SR 400 (I-4) Project Development and Environment (PD&E) Study

FM No.: 432100-1-22-01

Noise Study Report

Segment 3: State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Seminole County (77160), Florida

July 2016

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1.0 Summary of Project

The Florida Department of Transportation (FDOT) is conducting an update/reevaluation of the Project Development and Environment (PD&E) studies for the extension of proposed express lanes for State Road 400 (SR 400)/Interstate 4 (I-4). The project limits in the original PD&E studies were:

- West of Memorial Boulevard (SR 546) to the Polk/Osceola County Line, (29.5 miles)
- CR 532 (Polk/Osceola County Line) to West of SR 528 Beachline Expressway (13.7 miles), and
- West of SR 528 Beachline Expressway to SR 472 (43 miles).

The corresponding environmental documents associated with these PD&E studies include: Environmental Assessment/Finding of No Significant Impact (EA/FONSI) for SR 400 (I-4) from West of Memorial Boulevard (SR 546) to the Polk/Osceola County Line [Financial Project Number (FPN) 201210 (December 1998)] and from CR 532 (Polk/Osceola County Line) to West of SR 528 (Beachline Expressway) [FPN 242526 and 242483 (December 1999)] and Final Environmental Impact Statement (FEIS) for I-4 from SR 528 (Beachline Expressway) to SR 472 [FPN 242486, 242592 and 242703 (August 2002,Record of Decision Pending)].

The project limits of the current SR 400 (I-4) PD&E reevaluation, herein referred to as I-4 Beyond the Ultimate (BtU) PD&E Reevaluation Study, include a total of approximately 43 miles of roadway sections east and west of the 21-mile, I-4 Ultimate project. The I-4 Ultimate project, which began construction in early 2015, is reconstruction to include new express lanes, of the section of I-4 that extends from west of SR 435 (Kirkman Road) to east of SR 434. For analysis purposes, the current I-4 BtU PD&E study has been divided into the following five segments:

- Segment 1: SR 400 (I-4) from West of CR 532 (Polk/Osceola County Line) to West of SR 528 (Beachline Expressway) - Osceola County (92130) and Orange County (75280)
- Segment 2: SR 400 (I-4) from West of SR 528 (Beachline Expressway) to West of SR 435 (Kirkman Road) - Orange County (75280)
- Segment 3: SR 400 (I-4) from 1 Mile East of SR 434 to East of SR 15-600/US 17-92 (Seminole/Volusia County Line) - Seminole County (77160)
- Segment 4: SR 400 (I-4) from East of SR 15-600/US 17-92 (Seminole/Volusia County Line) to ½ Mile East of SR 472 - Volusia County (79110)
- Segment 5: SR 400 (I-4) from West of SR 25/US 27 to West of CR 532 (Polk/Osceola County Line) Polk County (16320)

Since no Record of Decision has been issued by the Federal Highway Administration (FHWA) for Segments 2, 3 and 4, the current PD&E BtU study for these three segments will update the original PD&E study. This noise traffic report was prepared for Segment 3 of the I-4 BtU PD&E study and contains detailed information that fulfills the purpose and need for SR 400 (I-4) Segment 3, from one mile East of SR 434 to East of SR 15-600/US 17-92, Project Development and Environment (PD&E) study.

The purpose of this report is to document changes in support of the PD&E update for the I-4 BtU Segment 3 portion of the FEIS for I-4 from SR 528 (Beachline Expressway) to SR 472 (FPN 242486-1, 242592-1 and 242703-1, August 2002, Record of Decision Pending). This update includes environmental analysis of the original design concept, which showed six general use lanes (GULs) and two high occupancy vehicle (HOV) lanes (6+2), to the current proposed design, which includes six GULs and four express lanes (EL) operating under a variable price toll plan (6+4). Other changes being reanalyzed include stormwater management, access plan and interchange configurations**.**

1.1 Description of Proposed Action

FDOT is proposing to reconstruct and widen I-4 as part of the I-4 BtU concept. This involves the build-out of I-4 to its ultimate condition through Central Florida, including segments in Polk, Osceola, Orange, Seminole and Volusia Counties. The project limits for the segment analyzed in this report are within an approximate 10-mile segment of I-4 which extends from east of SR 434 (Milepost 4.050) to east of US 17-92 (Milepost 14.135) in Seminole County (herein referred to as I-4 Segment 3), as shown in **Figure 1.1**.

The concept design proposes the addition of two new express lanes in each direction, resulting in a total of ten dedicated lanes for the majority of the I-4 Segment 3 corridor [6 general use lanes (GUL) + 4 express lanes (EL)]. The section of I-4 from the begin project limits to just south of Lake Mary Boulevard will have three GUL and one auxiliary (aux) lane in each direction, resulting in a 12-lane section (6 GUL + 2 Aux + 4 EL) through this portion of the corridor. Although, the interstate is a designated east-west corridor, the alignment follows a southwest to northeast orientation through the limits of Segment 3. The study area in this section from east of SR 434 to east of US 17-92 includes the interchanges at Lake Mary Boulevard, CR 46A, SR 417 (Seminole Expressway)/SR 429 (future Wekiva Parkway), SR 46 and US 17-92. **Figure 1.2** illustrates the proposed mainline typical sections for I-4 Segment 3.

1.2 Purpose and Need

The proposed improvements to I-4 include widening the existing six-lane divided urban interstate to a 10- or 12-lane divided highway in order to improve traffic operations, enhance connectivity and improve mobility by providing travel choices to the motoring public. I-4 is an east-west limited access freeway which links the west and east coasts of Florida, from I-275 in Tampa to I-95 in Daytona Beach. I-4 spans across six counties in Central Florida, traversing through many cities including Lakeland, Celebration, Orlando, Altamonte Springs, Sanford and DeLand. I-4 is a critical component of Florida's Strategic Intermodal System (SIS) which links seaports, rail, airports and other intermodal facilities. This aspect of I-4's significance is evidenced through connectivity provided by major junctions with I-275, I-75, SR 429 (Daniel Webster Western Beltway), SR 417 (Southern Connector/Central Florida Greenway/Seminole Expressway), SR 528 (Martin Andersen Beachline Expressway), SR 91 (Florida's Turnpike), SR 408 (Spessard Lindsay Holland East-West Expressway) and I-95 on the east coast.

I-4 serves as the primary corridor for the movement of people and freight between major population, employment and activity centers in the Central Florida region. When the entire Interstate was fully opened in the early 1960's, it was designed to serve intrastate and interstate travel by providing a critical link between the east and west coasts of Central Florida. Although this role continues to be a crucial transportation function of I-4, the highway also serves large volumes of local and commuter traffic with shorter trip distances. Today, the highway serves as the primary link between hotel/resort complexes and tourist attractions such as Walt Disney World, Universal Studios, Sea World, the International Drive Resort Area and downtown Orlando. Since I-4 is the only north-south limited access facility that is centrally located between the predominant employment centers and the major suburbs to the north, it has become the primary commuting corridor in the Central Florida metropolitan area.

Growth in Central Florida over the past decades has made it difficult for the transportation system to accommodate travel demand. Additionally, traffic congestion and crash incidents have resulted in major delays on the Interstate as well as other arterials surrounding the corridor. Increased congestion levels are experienced outside of the typical morning and afternoon rush-hour periods, affecting mobility levels for more hours of the day and impacting other non-commuter/non-weekday travel. The congestion on I-4 is further evidenced by the less than desirable levels of service on the Interstate as well as the crossroads.



Figure 1.1 – Project Location Map

Projections of future population and employment in the region indicate that travel demand will continue to increase well into the future. The ability to accommodate the new travel patterns resulting from growth must be provided to sustain the region's economy. Without the improvements, extremely congested conditions are expected to occur for extended periods of time in both the morning and evening peak periods. Due to these congested conditions, user travel times will continue to increase, the movement of goods through the urban area will be slower, and the deliveries of goods within the urban area will be forced to other times throughout the day. The need for improvements to I-4 is illustrated by the important transportation roles I-4 serves to the Central Florida region and the State of Florida. If no improvements are made to the Interstate, a loss in mobility for the area's residents, visitors and commuters can be expected, resulting in a severe threat to the continued viability of the economy and the quality of life.

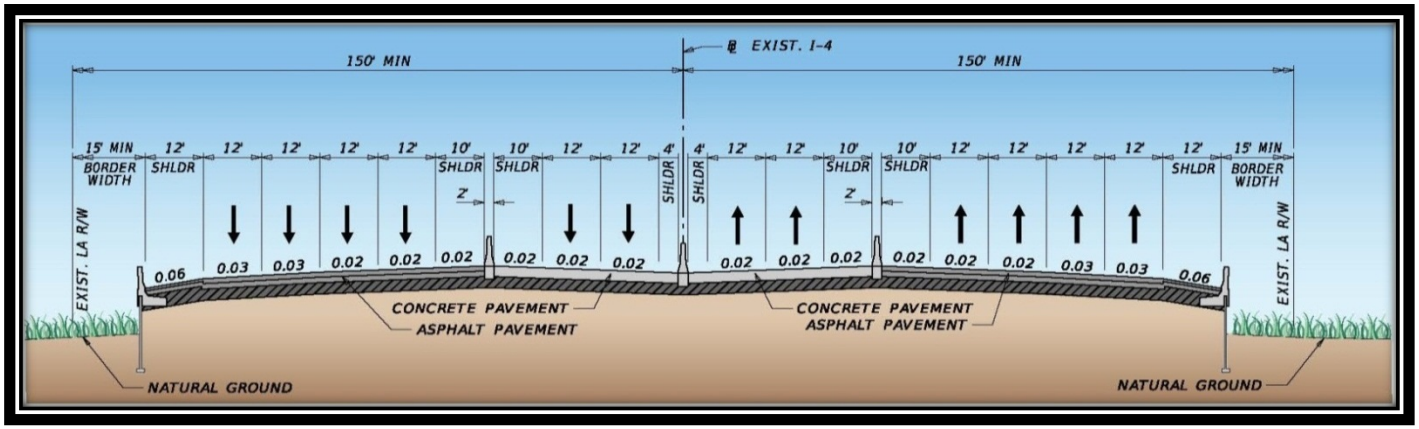
This PD&E update involves revising the original design concept showing 6 GULs + 2 HOV lanes, as recommended in the FEIS for I-4 from SR 528 to SR 472 (FPN No. 242486, 242592 and 242703, August 2002, Record of Decision Pending), to the current proposed design of 6 GUL + 4 EL. . The express lanes are tolled lanes and will extend the full length of the project. The access to/from the tolled lanes will be evaluated as part of this effort to determine if changes are needed from the previously approved concept for access to/from the HOV Lanes. The original I-4 PD&E Studies involved physical separation between the general use lanes and the HOV lanes on I -4, with demand management in the HOV lanes. The original demand management strategy was to control the use of the lanes by requiring a minimum number of occupants per vehicle to maintain an acceptable level of service (Level of Service D).

This update also addresses revising the demand management tool to convert the HOV lanes to tolled express lanes. The express lanes will be separated from the general use travel lanes by two shoulders with a barrier wall between the shoulders. A variable pricing tolling plan is proposed for the express lanes. The tolls will vary by time of day and day of week to maintain acceptable levels of service in the express lanes. The tolls will be collected electronically through existing E-Pass, SunPass and other systems currently in place in the Central Florida area. The conversion to express lanes will maintain the same right of way limits as documented previously and will not change the impacts to the social, natural or physical environment.

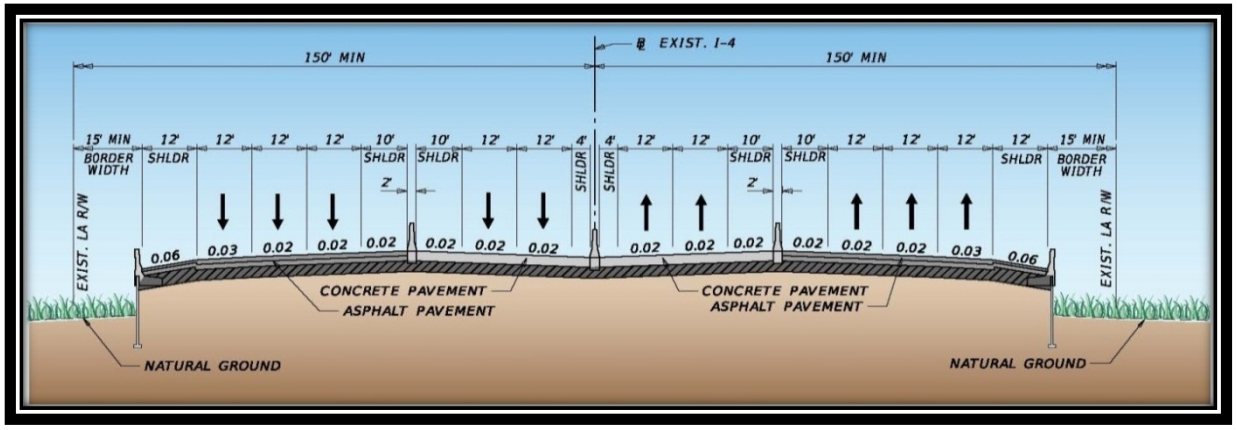
An update to the Systems Access Modification Report (SAMR), prepared in January 2013 is being completed in conjunction with this effort.

The purpose of this traffic noise study is to determine if noise levels will be likely to increase, if noise-sensitive receptors are (or will be) within the project area, and if noise impacts will occur. If future design-year noise levels at noise sensitive sites approach, meet, or exceed the Noise Abatement Criteria established by FHWA in 23 CFR 772 or increase 15 dB(A) over existing noise levels as a direct result of the transportation improvement project, noise abatement must be considered. The format and content of this report are based on the procedures established in Part 2, Chapter 17 “Noise”, of the FDOT PD&E Manual.

The noise analysis guidance provided is based on the regulatory material found in 23 Code of Federal Regulations (CFR), Part 772, and entitled “Procedures for Abatement of Highway Traffic Noise and Construction Noise” for FDOT noise assessments, regardless of funding. This regulation, pursuant to Rule Chapter 335.17, Florida Statutes (F.S.), is available from the FHWA and FDOT.



Typical Section SR 400 (Interstate 4)
MP 4.725 to MP 7.843 (Seminole County)
Station 2079+37.95 to Station 2244+00.00
Design Speed = 70 MPH



Typical Section SR 400 (Interstate 4)
MP 7.843 to MP 14.178 (Seminole County)
Station 2244+00.00 to Station 2578+48.33
Design Speed = 70 MPH

Figure 1.2 – I-4 Segment 3 Proposed Typical Sections

1.3 Existing Facility

The project corridor is located within an urban area of Seminole County, north of the city limits of Orlando. The corridor traverses Longwood, Lake Mary, and Sanford which are smaller cities located outside Orlando. A number of residential communities are located along both sides of the corridor, with a mix of business and professional developments, retail establishments such as hotels, shops, restaurants, churches, and the Seminole Town Center Mall (See Land Use and Habitat Coverage Maps in **Appendix I**). Categorization of land uses under the Florida Land Use Cover Forms and Classification System (FLUCFCS) include the following:

Residential (1000-1300) – This range of land use codes consists of areas containing low, medium, and high density residential housing. These areas are found on both sides of the right-of-way primarily from SR 434 to Lake Mary Boulevard, with a couple of smaller communities between SR 46 and US 17/92. The most densely populated areas are in the Huntington Pointe Subdivision south of Emma Oaks Trail on the eastbound side of I-4 north of the rest area, and the Notting Hill Condominiums south and west of Lake Mary Boulevard.

Commercial and Services (1400) – This land use was observed over a large portion of the project corridor along SR 434, West Lake Mary Boulevard, CR 46A, and SR 46. It includes numerous types of businesses in malls, strip malls and as stand-alone establishments along the corridor. Numerous automobile dealerships are located between CR 46A and just north of SR 46.

Retail Sales and Services (1410) – This land use was observed over a large portion of the project corridor which consisted of office complexes, shopping centers, and other service/retail oriented businesses along the adjacent roadways. Big-box stores like Gander Mountain, Home Depot, Target and Sam's Club are located along the corridor, and numerous other stores and restaurants can be found from Lake Mary Boulevard to SR 46.

Professional Services (1430) – Medical offices, dental offices, veterinary offices, banks, and other professional offices are located throughout the corridor, primarily at the SR 434 interchange and between Lake Mary Boulevard and SR 46.

Tourist Services (1450) – There are a number of hotels located along the corridor, especially along Greenwood Boulevard to the east of I-4, at Lake Mary Boulevard, and at the CR 46a and SR 46 Interchanges.

Institutional (1700) – This land use consists of schools and institutions such as ITT Technical Institute, Wekiva Christian School, and The Remington College of Nursing.

Religious (1720) – This land use consists of places of worship including churches such as the One Church of Markham Woods and Wekiva Prayer Walk, Neighborhood Alliance Church, and Church of the Living Edge.

Improved Pasture (2110) – This category of land use consists of land which has been cleared, tilled, reseeded with specific grass types and periodically improved with brush control and fertilizer application. A large swath of land on the western side of I-4 between the SR 417 interchange and SR 46 has been converted to improved pasture.

Herbaceous- Dry Prairie (3100) – This land use consists of open, dry treeless areas containing grasses, forbs, sedges, rushes and other herbaceous vegetation. This habitat was observed within several areas between SR 434 and EE Williamson Blvd.

Pine Flatwoods (4110) – This land use consists of natural pine flatwoods, and is located along I-4 between SR 46 and US 17/92.

Hardwood-Conifer Mixed (4340) – Vegetation within this land use consisted of oaks, pine, and other species with no clear canopy dominance between hardwoods and conifers. Several patches were observed between SR 434 and Lake Mary Boulevard.

Reservoirs (5300) – This land use designates all retention ponds and other artificial impoundments used for irrigation and flood control along the project corridor and within residential developments.

Cypress (6210) – Dominant vegetation consisted of cypress and was observed at US 17/92 along Lake Monroe and the St. Johns River.

Freshwater Marsh (6410) – Vegetated non-forested wetlands usually defined to low-lying areas or depressions in the landscape can be found adjacent to the roadway in several places between SR 434 and Lake Mary Blvd. and within the interchanges at Lake Mary Boulevard and US 17/92.

Roads and Highways (8140) – This land use designates all major and minor roads throughout the project corridor.

Water Supply Plants (8330) – There is a water supply plant west of the westbound lanes of I-4 north of Lake Mary Boulevard off of International Parkway.

Sewage Treatment Facilities (8340) – There is a sewage treatment facility east of I-4 between SR 434 and EE Williamson Boulevard.

2.0 Methodology

2.1 Noise Metrics

The noise levels documented in this report are based upon the hourly equivalent sound level [Leq(h)]. The Leq(h) represents the steady-state sound level, which contains the same amount of acoustic energy as the actual time-varying sound level over a one hour period. Sound levels are measured and calculated in decibels (dB), which is a unit of measure used to determine sound intensities. Leq(h) is measured on an A-weighted decibel scale (dBA), which is the frequency of sound that is heard by the human ear.

2.2 Traffic Noise Modeling

The Federal Highway Administration's (FHWA) Traffic Noise Modeling (TNM) Version 2.5 computer program was used to determine if noise abatement was warranted, and, if so, considered reasonable and feasible for any noise-sensitive sites. This model is the latest version of TNM and was used as required by 23 CFR 772. The model estimates the acoustic intensity at noise receptor sites based upon the roadway design and is influenced by vehicle speed and type. TNM 2.5 predicted noise levels are reported in dB(A) Leq(h). To validate TNM, potential noise receptor sites were identified throughout the project corridor. Information that was loaded into the noise model to predict existing and projected noise levels includes: roadway geometry; vehicle types, volumes, and speeds; existing barrier and buffer information, propagation path; and, climatic conditions. The results of the validation are shown in Section 4.1.

2.3 Existing Noise Levels

In order to collect data on existing noise levels within the project area, field monitoring was conducted by four noise monitoring specialists in accordance with the FHWA's guidance document "Measurement of Highway-Related Noise." on

July 25, 2013. Quest™ Model M-28 Noise Logging Dosimeters were used to collect sound levels at the location. The dosimeter was calibrated at the site just prior to the onset of sampling to ensure accuracy and mounted on a tripod at a height of approximately 5 feet which is standard and equivalent to the average height of the human ear. Noise readings were taken 3 separate times at 15-minute intervals during both the morning (10:00 – 11:00) and afternoon (1:00 – 2:00), periods of non-peak traffic activity along the project corridor.

The noise validation location was on the east side of I-4 at the right-of-way line adjacent to the power sub-station approximately 1 mile south of the Lake Mary Boulevard Interchange. The location provided clear site lines to observe traffic on both sides of I-4. The right-of-way adjacent to I-4 is mowed grass, with some planting and landscape vegetation in areas with slopes leading up to the chain link fence.

In order to gauge traffic volumes during the monitoring periods, traffic counts of the number and type of vehicles traveling in each direction at the monitoring station were recorded. Traffic counts were taken simultaneously during each of the 3 noise recording events. Vehicles were categorized as either 1) passenger cars or light trucks, 2) medium trucks (box or panel trucks of one double-axle) or 3) heavy trucks (two or more double-axles) and motorcycles. Field notes were collected to record general weather and environmental conditions, and all unusual or otherwise noteworthy sound events. Traffic speeds for passing vehicles were determined by the use of a daily calibrated radar gun and recording the resulting speeds during timed monitoring runs.

Peak hourly traffic volumes were used in the modeling effort and were based on the design traffic analysis conducted for this project. The speeds used in the TNM modeling program for the model validation were based on the average observed speeds of 65 mph for cars and trucks during the data collection.

Design files supplied by HNTB were used to establish the input parameters for modeling the roadway, including vertical and horizontal geometry and ground elevations.

2.4 Noise Abatement Criteria

The FHWA established Noise Abatement Criteria (NAC) for seven land use categories. If predicted noise levels approach or exceed the NAC levels, or a substantial noise increase is predicted, noise abatement must be considered. A substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 dB(A) or more by the project. FDOT defines ‘approach’ as within 1.0 dB(A) of the FHWA criteria.

Noise sensitive receptor sites include areas where frequent exterior human use occurs and where a reduced noise level would be beneficial. Included are lands which require quiet (Activity Category A), residential areas (Activity Category B), a variety of non-residential land uses such as parks, schools, places of worship, and medical facilities (Activity Category C), and commercial properties with areas of exterior use such as restaurants, hotels, and other places of business (Activity Category E). Activity Category D includes noise sensitive sites that have interior uses but no exterior activities such as hospitals, libraries, recording studios, television studios, and public meeting rooms. Activity Categories F (industrial and retail facilities) and G (undeveloped lands) have no exterior uses and are not considered noise sensitive and thus do not have any noise abatement criteria (see Table 1 - Noise Abatement Criteria [NAC]). The land uses occurring within the project study area were described previously in Section 1.3.

