Draft
Noise Study Report

US 301 (SR 41)
From Fowler Avenue to SR 56
Project Development & Environment (PD&E) Study

Florida Department of Transportation

District 7

Work Program Item Segment No. 255796-1

ETDM Project No. 14194

Hillsborough and Pasco Counties, Florida

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Prepared for:

Florida Department of Transportation
District Seven

Prepared by:
AIM Engineering and Surveying, Inc.
201 Kennedy Blvd, Suite 1800
Tampa, FL 33602

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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District Seven is conducting a Project Development and Environment (PD&E) study along US Highway 301 (US 301)/State Road 41 (SR 41) in Hillsborough and Pasco Counties to evaluate alternative roadway improvements along the corridor. The study limits are from Fowler Avenue/SR 582 in Hillsborough County to SR 56 in Pasco County, a distance of approximately 13.1 miles. The study involves widening this section of US 301 from a two-lane undivided roadway to a four-lane divided roadway and includes pedestrian and bicycle accommodations. This study also includes intersection improvements and access management recommendations. The proposed improvements are anticipated to increase safety along this segment of US 301 for all users and enhance the functionality of this important regional freight route.

The PD&E study objectives include the following: determine proposed typical sections and develop preliminary conceptual design plans for the proposed improvements, while minimizing impacts to the environment; consider agency and public comments; and ensure project compliance with all applicable federal and state laws. Federal funds are not planned to be used for the project, so this study is being conducted in accordance with the FDOT PD&E Manual, Part 1, Chapter 10, which addresses non-federal projects. A State Environmental Impact Report (SEIR) is being prepared as the environmental document for this study. The proposed improvements will include construction of stormwater management facility (SMF) and floodplain compensation (FPC) sites.

This study was prepared in accordance with Title 23, Part 772 of the Code of Federal Regulations, Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2010). The evaluation uses methodology established by the FDOT and documented in the PD&E Manual, Part 2, Chapter 18 (July 1, 2020), Highway Traffic Noise.

The Federal Highway Administration (FHWA) approved Traffic Noise Model (TNM) was used to predict traffic noise levels at 261 noise sensitive sites located adjacent to US 301 for the existing (2015) and future year (2045) conditions without the proposed improvements. With the build condition, 18 of the noise sensitive sites are identified as being relocations. As such, 243 noise sensitive sites were evaluated for the future build condition. Sixty-seven of the 243 noise sensitive sites are predicted to experience future noise levels with the proposed improvements to US 301 that approach, meet, or exceed the Noise Abatement Criteria (NAC) for their respective Activity Category. However, none of the 243 evaluated sites are predicted to experience a substantial increase of traffic noise as a result of the proposed improvements.

The 67 receptors representing 67 noise sensitive sites are referred to as “impacted” receptors. Of the 67 impacted receptors, 65 represent residential properties (Activity Category B) and two receptors represent the outdoor seating areas of the Orbital Paintball facility (Activity Category C).

Traffic management measures, modifications to the roadway alignment, buffer zones and noise barriers were considered as abatement measures at the impacted receptor locations. Noise barriers were the only abatement measure determined to be a potential feasible and reasonable measure. The locations of these barriers are listed below:

- Barrier 4: Ranch Oaks Estates
- Barrier 6: Kelly Lane Cul-de-sac
- Barrier 9: Ohio Avenue, Green Oaks Trailer Park and Spanish Main RV Park

The FDOT is committed to the construction of noise barriers at the three locations listed above contingent upon the following:

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

Notably, final recommendations on the construction of abatement measures is determined during the project's final design and through the public involvement process. Because of the elapsed time between when the noise study was performed and when the Environmental Document will be signed by FDOT (known as the Date of Public Knowledge), the potential exists for additional building permits for sites that have NAC to be granted subsequent to this study. A land use review was conducted on June 30, 2023. Any noise analysis performed during the design phase of this project will include a review of building permit dates. Any noise sensitive site that is identified as permitted between the completion of the land use review update and the Date of Public Knowledge will be analyzed for traffic noise impacts and, if impacts are predicted, abatement considered during the design phase of the project.

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1.0 INTRODUCTION

1.1 PD&E Study Purpose

The objective of the Project Development and Environment (PD&E) study is to assist the Florida Department of Transportation (FDOT) District Seven in reaching a decision on the type, location, and conceptual design of the proposed improvements for the widening of US 301 from Fowler Avenue to State Road (SR) 56, including stormwater management facility (SMF) and floodplain compensation (FPC) sites. This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including proposed typical sections, preliminary horizontal alignments, and intersection enhancement alternatives.

Federal funds are not planned to be used for the project, so this study is being conducted in accordance with the FDOT PD&E Manual, Part 1, Chapter 10, which addresses non-federal projects. The PD&E study satisfies all applicable requirements for a state funded project, and a State Environmental Impact Report (SEIR) is the environmental document for the project. This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14194. The ETDM Final Programming Screen Summary Report was published on April 21, 2015, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources.

1.2 Project Purpose and Need

The purpose of this project is to provide additional roadway capacity and improve safety on this portion of US 301 in unincorporated Hillsborough and Pasco Counties. US 301 is a major north-south roadway near the City of Temple Terrace at the southern project limit in Hillsborough County, and the City of Zephyrhills at the northern project limit in Pasco County. This roadway extends from the Sarasota-Bradenton-Venice Metropolitan Statistical Area to the Georgia state line northwest of Jacksonville, thus providing a regional route between the Tampa Bay area and Jacksonville/I-95 corridor. US 301 serves both regional and local travel and connects residential centers in the Temple Terrace and Zephyrhills areas with employment centers in the Tampa area. It provides regional connectivity with I-75, I-4, SR 56, SR 54, and SR 52. US 301 has been designated by both Hillsborough and Pasco Counties' Emergency Management as an emergency evacuation route. In addition to increasing capacity, this project will add to or enhance the multimodal facilities in this corridor.

The proposed widening of this portion of US 301 is expected to have positive mobility impacts. The Hillsborough Transportation Planning Organization's (TPO) It's Time Hillsborough 2045 Long Range Transportation Plan (LRTP) socioeconomic projections (November 2019) contain both population and employment projections. These projections show Hillsborough County's population increasing from 1,292,800 to 2,006,200 (a 55% increase) between 2015 and 2045. Employment is projected to increase from 830,800 to 1,705,400 (a 105% increase) between 2015 and 2045, mostly within the urban service area. The Pasco Metropolitan Planning Organization's (MPO) Mobility 2045 LRTP (March 2020) also documents socioeconomic projections. These projections show Pasco County's population increasing from 487,588 to 795,600 (a 63%

increase) between 2015 and 2045. Employment is projected to increase from 157,500 to 266,592 (a 69% increase) between 2015 and 2045. Based on projected population and employment growth, the existing study corridor would experience failing levels of service in the future.

US 301 is a truck route that provides north-south access within eastern Hillsborough and Pasco Counties and connections to the surrounding Tampa Bay area. There is no existing bus service within the study corridor; however, the Tampa Bay Area Regional Transportation Authority (TBARTA) Regional Transit Development Plan (adopted June 2020) shows future Regional Commuter Express Bus Service north of the project from SR 56 to Zephyrhills.

Safety within the US 301 corridor is also projected to improve with an increase in capacity and a corresponding reduction in congestion, as well as with the provision of a median, thereby reducing potential vehicle conflicts.

1.3 Project Description

The proposed action involves widening US 301 from the existing two-lane undivided roadway to a four-lane divided roadway and includes pedestrian and bicycle accommodations. The project is located in both Hillsborough and Pasco Counties and is approximately 13.1 miles long. A project location map is provided in **Figure 1-1**.

The widening of the Hillsborough County portion of the study corridor (from Fowler Avenue to the County line) is not identified in the Hillsborough TPO's 2045 LRTP. The widening of the Pasco County portion of the study corridor (from the County line to SR 56) is not identified in the Pasco MPO's 2045 LRTP Cost Feasible Plan but is identified in the 2045 Needs Plan.

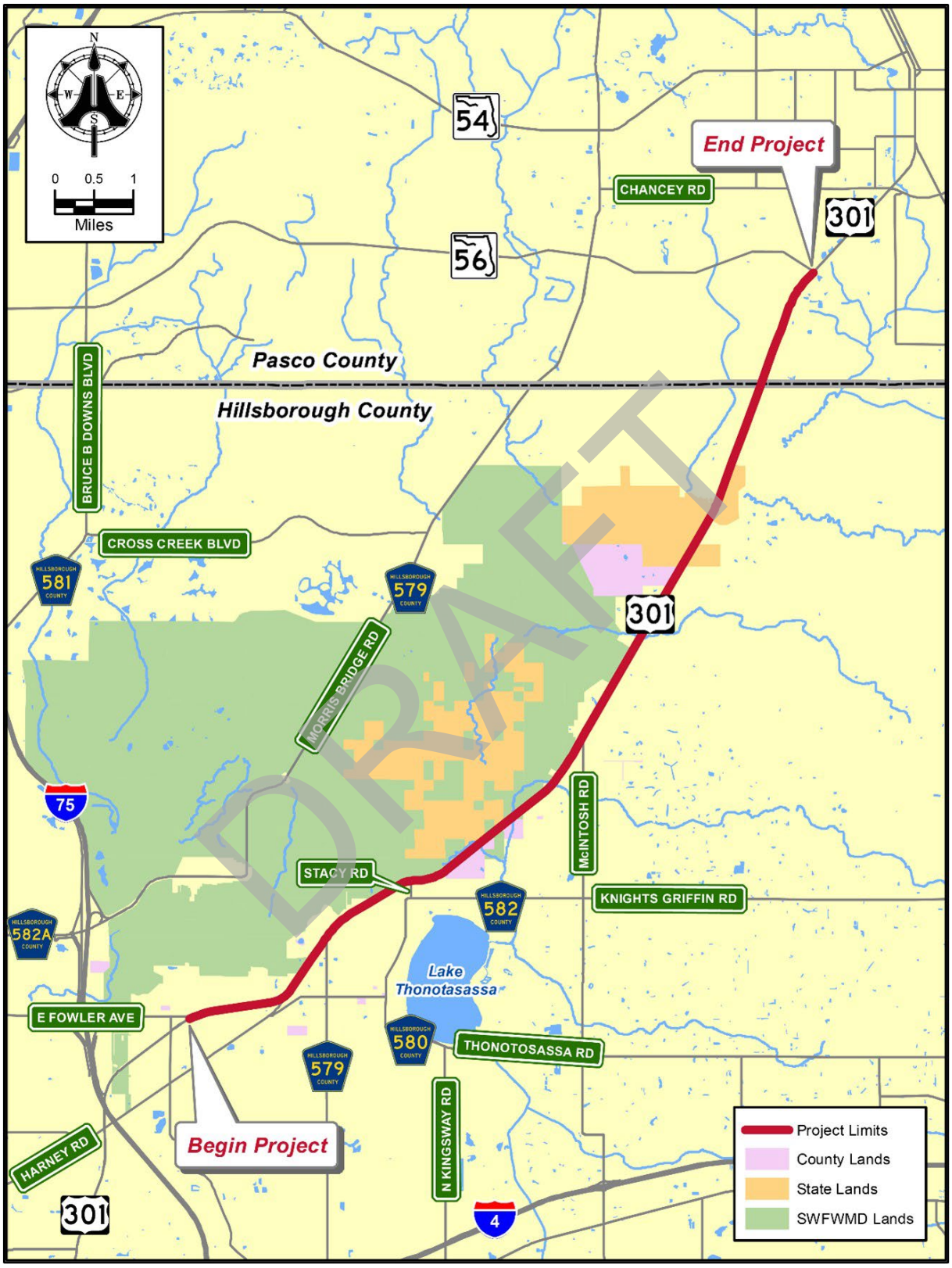


Figure 1-1 Project Location Map

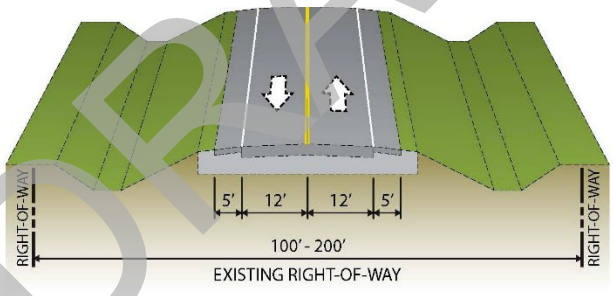
1.4 Existing Facility and Proposed Improvements

1.4.1 Existing Facility

The existing US 301 has a two-lane undivided rural typical section from Fowler Avenue to SR 56. The roadway is functionally classified by FDOT as an Urban Other Principal Arterial from Fowler Avenue to just north of County Road (CR) 579 (Mango Road) and from the County line to SR 56. The remaining portion of the project is classified as a Rural Other Principal Arterial. The posted speed limits within the study corridor are 50 mph from Fowler Avenue to Jackson Road and 60 mph from Flint Creek to SR 56.

The existing typical section consists of one 12-foot travel lane and a 5-foot paved shoulder, in each direction and a 2.2-mile, variable width, shared-use path (known as the Old Fort King Trail) running along the east side of US 301 beginning just north of Stacy Road. The shared-use path crosses US 301 at two locations. Drainage is collected in roadside ditches and is ultimately conveyed to the Hillsborough River. The existing right-of-way (ROW) width ranges from 100 feet to 200 feet.

There are also eight structures located within the study corridor. Five of the structures are roadway bridges or bridge culverts located over rivers/streams/creeks including Flint Creek, Flint Creek Relief, Holloman's Branch, Two Holes Branch and the Hillsborough River. The Old Fort King Trail also has three pedestrian bridges over Flint Creek, Flint Creek Relief and Holloman's Branch. The existing typical section is provided in **Figure 1-2**.



US 301 Existing Typical Section
from Fowler Avenue to SR 56

Figure 1-2 Existing Roadway Typical Section

1.4.2 Proposed Improvements

The proposed Build Alternative is composed of two typical sections. An urban typical section with a target/design speed of 45 mph is proposed from Fowler Avenue to Stacy Road. This typical section has two 11-foot travel lanes in each direction, a 30-foot raised median including 4-foot paved inside shoulders, and 7-foot buffered bike lanes in each direction. There is a 6-foot sidewalk on the east side of the roadway and a 12-foot shared use path on the west side of the roadway, as illustrated in **Figure 1-3**. The proposed typical ROW width varies from 151 feet to 200 feet.

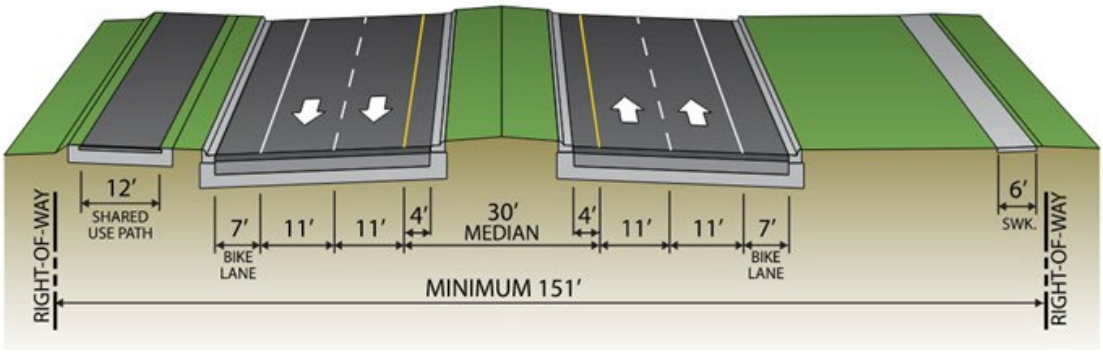


Figure 1-3 Proposed Urban Typical Section
Fowler Ave to Stacy Road

A suburban typical section with a target/design speed of 55 mph is proposed from Stacy Road to SR 56. This typical section has two 12-foot travel lanes in each direction, a 30-foot raised median including 4-foot paved inside shoulders, and 10-foot outside shoulders (5-foot paved). There will be a 6-foot sidewalk on the east side of the roadway and a 12-foot shared use path on the west side of the roadway, as illustrated in **Figure 1-4**. The proposed ROW width varies from 192 feet to 230 feet. Where possible, pavement savings will be achieved by converting the existing two-lane roadway to southbound only operation.

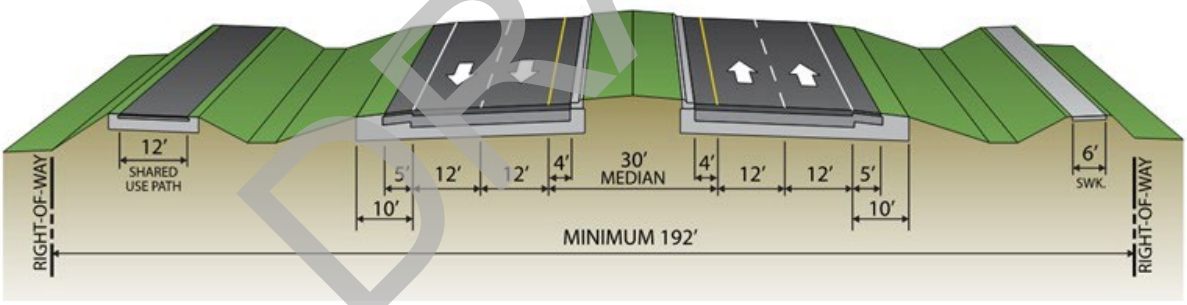


Figure 1-4 Proposed Suburban Typical Section
Stacy Road to SR 56

1.5 Report Purpose

The objectives of this noise study are to identify land uses for which there are Noise Abatement Criteria (NAC) adjacent to the US 301 project corridor, compare and evaluate predicted traffic noise levels at these sites with and without the project, and evaluate noise abatement measures where warranted. Land uses for which there are NAC are referred to as noise sensitive sites in this Noise Study Report (NSR). Additional objectives include the evaluation of construction noise and the estimation of future traffic noise level contours adjacent to the project corridor. This information will assist local officials in the development of setback requirements for future noise sensitive land uses.

2.0 METHODOLOGY

This study was prepared in accordance with Title 23, Part 772 of the Code of Federal Regulations, Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2010). The evaluation uses methodology established by the FDOT and documented in the PD&E Manual, Part 2, Chapter 18 (July 1, 2020), Highway Traffic Noise. Part 2, Chapter 18 of the PD&E Manual is the FDOT's official traffic noise policy.

The prediction of existing and future traffic noise levels with and without the preferred build alternative was performed using FHWA's computer model for highway traffic noise prediction and analysis - TNM version 2.5. TNM predicts sound energy, in one-third octave bands, between highways and nearby receptors while considering the intervening ground's acoustical characteristics and topography. TNM was used to predict traffic noise levels at land uses for which there are NAC along the US 301 project corridor.

2.1 Noise Metrics

The predicted traffic noise levels presented in this report are expressed in decibels (dB) on the A-weighted scale [dB(A)]. This scale most closely approximates the response characteristics of the human ear to traffic noise. All noise levels are reported as hourly equivalent level [Leq(h)] values, which is the equivalent steady-state sound level for a one-hour period that contains the same acoustic energy as the time-varying sound level during the same time period.

Noise is typically defined as unwanted sound. It is emitted from many sources including airplanes, factories, railroads, power generation plants, daily community activities and vehicles. Noise levels for common outdoor and indoor activities are shown in **Figure 2-1**.

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

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

Figure 2-1 Noise Levels for Common Outdoor and Indoor Activities

A receptor is defined as a discrete or representative location of a noise sensitive area(s) for any of the land use categories listed in FHWA's NAC. Receptors representing the noise sensitive sites adjacent to US 301 were mapped in TNM in accordance with the FDOT PD&E Manual, Part 2, Chapter 18 (July 1, 2020), Highway Traffic Noise.

TNM receptor locations for the residential sites were placed at the edge of the dwelling unit closest to the major traffic noise source. Receptor locations for other noise sensitive land uses were placed at the location of exterior activity closest to the major traffic noise source.

2.2 Traffic Data

Traffic characteristics that would yield the highest traffic noise impact for the design year were used to ensure "worst-case" traffic noise conditions in the analysis.[1] The maximum peak-hourly traffic representing Level of Service (LOS) "C" was used in TNM unless the traffic analysis showed that LOS "C" will not be reached.[2] If LOS "C" will not be reached, then demand volumes were used. **Table 2-1** presents the traffic volume characteristics used in TNM for the roadway segments of the US 301 project study area in the 2015 existing and 2045 no-build and build conditions. All traffic data used in the noise analysis are documented in the Traffic Data for Noise Studies and provided in **Appendix A**.

Table 2-1 Traffic Volume Characteristics used in TNM

Traffic Segment	Traffic Volume Characteristic		
	Existing (2015)	No-Build (2045)	Build (2045)
Fowler Avenue to Harney Road	Demand	LOS "C"	LOS "C"
Harney Road to CR 579 (Mango Road)	Demand	LOS "C"	LOS "C"
CR 579 (Mango Road) to Stacy Road	Demand	LOS "C"	LOS "C"
Stacy Road to McIntosh Road	Demand	LOS "C"	Demand
McIntosh Road to SR 56	Demand	LOS "C"	Demand

2.3 Noise Abatement Criteria

To evaluate traffic noise, the FHWA has established noise levels at which abatement must be considered. These noise levels are referred to as the Noise Abatement Criteria. The NAC are noise impact thresholds for considering abatement measures. As shown in **Table 2-2** NAC vary

[1] Florida Department of Transportation Project Development and Environment Manual Part 2, Chapter 18, Highway Traffic Noise, July 1, 2020.
[2] Florida Department of Transportation, Traffic Noise Modeling and Analysis Practitioners Handbook, December 31, 2018.

according to land use activity. A noise sensitive site is therefore considered any land use that may fall within the description of a NAC Activity Category.

Table 2-2 Noise Abatement Criteria

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

(Based on Table 1 of Title 23, Part 772 of the Code of Federal Regulations)

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.

Note: FDOT defines that a substantial noise increase occurs when existing noise level is predicted to exceeded by 15 decibels or more as a result of the transportation improvement project.

Traffic noise impacts occur when predicted future traffic noise levels associated with the proposed improvements approach, meet, or exceed the NAC or when predicted future traffic noise levels substantially exceed the existing condition noise levels.[3] FDOT defines “approach” to mean within 1 dB(A) of the NAC. A substantial increase in noise is defined as an increase of 15 or more decibels above the existing noise level as a direct result of the transportation improvement project.

