Project Development & Environment Study

SR 60 PD&E Study
From Valrico Road to the Polk County Line

Final
Noise Study Report

WPI Segment No.: 430055-1
Hillsborough County

Prepared for the

Florida Department of Transportation
District Seven

April 2015

Stephanie Pierce

FDOT Project Manager

Project Development & Environment Study

FINAL NOISE STUDY REPORT

State Road (SR) 60
From Valrico Road to the Polk County Line
Project Development and Environment (PD&E) Study
Hillsborough County, Florida

FDOT District 7
FPN: 430055-1-22-01

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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) Study to consider the proposed widening of a portion of SR 60. Located in Hillsborough County, the limits of this study are from Valrico Road at the west end extending eastward to the Polk County Line, a distance of approximately 12.3 miles. Within the project limits, the existing roadway is a principal arterial, and the improvement will expand the current 4-lane facility to 6-lanes.

The traffic noise analysis was performed following FDOT procedures that comply with Title 23 Code of Federal Regulations (CFR), Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. The evaluation used methodologies established by the FDOT that are documented in the PD&E Manual, Part 2, Chapter 17 (May 2011). The prediction of existing and future traffic noise levels with and without the roadway improvements was performed using the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM Version 2.5).

A total of 315 noise-sensitive sites were evaluated. The sites were comprised of 297 residences (located within the Oakwood Terrace Townhomes, Valrico Station Apartments, Strawberry Ridge Mobile Home Park, Citrus Hill RV Park, Orange Blossom RV Park, Turkey Creek Mobile Home Park, Orange Rose Mobile Home Park, Valrico Hills Mobile Home Park, Kings Mill Townhomes, Oakhill Village Mobile Home Park, Featherrock Mobile Home Park, and several isolated residences within the project corridor), four recreational areas, nine places of worship, two day care facilities, a medical center, an outdoor dining area, and the Hillsborough County Fairgrounds.

The results of the analysis indicate that existing (2012) exterior traffic noise levels range from 51.5 to 74.1 dB(A). Traffic noise levels are predicted to approach, meet, or exceed the Noise Abatement Criteria (NAC) at 97 receptors (94 residences, two recreational areas, and one place of worship). Existing (2012) interior levels for the places of worship and the day care facility that do not have exterior areas of use and the medical center range from 34.9 to 45.4 dB(A). None of these levels approach, meet or exceed the NAC. Future (2040) exterior noise levels without the proposed improvements (No-Build) range from 53.1 to 77.3 dB(A) and are predicted to approach, meet, or exceed the NAC at 136 receptors (133 residences, two recreational areas and one place of worship). Future (2040) interior noise levels without the proposed improvements are predicted to range from 34.9 to 48.1 dB(A); noise levels that do approach, meet or exceed the NAC. In the future (2040), with the improvements (Build), traffic noise levels are predicted to approach, meet, or exceed the NAC at 187 receptors (185 residences, two recreational areas, and one place of worship) with exterior noise levels ranging from 58.0 to 78.2 dB(A). In the future (2040), with the improvements, interior levels are predicted to range from 38.0 to 50.9; levels that do not approach, meeting, or exceed the NAC. Notably, when compared to

the existing condition, traffic noise levels are not predicted to increase more than 10 dB(A) above existing conditions at any of the evaluated sites. As such, the project would not substantially increase traffic noise (i.e., increase traffic noise 15 dB(A) or more).

Noise abatement measures were considered for the 187 impacted receptors (184 residences, tennis courts at the Valrico Station Apartments and Strawberry Ridge Mobile Home Park, and the basketball court at the Fellowship Baptist Church). The measures were traffic management, alternative roadway alignments, and noise barriers. The results of the evaluation indicate that although feasible, traffic management and an alternative roadway alignment(s) are not reasonable methods of reducing predicted traffic noise impacts at the impacted receptors. The results of the analysis performed to evaluate noise barriers indicates that, for the 28 noise barriers evaluated, barriers would meet minimum noise reduction requirements and reduce traffic noise at least 5 dB(A) at 53 of the 187 impacted receptors at a cost below the reasonable limit. The benefited residences are at the following six locations:

- Barrier 2: Residences at the Oakwood Terrace Townhomes and Valrico Station Apartments (South of SR 60) (Sites 3-7, 11)

- Barrier 3: Residences at the Strawberry Ridge Mobile Home Park (South of SR 60) (Sites 18, 21-27)

- Barrier 4: Residences at the Citrus Hill and Orange Blossom RV Parks (South of SR 60) (Sites 40-47, 54-57, 60-61)

- Barrier 24: Residences at and adjacent to the Valrico Hills Mobile Home Park (North of SR 60) (Sites 243-245, 247-254)

- Barrier 25: Residences west of Mulrennan Rd. (North of SR 60) (Sites 269-272, 274)

- Barrier 27: Residences at the Featherrock Mobile Home Park (North of SR 60) (Sites 301-305. 312-315)

Statement of Likelihood

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

- Detailed noise analysis during the final design process supports the need for, and the feasibility and reasonableness of, providing the barriers as abatement;
- The detailed analysis demonstrates that the cost of the noise barriers will not exceed the cost reasonable limit;
- The residents/property owners benefitted by the noise barriers desire that a noise barrier be constructed; and
- All safety and engineering conflicts or issues related to construction of the noise barriers are resolved.

Land uses adjacent SR 60 are identified on the FDOT listing of noise- and vibration-sensitive sites (e.g., residential use). Construction of the proposed roadway improvements is not expected to have any significant noise or vibration impact. If sensitive land uses develop adjacent to the roadway prior to construction, increased potential for noise or 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 or 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.

Land uses such as residences, auditoriums, hotels/motels, libraries, recreational areas, and parks are considered incompatible with highway noise levels that exceed the NAC. To reduce the possibility of additional traffic noise-related impacts, noise level contours were developed for the future improved roadway facility. These noise contours delineate the extent of the predicted traffic noise impact area from the improved roadway's edge-of-travel lane for activity categories of land use. Local officials will be provided a copy of the Final Noise Study Report to promote compatibility between any future land development in the project area.

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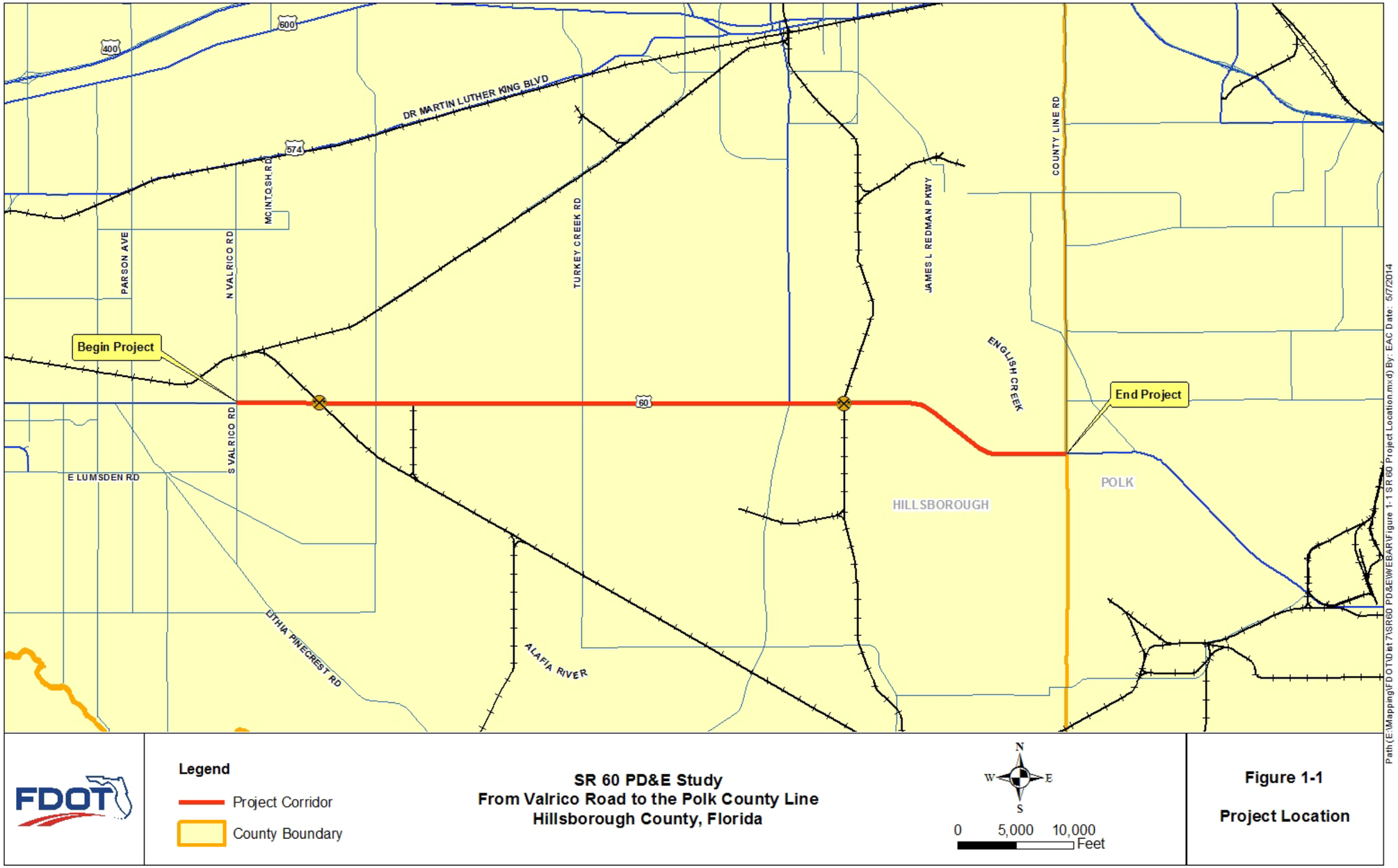
1.1 Project Description

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) Study to consider the proposed widening of a portion of SR 60. Located in Hillsborough County, the limits of this study are from Valrico Road at the west end extending eastward to the Polk County Line, a distance of approximately 12.3 miles (**Figure 1-1** and **Figure 1-2**). Within the project limits, the existing roadway is a principal arterial, and the improvement will expand the current 4-lane facility to 6-lanes. SR 60 is a major east-west arterial roadway and is part of the Florida Strategic Intermodal System (SIS). The project is within Sections 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30 of Township 29 South, Range 21 East; Sections 19, 20, 21, 22, 25, 26, 27, 28, 29 and 30 of Township 29 South, Range 22 East of the Public Land Survey System (PLSS).

This project was evaluated through the FDOT's Efficient Transportation Decision Making (ETDM) process, designated as ETDM project #4131. An ETDM Programming Screen Summary Report was published on June 8, 2012, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical and social resources. Based on the ETAT comments included in the Summary Report and undertaking the public involvement process to date, it has been determined that the proposed improvements to SR 60 would not create any significant impacts to the environment. Also, when the project went through the ETDM Programming Screen process, the FDOT planned to seek approval of the PD&E study's environmental document by the Federal Highway Administration (FHWA). In the meantime, the FDOT determined that it would instead process the study's environmental document as a State Environmental Impact Report (SEIR). The project is currently fully funded for design in the FDOT's 2024-2040 SIS Cost Feasible Plan and all subsequent phases, right-of-way and construction, are being considered to be added in future updates.


600
400
574
DR MARTIN LUTHER KING BLVD
MCINTOSH RD
PARSON AVE
N VALRICO RD
TURKEY CREEK RD
JAMES L REDMAN PKWY
COUNTY LINE RD
ENGLISH CREEK
Begin Project
End Project
60
S VALRICO RD
E LUMSDEN RD
HILLSBOROUGH
POLK
LITHIA PINECREST RD
ALAFIA RIVER
Legend
Project Corridor
County Boundary
SR 60 PD&E Study
From Valrico Road to the Polk County Line
Hillsborough County, Florida
N
W
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5,000
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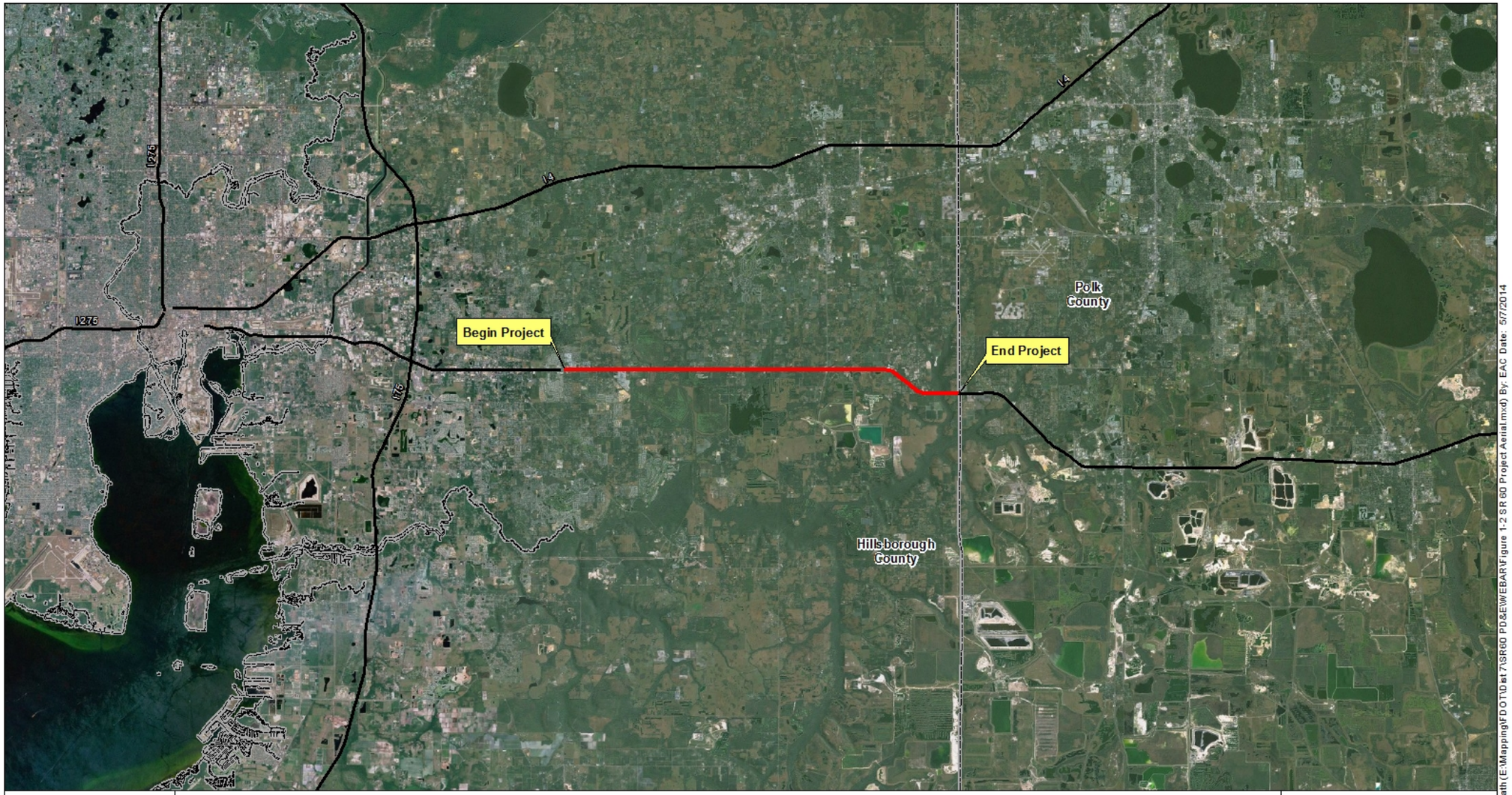
Feet
Figure 1-1
Project Location
Path (E:\Mapping\FDOT\Dist 7\SR60 PD&E\WEBART\Figure 1-1 SR 60 Project Location.mxd) By: EAC Date: 5/7/2014



Path:(E:\Mapping\FDOT\Dist 7\SR60 PD&E\WEBAR\Figure 1-2 SR 60 Project Aerial.mxd) By: EAC Date: 5/7/2014

FDOT

Legend

Project Corridor

County Boundary

SR 60 PD&E Study
From Valrico Road to the Polk County Line
Hillsborough County, Florida

N W E S

0 2.5 5 Miles

Figure 1-2

Project Aerial

1.2 Project Purpose and Need

The purpose of the proposed project is to accommodate increases in traffic due to the estimated employment increase for Hillsborough County as a whole and a population increase for unincorporated Hillsborough County. SR 60 is a major east-west arterial roadway and is part of the Florida Strategic Intermodal System (SIS). The SIS is comprised of facilities of statewide and interregional significance that move people and goods and provide for smooth and efficient transfers between modes and major facilities.

SR 60 provides connectivity with many of Florida's major highways, some of which include: US 19, US 41, Interstate 75 (I-75), US 98, US 17, US 27, US 441, Florida's Turnpike, Interstate 95 (I-95) and US 1. SR 60 on the western end terminates as a roundabout with Coronado Drive (CR 699) on Clearwater Beach in Pinellas County and the eastern terminus for SR 60 is SR A1A in Indian River County; therefore, it provides a coast-to-coast route across the state. SR 60 is a vital link in the regional transportation network that connects the Tampa Bay region to the remainder of the state.

The need for two additional lanes on SR 60 in this area is based on current roadway level of service (LOS) combined with future growth projections. The Hillsborough County Level of Service (LOS) Report (March 2011) shows the current LOS of SR 60 between Valrico Road and Dover Road as F. This segment is currently 12% over capacity. The 2011 LOS is C between Dover Road and Turkey Creek Road and also between SR 39 and County Line Road, and the LOS is currently B between the Turkey Creek Road SR 39.

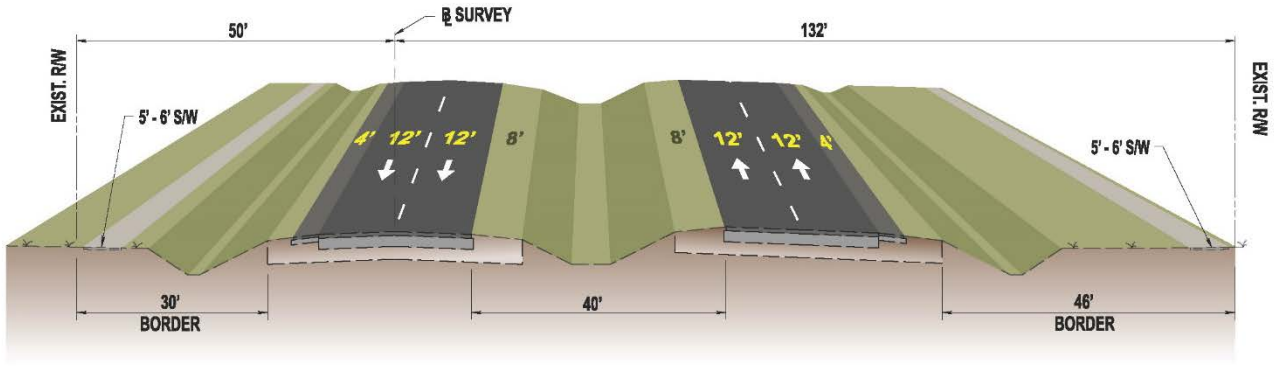
Socioeconomic growth projections from the Hillsborough County Metropolitan Planning Organization's 2035 Long Range Transportation Plan Socioeconomic Projections estimate an employment increase of 55% and a population increase of 47% for Hillsborough County between 2006 and 2035. Based on the growth projected to occur within the corridor, SR 60 is projected by the Tampa Bay Regional Planning Model (TBRPM) – Cost Feasible Network to have future traffic volumes of approximately 48,800 vehicles east of Valrico Road and 42,500 vehicles west of County Line Road by 2035, which would yield a LOS F for the corridor with the current roadway configuration. These volumes would not meet the acceptable FDOT LOS standards of LOS D for SR 60 between Valrico Road and Horton Road and LOS C for SR 60 between Horton Road and County Line Road.

1.3 Existing Facility and Proposed Improvements

Within the project limits, SR 60 currently has a four-lane divided urban typical section from Valrico Road to Dover Road and from Sydney Washer Road to Horton Road. It also has a four-lane rural typical section from Dover Road to Sydney Washer Road and from Horton Road to the Polk County Line (**Figure 1-3**). The existing roadway generally has four 12-foot travel lanes, four-foot paved outside shoulders, and a 40-foot grassed median.

The posted speed varies from 50 miles-per-hour (mph) to 65 mph. The existing right of way is typically 182 feet.

Figure 1-3
SR 60 Existing Typical Section



The preferred alternative (Pavement Savings Alternative), shown in **Figures 1-4** through **1-8,** involves widening the facility to six lanes as well as intersection improvements and construction of stormwater management and bicycle/pedestrian facilities. A "No-Build" Alternative is also being considered.

Figure 1-4
SR 60 Preferred Typical Section – Segment 1
(Valrico Road to Dover Road)

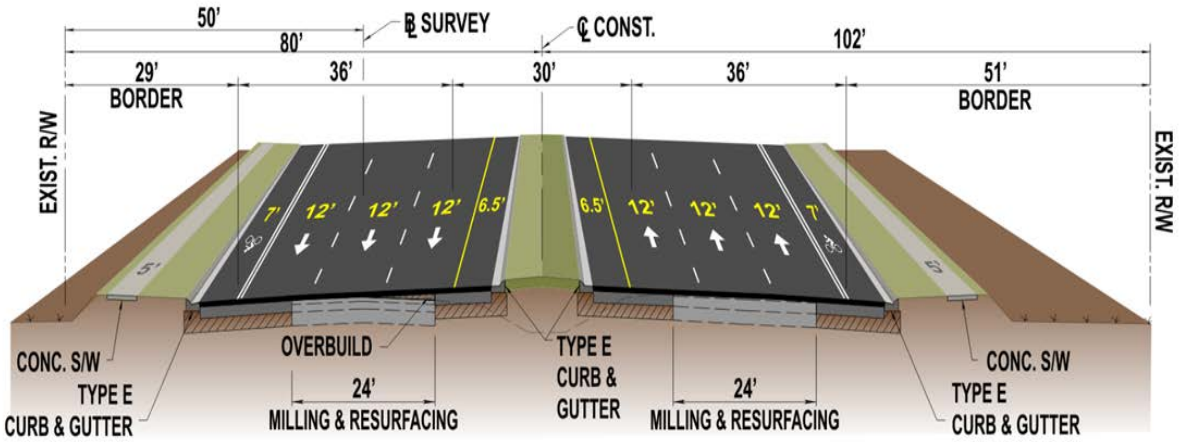


Figure 1-5
SR 60 Preferred Typical Section – Segment 2A
(Dover Road to West of Sydney Washer Road)

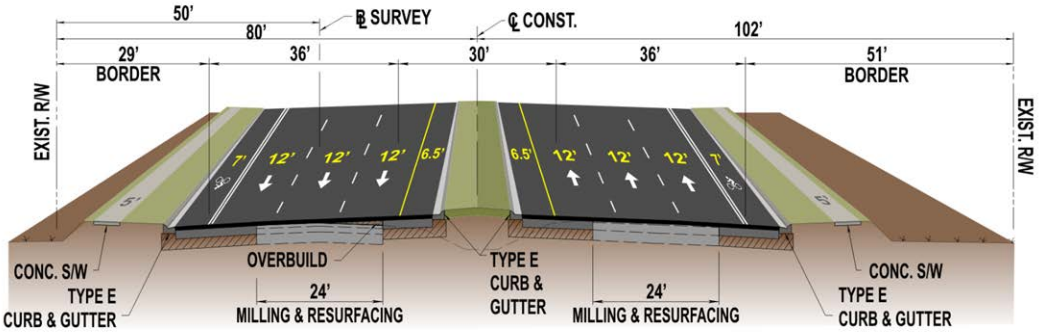


Figure 1-6
SR 60 Preferred Typical Section – Segment 2B
(West of Sydney Washer Road to West of Marge Owens Road)

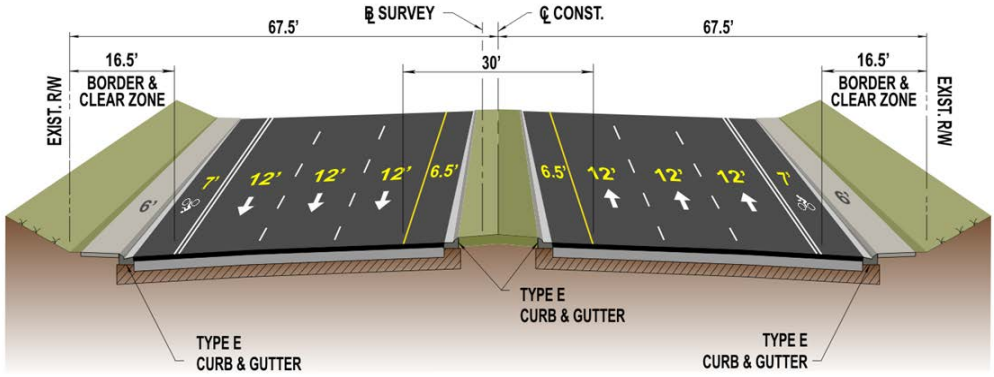


Figure 1-7
SR 60 Preferred Typical Section – Segment 2C
(West of Marge Owens Road to Turkey Creek Road)

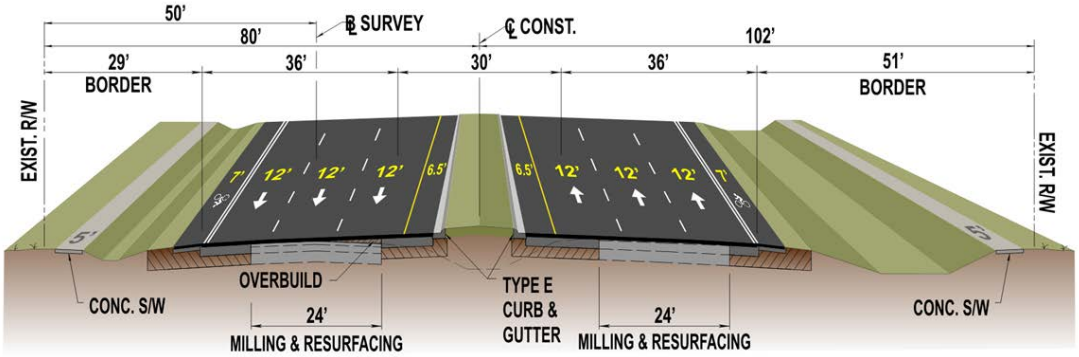
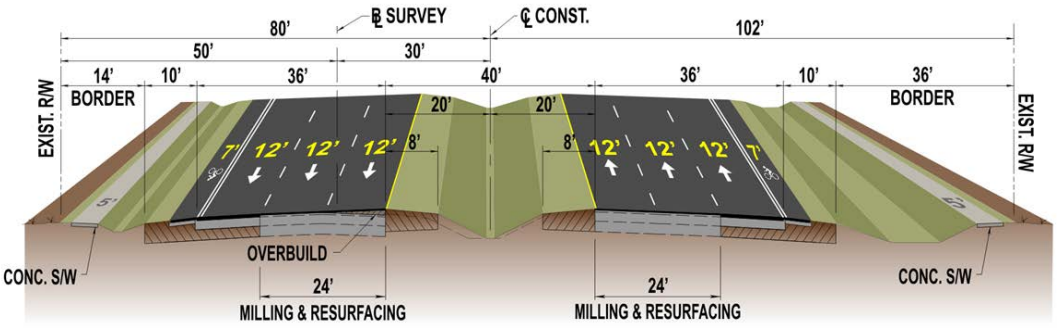


Figure 1-8
SR 60 Preferred Typical Section – Segment 3
(Turkey Creek Rd to Polk County Line)



2.0 Methodology

2.1 Evaluation Process

The traffic noise analysis for the SR 60 project was prepared in accordance with Title 23 of the Code of Federal Regulations (CFR) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. Methodologies established by FDOT and documented in the PD&E Manual, Part 2, Chapter 17 (May 2011) were also used. The potential feasibility and reasonableness of providing noise barriers as an abatement measure for impacted non-residential land uses (e.g., active sports areas and parks) was determined following procedures in FDOT's publication, A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations.