TABLE 1 – NOISE ABATEMENT CRITERIA

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

Part 2, Chapter 17 of PD&E Manual (5/24/2011) (Based on Table 1 of 23 CFR Part 772)

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

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

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

For reference, the relationship between typical noise levels and common indoor/outdoor activities is provided in **Table 2**.

Table 2 – Typical Noise Levels

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

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

3.0 Noise-Sensitive Sites

A noise-sensitive receptor is defined as "any property (owner occupied, rented, or leased) where frequent exterior human use occurs". The project was broken up into geographic noise sensitive areas to facilitate the analysis of traffic related noise impacts. Fifteen (15) noise sensitive areas that have the potential to be impacted by the project were identified (**Figure 3.1**). The potentially impacted noise-sensitive sites identified for this segment consist of single family residences, hotels, multi-family residences, churches, television broadcast studios, medical offices, recreation areas, and county trails. The Seminole County Building Department was contacted for all approved building permits within the developments along the project corridor. The properties identified during this search were all modeled as existing receptors in the TNM runs. The noise sensitive areas within the study area present several different types of sites to model within TNM: multi-family buildings with external balconies were modeled using several points to represent similar receptors at different locations in the building, while single family residences were modeled using a point to represent each site. Hotels with no external balconies were represented only by areas of common outdoor usage (pools, outdoor recreation areas). Multi-story buildings were modeled using representative points on the ground floor, first floor, and second floor where appropriate. First floor receptor sites were modeled 5 feet above ground level, while second and third story receptors were modeled at 15 and 25 feet above ground level. There are no additional noise-sensitive sites such as golf courses, libraries, or other areas that require quiet conditions within the study area. Following is a description of each Noise Sensitive Area:

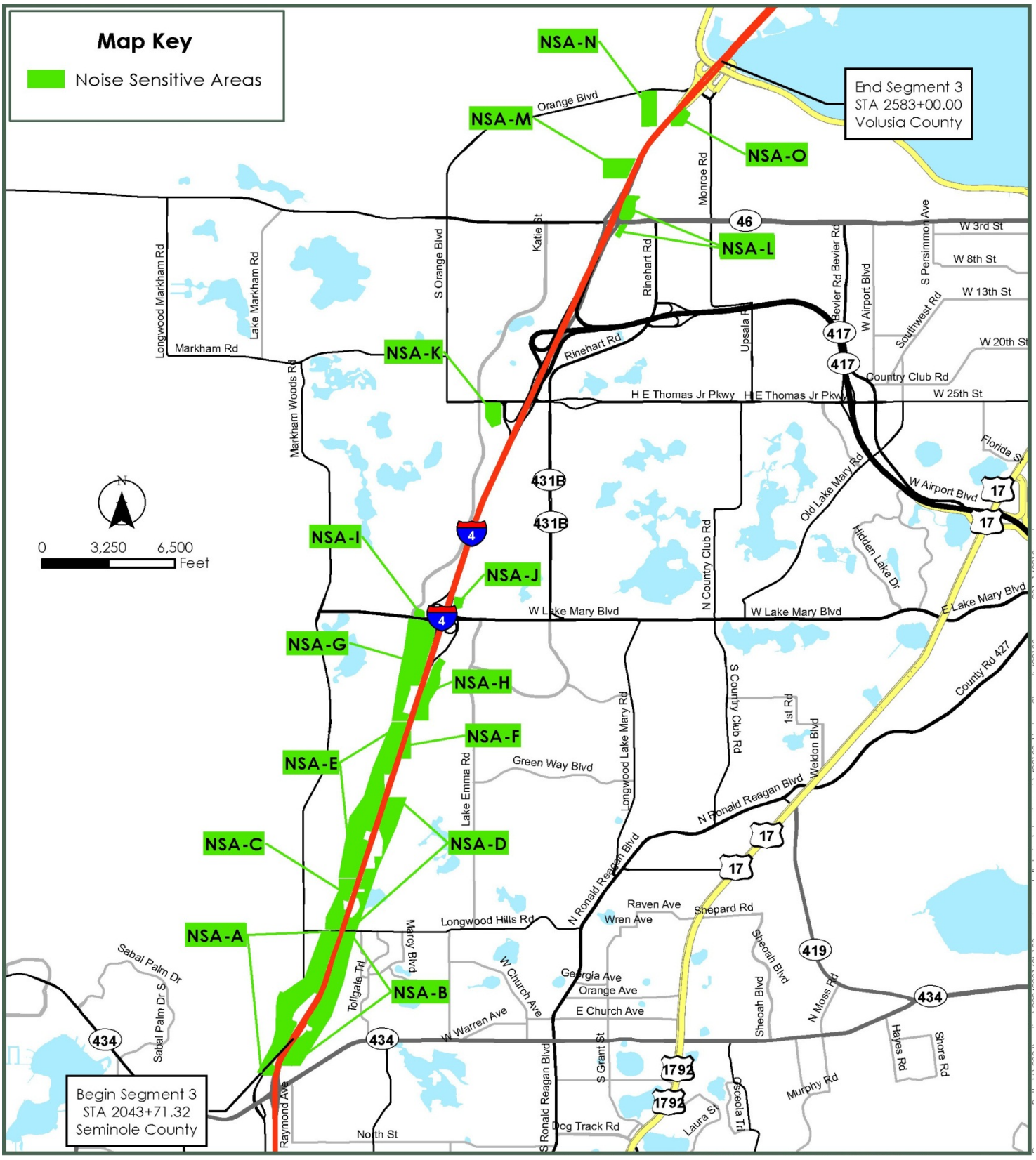


Figure 3.1 – Noise Sensitive Areas

Noise Sensitive Area A

This area is located west of I-4 between SR 434 and E.E. Williamson Road. This noise sensitive area includes the Seminole Wekiva Trail, single family homes, the Neighborhood Alliance Church, Markham Woods Church, and Church on the Living Edge. Although portions of this area are within the limits of the project area, this area was included in the noise study conducted for the I-4 Ultimate project (Draft Noise Study Report Addendum for SR 400 (I-4) Ultimate, July 2013) and therefore not re-analyzed in this study.

Noise Sensitive Area B

This area is located east of I-4 between SR 434 and E.E. Williamson Road. This noise sensitive area includes the Springwood Village Condominiums, single family homes, and a private park. Although portions of this area are within the limits of the project area, this area was included in the noise study conducted for the I-4 Ultimate project (Draft Noise Study Report Addendum for SR 400 (I-4) Ultimate, July 2013) and therefore not re-analyzed in this study. This area also includes two noise barriers recommended in the original PD&E study that were subsequently constructed under a separate project. The analysis conducted for the I-4 Ultimate addressed potential noise impacts in this area resulting in the addition of a 14-foot barrier mounted sound wall to replace the 60 foot section of existing sound wall being impacted by the project.

Noise Sensitive Area C

This area is located west of I-4 and north of E.E. Williamson Road to Dixon Road. This noise sensitive area includes single family homes in Markham Meadows, One Church Markham Woods Christian Academy, and the Wekiva Prayer Walk.

Noise Sensitive Area D

This area is located east of I-4 between E.E. Williamson and Emma Oaks Trail. This noise sensitive area includes single family homes in the North Cove, Northridge Point, Bolling Farms, and two private parks.

Noise Sensitive Area E

This area is located west of I-4 from Dixon Road to south of Long Pond Road. This noise sensitive area is comprised of single family homes in Mandarin Estates.

Noise Sensitive Area F

This area is located east of I-4 along Skyline Drive. This noise sensitive area is comprised of FOX 35 and the Good Life television broadcasting companies.

Noise Sensitive Area G

This area is located west of I-4 between Long Pond Road and Lake Mary Boulevard. This noise sensitive area includes single family homes in Robinwood, Oakmonte Village senior living facility, ITT Technical Institute, Notting Hill Apartments, Hyatt Place hotel, and various commercial and medical offices.

Noise Sensitive Area H

This area is located east of I-4 north of Sand Pond Road. This noise sensitive area includes commercial office buildings, Filutowski Cataract and Lasik Institute, Candlewood Suites, La Quinta Inn, and two Extended Stay America hotels.

Noise Sensitive Area J

This area is located east of I-4 north of Lake Mary Boulevard along Currency Circle. This noise sensitive area is comprised of the Homewood Suites and Hilton Garden Inn hotels.

Noise Sensitive Area K

This area is located west of I-4 south of CR 46A (H.E. Thomas Jr. Parkway). This noise sensitive area is comprised of the Residence Inn by Marriott and Orlando Marriott Lake Mary hotels.

Noise Sensitive Area L

This area is located east of I-4 to the north and south of SR 46. This noise sensitive area includes Springhill Suites, restaurants and gasoline service stations, the Royal Inn, and the Comfort Inn.

Noise Sensitive Area M

This area is located west of I-4 north of SR 46 along North Oregon Street. This noise sensitive area is Silverleaf, a single family home residential neighborhood.

Noise Sensitive Area N

This area is located west of I-4 to the south of Orange Boulevard. This noise sensitive area is comprised of single family homes.

Noise Sensitive Area O

This area is located east of I-4 along North Elder Road and School Street. This noise sensitive area is comprised of single family homes.

4.0 Predicted Noise Levels

4.1 Model Validation and Background Noise Levels

The TNM model was validated at the field sampling location along eastbound I-4 near the power sub-station. Field recorded noise levels varied slightly from TNM predictions. Contributing noise levels from sources other than roadway-generated noise along I-4 were not input into the TNM. Other noise sources include aircraft approaching/departing Sanford-Orlando International Airport, lawn equipment, and traffic-generated noise on adjacent surface roads. As seen in **Table 3**, TNM Version 2.5 predictions were within 3 decibels (dBA) of the field recorded noise levels. Therefore, the model was validated.

Table 3. TNM Validation Results (dBA)

Field Recording Station	Field Recorded	TNM Predicted	Δ	Threshold	Validate
Location 1 AM	70.5	73.5	3	3	YES
Location 1 PM	70.8	73.5	2.7	3	YES

4.2 Future Noise Impact Analysis

Future noise was modeled for the proposed project at potential noise receptor areas for the future build conditions in the design year 2040 (TNM results are included in **Appendix III**). Traffic data utilized was based upon Level of Service C as obtained from the generalized tables of FDOT's Level of Service Handbook (December 2012) and shown in Table 4. Based upon the design traffic models for the design year, I-4 is expected to operate at a low level of service (D or E), which precipitated the use of LOS C for the TNM model.

Note: trucks will not be permitted in the Express Lanes, and for the purpose of the TNM model, trucks were only spread into the outside middle and auxiliary outside lanes for General Use.

Table 4.
Traffic Data for TNM Modeling

Roadway Segment	Level of Service "C" Volume	Cars	Medium Trucks	Heavy Trucks	Speed
Auxiliary Outside	6,009	1429	49	98	65
General Use Outside Middle		1429	49	97	65
General Use Inside Middle		1429	0	0	65
General Use Inside		1429	0	0	65
Express Outside	3,320	1660	0	0	65
Express Inside		1660	0	0	65

Noise Sensitive Area A

This area consists of Activity Categories B and C and was included in the I-4 Ultimate Noise Study conducted for the project to the west of this study and therefore was not re-analyzed in this study. This analysis identified 3 sites that would be impacted by the project.

Noise Sensitive Area B

This area is comprised of Activity Categories B, C, and D. This area was included in the I-4 Ultimate Noise Study and therefore was not re-analyzed in this study. This area includes two existing noise barriers. 12 sites were predicted to be impacted by the project and the removal of 60 feet of the existing 18 foot ground mounted barrier along the right-of-way. The results of that noise study indicate that a new 14-foot barrier mounted sound wall will be constructed along the outside shoulder of I-4 eastbound from Station 734+35 to Station 738+85. This 450 foot long barrier was recommended due to the project's need to remove 60 feet of the existing 18-foot sound barrier located near the right-of-way. No additional noise impacts for this area were identified in the report.

Noise Sensitive Area C

This area is representative of Activity Categories B, C, and D and has 10 sites predicted to be impacted.

Noise Sensitive Area D

This area is representative of Activity Categories B and C and has 51 sites predicted to be impacted.

Noise Sensitive Area E

This area is representative of Activity Category B and has 40 sites predicted to be impacted.

Noise Sensitive Area F

This area is representative of Activity Categories C and D and has 2 sites predicted to be impacted.

Noise Sensitive Area G

This area is representative of Activity Categories B, C, D, and E and has 12 sites predicted to be impacted.

Noise Sensitive Area H

This area is representative of Activity Categories C, D, and E and has 5 sites predicted to be impacted.

Noise Sensitive Area I

This area is representative of Activity Categories C and E with no sites predicted to be impacted.

Noise Sensitive Area J

This area is representative of Activity Category E with no sites predicted to be impacted.

Noise Sensitive Area K

This area is representative of Activity Category E with no sites predicted to be impacted

Noise Sensitive Area L

This area is representative of Activity Category E and has 2 sites predicted to be impacted.

Noise Sensitive Area M

This area is representative of Activity Category C with no sites predicted to be impacted.

Noise Sensitive Area N

This area is representative of Activity Category B and has 1 site predicted to be impacted.

Noise Sensitive Area O

This area is representative of Activity Category B and has 2 sites predicted to be impacted.

Table 5 shows the results of the TNM analysis of noise sensitive sites in locations most likely to be impacted and those predicted to exceed the 66 dBA threshold in the future build scenarios.

Table 5

Noise Sensitive Areas

Noise Sensitive Area	Activity Category	Number of Impacted Sites
A	**B, C**	**3**
B	**B, C, D**	**12**
C	**B, C, D**	**10**
D	**B, C**	**51**
E	**B**	**40**
F	**C, D**	**2**
G	**B, C, D, E**	**12**
H	**C, D, E**	**5**
I	**C, E**	**0**
J	**E**	**0**
K	**E**	**0**
L	**E**	**2**
M	**C**	**0**
N	**B**	**1**
O	**B**	**2**

5.0 Noise Abatement

The FHWA requires that various noise abatement measures be considered for a proposed project when the predicted noise levels exceed noise abatement criteria, or, will increase substantially over existing levels. If none of the potential receptors exceed the abatement criteria or show a substantial increase over existing levels, noise abatement will not be required for the project. The most common and effective noise abatement measure is the construction of a noise barrier. As noted in 23 CFR 772.13(c)(1), the FHWA requires that, at a minimum, FDOT shall consider noise abatement in the form of a noise barrier. FHWA also considers the following activities as acceptable noise abatement measures.

5.1 Alignment Selection

Alignment selection involves the orientation of the project location in such a way as to minimize impacts and costs. For noise abatement, alignment selection is primarily a matter of (a) positioning the roadway at a sufficient distance from the noise-sensitive sites, and, (b) positioning the roadway at a location where other noise abatement techniques such as a noise abatement wall could be implemented. This project is constrained due to it being a widening of an existing roadway and cannot truly alter the existing alignment without substantial changes to the surrounding land uses.

5.2 Property Acquisition

Property acquisition for buffer zones alone is considered to be costly. Buffer zones can provide relief from noise impacts by creating added distance between the noise generator and the noise receptor. Methods of applying land use controls to maintain and establish buffered areas through zoning may be established by local jurisdiction. No property acquisition for noise abatement is proposed for this project.

5.3 Land Use Controls

One of the most effective noise abatement measures is the proper implementation of land use controls to minimize future noise impacts. Local jurisdictions with zoning control can implement policies to limit the growth on noise-sensitive land

uses adjacent to the roadway. Development planned for the study area includes additional residential and commercial areas in this heavily developed urban area. Therefore, no potential land use controls are available to assist in noise abatement in this corridor.

5.4 Traffic Management

Traffic management measures that limit vehicle type, speed, volume, and time of operations can be effective noise abatement measures. Such measures may be considered in the future if noise levels resulting from the proposed project approach or exceed the abatement criteria. No traffic management measures will be utilized as I-4 is a heavily traveled interstate highway and the only direct north-south interstate highway through the greater Orlando area.

5.5 Noise Barriers

Noise barriers reduce noise levels by blocking the sound path between a roadway and noise-sensitive sites. To be effective, barriers have to be continuous, sufficiently long and tall, shield a reasonably sized impacted area or a number of people, and provide appreciable noise level reduction. Noise barriers are to be modeled at locations where noise increases exceeded abatement criteria during the design year, and evaluated for feasibility and reasonableness. A wide range of factors are used to evaluate noise abatement measures as reasonable and feasible. Feasibility deals with engineering considerations such as the ability to construct a barrier using standard construction techniques and methods to provide a reduction of at least 5 dBA to an impacted receptor site. Additionally, in order for a noise barrier to be considered acoustically feasible, at least two impacted receptor sites must achieve a 5dBA reduction or greater.

When a noise abatement measure such as a sound barrier is determined to be feasible, the reasonableness is then evaluated. This implies 'common sense' and 'good judgment' were applied in a decision related to noise abatement. Three reasonableness factors must be collectively achieved in order for the noise abatement measure to be deemed reasonable: the achievement of the noise reduction design goal (7dBA per FDOT criteria), the cost effectiveness of the noise abatement measure, and the consideration of the viewpoints of the benefited property owners and residents. When examining the cost reasonableness of a modeled noise barrier design for a residential area, the upper limit of $42,000 per benefited receptor has been set by FDOT using the standard construction cost of $30.00 per square foot where approximately 1,400 square feet of noise barrier is provided per benefited receptor. A benefited receptor is defined as a noise sensitive site that will obtain a minimum of 5 dBA of noise reduction as a result of a specific noise abatement measure whether or not they are predicted as having a noise impact. Only benefited receptor sites can be included in the calculation of a barrier being cost reasonable.

Several Noise Barriers were deemed reasonable and feasible during the initial PD&E study for this segment. Barriers were constructed under a separate project at two locations within Noise Sensitive Area B, with an additional area of barrier deemed reasonable and feasible during the Noise Study for the I-4 Ultimate within Area B. Additional noise barriers were modeled for Noise Sensitive Areas with multiple impacted sites along the corridor during this analysis as described in the following section of the report. For each area, barriers were modeled as ground-mounted at the edge of the right-of-way, and as barrier-mounted along the edge of the roadway shoulder. For the ground-mounted barriers, barrier heights were analyzed from 16 feet to 22 feet tall, while the heights of the shoulder mounted barriers varied from 8 feet to 14 feet. The optimal barrier design for each analysis (**See Barrier Analysis Maps in Appendix II, TNM Barrier Analysis Runs in Appendix III)** is described in the following section of the report and detailed in **Table 6**.

Noise Sensitive Area A

No noise barriers were analyzed for this area during this study as it was analyzed in the I-4 Ultimate Noise Study in 2013 and had no barriers recommended as reasonable and feasible.

Noise Sensitive Area B

No noise barriers were analyzed for this area during this study as it was analyzed in the I-4 Ultimate Noise Study in 2013 which resulted in the removal of 60 feet of an existing ground mounted barrier and the construction of a 14 foot tall 450-foot long barrier mounted wall between stations 734+35 and 738+85. No additional barriers were recommended as reasonable and feasible, and the remaining existing ground-mounted walls will stay in place.

Noise Sensitive Area C

Noise barriers were analyzed for the impacted sites within this area. Both ground-mounted walls located adjacent to the right-of-way and barrier-mounted walls located at the edge of the shoulder were modeled. The best-case outcome for the ground-mounted wall was barrier BW – C1, with a 22-foot high, 2,559 foot long wall beginning just north of EE Williamson and continuing until Dixon Street just beyond the One Church of Markham Woods Christian Academy. This barrier resulted in 13 receptors receiving at least a 5d(B) reduction (with at least one receiving greater than 7d(B) to meet the design goal) at a total cost of $1,757,593 (using the unit cost of $30.00 per square foot), for an average cost of $135,199 per benefited receptor. The best-case outcome for the barrier-mounted wall was barrier BW – C2, with a 14-foot tall, 2,559 foot long wall with the same starting and ending locations as the ground-mounted wall. This barrier results in 9 receptors receiving at least a 5 d(B) reduction (with at least one receiving greater than 7d(B) to meet the design goal) at a total cost of $1,116,866, for an average cost of $124,096 per benefited receptor. Both of these wall options are above the $42,000 cost per benefited receptor and are therefore not cost reasonable.

Noise Sensitive Area D

Noise barriers were analyzed for the impacted sites within this area. Both ground-mounted and barrier-mounted walls were modeled. Two distinct areas were modeled for this area: Area 1 is the residential subdivisions from north of EE Williamson Road to just south of the eastbound rest area, and Area 2 is the residential subdivision from north of the rest area to Emma Oaks Drive.

For Area 1, the best-case outcome for the ground-mounted walls was barrier BW – D3, with a 22-foot high, 1,767 foot long wall beginning just north of EE Williamson. This barrier resulted in 11 receptors receiving at least a 5d(B) reduction (with at least one receiving greater than 7d(B) to meet the design goal) at a total cost of $1,166,114, for an average cost of $106,010 per benefited receptor. The best-case outcome for the barrier-mounted wall was barrier BW – D5, with a 14-foot tall, 3,231 foot long wall beginning just north of EE Williamson and ending at Northridge Drive. This barrier resulted in 18 receptors receiving at least a 5 d(B) reduction (with at least one receiving greater than 7d(B) to meet the design goal) at a total cost of $1,357,061, for an average cost of $75,392 per benefited receptor. Both of these wall options exceed the $42,000 cost per benefited receptor threshold and are therefore not cost reasonable.

For Area 2, the best-case outcome for the ground-mounted walls was barrier BW – D6, with a 12-foot high, 1,802 foot long wall beginning just north of the eastbound rest area on ramp continuing to just past Pine Bay Drive. This barrier resulted in 25 receptors with at least a 5d(B) reduction (with at least one receiving greater than 7d(B) to meet the design goal) at a total cost of $648,709, for an average cost of $25,948 per benefited receptor. The best-case outcome for the barrier-mounted wall was barrier BW – D7, with a 10-foot tall, 1,746 long wall beginning north of the eastbound rest area on-ramp

continuing to just past Pine Bay Drive. This barrier resulted in 24 receptors receiving at least a 5d(B) reduction (with at least one receiving greater than 7d(B) to meet the design goal) at a total cost $523,857, for an average cost of $21,827 per benefited receptor. Because this residential area is located at a lower elevation than the adjacent roadway, the 10-foot wall passes the Line-of-Sight test on TNM 2.5. Both of these wall options are below the $42,000 cost per benefited receptor threshold and are therefore cost reasonable.

Noise Sensitive Area E

Noise barriers were analyzed for impacted sites within this area. Both ground-mounted and barrier-mounted walls were modeled. The best-case outcome for the ground-mounted barrier was barrier BW – E2, with a 16-foot high, 5,617 foot long wall beginning south of East Crowley Circle and continuing to Long Pond Road. This barrier resulted in 45 receptors receiving at least a 5d(B) reduction (with at least one receiving greater than 7d(B) to meet the design goal) at a total cost of $2,696,124, for an average cost of $59,914 per benefited receptor. The best-case outcome for the barrier-mounted wall was barrier BW – E4, with a 14-foot tall, 5,871 foot long wall beginning south of East Crowley Circle and continuing to Long Pond Road. This barrier resulted in 32 receptors with at least a 5 d(B) reduction (with at least one receiving greater than 7d(B) to meet the design goal) at a total cost of $2,465,953, for an average cost of $77,061 per benefited receptor. Both of these wall options exceed the $42,000 cost per benefited receptor threshold and are therefore not cost reasonable.