[3] Title 23, Part 772 of the Code of Federal Regulations, Procedures for Abatement of Highway Traffic Noise and Construction Noise, Federal Register, Vol. 75, No. 133, Tuesday, July 13, 2010

For example, Activity Category B (residential) applies to a majority of the noise sensitive land uses within the study limits. Under Activity Category B, noise abatement measures are considered if the predicted future exterior levels from the proposed improvements are 66 dB(A) or higher, or if the predicted future traffic noise levels with the improvements exceed the existing condition noise levels by 15 dB(A) or more.

Common noise environments are defined in the PD&E Manual, Part 2, Chapter 18 (July 1, 2020) as groups of receptors within the same activity category of Federal Highway Administration's (FHWA) NAC that are exposed to similar noise sources and levels, traffic volumes, traffic mix, speed, and topographic features. The developed lands along the project corridor include both noise sensitive and non-noise sensitive sites. Field reviews within the project limits revealed 261 noise sensitive sites in the vicinity of the US 301 project corridor that have the potential to be impacted by traffic noise. The locations of these sites are mapped on the aerials (with concept plan and receptor sites) provided in **APPENDIX C**.

Activity Category A

Activity Category A focuses on the exterior impact criteria for 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 for the area to continue to serve its intended purpose. The approach NAC level for this activity category is 56 dB(A). No Activity Category A land uses are located within the US 301 study limits.

Activity Category B

Activity Category B includes the exterior impact criteria for single-family (including mobile home parks) and multifamily residences. This may include units above ground level. The approach NAC level for this activity category is 66 dB(A). There are 232 residences within the US 301 study limits that were evaluated as part of this traffic noise analysis.

Activity Category C

Activity Category C includes the exterior impact criteria for a variety of land use facilities. The approach NAC level for this activity category is 66 dB(A). Examples of this activity category include active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, golf courses, Section 4(f) resources, schools, television studios, trails, and trail crossings. Note that these criteria apply only to the exterior areas of Activity Category C. There are six Activity Category C land uses (John B. Sargeant Park, Hillsborough River State Park, Spanish Main RV Resort, Fellowship Baptist Church, Orbital Paintball and Fort King Trail crossings) located adjacent to the US 301 study limits. These land uses are represented by 24 receptors designated as 4-01 through 4-03, 8-02 through 8-07, 11-98 through 11-101, 12-01 through 12-05, 13-01, 15-01 and Trail 1 through Trail 4. The locations of these receptors are mapped on the aerials provided in **APPENDIX C**.

Activity Category D

Activity Category D includes the interior impact criteria for a variety of land use facilities listed in Activity Category C that may have interior uses. The approach NAC level for this activity category is 51 dB(A). Two Activity Category D land uses (Macedonia Missionary Baptist and New Faith Temple Churches and a museum and interpretive center at Hillsborough River State Park) are located within the US 301 study limits. These land uses are represented by four receptors 1-02, 1-09, 8-08 and 8-09 respectively and were not evaluated as Activity Category C because there were not any areas of outdoor use identified during the land use field reviews. The locations of these receptors are mapped on the aerials provided in **APPENDIX C**.

Activity Category E

Activity Category E includes the exterior impact criteria for developed lands that are less sensitive to highway traffic noise. The approach NAC level for this activity category is 71 dB(A) in exterior areas of frequent human use. Examples of this activity category include hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in Activity Category A-D or F. One Activity Category E land use (an outdoor seating area at the US 301 Bar and Grill) is located adjacent to the study limits of the US 301 project and is represented by receptor 3-32R and shown on the aerials provided in **APPENDIX C**. This site is designated a re-location and will therefore not have a predicted traffic noise level in the build condition.

Activity Category F

Activity Category F land uses include 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. There is no NAC level for this activity category since the FHWA considers these land uses as not sensitive to highway traffic noise; therefore, no noise analysis is required for these locations.

Activity Category G

Activity Category G includes undeveloped lands that are not permitted for construction. There are no NAC for Activity Category G. Although consideration of mitigation is not required, the FDOT must determine and document highway traffic noise levels and provide this information to local governments. Noise contours are developed to illustrate the best estimate of the distance from the edge of the nearest travel lane at which traffic noise would approach or exceed the NAC for Activity Categories A, B, C, D and E. Land use controls and noise contours are discussed further in **Section 2-4** and will assist local officials in planning and permitting future noise compatible land uses on the undeveloped parcels.

2.4 Noise Abatement Measures

FDOT considers noise abatement measures when future traffic noise levels attributed to a proposed roadway improvement approach, meet, or exceed the NAC, or when levels increase substantially. These measures may include traffic management, alignment modifications, land use controls, and noise barriers.[4] The following discusses the feasibility (i.e., amount of noise reduction, engineering considerations) and/or reasonableness (i.e., number of noise sensitive sites benefited, absolute noise levels, cost, etc.) of these measures.

2.4.1 Traffic Management

Traffic control measures that limit motor vehicle speeds and restrict certain vehicle types can be effective noise mitigation measures. However, these measures may also negate a project's ability to meet the need of the facility. For example, prohibiting heavy trucks from using US 301 would lower traffic noise levels; however, it would also eliminate the ability to efficiently move people and goods through the study limits. Therefore, this method of noise mitigation is not considered reasonable.

2.4.2 Alignment Modifications

Alignment modification involves shifting the roadway alignment at sufficient distances from noise sensitive areas to minimize traffic noise. The existing Florida Gas transmission line dictates the proposed horizontal alignment for the portion of the US 301 corridor south of Stacy Road. For this reason, shifting the US 301 alignment to reduce traffic noise would result in other undesirable impacts and is not a reasonable measure to reduce noise levels associated with this section of the project. The proposed improvements north of Stacy Road will generally follow the same alignment as the existing US 301 roadway to minimize the need for additional ROW within the project corridor. Maintaining the alignment within the existing ROW, where feasible, will minimize impacts to surrounding noise sensitive sites located both east and west of the roadway. As such, alternative roadway alignments are not considered a reasonable abatement measure.

2.4.3 Buffer Zones

Another noise abatement measure is to use land use controls to minimize impacts to future development. Providing a buffer between a highway and future noise sensitive land uses is an abatement measure that can minimize/eliminate traffic noise impacts in areas of future development. To encourage use of this abatement measure through local land use planning, noise contours have been developed.

Noise contours were developed to illustrate the best estimate of the distance from the edge of the nearest travel lane at which traffic noise would approach the NAC for Activity Categories A, B, C, D and E. These noise contours, which delineate points of equal traffic noise level, do not consider any shielding of noise provided by structures between the noise sensitive site and the roadway.

[4] Florida Department of Transportation Project Development and Environment Manual Part 2, Chapter 18, Highway Traffic Noise, July 1, 2020.

Table 2-3 will assist local officials in planning and permitting future noise compatible land uses adjacent to US 301.

Table 2-3 Estimated Noise Contours

US 301 Traffic Segment	NAC Activity Category			
	A – 56 dB(A)	B/C – 66 dB(A)	D – 51 dB(A)	E – 71 dB(A)
Fowler Avenue to Harney Road	358 feet	101 feet	0 feet	35 feet
Harney Road to CR 579	358 feet	101 feet	0 feet	35 feet
CR 579 to Stacy Road	358 feet	101 feet	0 feet	35 feet
Stacy Road to McIntosh Road	560 feet	174 feet	31 feet	84 feet
McIntosh Road to Proposed SR 56	560 feet	174 feet	31 feet	84 feet

2.4.4 Noise Barriers

Noise barriers have the potential to reduce traffic noise levels by physically obstructing the sound path between the motor vehicles on the roadway (the source) and the noise sensitive land uses adjacent to the roadway. However, in order to effectively reduce traffic noise, a noise barrier must be relatively long, continuous (without intermittent openings), and sufficiently tall. Following FDOT procedures, the minimum requirements for a noise barrier to be considered both acoustically feasible and reasonable and cost effective are:

- Acoustically Feasible and Reasonable Criteria – To be acoustically feasible, a barrier must provide at least a 5 dB(A) reduction in traffic noise for two or more impacted noise sensitive receptors. To be acoustically reasonable, a barrier must provide at least a 7 dB(A) reduction (i.e., the FDOT's Noise Reduction Design Goal) for at least one benefited receptor (a benefited receptor is a receptor that receives at least a 5 dB(A) reduction in noise from a mitigation measure).

- Cost Effective Criteria - The current FDOT unit cost to construct noise barriers (i.e., materials and labor) is $30.00 per square foot. A barrier should not cost more than $42,000 per benefited noise sensitive receptor.

If a noise barrier meets both the initial acoustic feasibility and reasonableness criteria and is cost effective, additional factors are considered. These factors relate to design and construction (i.e., given site-specific details, can a barrier actually be constructed), safety, access to and from adjacent properties, ROW requirements, maintenance, and impacts on utilities and drainage. The viewpoint of the impacted property owners, and renters if applicable, who may, or may not, desire a noise barrier is also a factor that is considered when evaluating noise barriers as an abatement measure as part of a Traffic Noise Analysis.

3.1 Model Validation

To validate the accuracy of TNM as a prediction model, traffic noise levels were measured on the afternoon of January 14, 2016, at three locations adjacent to US 301. The locations are shown on the aerials (with concept plan and receptor sites) provided in **APPENDIX C** and the Validation Monitoring Field Data Sheets are provided in **APPENDIX D**. The locations were selected because they provide a clear view of the passing vehicles traveling at free-flow conditions for more than 1,000 feet in each direction in close proximity to noise sensitive sites. Although these traffic noise levels were measured more than five years prior to this NSR being published, the time difference does not impact the results of the analysis since validation monitoring captures noise levels at a specific time, which is then recreated in TNM.

Traffic data including vehicle volumes by type, vehicle speeds, and meteorological conditions were recorded during each measurement period. The measurements were taken following procedures documented in the Noise Measurement Handbook (FHWA-HEP-18-065, 2018) using a Casella CEL-63X Type I sound level meter. The sound level meter was calibrated using a Casella CEL-120/1 acoustic calibrator. Speeds of passing vehicles were recorded with a Stalker Sport radar gun. The recorded traffic data were used as input in TNM to determine if, given the topography and actual site conditions of the area, the computer model could “recreate” the measured levels with the existing roadway.

Table 3-1 presents the field measurements and the validation results for all three locations adjacent to US 301. Following FDOT guidelines, a noise prediction model is considered within the accepted level of accuracy if the measured and predicted noise levels are within a tolerance standard of three dB(A). As shown, the ability of the model to predict noise levels within the FDOT limits of three dB(A) for the project was confirmed. The noise model usually predicts noise levels higher than measured levels, however, there are certain instances where background noises (i.e., birds, insects, lawn equipment, etc.) combined with vehicle volumes during a measurement period will cause measured levels to be slightly higher than those predicted. These instances occurred during validation measurement #1 runs 1 and 3, and validation measurement #3 runs 1 and 3 as described in the additional comments section of the Validation Monitoring Field Data Sheets provided in **APPENDIX D**.

Table 3-1 Noise Model Validation

Site	Run	Measured Leq(h)	Predicted Leq(h)	Differences	Validated
Validation Measurement #1 Spanish Main RV Resort	1	69.1	68.3	0.8	Yes
	2	67.5	68.2	0.7	Yes
	3	68.7	67.8	0.9	Yes
Validation Measurement #2 Fellowship Baptist Church	1	68.3	68.7	0.4	Yes
	2	69.2	69.6	0.2	Yes
	3	67.9	70.0	2.1	Yes
Validation Measurement #3 Rapid River Boulevard	1	66.3	65.8	0.5	Yes
	2	65.4	66.3	0.9	Yes
	3	67.0	66.6	0.4	Yes

Noise levels represented in dB(A)

3.2 Predicted Noise Levels

The predicted traffic noise levels modeled for 261 noise sensitive sites adjacent to US 301 are shown in the Predicted Noise Level table located in **APPENDIX B**. The existing (2015) and future year (2045) noise levels with and without the proposed improvements are provided. The existing condition traffic noise levels are predicted to range from 52.6 to 75.9 dB(A) for Activity Category B and C land uses, 33.8 to 41.3 dB(A) for Category D, and 66.7 dB(A) for the single receptor in Category E. The no-build condition future year traffic noise levels are predicted to range from 54.8 to 77.3 dB(A) for Activity Category B and C, 36.1 to 42.4 dB(A) for Category D, and 68.1 dB(A) for the single receptor in Category E. The proposed build alternative is predicted to result in traffic noise levels ranging from 57.6 to 71.9 dB(A) for Activity Category B and C, 39.7 to 47.3 dB(A) for Category D, and there is no predicted noise level for the single receptor in Category E since it is a relocation. Eighteen of the total 261 noise sensitive sites evaluated are relocations (2-05R through 2-013R, 3-17R, 3-22R, 3-32R, Trail 1 through Trail 4, 5-01R and 14-07R) and therefore were not evaluated in the build condition.

Sixty-seven of the 243 noise sensitive sites evaluated in the future year build condition are predicted to experience future noise levels with the proposed improvements to US 301 that approach, meet, or exceed the NAC for their respective Activity Category. However, none of the 243 evaluated sites are predicted to experience a substantial increase of traffic noise as a result of the proposed improvements. The maximum increase between the existing condition and the proposed build alternative is 8.7 dB(A) at receptor 13-09. The 67 receptors representing 67 noise sensitive sites are referred to as “impacted” receptors. Of the 67 impacted receptors, 65 represent residential properties (Activity Category B) and two receptors represent the outdoor seating areas of the Orbital Paintball facility (Activity Category C).

Notably, the predicted traffic noise levels in the build condition at receptor 4-01 and the majority of receptors in NSA 11 are less than the levels predicted for the existing condition at these receptors, showing a negative value in the increase over existing noise levels column in the

Predicted Noise Level table located in **APPENDIX B.** This negative value can be explained by a combination of the proposed improvements shifting the travel lanes further away from the receptors than the existing roadway and reduced posted speed limits of the build condition.

Noise barriers were evaluated as abatement measures for the impacted receptors that were predicted to experience future traffic noise levels that approach, meet, or exceed the NAC with the proposed improvements. The results of the evaluation are provided in the following section.

3.3 Noise Abatement Analysis

The TNM was used to evaluate the effectiveness of noise barriers for the 67 receptors that are predicted to experience traffic noise levels that exceed the NAC for Activity Category B. Noise barriers were modeled at all locations where two or more impacted residences were found in close proximity to each other. At each noise barrier location, the ability to meet noise reduction requirements was first assessed. If noise reduction requirements were met, the cost reasonableness was evaluated. All barriers were modeled in TNM at a location inside of the proposed ROW at the back of the proposed sidewalk.

3.3.1 Barriers for Single, Isolated Residences

As discussed in **Section 2.4.4**, for a noise barrier to be acoustically feasible, a barrier must provide at least a 5 dB(A) reduction in traffic noise for two or more impacted noise sensitive receptors. For several impacted, single, isolated residences adjacent to US 301 this is not achievable because they are not close enough to other impacted noise sensitive sites. As such, noise barriers for these impacted receptors are not considered a feasible noise abatement measure. These receptors and their locations are listed below:

- Receptor 2-04 – residence located 300 feet north of the Harney Road intersection adjacent to the southbound lanes of US 301
- Receptor 5-01 – residence located 3/4 of a mile south of the McIntosh Road intersection adjacent to the southbound lanes of US 301
- Receptor 6-10 – residence located 1/3 of a mile north of the McIntosh Road intersection adjacent to the southbound lanes of US 301
- Receptor 6-14 – residence located 1/2 of a mile north of the McIntosh Road intersection adjacent to the southbound lanes of US 301
- Receptor 7-05 – residence located 200 feet north of Dead River Road adjacent to the southbound lanes of US 301
- Receptor 7-20 – residence located 1/3 of a mile south of Dead River Road adjacent to the southbound lanes of US 301
- Receptor 10-27 – residence located 500 feet south of the Harney Road intersection adjacent to the northbound lanes of US 301

- Receptor 13-02 – residence located a little less than a mile south of the Harney Road intersection adjacent to the northbound lanes of US 301

- Receptor 13-09 – residence located 2/3 of a mile south of the Harney Road intersection adjacent to the northbound lanes of US 301

- Receptor 14-12 – residence located 1/3 of a mile south of St. Francis Lane adjacent to the northbound lanes of US 301.

3.3.2 Barrier 1 – Tom Folsom Road

A noise barrier was evaluated for the three impacted residences located west of Tom Folsom Road (receptors T-03, T-04 and T-05) adjacent to the southbound lanes of US 301. To accommodate the access to US 301 for these residences, a system of barrier segments was evaluated between each of the driveways five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheet 1 of the aerials in **APPENDIX C**.

The required minimum noise reduction of 5 dB(A) could only be reached at one impacted receptor (T-04), therefore this barrier system is not a feasible abatement measure. The ineffectiveness of a barrier at this location can be attributed to the driveway connections needed for residential access to US 301. The breaks in a barrier required to maintain this access would significantly reduce the noise reduction of a noise barrier.

3.3.3 Barrier 2 – Bradley Road / Marlo Drive

A noise barrier was evaluated for the six impacted residences located from east of Bradley Road to east of Marlo Drive (receptors 1-05, 1-06 and 1-11 through 1-14) adjacent to the southbound lanes of US 301. To accommodate the access to US 301 for these residences, a system of barrier segments was evaluated between each of the driveways five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheet 2 of the aerials in **APPENDIX C**.

The length of the barrier segments were optimized using the TNM to successfully achieve the minimum noise reduction requirements of 5 dB(A) at two impacted residences and 7 dB(A) at one impacted residence at barrier heights from 12 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-2**. As also shown, the cost per benefited receptor at these heights would exceed the FDOT's cost effectiveness criteria of $42,000 per benefited receptor. Since the cost per benefited receptor exceeds the cost reasonable guideline, the barrier system is not considered a reasonable noise abatement measure at this location. The ineffectiveness of a barrier at this location can be attributed to the driveway connections needed for residential access to US 301. The breaks in a barrier required to maintain this access would significantly reduce the noise reduction of a noise barrier.

Table 3-2 Noise Barrier Analysis Results – Barrier 2 (Bradley Road / Marlo Drive)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]	Cost Per Benefited Receptor	Cost Reasonable Yes/No[3]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total			
8	N/A	0	0	0	0	0	0	N/A	N/A	N/A
10	N/A	1	1	0	2	0	2	N/A	N/A	N/A
12	811	4	0	1	5	0	5	$291,960	$58,392	No
14	798	3	1	1	5	0	5	$335,160	$67,032	No
16	758	3	1	1	5	0	5	$363,840	$72,768	No
18	738	3	1	1	5	0	5	$398,520	$79,704	No
20	691	3	1	1	5	0	5	$414,600	$82,920	No
22	847	2	3	1	6	1	7	$559,020	$79,860	No

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.
[3] FDOT cost reasonable criterion is $42,000 per benefited receptor.

3.3.4 Barrier 3 – Harney Road Intersection

A noise barrier was previously evaluated for the two impacted residences located west of the Harney Road intersection (receptors 2-01 and 2-02) adjacent to the southbound lanes of US 301. Based on the updated plans and traffic, these two residences are no longer impacted. The locations of these receptors are shown on sheet 3 of the aerials in **APPENDIX C**.

3.3.5 Barrier 4 – Ranch Oaks Estates

A noise barrier was evaluated for the 14 impacted residences located in Ranch Oaks Estates north of the Harney Road intersection (receptors 2-14 through 2-24, 2-31, 2-32, and 2-40) adjacent to the southbound lanes of US 301. Nine relocations (2-05R through 2-13R) a combination of six mobile homes and three recreational vehicles are anticipated and therefore not evaluated as part of the barrier analysis. The barrier was evaluated five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheet 3 of the aerials in **APPENDIX C**.

The length of the barrier was optimized using the TNM to successfully achieve the minimum noise reduction requirements of 5 dB(A) for at least two impacted residences and 7 dB(A) for at least one impacted residence at each height evaluated from 8 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-3**.

Table 3-3 Noise Barrier Analysis Results – Barrier 4 (Ranch Oaks Estates)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]	Cost Per Benefited Receptor	Cost Reasonable Yes/No[3]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total			
8	1,230	5	5	2	11	1	12	$295,200	$24,600	Yes
10	840	4	5	10	13	6	19	$252,000	$13,263	Yes
12	840	12	5	15	14	18	32	$302,400	$9,450	Yes
14	820	11	9	16	14	22	36	$344,400	$9,567	Yes
16	820	9	8	20	14	23	37	$393,600	$10,638	Yes
18	820	10	7	22	14	25	39	$442,800	$11,354	Yes
20	820	8	8	23	14	25	39	$492,000	$12,615	Yes
22	820	8	6	25	14	25	39	$541,200	$13,877	Yes

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.
[3] FDOT cost reasonable criterion is $42,000 per benefited receptor.

As shown in the table above, at heights of 12 to 22 feet, a noise barrier is predicted to provide the necessary noise reduction at all 14 of the impacted receptors located in Ranch Oaks Estates. The noise barrier, at heights of 12 to 22 feet, will also provide this reduction for a minimum of 18 additional residences that are not predicted to be impacted by traffic noise levels from the proposed build alternative. Because this barrier is predicted to provide the required noise reduction at a cost below the reasonable guideline for all heights, the barrier was evaluated further. The results of the evaluation are provided in **Table 3-4**.

Table 3-4 Barrier 4 (Ranch Oaks Estates) Additional Barrier Considerations

Feasibility and Reasonableness Factors	Comments
Design and Construction Factors	A determination of the viability of a noise barrier being constructed at this location utilizing standard construction methods and techniques will be made during the project's design phase. Any additional costs to solely construct a noise barrier will be included in the final cost reasonableness evaluation of a noise barrier at this location during the project's design phase.
Safety Factors	There are no safety concerns for a noise barrier constructed at this location currently. A final review will be made during the design phase of the project that includes line of sight considerations and the safety of pedestrians and bicyclists traveling adjacent to the modeled barrier.
Accessibility Factors	The barrier will be located within FDOT's proposed ROW and is not expected to have an impact on accessibility to adjacent properties.
Right-of-Way Factors	It does not appear that additional ROW would need to be acquired to accommodate the modeled noise barrier.
Maintenance Factors	The FDOT should be able to utilize standard practices for maintenance at the modeled barrier location. Maintenance access between the proposed ROW and the modeled noise barrier will be further considered during the project's design phase.
Drainage Factors	The potential for drainage of stormwater along, under or away from the modeled barrier will be evaluated during the project's design phase to determine if special accommodations are necessary.
Utility Factors	A determination of potential utility conflicts will be made during the project's design phase. Potential lighting, overhead and buried utility conflicts associated with the construction of the barrier at the modeled location will be evaluated.
Viewpoint of Benefited Receptors / Community Desires	Viewpoints of the public regarding traffic noise will be documented as received from the public hearing or other mediums to be referenced during the design phase. Public support or opposition by property owners affected by a specific noise barrier will be solicited in the design phase of the project.