The predicted 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 equivalent levels (Leq), which are equivalent steady-state sound levels that contain the same acoustic energy as a time-varying sound level. The Leq values in this report represent a period of one hour (Leq(h)).

2.2 Noise Model

The prediction of existing and future traffic noise levels with and without the roadway improvements was performed using the FHWA's computer model for highway traffic noise prediction and analysis – Traffic Noise Model (TNM), Version 2.5. The TNM propagates sound energy, in one-third octave bands, between highways and nearby receptors taking the intervening ground's acoustical characteristics/topography and rows of buildings into account.

2.3 Traffic Data

Noise levels are low when traffic volumes are low and operating conditions are good (LOS A or B) and when traffic is so congested that movement is slow (LOS D, E, or F). Generally, the maximum hourly noise level occurs between these two conditions; therefore, traffic volumes used in the SR 60 analysis reflect either the design LOS C volume or the demand volume (if forecast demand levels meet the LOS A or B criteria), whichever were less. The Existing (year 2012), Future No-Build (year 2040), and Future Build (year 2040) traffic data that was used in the analysis are presented in **Table 2-1**. Additional documentation related to the traffic data is provided in **Appendix B** of this Noise Study Report (NSR).

Table 2-1
Traffic Data for Noise Analysis

Segment	Scenario	Total Peak Hour Peak Directional Volume		Peak Directional Volume by Vehicle Type					Off-Peak Directional Volume by Vehicle Type					Posted Speed (mph)
		LOS C	Demand	Cars	MT	HT	Buses	MC	Cars	MT	HT	Buses	MC	
Valrico Rd to Rolling Hills Blvd[1]	Existing	***1,643***	2,206	1,566	30	36	8	3	1,350	28	31	7	3	50
	No-Build	***1,643***	3,451	1,566	30	36	8	3	1,350	28	31	7	3	50
	Build	***2,518***	3,451	2,400	45	55	13	5	2,069	39	48	11	4	50
Rolling Hills Blvd to Miller Rd[1]	Existing	***1,643***	2,139	1,566	30	36	8	3	1,350	28	31	7	3	50/55
	No-Build	***1,643***	3,402	1,566	30	36	8	3	1,350	28	31	7	3	50/55
	Build	***2,518***	3,402	2,400	45	55	13	5	2,069	45	55	13	5	50
Miller Rd to St. Cloud Blvd[1]	Existing	***1,643***	1,986	1,566	30	36	8	3	1,350	28	31	7	3	55
	No-Build	***1,643***	3,209	1,566	30	36	8	3	1,350	28	31	7	3	55
	Build	***2,518***	3,209	2,400	45	55	13	5	2,069	45	55	13	5	50
St. Cloud to Mulrennan Rd[1]	Existing	***1,643***	2,006	1,566	30	36	8	3	1,350	28	31	7	3	55
	No-Build	***1,643***	3,035	1,566	30	36	8	3	1,350	28	31	7	3	55
	Build	***2,518***	3,035	2,400	45	55	13	5	2,069	45	55	13	5	50
Mulrennan Rd to Strawberry Ridge Blvd[1]	Existing	***1,643***	1,945	1,566	30	36	8	3	1,350	28	31	7	3	55
	No-Build	***1,643***	2,977	1,566	30	36	8	3	1,350	28	31	7	3	55
	Build	***2,518***	2,977	2,400	45	55	13	5	2,069	45	55	13	5	50
Strawberry Ridge Blvd to Dover Rd[1]	Existing	***1,643***	1,820	1,566	30	36	8	3	1,350	28	31	7	3	50/60
	No-Build	***1,643***	2,938	1,566	30	36	8	3	1,350	28	31	7	3	50/60
	Build	**2,518**	2,938	2,400	45	55	13	5	2,069	45	55	13	5	50
Dover Rd to Sydney Washer Rd[2]	Existing	2,397	***1,629***	1,536	37	44	8	3	1,324	32	38	7	3	50/60
	No-Build	***2,397***	2,856	2,261	55	65	12	5	1,949	48	56	10	4	50/60
	Build	3,601	***2,856***	2,693	66	77	14	6	2,322	57	66	12	5	50
Sydney Washer Rd to Turkey Creek Rd[2]	Existing	2,397	***1,479***	1,395	34	40	7	3	1,202	29	34	6	3	50/60
	No-Build	***2,397***	2,716	2,261	55	65	12	5	1,949	48	56	10	4	50/60
	Build	3,601	***2,716***	2,561	62	73	14	5	2,208	54	63	12	5	50

Segment	Scenario	Total Peak Hour Peak Directional Volume		Peak Directional Volume by Vehicle Type					Off-Peak Directional Volume by Vehicle Type					Posted Speed (mph)
		LOS C	Demand	Cars	MT	HT	Buses	MC	Cars	MT	HT	Buses	MC	
Turkey Creek Rd to Mud Lake Rd[2]	Existing	2,397	***1,397***	1,317	32	38	7	3	1,136	28	33	6	2	55/60
	No-Build	***2,397***	2,474	2,261	55	65	12	5	1,949	48	56	10	4	55/60
	Build	3,601	***2,474***	2,333	57	67	12	5	2,012	49	58	11	4	65
Mud Lake to SR 39[2]	Existing	2,397	***1,348***	1,272	31	36	7	3	1,096	27	31	6	2	50/60
	No-Build	2,397	***2,160***	2,037	50	58	11	4	1,096	27	31	6	2	50/60
	Build	3,601	***2,160***	2,037	50	58	11	4	1,096	27	31	6	2	65
SR 39 to Old Hopewell Rd[3]	Existing	2,397	***1,145***	1,051	24	68	1	2	906	21	58	1	1	50
	No-Build	2,397	***2,305***	2,116	48	136	1	3	1,825	42	117	1	3	50
	Build	3,601	***2,305***	2,116	48	136	1	3	1,825	42	117	1	3	65
Old Hopewell Rd to County Line Rd[3]	Existing	2,397	***1,080***	991	23	64	1	2	854	20	55	1	1	65
	No-Build	2,397	***2,281***	2,094	48	135	1	3	1,806	41	116	1	3	65
	Build	3,601	***2,281***	2,094	48	135	1	3	1,806	41	116	1	3	65

[1] Medium Trucks (MT) = 1.8%, Heavy Truck (HT) = 2.2%, Buses = 0.5%, Motorcycles = 0.2%
[2] Medium Trucks (MT) = 2.3%, Heavy Truck (HT) = 2.7%, Buses = 0.5%, Motorcycles = 0.2%
[3] Medium Trucks (MT) = 2.1%, Heavy Truck (HT) = 5.9%, Buses = 0.04%, Motorcycles = 0.15%
Note: The total peak hour peak direction traffic data used in the analysis is denoted by bold and italic text.
Source: RK&K, 2013.

3.0 Traffic Noise Analysis

3.1 Noise Sensitive Receptors

Noise-sensitive receptors are discrete, or representative, locations of a noise sensitive area(s). To evaluate traffic noise at these receptors, the FHWA established Noise Abatement Criteria (NAC). As shown in **Table 3-1**, the criteria vary according to the properties' activity category (i.e., land use). For comparative purposes, typical noise levels for common indoor and outdoor activities are provided in **Table 3-2**.

Table 3-1
FHWA/FDOT Noise Abatement Criteria
[Leq(h) Expressed in dB(A)]

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

Sources: Table 1 of 23 CFR Part 772 and Table 17.1 of Chapter 17 of the FDOT's PD&E Manual (dated 5-24-11)
[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: Noise abatement considerations are also warranted when a substantial noise increase is predicted to occur (i.e., when the predicted future traffic noise level with an improvement project is equal to or greater than 15 dB(A) when compared to the existing traffic noise level.

Table 3-2
Typical Noise Levels

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

Source: California Dept. of Transportation Technical Noise Supplement, Nov. 2009, Page 2-21.

The location of the receptors evaluated for the SR 60 project are illustrated on aerials provided in **Appendix A**. Three hundred and fifteen (315) noise-sensitive receptors were evaluated. The receptors represent 297 residences, four recreational areas, nine places of worship, two day care facilities, a medical center, an outdoor dining area, and the Hillsborough County Fairgrounds. Although several isolated residences were evaluated, the majority of the residences are located in the following subdivisions, mobile home parks (MHPs) and recreational vehicle (RV) parks:

- Oakwood Terrace Townhomes,
- Valrico Station Apartments,
- Strawberry Ridge MHP,
- Citrus Hill RV Park,
- Orange Blossom RV Park,

- Turkey Creek MHP,
- Orange Rose MHP,
- Valrico Hills MHP,
- Kings Mill Townhomes,
- Oakhill Village MHP, and
- Featherrock MHP.

Following FHWA/FDOT guidance, the residences were evaluated as Activity Category "B" and where exterior areas of use exist the recreational areas and day care facilities were evaluated as Activity Category "C". Several places of worship and one of the day care facilities do not have areas of exterior use. Therefore, these receptors and the medical center were evaluated as Activity Category "D". Finally, the outdoor dining area (at a restaurant) was evaluated as Activity Category "E".

For all of the categories, noise abatement measures were considered if the predicted traffic noise level with the proposed improvements was 15 dB(A) or more greater than the predicted existing traffic noise level. An increase of 15 dB(A) or more as a result of a transportation improvement is considered substantial. Abatement measures were also considered if traffic noise levels were predicted to approach, meet, or exceed the FDOT's NAC (presented in Table 3-1).

3.2 Measured Noise Levels

As previously stated, existing and future noise levels with and without the proposed improvements were modeled using the TNM. To verify the accuracy of the predictions, the computer model was validated using measured noise levels adjacent to the project corridor. Traffic data including motor vehicle volumes, vehicle mix, vehicle speeds, and meteorological conditions were recorded during each measurement period.

The field measurements were conducted in accordance with the FHWA's *Measurement of Highway-Related Noise*. The measurements were obtained using a Larson Davis Model 831, Type II integrating sound level meter (SLM). The SLM was calibrated before and after the measurement periods with a Larson Davis CAL200 calibrator.

The recorded traffic data were used as input for the TNM to determine if, given the topography and site conditions of the area, the computer model could "re-create" the measured levels with the existing roadway. 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).

Table 3-3 presents the field measurements and the validation results. As shown, the ability of the model to predict noise levels within the FDOT limits of plus or minus three dB(A) for

the project was confirmed. Documentation in support of the validation is provided in **Appendix C** of this NSR.

Table 3-3
Validation Data

Location	Measurement Period	Modeled (dB(A))	Measured (dB(A))	Difference
SR 60 – East of Strawberry Ridge MHP	1	62.5	61.2	1.3
	2	62.4	63.5	-1.1
	3	61.8	59.1	2.7
SR 60 – West of Belveal Rd.	1	65.7	64.9	0.8
	2	65.5	64.5	1.0
	3	64.4	64.3	0.1

3.3 Results of the Noise Analysis

Table 3-4 presents the results of the traffic noise analysis for the proposed improvements. As shown, existing (2012) exterior traffic noise levels are predicted to range from 51.5 to 74.1 dB(A). These results indicate that existing traffic noise levels exceed the NAC at 97 receptors (94 residences, two recreational areas and one place of worship). As also shown, future (2040) exterior noise levels without the proposed improvements (No-Build) are predicted to range from 53.1 to 77.3 dB(A) with traffic noise levels exceeding the NAC at 136 receptors (133 residences, two recreational areas and one place of worship). In the future (2040) with the improvements (Build) traffic noise levels are predicted to range from 58.0 to 78.2 dB(A) with traffic noise levels approaching, meeting, or exceeding the NAC at 187 receptors (184 residence, two recreational areas, and one place of worship).

As also shown in Table 3-4, existing (2012) interior levels for the places of worship and the day care facility that do not have exterior areas of use and the medical center range from 34.9 to 45.4 dB(A). None of these levels approach, meet or exceed the NAC. Future (2040) interior noise levels without the proposed improvements (No-Build) are predicted to range from 34.9 to 48.1 dB(A). Again, none of the levels would approach, meet or exceed the NAC. In the future (2040) with the improvements (Build) levels are predicted to range from 38.0 to 50.9, levels again that do not approach, meeting, or exceed the NAC.

Notably, when compared to the existing condition, traffic noise levels are not predicted to increase more than 10 dB(A) above existing conditions at any of the evaluated sites. As such, the project would not substantially increase traffic noise (i.e., increase traffic noise 15 dB(A) or more) at any of the evaluated receptors.

Noise abatement measures were evaluated for the 187 noise sensitive receptors, shown in **Table 3-5**, that are predicted to experience future traffic noise levels that would approach, meet, or exceed the NAC with the proposed improvements.

The results of the abatement evaluation are provided in the following section of this NSR.

Table 3-4
Predicted Traffic Noise Levels

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
Residences between Rolling Hills Blvd. and Miller Rd. (South of SR 60)								
1	SF	B	66	66.8	66.8	69.8	3	YES
2	SF	B	66	63.5	63.5	66.7	3	YES
Residences and tennis courts at the Oakwood Terrace Townhomes and Valrico Station Apartments (South of SR 60)								
3	MF Residence	B	66	63.4	63.4	66.2	3	YES
4	MF Residence	B	66	64.6	64.6	67.1	3	YES
5	MF Residence	B	66	65.3	65.3	67.7	2	YES
6	MF Residence	B	66	66.1	66.2	68.6	3	YES
7	MF Residence	B	66	66.9	66.9	69.3	2	YES
8	MF Residence	B	66	61.5	61.5	64.8	3	--
9	MF Residence	B	66	60.6	60.6	63.4	3	--
10	MF Residence	B	66	59.0	59.0	62.5	4	--
11	MF Residence	B	66	64.0	64.0	66.7	3	YES
12	MF Residence	B	66	62.5	62.5	65.3	3	--
13	MF Residence	B	66	61.1	61.1	64.2	3	--
14	MF Residence	B	66	60.3	60.3	63.4	3	--
15	Tennis Courts - Valrico Station Apts	C	66	66.2	66.2	68.5	2	YES
Residence between S. Mulrennan Rd and Strawberry Ridge MHP (South of SR 60)								
16	SF	B	66	62.5	62.5	66.2	4	YES
Residences and shuffleboard court at the Strawberry Ridge Mobile Home Park (South of SR 60)								
17	Shuffleboard court - Strawberry Ridge MHP	C	66	62.6	62.6	65.9	3	--
18	SF - Strawberry Ridge MH Park	B	66	64.3	64.3	66.6	2	YES
19	Picnic Area - Strawberry Ridge MH Park	C	66	62.9	62.9	65.4	3	--
20	Tennis Courts - Strawberry Ridge MHP	C	66	68.7	68.8	70.7	2	YES
21	MH - Strawberry Ridge MH Park	B	66	66.6	66.6	68.8	2	YES
22	MH - Strawberry Ridge MH Park	B	66	66.6	66.6	68.8	2	YES
23	MH - Strawberry Ridge MH Park	B	66	66.6	66.6	68.8	2	YES
24	MH - Strawberry Ridge MH Park	B	66	66.7	66.7	68.7	2	YES
25	MH - Strawberry Ridge MH Park	B	66	66.7	66.7	68.7	2	YES
26	MH - Strawberry Ridge MH Park	B	66	66.7	66.8	68.8	2	YES
27	MH - Strawberry Ridge MH Park	B	66	67.3	67.3	69.1	2	YES

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
28	MH - Strawberry Ridge MH Park	B	66	60.3	60.4	62.8	3	--
29	MH - Strawberry Ridge MH Park	B	66	58.3	58.4	62.2	4	--
30	MH - Strawberry Ridge MH Park	B	66	57.2	57.3	59.2	2	--
31	MH - Strawberry Ridge MH Park	B	66	62.8	62.8	65.3	3	--
32	MH - Strawberry Ridge MH Park	B	66	62.9	62.9	65.3	2	--
Medical center west of Dover Rd. (South of SR 60)								
33	Medical Center	D	51	37.6	38.0	40.6	3	--
Isolated residences east of Dover Rd. (South of SR 60)								
34	SF	B	66	59.8	60.8	64.1	4	--
35	SF	B	66	55.7	57.2	69.3	14	YES
36	SF	B	66	51.5	53.1	61.3	10	--
37	SF	B	66	56.4	58.0	69.9	14	YES
38	SF	B	66	58.5	60.2	66.9	8	YES
Residences at the Citrus Hill and Orange Blossom RV Parks (South of SR 60)								
39	MH - Citrus Hill RV Park	B	66	63.6	65.7	65.4	2	--
40	MH - Citrus Hill RV Park	B	66	66.8	68.9	68.0	1	YES
41	MH - Citrus Hill RV Park	B	66	68.4	70.5	69.4	1	YES
42	MH - Citrus Hill RV Park	B	66	68.7	70.8	69.7	1	YES
43	MH - Citrus Hill RV Park	B	66	68.2	70.3	69.3	1	YES
44	MH - Citrus Hill RV Park	B	66	68.3	70.4	69.4	1	YES
45	MH - Citrus Hill RV Park	B	66	68.4	70.5	69.5	1	YES
46	MH - Citrus Hill RV Park	B	66	68.4	70.5	69.5	1	YES
47	MH - Citrus Hill RV Park	B	66	69.0	71.1	70.1	1	YES
48	MH - Citrus Hill RV Park	B	66	64.0	66.1	65.5	2	--
49	MH - Citrus Hill RV Park	B	66	62.0	64.1	64.3	2	--
50	MH - Citrus Hill RV Park	B	66	63.1	65.2	65.2	2	--
51	MH - Citrus Hill RV Park	B	66	63.6	65.7	65.5	2	--
52	MH - Citrus Hill RV Park	B	66	63.5	65.6	65.5	2	--
53	MH - Citrus Hill RV Park	B	66	62.2	64.3	64.4	2	--
54	MH - Orange Blossom RV Park	B	66	63.8	65.9	70.7	7	YES
55	MH - Orange Blossom RV Park	B	66	70.3	72.4	71.4	1	YES
56	MH - Orange Blossom RV Park	B	66	70.4	72.5	71.5	1	YES
57	MH - Orange Blossom RV Park	B	66	65.9	68.0	67.3	1	YES

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
58	MH - Orange Blossom RV Park	B	66	63.9	66.0	65.6	2	--
59	MH - Orange Blossom RV Park	B	66	63.9	66.0	65.7	2	--
60	MH - Orange Blossom RV Park	B	66	64.1	66.2	66.0	2	YES
61	MH - Orange Blossom RV Park	B	66	64.5	66.6	66.3	2	YES
Residences east of Belveal Rd (South of SR 60)								
62	SF	B	66	59.1	61.2	61.8	3	--
63	SF	B	66	57.3	59.4	60.4	3	--
64	SF	B	66	58.0	60.1	60.8	3	--
Residences between Turkey Creek Rd and Calhoun Rd (South of SR 60)								
65	SF	B	66	59.7	62.0	65.5	6	--
66	SF	B	66	59.5	61.8	65.7	6	--
Residences and Place of Worship between Calhoun Rd and east of Luckasavage Rd (South of SR 60)								
67	SF	B	66	64.2	66.5	70.4	6	YES
68	SF	B	66	64.6	67.0	71.1	7	YES
69	SF	B	66	63.3	65.6	69.1	6	YES
70	SF	B	66	58.2	60.5	63.4	5	--
71	SF	B	66	62.1	64.5	70.2	8	YES
72	Place of Worship - Sunshine Cathedral	D	51	43.7	46.1	49.2	6	--
73	SF	B	66	63.3	65.6	68.3	5	YES
Residences between Calhoun Rd. and Haynsworth Dr. (South of SR 60)								
74	SF	B	66	68.1	70.5	72.5	4	YES
75	SF	B	66	63.5	65.9	68.3	5	YES
76	SF	B	66	57.7	60.1	62.4	5	--
77	SF	B	66	60.5	62.8	64.7	4	--
78	SF	B	66	56.1	58.4	60.1	4	--
79	SF	B	66	57.3	59.6	61.2	4	--
80	SF	B	66	57.4	59.8	61.6	4	--
Residences and Place of Worship between Haynsworth Dr. and Cassels Rd. (South of SR 60)								
81	SF	B	66	59.4	61.4	64.3	5	--
82	SF	B	66	66.8	68.8	70.7	4	YES
83	SF	B	66	60.4	62.4	65.2	5	--
84	SF	B	66	67.3	69.4	71.3	4	YES
85	SF	B	66	63.2	65.2	67.8	5	YES
86	SF	B	66	62.9	64.9	67.6	5	YES

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
87	Place of Worship - Zion Christian Fellowship Church	D	51	37.5	39.5	42.3	5	--
Isolated Residences between Cassels Rd. and SR 39 (South of SR 60)								
88	SF	B	66	65.5	67.6	69.8	4	YES
89	SF	B	66	65.2	67.2	70.4	5	YES
90	SF	B	66	60.6	62.7	66.1	5	YES
91	SF	B	66	55.5	57.7	60.9	5	--
92	SF	B	66	54.5	56.7	59.3	5	--
93	SF	B	66	53.7	56.3	58.0	4	--
Residence west of Smith Ryals Rd. (South of SR 60)								
94	SF	B	66	67.2	68.1	71.9	5	YES
Residences east of Curry McCloud Pl. (South of SR 60)								
95	SF	B	66	61.0	62.1	66.5	6	YES
96	SF	B	66	57.5	58.9	62.5	5	--
97	SF	B	66	60.1	61.3	65.6	5	--
98	SF	B	66	68.3	69.1	73.0	5	YES
99	SF	B	66	68.1	68.9	72.8	5	YES
100	SF	B	66	67.5	68.2	72.1	5	YES
Residences in the vicinity of Horton Rd. (South of SR 60)								
101	SF	B	66	60.1	61.4	65.4	5	--
102	SF	B	66	70.0	71.0	74.6	5	YES
103	SF	B	66	62.7	63.7	67.7	5	YES
104	SF	B	66	66.6	67.4	71.1	5	YES
Residences between west of Old Hopewell Rd. and Miles Farm Rd. (South of SR 60)								
105	SF	B	66	64.8	65.8	69.2	4	YES
106	SF	B	66	64.9	65.9	69.8	5	YES
107	SF	B	66	67.3	68.1	71.9	5	YES
108	SF	B	66	68.0	68.9	72.6	5	YES
109	SF	B	66	68.7	69.8	73.4	5	YES
110	SF	B	66	68.5	70.1	73.2	5	YES
111	SF	B	66	69.9	72.8	74.1	4	YES
112	SF	B	66	64.5	67.5	69.2	5	YES
113	SF	B	66	65.6	68.7	70.0	4	YES
114	SF	B	66	60.1	63.2	64.7	5	--
Residences west of County Line Rd. (North of SR 60)								
115	MF - Duplex	B	66	67.3	70.5	71.8	5	YES
116	MF - Duplex	B	66	67.1	70.4	71.7	5	YES