Noise Sensitive Area F

This noise sensitive area has two sites: FOX 35 and Good Life Television that are impacted. Noise barriers were modeled for this area with both the ground-mounted and barrier-mounted walls being analyzed. Barrier BW – F2, the 14-foot tall 1,243 foot long barrier-mounted wall provided a reduction of at least 7d(B) at one receptor and a 5 d(B) reduction at both receptors. The total cost was $522,091 with an average cost of $261,045 per benefited receptor. The best-case outcome for ground mounted barriers was for barrier BW – F1, a 16 foot tall, 1,240 foot long barrier that begins south of the FOX 35 property line and continues to the end of the Good Life Television property line. This barrier would cost $595,074 for an average cost of $297,537 per benefited receptor, which is well above the $42,000 threshold and therefore not cost reasonable.

Noise Sensitive Area G

Noise barriers were analyzed for the impacted sites within this area. An existing 14-foot barrier located along the property line of the residential subdivision north of Long Pond Road to just north of Fentonshire Place is currently providing noise abatement to the residences located here. It is anticipated that the roadway design and right-of-way requirements would not impact this wall. When the analysis of the future design and traffic is performed, this barrier would provide a 5d(B) reduction to 8 receptors, although no receptor achieves a reduction of at least 7 d(B), and four receptors would receive a noise impact. In order to achieve the design goal of at least one receptor at greater than 7d(B), the barrier (shown as barrier BW – G1 in **Table 6**) would need to be 18-feet tall and would then provide at least a 5 d(B) reduction to 11 receptors. This 1,842 foot long wall would cost $994,611 at an average cost of $90,419 per benefited receptor (not including the demolition of the existing barrier). This exceeds the $42,000 threshold per benefited receptor, and also would not be cost reasonable in order to provide a benefit to only 3 more receptors than the existing wall. An additional barrier was modeled adjacent to the Oakmonte Village of Lake Mary. This senior living facility has an existing berm constructed between the facility and I-4 currently providing some noise abatement. A 14-foot tall, 1,216 foot long barrier-mounted wall (BW – G2) was modeled and provided a 5 d(B) reduction to three receptors. This wall would cost a total of $510,873, for an average of $170,291 per benefited receptor which is above the $42,000 threshold and is not cost reasonable.

Noise Sensitive Area H

Noise barriers were modeled for this area that has two impacted receptors; the Candlewood Suites Hotel pool and the Filutowski Cataract and Laser Institute. Ground-mounted barriers were analyzed along the right-of-way, with the best-case result being barrier BW – H1, with a 12-foot tall, 1,751 foot long barrier beginning to the south of the Candlewood Suites property line and continuing until just north of the Filutowski Institute property line. This barrier results in both receptors receiving a 5 d(B) reduction with at least one receiving a 7d(B) reduction at a total cost of $630,231 dollars for an average cost of $315,115 per benefited receptor. Barrier BW – H2, a 1,751 foot long shoulder-mounted barrier was also modeled, with a 14-foot tall wall reaching the similar results. The total cost of the barrier was $735,270 for an average cost of $367,635 per benefited receptor. As the cost for these barriers is above the $42,000 threshold, neither option is cost reasonable.

Noise Sensitive Area I

No noise barriers were modeled for this area as no receptors were predicted to be impacted by the project.

Noise Sensitive Area J

No noise barriers were modeled for this area as no receptors were predicted to be impacted by the project.

Noise Sensitive Area K

No noise barriers were modeled for this area as no receptors were predicted to be impacted by the project.

Noise Sensitive Area L

As these properties are located below the roadway adjacent to the on-ramp for I-4 eastbound at SR 46, a ground-mounted barrier is not feasible at this location. A shoulder-mounted barrier was modeled along the on-ramp from just north of SR 46 to just north of the Comfort Inn property line. Barrier BW – L1, with a 12-foot tall, 1,372 foot long barrier results in a 5 d(B) reduction at 3 receptors, with at least one receptor receiving at least a 7d(B) reduction. This barrier has a total cost of $493,781 for an average of $164,593 per benefited receptor. As the cost exceeds the $42,000 threshold, this barrier is not cost reasonable.

Noise Sensitive Area M

This noise sensitive area contains the currently under construction residential neighborhood called Silverleaf. This development has privacy wall constructed along the southern side and the eastern side (which is adjacent to I-4) that varies from 6 feet tall at the ends to being 14 feet tall along the portions closest to I-4 (except a small window where a billboard exists which remains 6 feet). This wall is currently providing noise abatement to the receptors within the subdivision. The design plans and right-of-way needs for this area do not appear to impact this wall. When the proposed design is modeled with this wall, no noise related impacts are predicted, so there is no need to analyze additional barriers at this location.

Noise Sensitive Area N

This noise sensitive area contains a residential area with single family homes, though only a single residence is expected to receive a noise impact. Noise barriers were modeled for this area, but no design achieved a reduction of at least 5 d(B) at any one receptor, nor did any design achieve at least a 7 d(B) reduction at one receptor. Therefore, barriers are not feasible at this location.

Noise Sensitive Area O

Sound barriers were analyzed for this noise sensitive area with predicted impacts. Barrier BW – O1, with a 20-foot tall, 1,202 foot long ground-mounted wall was modeled along the edge of the right-of-way resulting in 3 receptors receiving at least a 5d(B) reduction with at least one receptor gaining at least 7 d(B) in reduction. This barrier had a total cost of $721,460 for an average cost of $240,487 per benefited receptor, which exceeds the $42,000 threshold and therefore this barrier is not cost reasonable. Barrier BW – O2, with a 14-foot tall, 1,194 foot long barrier-mounted wall was modeled but did not result in at least one receptors with a 7 d(B) reduction, though at least 1 received a 5 d(B) reduction.

6.0 Conclusions

Based upon the analysis conducted, one noise barrier is recommended for further consideration and public input for the project: For the Pine Bay Drive Subdivision within Noise Sensitive Area D, either a 12-foot tall, 1,802 foot long ground-mounted wall (Barrier BW – D6), or a 10-foot tall, 1,746 foot long barrier-mounted wall (Barrier BW – D7) provide the appropriate noise abatement and meet FDOT requirements.

Table 6 – Barrier Analysis													
Noise Sensitive Locations	**Barrier Type**	**Barrier Name**	**Barrier Location**	**Height (feet)**	**Length (feet)**	**# of Impacted Receptors**	**# of Impacted Benefited Receptors**	**# of Non-Impacted Benefited Receptors**	**Total # of Benefited Receptors**	**Avg. Noise Reduction (dBA)**	**Cost ($30.00 per square foot)**	**Average Cost per Benefited Receptor**	**Comment**
Area A	none												analyzed in I-4 Ultimate NSR
Area B	none												analyzed in I-4 Ultimate NSR
Area C	ground	BW – C1	I-4 WB ROW	22	2,559	10	7	6	13	8.1	$1,757,593	$135,199	not cost reasonable
	ground	BW – C1	I-4 WB ROW	20	2,559	10	7	3	10	8.4	$1,597,812	$177,667	not cost reasonable
	ground	BW – C1	I-4 WB ROW	18	2,559	10	6	3	9	8.0	$1,438,030	$159,781	not cost reasonable
	barrier-mounted	BW – C2	I-4 WB on barrier (typical) wall	14	2,559	10	7	2	9	6.6	$1,116,866	$124,096	not cost reasonable
Area D	ground	BW – D1	Area 1 - I-4 EB ROW	22	3,370	12	10	9	19	7.0	$2,223,800	$117,042	not cost reasonable
	ground	BW – D1	Area 1 – I-4 EB ROW	20	3,370	12	10	7	17	6.8	$2,021,637	$118,919	not cost reasonable
	ground	BW – D1	Area 1 – I-4 EB ROW	18	3,370	12	10	5	15	6.6	$1,819,473	$121,298	not cost reasonable
	ground	BW – D2	Area 1 – I-4 EB ROW 2 Barriers with gap at Lake Grace	22	1,552 962	12	10	4	14	7.3	$1,658,697	$118,478	not cost reasonable
	ground	BW – D3	Area 1 – I-4 EB ROW	22	1,767	12	7	4	11	6.8	$1,166,114	$106,010	not cost reasonable
	ground	BW – D4	Area 1 – I-4 EB ROW	22	1,603	12	4	4	8	6.4	$1,057,687	$132,210	not cost reasonable
	barrier-mounted	BW – D5	Area 1 - I-4 EB on barrier (typical) wall	14	3,231	15	8	10	18	6.5	$1,357,061	$75,392	not cost reasonable
	ground	BW – D6	Area 2 – I-4 EB ROW	22	1,802	27	27	0	27	8.8	$1,189,300	$44,098	not cost reasonable
	ground	**BW – D6**	**Area 2 – I-4 EB ROW**	**20**	**1,802**	**36**	**27**	**0**	**27**	**8.5**	**$1,081,182**	**$40,044**	**Cost reasonable**
	ground	**BW – D6**	**Area 2 – I-4 EB ROW**	**18**	**1,802**	**36**	**26**	**0**	**26**	**8.3**	**$973,064**	**$37,425**	**Cost reasonable**
	ground	**BW – D6**	**Area 2 – I-4 EB ROW**	**16**	**1,802**	**36**	**26**	**0**	**26**	**7.9**	**$864,945**	**$33,267**	**Cost reasonable**
	ground	**BW – D6**	**Area 2 – I-4 EB ROW**	**14**	**1,802**	**36**	**25**	**0**	**25**	**7.6**	**$756,827**	**$30,273**	**Cost reasonable**
	ground	**BW – D6**	**Area 2 - I-4 EB ROW**	**12**	**1,802**	**36**	**25**	**0**	**25**	**7.2**	**$648,709**	**$25,948**	**Cost Reasonable**

Noise Sensitive Locations	Barrier Type	Barrier Name	Barrier Location	Height (feet)	Length (Feet)	# of Impacted Receptors	# of Impacted Benefited Receptors	# of Non-Impacted Benefited Receptors	Total # of Benefited Receptors	Avg. Noise Reduction (dBA)	Cost ($30.00 per square foot)	Average Cost per Benefited Receptor	Comment
Area D	**barrier-mounted**	**BW – D7**	**Area 2 – I-4 EB on barrier (typical) wall**	**14**	**1,746**	**36**	**25**	**0**	**25**	**8.1**	**$733,400**	**$29,336**	**Cost Reasonable**
	barrier-mounted	**BW – D7**	**Area 2 – I-4 EB on barrier (typical) wall**	**12**	**1,746**	**36**	**25**	**0**	**25**	**7.5**	**$628,628**	**$25,145**	**Cost Reasonable**
	barrier-mounted	**BW – D7**	**Area 2 – I-4 EB on barrier (typical) wall**	**10**	**1,746**	**36**	**24**	**0**	**24**	**6.6**	**$523,857**	**$21,827**	**Cost Reasonable**
Area E	ground	BW – E1	I-4 WB ROW	22	8,024	40	35	26	61	8.9	$5,295,824	$86,817	not cost reasonable
	ground	BW – E1	I-4 WB ROW	20	8,024	40	35	23	58	8.8	$4,814,386	$83,006	not cost reasonable
	ground	BW – E1	I-4 WB ROW	18	8,024	40	35	17	52	8.7	$4,332,947	$83,326	not cost reasonable
	ground	BW – E1	I-4 WB ROW	16	8,024	40	34	13	47	8.6	$3,851,508	$81,947	not cost reasonable
	ground	BW – E2	I-4 WB ROW	22	5,617	40	35	21	56	9.1	$3,707,171	$66,199	not cost reasonable
	ground	BW – E2	I-4 WB ROW	20	5,617	40	34	19	53	8.9	$3,370,156	$63,588	not cost reasonable
	ground	BW – E2	I-4 WB ROW	18	5,617	40	34	14	48	8.8	$3,033,140	$63,190	not cost reasonable
	ground	BW – E2	I-4 WB ROW	16	5,617	40	34	11	45	8.5	$2,696,124	$59,914	not cost reasonable
	barrier-mounted	BW – E3	I-4 WB on barrier (typical) wall	14	5,872	40	16	1	17	6.3	$2,466,394	$145,082	not cost reasonable
	barrier-mounted	BW – E4	I-4 WB on barrier (typical) wall	14	5,871	40	29	3	32	7.2	$2,465,953	$77,061	not cost reasonable
	barrier-mounted	BW – E5	I-4 WB on barrier (typical) wall	14	7,828	40	29	3	32	7.2	$3,287,729	$102,741	not cost reasonable
	barrier-mounted	BW – E6	I-4 WB on barrier (typical) wall	14	4,696	40	9	0	9	6.7	$1,972,281	$219,142	not cost reasonable
Area F	ground	BW – F1	I-4 EB ROW	16	1,240	7	2	0	2	7.2	$595,074	$297,537	not cost reasonable
	barrier-mounted	BW – F2	I-4 EB on barrier (typical) wall	14	1,243	7	2	0	2	7.0	$522,091	$261,045	not cost reasonable
Area G	ground	BW – G1	I-4 WB ROW	22	1,842	11	1	10	11	7.1	$1,215,636	$110,512	not cost reasonable
	ground	BW – G1	I-4 WB ROW	20	1,842	11	1	10	11	6.2	$1,105,123	$100,465	not cost reasonable

Noise Sensitive Locations	Barrier Type		Barrier Location	Height (feet)	Length (feet)	# of Impacted Receptors	# of Impacted Benefited Receptors	# of Non-Impacted Benefited Receptors	Total # of Benefited Receptors	Avg. Noise Reduction (dBA)	Cost ($30.00 per square foot)	Average Cost per Benefited Receptor	Comment
Area G	ground	BW – G1	I-4 WB ROW	18	1,842	11	1	10	11	5.9	$944,611	$90,419	not cost reasonable
	barrier-mounted	BW – G2	I-4 WB on barrier (typical) wall	14	1,216	11	3	0	3	6.0	$510,873	$170,291	not cost reasonable
	ground	BW – G3	I-4 WB ROW	22	1,216	11	4	0	4	6.5	$802,800	$200,700	not cost reasonable
Area H	ground	BW – H1	I-4 EB ROW	12	1,751	5	2	0	2	7.9	$630,231	$315,115	not cost reasonable
	barrier-mounted	BW – H2	I-4 EB on barrier (typical) wall	14	1,751	5	2	0	2	8.7	$735,270	$367,635	not cost reasonable
Area I	none					0							no impacted receptors
Area J	none					0							no impacted receptors
Area K	none					0							no impacted receptors
Area L	barrier-mounted	BW – L1	I-4 EB on barrier (typical) wall	14	1,372	3	2	1	3	7.4	$576,078	$192,026	not cost reasonable
	barrier-mounted	BW – L1	I-4 on barrier (typical) wall	12	1,372	3	2	1	3	6.5	$493,781	$164,593	not cost reasonable
Area M	none					0							no impacted receptors
Area N	none					1							Only 1 receptor impacted
Area O	ground	BW – O1	I-4 EB ROW	22	1,202	2	2	1	3	9.1	$793,606	$264,535	not cost reasonable
	ground	BW – O1	I-4 EB ROW	20	1,202	2	2	1	3	8.4	$721,460	$240,487	not cost reasonable
	ground	BW – O1	I-4 EB ROW	18	1,202	2	2	0	2	9.1	$649,314	$324,657	not cost reasonable
	barrier-mounted	BW – O2	I-4 EB on barrier (typical) wall	14	1,194	2	1	0	1	6.3	$501,512	$501,512	did not meet design goal of at least 1 benefited receptor > 7dBA; not cost reasonable

7.0 Commitments

FDOT is committed to the construction of feasible and reasonable noise abatement measures at the noise impacted location described in the conclusion in Section 6.0 and shown in Table 6 and on the Noise Study Maps in Figure B contingent upon the following conditions:

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

8.0 Construction Noise and Vibration

Construction activities for any of the proposed improvements will have temporary noise impacts for those residents and travelers within the immediate vicinity of the project. Noise and vibration impacts will be caused by heavy equipment movement and construction activities such as pile driving and vibratory compaction. Noise control measures should be implemented according to the FDOT's Standard Specifications for Road and Bridge Construction to minimize or eliminate some potential construction noise and vibration impacts. Section 335, F.S., exempts FDOT from compliance with local ordinances. FDOT policy is to follow the requirement of local ordinances to the extent that is reasonable. However, should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in coordination with the District Noise Specialist will investigate additional methods of controlling these impacts.

9.0 Public Involvement

As this project will have significant public involvement, the Final NSR will be made available in multiple forms (Public Meetings, Web Site, Circulated to the appropriate local planning/zoning officials) in order to eliminate or minimize noise impacts at future development sites that are incompatible with traffic noise. The public will have opportunities for input during the public meetings and via the web site while the planning and design of the project are ongoing.

10.0 References

- Draft Noise Study Report Addendum for SR 400 / Interstate 4 Ultimate from East of Kirkman Road (SR 435) to east of SR 434 in Orange and Seminole Counties, July 2013
- FDOT's PD&E Manual - Part 2, Chapter 17 "Noise" (dated 05/24/2011))
- FDOT's Standard Specifications for Road and Bridge Construction
- FHWA's guidance document "Measurement of Highway-Related Noise."
- Final Environmental Impact Statement (FEIS) for I-4 from SR 528 Beachline Expressway to SR 472 (FPN 242486, 242592 and 242703, 2002)
- Noise Impact Report for SR 400 (I-4) Project Development and Environmental Study, Section 2, prepared by URS and CH2MHill, August 2002.

APPENDICES

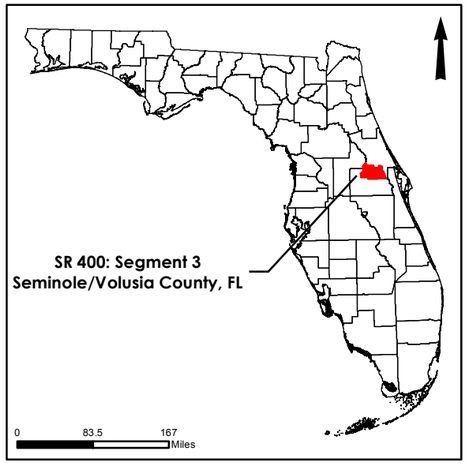
STATE ROAD 400 (SR 400)/INTERSTATE 4 BEYOND THE ULTIMATE PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

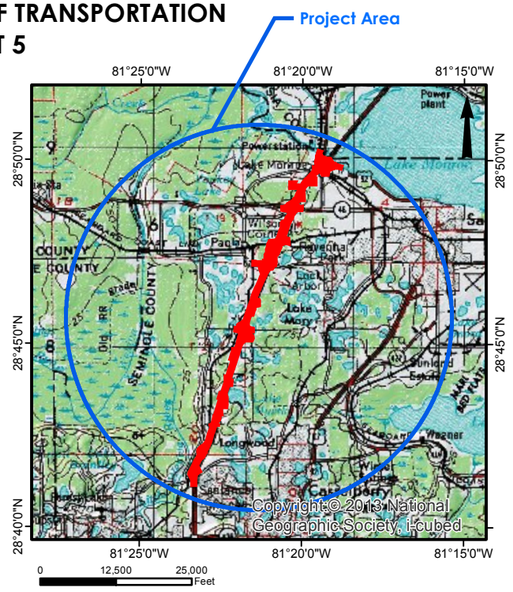
SEGMENT 3

FDOT FM NO. 432100-1-22-01

NOISE STUDY REPORT

SEMINOLE COUNTY
FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 5





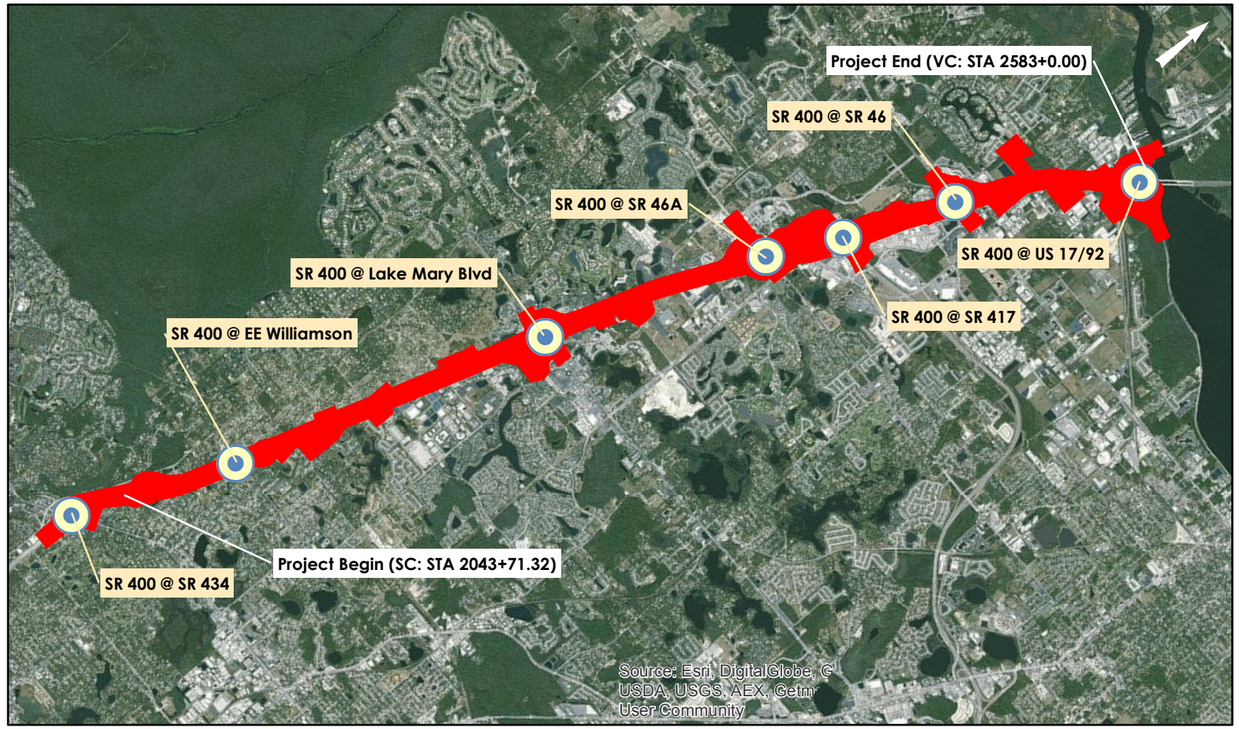


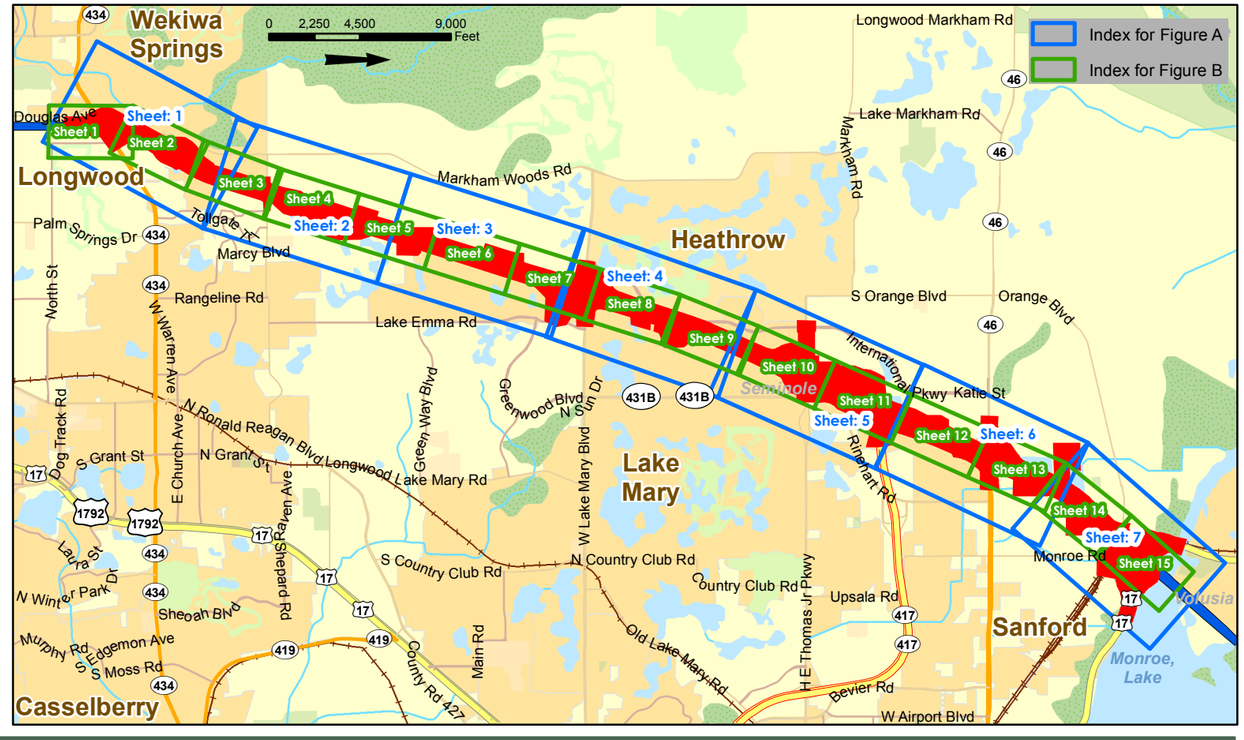
FIGURE NO.	SHEET NO.	TITLE
Figure A	Sheets 1-7	Land Use and Habitat Coverage Map
Figure B	Sheets 1-15	Noise Barrier Analysis Map