3.3.6 Barrier 5 – Langshire Village

A noise barrier was evaluated for the five impacted residences located in Langshire Village from just south of Anne Kenia Drive to just north of Palm Tree Drive (receptors 3-01, 3-08, 3-09, 3-14 and 3-18) adjacent to the southbound lanes of US 301.The barrier was evaluated in two segments to accommodate Palm Tree Drive's access to US 301, five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheets 3 and 4 of the aerials in **APPENDIX C**.

The lengths of the barrier segments were optimized using the TNM to successfully achieve the minimum noise reduction requirements of 5 dB(A) at two impacted residences and 7 dB(A) at one impacted residence at each height evaluated from 12 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-5**.

Table 3-5 Noise Barrier Analysis Results – Barrier 5 (Langshire Village)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]	Cost Per Benefited Receptor	Cost Reasonable Yes/No[3]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total			
8	N/A	0	0	0	0	0	0	N/A	N/A	N/A
10	2127	3	2	0	4	1	5	N/A	N/A	N/A
12	1498	5	0	1	5	1	6	$539,280	$89,880	No
14	1458	6	1	4	5	6	11	$612,360	$55,669	No
16	1361	7	1	4	5	7	12	$653,280	$54,440	No
18	1419	6	1	5	5	7	12	$766,260	$63,855	No
20	1419	4	2	6	5	7	12	$851,400	$70,950	No
22	1419	2	3	7	5	7	12	$936,540	$78,045	No

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.
[3] FDOT cost reasonable criterion is $42,000 per benefited receptor.

As shown (and mentioned above), the goal of reducing predicted traffic noise levels the required amount could be achieved at heights between 12 and 22 feet. However, the range in cost per benefited receptor is $54,440 to $89,880 at these heights and exceed the cost reasonable limit of $42,000 per benefited receptor. Since the cost per benefited receptor exceeds the cost reasonable guideline, the barrier system is not considered a reasonable noise abatement measure at this location. The higher cost per benefited receptor at this location can be attributed to the low density of impacted receptors causing an extended length of a barrier needed to provide the required noise reduction.

3.3.7 Barrier 6 – Kelly Lane Cul-de-sac

A noise barrier was evaluated for the six impacted residences located south and east of the cul-de-sac at the end of Kelly Lane (receptors 3-30 and 3-35 through 3-39) adjacent to the southbound lanes of US 301. One relocation (2-32R) is anticipated and therefore not evaluated as part of the barrier analysis. The barrier was evaluated five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheet 5 of the aerials in **APPENDIX C**.

The ends of the barrier were optimized using the TNM to successfully achieve the minimum noise reduction requirements of at least 5 dB(A) at two impacted residences and at least 7 dB(A) at one impacted residence at each height evaluated from 8 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-6**.

Table 3-6 Noise Barrier Analysis Results – Barrier 6 (Kelly Lane Cul-de-sac)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]	Cost Per Benefited Receptor	Cost Reasonable Yes/No[3]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total			
8	510	4	0	1	5	0	5	$121,400	$24,480	Yes
10	390	1	4	1	6	0	6	$117,000	$19,500	Yes
12	350	3	2	1	6	0	6	$126,000	$21,000	Yes
14	350	2	3	1	6	0	6	$147,000	$24,500	Yes
16	350	1	4	1	6	0	6	$168,000	$28,000	Yes
18	350	1	4	1	6	0	6	$189,000	$31,500	Yes
20	350	1	4	1	6	0	6	$210,000	$35,000	Yes
22	350	1	4	1	6	0	6	$231,000	$38,500	Yes

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.
[3] FDOT cost reasonable criterion is $42,000 per benefited receptor.

As shown in the table above, a noise barrier at 10 feet and above is predicted to provide the necessary noise reduction for all six impacted receptors located south and east of the cul-de-sac at the end of Kelly Lane. Because this barrier is predicted to provide the required noise reduction at a cost below the reasonable guideline for all heights, the barrier was evaluated further. The results of the evaluation are provided in **Table 3-7**.

Table 3-7 Barrier 6 (Kelly Lane Cul-de-sac) Additional Barrier Considerations

Feasibility and Reasonableness Factors	Comments
Design and Construction Factors	A determination of the viability of a noise barrier being constructed at this location utilizing standard construction methods and techniques will be made during the project's design phase. Any additional costs to solely construct a noise barrier will be included in the final cost reasonableness evaluation of a noise barrier at this location during the project's design phase.
Safety Factors	There are no safety concerns for a noise barrier constructed at this location currently. A final review will be made during the design phase of the project that includes line of sight considerations and the safety of pedestrians and bicyclists traveling adjacent to the modeled barrier.
Accessibility Factors	The barrier will be located within FDOT's proposed ROW and is not expected to have an impact on accessibility to adjacent properties.
Right-of-Way Factors	It does not appear that additional ROW would need to be acquired to accommodate the modeled noise barrier.
Maintenance Factors	The FDOT should be able to utilize standard practices for maintenance at the modeled barrier location. Maintenance access between the proposed ROW and the modeled noise barrier will be further considered during the project's design phase.
Drainage Factors	The potential for drainage of stormwater along, under or away from the modeled barrier will be evaluated during the project's design phase to determine if special accommodations are necessary.
Utility Factors	A determination of potential utility conflicts will be made during the project's design phase. Potential lighting, overhead and buried utility conflicts associated with the construction of the barrier at the modeled location will be evaluated.
Viewpoint of Benefited Receptors / Community Desires	Viewpoints of the public regarding traffic noise will be documented as received from the public hearing or other mediums to be referenced during the design phase. Public support or opposition by property owners affected by a specific noise barrier will be solicited in the design phase of the project.

3.3.8 Barrier 7 – West of Jackson Road

A noise barrier was evaluated for the two impacted residences located west of Jackson Road (receptors 10-15 and 10-16) adjacent to the northbound lanes of US 301. To accommodate the access to US 301 for these residences and adjacent commercial properties, a system of several barrier segments were evaluated between each of the driveways five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barriers are shown on sheet 2 of the aerials in **APPENDIX C**.

The required noise reduction goal of 7dB(A) could not be reached at any impacted receptors; therefore, the barrier system is not considered to be a reasonable abatement measure. The ineffectiveness of a barrier at this location can be attributed to the driveway connections needed for access to US 301. The breaks in a barrier required to maintain this access would significantly reduce the noise reduction of a noise barrier.

3.3.9 Barrier 8 – East of Jackson Road

A noise barrier was evaluated for the four impacted residences located east of Jackson Road (receptors 10-20 through 10-22 and 10-24) adjacent to the northbound lanes of US 301. To accommodate the access to US 301 for these residences, the barrier was evaluated in segments between each of the driveways five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheet 2 of the aerials in **APPENDIX C**.

The lengths of the barrier segments were optimized using the TNM to successfully achieve the minimum noise reduction requirements of 5 dB(A) at two impacted residences and 7 dB(A) at one impacted residence at each height evaluated from 14 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-8**.

The range in cost per benefited receptor is $86,400 to $92,400 at these heights and exceeds the cost reasonable limit of $42,000 per benefited receptor. Since the cost per benefited receptor exceeds the cost reasonable guideline, the barrier system is not considered a reasonable noise abatement measure at this location. The ineffectiveness of a barrier at this location can be attributed to the driveway connections needed for residential access to US 301. The breaks in a barrier required to maintain this access would significantly reduce the noise reduction of a noise barrier.

Table 3-8 Noise Barrier Analysis Results – Barrier 8 (East of Jackson Road)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]	Cost Per Benefited Receptor	Cost Reasonable Yes/No[3]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total			
8	N/A	1	0	0	1	0	1	N/A	N/A	N/A
10	N/A	0	0	1	1	0	1	N/A	N/A	N/A
12	N/A	0	0	1	1	0	1	N/A	N/A	N/A
14	660	2	0	1	3	0	3	$277,200	$92,400	No
16	560	2	0	1	3	0	3	$268,800	$89,600	No
18	480	2	0	1	3	0	3	$259,200	$86,400	No
20	440	2	0	1	3	0	3	$264,000	$88,000	No
22	420	2	0	1	3	0	3	$277,200	$92,400	No

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.
[3] FDOT cost reasonable criterion is $42,000 per benefited receptor.

3.3.10 Barrier 9 – Ohio Avenue, Green Oaks Trailer Park and Spanish Main RV Resort

A noise barrier was evaluated for the 11 impacted residences located south of Ohio Avenue, in the Green Oaks Trailer Park and in the Spanish Main RV Resort south of Florence Avenue (receptors 11-01, 11-17 through 11-19, 11-21, 11-22, 11-27, 11-34, 11-35, 11-49 and 11-50) adjacent to the northbound lanes of US 301.The barrier was evaluated in three segments to accommodate a driveway access and Ohio Avenue. The barrier was evaluated five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheets 3 and 4 of the aerials in **APPENDIX C**.

The length of the barrier segments were optimized using the TNM to successfully achieve the minimum noise reduction requirements of 5 dB(A) at two impacted residences and 7 dB(A) at one impacted residence at each height evaluated from 8 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-9**.

Receptor 11-17 was not benefited at any barrier height or length, due to its proximity to Ohio Ave. At heights of 10 to 22 feet, a noise barrier is predicted to provide the necessary noise reduction at ten of the impacted receptors located north of Ohio Avenue, in the Green Oaks Trailer Park and in the Spanish Main RV Resort. At these heights, the noise barrier will also provide this reduction for at least 6 additional residences that are not predicted to be impacted by traffic noise levels from the proposed build alternative. Because this barrier is predicted to provide the required noise reduction at a cost below the reasonable guideline for all heights between 8 and 22 feet, the barrier was evaluated further. The results of the evaluation are provided in **Table 3-10**.

Table 3-9 Noise Barrier Analysis Results – Barrier 9 (Ohio Avenue, Green Oaks Trailer Park and Spanish Main RV Resort)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]	Cost Per Benefited Receptor	Cost Reasonable Yes/No[3]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total			
8	862	6	1	1	8	0	8	$206,880	$25,860	Yes
10	819	8	2	6	10	6	16	$245,700	$15,356	Yes
12	798	7	8	11	10	16	26	$287,280	$11,049	Yes
14	798	6	10	13	10	19	29	$335,160	$11,557	Yes
16	798	3	11	15	10	19	29	$383,040	$13,208	Yes
18	798	3	9	17	10	19	29	$430,920	$14,859	Yes
20	798	1	7	21	10	19	29	$478,800	$16,510	Yes
22	798	1	5	32	10	19	29	$526,680	$18,161	Yes

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.
[3] FDOT cost reasonable criterion is $42,000 per benefited receptor.

Table 3-10 Barrier 9 (Ohio Avenue, Green Oaks Trailer Park and Spanish Main RV Resort) Additional Barrier Considerations

Feasibility and Reasonableness Factors	Comments
Design and Construction Factors	A determination of the viability of a noise barrier system being constructed at this location utilizing standard construction methods and techniques will be made during the project's design phase. Any additional costs to solely construct a noise barrier will be included in the final cost reasonableness evaluation of the noise barriers at this location during the project's design phase.
Safety Factors	There are no safety concerns for a noise barrier system constructed at this location currently. A final review will be made during the design phase of the project that includes line of sight considerations and the safety of pedestrians and bicyclists traveling adjacent to the modeled barriers.
Accessibility Factors	The barriers will be located within FDOT's proposed ROW and are not expected to have an impact on accessibility to adjacent properties.
Right-of-Way Factors	It does not appear that additional ROW would need to be acquired to accommodate the modeled noise barriers.
Maintenance Factors	The FDOT should be able to utilize standard practices for maintenance at the modeled barrier locations. Maintenance access between the proposed ROW and the modeled noise barriers will be further considered during the project's design phase.
Drainage Factors	The potential for drainage of stormwater along, under or away from the modeled barriers will be evaluated during the project's design phase to determine if special accommodations are necessary.
Utility Factors	A determination of potential utility conflicts will be made during the project's design phase. Potential lighting, overhead and buried utility conflicts associated with the construction of the barriers at the modeled location will be evaluated.
Viewpoint of Benefited Receptors / Community Desires	Viewpoints of the public regarding traffic noise will be documented as received from the public hearing or other mediums to be referenced during the design phase. Public support or opposition by property owners affected by a specific noise barrier will be solicited in the design phase of the project.

3.3.11 Barrier 10 – Orbital Paintball

A noise barrier was evaluated for the two impacted receptors representing outdoor seating areas at the Orbital Paintball facility located south of Stacy Road (receptors 12-01 and 12-02) adjacent to the northbound lanes of US 301.The barrier was evaluated five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheets 6 and 7 of the aerials in **APPENDIX C**.

For the purpose of evaluating special land use facilities such as the Orbital Paintball facility, the FDOT developed *A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations FL-ER-65-97.* This method evaluates the intensity of use of the facility and assigns a value to each user to determine cost reasonableness. If impacted, a noise barrier analysis is performed demonstrating that the number of person-hours of use on an average day would, or would not be achieved based on common sense application (i.e., expected use) at each impacted noise sensitive site.

A noise barrier was modeled across the front of the Orbital Paintball property to abate for future traffic noise levels. The ends of the barrier were optimized using the TNM to successfully achieve the minimum noise reduction requirements of at least 5 dB(A) at the two impacted receptors and at least 7 dB(A) at one of the two impacted receptors, at each height evaluated, from 14 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-11**.

Table 3-11 Noise Barrier Analysis Results – Barrier 10 (Orbital Paintball)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total	
8	N/A	0	0	0	0	0	0	N/A
10	N/A	0	0	0	0	0	0	N/A
12	N/A	1	0	0	1	0	1	N/A
14	1278	1	0	1	2	0	2	$536,760
16	602	1	0	1	2	0	2	$288,960
18	542	1	0	1	2	0	2	$292,680
20	522	1	0	1	2	0	2	$313,200
22	502	1	0	1	2	0	2	$331,320

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.

As shown in the table above, the most cost efficient barrier configuration for the abatement of traffic noise at the impacted receptors located at the Orbital Paintball facility is the 16-foot high, 602-foot long barrier at a total cost of $288,960. However, with a criteria abatement cost factor of $995,935/person-hr/ft^2 (as defined in *A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations*), in order for a noise barrier to be considered reasonable, the two outdoor seating areas would have to have an average daily use of 203 people or more for at least two hours each on every day of the year. It is not reasonable to assume this amount of daily use occurs at these sites. Therefore, a noise barrier is not a reasonable measure to abate for traffic noise at this location.

3.3.12 Barrier 11 – McIntosh Road

A noise barrier was evaluated for the two impacted residences located just north of McIntosh Road (receptors 14-08 and 14-10) adjacent to the northbound lanes of US 301.The barrier was evaluated in two segments to accommodate the access to US 301 for these residences, five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheet 12 of the aerials in **APPENDIX C**.

The ends of the barrier segments were optimized using the TNM to successfully achieve the minimum noise reduction requirements of at least 5 dB(A) at the two impacted residences and at least 7 dB(A) at one of the two impacted residences at each height evaluated from 12 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-12**.

Table 3-12 Noise Barrier Analysis Results – Barrier 11 (McIntosh Road)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]	Cost Per Benefited Receptor	Cost Reasonable Yes/No[3]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total			
8	N/A	1	0	0	0	0	0	N/A	N/A	N/A
10	N/A	0	0	0	0	0	0	N/A	N/A	N/A
12	440	1	0	1	2	0	2	$158,400	$79,200	No
14	400	1	0	1	2	0	2	$168,000	$84,000	No
16	400	0	1	1	2	0	2	$192,000	$96,000	No
18	380	1	0	1	2	0	2	$205,200	$102,600	No
20	380	1	0	1	2	0	2	$228,000	$114,000	No
22	380	1	0	1	2	0	2	$250,800	$125,400	No

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.
[3] FDOT cost reasonable criterion is $42,000 per benefited receptor.

As shown (and mentioned above), the goal of reducing predicted traffic noise levels the required amount could be achieved at heights between 12 and 22 feet. However, the range in cost per benefited receptor is $79,200 to $125,400 at these heights, costs that exceed the cost reasonable limit of $42,000 per benefited receptor. Since the cost per benefited receptor exceeds the cost reasonable guideline, the barrier is not considered a reasonable noise abatement measure at this location. The ineffectiveness of a barrier at this location can be attributed to the driveway connection needed for residential access to US 301. The break in the barrier required to maintain this access significantly reduces the noise reduction of a noise barrier at this location.

3.3.13 Barrier 12 – St. Francis Lane

A noise barrier was evaluated for the four impacted residences located just south of St. Francis Lane (receptors 14-13 through 14-16) adjacent to the northbound lanes of US 301.The barrier was evaluated in two segments to accommodate the access to US 301 for these residences five feet inside of the proposed FDOT ROW. The locations of these receptors and modeled barrier are shown on sheet 13 of the aerials in **APPENDIX C**.

The ends of the barrier segments were optimized using the TNM to successfully achieve the minimum noise reduction requirements of 5 dB(A) at two impacted residences and 7 dB(A) at one impacted residence at each height evaluated from 10 to 22 feet in increments of 2 feet. The results of the evaluation are shown in **Table 3-13**.

Table 3-13 Noise Barrier Analysis Results – Barrier 12 (St. Francis Lane)

Barrier Height (feet)	Barrier Length (feet)	Noise Reduction at Impacted Receptors (dB(A))			Number of Benefited Receptors[1]			Total Estimated Cost[2]	Cost Per Benefited Receptor	Cost Reasonable Yes/No[3]
		5-5.9	6-6.9	≥7	Impacted	Not Impacted	Total			
8	679	1	0	0	1	0	1	N/A	N/A	N/A
10	658	1	1	1	3	0	3	$197,400	$65,800	No
12	530	0	2	1	3	0	3	$190,800	$63,600	No
14	467	2	0	1	3	0	3	$196,140	$65,380	No
16	447	2	0	1	3	0	3	$214,560	$71,520	No
18	426	2	0	1	3	0	3	$230,040	$76,680	No
20	426	2	0	1	3	0	3	$255,600	$85,200	No
22	426	0	0	1	3	0	3	$281,160	$93,720	No

[1] Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.
[2] Based on a unit cost of $30 per square foot.
[3] FDOT cost reasonable criterion is $42,000 per benefited receptor.

As shown (and mentioned above), the goal of reducing predicted traffic noise levels the required amount could be achieved at heights between 10 and 22 feet. However, the range in cost per benefited receptor is $63,600 to $93,720 at these heights and exceed the cost reasonable limit of $42,000 per benefited receptor. Since the cost per benefited receptor exceeds the cost reasonable guideline, the barrier is not considered a reasonable noise abatement measure at this location. The ineffectiveness of a barrier at this location can be attributed to the driveway connection needed for residential access to US 301 and the limitation in the length of a segment at St. Francis Lane. The break and limitations in the length of the barrier required to maintain access to the driveway and St. Francis Lane reduces the noise reduction of a noise barrier at this location.

4.0 CONCLUSIONS

The FHWA approved TNM was used to predict traffic noise levels at 261 noise sensitive sites located adjacent to US 301 for the existing (2015) and future year (2045) conditions with and without the proposed improvements. Sixty-seven of the 243 noise sensitive sites evaluated in the future year build condition (18 of the total 261 noise sensitive sites evaluated are relocations and therefore were not evaluated in the build condition) are predicted to experience future noise levels with the proposed improvements to US 301 that approach, meet, or exceed the NAC for their respective Activity Category. However, none of the 243 evaluated sites are predicted to experience a substantial increase of traffic noise as a result of the proposed improvements.

The 67 receptors representing 67 land uses for which there are NAC are referred to as "impacted" receptors. Of the 67 impacted receptors, 65 represent residential properties (Activity Category B) and two receptors represent the outdoor seating areas of the Orbital Paintball facility (Activity Category C).

Traffic management measures, modifications to the roadway alignment, buffer zones and noise barriers were considered as abatement measures at the impacted receptor locations. Noise barriers were the only abatement measure found to be cost reasonable and feasible. The locations of these barriers are listed below:

- Barrier 4: Ranch Oak Estates
- Barrier 6: Kelly Lane Cul-de-sac
- Barrier 9: Ohio Avenue, Green Oaks Trailer Park and Spanish Main RV Resort

Because of the elapsed time between when the noise study was performed and when the Environmental Document will be signed by FDOT (known as the Date of Public Knowledge), the potential exists for additional building permits for sites that have NAC to be granted subsequent to this study. A land use review was conducted on June 30, 2023. Any noise analysis performed during the design phase of this project will include a review of building permit dates. Any noise sensitive site that is identified as permitted between the completion of the land use review update and the Date of Public Knowledge will be analyzed for traffic noise impacts and, if impacts are predicted, abatement considered during the design phase of the project.

4.1 Statement of Likelihood

The FDOT is committed to the construction of noise barriers at three locations contingent upon the following:

- Detailed noise analyses during the final design process support the need, feasibility and reasonableness of providing abatement;

- Cost analysis indicates that the cost of the noise barrier(s) will not exceed the cost reasonable criterion;
- Community input supporting types, heights, and locations of the noise barrier(s) is provided to the District Office; and
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.

Notably, final recommendations on the construction of abatement measures is determined during the project's final design and through the public involvement process. The locations of the three barriers are listed below:

- Barrier 4: Ranch Oak Estates
- Barrier 6: Kelly Lane Cul-de-sac
- Barrier 9: Ohio Avenue, Green Oaks Trailer Park and Spanish Main RV Resort

5.0 CONSTRUCTION NOISE AND VIBRATION

Construction of the proposed roadway improvements is not expected to have any significant noise and vibration impact. If sensitive land uses develop adjacent to the roadway prior to construction, increased potential for noise and vibration impacts could result. It is anticipated that the application of the FDOT Standard Specifications for Road and Bridge Construction will minimize or eliminate potential construction noise and vibration impacts. However, should unanticipated noise and vibration issues arise during the construction process, the Project Engineer, in coordination with the District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

6.0 COMMUNITY COORDINATION

6.1 Public Meetings

The second Public Hearing is scheduled for August 1, 2023. Information from the public hearing will be included in this section as an update after the hearing is complete and when the comment period has elapsed.

