non-impacted noise-sensitive sites.
*4 = Based on FDOT Statewide average of $30 per square foot.
*5 = FDOT Reasonable Cost Guideline is $42,000.

Noise Barrier 8 Evaluation Summary

Evaluated Barrier Options					Number of Impacted Sites	Number of Impacted Sites Within a Noise Reduction Range			Number of Benefited Sites [*1]				Total Estimated Cost [*4]	Cost per Benefited Receptor [*5]
Option	Barrier Type	Height (feet)	Length (feet)	Approx. Location (Roadway Stationing)		5-5.9 dB(A)	6-6.9 dB(A)	≥ 7.0 dB(A) [*2]	Impacted	Other [*3]	Total	Noise Reduction dB(A) Average (Max)		
Option 1	Shoulder	8	3,242	Sta. 602+00 to 225+00	19	8	0	0	8	0	8	5.3 (5.5)	$ 778,080	$ 97,260
Option 2	Shoulder	8	1,760	Sta. 602+00 to 210+20		8	0	0	8	0	8	5.2 (5.4)	$ 422,400	$ 52,800

*1 = Minimum of 5.0 dB(A) required to be considered benefited by noise barrier.
*2 = FDOT Noise Reduction Design Goal is 7.0 dB(A) at a minimum of 1 benefited receptor.
*3 = Refers to non-impacted noise-sensitive sites.
*4 = Based on FDOT Statewide average of $30 per square foot.
*5 = FDOT Reasonable Cost Guideline is $42,000.

Noise Barrier 9 Evaluation Summary

Evaluated Barrier Options					Number of Impacted Sites	Number of Impacted Sites Within a Noise Reduction Range			Number of Benefited Sites [*1]				Total Estimated Cost [*4]	Cost per Benefited Receptor [*5]
Option	Barrier Type	Height (feet)	Length (feet)	Approx. Location (Roadway Stationing)		5-5.9 dB(A)	6-6.9 dB(A)	≥ 7.0 dB(A) [*2]	Impacted	Other [*3]	Total	Noise Reduction dB(A) Average (Max)		
Option 1 Not Recommended	Shoulder (8' on bridge)	14	4,028	Sta. 221+00 to 270+00	7	1	0	3	4	0	4	6.9 (8.5)	$1,449,000	$ 362,250
Option 2 Not Recommended	ROW	22	3,529	Sta. 230+00 to 262+60		1	0	2	3	0	3	8.5 (10.4)	$2,329,140	$ 776,380

*1 = Minimum of 5.0 dB(A) required to be considered benefited by noise barrier.
*2 = FDOT Noise Reduction Design Goal is 7.0 dB(A) at a minimum of 1 benefited receptor.
*3 = Refers to non-impacted noise-sensitive sites.
*4 = Based on FDOT Statewide average of $30 per square foot.
*5 = FDOT Reasonable Cost Guideline is $42,000.

Noise Barrier 10 Evaluation Summary

Evaluated Barrier Options					Number of Impacted Sites	Number of Impacted Sites Within a Noise Reduction Range			Number of Benefited Sites *1				Total Estimated Cost *4	Cost per Benefited Receptor *5
Option	Barrier Type	Height (feet)	Length (feet)	Approx. Location (Roadway Stationing)		5-5.9 dB(A)	6-6.9 dB(A)	≥ 7.0 dB(A) *2	Impacted	Other *3	Total	Noise Reduction dB(A) Average (Max)		
Option 1 Not Recommended	Shoulder (8' on bridge)	14	4,232	Sta. 241+00 to 284+00	7	5	2	0	7	8	15	5.9 (6.8)	$1,728,660	$ 115,244

*1 = Minimum of 5.0 dB(A) required to be considered benefited by noise barrier.
*2 = FDOT Noise Reduction Design Goal is 7.0 dB(A) at a minimum of 1 benefited receptor.
*3 = Refers to non-impacted noise-sensitive sites.
*4 = Based on FDOT Statewide average of $30 per square foot.
*5 = FDOT Reasonable Cost Guideline is $42,000.

Appendix E3:

Segment #429-153 Project Aerials
Noise Barrier Evaluation Tables

NSA 18 thru 26
Barriers 11 thru 18

Noise barriers 11 thru 18, for NSA's 18 thru 25, are under evaluation for this project segment. The results of the barrier analyses will be incorporated at a later date, prior to the project's public meeting.