PROJECT DETAILS

NOISE STUDY REPORT:
Segment 3 - Report Maps

State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 - Seminole County (77160)

77160 Seminole County	79110 Volusia County
STA 2043+71.32 (Begin) - MP 4.05	STA 2578+48.33 (Begin) - MP 0.00
STA 2578+48.33 (End) - MP 14.135	STA 2583+0.00 (End) - MP 0.086



STN No. 2024230168

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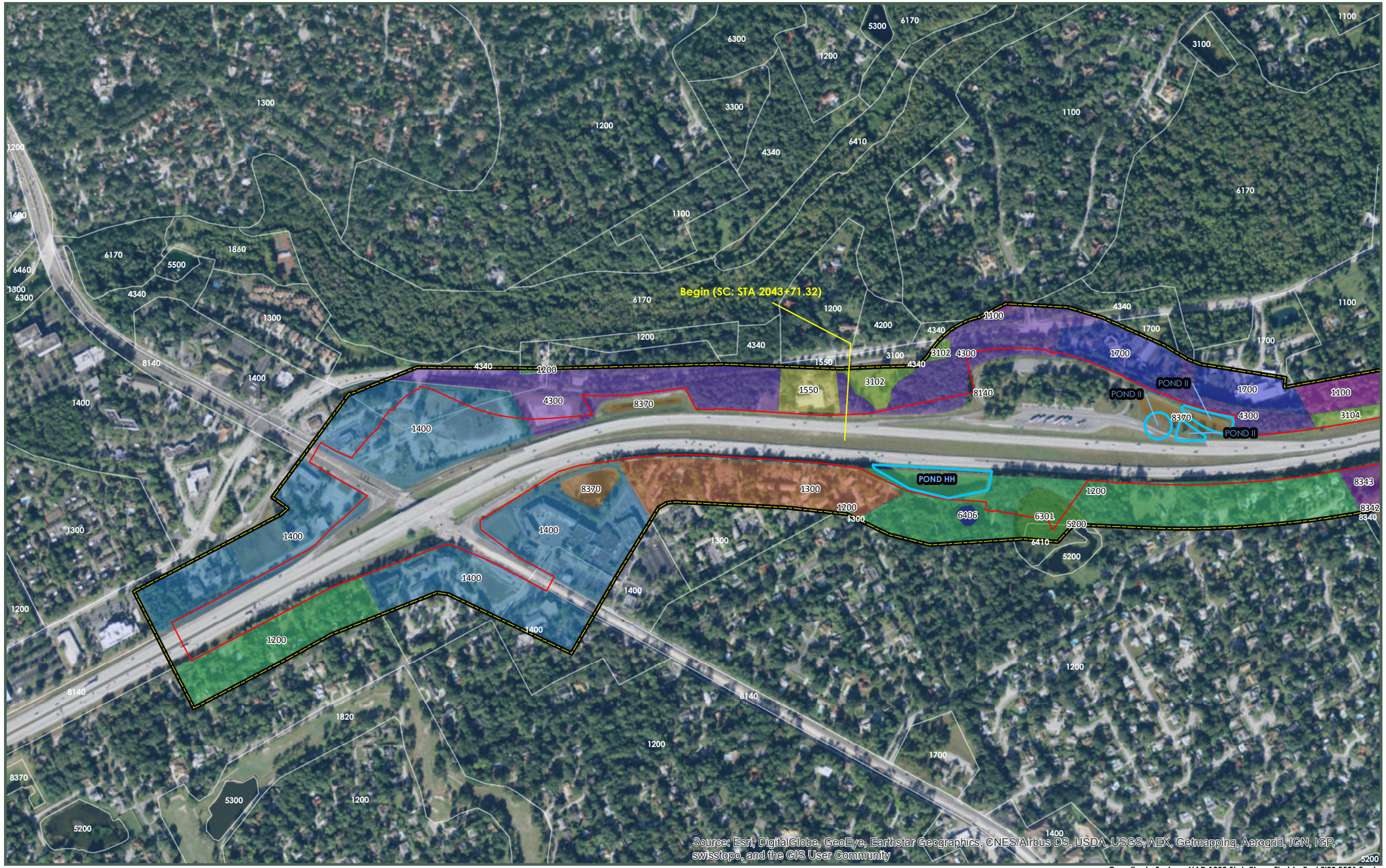
APPENDIX I

Land Use and Habitat Coverage Maps



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate-Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Land Use and Habitat Coverage

- 1100: Residential,LD
- 1200: Residential, MD
- 1300: Residential, HD
- 1400: Commercial and Services
- 1550: Other Light Industrial
- 1700: Institutional
- 1840: Marinas & Fish Camps
- 1850: Parks & Zoos
- 1860: Recreational
- 1900: Open land
- 2100: Cropland & Pastureland
- 3100: Herbaceous
- 3300: Mixed Rangeland
- 4110: Pine flatwoods
- 4300: Upland Hardwood Forests
- 5100: Streams & Waterways
- 5200: Lakes
- 5300: Reservoirs
- 6170: Mixed Wetland Hardwoods
- 6210: Cypress
- 6300: Wetland Forested Mixed
- 6400: Vegetated Non-Forested Wetlands
- 8120: Railroads
- 8140: Roads and Highways
- 8310: Power Facilities
- 8320: Power Transmission Lines
- 8330: Water supply plants
- 8340: Sewage treatment
- 8370: Surface water collection basins
- Extented Land Use and Habitat Cover

Title:

NOISE STUDY REPORT: Segment 3 - Land Use and Habitat Coverage Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 325 650 1,300 Feet

Figure A - Land Use and Habitat Coverage Map: Sheet 1 of 7

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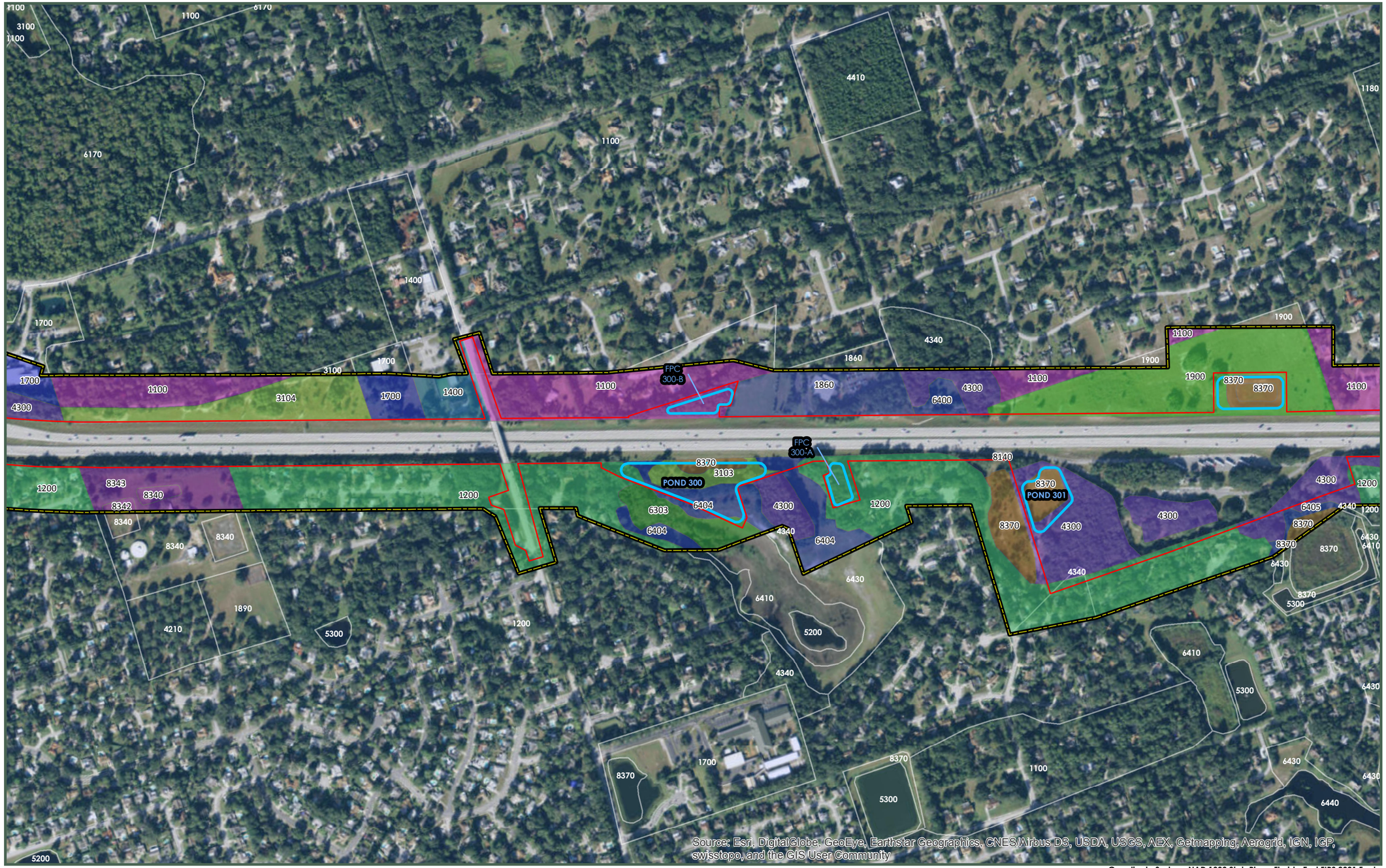

Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Land Use and Habitat Coverage

- 1100: Residential,LD
- 1200: Residential, MD
- 1300: Residential, HD
- 1400: Commercial and Services
- 1550: Other Light Industrial
- 1700: Institutional
- 1840: Marinas & Fish Camps
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- 8140: Roads and Highways
- 8310: Power Facilities
- 8320: Power Transmission Lines
- 8330: Water supply plants
- 8340: Sewage treatment
- 8370: Surface water collection basins
- Extented Land Use and Habitat Cover

Title:

NOISE STUDY REPORT: Segment 3 - Land Use and Habitat Coverage Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA. 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 325 650 1,300 Feet

Figure A - Land Use and Habitat Coverage Map: Sheet 2 of 7

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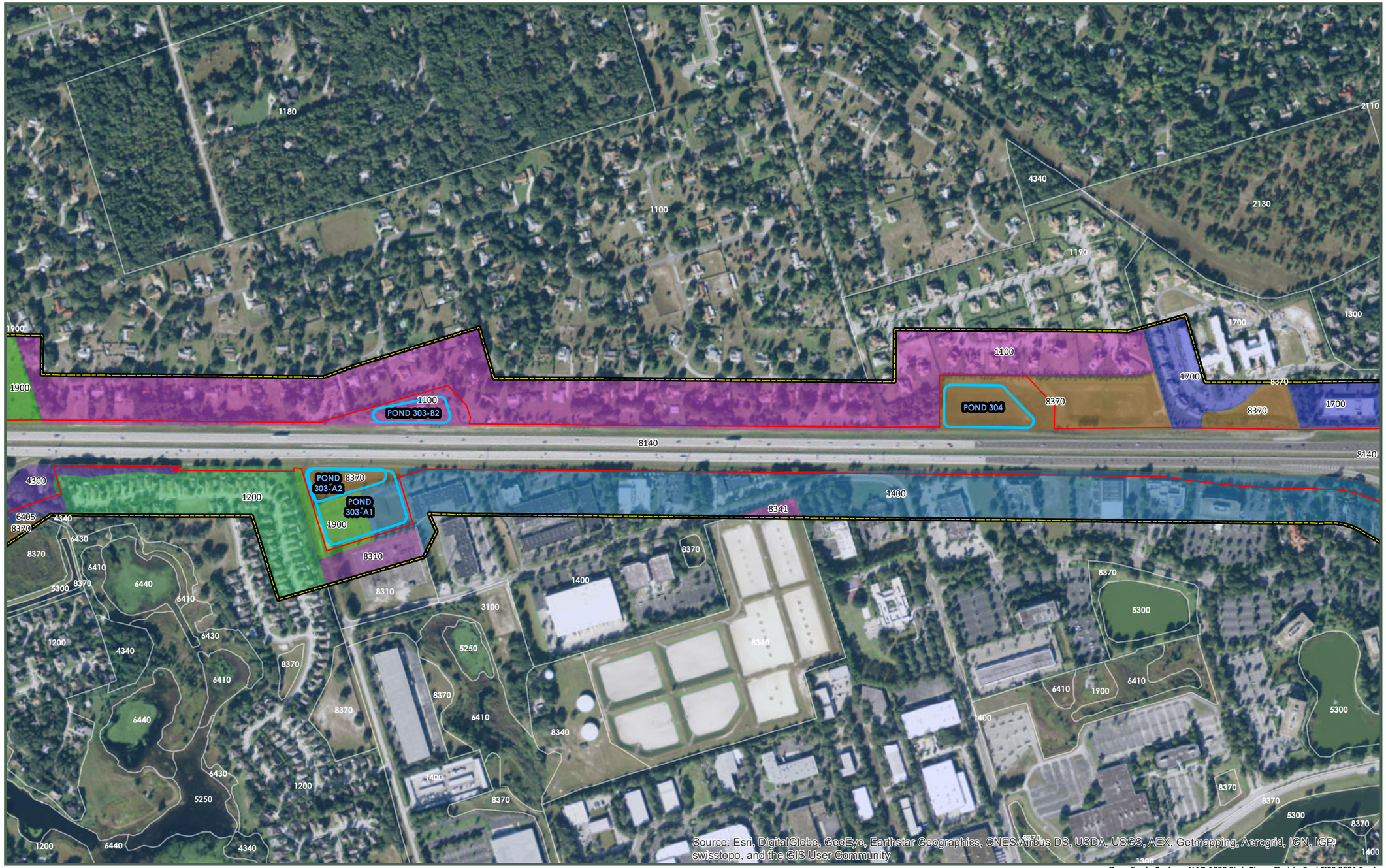

Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Land Use and Habitat Coverage

- 1100: Residential,LD
- 1200: Residential, MD
- 1300: Residential, HD
- 1400: Commercial and Services
- 1550: Other Light Industrial
- 1700: Institutional
- 1840: Marinas & Fish Camps
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- 8330: Water supply plants
- 8340: Sewage treatment
- 8370: Surface water collection basins
- Extented Land Use and Habitat Cover

Title:

NOISE STUDY REPORT: Segment 3 - Land Use and Habitat Coverage Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 325 650 1,300 Feet

Figure A - Land Use and Habitat Coverage Map: Sheet 3 of 7

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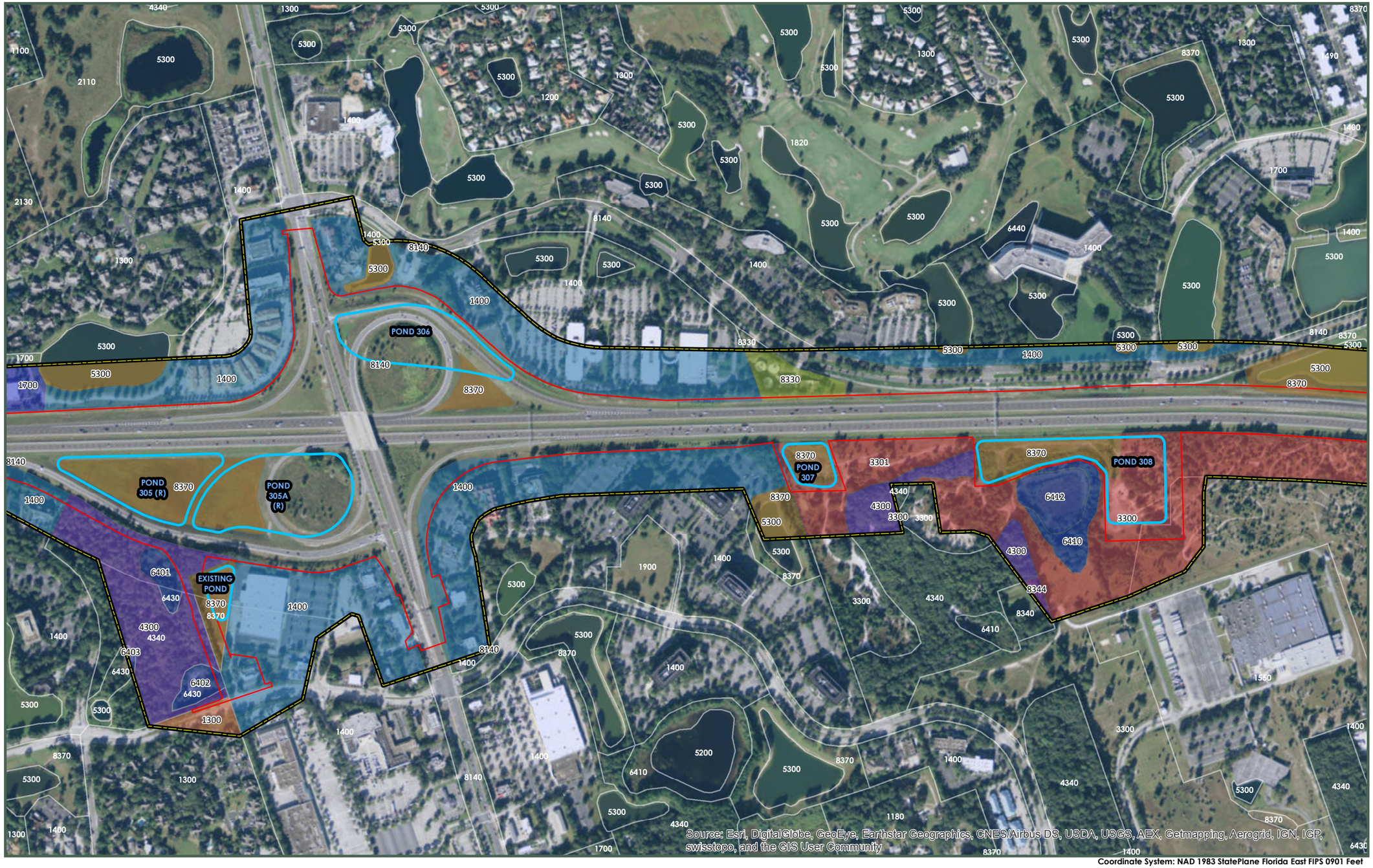

Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Land Use and Habitat Coverage

- 1100: Residential,LD
- 1200: Residential, MD
- 1300: Residential, HD
- 1400: Commercial and Services
- 1550: Other Light Industrial
- 1700: Institutional
- 1840: Marinas & Fish Camps
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- 8140: Roads and Highways
- 8310: Power Facilities
- 8320: Power Transmission Lines
- 8330: Water supply plants
- 8340: Sewage treatment
- 8370: Surface water collection basins
- Extented Land Use and Habitat Cover

Title:

NOISE STUDY REPORT: Segment 3 - Land Use and Habitat Coverage Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 325 650 1,300 Feet