6.2 Coordination with Local Officials

Local officials can promote compatibility between land development and highways. FDOT will send copies of this report, which includes the noise contours described in Section 2.4.3, to Hillsborough and Pasco Counties to assist them in permitting future noise-compatible land uses along US 301.

7.0 REFERENCES

Title 23, Part 772 of the Code of Federal Regulations , Procedures for Abatement of Highway Traffic Noise and Construction Noise, Federal Register, Vol. 75, No. 133, Tuesday, July 13, 2010; pages 39834-39839. Available from FHWA.

Florida Department of Transportation Project Development and Environment Manual Part 2, Chapter 18, Highway Traffic Noise, July 1, 2020. Available from FDOT.

Federal Highway Administration Report Number FHWA-PD-96-009, FHWA Traffic Noise Model, Version 1.0 User's Guide. January 1998, 192 pages + supplements. Available from McTrans Center, University of Florida, Gainesville, Florida.

Florida Statute 335.17, State Highway Construction; Means of Noise Abatement. 1989; 1 page. Available from FDOT.

Federal Highway Administration Report Number FHWA-HEP-18-065, Noise Measurement Handbook – Final Report (2018).

Florida Department of Transportation Design Manual (Topic No. 625-000-002), Chapter 264, Noise Walls, and Perimeter Walls. January 1, 2018. Available from FDOT.

Florida Department of Transportation Standard Specifications for Road and Bridge Construction. July 2018. Available from FDOT

Florida Department of Transportation, Traffic Noise Modeling and Analysis Practitioners Handbook, December 31, 2018.

FHWA. Report FHWA-HEP-10-025, Highway Traffic Noise: Analysis and Abatement Guidance, December 2011

Florida Department of Transportation, A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations (FL-ER-65-97), July 2009

APPENDIX A

TRAFFIC DATA

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	2/10/2021
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between Fowler Avenue and Harney Road		

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

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

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2015	Year:	2045	Year:	2045
ADT: LOS (C)	18,000	ADT: LOS (C)	18,000	ADT: LOS (C)	52,600
Demand	17,650	Demand	51,200	Demand	51,200
Speed:	55 mph	Speed:	55 mph	Speed:	55 mph
	89 kmh		89 kmh		89 kmh
K=	9.0 %	K=	9.0 %	K=	9.0 %
D=	75.0 %	D=	65.0 %	D=	65.0 %
T=	10.6 % for 24 hrs.	T=	10.6 % for 24 hrs.	T=	10.6 % for 24 hrs.
T=	5.3 % Design hr	T=	5.3 % Design hr	T=	5.3 % Design hr
2.1	% Medium Trucks DHV	2.1	% Medium Trucks DHV	2.1	% Medium Trucks DHV
3.2	% Heavy Trucks DHV	3.2	% Heavy Trucks DHV	3.2	% Heavy Trucks DHV
0.1	% Buses DHV	0.1	% Buses DHV	0.1	% Buses DHV
0.7	% Motorcycles DHV	0.7	% Motorcycles DHV	0.7	% Motorcycles DHV

STAMINA/TNM INPUT

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

Existing Facility Model:		**Demand**	**No-Build (Design Year) Model:**		**LOS (C)**	**Build (Design Year) Model:**		**Demand**
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	1141	Southbound:	Autos	989	Southbound:	Autos	2889
	Med Trucks	26		Med Trucks	22		Med Trucks	65
	Hvy Trucks	39		Hvy Trucks	34		Hvy Trucks	98
	Buses	1		Buses	1		Buses	3
	Motorcycles	9		Motorcycles	7		Motorcycles	22
Northbound:	Autos	380	Northbound:	Autos	532	Northbound:	Autos	1556
	Med Trucks	9		Med Trucks	12		Med Trucks	35
	Hvy Trucks	13		Hvy Trucks	18		Hvy Trucks	53
	Buses	0		Buses	1		Buses	2
	Motorcycles	3		Motorcycles	4		Motorcycles	12
Demand			Demand			Demand		
Southbound:	Autos	1119	Southbound:	Autos	2812	Southbound:	Autos	2812
	Med Trucks	25		Med Trucks	63		Med Trucks	63
	Hvy Trucks	38		Hvy Trucks	96		Hvy Trucks	96
	Buses	1		Buses	3		Buses	3
	Motorcycles	8		Motorcycles	21		Motorcycles	21
Northbound:	Autos	373	Northbound:	Autos	1514	Northbound:	Autos	1514
	Med Trucks	8		Med Trucks	34		Med Trucks	34
	Hvy Trucks	13		Hvy Trucks	52		Hvy Trucks	52
	Buses	0		Buses	2		Buses	2
	Motorcycles	3		Motorcycles	11		Motorcycles	11

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	1/18/2021
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between Harney Road and CR 579		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2015		Year:	2045		Year:	2045	
ADT: LOS (C)	18,000		ADT: LOS (C)	18,000		ADT: LOS (C)	52,600	
Demand	16,000		Demand	38,200		Demand	38,200	
Speed:	55	mph	Speed:	55	mph	Speed:	55	mph
	89	kmh		89	kmh		89	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	75.0	%	D=	65.0	%	D=	65.0	%
T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.
T=	5.3	% Design hr	T=	5.3	% Design hr	T=	5.3	% Design hr
2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV	
3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV	
0.1	% Buses DHV		0.1	% Buses DHV		0.1	% Buses DHV	
0.7	% Motorcycles DHV		0.7	% Motorcycles DHV		0.7	% Motorcycles DHV	

STAMINA/TNM INPUT

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

Existing Facility Model:		**Demand**	**No-Build (Design Year) Model:**		**LOS (C)**	**Build (Design Year) Model:**		**Demand**
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	1141	Southbound:	Autos	989	Southbound:	Autos	2889
	Med Trucks	26		Med Trucks	22		Med Trucks	65
	Hvy Trucks	39		Hvy Trucks	34		Hvy Trucks	98
	Buses	1		Buses	1		Buses	3
	Motorcycles	9		Motorcycles	7		Motorcycles	22
Northbound:	Autos	380	Northbound:	Autos	532	Northbound:	Autos	1556
	Med Trucks	9		Med Trucks	12		Med Trucks	35
	Hvy Trucks	13		Hvy Trucks	18		Hvy Trucks	53
	Buses	0		Buses	1		Buses	2
	Motorcycles	3		Motorcycles	4		Motorcycles	12
Demand			Demand			Demand		
Southbound:	Autos	1014	Southbound:	Autos	2098	Southbound:	Autos	2098
	Med Trucks	23		Med Trucks	47		Med Trucks	47
	Hvy Trucks	35		Hvy Trucks	72		Hvy Trucks	72
	Buses	1		Buses	2		Buses	2
	Motorcycles	8		Motorcycles	16		Motorcycles	16
Northbound:	Autos	338	Northbound:	Autos	1130	Northbound:	Autos	1130
	Med Trucks	8		Med Trucks	25		Med Trucks	25
	Hvy Trucks	12		Hvy Trucks	39		Hvy Trucks	39
	Buses	0		Buses	1		Buses	1
	Motorcycles	3		Motorcycles	8		Motorcycles	8

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	1/18/2021
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between CR 579 and Stacy Road		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2015		Year:	2045		Year:	2045	
ADT: LOS (C)	18,000		ADT: LOS (C)	18,000		ADT: LOS (C)	52,600	
Demand	14,600		Demand	39,300		Demand	39,300	
Speed:	55	mph	Speed:	55	mph	Speed:	55	mph
	89	kmh		89	kmh		89	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	75.0	%	D=	65.0	%	D=	65.0	%
T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.
T=	5.3	% Design hr	T=	5.3	% Design hr	T=	5.3	% Design hr
2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV	
3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV	
0.1	% Buses DHV		0.1	% Buses DHV		0.1	% Buses DHV	
0.7	% Motorcycles DHV		0.7	% Motorcycles DHV		0.7	% Motorcycles DHV	

STAMINA/TNM INPUT

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

Existing Facility Model:		**Demand**	**No-Build (Design Year) Model:**		**LOS (C)**	**Build (Design Year) Model:**		**Demand**
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	1141	Southbound:	Autos	989	Southbound:	Autos	2889
	Med Trucks	26		Med Trucks	22		Med Trucks	65
	Hvy Trucks	39		Hvy Trucks	34		Hvy Trucks	98
	Buses	1		Buses	1		Buses	3
	Motorcycles	9		Motorcycles	7		Motorcycles	22
Northbound:	Autos	380	Northbound:	Autos	532	Northbound:	Autos	1556
	Med Trucks	9		Med Trucks	12		Med Trucks	35
	Hvy Trucks	13		Hvy Trucks	18		Hvy Trucks	53
	Buses	0		Buses	1		Buses	2
	Motorcycles	3		Motorcycles	4		Motorcycles	12
Demand			Demand			Demand		
Southbound:	Autos	925	Southbound:	Autos	2159	Southbound:	Autos	2159
	Med Trucks	21		Med Trucks	48		Med Trucks	48
	Hvy Trucks	32		Hvy Trucks	74		Hvy Trucks	74
	Buses	1		Buses	2		Buses	2
	Motorcycles	7		Motorcycles	16		Motorcycles	16
Northbound:	Autos	308	Northbound:	Autos	1162	Northbound:	Autos	1162
	Med Trucks	7		Med Trucks	26		Med Trucks	26
	Hvy Trucks	11		Hvy Trucks	40		Hvy Trucks	40
	Buses	0		Buses	1		Buses	1
	Motorcycles	2		Motorcycles	9		Motorcycles	9

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	1/18/2021
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between Stacy Road and McIntosh Road		

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

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

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2015	Year:	2045	Year:	2045
ADT: LOS (C)	18,000	ADT: LOS (C)	18,000	ADT: LOS (C)	52,600
Demand	11,700	Demand	29,300	Demand	29,300
Speed:	60 mph	Speed:	60 mph	Speed:	60 mph
	97 kmh		97 kmh		97 kmh
K=	9.0 %	K=	9.0 %	K=	9.0 %
D=	75.0 %	D=	65.0 %	D=	65.0 %
T=	11.4 % for 24 hrs.	T=	11.4 % for 24 hrs.	T=	11.4 % for 24 hrs.
T=	5.7 % Design hr	T=	5.7 % Design hr	T=	5.7 % Design hr
2.0	% Medium Trucks DHV	2.0	% Medium Trucks DHV	2.0	% Medium Trucks DHV
3.7	% Heavy Trucks DHV	3.7	% Heavy Trucks DHV	3.7	% Heavy Trucks DHV
0.1	% Buses DHV	0.1	% Buses DHV	0.1	% Buses DHV
0.3	% Motorcycles DHV	0.3	% Motorcycles DHV	0.3	% Motorcycles DHV

STAMINA/TNM INPUT

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

Existing Facility Model:		**Demand**	**No-Build (Design Year) Model:**		**LOS (C)**	**Build (Design Year) Model:**		**Demand**
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	1141	Southbound:	Autos	989	Southbound:	Autos	2889
	Med Trucks	24		Med Trucks	21		Med Trucks	62
	Hvy Trucks	45		Hvy Trucks	39		Hvy Trucks	114
	Buses	1		Buses	1		Buses	3
	Motorcycles	4		Motorcycles	3		Motorcycles	9
Northbound:	Autos	380	Northbound:	Autos	532	Northbound:	Autos	1556
	Med Trucks	8		Med Trucks	11		Med Trucks	33
	Hvy Trucks	15		Hvy Trucks	21		Hvy Trucks	61
	Buses	0		Buses	1		Buses	2
	Motorcycles	1		Motorcycles	2		Motorcycles	5
Demand			Demand			Demand		
Southbound:	Autos	742	Southbound:	Autos	1609	Southbound:	Autos	1609
	Med Trucks	16		Med Trucks	34		Med Trucks	34
	Hvy Trucks	29		Hvy Trucks	63		Hvy Trucks	63
	Buses	1		Buses	2		Buses	2
	Motorcycles	2		Motorcycles	5		Motorcycles	5
Northbound:	Autos	247	Northbound:	Autos	867	Northbound:	Autos	867
	Med Trucks	5		Med Trucks	18		Med Trucks	18
	Hvy Trucks	10		Hvy Trucks	34		Hvy Trucks	34
	Buses	0		Buses	1		Buses	1
	Motorcycles	1		Motorcycles	3		Motorcycles	3

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	1/18/2021
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between McIntosh Road and SR 56		

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

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

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2015	Year:	2045	Year:	2045
ADT: LOS (C)	18,000	ADT: LOS (C)	18,000	ADT: LOS (C)	52,600
Demand	12,400	Demand	37,400	Demand	37,400
Speed:	60 mph	Speed:	60 mph	Speed:	60 mph
	97 kmh		97 kmh		97 kmh
K=	9.0 %	K=	9.0 %	K=	9.0 %
D=	75.0 %	D=	65.0 %	D=	65.0 %
T=	11.4 % for 24 hrs.	T=	11.4 % for 24 hrs.	T=	11.4 % for 24 hrs.
T=	5.7 % Design hr	T=	5.7 % Design hr	T=	5.7 % Design hr
2.0	% Medium Trucks DHV	2.0	% Medium Trucks DHV	2.0	% Medium Trucks DHV
3.7	% Heavy Trucks DHV	3.7	% Heavy Trucks DHV	3.7	% Heavy Trucks DHV
0.1	% Buses DHV	0.1	% Buses DHV	0.1	% Buses DHV
0.3	% Motorcycles DHV	0.3	% Motorcycles DHV	0.3	% Motorcycles DHV

STAMINA/TNM INPUT

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

Existing Facility Model:		**Demand**	**No-Build (Design Year) Model:**		**LOS (C)**	**Build (Design Year) Model:**		**Demand**
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	1141	Southbound:	Autos	989	Southbound:	Autos	2889
	Med Trucks	24		Med Trucks	21		Med Trucks	62
	Hvy Trucks	45		Hvy Trucks	39		Hvy Trucks	114
	Buses	1		Buses	1		Buses	3
	Motorcycles	4		Motorcycles	3		Motorcycles	9
Northbound:	Autos	380	Northbound:	Autos	532	Northbound:	Autos	1556
	Med Trucks	8		Med Trucks	11		Med Trucks	33
	Hvy Trucks	15		Hvy Trucks	21		Hvy Trucks	61
	Buses	0		Buses	1		Buses	2
	Motorcycles	1		Motorcycles	2		Motorcycles	5
Demand			Demand			Demand		
Southbound:	Autos	786	Southbound:	Autos	2054	Southbound:	Autos	2054
	Med Trucks	17		Med Trucks	44		Med Trucks	44
	Hvy Trucks	31		Hvy Trucks	81		Hvy Trucks	81
	Buses	1		Buses	2		Buses	2
	Motorcycles	3		Motorcycles	7		Motorcycles	7
Northbound:	Autos	262	Northbound:	Autos	1106	Northbound:	Autos	1106
	Med Trucks	6		Med Trucks	24		Med Trucks	24
	Hvy Trucks	10		Hvy Trucks	44		Hvy Trucks	44
	Buses	0		Buses	1		Buses	1
	Motorcycles	1		Motorcycles	4		Motorcycles	4

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	3/14/2023
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between Fowler Avenue and Harney Road - Context Classification = C3R (Suburban Residential)		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2015		Year:	2045		Year:	2045	
ADT: LOS (C)	15,300		ADT: LOS (C)	15,300		ADT: LOS (C)	30,700	
Demand	17,650		Demand	51,200		Demand	51,200	
Speed:	55	mph	Speed:	55	mph	Speed:	45	mph
	89	kmh		89	kmh		72	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	75.0	%	D=	65.0	%	D=	65.0	%
T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.
T=	5.3	% Design hr	T=	5.3	% Design hr	T=	5.3	% Design hr
2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV	
3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV	
0.1	% Buses DHV		0.1	% Buses DHV		0.1	% Buses DHV	
0.7	% Motorcycles DHV		0.7	% Motorcycles DHV		0.7	% Motorcycles DHV	

STAMINA/TNM INPUT

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

Existing Facility Model:		LOS (C)	No-Build (Design Year) Model:		LOS (C)	Build (Design Year) Model:		LOS (C)
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	970	Southbound:	Autos	840	Southbound:	Autos	1686
	Med Trucks	22		Med Trucks	19		Med Trucks	38
	Hvy Trucks	33		Hvy Trucks	29		Hvy Trucks	57
	Buses	1		Buses	1		Buses	2
	Motorcycles	7		Motorcycles	6		Motorcycles	13
Northbound:	Autos	323	Northbound:	Autos	453	Northbound:	Autos	908
	Med Trucks	7		Med Trucks	10		Med Trucks	20
	Hvy Trucks	11		Hvy Trucks	15		Hvy Trucks	31
	Buses	0		Buses	0		Buses	1
	Motorcycles	2		Motorcycles	3		Motorcycles	7
Demand			Demand			Demand		
Southbound:	Autos	1119	Southbound:	Autos	2812	Southbound:	Autos	2812
	Med Trucks	25		Med Trucks	63		Med Trucks	63
	Hvy Trucks	38		Hvy Trucks	96		Hvy Trucks	96
	Buses	1		Buses	3		Buses	3
	Motorcycles	8		Motorcycles	21		Motorcycles	21
Northbound:	Autos	373	Northbound:	Autos	1514	Northbound:	Autos	1514
	Med Trucks	8		Med Trucks	34		Med Trucks	34
	Hvy Trucks	13		Hvy Trucks	52		Hvy Trucks	52
	Buses	0		Buses	2		Buses	2
	Motorcycles	3		Motorcycles	11		Motorcycles	11

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	3/14/2023
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between Harney Road and CR 579 - Context Classification = C3C (Suburban Commercial)		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2015		Year:	2045		Year:	2045	
ADT: LOS (C)	15,300		ADT: LOS (C)	15,300		ADT: LOS (C)	30,700	
Demand	16,000		Demand	38,200		Demand	38,200	
Speed:	55	mph	Speed:	55	mph	Speed:	45	mph
	89	kmh		89	kmh		72	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	75.0	%	D=	65.0	%	D=	65.0	%
T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.
T=	5.3	% Design hr	T=	5.3	% Design hr	T=	5.3	% Design hr
2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV	
3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV	
0.1	% Buses DHV		0.1	% Buses DHV		0.1	% Buses DHV	
0.7	% Motorcycles DHV		0.7	% Motorcycles DHV		0.7	% Motorcycles DHV	

STAMINA/TNM INPUT

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

Existing Facility Model:		LOS (C)	No-Build (Design Year) Model:		LOS (C)	Build (Design Year) Model:		LOS (C)
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	970	Southbound:	Autos	840	Southbound:	Autos	1686
	Med Trucks	22		Med Trucks	19		Med Trucks	38
	Hvy Trucks	33		Hvy Trucks	29		Hvy Trucks	57
	Buses	1		Buses	1		Buses	2
	Motorcycles	7		Motorcycles	6		Motorcycles	13
Northbound:	Autos	323	Northbound:	Autos	453	Northbound:	Autos	908
	Med Trucks	7		Med Trucks	10		Med Trucks	20
	Hvy Trucks	11		Hvy Trucks	15		Hvy Trucks	31
	Buses	0		Buses	0		Buses	1
	Motorcycles	2		Motorcycles	3		Motorcycles	7
Demand			Demand			Demand		
Southbound:	Autos	1014	Southbound:	Autos	2098	Southbound:	Autos	2098
	Med Trucks	23		Med Trucks	47		Med Trucks	47
	Hvy Trucks	35		Hvy Trucks	72		Hvy Trucks	72
	Buses	1		Buses	2		Buses	2
	Motorcycles	8		Motorcycles	16		Motorcycles	16
Northbound:	Autos	338	Northbound:	Autos	1130	Northbound:	Autos	1130
	Med Trucks	8		Med Trucks	25		Med Trucks	25
	Hvy Trucks	12		Hvy Trucks	39		Hvy Trucks	39
	Buses	0		Buses	1		Buses	1
	Motorcycles	3		Motorcycles	8		Motorcycles	8

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	3/14/2023
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between CR 579 and Stacy Road - Context Classification = C3C (Suburban Commercial)		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2015		Year:	2045		Year:	2045	
ADT: LOS (C)	15,300		ADT: LOS (C)	15,300		ADT: LOS (C)	30,700	
Demand	14,600		Demand	39,300		Demand	39,300	
Speed:	55	mph	Speed:	55	mph	Speed:	45	mph
	89	kmh		89	kmh		72	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	75.0	%	D=	65.0	%	D=	65.0	%
T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.	T=	10.6	% for 24 hrs.
T=	5.3	% Design hr	T=	5.3	% Design hr	T=	5.3	% Design hr
2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV		2.1	% Medium Trucks DHV	
3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV		3.2	% Heavy Trucks DHV	
0.1	% Buses DHV		0.1	% Buses DHV		0.1	% Buses DHV	
0.7	% Motorcycles DHV		0.7	% Motorcycles DHV		0.7	% Motorcycles DHV	

STAMINA/TNM INPUT

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

Existing Facility Model:		**Demand**	**No-Build (Design Year) Model:**		**LOS (C)**	**Build (Design Year) Model:**		**LOS (C)**
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	970	Southbound:	Autos	840	Southbound:	Autos	1686
	Med Trucks	22		Med Trucks	19		Med Trucks	38
	Hvy Trucks	33		Hvy Trucks	29		Hvy Trucks	57
	Buses	1		Buses	1		Buses	2
	Motorcycles	7		Motorcycles	6		Motorcycles	13
Northbound:	Autos	323	Northbound:	Autos	453	Northbound:	Autos	908
	Med Trucks	7		Med Trucks	10		Med Trucks	20
	Hvy Trucks	11		Hvy Trucks	15		Hvy Trucks	31
	Buses	0		Buses	0		Buses	1
	Motorcycles	2		Motorcycles	3		Motorcycles	7
Demand			Demand			Demand		
Southbound:	Autos	925	Southbound:	Autos	2159	Southbound:	Autos	2159
	Med Trucks	21		Med Trucks	48		Med Trucks	48
	Hvy Trucks	32		Hvy Trucks	74		Hvy Trucks	74
	Buses	1		Buses	2		Buses	2
	Motorcycles	7		Motorcycles	16		Motorcycles	16
Northbound:	Autos	308	Northbound:	Autos	1162	Northbound:	Autos	1162
	Med Trucks	7		Med Trucks	26		Med Trucks	26
	Hvy Trucks	11		Hvy Trucks	40		Hvy Trucks	40
	Buses	0		Buses	1		Buses	1
	Motorcycles	2		Motorcycles	9		Motorcycles	9