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
117	MF - Quadraplex	B	66	66.9	70.2	71.6	5	YES
118	MF - Quadraplex	B	66	66.9	70.1	71.5	5	YES
119	MF - Quadraplex	B	66	66.8	70.1	71.5	5	YES
120	MF - Quadraplex	B	66	66.8	70	71.5	5	YES
121	MF - Duplex	B	66	66.6	69.9	71.3	5	YES
122	MF - Duplex	B	66	66.7	69.9	71.3	5	YES
123	SF	B	66	74.1	77.3	78.2	4	YES
124	SF	B	66	62.8	66	68	5	YES
125	SF	B	66	61.3	64.6	66.6	5	YES
126	SF	B	66	62.1	65.3	67.2	5	YES
Residences east of Sam Hicks Rd. (North of SR 60)								
127	SF	B	66	69.3	72.6	73.6	4	YES
128	SF	B	66	60.9	64.1	65.2	4	--
129	SF	B	66	70.7	74	74.8	4	YES
130	SF	B	66	64.2	67.4	68.9	5	YES
131	SF	B	66	68.0	71.2	72.2	4	YES
132	SF	B	66	70.2	73.4	74.4	4	YES
133	SF	B	66	65.0	68.3	69.8	5	YES
134	SF	B	66	65.5	68.9	70.4	5	YES
135	SF	B	66	69.3	72.7	73.9	5	YES
136	SF	B	66	68.5	71.6	73.1	5	YES
137	Place of Worship - New Testament Church	D	51	45.1	48.1	49.4	4	--
138	SF	B	66	58.6	61.7	63.2	5	--
139	SF	B	66	60.0	63.1	64.8	5	--
140	SF	B	66	60.9	63.9	65.1	4	--
Residences between Sam Hicks Rd. and Horton Rd. (North of SR 60)								
141	SF	B	66	65.3	68.4	69.2	4	YES
142	SF	B	66	66.1	69.1	70.6	5	YES
143	SF	B	66	60.8	63.8	66.2	5	YES
Residences between Horton Rd. and Smith Ryals Rd. (North of SR 60)								
144	SF	B	66	68.4	71.4	72.7	4	YES
145	SF	B	66	67.9	70.9	72.2	4	YES
146	SF	B	66	70.6	73.6	75	4	YES
147	SF	B	66	70.2	73.2	74.6	4	YES
148	SF	B	66	64.3	67.3	69.1	5	YES
149	SF	B	66	65.2	68.2	69.9	5	YES
150	SF	B	66	68.2	71.2	72.5	4	YES

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
152	Place of Worship - St Mary's Church Basketball Court	C	66	60.3	63.3	65.2	5	--
153	SF	B	66	59.6	62.6	64.4	5	--
154	SF	B	66	55.6	58.6	60	4	--
Residences west of Smith Ryals Rd. (North of SR 60)								
155	SF	B	66	65.1	68.1	69.8	5	YES
156	SF	B	66	70.8	73.8	75.3	5	YES
157	SF	B	66	58.3	61.3	62.7	4	--
Residences west of Clarence Gordan Rd. (North of SR 60)								
158	SF	B	66	63.2	66.2	70.5	7	YES
159	SF	B	66	65.7	68.9	72.9	7	YES
Residences west of Clarence Gordan Rd. and adjacent to Weigh Station (North of SR 60)								
160	SF	B	66	67.7	70.7	74.6	7	YES
161	SF	B	66	67.1	70.2	73.9	7	YES
162	SF	B	66	61.3	64.3	67.5	6	YES
163	SF	B	66	57.9	61	63.8	6	--
Residences east of SR 39 (North of SR 60)								
164	SF	B	66	63.5	66.5	69.9	6	YES
165	SF	B	66	57.4	60.4	62.9	6	--
166	SF	B	66	65.8	68.8	72.6	7	YES
167	SF	B	66	56.7	59.6	61.9	5	--
Residences between SR 39 and S Bugg Rd. (North of SR 60)								
168	SF	B	66	62.9	65	67.6	5	YES
169	SF	B	66	59.6	61.6	65.1	5	--
170	SF	B	66	66.3	68.4	71.8	6	YES
171	SF	B	66	65.7	67.7	71.1	5	YES
172	SF	B	66	62.5	64.6	68.3	6	YES
173	SF	B	66	64.9	67	70.4	6	YES
174	SF	B	66	66.8	68.9	72.1	5	YES
175	SF	B	66	70.3	72.4	75.9	6	YES
177	SF	B	66	66.3	68.3	71.5	5	YES
178	SF	B	66	66.0	68	71.0	5	YES
179	SF	B	66	68.9	70.9	74.0	5	YES
Residences west of S Bugg Rd. (North of SR 60)								
180	SF	B	66	54.8	56.9	58.5	4	--
181	SF	B	66	61.1	63.2	66.7	6	YES
182	SF	B	66	59.9	61.9	65.3	5	--

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
183	SF	B	66	60.0	62.1	65.3	5	--
184	SF	B	66	60.2	62.2	65.6	5	--
Isolated residences east of Mud Lake Rd. (North of SR 60)								
185	SF	B	66	64.7	66.8	70.2	6	YES
186	SF	B	66	58.2	60.3	63.8	6	--
Place of Worship west of Mud Lake Rd. (North of SR 60)								
187	Place of Worship - Iglesia de Dios	D	51	45.4	46.7	50.9	6	--
Residences between east of Gable Rd. and the Turkey Creek Mobile Home Park (North of SR 60)								
188	SF	B	66	64.4	66.8	70.4	6	YES
189	SF	B	66	66.4	68.8	72.2	6	YES
190	SF	B	66	67.7	70	73.4	6	YES
191	SF	B	66	54.8	57.2	61.8	7	--
Residences at the Turkey Creek Mobile Home Park and west of Wallace Rd. (North of SR 60)								
192	MF - Turkey Creek MHP	B	66	61.8	64.1	67.2	5	YES
193	MF - Turkey Creek MHP	B	66	61.7	64	67.7	6	YES
194	MF - Turkey Creek MHP	B	66	61.9	64.3	69.4	8	YES
195	MF - Turkey Creek MHP	B	66	61.7	64.1	68	6	YES
196	MF - Turkey Creek MHP	B	66	60.3	62.6	65.7	5	--
197	MF - Turkey Creek MHP	B	66	60.8	63.1	67.8	7	YES
198	MF - Turkey Creek MHP	B	66	61.5	63.8	68.5	7	YES
199	MF - Turkey Creek MHP	B	66	60.5	62.9	66.6	6	YES
200	MF - Turkey Creek MHP	B	66	58.3	60.7	65.8	8	--
201	MF - Turkey Creek MHP	B	66	58.9	61.3	65.3	6	--
202	MF - Turkey Creek MHP	B	66	59.5	61.9	65.8	6	--
203	MF - Turkey Creek MHP	B	66	59.4	61.8	65.3	6	--
204	SF	B	66	59.4	61.7	65.4	6	--
Isolated residence west of Wallace Rd. (North of SR 60)								
205	SF	B	66	67.2	69.5	71.2	4	YES
Residences east of Turkey Creek Rd. (North of SR 60)								
206	SF	B	66	64.4	66.7	71.6	7	YES
207	SF	B	66	62.9	65.2	72.0	9	YES
208	SF	B	66	67.2	69.6	76.4	9	YES
209	SF	B	66	64.1	66.5	72.8	9	YES
210	SF	B	66	64.2	66.5	72.7	9	YES
211	SF	B	66	63.8	66.1	72.5	9	YES
212	SF	B	66	64.1	66.5	72.7	9	YES
213	SF	B	66	63.6	65.9	72.0	8	YES

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
214	SF	B	66	64.2	66.5	72.3	8	YES
215	SF	B	66	64.8	67.2	72.7	8	YES
216	SF	B	66	57.2	59.5	65.0	8	--
217	SF	B	66	56.2	58.5	63.2	7	--
218	SF	B	66	55.0	57.3	61.3	6	--
219	SF	B	66	66.3	68.6	71.6	5	YES
220	SF	B	66	62.5	64.7	68.3	6	YES
221	SF	B	66	60.0	62.2	65.0	5	--
Residences west of Turkey Creek Rd. (North of SR 60)								
222	SF	B	66	71.0	73.1	74.4	3	YES
223	SF	B	66	68.7	70.8	71.3	3	YES
224	SF	B	66	67.1	69.2	69.4	2	YES
225	SF	B	66	67.2	69.3	69.5	2	YES
226	SF	B	66	67.7	69.8	69.9	2	YES
227	SF	B	66	60.9	63	64.2	3	--
228	SF	B	66	61.4	63.5	64.6	3	--
229	SF	B	66	71.5	73.6	73.5	2	YES
Residences at the Orange Rose Mobile Home Park (North of SR 60)								
230	MF - Orange Rose MHP (or Star Lite MHP)	B	66	67.6	69.7	69.5	2	YES
231	MF - Orange Rose MHP (or Star Lite MHP)	B	66	69.6	71.7	71.5	2	YES
232	MF - Orange Rose MHP (or Star Lite MHP)	B	66	69.7	71.8	71.6	2	YES
233	MF - Orange Rose MHP (or Star Lite MHP)	B	66	66.1	68.2	68.1	2	YES
234	MF - Orange Rose MHP (or Star Lite MHP)	B	66	65.6	67.7	67.8	2	YES
235	MF - Orange Rose MHP (or Star Lite MHP)	B	66	62.8	64.9	65.2	2	--
236	MF - Orange Rose MHP (or Star Lite MHP)	B	66	62.2	64.3	64.7	3	--
237	MF - Orange Rose MHP (or Star Lite MHP)	B	66	60.5	62.6	62.7	2	--
238	MF - Orange Rose MHP (or Star Lite MHP)	B	66	58.0	60.1	60.3	2	--
Isolated residence west of the Orange Rose Mobile Home Park (North of SR 60)								
239	SF	B	66	70.1	72.2	71.8	2	YES
Hillsborough County State Fairgrounds (North of SR 60)								
241	Fairgrounds	C	66	60.7	62.8	62.2	2	--
Residences at and adjacent to the Valrico Hills Mobile Home Park (North of SR 60)								
242	SF	B	66	61.7	63.3	64.9	3	--

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
243	SF	B	66	69.3	71	71	2	YES
244	SF	B	66	68.1	69.7	70.3	2	YES
245	SF	B	66	69.1	70.7	70.8	2	YES
246	SF	B	66	60.7	62.4	64.1	3	--
247	MF - Valrico Hills MHP	B	66	64.2	65.8	67	3	YES
248	MF - Valrico Hills MHP	B	66	64.1	65.8	66.9	3	YES
249	MF - Valrico Hills MHP	B	66	64.3	66	67.1	3	YES
250	MF - Valrico Hills MHP	B	66	64.3	66	67.1	3	YES
251	MF - Valrico Hills MHP	B	66	64.1	65.8	66.9	3	YES
252	MF - Valrico Hills MHP	B	66	64.2	65.9	66.9	3	YES
253	MF - Valrico Hills MHP	B	66	64.2	65.8	66.8	3	YES
254	MF - Valrico Hills MHP	B	66	64.6	66.3	66.7	2	YES
255	MF - Valrico Hills MHP	B	66	61.0	62.7	64.4	3	--
256	MF - Valrico Hills MHP	B	66	60.9	62.6	64.3	3	--
257	MF - Valrico Hills MHP	B	66	60.8	62.4	64.2	3	--
258	MF - Valrico Hills MHP	B	66	60.8	62.4	64.1	3	--
259	MF - Valrico Hills MHP	B	66	60.5	62.2	63.5	3	--
260	MF - Valrico Hills MHP	B	66	60.8	62.5	63.8	3	--
261	MF - Valrico Hills MHP	B	66	61.0	62.6	63.8	3	--
262	MF - Valrico Hills MHP	B	66	61.0	62.7	63.7	3	--
263	SF	B	66	61.2	62.8	64.0	3	--
264	SF	B	66	58.2	59.9	61.1	3	--
Isolated residence west of Dover Rd. (North of SR 60)								
265	SF	B	66	58.6	59.5	60.7	2	--
Discovery Point Day Care playground (North of SR 60)								
267	Playground	C	66	58.1	61.1	62.2	4	--
Kings Mill Townhomes (North of SR 60)								
268	MF - Kings Mill Townhomes	B	66	54.7	60.4	61.9	7	--
Residences west of Mulrennan Rd. (North of SR 60)								
269	SF	B	66	70	70	73.0	3	YES
270	SF	B	66	69.6	69.6	72.6	3	YES
271	SF	B	66	69.1	69.1	72.6	4	YES
272	SF	B	66	68.4	68.4	72.2	4	YES
273	SF	B	66	59.6	59.6	62.5	3	--
274	SF	B	66	63.5	63.5	66.6	3	YES
275	SF	B	66	62.7	62.7	65.4	3	--
276	SF	B	66	61.0	61	63.6	3	--

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
277	SF	B	66	53.0	60.7	63.1	10	--
278	SF	B	66	59.1	61.2	64.5	5	--
Isolated residence west of St Cloud Ave. (North of SR 60)								
279	SF	B	66	67.2	67.2	70.6	3	YES
Place of Worship east of Church Street (North of SR 60)								
280	Place of Worship - New Life Church	D	51	38.2	38.2	42.1	4	--
Residences at the Oakhill Village Mobile Home Park (North of SR 60)								
281	MF - Oakhill Village MHP	B	66	66.3	66.3	69.3	3	YES
282	MF - Oakhill Village MHP	B	66	65.6	65.7	68.8	3	YES
283	MF - Oakhill Village MHP	B	66	63.9	63.9	67.3	3	YES
284	MF - Oakhill Village MHP	B	66	63.2	63.2	66.7	4	YES
285	MF - Oakhill Village MHP	B	66	62.4	62.4	66.1	4	YES
286	MF - Oakhill Village MHP	B	66	62.7	62.7	66.2	4	YES
287	MF - Oakhill Village MHP	B	66	62.0	62	65.5	4	--
288	MF - Oakhill Village MHP	B	66	63.0	63	66.7	4	YES
289	MF - Oakhill Village MHP	B	66	62.8	62.8	66.4	4	YES
290	MF - Oakhill Village MHP	B	66	61.4	61.4	65.2	4	--
291	MF - Oakhill Village MHP	B	66	61.2	61.2	65.0	4	--
292	MF - Oakhill Village MHP	B	66	60.4	60.4	64.2	4	--
293	MF - Oakhill Village MHP	B	66	59.8	59.8	63.6	4	--
294	MF - Oakhill Village MHP	B	66	60.0	60	63.8	4	--
295	MF - Oakhill Village MHP	B	66	59.9	59.9	63.8	4	--
296	MF - Oakhill Village MHP	B	66	58.3	58.4	62.2	4	--
297	MF - Oakhill Village MHP	B	66	57.4	57.4	61.0	4	--
298	MF - Oakhill Village MHP	B	66	57.7	57.7	61.3	4	--
Place of Worship and Day Care Center east of Miller Rd. (North of SR 60)								
299	Place of Worship - Life Center of Brandon	D	51	45.3	45.3	48.0	3	--
300	Day Care - Kiddie Academy	D	51	34.9	34.9	38.0	3	--
Residences at the Featherrock Mobile Home Park (North of SR 60)								
301	MF - Featherrock MHP	B	66	67.1	67.1	70.6	4	YES
302	MF - Featherrock MHP	B	66	66.2	66.2	69.9	4	YES
303	MF - Featherrock MHP	B	66	66.1	66.1	69.8	4	YES
304	MF - Featherrock MHP	B	66	67.5	67.5	71.2	4	YES
305	MF - Featherrock MHP	B	66	66.1	66.1	69.9	4	YES
306	MF - Featherrock MHP	B	66	62.1	62.1	64.9	3	--
307	MF - Featherrock MHP	B	66	61.6	61.6	65.7	4	--

Receptor ID	Description	Activity Category	FDOT NAC	Existing (2012)	No-Build (2040)	Build (2040)	Increase over Existing	Approaches, Meets or Exceeds the NAC ?
308	MF - Featherrock MHP	B	66	61.3	61.3	65.4	4	--
309	MF - Featherrock MHP	B	66	61.4	61.4	65.4	4	--
310	MF - Featherrock MHP	B	66	61.8	61.8	65.6	4	--
311	MF - Featherrock MHP	B	66	61.8	61.8	65.8	4	--
312	MF - Featherrock MHP	B	66	62.0	62	65.9	4	--
313	MF - Featherrock MHP	B	66	63.6	63.6	67.0	3	YES
314	MF - Featherrock MHP	B	66	62.7	62.7	66.0	3	YES
315	MF - Featherrock MHP	B	66	62.9	62.9	66.3	3	YES
316	MF - Featherrock MHP	B	66	62.0	62	65.6	4	--
Recreational Area at the Fellowship Baptist Church (North of SR 60)								
318	Fellowship Bapt. Church of Valrico Basketball Ct	C	66	70.6	70.6	73.5	3	YES
Outdoor Dining Area at the NY Diner (North of SR 60)								
319	Outdoor dining area - NY Diner	E	71	66.1	66.1	69.2	3	--

Notes: Receptor locations are illustrated on the project aerials in Appendix A of this report.
Each residential receptor represents one residence.

4.0 Evaluation of Abatement Alternatives

Traffic noise abatement measures were considered for the receptors (i.e., properties) listed in **Table 4-1.** The measures considered were traffic management, alternative roadway alignment and noise barriers. The following discusses the feasibility (e.g., amount of noise reduction, engineering considerations, etc.) and cost reasonableness of these measures.

Table 4-1
Noise Sensitive Receptors Evaluated for Noise Abatement

Receptor	Description/Location
1-2	Residences located between Rolling Hills Blvd. and Miller Rd.
3-7, 11, 15	Residences and tennis courts at the Oakwood Terrace Townhomes and Valrico Station Apartments
16	Isolated residence between S. Mulrennan Rd. and the Strawberry Ridge Mobile Home Park
18, 20-27	Residences and the shuffle board court at the Strawberry Ridge Mobile Home Park
35, 37, 38	Isolated residences east of Dover Rd.
40-47, 54-57, 60-61	Residences at the Citrus Hill and Orange Blossom RV Parks
67-69, 71, 73	Residences between Calhoun Rd and east of Luckasavage Rd.
74-75	Residences between Calhoun Rd. and Haynsworth Dr.
82, 84-86	Residences between Haynsworth Dr. and Cassels Rd.
88-90	Isolated residences between Cassels Rd. and SR 39
94	Isolated residence west of Smith Ryals Rd.
95, 98-100	Residence between Smith Ryals Rd. and Miles Farm Rd.
102-104	Residences east of Curry McCloud Pl.
105-113	Residences between west of Old Hopewell Rd. and Miles Farm Rd.
115-126	Residences west of County Line Rd.
127, 129-136	Residences east of Sam Hicks Rd.
141-143	Residences between Sam Hicks Rd. and Horton Rd
144-150	Residences between Horton Rd. and Smith Ryals Rd.
155-156	Residences west of Smith Ryals Rd.
158-159	Residences west of Clarence Gordan Rd.
160-162	Residences west of Clarence Gordan Rd. and adjacent to Weigh Station
164, 166	Residences east of SR 39
168, 170-179	Residences between SR 39 and S Bugg Rd.
181	Isolated residence west of S. Bugg St.
185	Isolated residence east of Mud Lake Rd.
188-190	Residences between east of Gable Rd. and the Turkey Creek Mobile Home Park
192-195, 197-199	Residences at the Turkey Creek Mobile Home Park and west of Wallace Rd.
205	Isolated residence west of Wallace Rd.
206-215, 219-220	Residences east of Turkey Creek Rd.
222-226, 229	Residences west of Turkey Creek Rd.

Receptor	Description/Location
230-234	Residences at the Orange Rose Mobile Home Park
239	Isolated residence west of the Orange Rose Mobile Home Park
243-245, 247-254	Residences at and adjacent to the Valrico Hills Mobile Home Park
269-272, 274	Residences west of Mulrennan Rd.
279	Isolated residence west of St. Cloud Ave.
281-286, 288-289	Residences at and adjacent to the Oakhill Village Mobile Home Park
301-305, 313-315	Residences at the Featherrock Mobile Home Park
318	Basketball court at the Fellowship Baptist Church

4.1 Traffic Management

Traffic management measures that limit motor vehicle speeds, reduce traffic volumes or prohibit truck traffic can be effective noise mitigation measures. However, these measures also negate a project's ability to accommodate forecast traffic volumes. For example, if the posted speed were reduced, the capacity of the roadway to handle the forecast motor vehicle demand would also be reduced. Therefore, reducing traffic speeds and/or the traffic volumes or fleet is inconsistent with the goal of improving the ability of the roadway to handle the forecast volumes. As such, traffic management measures were not considered a reasonable noise abatement measure for the SR 60 project.

4.2 Alternative Roadway Alignment

The proposed improvements will follow the same alignment as the existing roadway and would require additional right-of-way (ROW) within the project corridor. Because noise sensitive sites are located on both sides of the roadway, shifting the alignment one way or the other would also shift the noise closer to some of the sites. As such, alternative roadway alignment(s) were not considered a reasonable noise abatement measure.

4.3 Noise Barriers

Noise barriers have the potential to reduce traffic noise levels by blocking the sound path between the motor vehicles on the roadway (the source) and the noise-sensitive receptors 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. For a noise barrier to be considered a potential abatement measure the barrier must initially provide the following noise reduction requirements:

- *Minimum Noise Reduction Requirements* - A barrier must provide at least a five dB(A) reduction in traffic noise for two or greater impacted noise-sensitive receptors and also provide at least a seven dB(A) reduction (i.e., the FDOT's noise reduction design goal) for at least one benefitted receptor.

If, based on an evaluation using TNM, a noise barrier could meet the noise reduction requirements, the cost must also be reasonable. For this purpose, the FDOT has established the following cost effective limit:

- *Cost Effective Limit* – At a cost of $30 per square foot, a barrier should not cost more than $42,000 per benefited noise-sensitive receptor (a benefited receptor is a receptor that receives at least a five dB(A) reduction in noise from a mitigation measure). For special land uses, such as the basketball court at the Fellowship Baptist Church, the cost of a barrier is based on the number of people using the impacted and benefitted area per day.

If a noise barrier has the potential to provide the required reduction in traffic noise at a cost at or below the cost effective limit, additional factors are also considered. These factors consider both the feasibility and reasonableness of a barrier as an abatement measure and include factors that 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.

The TNM was used to evaluate the ability of noise barriers to reduce traffic noise levels for the impacted noise sensitive receptors adjacent to SR 60. The barriers were evaluated at heights from eight to 22 feet (in two-foot increments). The length of the barriers was optimized in an attempt to determine if at least the minimum noise reduction requirements (i.e., a minimum reduction of 5 dB(A) for two impacted receptors and a minimum reduction of 7 dB(A) for one benefitted receptor) could be achieved.

Barriers were not considered for the impacted properties, presented in **Table 4-2**, because these areas only envelop one impacted receptor each and, in order for a barrier to be considered acoustically feasible and reasonable, at least two impacted receptors are required to be benefited by a barrier.

Table 4-2
Isolated Noise Sensitive Receptors

Site	Description/Location
16	Isolated residence between S. Mulrennan Rd. and the Strawberry Ridge Mobile Home Park
35, 37, 38	Isolated residences east of Dover Rd.
88-90	Isolated residences between Cassels Rd. and SR 39
94	Isolated residence west of Smith Ryals Rd.
164, 166	Isolated residences east of SR 39
181	Isolated residence west of S. Bugg St.
185	Isolated residence east of Mud Lake Rd.
205	Isolated residence west of Wallace Rd.
239	Isolated residence west of the Orange Rose Mobile Home Park
279	Isolated residence west of St. Cloud Ave.

The following provides the results of the noise barrier evaluation and discusses the potential amount of noise reduction and the cost effectiveness of providing barriers as an abatement measure for the impacted residences.

Barrier 1: Residences between Rolling Hills Blvd. and Miller Rd. (South of SR 60) (Sites 1-2)

Barrier 1 was considered for the two residences located in the area between Rolling Hills Blvd and Miller Rd. The predicted traffic noise levels at these properties with the improvements are 69.8 and 66.7 dB(A), respectively. Several factors were considered in the evaluation of a noise barrier for these properties including:

- Both properties have direct access to/from SR 60 and the need for this access would not allow a continuous length of barrier (i.e., a barrier could not be constructed such that it was continuous from cross street to cross street), and
- The ROW is very limited with only one to two feet between the ROW and the proposed sidewalk.

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in two segments to accommodate access to/from the properties and was limited to the property boundaries.

While the noise reduction goal of 7 dB(A) was met at one of the impacted receptors, a barrier would not provide a minimum 5 dB(A) reduction for the second impacted receptor due to constraints on the lengths of the barrier segments. As such, a noise barrier is not considered a feasible noise abatement measure for these properties.

Barrier 2: Residences at the Oakwood Terrace Townhomes and Valrico Station Apartments (South of SR 60) (Sites 3-7, 11)

Barrier 2 was evaluated for the six residences located within the Oakwood Terrace Townhomes and Valrico Station Apartment. The predicted traffic noise levels with the proposed improvements at these properties ranges from 66.2 to 69.3 dB(A).

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in three segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-3**. As shown, at barrier heights between 10 and 22 feet, four of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more, the noise reduction design goal of 7 dB(A) would be achieved and the cost of the barrier would be below the FDOT's cost reasonable limit. Because Barrier 2 is predicted to provide the minimum noise reduction requirements at a cost below the cost effective limit, the barrier was evaluated further. The results of the evaluation are provided in **Table 4-4** and shown on sheet 3 within Appendix A.