Figure A - Land Use and Habitat Coverage Map: Sheet 4 of 7

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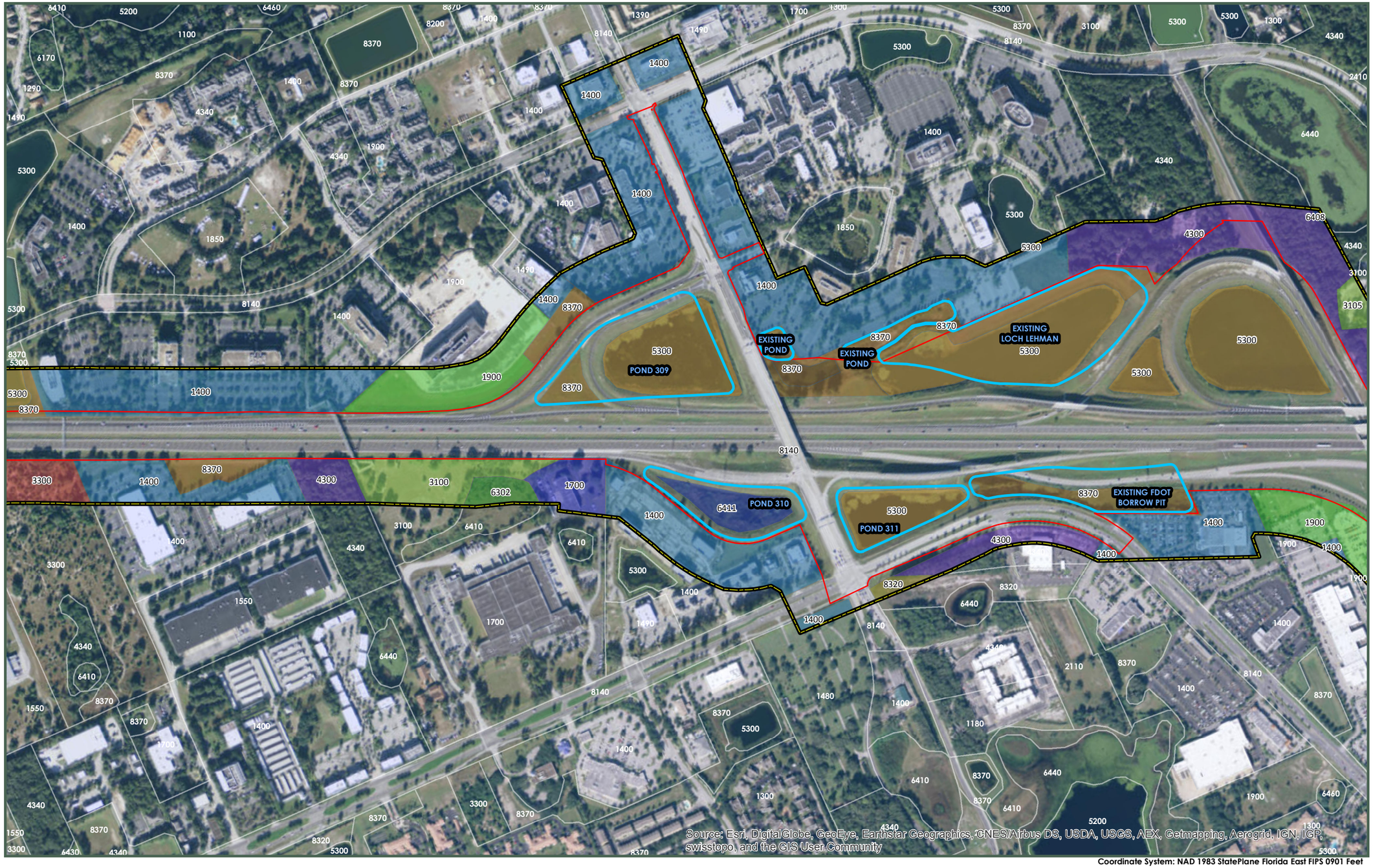

Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Land Use and Habitat Coverage

- 1100: Residential,LD
- 1200: Residential, MD
- 1300: Residential, HD
- 1400: Commercial and Services
- 1550: Other Light Industrial
- 1700: Institutional
- 1840: Marinas & Fish Camps
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- 8320: Power Transmission Lines
- 8330: Water supply plants
- 8340: Sewage treatment
- 8370: Surface water collection basins
- Extented Land Use and Habitat Cover

Title:

NOISE STUDY REPORT: Segment 3 - Land Use and Habitat Coverage Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 325 650 1,300 Feet

Figure A - Land Use and Habitat Coverage Map: Sheet 5 of 7

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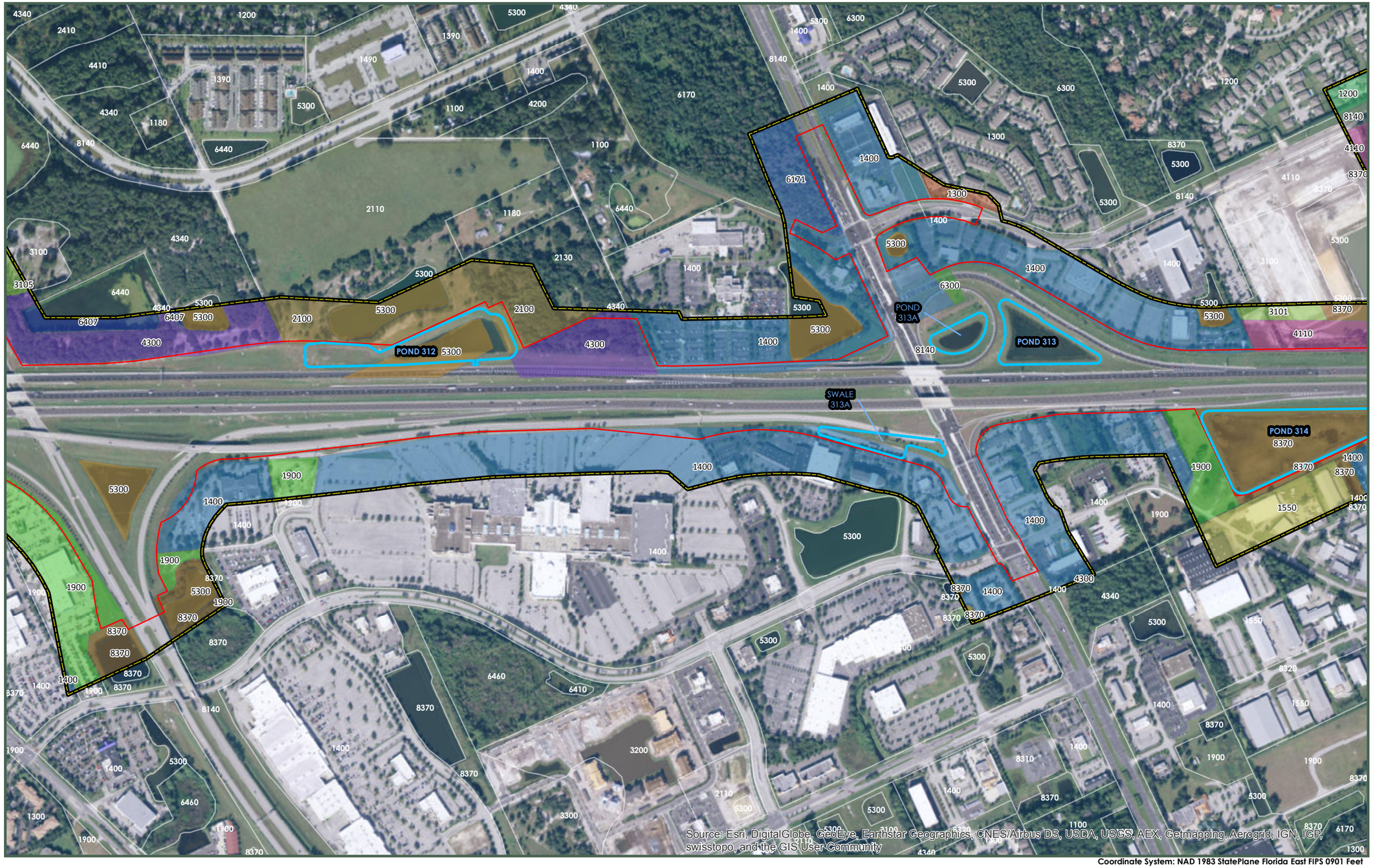

Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Land Use and Habitat Coverage

- 1100: Residential,LD
- 1200: Residential, MD
- 1300: Residential, HD
- 1400: Commercial and Services
- 1550: Other Light Industrial
- 1700: Institutional
- 1840: Marinas & Fish Camps
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- 8140: Roads and Highways
- 8310: Power Facilities
- 8320: Power Transmission Lines
- 8330: Water supply plants
- 8340: Sewage treatment
- 8370: Surface water collection basins
- Extented Land Use and Habitat Cover

Title:

NOISE STUDY REPORT: Segment 3 - Land Use and Habitat Coverage Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

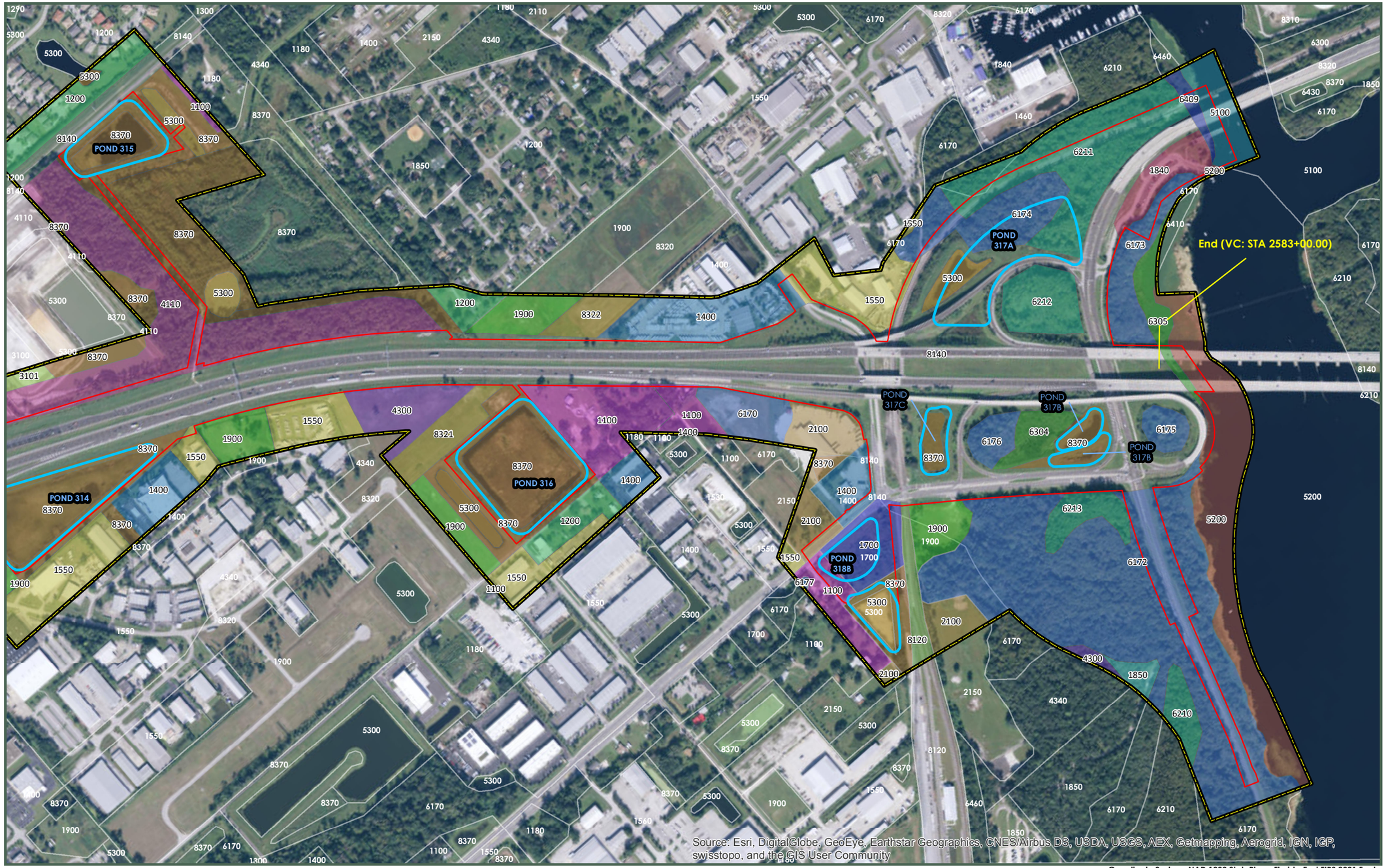
77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 325 650 1,300 Feet

Figure A - Land Use and Habitat Coverage Map: Sheet 6 of 7



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Land Use and Habitat Coverage

- 1100: Residential,LD
- 1200: Residential, MD
- 1300: Residential, HD
- 1400: Commercial and Services
- 1550: Other Light Industrial
- 1700: Institutional
- 1840: Marinas & Fish Camps
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- 8310: Power Facilities
- 8320: Power Transmission Lines
- 8330: Water supply plants
- 8340: Sewage treatment
- 8370: Surface water collection basins
- Extented Land Use and Habitat Cover

Title:

NOISE STUDY REPORT: Segment 3 - Land Use and Habitat Coverage Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA. 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 325 650 1,300 Feet

Figure A - Land Use and Habitat Coverage Map: Sheet 7 of 7

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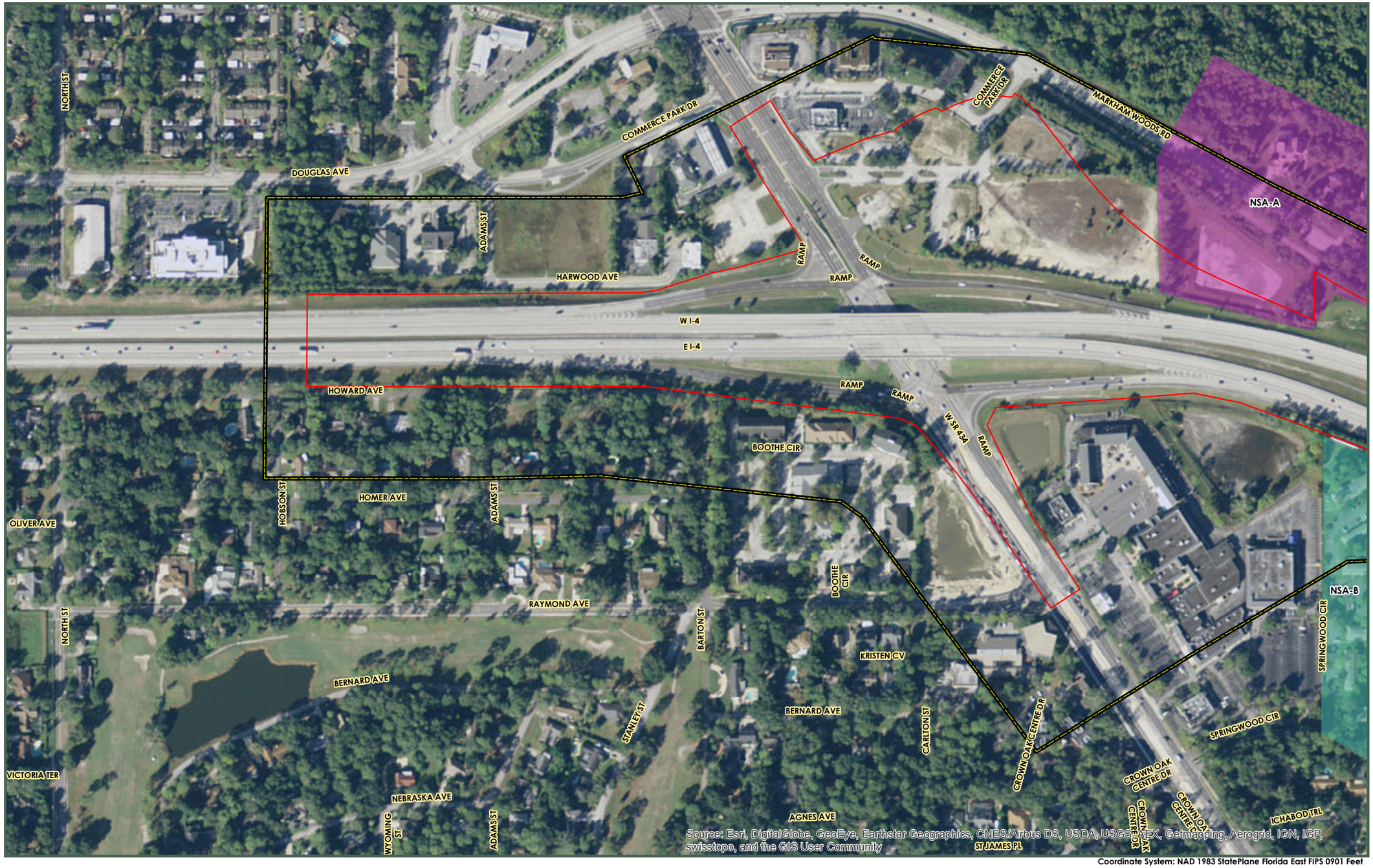
APPENDIX II

Noise Barrier Analysis Maps

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 - Seminole County (77160)



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
- NSA-B
- NSA-C
- NSA-D
- NSA-E
- NSA-F
- NSA-G
- NSA-H
- NSA-I
- NSA-J
- NSA-K
- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

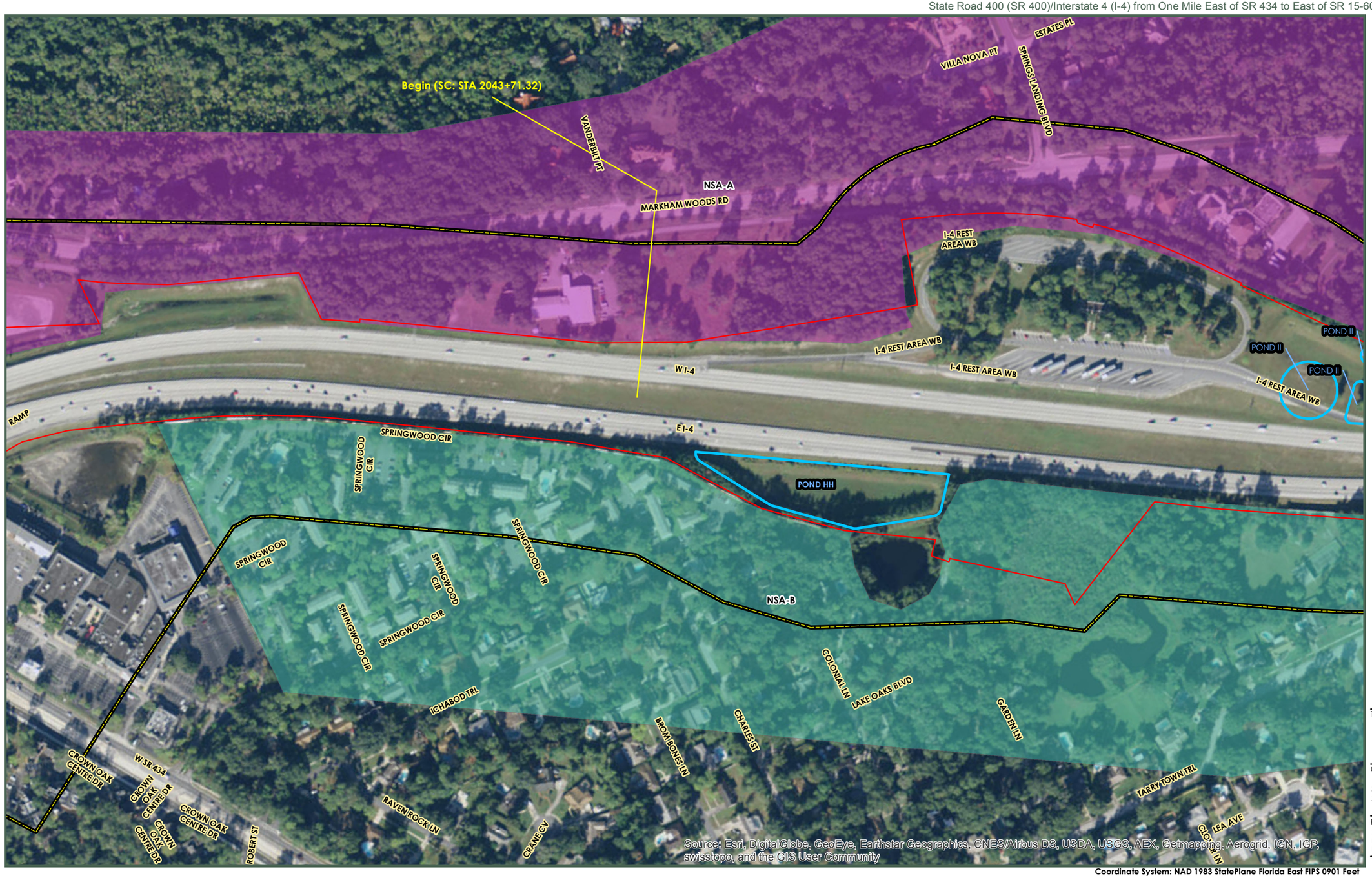
Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Figure B - Noise Barrier Analysis Map: Sheet 1 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
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- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

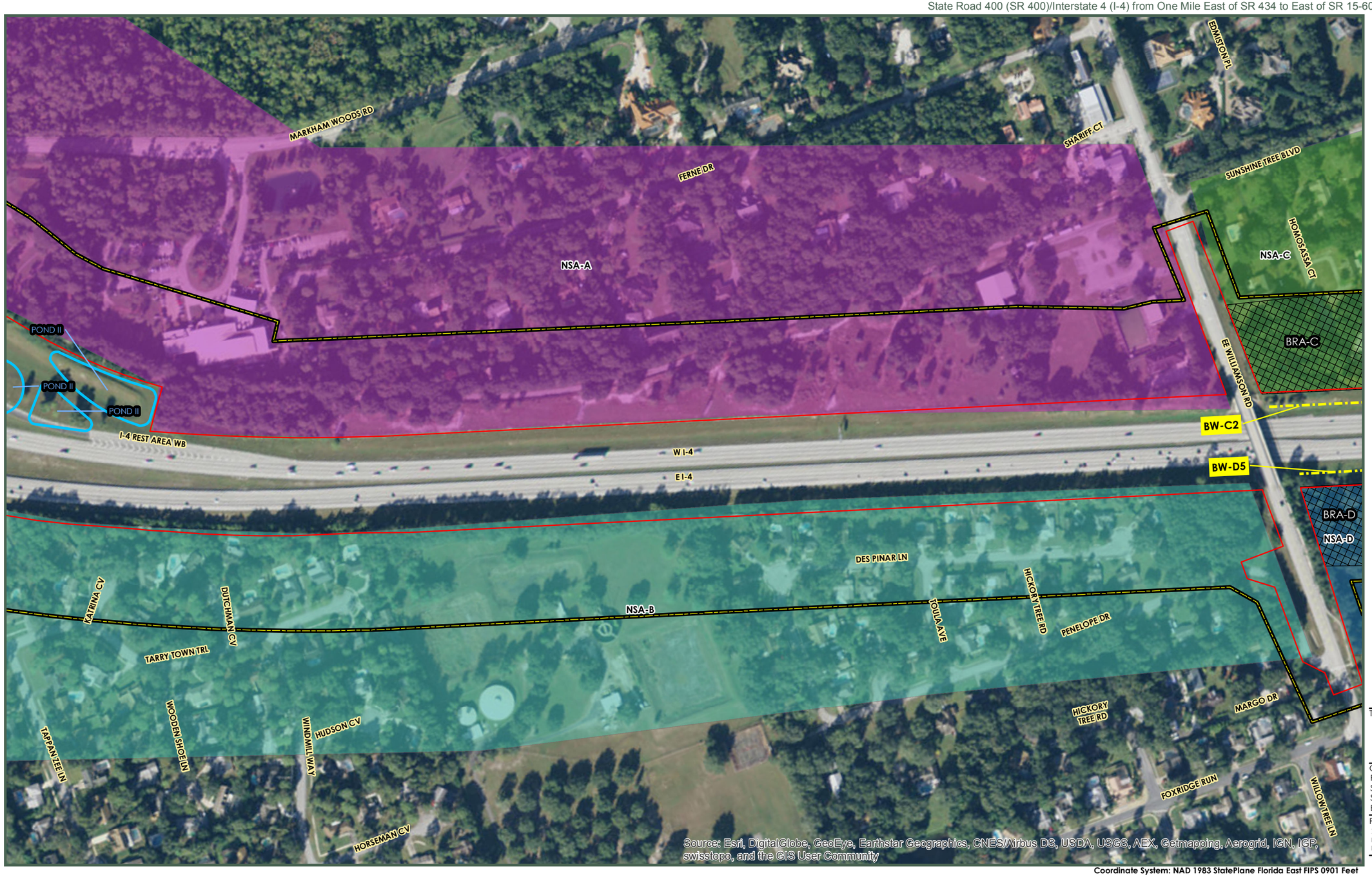
Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Figure B - Noise Barrier Analysis Map: Sheet 2 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
- NSA-B
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- NSA-K
- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
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Independent Review by: jMoore 12/21/2015