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	3/14/2023
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between Stacy Road and McIntosh Road - Context Classification = C1 (Natural)		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2015		Year:	2045		Year:	2045	
ADT: LOS (C)	8,200		ADT: LOS (C)	8,200		ADT: LOS (C)	45,800	
Demand	11,700		Demand	29,300		Demand	29,300	
Speed:	60	mph	Speed:	60	mph	Speed:	55	mph
	97	kmh		97	kmh		89	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	75.0	%	D=	65.0	%	D=	65.0	%
T=	11.4	% for 24 hrs.	T=	11.4	% for 24 hrs.	T=	11.4	% for 24 hrs.
T=	5.7	% Design hr	T=	5.7	% Design hr	T=	5.7	% Design hr
2.0	% Medium Trucks DHV		2.0	% Medium Trucks DHV		2.0	% Medium Trucks DHV	
3.7	% Heavy Trucks DHV		3.7	% Heavy Trucks DHV		3.7	% Heavy Trucks DHV	
0.1	% Buses DHV		0.1	% Buses DHV		0.1	% Buses DHV	
0.3	% Motorcycles DHV		0.3	% Motorcycles DHV		0.3	% Motorcycles DHV	

STAMINA/TNM INPUT

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

Existing Facility Model:		LOS (C)	No-Build (Design Year) Model:		LOS (C)	Build (Design Year) Model:		Demand
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	520	Southbound:	Autos	450	Southbound:	Autos	2516
	Med Trucks	11		Med Trucks	10		Med Trucks	54
	Hvy Trucks	20		Hvy Trucks	18		Hvy Trucks	99
	Buses	1		Buses	0		Buses	3
	Motorcycles	2		Motorcycles	1		Motorcycles	8
Northbound:	Autos	173	Northbound:	Autos	243	Northbound:	Autos	1355
	Med Trucks	4		Med Trucks	5		Med Trucks	29
	Hvy Trucks	7		Hvy Trucks	10		Hvy Trucks	53
	Buses	0		Buses	0		Buses	1
	Motorcycles	1		Motorcycles	1		Motorcycles	4
Demand			Demand			Demand		
Southbound:	Autos	742	Southbound:	Autos	1609	Southbound:	Autos	1609
	Med Trucks	16		Med Trucks	34		Med Trucks	34
	Hvy Trucks	29		Hvy Trucks	63		Hvy Trucks	63
	Buses	1		Buses	2		Buses	2
	Motorcycles	2		Motorcycles	5		Motorcycles	5
Northbound:	Autos	247	Northbound:	Autos	867	Northbound:	Autos	867
	Med Trucks	5		Med Trucks	18		Med Trucks	18
	Hvy Trucks	10		Hvy Trucks	34		Hvy Trucks	34
	Buses	0		Buses	1		Buses	1
	Motorcycles	1		Motorcycles	3		Motorcycles	3

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

TRAFFIC DATA FOR NOISE STUDIES

Project:	US 301 PD&E Study From Fowler Avenue to SR 56	Date:	3/14/2023
WPI Segment Number(s):	255796-1-22-01	Prepared By:	AIM Engineering & Surveying
Financial Project ID:	N/A		
Federal Aid Number(s):	N/A		
Segment Description:	Between McIntosh Road and SR 56 - Context Classification = C1 (Natural)/C2 (Rural)		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2015		Year:	2045		Year:	2045	
ADT: LOS (C)	8,200		ADT: LOS (C)	8,200		ADT: LOS (C)	45,800	
Demand	12,400		Demand	37,400		Demand	37,400	
Speed:	60	mph	Speed:	60	mph	Speed:	55	mph
	97	kmh		97	kmh		89	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	75.0	%	D=	65.0	%	D=	65.0	%
T=	11.4	% for 24 hrs.	T=	11.4	% for 24 hrs.	T=	11.4	% for 24 hrs.
T=	5.7	% Design hr	T=	5.7	% Design hr	T=	5.7	% Design hr
2.0	% Medium Trucks DHV		2.0	% Medium Trucks DHV		2.0	% Medium Trucks DHV	
3.7	% Heavy Trucks DHV		3.7	% Heavy Trucks DHV		3.7	% Heavy Trucks DHV	
0.1	% Buses DHV		0.1	% Buses DHV		0.1	% Buses DHV	
0.3	% Motorcycles DHV		0.3	% Motorcycles DHV		0.3	% Motorcycles DHV	

STAMINA/TNM INPUT

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

Existing Facility Model:		**LOS (C)**	**No-Build (Design Year) Model:**		**LOS (C)**	**Build (Design Year) Model:**		**Demand**
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	520	Southbound:	Autos	450	Southbound:	Autos	2516
	Med Trucks	11		Med Trucks	10		Med Trucks	54
	Hvy Trucks	20		Hvy Trucks	18		Hvy Trucks	99
	Buses	1		Buses	0		Buses	3
	Motorcycles	2		Motorcycles	1		Motorcycles	8
Northbound:	Autos	173	Northbound:	Autos	243	Northbound:	Autos	1355
	Med Trucks	4		Med Trucks	5		Med Trucks	29
	Hvy Trucks	7		Hvy Trucks	10		Hvy Trucks	53
	Buses	0		Buses	0		Buses	1
	Motorcycles	1		Motorcycles	1		Motorcycles	4
Demand			Demand			Demand		
Southbound:	Autos	786	Southbound:	Autos	2054	Southbound:	Autos	2054
	Med Trucks	17		Med Trucks	44		Med Trucks	44
	Hvy Trucks	31		Hvy Trucks	81		Hvy Trucks	81
	Buses	1		Buses	2		Buses	2
	Motorcycles	3		Motorcycles	7		Motorcycles	7
Northbound:	Autos	262	Northbound:	Autos	1106	Northbound:	Autos	1106
	Med Trucks	6		Med Trucks	24		Med Trucks	24
	Hvy Trucks	10		Hvy Trucks	44		Hvy Trucks	44
	Buses	0		Buses	1		Buses	1
	Motorcycles	1		Motorcycles	4		Motorcycles	4

APPENDIX B

PREDICTED NOISE LEVELS

US 301 from Fowler Ave to SR 56 Traffic Noise Level Results Table										
Receiver ID	Concept Plan Sheet	Dwelling Units	NAC	Existing Noise Level - dB(A)	No Build Condition Noise Level dB(A)	Build Condition Noise Level - dB(A)	Impact Threshold	Increase Over Existing Noise Levels - dB(A)	Substantial Increase Threshold	Impact
T-01	1	1	B	59.6	59.6	**64.8**	66	5.2	NO	NO
T-02	1	1	B	56.9	57.2	**60.9**	66	4.0	NO	NO
T-03	1	1	B	62.7	62.1	**67.6**	66	4.9	NO	IMPACT
T-04	1	1	B	65	64.2	**69.4**	66	4.4	NO	IMPACT
T-05	1	1	B	62.4	61.9	**66.5**	66	4.1	NO	IMPACT
T-06	1	1	B	58.8	58.7	**62.5**	66	3.7	NO	NO
T-07	1	1	B	55.6	56	**59.5**	66	3.9	NO	NO
1-01	1	1	B	56.9	57.4	**61.4**	66	4.5	NO	NO
1-02	1	0	D	41.3	40.7	**47.3**	51	6.0	NO	NO
1-03	1	1	B	59.9	60	**65.4**	66	5.5	NO	NO
1-04	1	1	B	57	57.7	**62.1**	66	5.1	NO	NO
1-05	1/2	1	B	64.9	64.5	**71.9**	66	7.0	NO	IMPACT
1-06	2	1	B	63.4	63.2	**71**	66	7.6	NO	IMPACT
1-07	1/2	1	B	58.9	59.3	**64.7**	66	5.8	NO	NO
1-08	2	1	B	58.7	59.2	**64.9**	66	6.2	NO	NO
1-09	2	0	D	35.9	36.1	**42.9**	51	7.0	NO	NO
1-10	2	1	B	58.1	58.7	**64**	66	5.9	NO	NO
1-11	2	1	B	62	62.1	**69.5**	66	7.5	NO	IMPACT
1-12	2	1	B	61.7	62.1	**69**	66	7.3	NO	IMPACT
1-13	2	1	B	62.1	63	**68.9**	66	6.8	NO	IMPACT
1-14	2	1	B	62.6	63.6	**69.2**	66	6.6	NO	IMPACT
2-01	3	1	B	58.4	59.2	**61.3**	66	2.9	NO	NO
2-02	3	1	B	58.4	59.3	**61.6**	66	3.2	NO	NO
2-03	3	1	B	54.7	55.3	**58**	66	3.3	NO	NO
2-04	3	1	B	59.9	61.1	**63.5**	66	3.6	NO	NO
2-05R	3	1	B	69.1	69.7	RELOCATION				
2-06R	3	1	B	68.6	69.2	RELOCATION				
2-07R	3	1	B	67.3	68.2	RELOCATION				
2-08R	3	1	B	65.6	66.4	RELOCATION				
2-09R	3	1	B	65.1	66.1	RELOCATION				
2-10R	3	1	B	66.2	67.6	RELOCATION				
2-11R	3	1	B	66.7	68	RELOCATION				
2-12R	3	1	B	67.2	68.3	RELOCATION				
2-13R	3/4	1	B	66.8	68.1	RELOCATION				
2-14	3	1	B	63.5	64.3	**70.6**	66	7.1	NO	IMPACT
2-15	3	1	B	64	65	**69.8**	66	5.8	NO	IMPACT
2-16	3	1	B	60.9	61.9	**66.5**	66	5.6	NO	IMPACT
2-17	3	1	B	61.3	62.3	**66.7**	66	5.4	NO	IMPACT
2-18	3	1	B	61.3	62.3	**66.5**	66	5.2	NO	IMPACT
2-19	3	1	B	61.4	62.4	**66.7**	66	5.3	NO	IMPACT
2-20	3	1	B	60.8	61.9	**66.1**	66	5.3	NO	IMPACT
2-21	3	1	B	61.2	62.2	**66.5**	66	5.3	NO	IMPACT
2-22	3	1	B	61.3	62.3	**66.6**	66	5.3	NO	IMPACT
2-23	3	1	B	61.3	62.4	**66.6**	66	5.3	NO	IMPACT
2-24	3	1	B	61.2	62.3	**66.4**	66	5.2	NO	IMPACT
2-25	3	1	B	58.6	59.5	**63.2**	66	4.6	NO	NO

US 301 from Fowler Ave to SR 56 Traffic Noise Level Results Table										
Receiver ID	Concept Plan Sheet	Dwelling Units	NAC	Existing Noise Level - dB(A)	No Build Condition Noise Level dB(A)	Build Condition Noise Level - dB(A)	Impact Threshold	Increase Over Existing Noise Levels - dB(A)	Substantial Increase Threshold	Impact
2-26	3	1	B	59.9	60.9	**64.9**	66	5.0	NO	NO
2-27	3	1	B	59.8	60.8	**64.8**	66	5.0	NO	NO
2-28	3	1	B	59.4	60.5	**64.2**	66	4.8	NO	NO
2-29	3	1	B	59.2	60.3	**63.8**	66	4.6	NO	NO
2-30	3	1	B	59.2	60.4	**63.8**	66	4.6	NO	NO
2-31	3	1	B	63.5	64.8	**68.6**	66	5.1	NO	IMPACT
2-32	3	1	B	62.3	63.5	**67.8**	66	5.5	NO	IMPACT
2-33	3	1	B	59.7	60.8	**64.7**	66	5.0	NO	NO
2-34	3	1	B	58.7	59.8	**63.4**	66	4.7	NO	NO
2-35	3	1	B	58.1	59.1	**62.6**	66	4.5	NO	NO
2-36	3	1	B	59.2	60.3	**63.2**	66	4.0	NO	NO
2-37	3	1	B	57.4	58.4	**61.2**	66	3.8	NO	NO
2-38	3	1	B	57.2	58.2	**61**	66	3.8	NO	NO
2-39	3	1	B	56	56.9	**59.7**	66	3.7	NO	NO
2-40	3	1	B	63	64.4	**67.3**	66	4.3	NO	IMPACT
2-41	3	1	B	60.2	61.4	**64.3**	66	4.1	NO	NO
2-42	3	1	B	58.8	59.9	**62.4**	66	3.6	NO	NO
2-43	3	1	B	57.4	58.5	**60.7**	66	3.3	NO	NO
2-44	3	1	B	57.2	58.1	**61.4**	66	4.2	NO	NO
2-45	3	1	B	57	58	**61.2**	66	4.2	NO	NO
2-46	3	1	B	57.2	58.1	**61.4**	66	4.2	NO	NO
2-47	3	1	B	56.9	57.9	**61**	66	4.1	NO	NO
2-48	3	1	B	57	58	**61.1**	66	4.1	NO	NO
2-49	3	1	B	56.8	57.8	**60.8**	66	4.0	NO	NO
2-50	3	2	B	57.1	58.2	**61.1**	66	4.0	NO	NO
2-51	3	2	B	56	56.9	**59.9**	66	3.9	NO	NO
2-52	3	2	B	56.4	57.3	**60.4**	66	4.0	NO	NO
2-53	3	2	B	56	56.9	**60**	66	4.0	NO	NO
2-54	3	2	B	55.5	56.4	**59.4**	66	3.9	NO	NO
2-55	3	2	B	55.9	56.9	**59.8**	66	3.9	NO	NO
2-56	3	2	B	56.1	57.1	**60**	66	3.9	NO	NO
2-57	3	2	B	56.1	57.1	**60**	66	3.9	NO	NO
2-84	3/4	1	B	57.5	58.8	**61**	66	3.5	NO	NO
3-01	4	1	B	62.5	64.2	**66**	66	3.5	NO	IMPACT
3-02	4	1	B	60.1	61.8	**62.9**	66	2.8	NO	NO
3-03	4	1	B	58.2	59.8	**60.7**	66	2.5	NO	NO
3-04	4	1	B	56.5	57.9	**59**	66	2.5	NO	NO
3-08	4	1	B	64.5	66	**68.7**	66	4.2	NO	IMPACT
3-09	4	1	B	62.1	63.7	**66**	66	3.9	NO	IMPACT
3-10	4	1	B	58.1	59.5	**60.9**	66	2.8	NO	NO
3-11	4	0.5	B	56.3	57.6	**59**	66	2.7	NO	NO
3-11-2	4		B	60.7	57.6	**62.7**	66	2.0	NO	NO
3-14	4/5	1	B	64.2	65.6	**68.1**	66	3.9	NO	IMPACT
3-15	4/5	1	B	60	61.5	**63.3**	66	3.3	NO	NO
3-16	4/5	1	B	56.9	58.3	**59.7**	66	2.8	NO	NO
3-17R	4/5	1	B	67.3	68.2	RELOCATION				

US 301 from Fowler Ave to SR 56 Traffic Noise Level Results Table										
Receiver ID	Concept Plan Sheet	Dwelling Units	NAC	Existing Noise Level - dB(A)	No Build Condition Noise Level dB(A)	Build Condition Noise Level - dB(A)	Impact Threshold	Increase Over Existing Noise Levels - dB(A)	Substantial Increase Threshold	Impact
3-18	4/5	1	B	62.9	64.4	**66.5**	66	3.6	NO	IMPACT
3-19	4/5	1	B	58.7	60.4	**61.5**	66	2.8	NO	NO
3-20	4/5	1	B	56.2	57.7	**59.1**	66	2.9	NO	NO
3-22R	5	1	B	67	67.7	RELOCATION				
3-23	4/5	1	B	61.8	63.4	**65.6**	66	3.8	NO	NO
3-24	4/5	1	B	56.4	58.1	**59.3**	66	2.9	NO	NO
3-26	5	1	B	60.5	62.4	**64**	66	3.5	NO	NO
3-28	5	1	B	56.5	58.3	**59.4**	66	2.9	NO	NO
3-30	5	1	B	64.3	66.1	**68.7**	66	4.4	NO	IMPACT
3-31	5	1	B	59	60.7	**62.6**	66	3.6	NO	NO
3-32R	5	0	E	66.7	68.1	RELOCATION				
3-34	5	1	B	56.8	58.4	**60.3**	66	3.5	NO	NO
3-35	5	1	B	62	63.9	**66.3**	66	4.3	NO	IMPACT
3-36	5	1	B	63	64.8	**67.2**	66	4.2	NO	IMPACT
3-37	5	1	B	63.6	65.5	**67.9**	66	4.3	NO	IMPACT
3-38	5	1	B	64.2	66	**68.6**	66	4.4	NO	IMPACT
3-39R	5	1	B	65	66.7	**69.7**	66.0	4.7	NO	IMPACT
3-40	5	1	B	61.4	63.2	**65.7**	66	4.3	NO	NO
3-41	5	1	B	60.1	61.9	**64.3**	66	4.2	NO	NO
3-42	5	1	B	57.9	59.6	**61.8**	66	3.9	NO	NO
3-43	5	1	B	56.6	58.2	**60.4**	66	3.8	NO	NO
3-48	6	1	B	55.9	57.4	**59**	66	3.1	NO	NO
4-01	7	0	C	64.2	65.8	**62.9**	66	-1.3	NO	NO
4-02	7	0	C	58.4	60.6	**60.2**	66	1.8	NO	NO
4-03	7	0	C	56.3	58.6	**58.9**	66	2.6	NO	NO
Trail 1	7	0	C	74.9	75.7	RELOCATION				
5-01	11	1	B	64.3	67.2	RELOCATION				
Trail 4	11	0	C	75.5	77.3	RELOCATION				
6-01	12	1	B	62	64.9	**63.3**	66	1.3	NO	NO
6-02	12	1	B	63.5	65.6	**65.3**	66	1.8	NO	NO
6-03	12	1	B	63.2	65.6	**65**	66	1.8	NO	NO
6-04	12/13	1	B	59.8	62.6	**61.8**	66	2.0	NO	NO
6-05	13	1	B	60	62.6	**62.9**	66	2.9	NO	NO
6-06	13	1	B	57.7	60.2	**61.5**	66	3.8	NO	NO
6-07	13	1	B	57.7	60.1	**61.4**	66	3.7	NO	NO
6-08	13	1	B	60.4	62.9	**63.8**	66	3.4	NO	NO
6-09	13	1	B	54.9	57.1	**59.4**	66	4.5	NO	NO
6-10	13	1	B	64.2	66.9	**66.5**	66	2.3	NO	IMPACT
6-11	13	1	B	59.9	62.4	**62.9**	66	3.0	NO	NO
6-12	13	1	B	59.5	62	**62.4**	66	2.9	NO	NO
6-13	13	1	B	63.4	66.1	**65.4**	66	2.0	NO	NO
6-14	13	1	B	64.6	67.2	**66.4**	66	1.8	NO	IMPACT
6-15	13	1	B	55.1	57.4	**59.2**	66	4.1	NO	NO
7-01	14/15	1	B	65.1	67.6	**65.4**	66	0.3	NO	NO
7-02	15	1	B	58.8	61.2	**61.5**	66	2.7	NO	NO
7-03	15	1	B	58	60.4	**61.6**	66	3.6	NO	NO

US 301 from Fowler Ave to SR 56 Traffic Noise Level Results Table										
Receiver ID	Concept Plan Sheet	Dwelling Units	NAC	Existing Noise Level - dB(A)	No Build Condition Noise Level dB(A)	Build Condition Noise Level - dB(A)	Impact Threshold	Increase Over Existing Noise Levels - dB(A)	Substantial Increase Threshold	Impact
7-04	15	1	B	56.1	58.4	**60.3**	66	4.2	NO	NO
7-05	15	1	B	67.9	69.9	**68.1**	66	0.2	NO	IMPACT
7-06	15	1	B	57.7	60.1	**60.9**	66	3.2	NO	NO
7-08	15	1	B	57.2	59.5	**60.2**	66	3.0	NO	NO
7-09	15	1	B	63.9	66.6	**65**	66	1.1	NO	NO
7-10	15/16	1	B	59.4	61.9	**61.9**	66	2.5	NO	NO
7-11	15/16	1	B	63.4	66.1	**65.2**	66	1.8	NO	NO
7-12	15/16	1	B	56.7	59	**60**	66	3.3	NO	NO
7-13	15/16	1	B	64.1	66.7	**65.6**	66	1.5	NO	NO
7-14	16	1	B	57.4	59.8	**60.6**	66	3.2	NO	NO
7-15	16	1	B	63.3	65.9	**65.2**	66	1.9	NO	NO
7-16	16	1	B	57.8	60.2	**61**	66	3.2	NO	NO
7-17	16	1	B	60.7	63.2	**62.9**	66	2.2	NO	NO
7-18	16	1	B	63.1	65.7	**64.8**	66	1.7	NO	NO
7-19	16	1	B	59.1	61.5	**62.2**	66	3.1	NO	NO
7-20	16	1	B	64.9	67.5	**66.3**	66	1.4	NO	IMPACT
7-21	16	1	B	60.6	63.2	**63.2**	66	2.6	NO	NO
8-02	17	0	C	53.2	55.5	**58.6**	66	5.4	NO	NO
8-03	17/18	0	C	53.4	55.6	**58.9**	66	5.5	NO	NO
8-04	17/18	0	C	55.9	58.2	**60.9**	66	5.0	NO	NO
8-05	17/18	0	C	55.7	58.1	**60.9**	66	5.2	NO	NO
8-06	17/18	0	C	56.2	58.5	**61.3**	66	5.1	NO	NO
8-07	17/18	0	C	58.1	60.6	**62.9**	66	4.8	NO	NO
8-08	18	0	D	39.8	42.4	**42.9**	51	3.1	NO	NO
8-09	18	0	D	33.8	36.3	**39.7**	51	5.9	NO	NO
9-01	21	1	B	54.8	57	**59.7**	66	4.9	NO	NO
T-08	1	1	B	57.3	57.3	**61.7**	66	4.4	NO	NO
T-09	1	1	B	60.5	60.2	**65.2**	66	4.7	NO	NO
T-10	1	1	B	57.7	57.7	**62.4**	66	4.7	NO	NO
T-11	1	1	B	56.9	57.2	**61.7**	66	4.8	NO	NO
10-01	1	1	B	56.5	57	**61.5**	66	5.0	NO	NO
10-02	1	1	B	55.9	56.6	**61.1**	66	5.2	NO	NO
10-03	1	1	B	55.6	56.4	**60.9**	66	5.3	NO	NO
10-13	1/2	1	B	60.2	61.1	**65**	66	4.8	NO	NO
10-14	2	1	B	57	58.2	**61.8**	66	4.8	NO	NO
10-15	2	1	B	63.1	64.4	**67.3**	66	4.2	NO	IMPACT
10-16	2	1	B	62.7	64	**66.7**	66	4.0	NO	IMPACT
10-17	2	1	B	57.3	58.5	**61.9**	66	4.6	NO	NO
10-18	2	1	B	58.3	59.5	**62.7**	66	4.4	NO	NO
10-20	2	1	B	67.8	67.8	**71.3**	66	3.5	NO	IMPACT
10-21	2	1	B	63.7	64.2	**67.5**	66	3.8	NO	IMPACT
10-22	2	1	B	63.2	63.8	**67**	66	3.8	NO	IMPACT
10-23	2	1	B	60.3	61.2	**64.6**	66	4.3	NO	NO
10-24	2/3	1	B	67.3	68	**71.5**	66	4.2	NO	IMPACT
10-25	2	1	B	60	60.9	**64.6**	66	4.6	NO	NO
10-26	2/3	1	B	59.2	60	**63.6**	66	4.4	NO	NO