Table 4-3
Barrier 2 - Residences at the Oakwood Terrace Townhomes and Valrico Station Apartments

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / 260	2	1	1	4	0	4	$78,000	$19,500	Yes
12 / 220	2	0	2	4	0	4	$79,200	$19,800	Yes
14 / 210	2	0	2	4	0	4	$88,200	$22,050	Yes
16 / 210	1	2	1	4	0	4	$100,800	$25,200	Yes
18 / 200	1	2	1	4	0	4	$108,000	$27,000	Yes
20 / 190	2	1	1	4	0	4	$114,000	$28,500	Yes
22 / 190	1	2	1	4	0	4	$125,000	$31,350	Yes

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Table 4-4
Additional Considerations – Barrier 2

Evaluation Criteria	Comment
1. Amount of noise reduction	Traffic noise from SR 60 would reduce a minimum of 5 dB(A) at four of the affected receptors at barrier heights from 10 to 22 feet.
2. Safety	It is not anticipated that there will be any safety issues at this location. This item will be reviewed in greater detail during the design phase of the project.
3. Community desires	The desires of the property owners and renters (if applicable) will be solicited during the design phase of the project.
4. Accessibility	Accessibility constraints are not anticipated at this location but should be evaluated further during the design phase of this project.
5. Land use stability	The use of this property is not expected to change in the near future.
6. Local controls	Hillsborough County's Land Development Code (*Section 6.06.06 Landscaping and Buffering*) identifies noise as a factor to consider when reviewing proposed general development plans. Additional information on these policies is provided in Appendix D.
7. Views of local officials with jurisdiction	The views of local officials may be solicited during the design phase as part of the ongoing public involvement process.
8. Constructability	It is anticipated that the barrier could be constructed using routine construction methods. This will be reviewed in greater detail during the design phase of the project.
9. Maintainability	There may be constraints for maintenance purposes due to limited ROW. This item will be reviewed in greater detail during the design phase of the project.
10. Aesthetics	The aesthetics of the noise barrier will be determined by the District in consultation with the property owners/renters during the design phase of the project.
11. ROW needs including access rights, easements for construction and/or maintenance, and additional land	Due to a limited ROW width, the noise barrier would need to be located on or very close to the ROW line. Additionally, the properties have a metal fence that will need to be addressed during the design phase.
12. Cost	The cost per benefited site does not exceed the reasonable limit at any of the evaluated heights.
13. Utilities	The noise barrier may conflict with above-ground power poles. Potential conflicts will be reviewed in greater detail during the design phase of the project.
14. Drainage	It is not anticipated that the barrier would impede/restrict drainage in the area. This should be reviewed in greater detail during the design phase of the project.
15. Special land use considerations	None.
16. Other environmental considerations	None.

Barrier 2a: Tennis court at the Valrico Station Apartments (South of SR 60) (Site 15)

Barrier 2a was considered for the tennis court at the Valrico Station Apartments that is predicted to be impacted with the proposed SR 60 improvements. The impacted and

frequently used area can be described as the portion of the tennis court adjacent to SR 60, an area that represents 80% percent of the entire area of the court. The highest predicted traffic noise level in this area is 68.5 dB(A). The FDOT's "special land use" procedures were used to determine if a noise barrier could be considered a potential abatement measure for the impacted area.

Due to constraints on the length of the barrier, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 3: Residences at the Strawberry Ridge Mobile Home Park (South of SR 60) (Sites 18, 21-27)

Barrier 3 was evaluated for the eight residences located within the Strawberry Ridge Mobile Home Park. The predicted traffic noise levels with the proposed improvements at these properties ranges from 66.6 to 69.1 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line. The barrier was also evaluated in three segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-5**. As shown, at barrier heights between 10 and 14 feet, at least five of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more, the noise reduction design goal of 7 dB(A) would be achieved and the cost of the barrier would be below the FDOT's cost reasonable limit. Because Barrier 3 is predicted to provide the minimum noise reduction requirements at a cost below the cost effective limit, the barrier was evaluated further. The results of the evaluation are provided in **Table 4-6** and shown on sheet 4 within Appendix A.

Table 4-5
Barrier 3 - Residences at the Strawberry Ridge Mobile Home Park

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / 540	1	3	1	5	0	5	$162,000	$32,400	Yes
12 / 770	3	1	3	6	1	7	$277,200	$39,600	Yes
14 / 680	3	1	3	6	1	7	$285,600	$40,800	Yes
16 / 650	3	0	4	6	1	7	$312,000	$44,571	No
18 / 630	2	1	4	6	1	7	$340,200	$48,600	No
20 / 620	2	2	3	6	1	7	$372,000	$53,143	No
22 / 610	2	1	4	6	1	7	$402,600	$57,514	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Table 4-6
Additional Considerations – Barrier 3

Evaluation Criteria	Comment
1. Amount of noise reduction	Traffic noise from SR 60 would reduce a minimum of 5 dB(A) at five of the affected receptors at barrier heights from 10 to 14 feet.
2. Safety	It is not anticipated that there will be any safety issues at this location. This item will be reviewed in greater detail during the design phase of the project.
3. Community desires	The desires of the property owners and renters (if applicable) will be solicited during the design phase of the project.
4. Accessibility	Accessibility constraints are not anticipated at this location but should be evaluated further during the design phase of this project.
5. Land use stability	The use of this property is not expected to change in the near future.
6. Local controls	Hillsborough County's Land Development Code (*Section 6.06.06 Landscaping and Buffering*) identifies noise as a factor to consider when reviewing proposed general development plans. Additional information on these policies is provided in Appendix D.
7. Views of local officials with jurisdiction	The views of local officials may be solicited during the design phase as part of the ongoing public involvement process.
8. Constructability	It is anticipated that the barrier could be constructed using routine construction methods. This will be reviewed in greater detail during the design phase of the project.
9. Maintainability	There may be constraints for maintenance purposes due to limited ROW. This item will be reviewed in greater detail during the design phase of the project.
10. Aesthetics	The aesthetics of the noise barrier will be determined by the District in consultation with the property owners/renters during the design phase of the project.
11. ROW needs including access rights, easements for construction and/or maintenance, and additional land	Due to a limited ROW width, the noise barrier would need to be located on or very close to the ROW line. Additionally, the property has a wood lattice fence that will need to be addressed during the design phase.
12. Cost	The cost per benefited site does not exceed the reasonable limit at any of the evaluated heights.
13. Utilities	The noise barrier may conflict with above-ground power poles. Potential conflicts will be reviewed in greater detail during the design phase of the project.
14. Drainage	It is not anticipated that the barrier would impede/restrict drainage in the area. This should be reviewed in greater detail during the design phase of the project.
15. Special land use considerations	None.
16. Other environmental considerations	None.

Barrier 3a: Tennis courts at the Strawberry Ridge Mobile Home Park (South of SR 60) (Site 20)

Barrier 3a was considered for the tennis courts at the Strawberry Ridge Mobile Home Park that are predicted to be impacted with the proposed SR 60 improvements. The entire area of the tennis court adjacent to SR 60 is predicted to be impacted. The highest predicted traffic noise level in this area is 70.7 dB(A). The FDOT's "special land use" procedures were used to determine if a noise barrier could be considered a potential abatement measure for the impacted area.

Due to limited ROW, a barrier was evaluated on the FDOT ROW line and was limited to the property boundaries. Because it is not known how frequently the impacted and benefited area of the tennis court would be used and by how many people, the minimum number of person-hours of use on an average day to have the cost be considered effective was calculated.

At barrier lengths ranging from 230 to 340 feet and barriers heights between 8 and 22 feet, the minimum number of person-hours of use in the impacted and benefited area of the tennis courts on an average day ranges from 294 to 513. Because it is not reasonable to assume that this level of activity would occur within the impacted area that would be benefited by a barrier, Barrier 3a is not considered a reasonable noise abatement measure.

Barrier 4: Residences at the Citrus Hill and Orange Blossom RV Parks (South of SR 60) (Sites 40-47, 54-57, 60-61)

Barrier 4 was evaluated for the 14 residences located within the Citrus Hill and Orange Blossom RV Parks. The predicted traffic noise levels with the proposed improvements at these properties ranges from 66.0 to 71.5 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line. The barrier was also evaluated in three segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-7**. As shown, at barrier heights between 8 and 22 feet, at least eight of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more, the noise reduction design goal of 7 dB(A) would be achieved and the cost of the barrier would be below the FDOT's cost reasonable limit. Because Barrier 4 is predicted to provide the minimum noise reduction requirements at a cost below the cost effective limit, the barrier was evaluated further. The results of the evaluation are provided in **Table 4-8** shown on sheet 8 within Appendix A.

Table 4-7
Barrier 4 - Residences at the Citrus Hill and Orange Blossom RV Parks

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / 839	5	2	1	8	0	8	$201,360	$25,170	Yes
10 / 1,076	5	4	5	13	1	14	$322,800	$23,057	Yes
12 / 964	8	2	7	13	4	17	$343,440	$20,202	Yes
14 / 921	10	1	7	13	5	18	$386,820	$21,490	Yes
16 / 921	10	1	7	13	5	18	$442,080	$24,560	Yes
18 / 891	9	2	7	13	5	18	$481,140	$26,730	Yes
20 / 881	10	1	8	13	6	19	$528,600	$27,821	Yes
22 / 881	10	1	8	13	6	19	$581,460	$30,603	Yes

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Table 4-8
Additional Considerations – Barrier 4

Evaluation Criteria	Comment
1. Amount of noise reduction	Traffic noise from SR 60 would reduce a minimum of 5 dB(A) at eight of the affected receptors at barrier heights from 8 to 22 feet.
2. Safety	It is not anticipated that there will be any safety issues at this location. This item will be reviewed in greater detail during the design phase of the project.
3. Community desires	The desires of the property owners and renters (if applicable) will be solicited during the design phase of the project.
4. Accessibility	Accessibility to the frontage road at the Orange Blossom RV Park are anticipated and should be evaluated further during the design phase of this project.
5. Land use stability	The use of this property is not expected to change in the near future.
6. Local controls	Hillsborough County's Land Development Code (*Section 6.06.06 Landscaping and Buffering*) identifies noise as a factor to consider when reviewing proposed general development plans. Additional information on these policies is provided in Appendix D.
7. Views of local officials with jurisdiction	The views of local officials may be solicited during the design phase as part of the ongoing public involvement process.
8. Constructability	It is anticipated that the barrier could be constructed using routine construction methods. This will be reviewed in greater detail during the design phase of the project.
9. Maintainability	There may be constraints for maintenance purposes due to limited ROW. This item will be reviewed in greater detail during the design phase of the project.
10. Aesthetics	The aesthetics of the noise barrier will be determined by the District in consultation with the property owners/renters during the design phase of the project.
11. ROW needs including access rights, easements for construction and/or maintenance, and additional land	Due to a limited ROW width, the noise barrier would need to be located on or very close to the ROW line. Additionally, the

	property has a wood lattice fence that will need to be addressed during the design phase.
12. Cost	The cost per benefited site does not exceed the reasonable limit at any of the evaluated heights.
13. Utilities	The noise barrier may conflict with above-ground power poles. Potential conflicts will be reviewed in greater detail during the design phase of the project.
14. Drainage	It is not anticipated that the barrier would impede/restrict drainage in the area. This should be reviewed in greater detail during the design phase of the project.
15. Special land use considerations	None.
16. Other environmental considerations	None.

Barrier 5: Residences between Calhoun Rd. and east of Luckasavage Rd. (South of SR 60) (Sites 67-69, 71, 73)

Barrier 5 was evaluated for the five residences located between Calhoun Rd. and east of Luckasavage Rd. The predicted traffic noise levels with the proposed improvements at these properties ranges from 68.3 to 71.1 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line. The barrier was also evaluated in six segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-9**. As shown, at barrier heights between 8 and 22 feet, four of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 5 is not considered a reasonable noise abatement measure.

Table 4-9
Barrier 5 - Residences between Calhoun Rd. and east of Luckasavage Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / -	-	-	-	-	-	-	-	-	No
10 / -	-	-	-	-	-	-	-	-	No
12 / -	-	-	-	-	-	-	-	-	No
14 / 1,352	4	0	1	4	1	5	$567,840	$113,568	No
16 / 1,242	4	0	1	4	1	5	$596,160	$119,232	No
18 / 1,181	4	0	1	4	1	5	$637,740	$127,548	No
20 / 1,151	4	0	1	4	1	5	$690,600	$138,120	No
22 / 1,111	4	0	1	4	1	5	$733,260	$146,652	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 6: Residences between Calhoun Rd. and Haynsworth Dr. (South of SR 60) (Sites 74-75)

Barrier 6 was considered for the two residences located in the area between Calhoun Rd. and Haynsworth Dr. The predicted traffic noise levels at these properties with the improvements are 72.5 and 68.3 dB(A), respectively.

A barrier was evaluated five feet inside of the FDOT ROW line and was limited to the property boundaries.

Due to constraints on the length of the barrier, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 7: Residences between Haynsworth Dr. and Cassels Rd. (South of SR 60) (Sites 82, 84-86)

Barrier 7 was evaluated for the four residences located between Haynsworth Dr. and Cassels Rd. The predicted traffic noise levels with the proposed improvements at these properties ranges from 67.6 to 71.3 dB(A).

Due to the limited ROW, a barrier was evaluated just inside of the FDOT ROW line. The barrier was also evaluated in six segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-10**. As shown, at barrier heights between 8 and 22 feet, at least three of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 7 is not considered a reasonable noise abatement measure.

Table 4-10
Barrier 7 - Residences between Haynsworth Dr. and Cassels Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / -	-	-	-	-	-	-	-	-	No
10 / -	-	-	-	-	-	-	-	-	No
12 / -	-	-	-	-	-	-	-	-	No
14 / 953	2	0	1	3	0	3	$400,260	$133,420	No
16 / 858	2	0	1	3	0	3	$411,840	$137,280	No
18 / 1,065	4	0	1	4	1	5	$575,100	$115,020	No
20 / 1,019	4	0	1	4	1	5	$611,400	$122,280	No
22 / 999	4	0	1	4	1	5	$659,340	$131,868	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 8: Residences east of Curry McCloud Pl. (South of SR 60) (Sites 95, 98-100)

Barrier 8 was considered for the four residences located east of Curry McCloud Pl. The predicted traffic noise levels at these properties with the improvements range from 66.5 and 73.0 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line and was limited to the property boundaries.

Due to constraints on the lengths of the barrier segments due to access requirements, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 9: Residences in the vicinity of Horton Rd. (South of SR 60) (Sites 102-104)

Barrier 9 was considered for the three residences located in the vicinity of Horton Rd. The predicted traffic noise levels at these properties with the improvements range from 72.1 and 73.0 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-11**. As shown, at barrier heights between 12 and 22 feet, two of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 9 is not considered a reasonable noise abatement measure.

Table 4-11
Barrier 9 - Residences in the vicinity of Horton Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / -	-	-	-	-	-	-	-	-	No
10 / 248	0	0	1	1	0	1	$74,400	$74,400	No
12 / 328	1	0	1	2	0	2	$118,080	$59,040	No
14 / 268	1	0	1	2	0	2	$112,560	$56,280	No
16 / 258	1	0	1	2	0	2	$123,840	$61,920	No
18 / 248	1	0	1	2	0	2	$133,920	$66,960	No
20 / 248	1	0	1	2	0	2	$148,800	$74,400	No
22 / 138	1	0	1	2	0	2	$91,080	$45,540	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 10: Residences between west of Old Hopewell Rd. and Miles Farm Rd. (South of SR 60) (Sites 105-113)

Barrier 10 was considered for the nine residences located from west of Old Hopewell Rd. to Miles Farm Rd. The predicted traffic noise levels at these properties with the improvements range from 69.2 and 74.1 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line. The barrier was also evaluated in nine segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-12**. As shown, at barrier heights between 12 and 22 feet, three of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 10 is not considered a reasonable noise abatement measure.

Table 4-12
Barrier 10 - Residences between west of Old Hopewell Rd. and Miles Farm Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / 583	2	0	1	3	0	3	$139,920	$46,640	No
10 / 523	2	0	1	3	0	3	$156,900	$52,300	No
12 / 543	2	0	1	3	0	3	$195,480	$65,160	No
14 / 461	2	0	1	3	0	3	$193,620	$64,540	No
16 / 461	2	0	1	3	0	3	$221,280	$73,760	No
18 / 461	2	0	1	3	0	3	$248,940	$82,980	No
20 / 461	2	0	1	3	0	3	$276,600	$92,200	No
22 / 461	2	0	1	3	0	3	$304,260	$101,420	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 11: Residences west of County Line Rd. (North of SR 60) (Sites 115-126)

Barrier 11 was considered for the nine residences located from of County Line Rd. The predicted traffic noise levels at these properties with the improvements range from 66.6 and 74.1 dB(A).

Due to ROW constraints, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in four segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-13**. As shown, while the noise reduction goal of 7 dB(A) was met at one of the impacted receptors, a barrier would not provide a minimum 5 dB(A) reduction for any of the other impacted receptors due to constraints on the lengths of the barrier segments and the distance of the receptors from the roadway. As such, a noise barrier is not considered a feasible noise abatement measure for these properties

Table 4-13
Barrier 11 - Residences west of County Line Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / 583	0	0	1	1	0	1	-	-	-
10 / 523	0	0	1	1	0	1	-	-	-
12 / 543	0	0	1	1	0	1	-	-	-
14 / 461	0	0	1	1	0	1	-	-	-
16 / 461	0	0	1	1	0	1	-	-	-
18 / 461	0	0	1	1	0	1	-	-	-
20 / 461	0	0	1	1	0	1	-	-	-
22 / 461	0	0	1	1	0	1	-	-	-

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 12: Residences east of Sam Hicks Rd. (North of SR 60) (Sites 127, 129-136)

Barrier 12 was considered for the 12 residences located east of Sam Hicks Rd. The predicted traffic noise levels at these properties with the improvements range from 66.2 and 74.8 dB(A).

Due to ROW constraints, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in nine segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-14**. As shown, at barrier heights between 12 and 22 feet, nine of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 12 is not considered a reasonable noise abatement measure.

Table 4-14
Barrier 12 - Residences east of Sam Hicks Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / --	--	--	--	--	--	--	--	--	--
12 / 2,607	6	1	1	9	0	9	$938,520	$117,315	No
14 / 2,419	4	3	2	9	0	9	$1,015,980	$112,887	No
16 / 2,285	7	1	1	9	0	9	$1,096,800	$121,867	No
18 / 2,220	7	1	1	9	0	9	$1,198,800	$133,200	No
20 / 2,200	7	0	2	9	0	9	$1,320,000	$146,667	No
22 / 2,120	7	1	1	9	0	9	$1,399,200	$155,467	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 13: Residences between Sam Hicks Rd. and Horton Rd. (North of SR 60) (Sites 141-143)

Barrier 13 was considered for the three residences located in the area between Sam Hicks Rd. and Horton Rd. The predicted traffic noise levels at these properties with the improvements range from 66.2 and 70.6 dB(A).

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line and was limited to the property boundaries of the impacted receptors.

Due to limitations in the length of the barrier, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 14: Residences between Horton Rd. and Smith Ryals Rd. (North of SR 60) (Sites 144-150)

Barrier 14 was considered for the seven residences located between Horton Rd. and Smith Ryals Rd. The predicted traffic noise levels at these properties with the improvements range from 69.1 and 75.3 dB(A).

Due to ROW constraints, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in four segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-15**. As shown, at barrier heights between 12 and 22 feet, three of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 14 is not considered a reasonable noise abatement measure.

Table 4-15
Barrier 14 - Residences between Horton Rd. and Smith Ryals Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / --	--	--	--	--	--	--	--	--	--
12 / 806	1	1	1	3	0	3	$290,160	$96,720	No
14 / 740	1	1	1	3	0	3	$310,800	$103,600	No
16 / 680	2	0	1	3	0	3	$326,400	$108,800	No
18 / 680	2	0	1	3	0	3	$367,200	$122,400	No
20 / 660	2	0	1	3	0	3	$396,000	$132,000	No
22 / 660	2	0	1	3	0	3	$435,600	$145,200	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 15: Residences west of Smith Ryals Rd. (North of SR 60) (Sites 155-156)

Barrier 15 was considered for the two residences located in the area west of Smith Ryals Rd. The predicted traffic noise levels at these properties with the improvements are 69.8 and 75.3 dB(A), respectively.

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in two segments to accommodate access to/from the properties and was limited to the property boundaries.

While the noise reduction goal of 7 dB(A) was met at one of the impacted receptors, a barrier would not provide a minimum 5 dB(A) reduction for the second impacted receptor due to constraints on the lengths of the barrier segments. As such, a noise barrier is not considered a feasible noise abatement measure for these properties.

Barrier 16: Residences west of Clarence Gordan Rd. (North of SR 60) (Sites 158-159)

Barrier 16 was considered for the two residences located west of Clarence Gordan Rd. The predicted traffic noise levels at these properties with the improvements are 70.5 and 72.9 dB(A), respectively.

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in three segments to accommodate access to/from the properties and was limited to the property boundaries.

Due to limitations in the barrier length to allow access to/from the properties, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 17: Residences west of Clarence Gordan Rd. and adjacent to Weigh Station (North of SR 60) (Sites 160-162)

Barrier 17 was considered for the three residences located west of Clarence Gordan Rd. and adjacent to Weigh Station. The predicted traffic noise levels at these properties with the improvements range from 67.5 and 74.6 dB(A).

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in two segments to accommodate access to/from the properties and was limited to the property boundaries.

Due to limitations on the length of the barrier, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 18: Residences between SR 39 and S Bugg Rd. (North of SR 60) (Sites 168, 170-179)

Barrier 18 was considered for the ten residences located between SR 39 and S Bugg Rd. The predicted traffic noise levels at these properties with the improvements range from 67.6 and 75.9 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line. The barrier was also evaluated in 13 segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-16**. As shown, at barrier heights between 10 and 22 feet, at least five of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 18 is not considered a reasonable noise abatement measure.

Table 4-16
Barrier 18 - Residences between SR 39 and S. Bugg Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / 1,060	4	0	1	5	0	5	$318,000	$63,600	No
12 / 1,157	4	1	1	6	0	6	$416,520	$69,420	No
14 / 1,142	4	1	1	6	0	6	$479,640	$79,940	No
16 / 1,108	4	1	1	6	0	6	$531,840	$88,640	No
18 / 1,097	4	1	1	6	0	6	$592,380	$98,730	No
20 / 1,078	5	0	1	6	0	6	$646,800	$107,800	No
22 / 1,067	5	0	1	6	0	6	$704,220	$117,370	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 19: Residences between east of Gable Rd. and the Turkey Creek Mobile Home Park (North of SR 60) (Sites 188-190)

Barrier 19 was considered for the three residences located in the area between east of Gable Rd. and the Turkey Creek Mobile Home Park. The predicted traffic noise levels at these properties with the improvements range from 70.3 and 73.4 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line. The barrier was also evaluated in four segments to accommodate access to/from the properties and was limited to the property boundaries.

While the noise reduction goal of 7 dB(A) was met at one of the impacted receptors, a barrier would not provide a minimum 5 dB(A) reduction for a second impacted receptor due to barrier length constraints. As such, a noise barrier is not considered a feasible noise abatement measure for these properties.

Barrier 20: Residences at the Turkey Creek Mobile Home Park and west of Wallace Rd. (North of SR 60) (Sites 192-195, 197-199)

Barrier 20 was considered for the seven residences located at the Turkey Creek Mobile Home Park and west of Wallace Rd. The predicted traffic noise levels at these properties with the improvements range from 66.6 and 69.4 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line and was limited to the property boundaries.

Due to limitations on the length of the barrier and the distance of the receptor from the road, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 21: Residences east of Turkey Creek Rd. (North of SR 60) (Sites 206-215, 219-220)

Barrier 21 was considered for the twelve residences located east of Turkey Creek Rd. The predicted traffic noise levels at these properties with the improvements range from 68.3 and 76.4 dB(A).

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in 11 segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-17**. As shown, at barrier heights between 10 and 22 feet, four of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 21 is not considered a reasonable noise abatement measure.

Table 4-17
Barrier 21 - Residences east of Turkey Creek Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / 753	3	0	1	4	0	4	$225,900	$56,475	No
12 / 563	3	0	1	4	0	4	$202,680	$50,670	No
14 / 533	3	0	1	4	0	4	$223,860	$55,965	No
16 / 530	3	0	1	4	0	4	$254,400	$63,600	No
18 / 520	3	0	1	4	0	4	$280,800	$70,200	No
20 / 510	3	0	1	4	0	4	$306,000	$76,500	No
22 / 500	3	0	1	4	0	4	$330,000	$82,500	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 22: Residences west of Turkey Creek Rd. (North of SR 60) (Sites 222-226, 229)

Barrier 22 was considered for the six residences located west of Turkey Creek Rd. The predicted traffic noise levels at these properties with the improvements range from 69.4 and 74.4 dB(A).

A barrier was evaluated five feet inside of the FDOT ROW line. The barrier was also evaluated in nine segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-18**. As shown, at barrier heights between 8 and 22 feet, at least four of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more and the noise reduction design goal of 7 dB(A) would be achieved. However, because the cost of the barrier at all barrier heights would be above the FDOT's cost reasonable limit, Barrier 22 is not considered a reasonable noise abatement measure.

Table 4-18
Barrier 22 - Residences west of Turkey Creek Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / 1,058	3	0	1	4	0	4	$253,920	$63,480	No
10 / 999	0	4	1	5	0	5	$299,700	$59,940	No
12 / 859	4	0	1	5	0	5	$309,240	$61,848	No
14 / 829	4	0	1	5	0	5	$348,180	$69,636	No
16 / 775	4	0	1	5	0	5	$372,000	$74,400	No
18 / 715	4	0	1	5	0	5	$386,100	$77,220	No
20 / 684	4	0	1	5	0	5	$410,400	$82,080	No
22 / 654	4	0	1	5	0	5	$431,640	$86,328	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Barrier 23: Residences at the Orange Rose Mobile Home Park (North of SR 60) (Sites 230-234)

Barrier 23 was considered for the five residences located at the Orange Rose Mobile Home Park. The predicted traffic noise levels at these properties with the improvements range from 67.8 and 71.6 dB(A).

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in two segments to accommodate access to/from the properties and was limited to the property boundaries.

Due to limitations on the length of the barrier segments, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 24: Residences at and adjacent to the Valrico Hills Mobile Home Park (North of SR 60) (Sites 243-245, 247-254)

Barrier 24 was evaluated for the 11 residences located at and adjacent to the Valrico Hills Mobile Home Park. The predicted traffic noise levels with the proposed improvements at these properties ranges from 66.7 to 71.0 dB(A).