Figure B - Noise Barrier Analysis Map: Sheet 3 of 15

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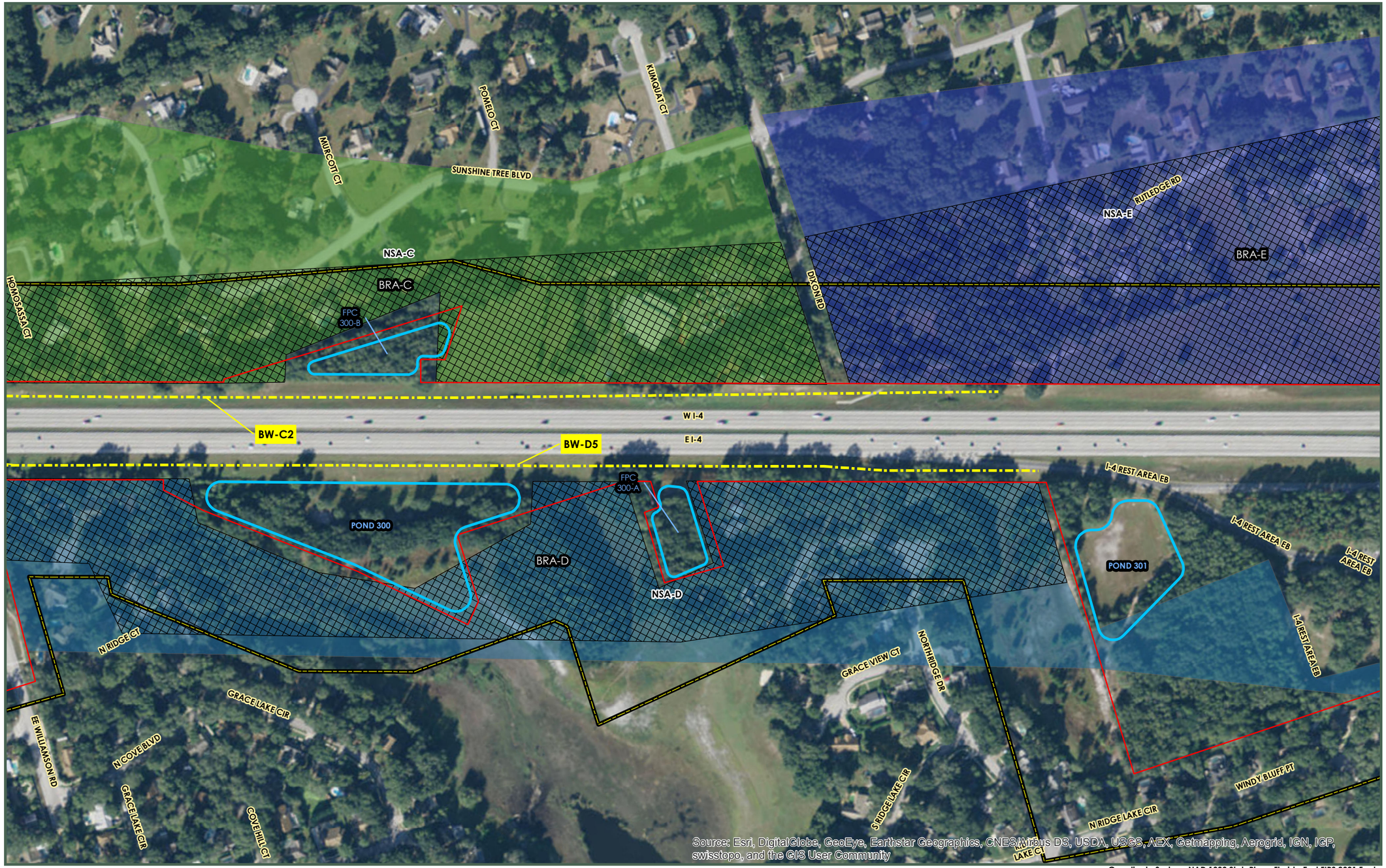

Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
- NSA-B
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- NSA-I
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- NSA-K
- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

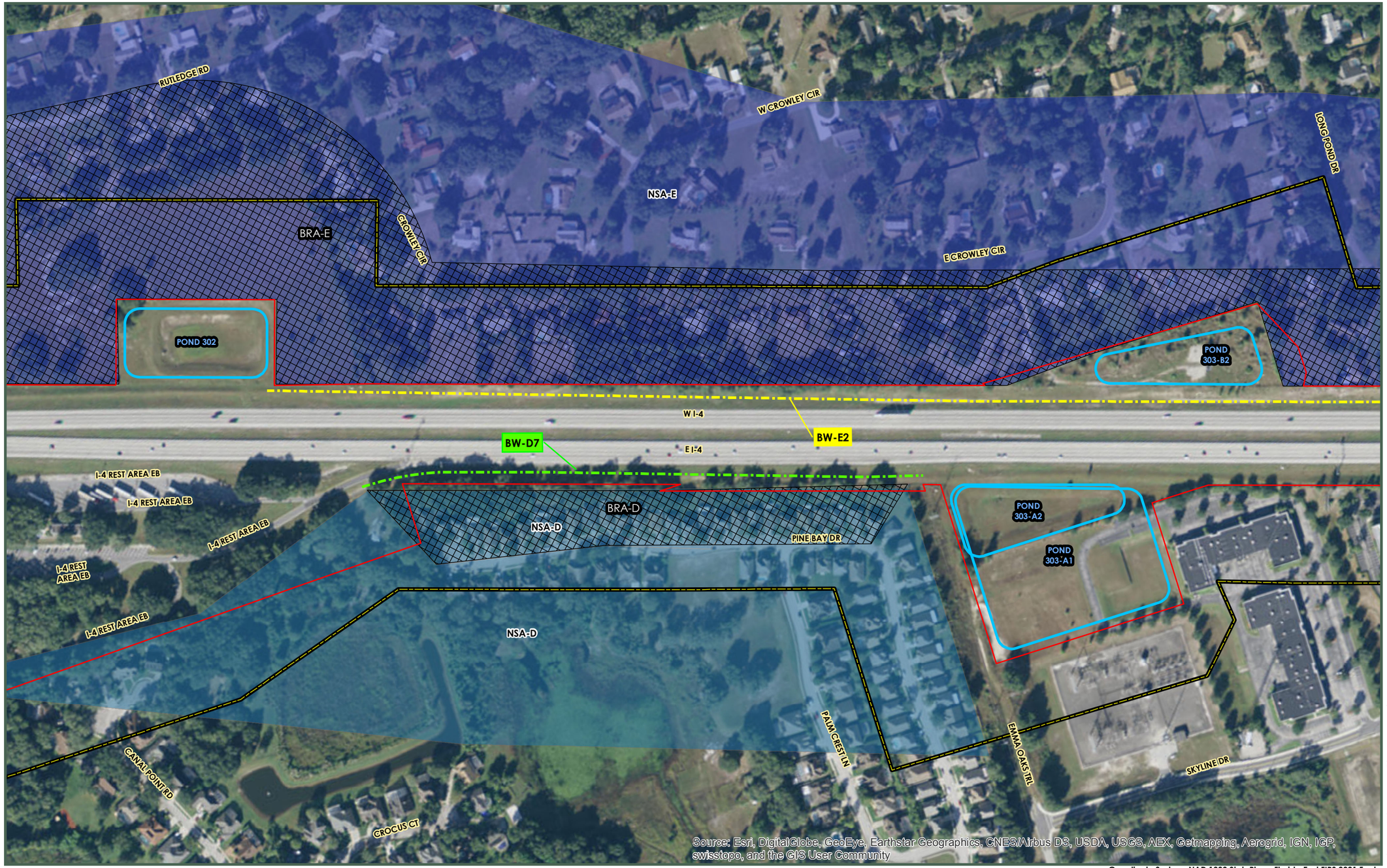
77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Figure B - Noise Barrier Analysis Map: Sheet 4 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate-Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
- NSA-B
- NSA-C
- NSA-D
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- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

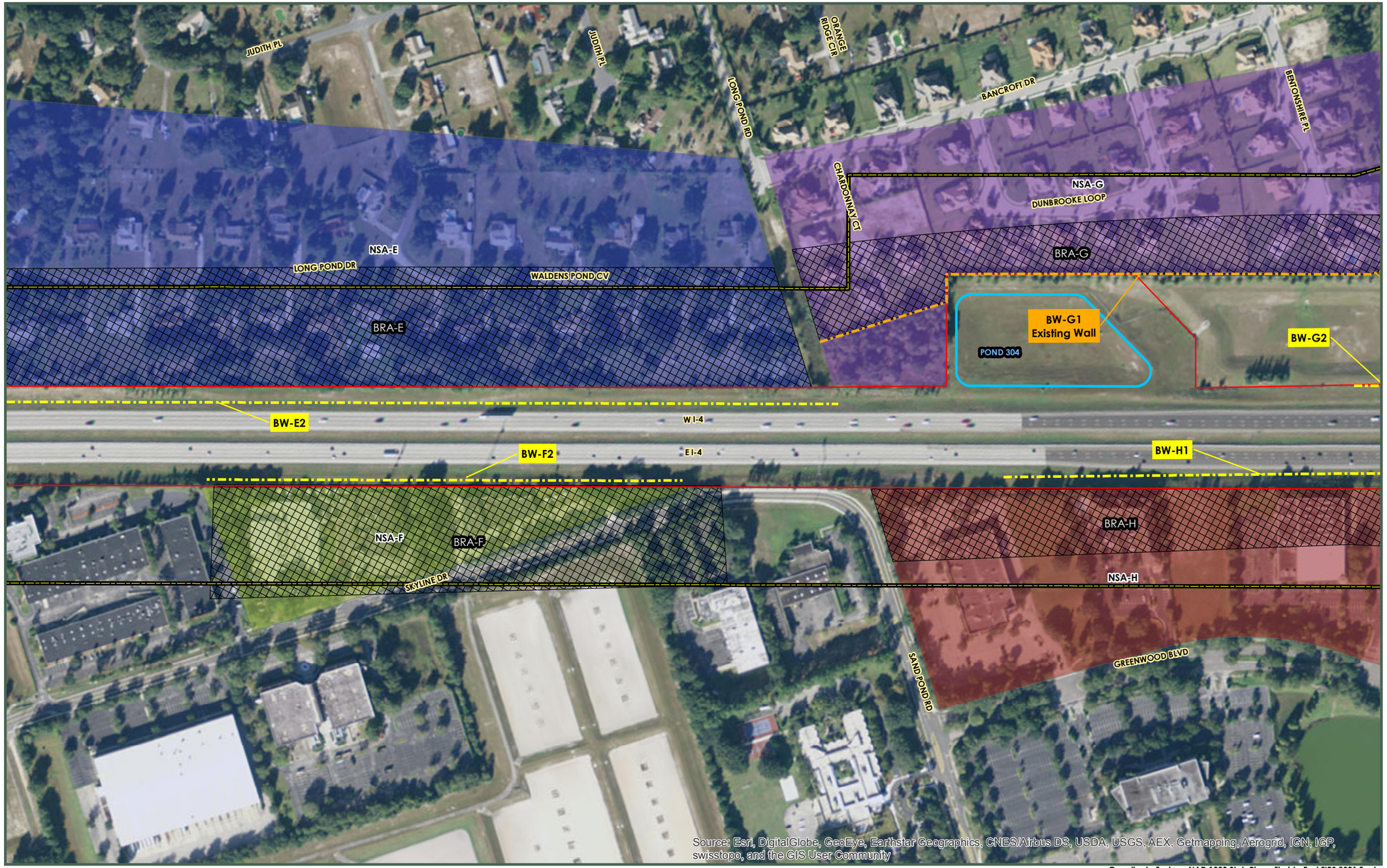
Project Location:
77160 Seminole County 79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05 STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135 STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Figure B - Noise Barrier Analysis Map: Sheet 5 of 15

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 - Seminole County (77160)



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
- NSA-B
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- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
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Independent Review by: jMoore 12/21/2015

Figure B - Noise Barrier Analysis Map: Sheet 6 of 15

1 " = 300 '

SR 400 (I-4) Project Development and Environment (PD&E) Study | FM No. 432100-1-22-01

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Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
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- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
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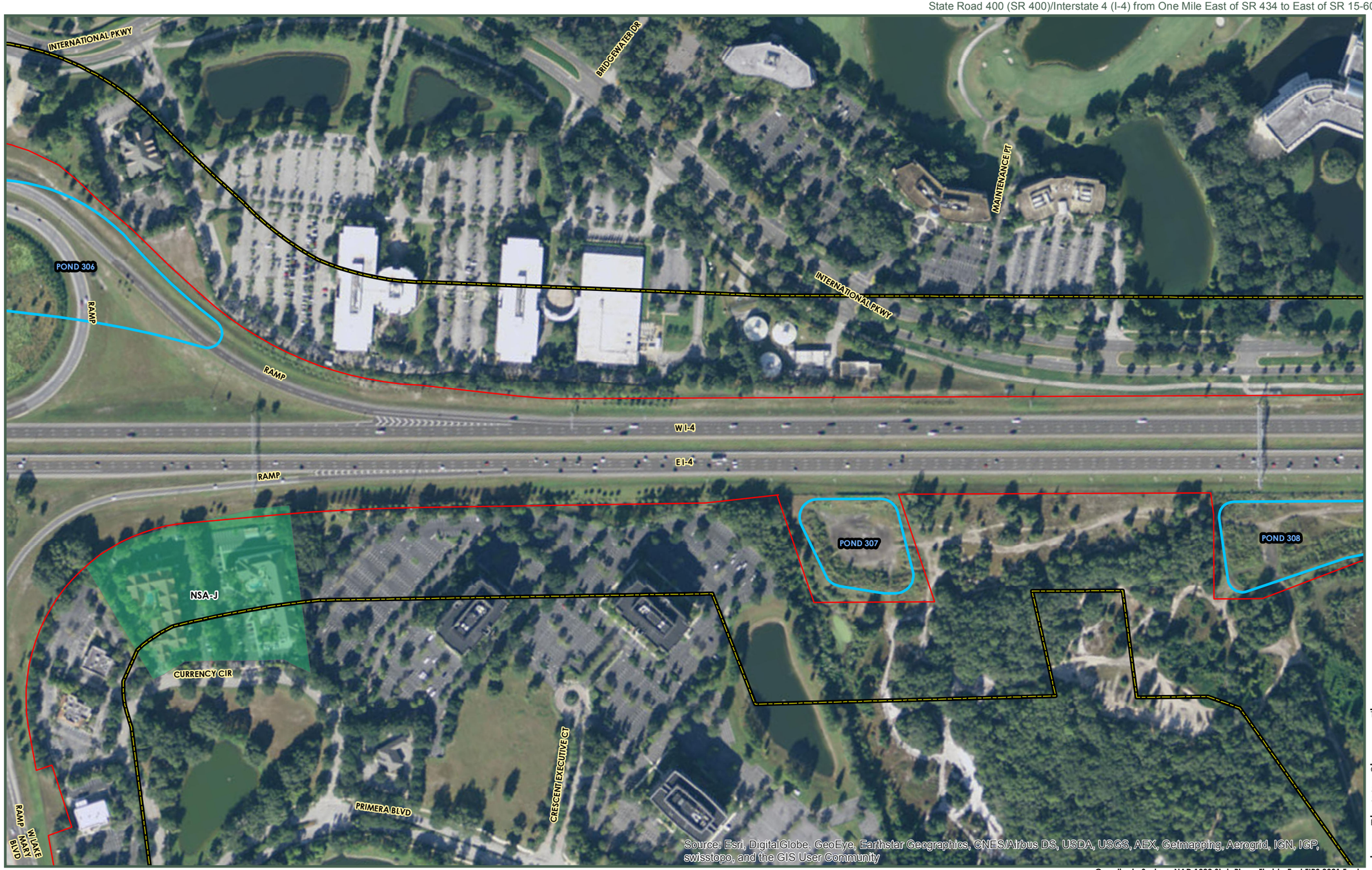
Figure B - Noise Barrier Analysis Map: Sheet 7 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
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- NSA-K
- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

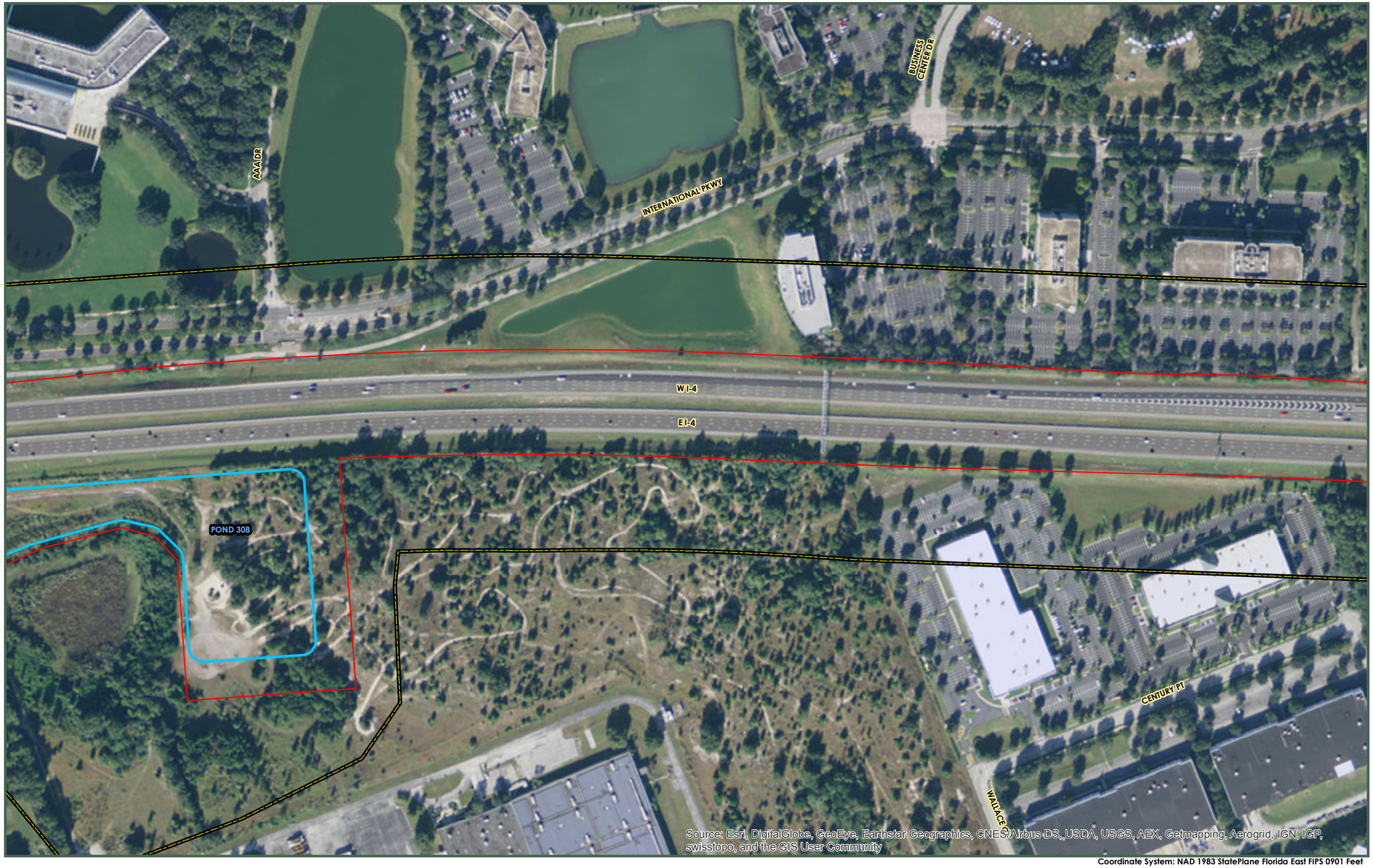
77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Figure B - Noise Barrier Analysis Map: Sheet 8 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
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- NSA-K
- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
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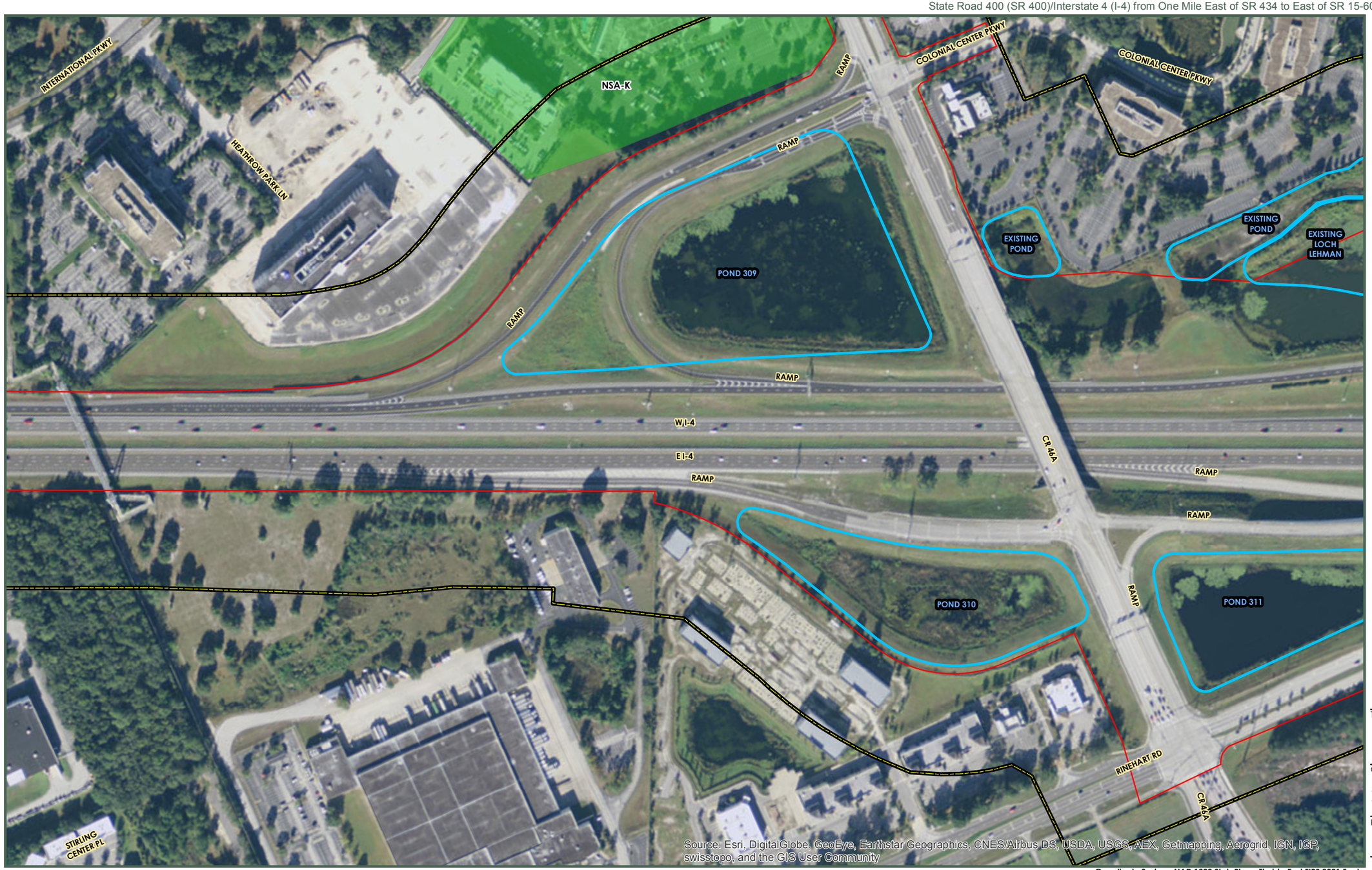
Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Figure B - Noise Barrier Analysis Map: Sheet 9 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