US 301 from Fowler Ave to SR 56 Traffic Noise Level Results Table										
Receiver ID	Concept Plan Sheet	Dwelling Units	NAC	Existing Noise Level - dB(A)	No Build Condition Noise Level dB(A)	Build Condition Noise Level - dB(A)	Impact Threshold	Increase Over Existing Noise Levels - dB(A)	Substantial Increase Threshold	Impact
10-27	3	1	B	67.1	67.6	**66.8**	66	-0.3	NO	IMPACT
11-01	3	1	B	67.4	68.1	**66**	66	-1.4	NO	IMPACT
11-02	3	1	B	64.8	65.8	**64.1**	66	-0.7	NO	NO
11-03	3	1	B	63.3	64.4	**63**	66	-0.3	NO	NO
11-04	3	1	B	63.1	64.1	**62.7**	66	-0.4	NO	NO
11-05	3	1	B	62.5	63.7	**62.2**	66	-0.3	NO	NO
11-06	3	1	B	61	62.3	**61**	66	0.0	NO	NO
11-12	3/4	1	B	65.1	66.1	**64.5**	66	-0.6	NO	NO
11-17	3/4	1	B	69.1	69.6	**67.3**	66	-1.8	NO	IMPACT
11-18	4	1	B	70.5	70.8	**68.1**	66	-2.4	NO	IMPACT
11-19	4	1	B	71.1	71.2	**68.4**	66	-2.7	NO	IMPACT
11-20	4	1	B	64.4	65.7	**63.9**	66	-0.5	NO	NO
11-21	4	1	B	70.1	70.5	**67.9**	66	-2.2	NO	IMPACT
11-22	4	1	B	67.3	68.1	**66.3**	66	-1.0	NO	IMPACT
11-23	4	1	B	65.1	66.3	**64.5**	66	-0.6	NO	NO
11-24	4	1	B	63.7	65.1	**63.2**	66	-0.5	NO	NO
11-25	4	1	B	62.6	64.2	**62.1**	66	-0.5	NO	NO
11-27	4	1	B	69.5	69.9	**67.5**	66	-2.0	NO	IMPACT
11-28	4	1	B	66.5	67.5	**65.8**	66	-0.7	NO	NO
11-29	4	1	B	63.8	65.3	**63.3**	66	-0.5	NO	NO
11-30	4	1	B	62.1	63.7	**61.6**	66	-0.5	NO	NO
11-34	4	1	B	69.8	70.2	**67.8**	66	-2.0	NO	IMPACT
11-35	4	1	B	68.2	68.9	**66.9**	66	-1.3	NO	IMPACT
11-36	4	1	B	65.9	67	**65.3**	66	-0.6	NO	NO
11-37	4	1	B	64	65.4	**63.5**	66	-0.5	NO	NO
11-38	4	1	B	62.5	64.1	**62**	66	-0.5	NO	NO
11-39	4	1	B	61.3	63	**60.8**	66	-0.5	NO	NO
11-40	4	1	B	66.5	67.5	**65.8**	66	-0.7	NO	NO
11-41	4	1	B	65.1	66.3	**64.5**	66	-0.6	NO	NO
11-42	4	1	B	63.4	64.9	**62.9**	66	-0.5	NO	NO
11-43	4	1	B	62.1	63.7	**61.5**	66	-0.6	NO	NO
11-49	4	1	B	70.8	71	**68.4**	66	-2.4	NO	IMPACT
11-50	4	1	B	68.4	69	**67**	66	-1.4	NO	IMPACT
11-51	4	1	B	66.3	67.3	**65.8**	66	-0.5	NO	NO
11-52	4	1	B	65	66.2	**64.6**	66	-0.4	NO	NO
11-53	4	1	B	63.8	65.2	**63.4**	66	-0.4	NO	NO
11-54	4	1	B	63	64.6	**62.6**	66	-0.4	NO	NO
11-62	4	1	B	62.4	64	**62**	66	-0.4	NO	NO
11-63	4	1	B	61.5	63.2	**61.1**	66	-0.4	NO	NO
11-64	4	1	B	61.6	63.2	**61.3**	66	-0.3	NO	NO
11-88	4	1	B	59.6	61.2	**59.6**	66	0.0	NO	NO
11-89	4	1	B	58.5	59.8	**58.8**	66	0.3	NO	NO
11-98	4	0	C	63.9	65.2	**63.9**	66	0.0	NO	NO
11-99	4	0	C	63.4	64.9	**63.8**	66	0.4	NO	NO
11-100	4	0	C	59.9	61.3	**60**	66	0.1	NO	NO
11-101	4	0	C	59.8	61.4	**59.8**	66	0.0	NO	NO

US 301 from Fowler Ave to SR 56 Traffic Noise Level Results Table										
Receiver ID	Concept Plan Sheet	Dwelling Units	NAC	Existing Noise Level - dB(A)	No Build Condition Noise Level dB(A)	Build Condition Noise Level - dB(A)	Impact Threshold	Increase Over Existing Noise Levels - dB(A)	Substantial Increase Threshold	Impact
11-115	4	1	B	58.3	59.9	**58.4**	66	0.1	NO	NO
11-129	4	1	B	59.9	61.6	**59.6**	66	-0.3	NO	NO
12-01	6	0	C	62.4	64.4	**66.5**	66	4.1	NO	IMPACT
12-02	6/7	0	C	63	64.9	**67.7**	66	4.7	NO	IMPACT
12-03	6	0	C	57.8	59.5	**62.9**	66	5.1	NO	NO
12-04	6/7	0	C	57.2	59	**62.2**	66	5.0	NO	NO
12-05	6/7	0	C	56.4	58.2	**61.6**	66	5.2	NO	NO
Trail 2	7	0	C	74	75.2	RELOCATION				
13-01	10	0	C	57.2	59.9	**61.6**	66	4.4	NO	NO
13-02	10/11	1	B	61.6	64.6	**67.1**	66	5.5	NO	IMPACT
13-03	11	1	B	58.3	61.1	**63.4**	66	5.1	NO	NO
13-04	11	1	B	54.9	57.5	**59.5**	66	4.6	NO	NO
13-07	11	1	B	54.1	56.7	**58.9**	66	4.8	NO	NO
13-08	11	1	B	53.3	55.8	**58.9**	66	5.6	NO	NO
13-09	11	1	B	60.3	63.1	**69**	66	8.7	NO	IMPACT
13-10	11	1	B	55.1	57.6	**62.7**	66	7.6	NO	NO
Trail 3	11	0	C	75.9	77	RELOCATION				
14-01	12	1	B	53.6	56	**58.7**	66	5.1	NO	NO
14-05	12	1	B	53	55.5	**58.8**	66	5.8	NO	NO
14-06	12	1	B	55.9	58.6	**61.8**	66	5.9	NO	NO
14-07R	12	1	B	64.8	67.3	RELOCATION				
14-08	12	1	B	60.3	63	**67.5**	66	7.2	NO	IMPACT
14-09	12	1	B	53.5	55.9	**59**	66	5.5	NO	NO
14-10	12	1	B	61.6	64.4	**68.7**	66	7.1	NO	IMPACT
14-11	12	1	B	57.4	60	**63.1**	66	5.7	NO	NO
14-12	13	1	B	57.8	60.2	**64.1**	66	6.3	NO	NO
14-13	13	1	B	61	63.6	**68.4**	66	7.4	NO	IMPACT
14-14	13	1	B	59.9	62.4	**67.1**	66	7.2	NO	IMPACT
14-15	13	1	B	59.6	62.1	**66.7**	66	7.1	NO	IMPACT
14-16	13	1	B	59.4	61.9	**66.4**	66	7.0	NO	IMPACT
15-01	18	0	C	52.6	54.8	**60.3**	66	7.7	NO	NO
indicates receiver evaluated April 2021										
indicates receiver re-evaluated April 2023										

APPENDIX C

AERIALS (WITH CONCEPT PLAN AND RECEPTOR SITES)

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

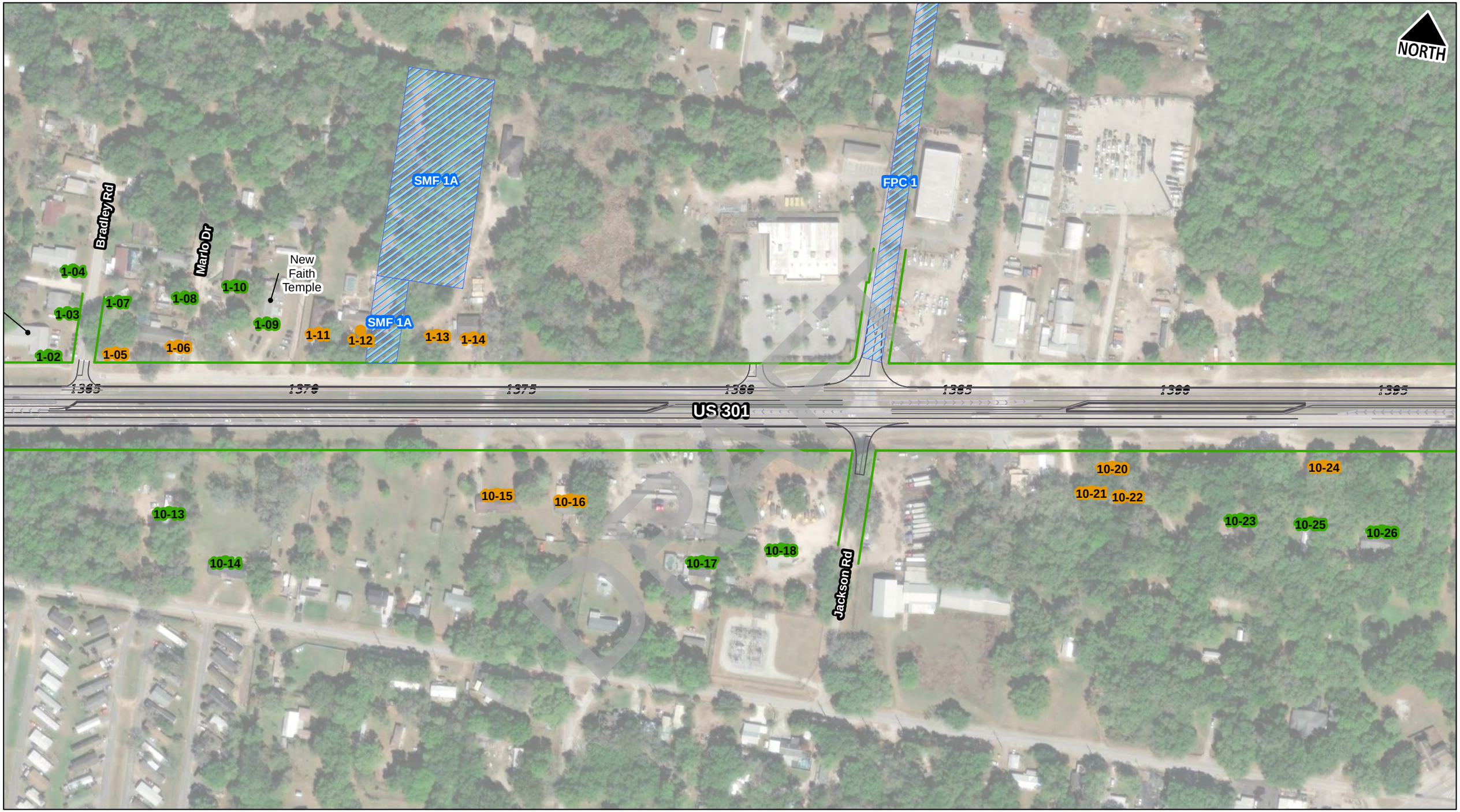
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 1



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

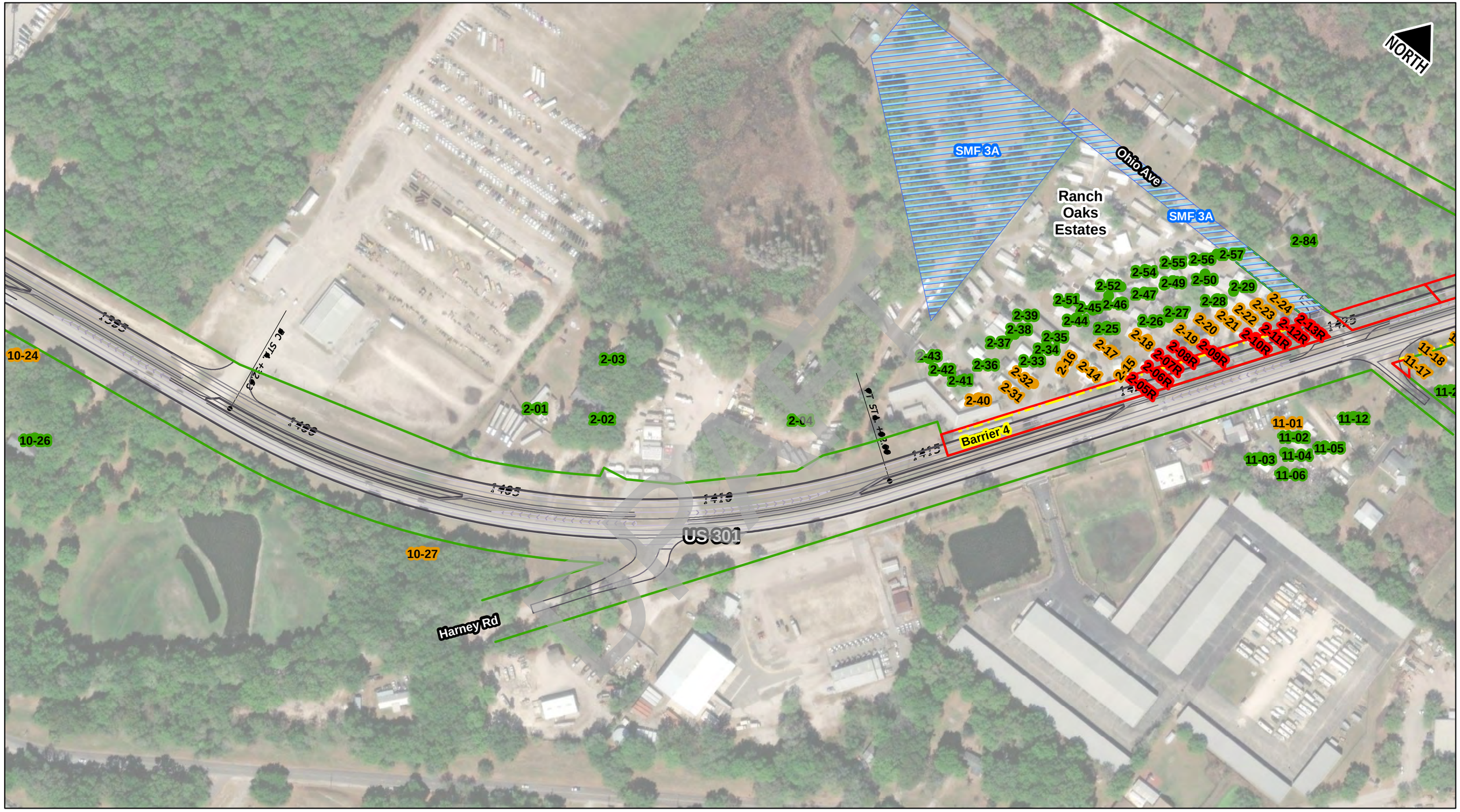
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 2



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

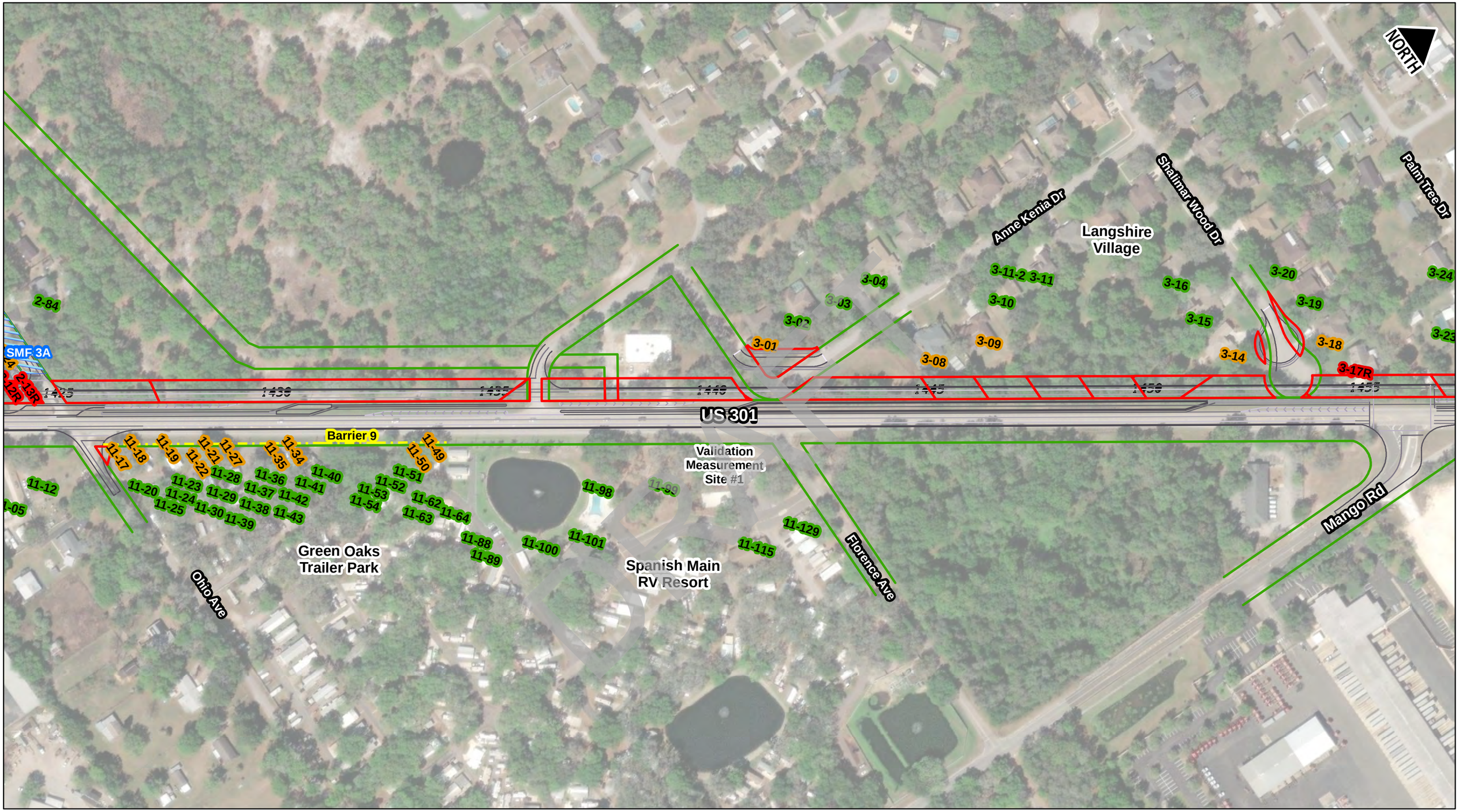
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 3



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

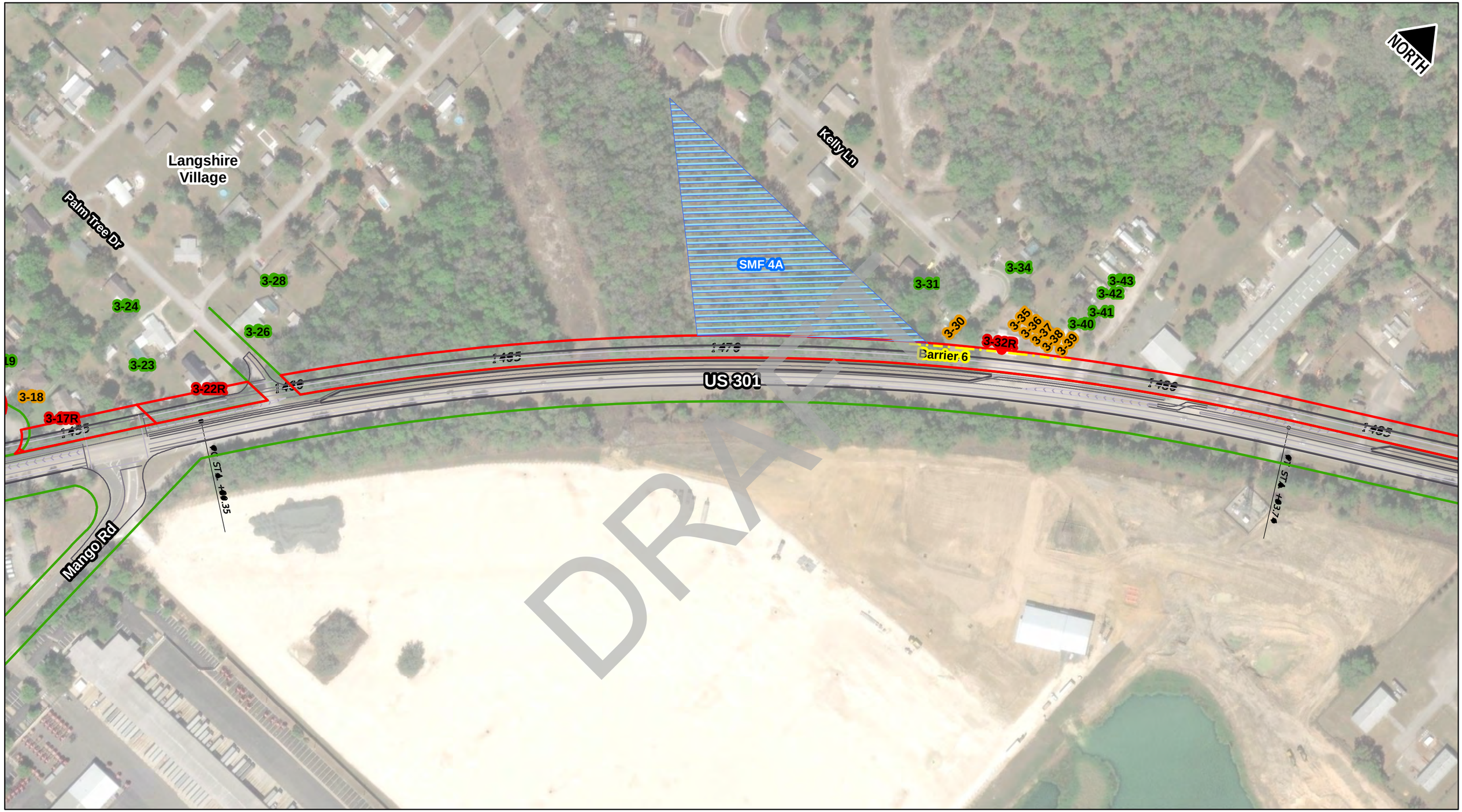
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 4