Due to limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in two segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-19**. As shown, at barrier heights between 18 and 20 feet, seven of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more, the noise reduction design goal of 7 dB(A) would be achieved and the cost of the barrier would be below the FDOT's cost reasonable limit. Because Barrier 24 is predicted to provide the minimum noise reduction requirements at a cost below the cost effective limit, the barrier was evaluated further. The results of the evaluation are provided in **Table 4-20** shown on sheet 5 within Appendix A.

Table 4-19
Barrier 24 - Residences at and adjacent to the Valrico Hills Mobile Home Park

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / --	--	--	--	--	--	--	--	--	--
12 / --	--	--	--	--	--	--	--	--	--
14 / 607	5	0	1	6	0	6	$254,940	$42,490	No
16 / 620	2	4	1	7	0	7	$297,600	$42,514	No
18 / 620	3	5	1	7	2	9	$334,800	$37,200	Yes
20 / 607	3	5	1	7	2	9	$364,200	$40,467	Yes
22 / 577	4	4	1	7	2	9	$380,820	$42,313	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Table 4-20
Additional Considerations – Barrier 24

Evaluation Criteria	Comment
1. Amount of noise reduction	Traffic noise from SR 60 would reduce a minimum of 5 dB(A) at seven of the affected receptors at barrier heights from 18 to 20 feet.
2. Safety	It is not anticipated that there will be any safety issues at this location. This item will be reviewed in greater detail during the design phase of the project.
3. Community desires	The desires of the property owners and renters (if applicable) will be solicited during the design phase of the project.
4. Accessibility	Accessibility constraints (i.e. access to driveways) are possible at this location and should be evaluated further during the design phase of this project.
5. Land use stability	The use of this property is not expected to change in the near future.
6. Local controls	Hillsborough County's Land Development Code (*Section 6.06.06 Landscaping and Buffering*) identifies noise as a factor to consider when reviewing proposed general development plans. Additional information on these policies is provided in Appendix D.
7. Views of local officials with jurisdiction	The views of local officials may be solicited during the design phase as part of the ongoing public involvement process.
8. Constructability	It is anticipated that the barrier could be constructed using routine construction methods. This will be reviewed in greater detail during the design phase of the project.
9. Maintainability	There may be constraints for maintenance purposes due to limited ROW. This item will be reviewed in greater detail during the design phase of the project.
10. Aesthetics	The aesthetics of the noise barrier will be determined by the District in consultation with the property owners/renters during the design phase of the project.
11. ROW needs including access rights, easements for construction and/or maintenance, and additional land	Due to a limited ROW width, the noise barrier would need to be located on or very close to the ROW line.
12. Cost	The cost per benefited site does not exceed the reasonable limit at any of the evaluated heights.
13. Utilities	The noise barrier may conflict with above-ground power poles. Potential conflicts will be reviewed in greater detail during the design phase of the project.
14. Drainage	It is not anticipated that the barrier would impede/restrict drainage in the area. This should be reviewed in greater detail during the design phase of the project.
15. Special land use considerations	None.
16. Other environmental considerations	None.

Barrier 25: Residences west of Mulrennan Rd. (North of SR 60) (Sites 269-272, 274)

Barrier 25 was evaluated for the five residences located west of Mulrennan Rd. The predicted traffic noise levels with the proposed improvements at these properties ranges from 66.6 to 72.2 dB(A).

Due to limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in three segments to accommodate access to/from the properties and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-21**. As shown, at barrier heights between 12 and 18 feet, three of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more, the noise reduction design goal of 7 dB(A) would be achieved and the cost of the barrier would be below the FDOT's cost reasonable limit. Because Barrier 25 is predicted to provide the minimum noise reduction requirements at a cost below the cost effective limit, the barrier was evaluated further. The results of the evaluation are provided in **Table 4-22** shown on sheet 3 within Appendix A.

Table 4-21
Barrier 25 - Residences west of Mulrennan Rd.

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / --	--	--	--	--	--	--	--	--	--
12 / 229	1	1	1	3	0	3	$82,440	$27,480	Yes
14 / 229	1	1	1	3	0	3	$96,180	$32,060	Yes
16 / 227	1	1	1	3	0	3	$108,960	$36,320	Yes
18 / 227	1	1	1	3	0	3	$122,580	$40,860	Yes
20 / 227	1	1	1	3	0	3	$136,200	$45,400	No
22 / 219	1	1	1	3	0	3	$144,540	$48,180	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Table 4-22
Additional Considerations – Barrier 25

Evaluation Criteria	Comment
1. Amount of noise reduction	Traffic noise from SR 60 would reduce a minimum of 5 dB(A) at seven of the affected receptors at barrier heights from 12 to 18 feet.
2. Safety	It is not anticipated that there will be any safety issues at this location. This item will be reviewed in greater detail during the design phase of the project.
3. Community desires	The desires of the property owners and renters (if applicable) will be solicited during the design phase of the project.

4. Accessibility	Accessibility constraints (i.e. access to driveways) are possible at this location and should be evaluated further during the design phase of this project.
5. Land use stability	The use of this property is not expected to change in the near future.
6. Local controls	Hillsborough County's Land Development Code (*Section 6.06.06 Landscaping and Buffering*) identifies noise as a factor to consider when reviewing proposed general development plans. Additional information on these policies is provided in Appendix D.
7. Views of local officials with jurisdiction	The views of local officials may be solicited during the design phase as part of the ongoing public involvement process.
8. Constructability	It is anticipated that the barrier could be constructed using routine construction methods. This will be reviewed in greater detail during the design phase of the project.
9. Maintainability	There may be constraints for maintenance purposes due to limited ROW. This item will be reviewed in greater detail during the design phase of the project.
10. Aesthetics	The aesthetics of the noise barrier will be determined by the District in consultation with the property owners/renters during the design phase of the project.
11. ROW needs including access rights, easements for construction and/or maintenance, and additional land	Due to a limited ROW width, the noise barrier would need to be located on or very close to the ROW line.
12. Cost	The cost per benefited site does not exceed the reasonable limit at any of the evaluated heights.
13. Utilities	The noise barrier may conflict with above-ground power poles. Potential conflicts will be reviewed in greater detail during the design phase of the project.
14. Drainage	It is not anticipated that the barrier would impede/restrict drainage in the area. This should be reviewed in greater detail during the design phase of the project.
15. Special land use considerations	None.
16. Other environmental considerations	None.

Barrier 26: Residences at the Oakhill Village Mobile Home Park (North of SR 60) (Sites 281-286, 288-299)

Barrier 26 was considered for the eight residences located at the Oakhill Village Mobile Home Park. The predicted traffic noise levels at these properties with the improvements range from 66.1 and 69.3 dB(A).

Due to the limited ROW, a barrier was evaluated on the FDOT ROW line. The barrier was also evaluated in three segments to accommodate access to/from the properties and was limited to the property boundaries.

Due to limitations on the length of the barrier segments, the noise reduction design goal of 7 dB(A) could not be achieved at any of the evaluated barrier heights. Therefore, the barrier is not considered a reasonable noise abatement measure.

Barrier 27: Residences at the Featherrock Mobile Home Park (North of SR 60) (Sites 301-305. 312-315)

Barrier 27 was evaluated for the eight residences located at the Featherrock Mobile Home Park (North of SR 60). The predicted traffic noise levels with the proposed improvements at these properties ranges from 66.0 to 71.2 dB(A).

Due to limited ROW, a barrier was evaluated on the FDOT ROW line and was limited to the property boundaries.

The results of the evaluation are provided in **Table 4-23**. As shown, at barrier heights between 10 and 20 feet, at least four of the impacted residences would benefit from a reduction in traffic noise of 5 dB(A) or more, the noise reduction design goal of 7 dB(A) would be achieved and the cost of the barrier would be below the FDOT's cost reasonable limit. Because Barrier 27 is predicted to provide the minimum noise reduction requirements at a cost below the cost effective limit, the barrier was evaluated further. The results of the evaluation are provided in **Table 4-24** shown on sheet 1 within Appendix A.

Table 4-23
Barrier 27 - Residences at the Featherrock Mobile Home Park

Barrier Height/ Length (ft)	Number of Impacted Receptors and Insertion Loss (dB(A))			Number of Benefited Receptors			Total Estimated Cost	Cost Per Benefited Receptor	Cost Reasonable Yes/No
	5	6	7 or >	Impacted	Other*	Total			
8 / --	--	--	--	--	--	--	--	--	--
10 / 490	2	1	1	4	0	4	$147,000	$36,750	Yes
12 / 390	2	1	1	4	0	4	$140,400	$35,100	Yes
14 / 670	5	0	4	5	4	9	$281,400	$31,267	Yes
16 / 640	5	0	4	5	4	9	$307,200	$34,133	Yes
18 / 620	4	1	4	5	4	9	$334,800	$37,200	Yes
20 / 610	4	1	4	5	4	9	$366,000	$40,667	Yes
22 / 600	4	1	4	5	4	9	$396,000	$44,000	No

* Other = Receptors determined to be unaffected by the project (traffic noise levels less than 66 dB(A)) but benefited by the noise barrier.

Table 4-24
Additional Considerations – Barrier 27

Evaluation Criteria	Comment
1. Amount of noise reduction	Traffic noise from SR 60 would reduce a minimum of 5 dB(A) at four of the affected receptors at barrier heights from 8 to 10 feet and nine of the affected receptors at barrier heights from 12 to 20 feet.
2. Safety	It is not anticipated that there will be any safety issues at this location. This item will be reviewed in greater detail during the design phase of the project.
3. Community desires	The desires of the property owners and renters (if applicable) will be solicited during the design phase of the project.

4. Accessibility	Accessibility constraints are not anticipated at this location but should be evaluated further during the design phase of this project.
5. Land use stability	The use of this property is not expected to change in the near future.
6. Local controls	Hillsborough County's Land Development Code (*Section 6.06.06 Landscaping and Buffering*) identifies noise as a factor to consider when reviewing proposed general development plans. Additional information on these policies is provided in Appendix D.
7. Views of local officials with jurisdiction	The views of local officials may be solicited during the design phase as part of the ongoing public involvement process.
8. Constructability	It is anticipated that the barrier could be constructed using routine construction methods. This will be reviewed in greater detail during the design phase of the project.
9. Maintainability	There may be constraints for maintenance purposes due to limited ROW. This item will be reviewed in greater detail during the design phase of the project.
10. Aesthetics	The aesthetics of the noise barrier will be determined by the District in consultation with the property owners/renters during the design phase of the project.
11. ROW needs including access rights, easements for construction and/or maintenance, and additional land	Due to a limited ROW width, the noise barrier would need to be located on or very close to the ROW line.
12. Cost	The cost per benefited site does not exceed the reasonable limit at any of the evaluated heights.
13. Utilities	The noise barrier may conflict with above-ground power poles. Potential conflicts will be reviewed in greater detail during the design phase of the project.
14. Drainage	It is not anticipated that the barrier would impede/restrict drainage in the area. This should be reviewed in greater detail during the design phase of the project.
15. Special land use considerations	None.
16. Other environmental considerations	None.

Barrier 28: Basketball Court at the Fellowship Baptist Church of Valrico (Site 318)

Barrier 28 was considered for the basketball court located in front of the Fellowship Baptist Church of Valrico that is predicted to be impacted with the proposed SR 60 improvements. The entire area of the basketball court adjacent to SR 60 is predicted to be impacted. The highest predicted traffic noise level in this area is 74.2 dB(A). The FDOT's "special land use" procedures were used to determine if a noise barrier could be considered a potential abatement measure for the impacted area. The cost of a barrier at a special land use should not exceed $995,935 per person-hour per square foot (dollars/person-hr/ft2).

Due to limited ROW, a barrier was evaluated on the FDOT ROW line and was limited to the property boundaries. Because it is not known how frequently the impacted and benefited area of the basketball court would be used and by how many people, the minimum number of person-hours of use on an average day to have the cost be considered effective was calculated.

At barrier lengths ranging from 96 to 210 feet and barriers heights between 8 and 22 feet, the minimum number of person-hours of use in the impacted and benefited area of the outdoor dining area on an average day ranges from 61 to 98. Because it is not reasonable to assume that this level of activity would occur within the impacted area that would be benefited by a barrier, Barrier 28 is not considered a reasonable noise abatement measure.

5.0 Conclusions

As previously stated, future traffic noise levels with the proposed improvements are predicted to approach, meet, or exceed the NAC at 187 noise sensitive sites. These sites are predicted to experience future traffic noise levels with the proposed improvements to SR 60 that would range from 66.1 to 78.2 dB(A).

The results of the evaluation indicate that construction of noise barriers is a potentially reasonable and feasible noise abatement method to reduce the predicted traffic noise levels for up to 53 of the 187 impacted sites at the following locations:

- Barrier 2: Residences and tennis court at the Oakwood Terrace Townhomes and Valrico Station Apartments (South of SR 60) (Sites 3-7, 11)

- Barrier 3: Residences at the Strawberry Ridge MHP (South of SR 60) (Sites 18, 21-27)

- Barrier 4: Residences at the Citrus Hill and Orange Blossom RV Parks (South of SR 60) (Sites 40-47, 54-57, 60-61)

- Barrier 24: Residences at and adjacent to the Valrico Hills Mobile Home Park (North of SR 60) (Sites 243-245, 247-254)

- Barrier 25: Residences west of Mulrennan Rd (North of SR 60) (Sites 269-272, 274)

- Barrier 27: Residences at the Featherrock MHP (North of SR 60) (Sites 301-305. 312-315)

5.1 Statement of Likelihood

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

- Detailed noise analysis during the final design process supports the need for, and the feasibility and reasonableness of providing the barriers as abatement;

- The detailed analysis demonstrates that the cost of the noise barrier will not exceed the cost effective limit;

- The residents/property owners benefitted by the noise barrier desire that a noise barrier be constructed; and

- All safety and engineering conflicts or issues related to construction of a noise barrier are resolved.

6.0 Noise Contours

Land uses such as residences and recreational areas are considered incompatible with highway noise levels that approach or exceed the NAC. To reduce the possibility of additional traffic noise-related impacts, noise level contours were developed for the future improved roadway facility. These noise contours, shown in **Figures 6-1** through **6-3**, delineate the extent of the predicted traffic noise impact area from the improved roadway's edge-of-travel lane for each of the land use Activity Categories (Table 3-1).

Local officials will be provided a copy of the Final NSR to promote compatibility between any future land developments in this area and the proposed project.

Figure 6-1
Noise Contours – Segment 1

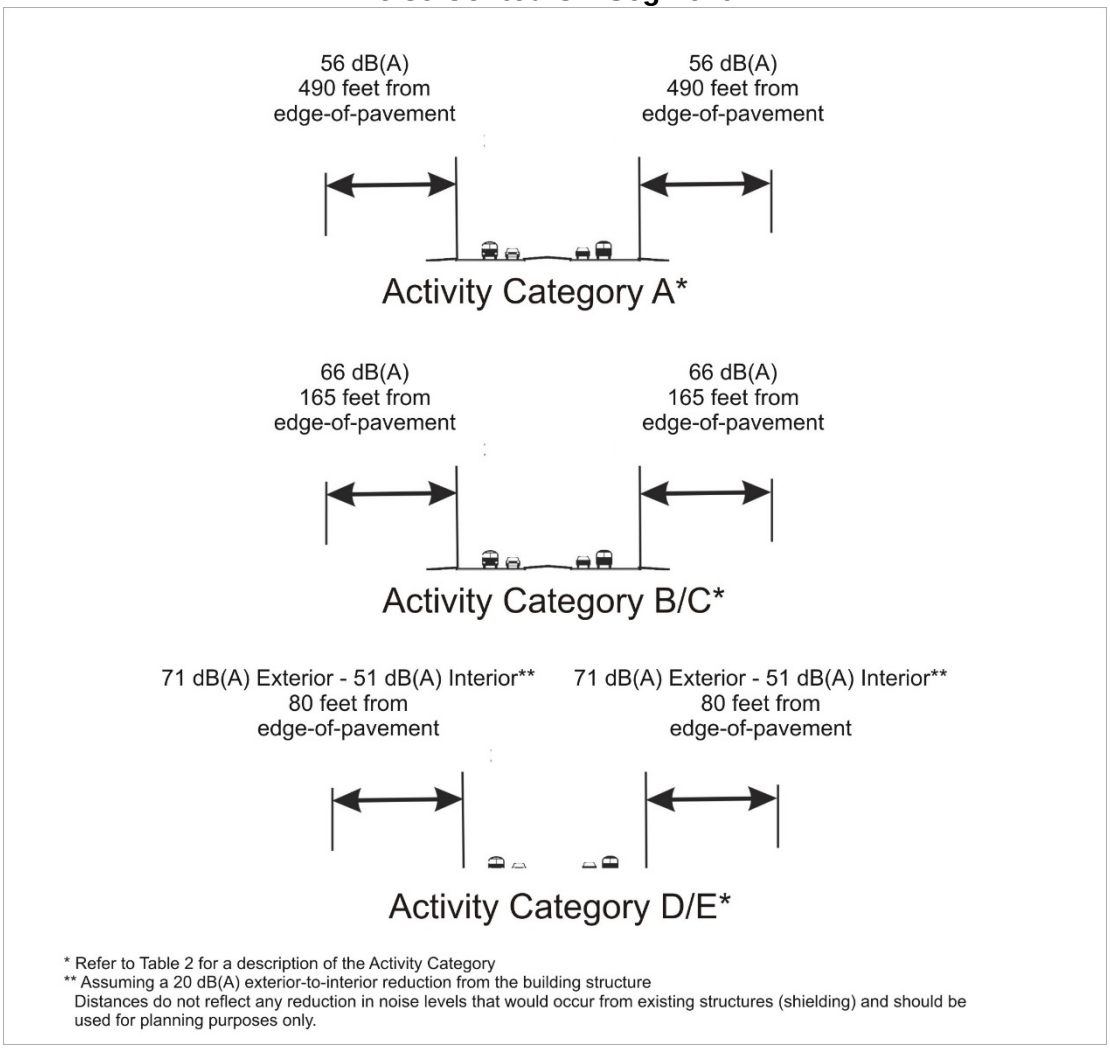
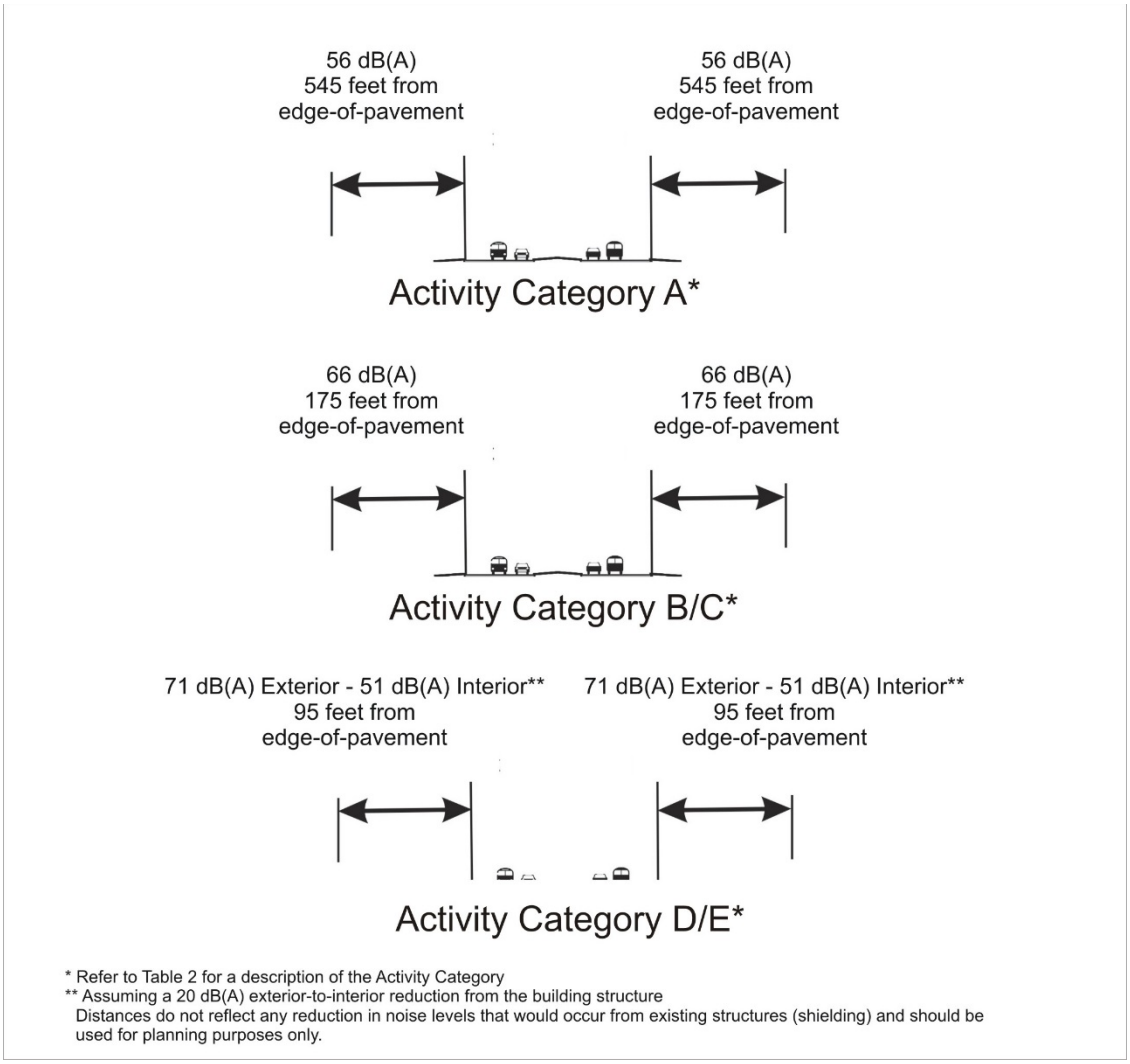
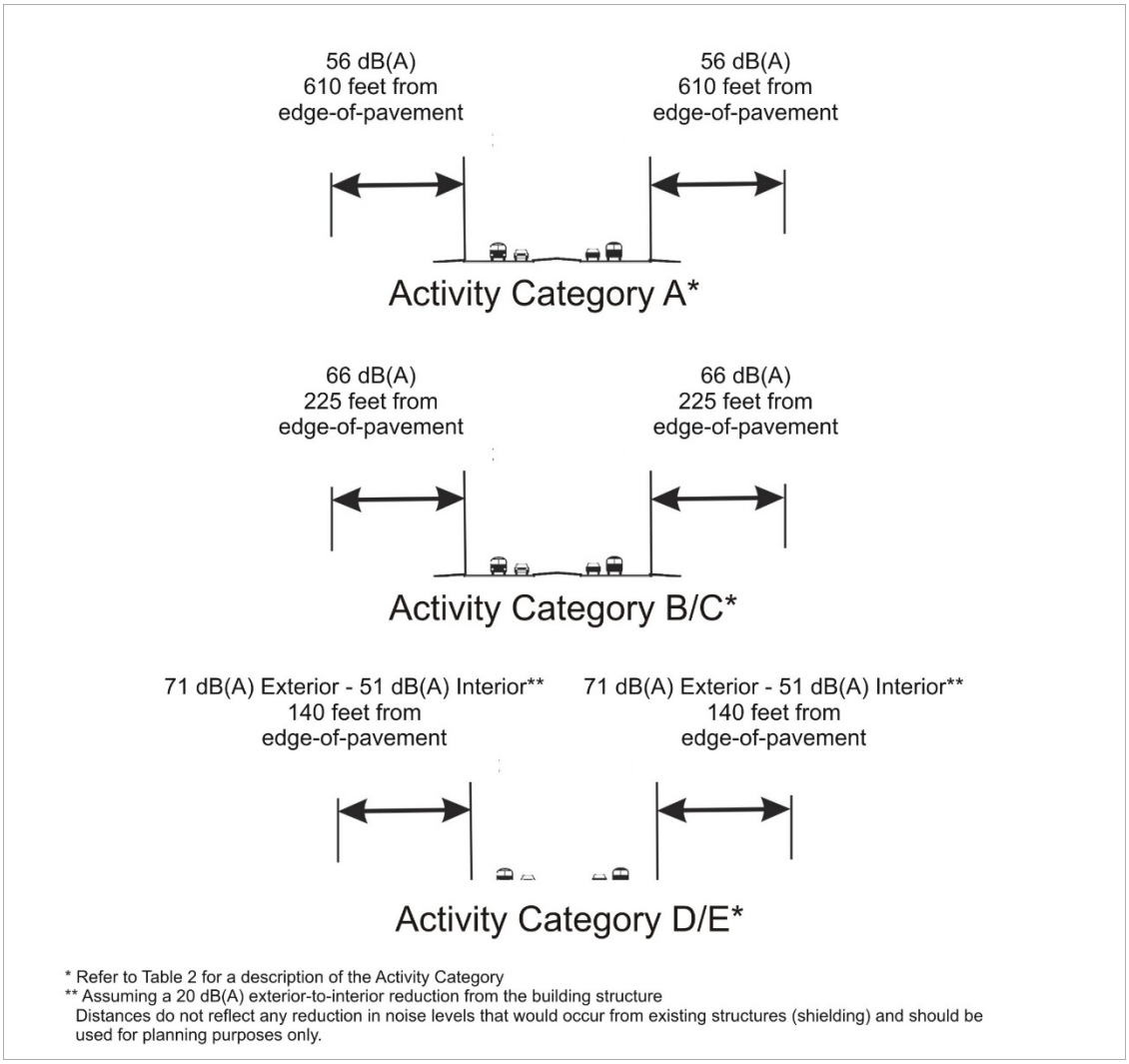


Figure 6-2
Noise Contours – Segment 2a, 2b, 2c



* Refer to Table 2 for a description of the Activity Category
** Assuming a 20 dB(A) exterior-to-interior reduction from the building structure
Distances do not reflect any reduction in noise levels that would occur from existing structures (shielding) and should be used for planning purposes only.