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 5

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

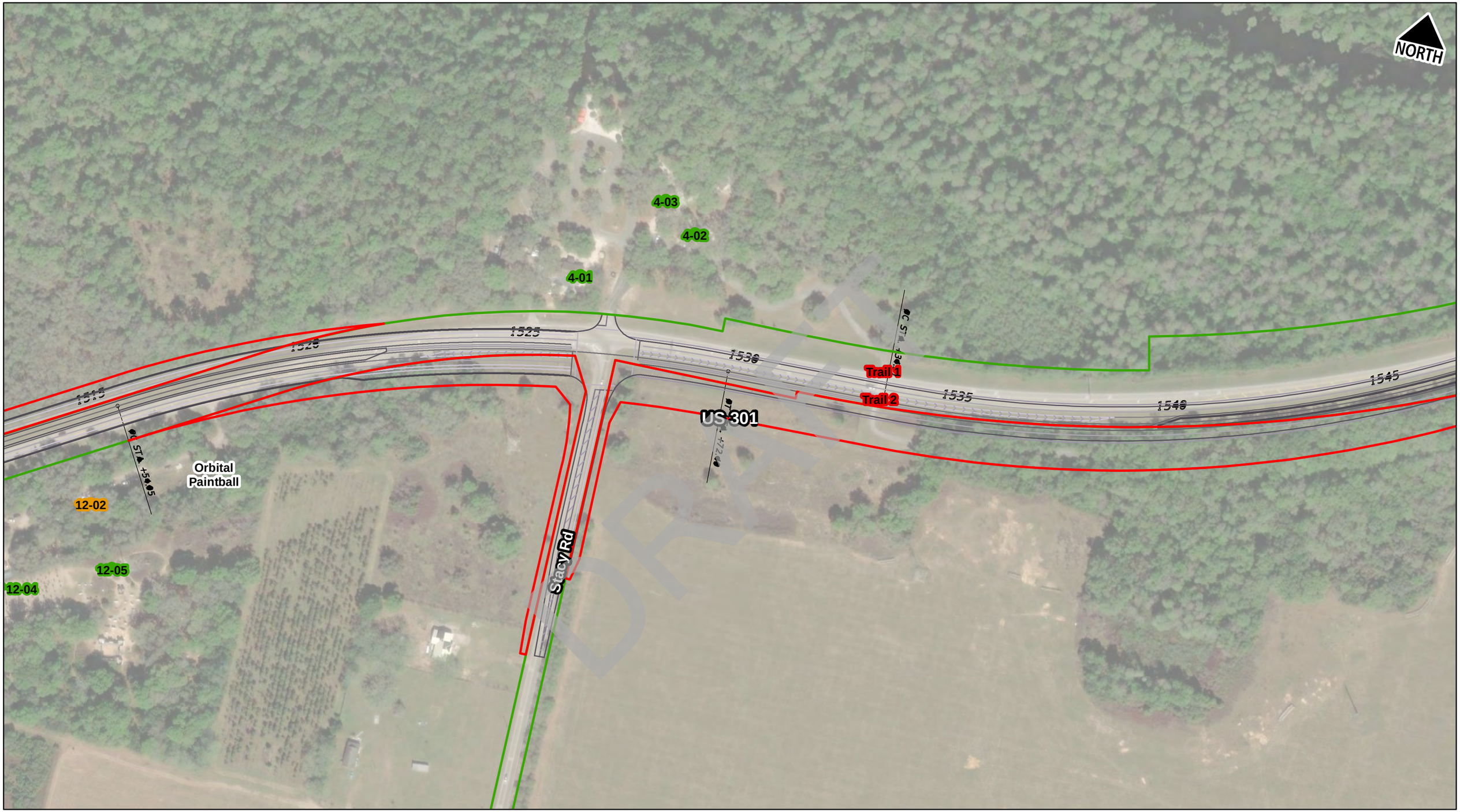
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 6



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

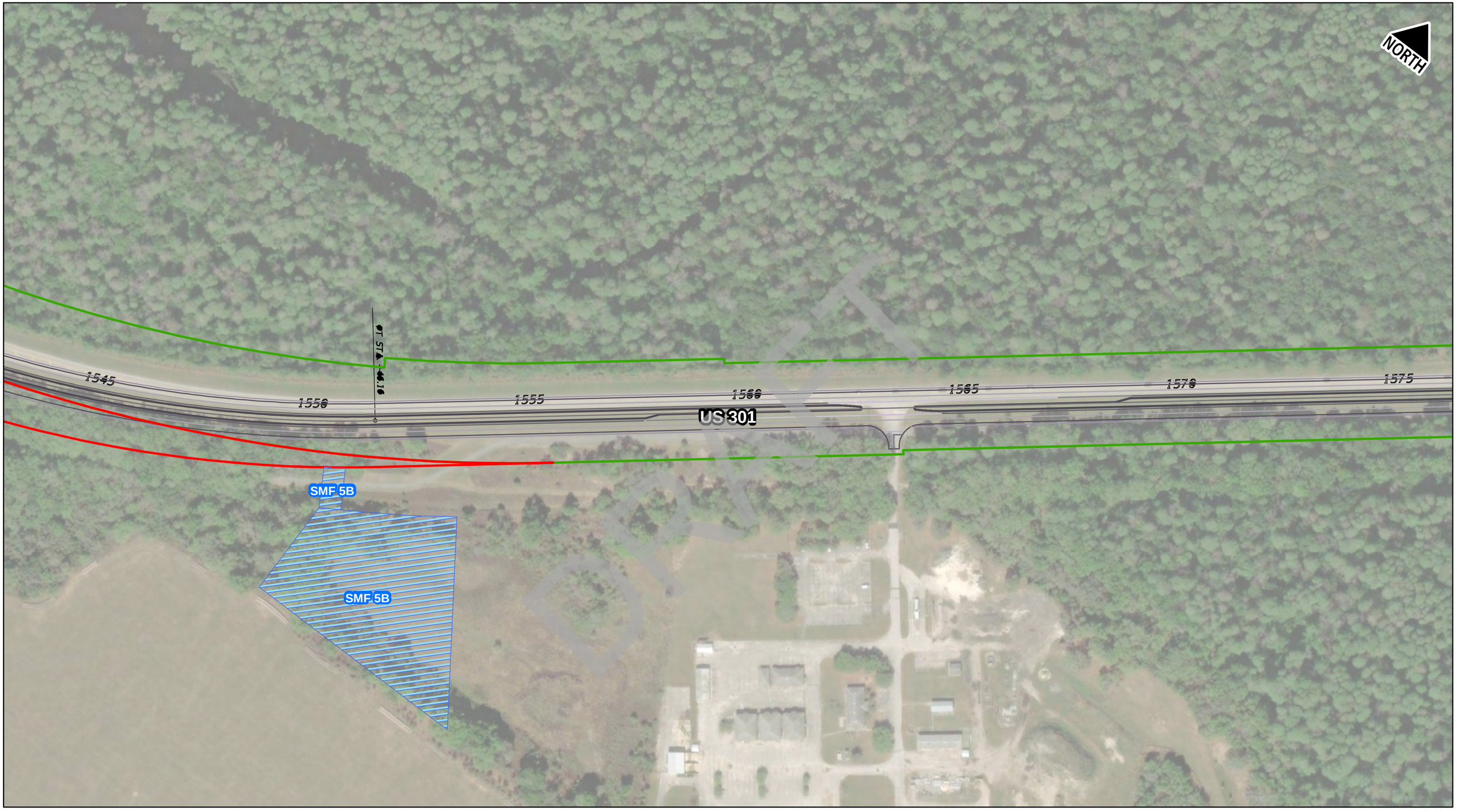
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 7



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 8

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 9

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

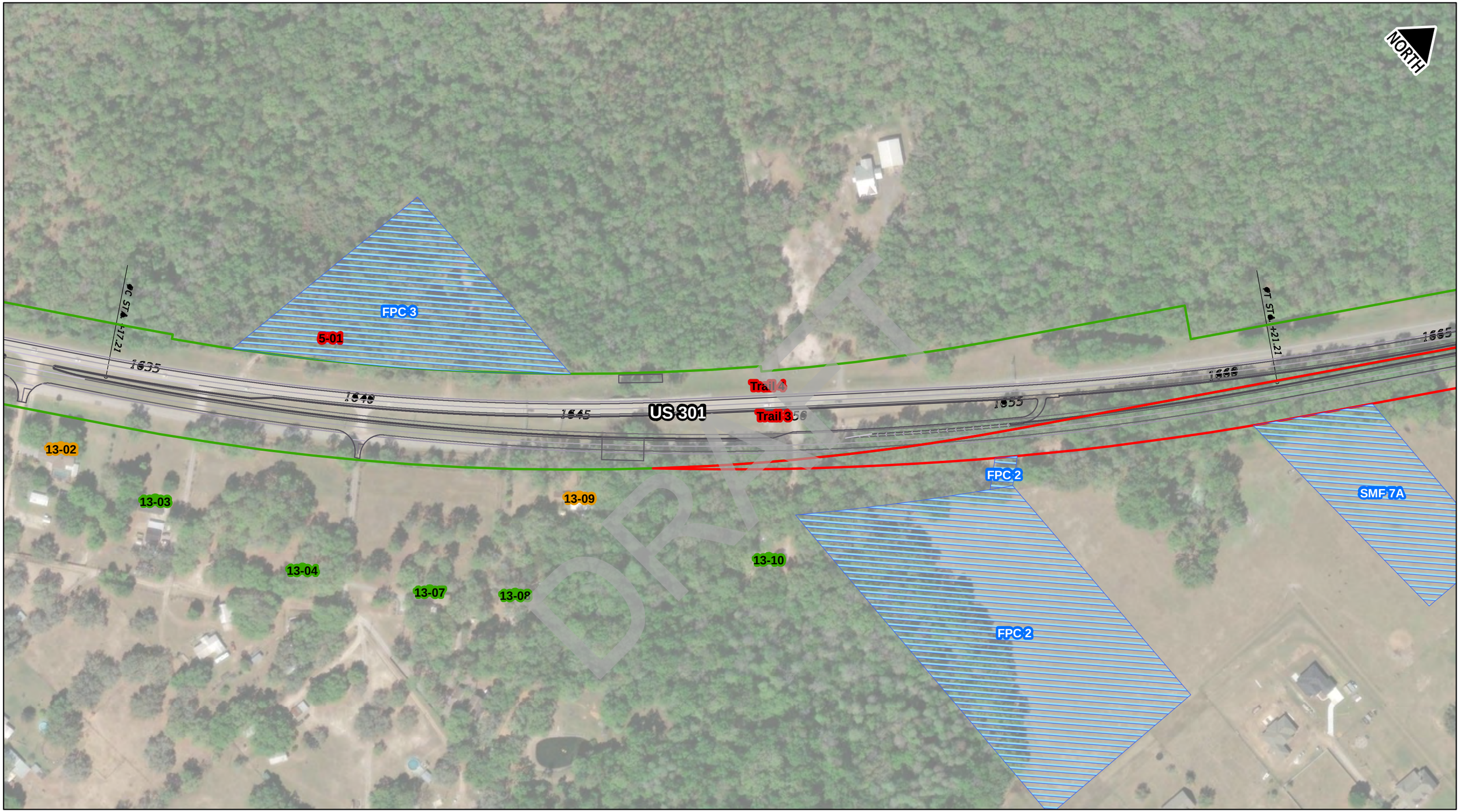
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 10



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

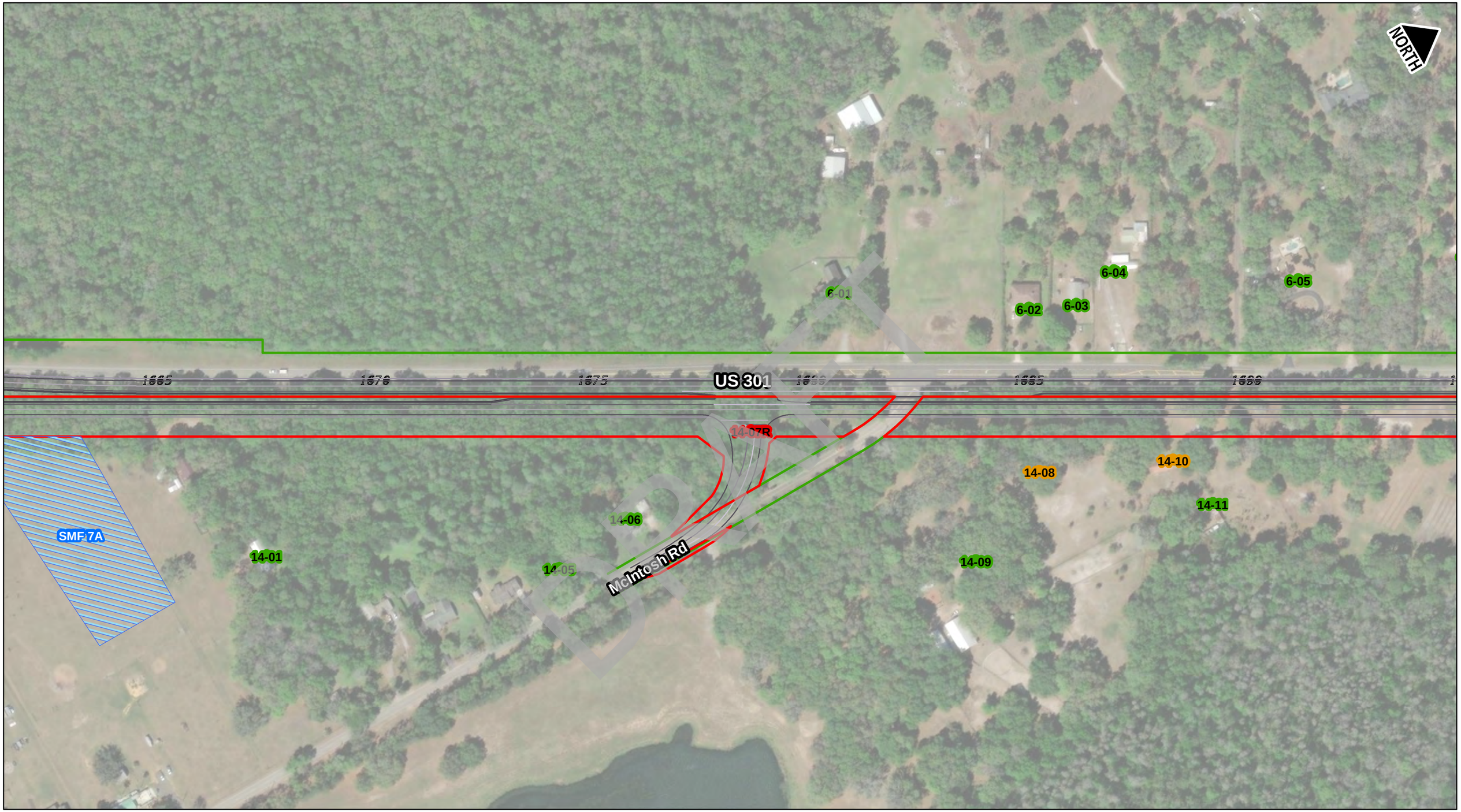
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 11



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 12

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 13

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- **NO IMPACT**
- **IMPACT**
- **RELOCATION**

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

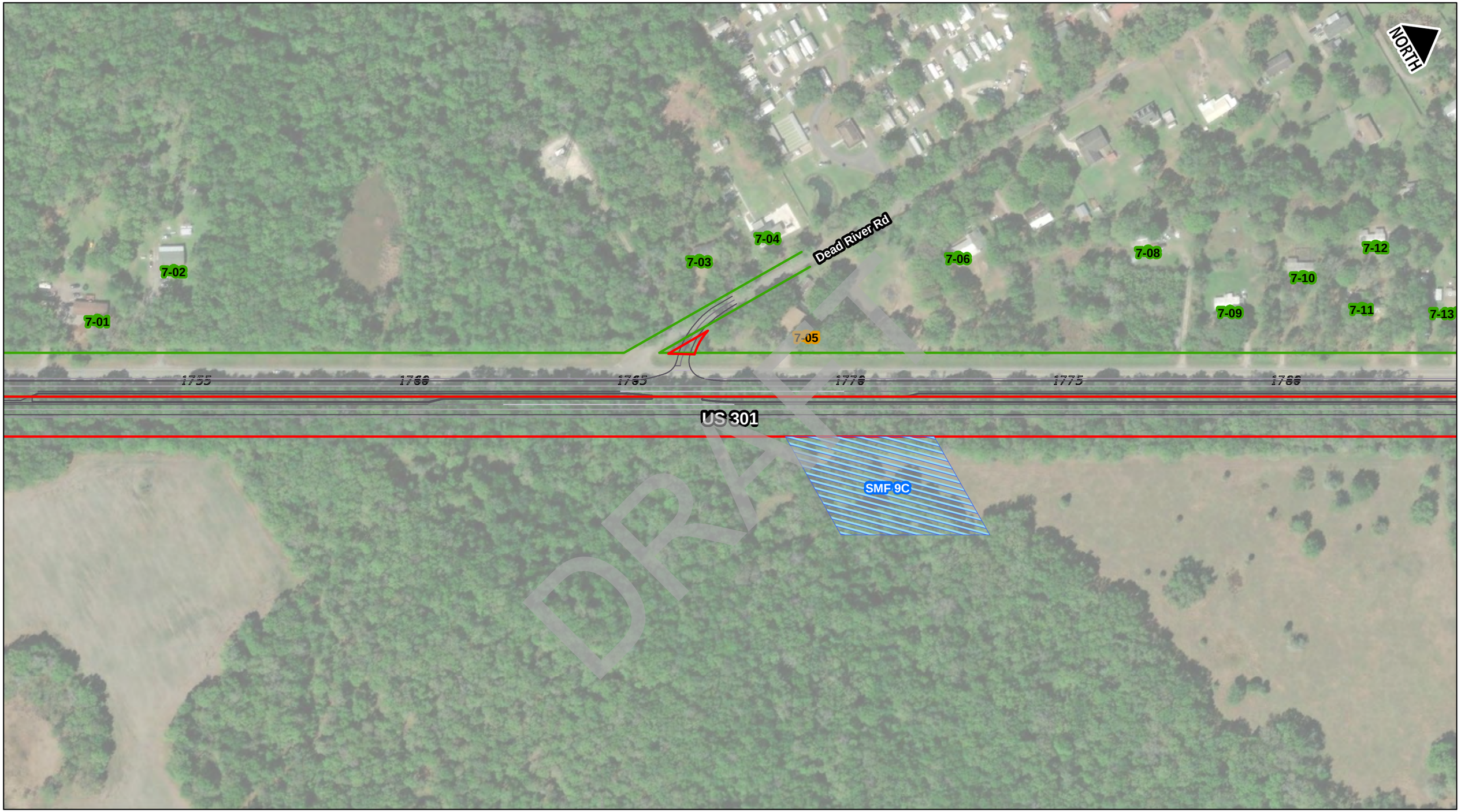
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 14



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 15

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

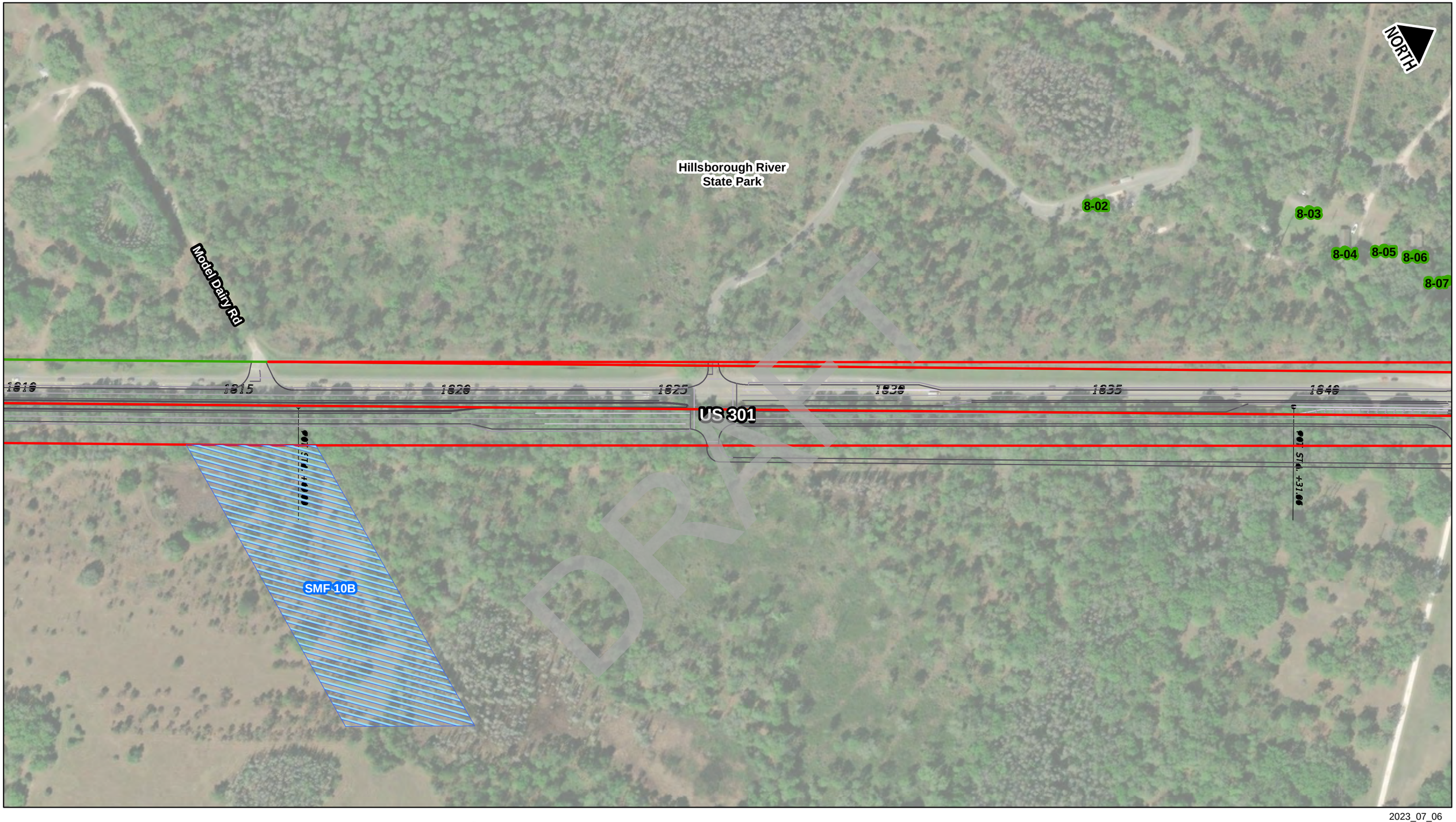
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 16



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

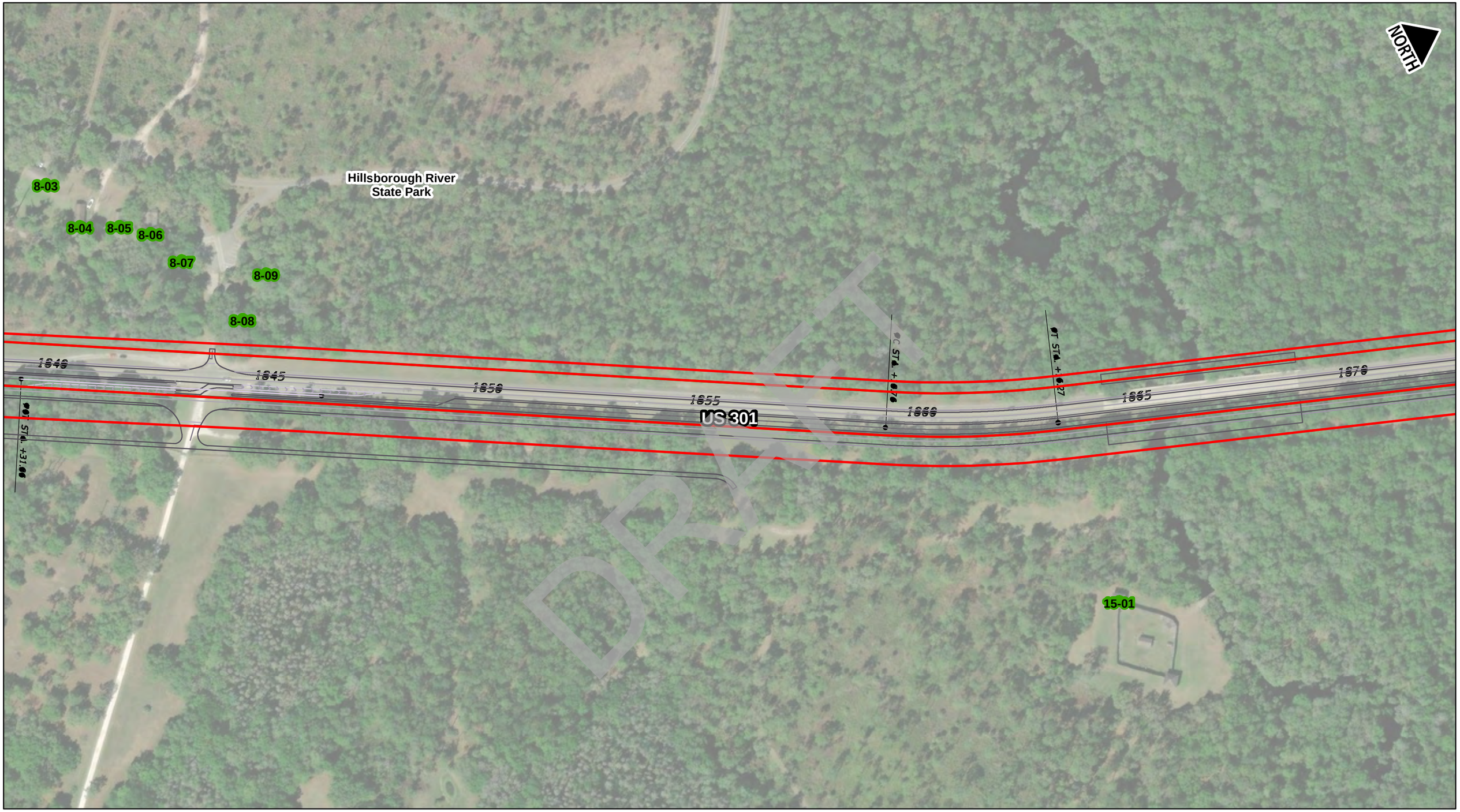
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 17



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

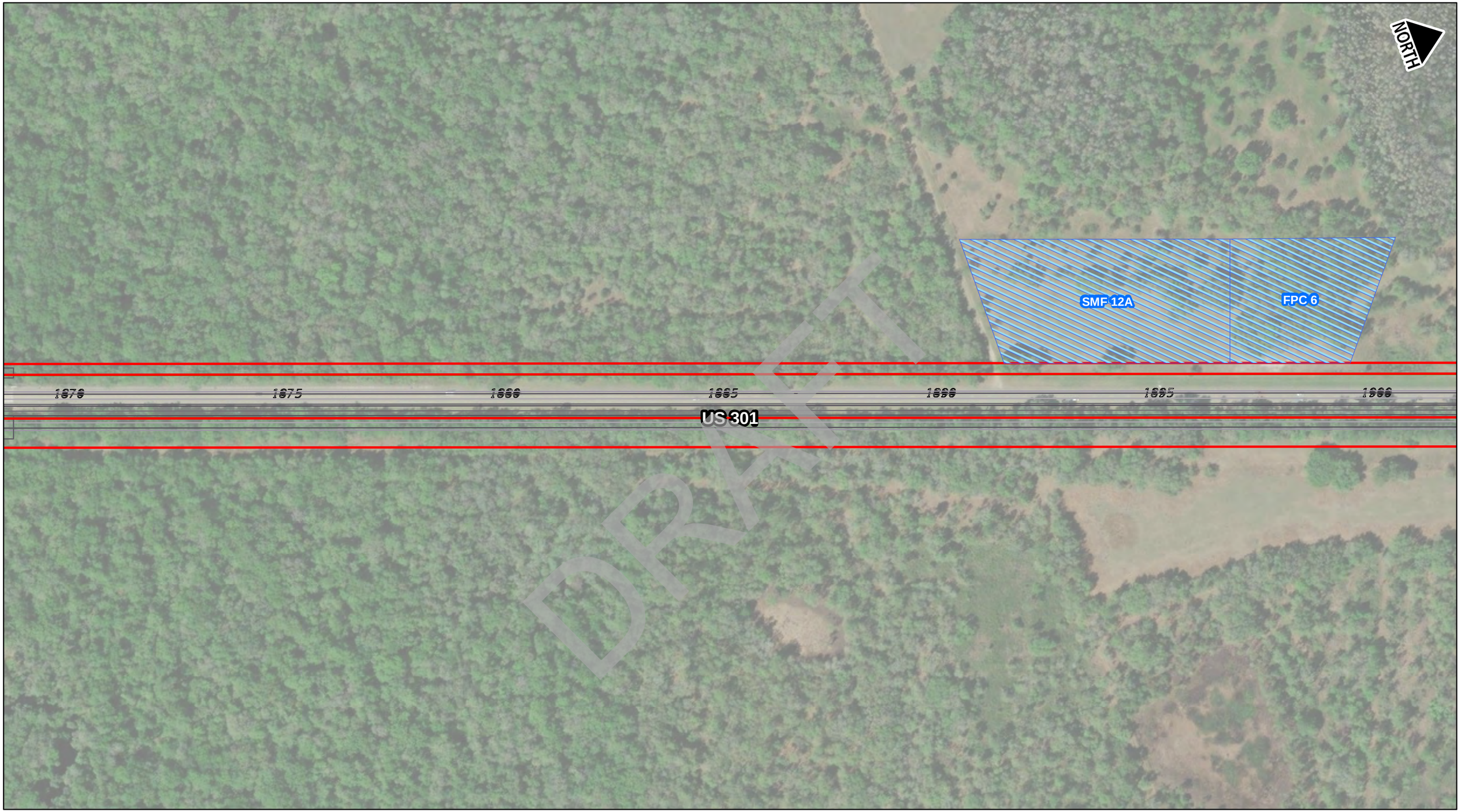
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 18



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 19

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

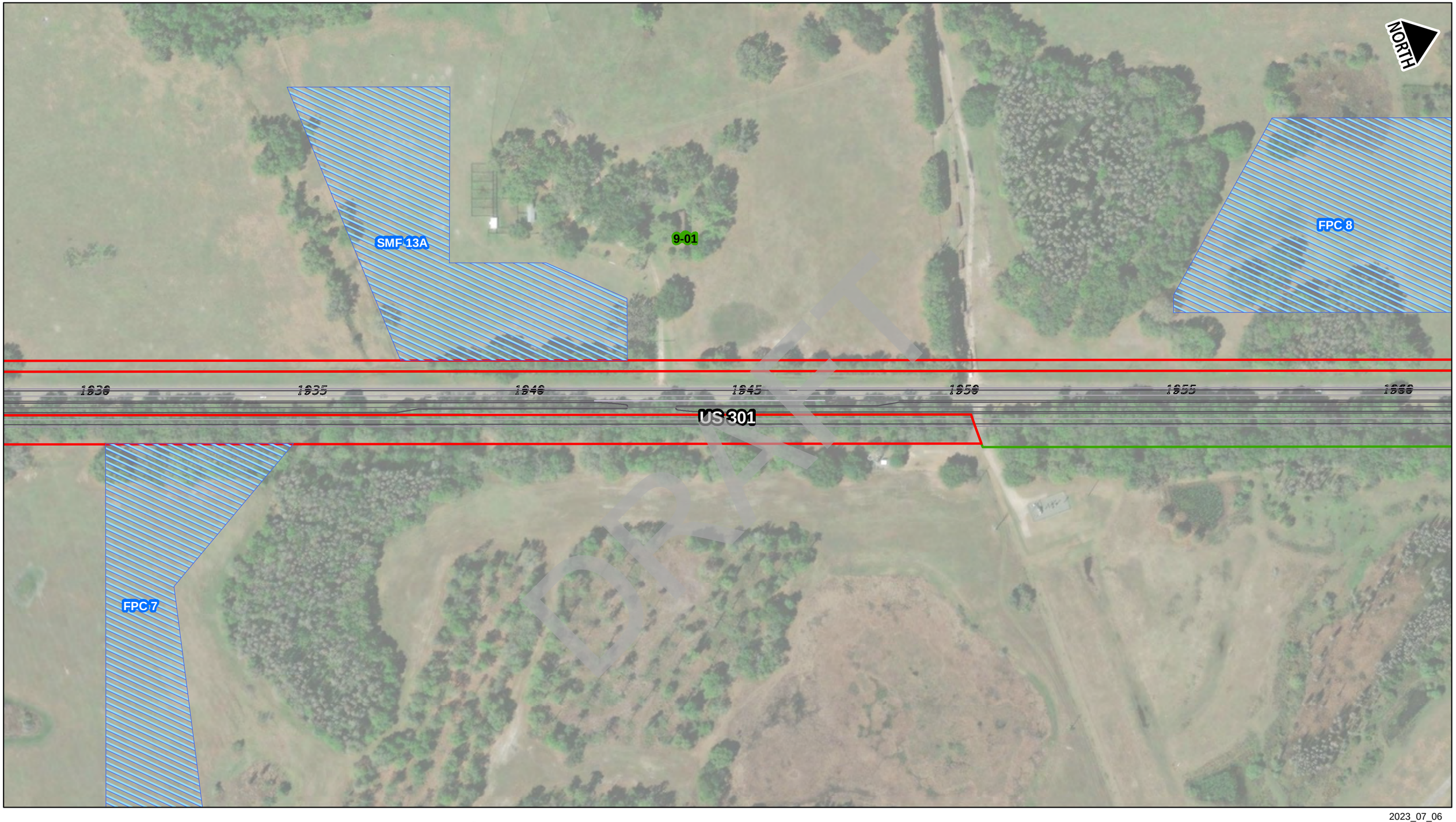
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 20



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 21

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 22

2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

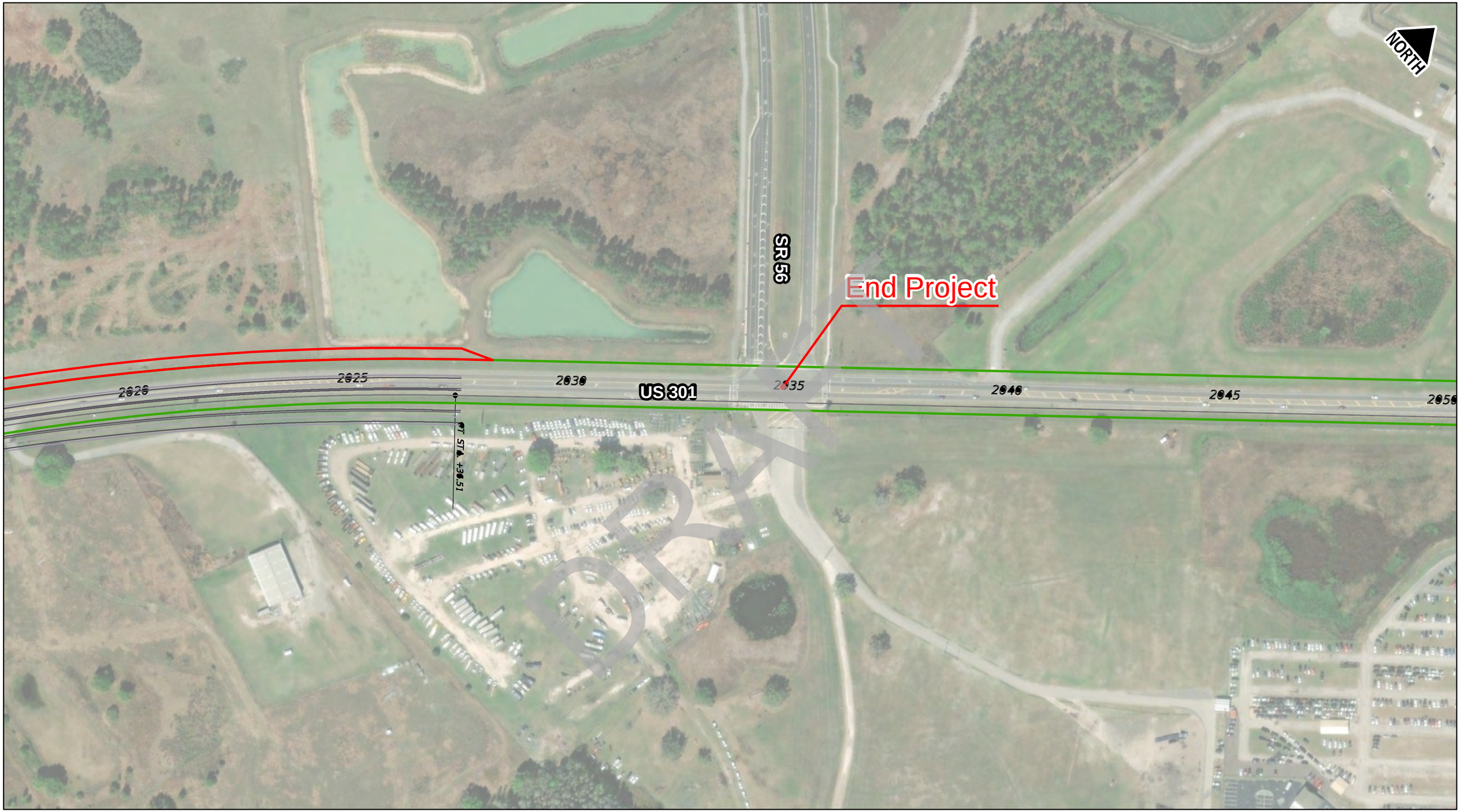
Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 23



2023_07_06

WPI Segment No.: 255796-1-22-01
US 301 (SR 41) PD&E Study
from Fowler Avenue to SR 56
Hillsborough/Pasco County, Florida

LEGEND

Receptors
- NO IMPACT
- IMPACT
- RELOCATION

Barriers
- Barriers

Right-of-Way
- Existing
- Proposed

Proposed PFC and SMF locations

AERIALS

(WITH CONCEPT PLAN AND RECEPTOR SITES)

200 100 0 200
Feet

SHEET 24

APPENDIX D

VALIDATION MONITORING FIELD DATA SHEETS

Traffic Noise Model Validation Monitoring Field Data Sheet #1

Project: US 301 – Fowler to SR 56 PDE Date: 1/14/16

Monitor Location: Corner of Florence Ave / US 301 — Spanish main RV resort

Distance from ~~near travel lane~~ / elevation difference / other factors needed for model:

50ft EOP / 2-3 ft lower /

Air Temperature	Wind Speed	Wind Direction	Humidity	% Cloud
66°	7mph	ENE	42%	85%

Monitor Identification: Casella CEL-63X S/N – 3911360 – Enviro-Equipment rental – # 000671

Vehicle Type	Roadway Direction Identification					
	Northbound/~~Eastbound~~ RJF			Southbound/~~Westbound~~ PG		
	Rep 1	Rep 2	Rep 3	Rep 1	Rep 2	Rep 3
Cars	58	75	57	61	63	70
Medium Trucks	~~58~~ 4	4	4	2	7	4
Heavy Trucks	~~4~~ 8	6	4	6	5	9
Buses	1	1	0	0	0	1
Motorcycles	0	0	0	4	1	1

Vehicle Speed(s): Speed limit is 55, but the average speed is lower at times because of vehicles turning on Florence.

Event Start Time /Duration: Rep 1 12:55 10Min Rep 2 1:07 10Min Rep 3 ~~1119~~

Results / Leq: Rep 1 69.1 Rep 2 67.5 Rep 3 68.7

Major Noise Source(s): _____

Background Noise Source(s): _____

Additional Comments / Unusual Events (e.g., airplane, siren, dog, etc.):

Rep 1 gas powered golf cart nearby for ~ 45 sec. Garbage truck on local road across US 301 from monitor

Rep 2 N/A

Rep 3 Several load vehicles turned and drove by the monitor on Florence Ave during the event – also a gas powered golf cart.

Field staff for this monitor:

PG and RJF

Traffic Noise Model Validation Monitoring Field Data Sheet #2

Project: US 301 PDE Fowler to 56 Date: 11/4/16

Monitor Location: Fellowship Baptist church - at fence line in front of trail

Distance from near ~~travel lane~~ EOP / elevation difference / other factors needed for model:

50 ft / 3-4 ft /

Air Temperature	Wind Speed	Wind Direction	Humidity	% Cloud
67	8mph	ENE	42%	95%

Monitor Identification: _____

Vehicle Type	Roadway Direction Identification					
	Northbound/~~Eastbound~~			Southbound/~~Westbound~~		
	Rep 1	Rep 2	Rep 3	Rep 1	Rep 2	Rep 3
Cars	59	65	94	53	44	40
Medium Trucks	4	6	6	2	2	7
Heavy Trucks	4	3	2	2	7	6
Buses	0	0	0	0	0	0
Motorcycles	0	1	0	0	0	0

Vehicle Speed(s): 60 mph limit

Event Start Time /Duration: Rep 1 1:48 10 Min Rep 2 2:04 10 min Rep 3 2:15 10 min

Results / Leq: Rep 1 68.3 Rep 2 69.2 Rep 3 67.9

Major Noise Source(s): US 301

Background Noise Source(s): _____

Additional Comments / Unusual Events (e.g., airplane, siren, dog, etc.):

Rep 1 quiet background

Rep 2 1 jet flyover - medium altitude

Rep 3 1 propplane flyby - medium altitude

Field staff for this monitor:

RJF & PG

Traffic Noise Model Validation Monitoring Field Data Sheet #3

Project: US301 PDE (Fowler to SR) Date: 11/14/16

Monitor Location: NE most entrance to Rapid River Blvd – station 1003

Distance from near travel lane / elevation difference / other factors needed for model:

70 ft / 1-2' below road

Air Temperature	Wind Speed	Wind Direction	Humidity	% Cloud
67°	6 mph	ENE	44%	95%

Monitor Identification: _____

Vehicle Type	Roadway Direction Identification					
	Northbound/~~Eastbound~~			Southbound/~~Westbound~~		
	Rep 1	Rep 2	Rep 3	Rep 1	Rep 2	Rep 3
Cars	73	84	78	35	45	51
Medium Trucks	5	2	4	3	5	0
Heavy Trucks	1	5	4	3	1	4
Buses	0	0	0	0	0	0
Motorcycles	2	0	0	0	0	2

Vehicle Speed(s): speed limit 60 mph

Event Start Time /Duration: Rep 1 2:49/10min Rep 2 3:00/10min Rep 3 3:12/10min

Results / Leq: Rep 1 66.3 Rep 2 65.4 Rep 3 67.0

Major Noise Source(s): US 30

Background Noise Source(s): _____

Additional Comments / Unusual Events (e.g., airplane, siren, dog, etc.):

Rep 1 Very quiet US 301 traffic / construction noise nearby

Rep 2 Diesel Truck parked / idled nearby for ~ 1.5 minutes.

Rep 3 Same for ~ 1 more.

Field staff for this monitor:

RJF & PG