Figure 6-3
Noise Contours – Segment 3



7.0 Construction Noise and Vibration

Land uses adjacent SR 60 are identified on the FDOT listing of noise- and vibration-sensitive sites (e.g., residential use). Construction of the proposed roadway improvements is not expected to have any significant noise or vibration impact. If sensitive land uses develop adjacent to the roadway prior to construction, increased potential for noise or 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 or 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."

8.0 References

Hillsborough County, FL. Land Development Code. Part 6.06.06: Landscaping, Irrigation and Buffering Requirements. https://library.municode.com/index.aspx?clientID=12399&stateID=9&statename=Florida%20

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Federal Highway Administration. February 2004. Traffic Noise Model, Version 2.5.

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Federal Highway Administration. May 1996. Measurement of Highway-Related Noise. FHWA-PD-96-046.

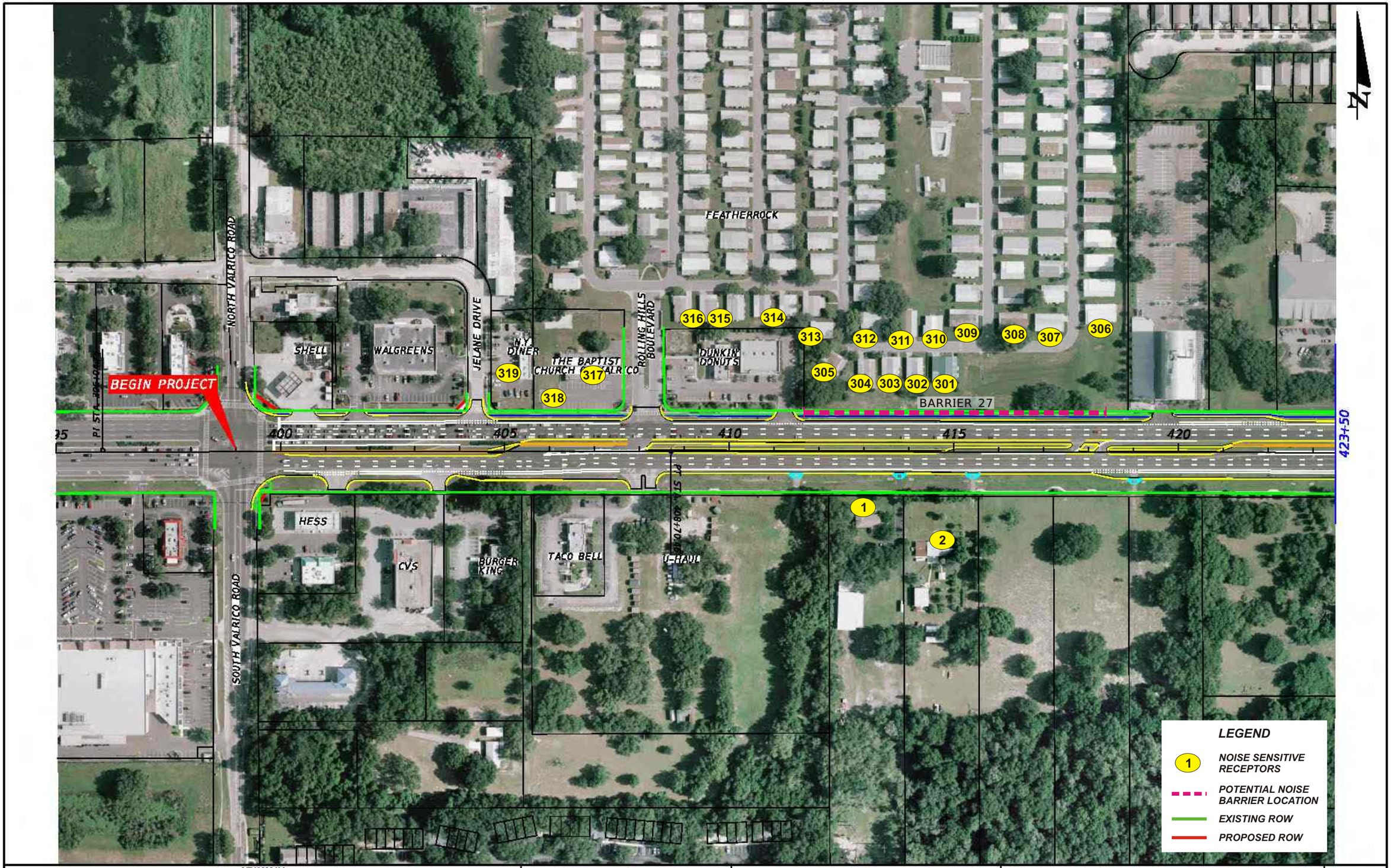
Florida Department of Transportation. May 24, 2011. Project Development and Environment Manual, Part 2, Chapter 17 – Noise.

Florida Department of Transportation. January 1, 2012. Plans Preparation Manual, Volume 1, Chapter 32 – Sound Barriers.

Florida Department of Transportation. July 22, 2009. A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations.

Florida Department of Transportation. March 28, 2014. Traffic Noise Modeling and Analysis Guidelines for Florida Department of Transportation Projects.

APPENDIX A – PROJECT AERIALS



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RUMMEL, KLEPPER & KAHL, LLP (RK&K)
CHRISTOPHER A. PIAZZA
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

SHEET NO. 1

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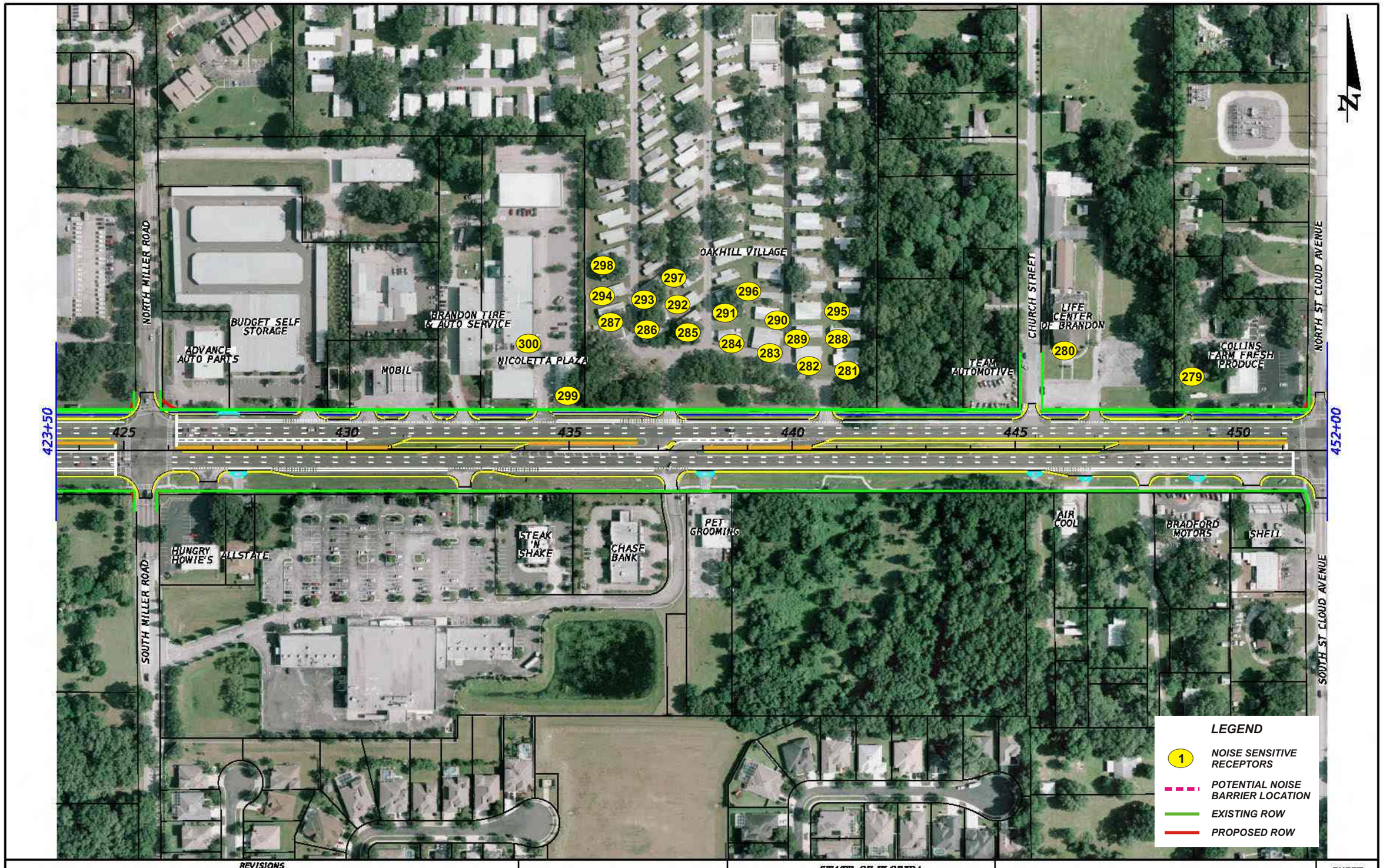

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						60	HILLSBOROUGH	430055-1-22-01		

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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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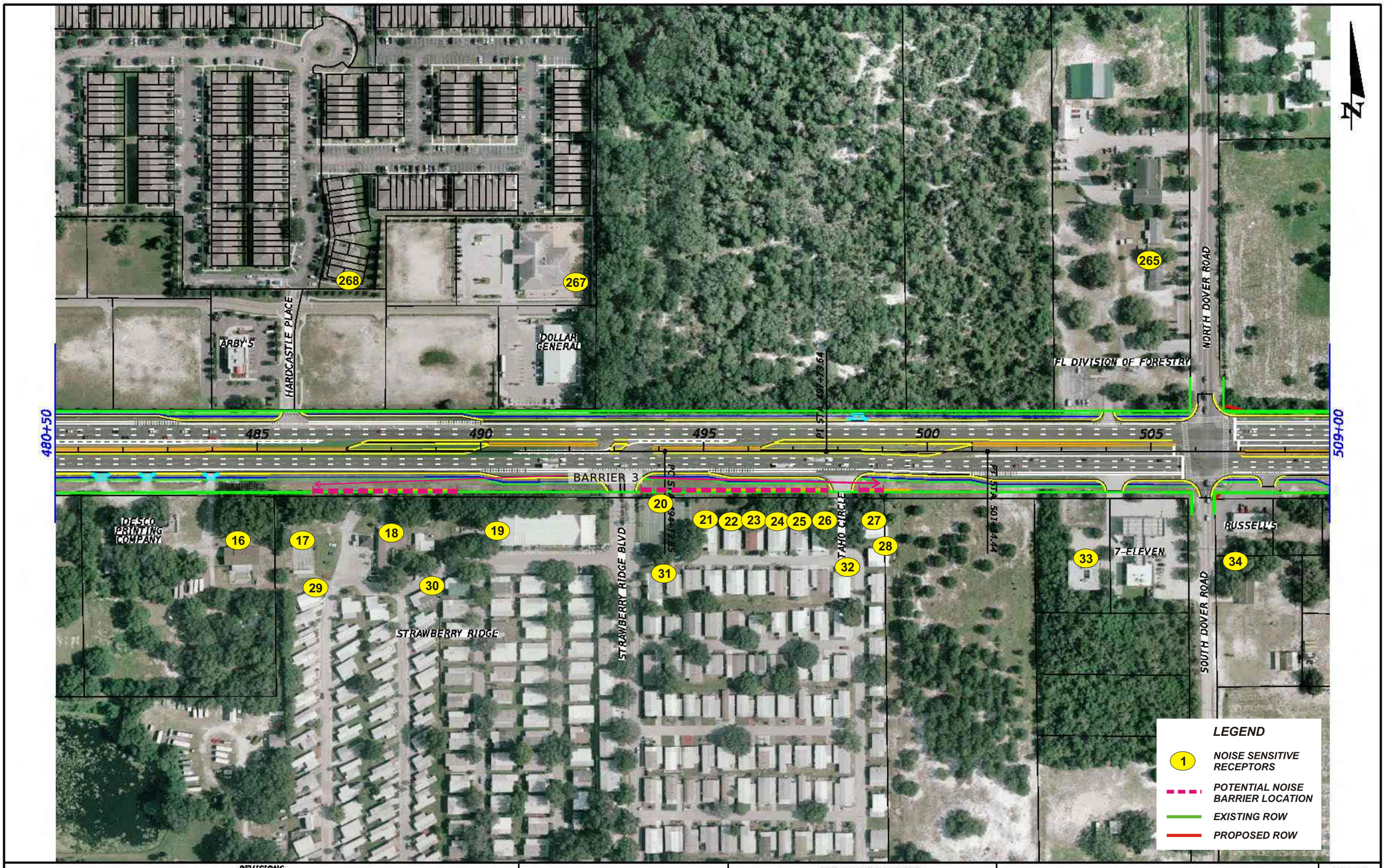

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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DATE OF AERIAL: 8/3/2012

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
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DATE	DESCRIPTION	DATE	DESCRIPTION	DATE OF AERIAL: 8/3/2012	CHRISTOPHER A. PIAZZA P.E. LICENSE NUMBER 66509 14055 RIVEREDGE DRIVE, SUITE 130 TAMPA, FL 33637 CERTIFICATE OF AUTHORIZATION No. 26879	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		7
						60	HILLSBOROUGH	430055-1-22-01		

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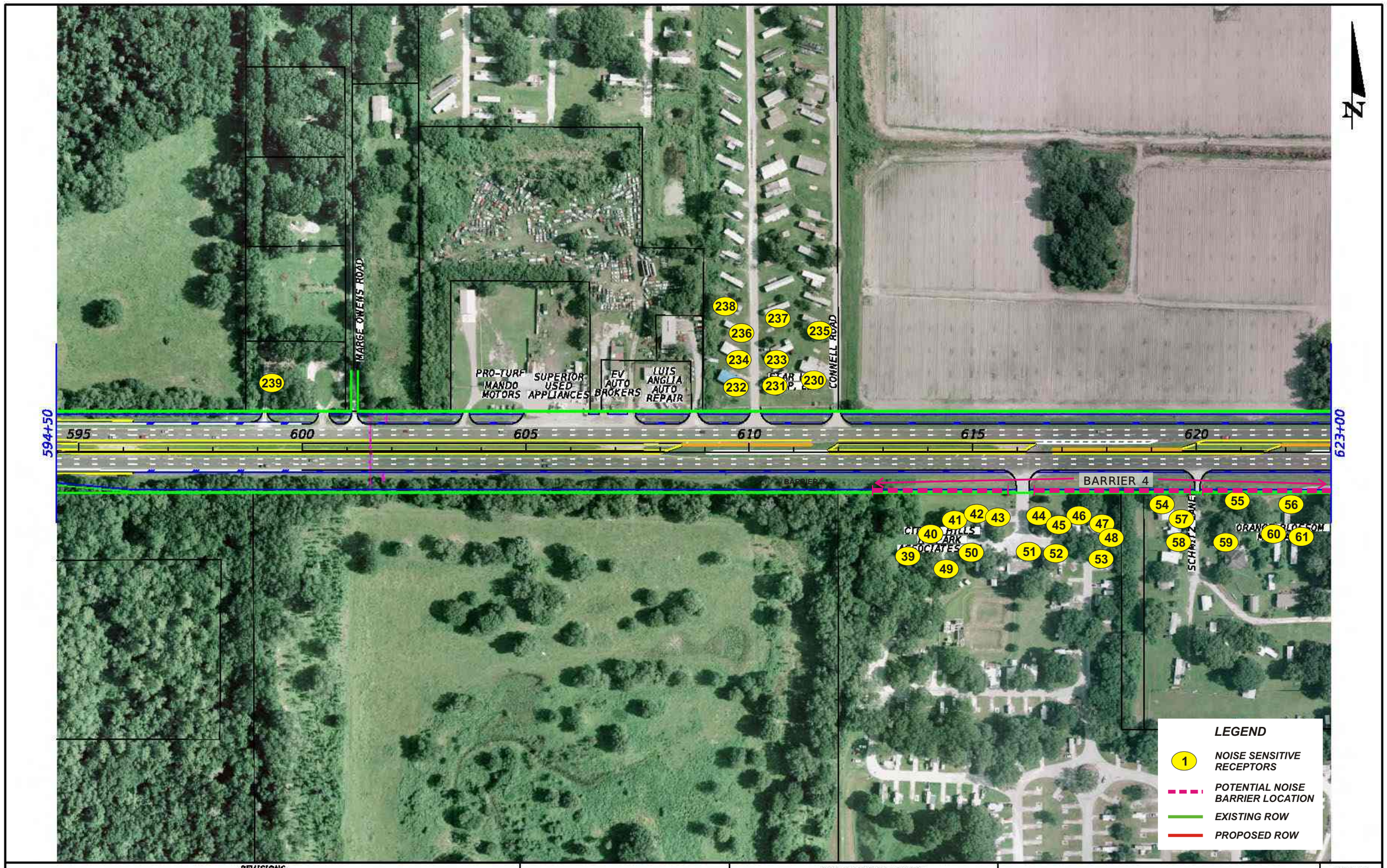

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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Feet
DATE OF AERIAL: 8/3/2012

RUMMEL, KLEPPER & KAHL, LLP (RK&K)
CHRISTOPHER A. PIAZZA
P.E. LICENSE NUMBER 66509
14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

SHEET NO. 8

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JERRY SMITH ROAD

SOUTH FARKAS ROAD

623+00

651+50

625 630 635 640 645 650

229 226 225 224 228 223 227 222

BARRIER 4

BELVEAL ROAD

COOPERS DELI & MARKET, INC.

62 63 64

N

LEGEND

- 1 — NOISE SENSITIVE RECEPTORS
- POTENTIAL NOISE BARRIER LOCATION
- EXISTING ROW
- PROPOSED ROW

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

0 40 200
Feet
DATE OF AERIAL: 8/3/2012

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P.E. LICENSE NUMBER 66509
14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

SHEET NO. 9

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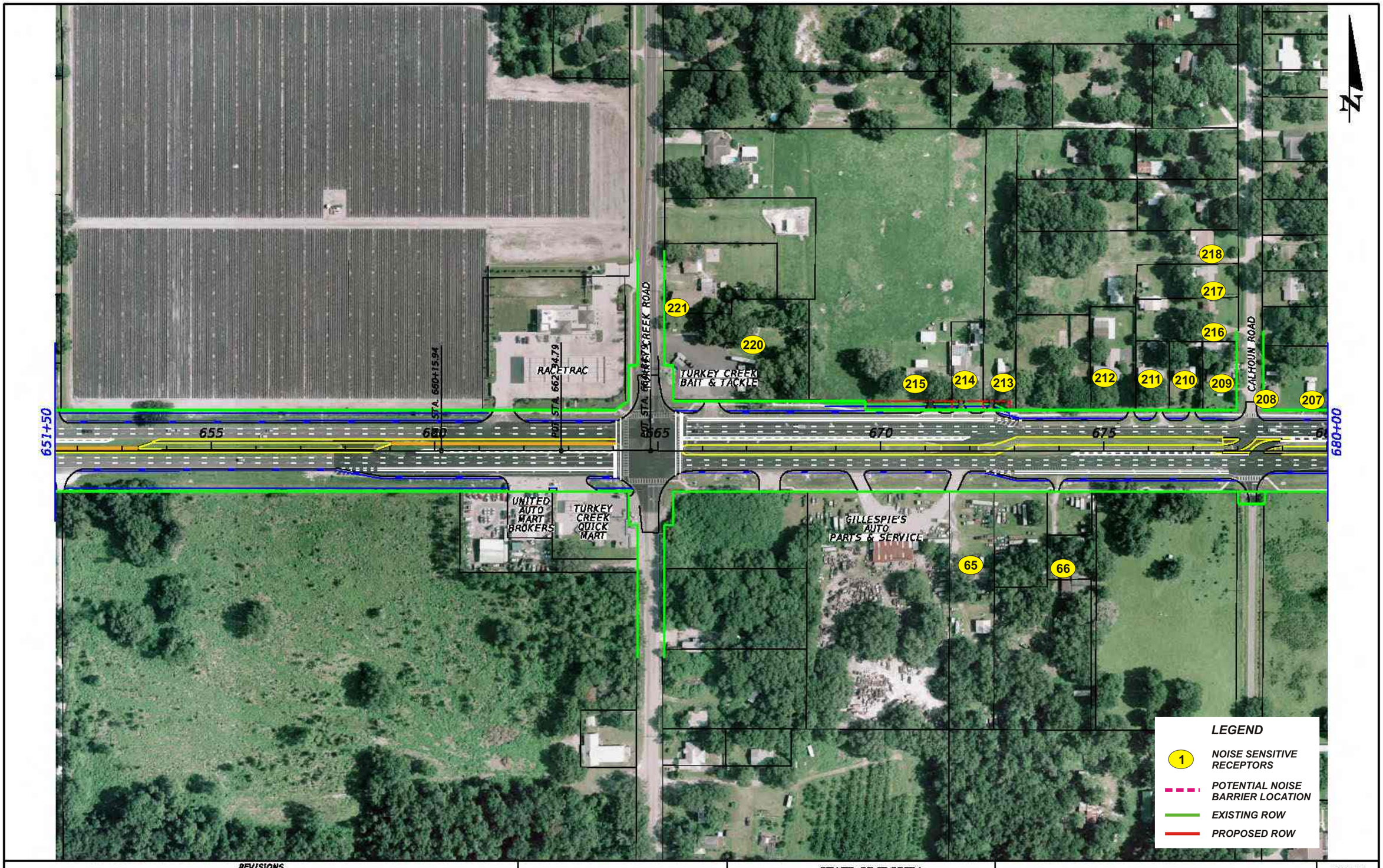

REVISIONS				
DATE	DESCRIPTION	DATE	DESCRIPTION	

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Feet
DATE OF AERIAL: 8/3/2012

RUMMEL, KLEPPER & KAHL, LLP (RK&K)
CHRISTOPHER A. PIAZZA
P.E. LICENSE NUMBER 66509
14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

SHEET NO. 10

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DATE OF AERIAL: 8/3/2012

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CHRISTOPHER A. PIAZZA
P.E. LICENSE NUMBER 66509
14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

SHEET NO. 11

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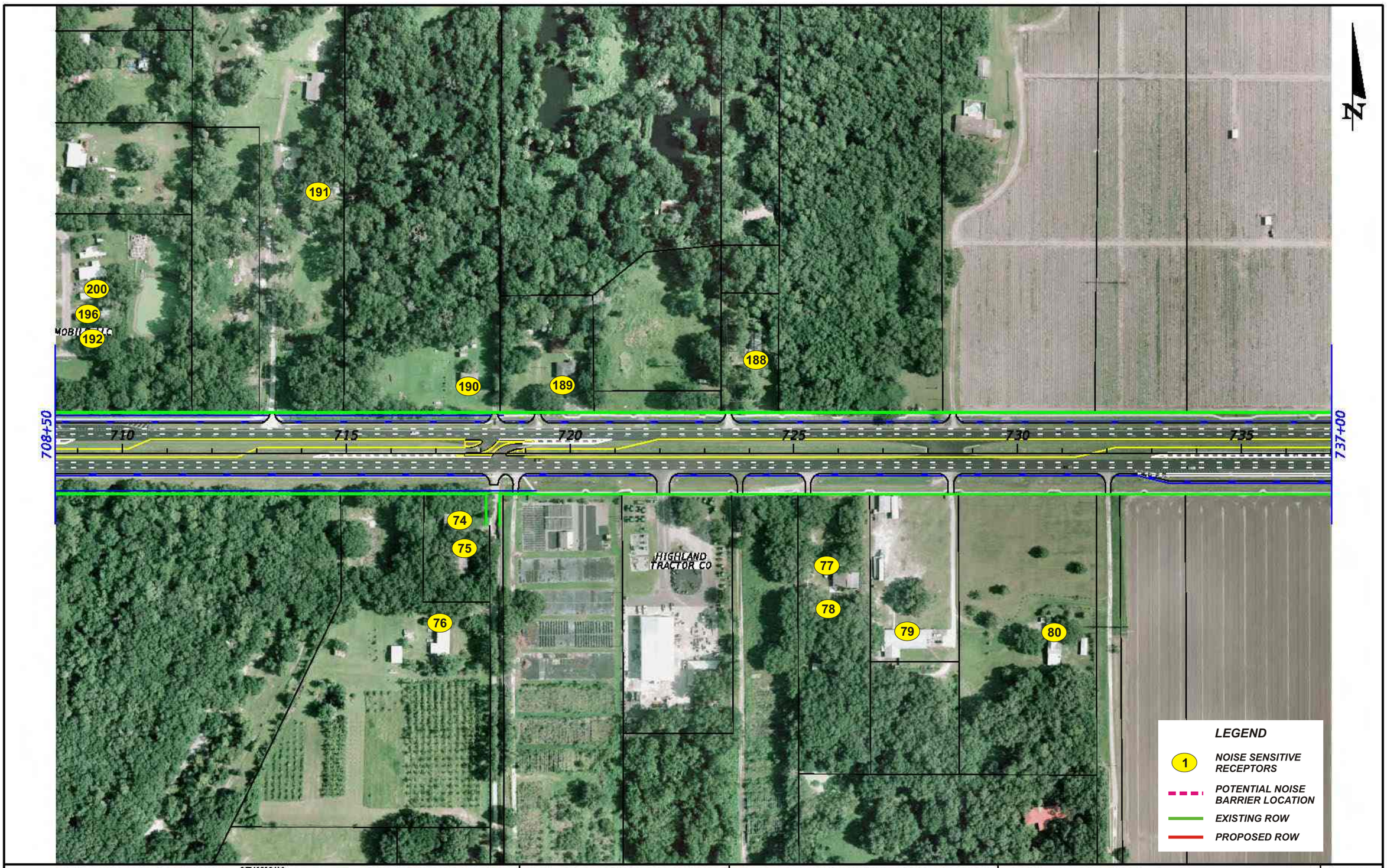

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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DATE OF AERIAL: 8/3/2012

RUMMEL, KLEPPER & KAHL, LLP (RK&K)
CHRISTOPHER A. PIAZZA
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14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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REVISIONS				0 40 200 Feet
DATE	DESCRIPTION	DATE	DESCRIPTION	DATE OF AERIAL: 8/3/2012

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CHRISTOPHER A. PIAZZA
P.E. LICENSE NUMBER 66509
14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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REVISIONS			
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Feet
DATE OF AERIAL: 8/3/2012

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CHRISTOPHER A. PIAZZA
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TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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Feet
DATE OF AERIAL: 8/3/2012

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14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

SHEET NO. 15

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REVISIONS			
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Feet
DATE OF AERIAL: 8/3/2012

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TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
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DATE OF AERIAL: 8/3/2012

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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DATE OF AERIAL: 8/3/2012

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CHRISTOPHER A. PIAZZA
P.E. LICENSE NUMBER 66509
14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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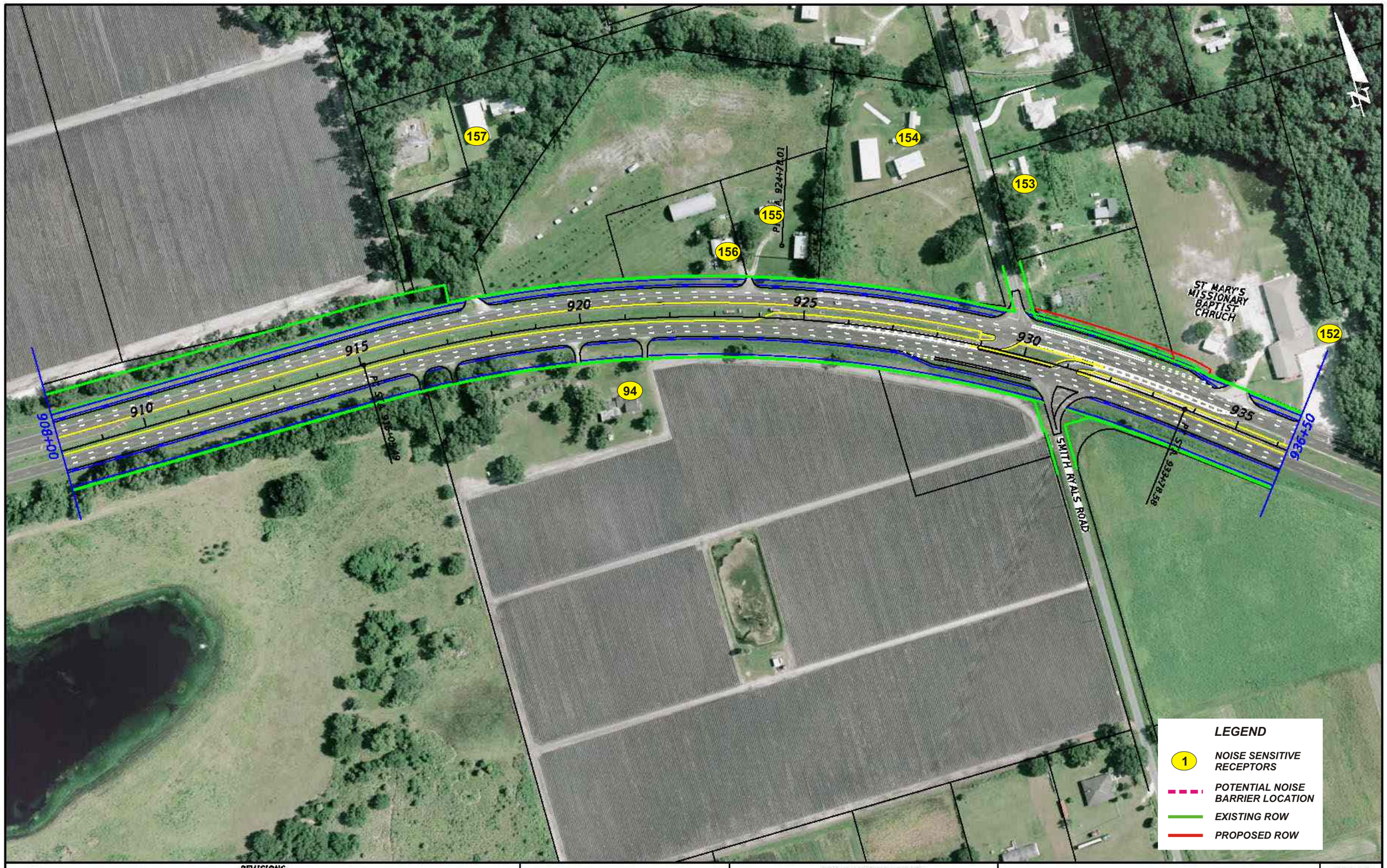

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DATE	DESCRIPTION	DATE	DESCRIPTION	DATE OF AERIAL: 8/3/2012	CHRISTOPHER A. PIAZZA P.E. LICENSE NUMBER 66509 14055 RIVEREDGE DRIVE, SUITE 130 TAMPA, FL 33637 CERTIFICATE OF AUTHORIZATION No. 26879	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		19
						60	HILLSBOROUGH	430055-1-22-01		

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DATE	DESCRIPTION	DATE	DESCRIPTION	DATE OF AERIAL: 8/3/2012	CHRISTOPHER A. PIAZZA P.E. LICENSE NUMBER 66509 14055 RIVEREDGE DRIVE, SUITE 130 TAMPA, FL 33637 CERTIFICATE OF AUTHORIZATION No. 26879	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		20
						60	HILLSBOROUGH	430055-1-22-01		

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REVISIONS				0 40 200 Feet	RUMMEL, KLEPPER & KAHL, LLP (RK&K)	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SR 60 PD&E STUDY RECOMMENDED ALTERNATIVE	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	DATE OF AERIAL: 8/3/2012	CHRISTOPHER A. PIAZZA P.E. LICENSE NUMBER 66509 14055 RIVEREDGE DRIVE, SUITE 130 TAMPA, FL 33637 CERTIFICATE OF AUTHORIZATION No. 26879	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		21
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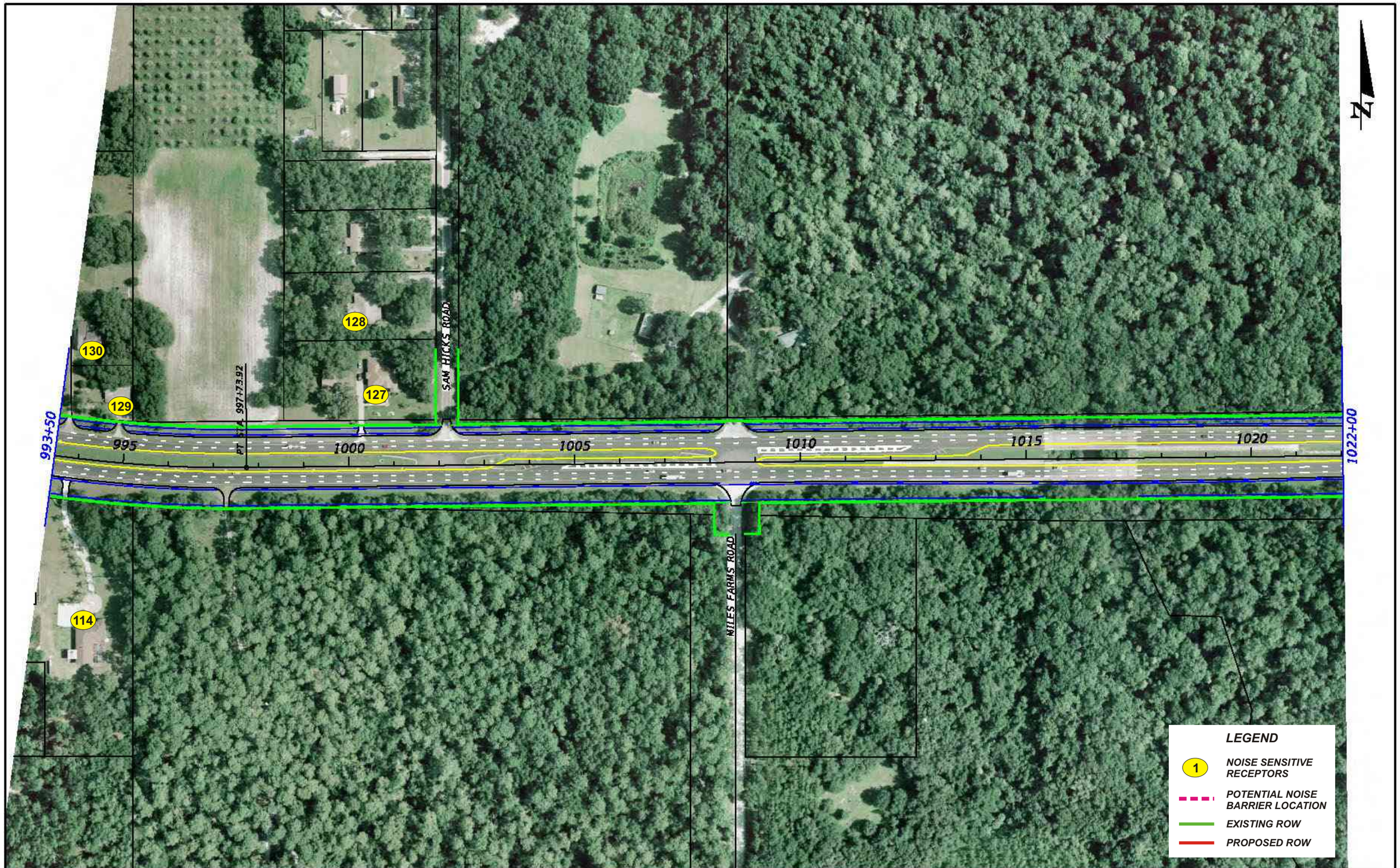

REVISIONS				0 40 200 Feet	RUNNEL, KLEPPER & KAHL, LLP (RK&K)	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SR 60 PD&E STUDY RECOMMENDED ALTERNATIVE	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	DATE OF AERIAL: 8/3/2012	CHRISTOPHER A. PIAZZA P.E. LICENSE NUMBER 66509 14055 RIVEREDGE DRIVE, SUITE 130 TAMPA, FL 33637 CERTIFICATE OF AUTHORIZATION No. 26879	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		22
						60	HILLSBOROUGH	430055-1-22-01		

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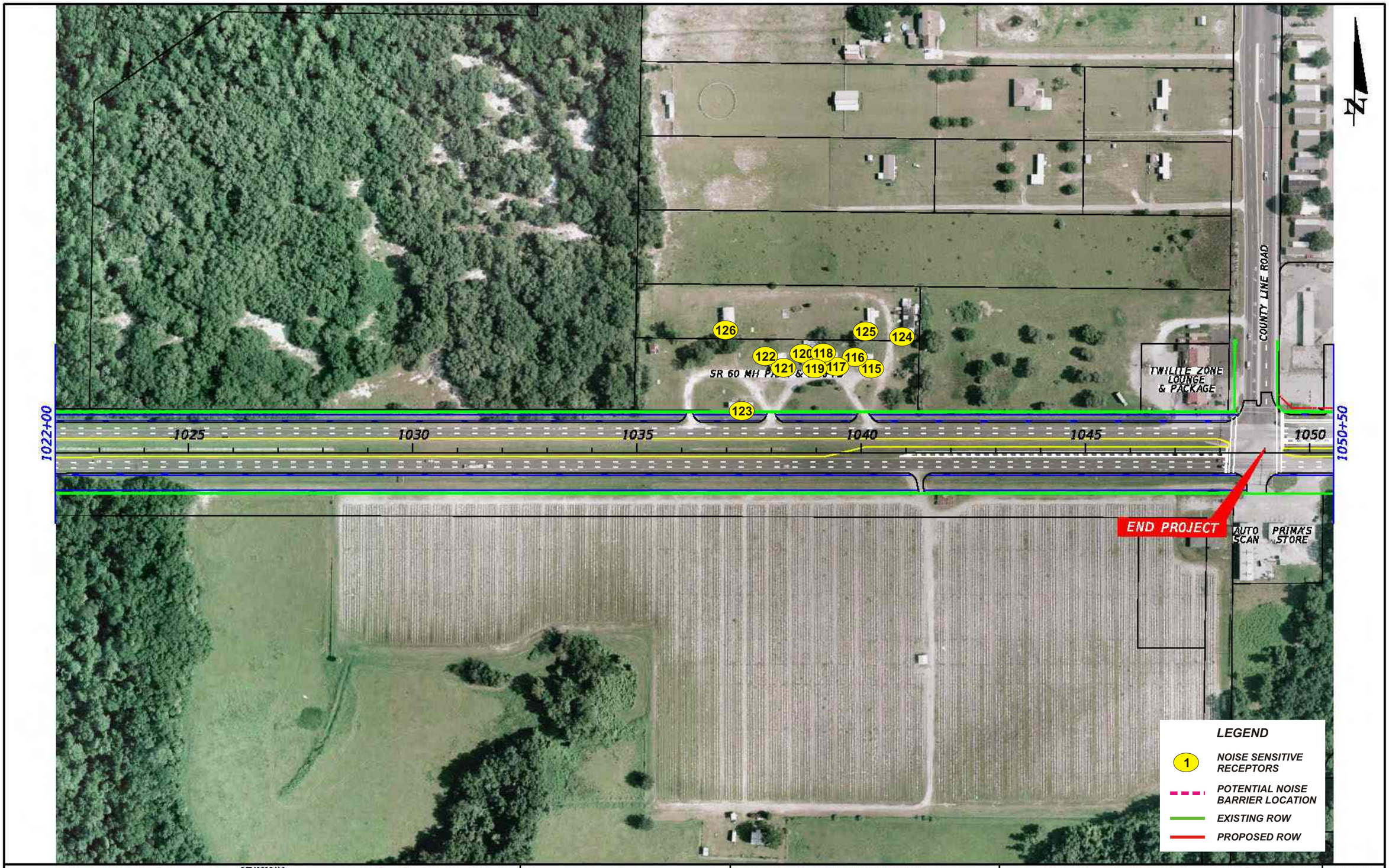

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DATE	DESCRIPTION	DATE	DESCRIPTION

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DATE OF AERIAL: 8/3/2012

RUMMEL, KLEPPER & KAHL, LLP (RK&K)
CHRISTOPHER A. PIAZZA
P.E. LICENSE NUMBER 66509
14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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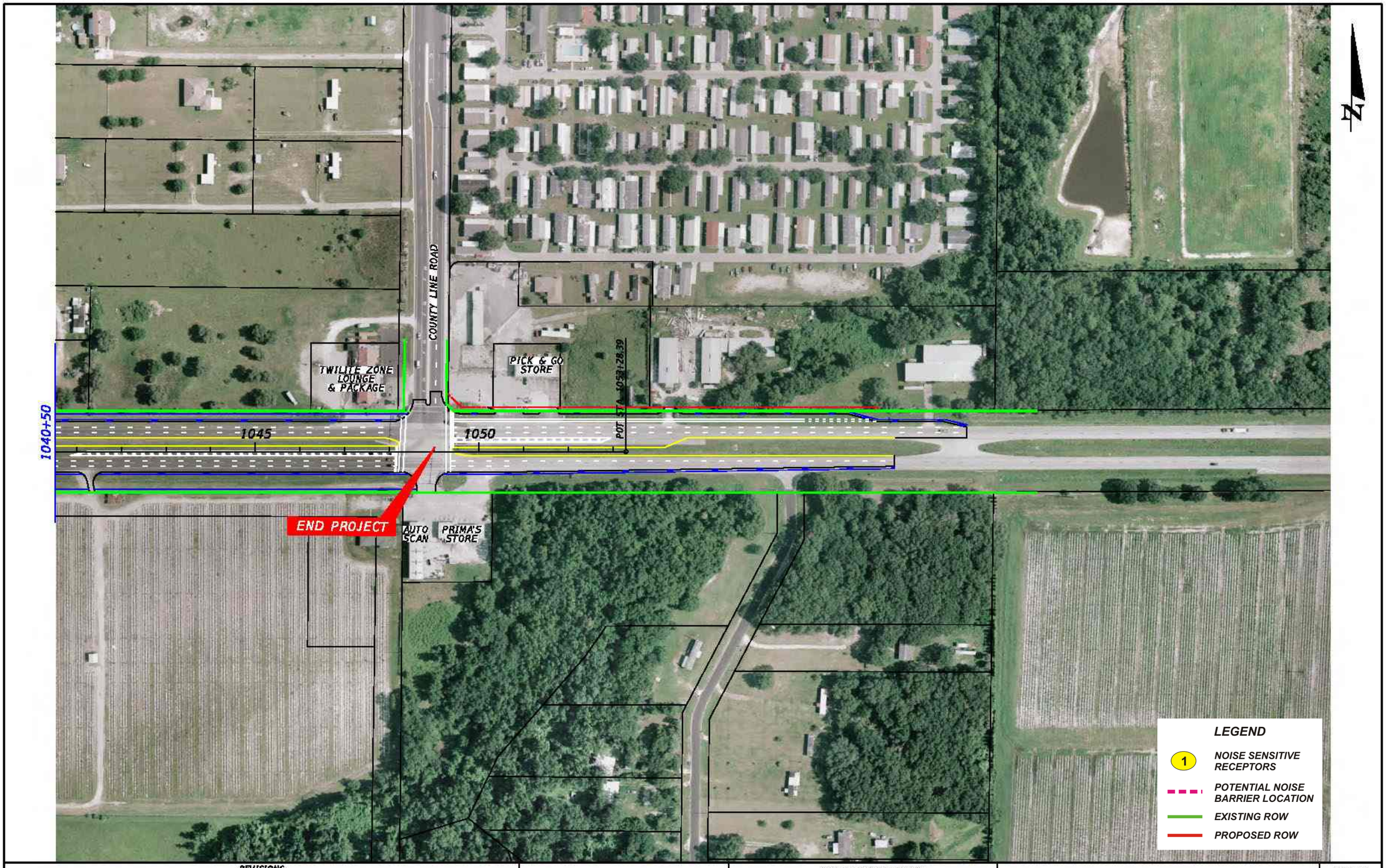

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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Feet
DATE OF AERIAL: 8/3/2012

RUMMEL, KLEPPER & KAHL, LLP (RK&K)
CHRISTOPHER A. PIAZZA
P.E. LICENSE NUMBER 66509
14055 RIVEREDGE DRIVE, SUITE 130
TAMPA, FL 33637
CERTIFICATE OF AUTHORIZATION No. 26879

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60	HILLSBOROUGH	430055-1-22-01

SR 60 PD&E STUDY
RECOMMENDED ALTERNATIVE

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APPENDIX B – TRAFFIC DATA

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Valrico Rd to Rolling Hills Blvd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	34,000		ADT: LOS (C)	34,000		ADT: LOS (C)	52,100	
Demand	45,650		Demand	71,400		Demand	71,400	
Speed:	50	mph	Speed:	50	mph	Speed:	50	mph
	80	kmh		80	kmh		80	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.
T=	4.00	% Design hr	T=	4.00	% Design hr	T=	4.00	% Design hr
1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV	
2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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)		
Peak:	Autos	1566	Peak:	Autos	1566	Peak:	Autos	2400
	Med Trucks	30		Med Trucks	30		Med Trucks	45
	Hvy Trucks	36		Hvy Trucks	36		Hvy Trucks	55
	Buses	8		Buses	8		Buses	13
	Motorcycles	3		Motorcycles	3		Motorcycles	5
Non-Peak:	Autos	1350	Non-Peak:	Autos	1350	Non-Peak:	Autos	2069
	Med Trucks	26		Med Trucks	26		Med Trucks	39
	Hvy Trucks	31		Hvy Trucks	31		Hvy Trucks	48
	Buses	7		Buses	7		Buses	11
	Motorcycles	3		Motorcycles	3		Motorcycles	4
Demand			Demand			Demand		
Peak:	Autos	2103	Peak:	Autos	3289	Peak:	Autos	3289
	Med Trucks	40		Med Trucks	62		Med Trucks	62
	Hvy Trucks	49		Hvy Trucks	76		Hvy Trucks	76
	Buses	11		Buses	17		Buses	17
	Motorcycles	4		Motorcycles	7		Motorcycles	7
Non-Peak:	Autos	1813	Non-Peak:	Autos	2835	Non-Peak:	Autos	2835
	Med Trucks	34		Med Trucks	54		Med Trucks	54
	Hvy Trucks	42		Hvy Trucks	65		Hvy Trucks	65
	Buses	10		Buses	15		Buses	15
	Motorcycles	4		Motorcycles	6		Motorcycles	6

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Rolling Hills Blvd to Miller Rd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	34,000		ADT: LOS (C)	34,000		ADT: LOS (C)	52,100	
Demand	44,250		Demand	70,400		Demand	70,400	
Speed:	50/55	mph	Speed:	50/55	mph	Speed:	50/55	mph
	#VALUE!	kmh		#VALUE!	kmh		#VALUE!	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.
T=	4.00	% Design hr	T=	4.00	% Design hr	T=	4.00	% Design hr
1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV	
2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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)		
Peak:	Autos	1566	Peak:	Autos	1566	Peak:	Autos	2400
	Med Trucks	30		Med Trucks	30		Med Trucks	45
	Hvy Trucks	36		Hvy Trucks	36		Hvy Trucks	55
	Buses	8		Buses	8		Buses	13
	Motorcycles	3		Motorcycles	3		Motorcycles	5
Non-Peak:	Autos	1350	Non-Peak:	Autos	1350	Non-Peak:	Autos	2069
	Med Trucks	26		Med Trucks	26		Med Trucks	39
	Hvy Trucks	31		Hvy Trucks	31		Hvy Trucks	48
	Buses	7		Buses	7		Buses	11
	Motorcycles	3		Motorcycles	3		Motorcycles	4
Demand			Demand			Demand		
Peak:	Autos	2038	Peak:	Autos	3243	Peak:	Autos	3243
	Med Trucks	38		Med Trucks	61		Med Trucks	61
	Hvy Trucks	47		Hvy Trucks	75		Hvy Trucks	75
	Buses	11		Buses	17		Buses	17
	Motorcycles	4		Motorcycles	7		Motorcycles	7
Non-Peak:	Autos	1757	Non-Peak:	Autos	2796	Non-Peak:	Autos	2796
	Med Trucks	33		Med Trucks	53		Med Trucks	53
	Hvy Trucks	41		Hvy Trucks	65		Hvy Trucks	65
	Buses	9		Buses	15		Buses	15
	Motorcycles	4		Motorcycles	6		Motorcycles	6

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Miller Rd to St Cloud Blvd		

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

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

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	4	Lanes:	4	Lanes:	
Year:	2012	Year:	2040	Year:	2040
ADT: LOS (C)	34,000	ADT: LOS (C)	34,000	ADT: LOS (C)	52,100
Demand	41,100	Demand	66,400	Demand	66,400
Speed:	55 mph	Speed:	55 mph	Speed:	55 mph
	89 kmh		89 kmh		89 kmh
K=	9.00 %	K=	9.0 %	K=	9.0 %
D=	53.70 %	D=	53.7 %	D=	53.7 %
T=	7.40 % for 24 hrs.	T=	7.40 % for 24 hrs.	T=	7.40 % for 24 hrs.
T=	4.00 % Design hr	T=	4.00 % Design hr	T=	4.00 % Design hr
1.80	% Medium Trucks DHV	1.80	% Medium Trucks DHV	1.80	% Medium Trucks DHV
2.20	% Heavy Trucks DHV	2.20	% Heavy Trucks DHV	2.20	% Heavy Trucks DHV
0.50	% Buses DHV	0.50	% Buses DHV	0.50	% Buses DHV
0.20	% Motorcycles DHV	0.20	% Motorcycles DHV	0.20	% 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)	
Peak: Autos	1566	Peak: Autos	1566	Peak: Autos	2400
Med Trucks	30	Med Trucks	30	Med Trucks	45
Hvy Trucks	36	Hvy Trucks	36	Hvy Trucks	55
Buses	8	Buses	8	Buses	13
Motorcycles	3	Motorcycles	3	Motorcycles	5
Non-Peak: Autos	1350	Non-Peak: Autos	1350	Non-Peak: Autos	2069
Med Trucks	26	Med Trucks	26	Med Trucks	39
Hvy Trucks	31	Hvy Trucks	31	Hvy Trucks	48
Buses	7	Buses	7	Buses	11
Motorcycles	3	Motorcycles	3	Motorcycles	4
Demand		Demand		Demand	
Peak: Autos	1893	Peak: Autos	3058	Peak: Autos	3058
Med Trucks	36	Med Trucks	58	Med Trucks	58
Hvy Trucks	44	Hvy Trucks	71	Hvy Trucks	71
Buses	10	Buses	16	Buses	16
Motorcycles	4	Motorcycles	6	Motorcycles	6
Non-Peak: Autos	1632	Non-Peak: Autos	2637	Non-Peak: Autos	2637
Med Trucks	31	Med Trucks	50	Med Trucks	50
Hvy Trucks	38	Hvy Trucks	61	Hvy Trucks	61
Buses	9	Buses	14	Buses	14
Motorcycles	3	Motorcycles	6	Motorcycles	6

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	St Cloud Blvd to Mulrennan Rd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	34,000		ADT: LOS (C)	34,000		ADT: LOS (C)	52,100	
Demand	41,500		Demand	62,800		Demand	62,800	
Speed:	55	mph	Speed:	55	mph	Speed:	55	mph
	89	kmh		89	kmh		89	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.
T=	4.00	% Design hr	T=	4.00	% Design hr	T=	4.00	% Design hr
1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV	
2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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)		
Peak:	Autos	1566	Peak:	Autos	1566	Peak:	Autos	2400
	Med Trucks	30		Med Trucks	30		Med Trucks	45
	Hvy Trucks	36		Hvy Trucks	36		Hvy Trucks	55
	Buses	8		Buses	8		Buses	13
	Motorcycles	3		Motorcycles	3		Motorcycles	5
Non-Peak:	Autos	1350	Non-Peak:	Autos	1350	Non-Peak:	Autos	2069
	Med Trucks	26		Med Trucks	26		Med Trucks	39
	Hvy Trucks	31		Hvy Trucks	31		Hvy Trucks	48
	Buses	7		Buses	7		Buses	11
	Motorcycles	3		Motorcycles	3		Motorcycles	4
Demand			Demand			Demand		
Peak:	Autos	1911	Peak:	Autos	2892	Peak:	Autos	2892
	Med Trucks	36		Med Trucks	55		Med Trucks	55
	Hvy Trucks	44		Hvy Trucks	67		Hvy Trucks	67
	Buses	10		Buses	15		Buses	15
	Motorcycles	4		Motorcycles	6		Motorcycles	6
Non-Peak:	Autos	1648	Non-Peak:	Autos	2494	Non-Peak:	Autos	2494
	Med Trucks	31		Med Trucks	47		Med Trucks	47
	Hvy Trucks	38		Hvy Trucks	58		Hvy Trucks	58
	Buses	9		Buses	13		Buses	13
	Motorcycles	3		Motorcycles	5		Motorcycles	5

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Mulrennan Rd to Strawberry Ridge Blvd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	34,000		ADT: LOS (C)	34,000		ADT: LOS (C)	52,100	
Demand	40,250		Demand	61,600		Demand	61,600	
Speed:	55	mph	Speed:	55	mph	Speed:	55	mph
	89	kmh		89	kmh		89	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.
T=	4.00	% Design hr	T=	4.00	% Design hr	T=	4.00	% Design hr
1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV	
2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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)		
Peak:	Autos	1566	Peak:	Autos	1566	Peak:	Autos	2400
	Med Trucks	30		Med Trucks	30		Med Trucks	45
	Hvy Trucks	36		Hvy Trucks	36		Hvy Trucks	55
	Buses	8		Buses	8		Buses	13
	Motorcycles	3		Motorcycles	3		Motorcycles	5
Non-Peak:	Autos	1350	Non-Peak:	Autos	1350	Non-Peak:	Autos	2069
	Med Trucks	26		Med Trucks	26		Med Trucks	39
	Hvy Trucks	31		Hvy Trucks	31		Hvy Trucks	48
	Buses	7		Buses	7		Buses	11
	Motorcycles	3		Motorcycles	3		Motorcycles	4
Demand			Demand			Demand		
Peak:	Autos	1854	Peak:	Autos	2837	Peak:	Autos	2837
	Med Trucks	35		Med Trucks	54		Med Trucks	54
	Hvy Trucks	43		Hvy Trucks	65		Hvy Trucks	65
	Buses	10		Buses	15		Buses	15
	Motorcycles	4		Motorcycles	6		Motorcycles	6
Non-Peak:	Autos	1598	Non-Peak:	Autos	2446	Non-Peak:	Autos	2446
	Med Trucks	30		Med Trucks	46		Med Trucks	46
	Hvy Trucks	37		Hvy Trucks	56		Hvy Trucks	56
	Buses	8		Buses	13		Buses	13
	Motorcycles	3		Motorcycles	5		Motorcycles	5

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Strawberry Ridge Blvd to Dover Rd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	34,000		ADT: LOS (C)	34,000		ADT: LOS (C)	52,100	
Demand	37,650		Demand	60,800		Demand	60,800	
Speed:	55	mph	Speed:	55	mph	Speed:	55	mph
	89	kmh		89	kmh		89	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.	T=	7.40	% for 24 hrs.
T=	4.00	% Design hr	T=	4.00	% Design hr	T=	4.00	% Design hr
1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV		1.80	% Medium Trucks DHV	
2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV		2.20	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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)		
Peak:	Autos	1566	Peak:	Autos	1566	Peak:	Autos	2400
	Med Trucks	30		Med Trucks	30		Med Trucks	45
	Hvy Trucks	36		Hvy Trucks	36		Hvy Trucks	55
	Buses	8		Buses	8		Buses	13
	Motorcycles	3		Motorcycles	3		Motorcycles	5
Non-Peak:	Autos	1350	Non-Peak:	Autos	1350	Non-Peak:	Autos	2069
	Med Trucks	26		Med Trucks	26		Med Trucks	39
	Hvy Trucks	31		Hvy Trucks	31		Hvy Trucks	48
	Buses	7		Buses	7		Buses	11
	Motorcycles	3		Motorcycles	3		Motorcycles	4
Demand			Demand			Demand		
Peak:	Autos	1734	Peak:	Autos	2800	Peak:	Autos	2800
	Med Trucks	33		Med Trucks	53		Med Trucks	53
	Hvy Trucks	40		Hvy Trucks	65		Hvy Trucks	65
	Buses	9		Buses	15		Buses	15
	Motorcycles	4		Motorcycles	6		Motorcycles	6
Non-Peak:	Autos	1495	Non-Peak:	Autos	2414	Non-Peak:	Autos	2414
	Med Trucks	28		Med Trucks	46		Med Trucks	46
	Hvy Trucks	35		Hvy Trucks	56		Hvy Trucks	56
	Buses	8		Buses	13		Buses	13
	Motorcycles	3		Motorcycles	5		Motorcycles	5

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Dover Rd to Sydney Washer Rd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	49,600		ADT: LOS (C)	49,600		ADT: LOS (C)	74,500	
Demand	33,700		Demand	59,100		Demand	59,100	
Speed:	55/60	mph	Speed:	55/60	mph	Speed:	55/60	mph
	#VALUE!	kmh		#VALUE!	kmh		#VALUE!	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	10.20	% for 24 hrs.	T=	10.20	% for 24 hrs.	T=	10.20	% for 24 hrs.
T=	5.00	% Design hr	T=	5.00	% Design hr	T=	5.00	% Design hr
2.30	% Medium Trucks DHV		2.30	% Medium Trucks DHV		2.30	% Medium Trucks DHV	
2.70	% Heavy Trucks DHV		2.70	% Heavy Trucks DHV		2.70	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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)		
Peak:	Autos	2261	Peak:	Autos	2261	Peak:	Autos	3395
	Med Trucks	55		Med Trucks	55		Med Trucks	83
	Hvy Trucks	65		Hvy Trucks	65		Hvy Trucks	97
	Buses	12		Buses	12		Buses	18
	Motorcycles	5		Motorcycles	5		Motorcycles	7
Non-Peak:	Autos	1949	Non-Peak:	Autos	1949	Non-Peak:	Autos	2927
	Med Trucks	48		Med Trucks	48		Med Trucks	71
	Hvy Trucks	56		Hvy Trucks	56		Hvy Trucks	84
	Buses	10		Buses	10		Buses	16
	Motorcycles	4		Motorcycles	4		Motorcycles	6

Demand			Demand			Demand		
Peak:	Autos	1536	Peak:	Autos	2693	Peak:	Autos	2693
	Med Trucks	37		Med Trucks	66		Med Trucks	66
	Hvy Trucks	44		Hvy Trucks	77		Hvy Trucks	77
	Buses	8		Buses	14		Buses	14
	Motorcycles	3		Motorcycles	6		Motorcycles	6
Non-Peak:	Autos	1324	Non-Peak:	Autos	2322	Non-Peak:	Autos	2322
	Med Trucks	32		Med Trucks	57		Med Trucks	57
	Hvy Trucks	38		Hvy Trucks	66		Hvy Trucks	66
	Buses	7		Buses	12		Buses	12
	Motorcycles	3		Motorcycles	5		Motorcycles	5

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Sydney Washer Rd to Turkey Creek Rd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	49,600		ADT: LOS (C)	49,600		ADT: LOS (C)	74,500	
Demand	30,600		Demand	56,200		Demand	56,200	
Speed:	55/60	mph	Speed:	55/60	mph	Speed:	55/60	mph
	#VALUE!	kmh		#VALUE!	kmh		#VALUE!	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	10.20	% for 24 hrs.	T=	10.20	% for 24 hrs.	T=	10.20	% for 24 hrs.
T=	5.00	% Design hr	T=	5.00	% Design hr	T=	5.00	% Design hr
2.30	% Medium Trucks DHV		2.30	% Medium Trucks DHV		2.30	% Medium Trucks DHV	
2.70	% Heavy Trucks DHV		2.70	% Heavy Trucks DHV		2.70	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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)		
Peak:	Autos	2261	Peak:	Autos	2261	Peak:	Autos	3395
	Med Trucks	55		Med Trucks	55		Med Trucks	83
	Hvy Trucks	65		Hvy Trucks	65		Hvy Trucks	97
	Buses	12		Buses	12		Buses	18
	Motorcycles	5		Motorcycles	5		Motorcycles	7
Non-Peak:	Autos	1949	Non-Peak:	Autos	1949	Non-Peak:	Autos	2927
	Med Trucks	48		Med Trucks	48		Med Trucks	71
	Hvy Trucks	56		Hvy Trucks	56		Hvy Trucks	84
	Buses	10		Buses	10		Buses	16
	Motorcycles	4		Motorcycles	4		Motorcycles	6

Demand			Demand			Demand		
Peak:	Autos	1395	Peak:	Autos	2561	Peak:	Autos	2561
	Med Trucks	34		Med Trucks	62		Med Trucks	62
	Hvy Trucks	40		Hvy Trucks	73		Hvy Trucks	73
	Buses	7		Buses	14		Buses	14
	Motorcycles	3		Motorcycles	5		Motorcycles	5
Non-Peak:	Autos	1202	Non-Peak:	Autos	2208	Non-Peak:	Autos	2208
	Med Trucks	29		Med Trucks	54		Med Trucks	54
	Hvy Trucks	34		Hvy Trucks	63		Hvy Trucks	63
	Buses	6		Buses	12		Buses	12
	Motorcycles	3		Motorcycles	5		Motorcycles	5

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Turkey Creek Rd to Mud Lake Rd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	49,600		ADT: LOS (C)	49,600		ADT: LOS (C)	74,500	
Demand	28,900		Demand	51,200		Demand	51,200	
Speed:	55/60	mph	Speed:	55/60	mph	Speed:	55/60	mph
	#VALUE!	kmh		#VALUE!	kmh		#VALUE!	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	10.20	% for 24 hrs.	T=	10.20	% for 24 hrs.	T=	10.20	% for 24 hrs.
T=	5.00	% Design hr	T=	5.00	% Design hr	T=	5.00	% Design hr
2.30	% Medium Trucks DHV		2.30	% Medium Trucks DHV		2.30	% Medium Trucks DHV	
2.70	% Heavy Trucks DHV		2.70	% Heavy Trucks DHV		2.70	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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)		
Peak:	Autos	2261	Peak:	Autos	2261	Peak:	Autos	3395
	Med Trucks	55		Med Trucks	55		Med Trucks	83
	Hvy Trucks	65		Hvy Trucks	65		Hvy Trucks	97
	Buses	12		Buses	12		Buses	18
	Motorcycles	5		Motorcycles	5		Motorcycles	7
Non-Peak:	Autos	1949	Non-Peak:	Autos	1949	Non-Peak:	Autos	2927
	Med Trucks	48		Med Trucks	48		Med Trucks	71
	Hvy Trucks	56		Hvy Trucks	56		Hvy Trucks	84
	Buses	10		Buses	10		Buses	16
	Motorcycles	4		Motorcycles	4		Motorcycles	6
Demand			Demand			Demand		
Peak:	Autos	1317	Peak:	Autos	2333	Peak:	Autos	2333
	Med Trucks	32		Med Trucks	57		Med Trucks	57
	Hvy Trucks	38		Hvy Trucks	67		Hvy Trucks	67
	Buses	7		Buses	12		Buses	12
	Motorcycles	3		Motorcycles	5		Motorcycles	5
Non-Peak:	Autos	1136	Non-Peak:	Autos	2012	Non-Peak:	Autos	2012
	Med Trucks	28		Med Trucks	49		Med Trucks	49
	Hvy Trucks	33		Hvy Trucks	58		Hvy Trucks	58
	Buses	6		Buses	11		Buses	11
	Motorcycles	2		Motorcycles	4		Motorcycles	4

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Mud Lake Rd to SR 39/James L Redman Pkwy		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	49,600		ADT: LOS (C)	49,600		ADT: LOS (C)	74,500	
Demand	27,900		Demand	44,700		Demand	44,700	
Speed:	50/60	mph	Speed:	50/60	mph	Speed:	50/60	mph
	#VALUE!	kmh		#VALUE!	kmh		#VALUE!	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	10.20	% for 24 hrs.	T=	10.20	% for 24 hrs.	T=	10.20	% for 24 hrs.
T=	5.00	% Design hr	T=	5.00	% Design hr	T=	5.00	% Design hr
2.30	% Medium Trucks DHV		2.30	% Medium Trucks DHV		2.30	% Medium Trucks DHV	
2.70	% Heavy Trucks DHV		2.70	% Heavy Trucks DHV		2.70	% Heavy Trucks DHV	
0.50	% Buses DHV		0.50	% Buses DHV		0.50	% Buses DHV	
0.20	% Motorcycles DHV		0.20	% Motorcycles DHV		0.20	% 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:	Demand		Build (Design Year) Model:	Demand	
LOS (C)			LOS (C)			LOS (C)		
Peak:	Autos	2261	Peak:	Autos	2261	Peak:	Autos	3395
	Med Trucks	55		Med Trucks	55		Med Trucks	83
	Hvy Trucks	65		Hvy Trucks	65		Hvy Trucks	97
	Buses	12		Buses	12		Buses	18
	Motorcycles	5		Motorcycles	5		Motorcycles	7
Non-Peak:	Autos	1949	Non-Peak:	Autos	1949	Non-Peak:	Autos	2927
	Med Trucks	48		Med Trucks	48		Med Trucks	71
	Hvy Trucks	56		Hvy Trucks	56		Hvy Trucks	84
	Buses	10		Buses	10		Buses	16
	Motorcycles	4		Motorcycles	4		Motorcycles	6
Demand			Demand			Demand		
Peak:	Autos	1272	Peak:	Autos	2037	Peak:	Autos	2037
	Med Trucks	31		Med Trucks	50		Med Trucks	50
	Hvy Trucks	36		Hvy Trucks	58		Hvy Trucks	58
	Buses	7		Buses	11		Buses	11
	Motorcycles	3		Motorcycles	4		Motorcycles	4
Non-Peak:	Autos	1096	Non-Peak:	Autos	1756	Non-Peak:	Autos	1756
	Med Trucks	27		Med Trucks	43		Med Trucks	43
	Hvy Trucks	31		Hvy Trucks	50		Hvy Trucks	50
	Buses	6		Buses	9		Buses	9
	Motorcycles	2		Motorcycles	4		Motorcycles	4

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	SR 39/James L Redman Pkwy to Old Hopewell Rd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	49,600		ADT: LOS (C)	49,600		ADT: LOS (C)	74,500	
Demand	23,700		Demand	47,700		Demand	47,700	
Speed:	50/65	mph	Speed:	50/65	mph	Speed:	50/65	mph
	#VALUE!	kmh		#VALUE!	kmh		#VALUE!	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	16.00	% for 24 hrs.	T=	16.00	% for 24 hrs.	T=	16.00	% for 24 hrs.
T=	8.00	% Design hr	T=	8.00	% Design hr	T=	8.00	% Design hr
2.10	% Medium Trucks DHV		2.10	% Medium Trucks DHV		2.10	% Medium Trucks DHV	
5.90	% Heavy Trucks DHV		5.90	% Heavy Trucks DHV		5.90	% Heavy Trucks DHV	
0.04	% Buses DHV		0.04	% Buses DHV		0.04	% Buses DHV	
0.15	% Motorcycles DHV		0.15	% Motorcycles DHV		0.15	% 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:	Demand		Build (Design Year) Model:	Demand	
LOS (C)			LOS (C)			LOS (C)		
Peak:	Autos	2201	Peak:	Autos	2201	Peak:	Autos	3306
	Med Trucks	50		Med Trucks	50		Med Trucks	76
	Hvy Trucks	141		Hvy Trucks	141		Hvy Trucks	212
	Buses	1		Buses	1		Buses	1
	Motorcycles	4		Motorcycles	4		Motorcycles	5
Non-Peak:	Autos	1897	Non-Peak:	Autos	1897	Non-Peak:	Autos	2850
	Med Trucks	43		Med Trucks	43		Med Trucks	65
	Hvy Trucks	122		Hvy Trucks	122		Hvy Trucks	183
	Buses	1		Buses	1		Buses	1
	Motorcycles	3		Motorcycles	3		Motorcycles	5
Demand			Demand			Demand		
Peak:	Autos	1051	Peak:	Autos	2116	Peak:	Autos	2116
	Med Trucks	24		Med Trucks	48		Med Trucks	48
	Hvy Trucks	68		Hvy Trucks	136		Hvy Trucks	136
	Buses	1		Buses	1		Buses	1
	Motorcycles	2		Motorcycles	3		Motorcycles	3
Non-Peak:	Autos	906	Non-Peak:	Autos	1825	Non-Peak:	Autos	1825
	Med Trucks	21		Med Trucks	42		Med Trucks	42
	Hvy Trucks	58		Hvy Trucks	117		Hvy Trucks	117
	Buses	1		Buses	1		Buses	1
	Motorcycles	1		Motorcycles	3		Motorcycles	3

TRAFFIC DATA FOR NOISE STUDIES

Project:	Valrico Rd to County Line Rd	Date:	5/17/2013
State Project Number(s):	430055-1	Prepared By:	Richard Oujevolk, PE 40205
Financial Project ID:	430055-1		
Federal Aid Number(s):	0		
Segment Description:	Old Hopewell Rd to County Line Rd		

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

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

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:		
Year:	2012		Year:	2040		Year:	2040	
ADT: LOS (C)	49,600		ADT: LOS (C)	49,600		ADT: LOS (C)	74,500	
Demand	22,350		Demand	47,200		Demand	47,200	
Speed:	65	mph	Speed:	65	mph	Speed:	65	mph
	105	kmh		105	kmh		105	kmh
K=	9.00	%	K=	9.0	%	K=	9.0	%
D=	53.70	%	D=	53.7	%	D=	53.7	%
T=	16.00	% for 24 hrs.	T=	16.00	% for 24 hrs.	T=	16.00	% for 24 hrs.
T=	8.00	% Design hr	T=	8.00	% Design hr	T=	8.00	% Design hr
2.10	% Medium Trucks DHV		2.10	% Medium Trucks DHV		2.10	% Medium Trucks DHV	
5.90	% Heavy Trucks DHV		5.90	% Heavy Trucks DHV		5.90	% Heavy Trucks DHV	
0.04	% Buses DHV		0.04	% Buses DHV		0.04	% Buses DHV	
0.15	% Motorcycles DHV		0.15	% Motorcycles DHV		0.15	% 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:**	**Demand**	**Build (Design Year) Model:**	**Demand**
LOS (C)		LOS (C)		LOS (C)	
Peak: Autos	2201	Peak: Autos	2201	Peak: Autos	3306
Med Trucks	50	Med Trucks	50	Med Trucks	76
Hvy Trucks	141	Hvy Trucks	141	Hvy Trucks	212
Buses	1	Buses	1	Buses	1
Motorcycles	4	Motorcycles	4	Motorcycles	5
Non-Peak: Autos	1897	Non-Peak: Autos	1897	Non-Peak: Autos	2850
Med Trucks	43	Med Trucks	43	Med Trucks	65
Hvy Trucks	122	Hvy Trucks	122	Hvy Trucks	183
Buses	1	Buses	1	Buses	1
Motorcycles	3	Motorcycles	3	Motorcycles	5
Demand		Demand		Demand	
Peak: Autos	991	Peak: Autos	2094	Peak: Autos	2094
Med Trucks	23	Med Trucks	48	Med Trucks	48
Hvy Trucks	64	Hvy Trucks	135	Hvy Trucks	135
Buses	1	Buses	1	Buses	1
Motorcycles	2	Motorcycles	3	Motorcycles	3
Non-Peak: Autos	854	Non-Peak: Autos	1806	Non-Peak: Autos	1806
Med Trucks	20	Med Trucks	41	Med Trucks	41
Hvy Trucks	55	Hvy Trucks	116	Hvy Trucks	116
Buses	1	Buses	1	Buses	1
Motorcycles	1	Motorcycles	3	Motorcycles	3

APPENDIX C – VALIDATION DOCUMENTATION

NOISE MEASUREMENT DATA SHEET

Measurements Taken By: Paola Pringle, Shelli Hyres & Lindsay Baumaister Date: 8/7/14
Time Study Started: 10:03 AM Time Study Ended: 10:40 AM
Project Identification:
Financial Project ID: 430055-1-22-01
Project Location: SR 60 PD&E – Valrico Rd to the Polk County Line
Hillsborough County, FL
Site Identification: Site 1 – SR 60, east of Strawberry Ridge MHP

Weather Conditions:
Sky: Clear X Partly Cloudy Cloudy Other
Temperature 88F Wind Speed 1.2 mph Wind Direction NE Humidity 75%
Equipment:
Sound Level Meter:
Type: Larson Davis 831 Serial Number(s): 1285
Did you check the battery? Yes X No
Calibration Readings: Start 113.90 End 113.91
Response Settings: Fast Slow X
Weighting: A X Other
Calibrator:
Type: Larson Davis CAL 200 Serial Number: 5592
Did you check the battery? Yes X No

TRAFFIC DATA

Roadway Identification	SR 60 Westbound		SR 60 Eastbound	
Vehicle Type	Volume	Speed (mph)	Volume	Speed (mph)
Autos	384-375-390	36-40-38	333-282-237	43-49-48
Medium Trucks	21-12-3	27-48-22	24-6-6	41-48-45
Heavy Trucks	24-9-12	30-40-37	21-24-15	44-40-47
Buses	0-0-0	0-0-0	0-0-0	0-0-0
Motorcycles	0-0-0	0-0-0	0-0-0	0-0-0
Duration	Three 10-minute sample periods		Three 10-minute sample periods	
Note: Because traffic counts and speeds are collected manually, vehicle speeds may not have been obtained for all vehicle types.				

RESULTS [dB(A)]

L_{EQ} 61.2/63.5/59.1 Lmax 80.2/82.9/80.2

Background Noise: Birds chirping, cicadas
Major Sources: SR 60 Unusual Events: emergency vehicle, cicadas, horn, stop light at Dover

NOISE MEASUREMENT DATA SHEET

Measurements Taken By: Paola Pringle, Shelli Hyres & Lindsay Baumaister Date: 8/7/14
Time Study Started: 11:13 AM Time Study Ended: 11:48 AM
Project Identification:
Financial Project ID: 430055-1-22-01
Project Location: SR 60 PD&E – Valrico Rd to the Polk County Line
Hillsborough County, FL
Site Identification: Site 2 – SR 60 at Belveal Rd.

Weather Conditions:
Sky: Clear X Partly Cloudy Cloudy Other
Temperature 93F Wind Speed 2 mph Wind Direction W Humidity 62%
Equipment:
Sound Level Meter:
Type: Larson Davis 831 Serial Number(s): 1285
Did you check the battery? Yes X No
Calibration Readings: Start 113.99 End 113.92
Response Settings: Fast Slow X
Weighting: A X Other
Calibrator:
Type: Larson Davis CAL 200 Serial Number: 5592
Did you check the battery? Yes X No

TRAFFIC DATA

Roadway Identification	SR 60 Westbound		SR 60 Eastbound	
Vehicle Type	Volume	Speed (mph)	Volume	Speed (mph)
Autos	294-354-336	52-49-46	270-294-315	49-51-47
Medium Trucks	3-12-3	49-54-47	6-15-3	54-50-43
Heavy Trucks	24-12-18	52-47-47	21-12-12	52-54-47
Buses	0-0-0	0-0-0	0-0-0	0-0-0
Motorcycles	0-0-0	0-0-0	0-0-0	0-0-0
Duration	Three 10-minute sample periods		Three 10-minute sample periods	
Note: Because traffic counts and speeds are collected manually, vehicle speeds may not have been obtained for all vehicle types.				

RESULTS [dB(A)]

L_{EQ} 64.9/64.5/64.3 Lmax 75.3/82.1/76.8

Background Noise: Birds chirping, cicadas
Major Sources: SR 60 Unusual Events: horn, car on frontage road and side street, Prop plane

APPENDIX D – HILLSBOROUGH COUNTY LAND DEVELOPMENT CODE

HILLSBOROUGH COUNTY, FL
LAND DEVELOPMENT CODE
PART 6.06.00 LANDSCAPING, IRRIGATION AND BUFFERING REQUIREMENTS

Section 6.06.06 Buffering and Screening Requirements

C – Screening

6. Areas of Excessive Traffic or Noise. If proposed residential development is adjacent to an area of excessive traffic or noise, including a limited access highway, screening shall consist of the landscaping required per Screening Standard "B" above or a berm/planting combination, with the berm an average height of four feet and dense plantings which will, when combined with the berm, achieve a minimum height of eight feet and 75 percent opacity within two years of planting. If demonstrated that screening has been or will be provided by another entity to an equivalent or higher degree, the Administrator may waive any portion or all of these requirements. Furthermore, because of the extensive landscaping provided on the public right-of-way, properties abutting the Veterans Expressway are exempt from the provision of this Section.