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- NSA-N
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- Benifited Receiver Areas

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

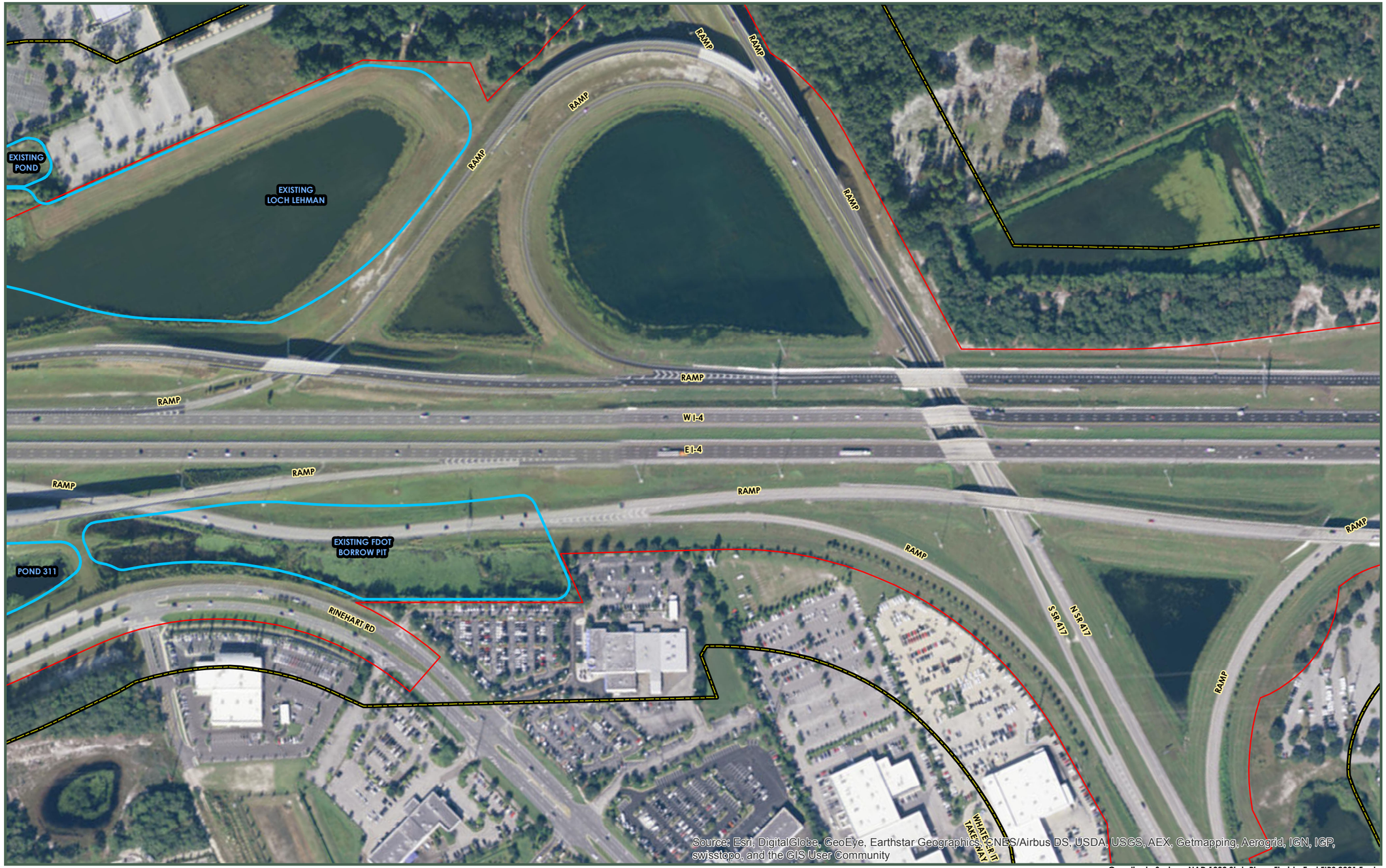
Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Figure B - Noise Barrier Analysis Map: Sheet 10 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
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- NSA-O
- Benifited Receiver Areas

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Figure B - Noise Barrier Analysis Map: Sheet 11 of 15

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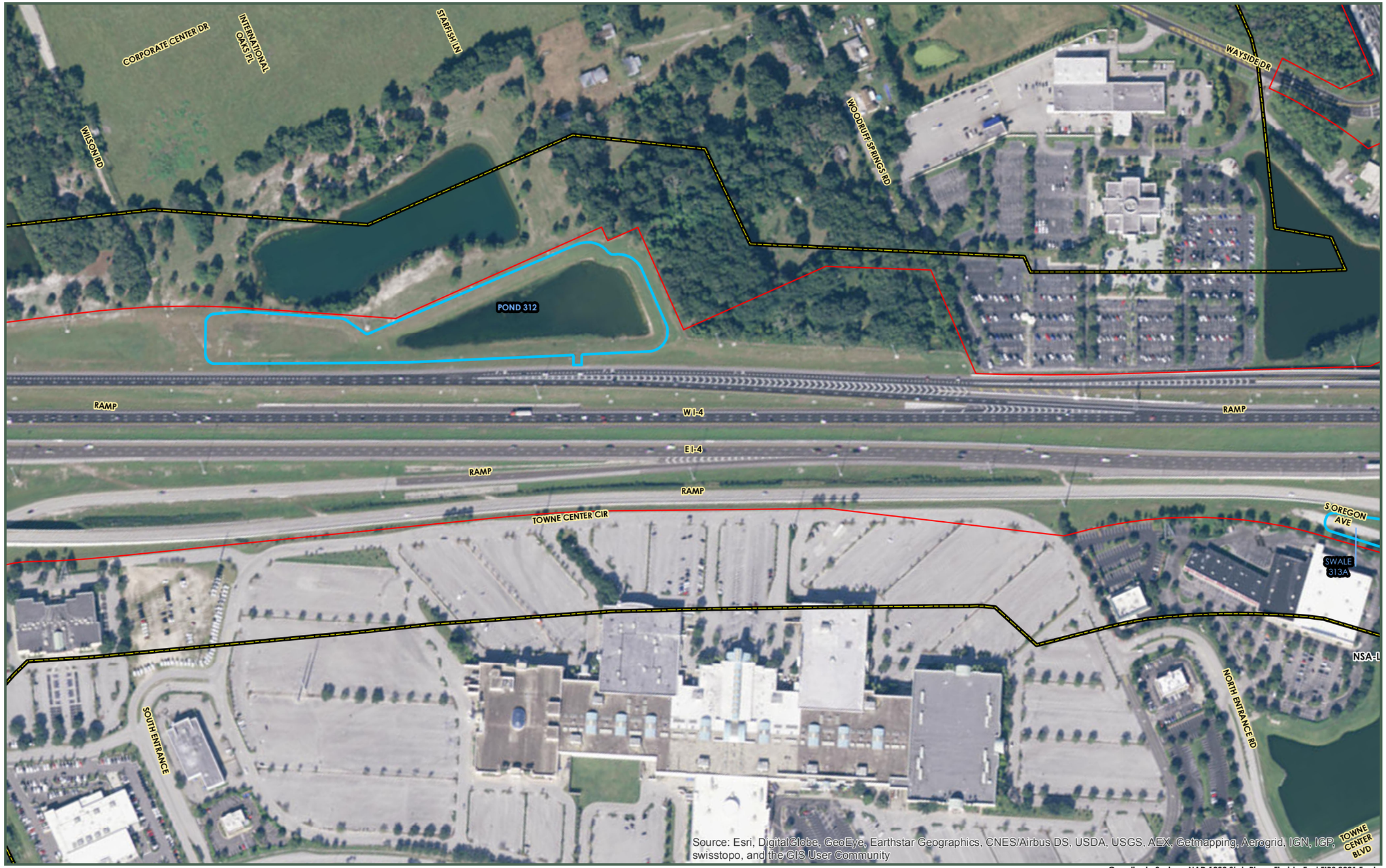

Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
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- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
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- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

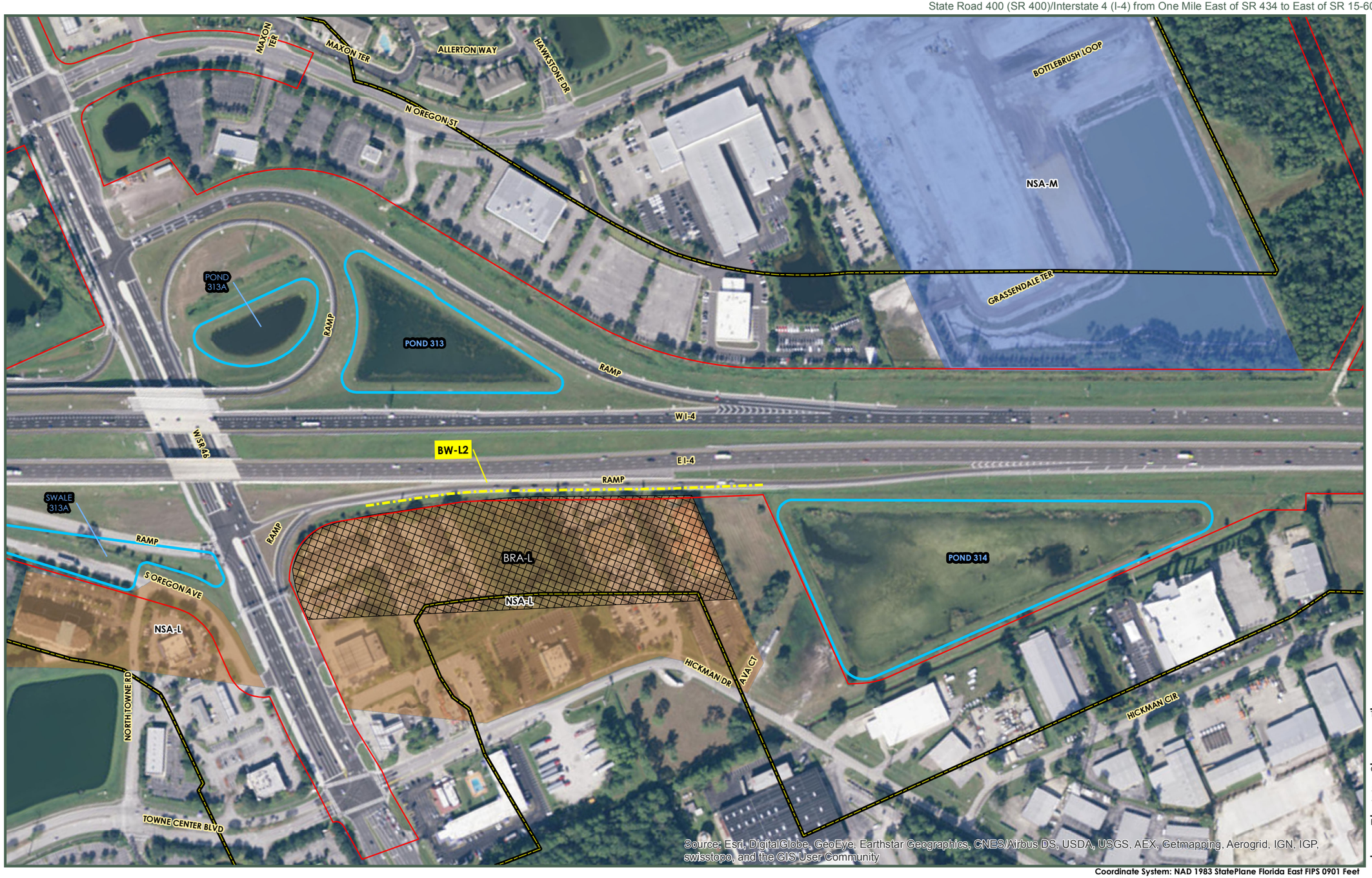
77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Figure B - Noise Barrier Analysis Map: Sheet 12 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
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- NSA-I
- NSA-J
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- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

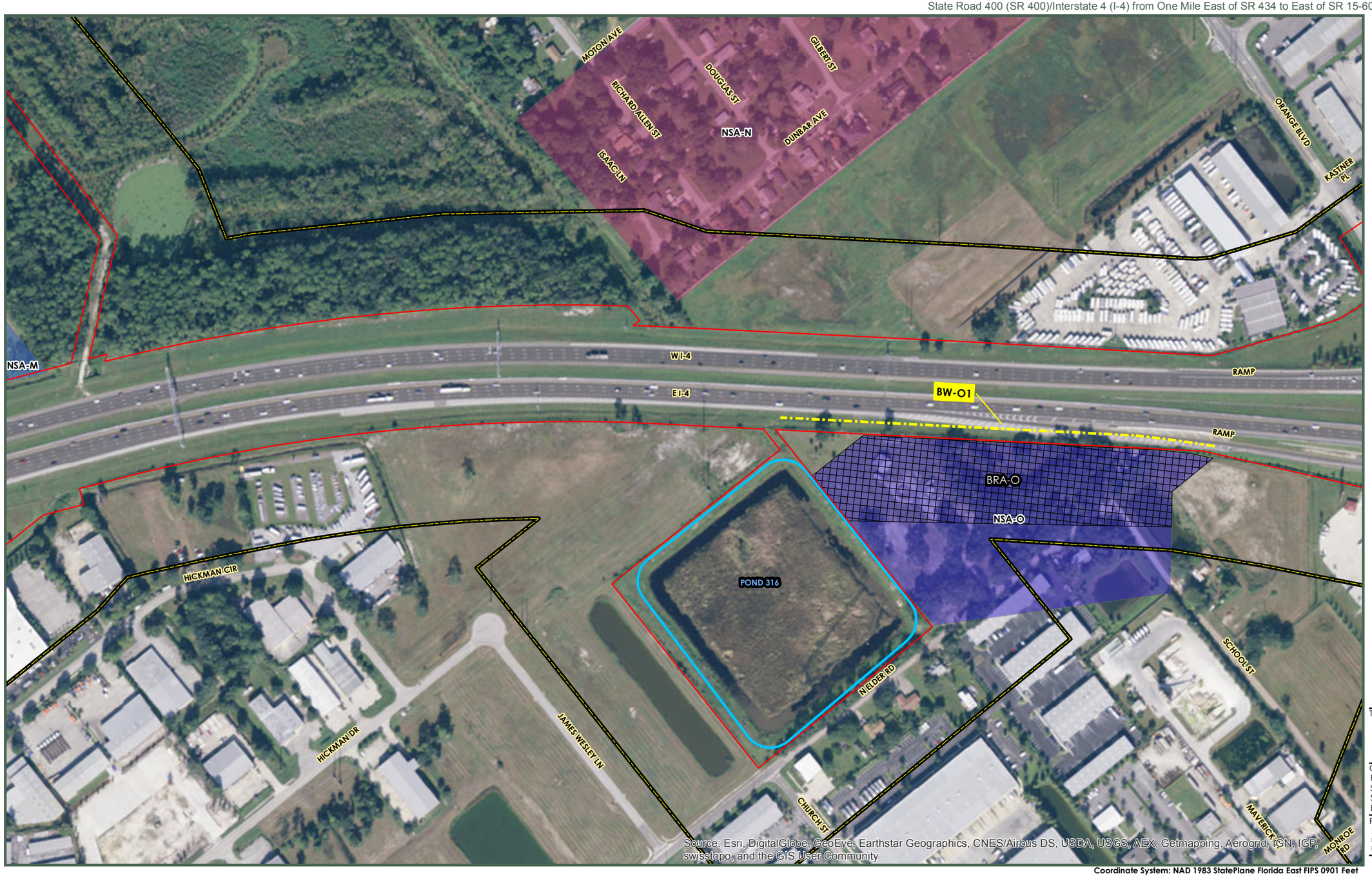
77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Figure B - Noise Barrier Analysis Map: Sheet 13 of 15



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
- NSA-B
- NSA-C
- NSA-D
- NSA-E
- NSA-F
- NSA-G
- NSA-H
- NSA-I
- NSA-J
- NSA-K
- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Figure B - Noise Barrier Analysis Map: Sheet 14 of 15

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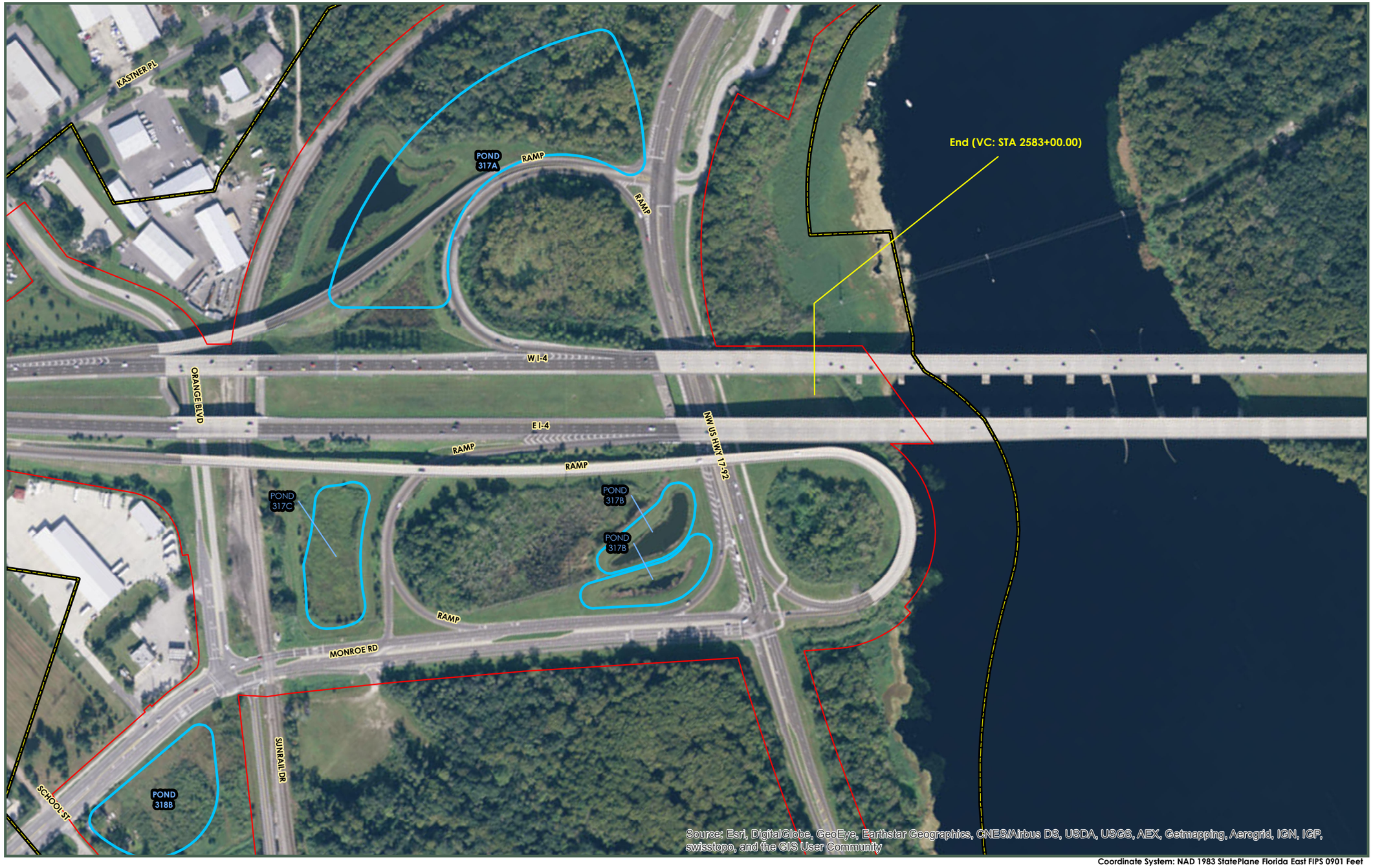
NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 - Seminole County (77160)



Map Key

SR 400 (I-4) PD&E- Segment 3 Limits

- SR 400 Beyond the Ultimate- Segment 3 Study Area
- SR 400 Segment 3 R/W (12/11/2015)
- Pond Sites (12/10/2015)

Barrier Walls

- Modeled Walls C (Not Cost Reasonable)
- Proposed Walls (Cost Reasonable)
- Existing Walls

Noise Sensitive Areas (NSA)

- NSA-A
- NSA-B
- NSA-C
- NSA-D
- NSA-E
- NSA-F
- NSA-G
- NSA-H
- NSA-I
- NSA-J
- NSA-K
- NSA-L
- NSA-M
- NSA-N
- NSA-O
- Benifited Receiver Areas

Title:

NOISE STUDY REPORT: Segment 3 - Noise Barrier Analysis Map

Client/Project:
Florida Department of Transportation- D5
SR 400 (I-4) Beyond the Ultimate PD&E Study
Segment 3: SR 400/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92

Project Location:

77160 Seminole County	79110 Volusia County
Begin: STA 2043+71.32 - MP 4.05	STA 2578+48.33 - MP 0.0
End: STA 2578.48.33 - MP 14.135	STA 2583+0.00 - MP 0.086

Prepared by: mLeonard 12/21/2015
Technical Review by: mDrauer 12/21/2015
Independent Review by: jMoore 12/21/2015

Coordinate System: NAD 1983 StatePlane Florida East FIPS 0901 Feet

0 150 300 600 Feet

Figure B - Noise Barrier Analysis Map: Sheet 15 of 15

1 " = 300 '

APPENDIX III

TNM Results

TNM Sound Levels

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Church of Higher Call	1	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
Pool	2	1	0.0	69.1	66	69.1	10	Snd Lvl	68.9	0.2	8	-7.8
Markham Meadows 28	3	1	0.0	72.4	66	72.4	10	Snd Lvl	66.4	6.0	8	-2.0
Markham Meadows 24	4	1	0.0	66.4	66	66.4	10	Snd Lvl	63.0	3.4	8	-4.6
Markham Meadows 21	5	1	0.0	71.0	66	71.0	10	Snd Lvl	64.8	6.2	8	-1.8
Play Field	6	1	0.0	71.7	66	71.7	10	Snd Lvl	66.0	5.7	8	-2.3
Neighborhood Alliance Church	7	1	0.0	61.7	66	61.7	10	----	61.7	0.0	8	-8.0
Church	8	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Ferne 1	9	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
Ferne 2	10	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
Ferne 3	11	1	0.0	66.2	66	66.2	10	Snd Lvl	66.1	0.1	8	-7.9
Trail 1	12	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
Markham Meadows 20	13	1	0.0	71.0	66	71.0	10	Snd Lvl	65.3	5.7	8	-2.3
Markham Meadows 19	14	1	0.0	68.1	66	68.1	10	Snd Lvl	64.3	3.8	8	-4.2
Markham Meadows 16	15	1	0.0	65.9	66	65.9	10	----	63.2	2.7	8	-5.3
Markham Meadows 13	16	1	0.0	64.9	66	64.9	10	----	62.4	2.5	8	-5.5
Markham Meadows 6	17	1	0.0	64.2	66	64.2	10	----	61.5	2.7	8	-5.3
Markham Meadows 2	18	1	0.0	61.1	66	61.1	10	----	58.2	2.9	8	-5.1
Markham Meadows 28	19	1	0.0	65.2	66	65.2	10	----	63.0	2.2	8	-5.8
Markham Meadows 27	20	1	0.0	61.7	66	61.7	10	----	60.4	1.3	8	-6.7
Markham Meadows 26	21	1	0.0	61.2	66	61.2	10	----	59.6	1.6	8	-6.4
Markham Meadows 25	22	1	0.0	63.2	66	63.2	10	----	61.1	2.1	8	-5.9
Markham Meadows 24	23	1	0.0	60.5	66	60.5	10	----	58.8	1.7	8	-6.3

Markham Meadows 23	24	1	0.0	62.6	66	62.6	10	----	60.3	2.3	8	-5.7
Markham Meadows 18	25	1	0.0	61.9	66	61.9	10	----	60.0	1.9	8	-6.1
Markham Meadows 17	26	1	0.0	59.6	66	59.6	10	----	57.8	1.8	8	-6.2
Markham Meadows 15	27	1	0.0	60.1	66	60.1	10	----	57.9	2.2	8	-5.8
Markham Meadows 14	28	1	0.0	57.2	66	57.2	10	----	55.5	1.7	8	-6.3
Markham Meadows 12	29	1	0.0	60.3	66	60.3	10	----	57.9	2.4	8	-5.6
Markham Meadows 11	30	1	0.0	58.1	66	58.1	10	----	56.0	2.1	8	-5.9
Markham Meadows 10	31	1	0.0	56.8	66	56.8	10	----	55.0	1.8	8	-6.2
Markham Meadows 7	32	1	0.0	56.1	66	56.1	10	----	54.3	1.8	8	-6.2
Markham Meadows 8	33	1	0.0	57.7	66	57.7	10	----	55.3	2.4	8	-5.6
Markham Meadows 9	34	1	0.0	60.3	66	60.3	10	----	57.6	2.7	8	-5.3
Markham Meadows 5	35	1	0.0	59.9	66	59.9	10	----	57.0	2.9	8	-5.1
Markham Meadows 4	36	1	0.0	57.8	66	57.8	10	----	55.2	2.6	8	-5.4
Markham Meadows 3	37	1	0.0	56.6	66	56.6	10	----	54.2	2.4	8	-5.6
Markham Meadows 1	38	1	0.0	58.1	66	58.1	10	----	55.3	2.8	8	-5.2
play ground	39	1	0.0	80.0	66	80.0	10	Snd Lvl	69.1	10.9	8	2.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	39	0.0	2.4	10.9
All Impacted	10	0.0	4.2	10.9
All that meet NR Goal	1	10.9	10.9	10.9

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove BM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Woodlands 1	1	1	0.0	64.7	66	64.7	10	----	64.6	0.1	8	-7.9
North Cove 1	2	1	0.0	71.9	66	71.9	10	Snd Lvl	66.7	5.2	8	-2.8
North Cove 2	3	1	0.0	75.7	66	75.7	10	Snd Lvl	66.3	9.4	8	1.4
North Cove Park	4	1	0.0	75.7	66	75.7	10	Snd Lvl	65.5	10.2	8	2.2
North Cove 3	5	1	0.0	74.8	66	74.8	10	Snd Lvl	64.7	10.1	8	2.1
North Cove 77	6	1	0.0	66.6	66	66.6	10	Snd Lvl	62.1	4.5	8	-3.5
North Cove 76	7	1	0.0	65.6	66	65.6	10	----	60.7	4.9	8	-3.1
North Cove 75	8	1	0.0	65.2	66	65.2	10	----	60.1	5.1	8	-2.9
North Cove 74	9	1	0.0	64.1	66	64.1	10	----	59.0	5.1	8	-2.9
North Cove 73	10	1	0.0	63.6	66	63.6	10	----	59.2	4.4	8	-3.6
North Cove 72	11	1	0.0	61.9	66	61.9	10	----	57.9	4.0	8	-4.0
North Cove 69	12	1	0.0	59.8	66	59.8	10	----	55.9	3.9	8	-4.1
North Cove 70	13	1	0.0	60.5	66	60.5	10	----	56.5	4.0	8	-4.0
North Cove 71	14	1	0.0	61.2	66	61.2	10	----	56.7	4.5	8	-3.5
North Cove 65	15	1	0.0	59.7	66	59.7	10	----	55.6	4.1	8	-3.9
North Cove 66	16	1	0.0	59.7	66	59.7	10	----	55.1	4.6	8	-3.4
North Cove 67	17	1	0.0	59.2	66	59.2	10	----	54.9	4.3	8	-3.7
North Cove 68	18	1	0.0	58.5	66	58.5	10	----	54.3	4.2	8	-3.8
North Cove 4	19	1	0.0	69.9	66	69.9	10	Snd Lvl	62.1	7.8	8	-0.2
North Cove 5	20	1	0.0	67.0	66	67.0	10	Snd Lvl	60.4	6.6	8	-1.4
North Cove 6	21	1	0.0	64.5	66	64.5	10	----	58.8	5.7	8	-2.3
North Cove 7	22	1	0.0	62.5	66	62.5	10	----	57.3	5.2	8	-2.8
North Cove 8	23	1	0.0	61.3	66	61.3	10	----	56.2	5.1	8	-2.9

North Cove 9	24	1	0.0	60.1	66	60.1	10	----	55.0	5.1	8	-2.9
North Cove 10	25	1	0.0	59.4	66	59.4	10	----	53.9	5.5	8	-2.5
North Cove 11	26	1	0.0	59.0	66	59.0	10	----	53.4	5.6	8	-2.4
North Cove 12	27	1	0.0	57.7	66	57.7	10	----	52.6	5.1	8	-2.9
North Cove 13	28	1	0.0	57.5	66	57.5	10	----	52.2	5.3	8	-2.7
North Cove 14	29	1	0.0	55.0	66	55.0	10	----	52.2	2.8	8	-5.2
North Cove 15	30	1	0.0	55.9	66	55.9	10	----	52.3	3.6	8	-4.4
North Cove 16	31	1	0.0	54.9	66	54.9	10	----	52.2	2.7	8	-5.3
North Cove 17	32	1	0.0	58.0	66	58.0	10	----	53.8	4.2	8	-3.8
North Cove 18	33	1	0.0	57.2	66	57.2	10	----	53.1	4.1	8	-3.9
North Cove 19	59	1	0.0	56.8	66	56.8	10	----	52.7	4.1	8	-3.9
North Cove 20	35	1	0.0	56.2	66	56.2	10	----	52.5	3.7	8	-4.3
North Cove 21	36	1	0.0	56.4	66	56.4	10	----	52.0	4.4	8	-3.6
North Cove 22	37	1	0.0	55.9	66	55.9	10	----	52.3	3.6	8	-4.4
North Cove 23	38	1	0.0	55.1	66	55.1	10	----	52.2	2.9	8	-5.1
Woodlands 2	39	1	0.0	62.4	66	62.4	10	----	59.3	3.1	8	-4.9
Woodlands 3	40	1	0.0	60.8	66	60.8	10	----	57.8	3.0	8	-5.0
Woodlands 5	41	1	0.0	59.1	66	59.1	10	----	56.1	3.0	8	-5.0
Woodlands 4	42	1	0.0	60.0	66	60.0	10	----	56.9	3.1	8	-4.9
North Cove 24	43	1	0.0	58.0	66	58.0	10	----	54.0	4.0	8	-4.0
North Cove 25	44	1	0.0	57.5	66	57.5	10	----	53.9	3.6	8	-4.4
North Cove 26	45	1	0.0	57.1	66	57.1	10	----	53.6	3.5	8	-4.5
North Cove 27	46	1	0.0	56.3	66	56.3	10	----	53.2	3.1	8	-4.9
North Cove 28	47	1	0.0	56.4	66	56.4	10	----	53.1	3.3	8	-4.7
North Cove 29	48	1	0.0	55.9	66	55.9	10	----	52.9	3.0	8	-5.0
North Cove 30	49	1	0.0	55.5	66	55.5	10	----	52.7	2.8	8	-5.2
North Cove 31	50	1	0.0	54.9	66	54.9	10	----	52.4	2.5	8	-5.5
North Cove 32	51	1	0.0	56.4	66	56.4	10	----	53.2	3.2	8	-4.8
North Cove 33	52	1	0.0	56.8	66	56.8	10	----	53.3	3.5	8	-4.5
North Cove 34	53	1	0.0	56.4	66	56.4	10	----	52.9	3.5	8	-4.5
North Cove 35	54	1	0.0	55.3	66	55.3	10	----	52.4	2.9	8	-5.1
North Cove 36	55	1	0.0	55.5	66	55.5	10	----	52.5	3.0	8	-5.0
North Cove 37	56	1	0.0	55.2	66	55.2	10	----	52.4	2.8	8	-5.2
North Cove 38	57	1	0.0	54.9	66	54.9	10	----	52.4	2.5	8	-5.5
North Cove 39	58	1	0.0	55.2	66	55.2	10	----	52.6	2.6	8	-5.4
Northridge 12	60	1	0.0	76.7	66	76.7	10	Snd Lvl	73.2	3.5	8	-4.5
Northridge 11	61	1	0.0	65.0	66	65.0	10	----	60.9	4.1	8	-3.9
Northridge 10	62	1	0.0	65.0	66	65.0	10	----	61.0	4.0	8	-4.0
Northridge 9	63	1	0.0	66.0	66	66.0	10	Snd Lvl	61.9	4.1	8	-3.9
Northridge 8	64	1	0.0	68.1	66	68.1	10	Snd Lvl	63.8	4.3	8	-3.7
Northridge 7	65	1	0.0	69.9	66	69.9	10	Snd Lvl	65.5	4.4	8	-3.6

Northridge 6	66	1	0.0	67.7	66	67.7	10	Snd Lvl	63.7	4.0	8	-4.0
Northridge 5	67	1	0.0	65.3	66	65.3	10	----	61.8	3.5	8	-4.5
Northridge 3	68	1	0.0	62.2	66	62.2	10	----	58.7	3.5	8	-4.5
Northridge 2	69	1	0.0	60.4	66	60.4	10	----	56.9	3.5	8	-4.5
Northridge 1	70	1	0.0	59.9	66	59.9	10	----	56.7	3.2	8	-4.8
Bay Poiint 12	71	1	0.0	58.4	66	58.4	10	----	55.7	2.7	8	-5.3
Bay Point 11	72	1	0.0	57.8	66	57.8	10	----	55.1	2.7	8	-5.3
Bay Point 10	73	1	0.0	57.2	66	57.2	10	----	54.6	2.6	8	-5.4
Bay Point 9	74	1	0.0	56.7	66	56.7	10	----	54.1	2.6	8	-5.4
bay Point 8	75	1	0.0	56.2	66	56.2	10	----	53.7	2.5	8	-5.5
Bay Point 7	76	1	0.0	55.6	66	55.6	10	----	53.2	2.4	8	-5.6
Bay Point 6	77	1	0.0	54.9	66	54.9	10	----	52.8	2.1	8	-5.9
Bay Point 5	78	1	0.0	56.8	66	56.8	10	----	53.6	3.2	8	-4.8
Bay Point 4	79	1	0.0	56.7	66	56.7	10	----	53.5	3.2	8	-4.8
Bay Point 3	80	1	0.0	56.3	66	56.3	10	----	53.3	3.0	8	-5.0
Bay Point 2	81	1	0.0	56.0	66	56.0	10	----	53.0	3.0	8	-5.0
North Cove 62	82	1	0.0	55.6	66	55.6	10	----	53.2	2.4	8	-5.6
North Cove 63	83	1	0.0	56.3	66	56.3	10	----	53.5	2.8	8	-5.2
North Cove 64	84	1	0.0	55.9	66	55.9	10	----	53.3	2.6	8	-5.4
North Cove 65	85	1	0.0	55.4	66	55.4	10	----	52.9	2.5	8	-5.5
Bay Point 1	86	1	0.0	55.5	66	55.5	10	----	52.7	2.8	8	-5.2
Tennis Ct.	87	1	0.0	75.0	66	75.0	10	Snd Lvl	66.2	8.8	8	0.8
Northridge 13	91	1	0.0	70.3	66	70.3	10	Snd Lvl	65.1	5.2	8	-2.8
Northridge 14	92	1	0.0	67.3	66	67.3	10	Snd Lvl	63.1	4.2	8	-3.8
Receiver93	93	1	0.0	65.1	66	65.1	10	----	61.6	3.5	8	-4.5
Northridge 4	94	1	0.0	63.4	66	63.4	10	----	59.0	4.4	8	-3.6
Bolling 1	95	1	0.0	56.1	66	56.1	10	----	55.2	0.9	8	-7.1
Bolling 2	96	1	0.0	59.7	66	59.7	10	----	58.7	1.0	8	-7.0
Bolling 3	97	1	0.0	60.1	66	60.1	10	----	59.3	0.8	8	-7.2
Bolling 4	98	1	0.0	60.5	66	60.5	10	----	59.8	0.7	8	-7.3
Bolling 5	99	1	0.0	60.8	66	60.8	10	----	60.3	0.5	8	-7.5
Bolling 6	100	1	0.0	61.2	66	61.2	10	----	60.7	0.5	8	-7.5
Bolling 7	101	1	0.0	61.4	66	61.4	10	----	61.0	0.4	8	-7.6
Bolling 8	102	1	0.0	62.0	66	62.0	10	----	61.7	0.3	8	-7.7
Bolling 9	103	1	0.0	61.2	66	61.2	10	----	61.0	0.2	8	-7.8
Bolling 10	104	1	0.0	60.0	66	60.0	10	----	59.7	0.3	8	-7.7
Bolling 11	105	1	0.0	60.7	66	60.7	10	----	60.5	0.2	8	-7.8
Bolling 12	106	1	0.0	62.0	66	62.0	10	----	61.8	0.2	8	-7.8
Bolling 13	107	1	0.0	63.0	66	63.0	10	----	62.9	0.1	8	-7.9
Bolling 14	108	1	0.0	63.4	66	63.4	10	----	63.2	0.2	8	-7.8
Bolling 15	109	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9

Bolling 16	110	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Bolling 17	111	1	0.0	61.2	66	61.2	10	----	61.1	0.1	8	-7.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	107	0.1	3.4	10.2
All Impacted	15	3.5	6.2	10.2
All that meet NR Goal	4	8.8	9.6	10.2

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay BM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	72.0	66	72.0	10	Snd Lvl	67.2	4.8	8	-3.2
Pine Bay 2	2	1	0.0	72.3	66	72.3	10	Snd Lvl	67.1	5.2	8	-2.8
Pine Bay 3	3	1	0.0	72.1	66	72.1	10	Snd Lvl	67.4	4.7	8	-3.3
Pine Bay 4	4	1	0.0	72.4	66	72.4	10	Snd Lvl	67.1	5.3	8	-2.7
Pine Bay 5	5	1	0.0	72.4	66	72.4	10	Snd Lvl	67.1	5.3	8	-2.7
Pine Bay 6	6	1	0.0	72.3	66	72.3	10	Snd Lvl	67.1	5.2	8	-2.8
Pine Bay 7	7	1	0.0	72.5	66	72.5	10	Snd Lvl	66.9	5.6	8	-2.4
Pine Bay 8	8	1	0.0	72.4	66	72.4	10	Snd Lvl	66.8	5.6	8	-2.4
Pine Bay 9	9	1	0.0	72.4	66	72.4	10	Snd Lvl	66.7	5.7	8	-2.3
Pine Bay 10	10	1	0.0	72.2	66	72.2	10	Snd Lvl	66.6	5.6	8	-2.4
Pine Bay 11	11	1	0.0	72.4	66	72.4	10	Snd Lvl	66.5	5.9	8	-2.1
Pine Bay 12	12	1	0.0	72.3	66	72.3	10	Snd Lvl	66.3	6.0	8	-2.0
Pine Bay 13	13	1	0.0	72.3	66	72.3	10	Snd Lvl	66.0	6.3	8	-1.7
Pine Bay 14	14	1	0.0	72.2	66	72.2	10	Snd Lvl	65.9	6.3	8	-1.7
Pine Bay 15	15	1	0.0	71.5	66	71.5	10	Snd Lvl	65.5	6.0	8	-2.0
Pine Bay 16	16	1	0.0	71.3	66	71.3	10	Snd Lvl	65.5	5.8	8	-2.2
Pine Bay 17	17	1	0.0	71.2	66	71.2	10	Snd Lvl	65.4	5.8	8	-2.2
Pine Bay 18	18	1	0.0	71.2	66	71.2	10	Snd Lvl	65.3	5.9	8	-2.1
Pine Bay 19	19	1	0.0	70.8	66	70.8	10	Snd Lvl	65.0	5.8	8	-2.2
Pine Bay 20	20	1	0.0	70.6	66	70.6	10	Snd Lvl	65.0	5.6	8	-2.4
Pine Bay 21	21	1	0.0	70.7	66	70.7	10	Snd Lvl	65.1	5.6	8	-2.4
Pine Bay 22	22	1	0.0	70.7	66	70.7	10	Snd Lvl	65.2	5.5	8	-2.5
Pine Bay 23	23	1	0.0	70.6	66	70.6	10	Snd Lvl	65.3	5.3	8	-2.7

Pine Bay 24	24	1	0.0	70.2	66	70.2	10	Snd Lvl	65.4	4.8	8	-3.2
Pine Bay 25	25	1	0.0	70.1	66	70.1	10	Snd Lvl	65.7	4.4	8	-3.6
Pine Bay 26	26	1	0.0	69.9	66	69.9	10	Snd Lvl	66.0	3.9	8	-4.1
Pine Bay 27	27	1	0.0	70.0	66	70.0	10	Snd Lvl	66.6	3.4	8	-4.6
Pine Bay 28	28	1	0.0	70.7	66	70.7	10	Snd Lvl	68.1	2.6	8	-5.4
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	69.2	1.6	8	-6.4
Pine Bay 30	30	1	0.0	69.1	66	69.1	10	Snd Lvl	68.0	1.1	8	-6.9
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	67.1	0.7	8	-7.3
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	66.0	0.6	8	-7.4
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.9	0.7	8	-7.3
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	64.0	0.7	8	-7.3
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.6	0.6	8	-7.4
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.9	0.6	8	-7.4
Pine Bay 37	37	1	0.0	63.0	66	63.0	10	----	62.5	0.5	8	-7.5
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	62.0	0.5	8	-7.5
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.5	0.5	8	-7.5
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	61.0	0.5	8	-7.5
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.9	0.4	8	-7.6
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.4	0.4	8	-7.6
Pine Bay 43	43	1	0.0	60.0	66	60.0	10	----	59.7	0.3	8	-7.7
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	60.1	0.5	8	-7.5
Pine Bay 45	45	1	0.0	60.9	66	60.9	10	----	60.4	0.5	8	-7.5
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.8	0.5	8	-7.5
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	61.4	0.6	8	-7.4
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	61.8	0.7	8	-7.3
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	62.4	0.7	8	-7.3
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	62.9	0.8	8	-7.2
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	63.5	0.8	8	-7.2
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	64.4	0.8	8	-7.2
Pine Bay 53	53	1	0.0	66.2	66	66.2	10	Snd Lvl	65.1	1.1	8	-6.9
Pine Bay 54	54	1	0.0	66.1	66	66.1	10	Snd Lvl	64.9	1.2	8	-6.8
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	64.7	1.3	8	-6.7
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	64.5	1.4	8	-6.6
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	63.3	1.1	8	-6.9
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	62.5	1.0	8	-7.0
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	61.7	0.8	8	-7.2
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	60.9	0.7	8	-7.3
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	60.5	0.6	8	-7.4
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	60.0	0.4	8	-7.6
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	59.6	0.4	8	-7.6
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	64.3	1.8	8	-6.2

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	64.1	1.7	8	-6.3
Pine Bay 66	66	1	0.0	64.8	66	64.8	10	----	63.0	1.8	8	-6.2
Pine Bay 67	67	1	0.0	64.7	66	64.7	10	----	62.9	1.8	8	-6.2
Pine Bay 68	68	1	0.0	64.6	66	64.6	10	----	62.8	1.8	8	-6.2
Pine Bay 69	69	1	0.0	64.6	66	64.6	10	----	62.9	1.7	8	-6.3
Pine Bay 70	70	1	0.0	64.8	66	64.8	10	----	62.9	1.9	8	-6.1
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	63.0	1.6	8	-6.4
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	62.8	1.6	8	-6.4
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	62.8	1.5	8	-6.5
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	62.6	1.4	8	-6.6
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	59.7	0.7	8	-7.3
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	59.2	0.6	8	-7.4
Bolling 1	77	1	0.0	59.5	66	59.5	10	----	59.4	0.1	8	-7.9
Bolling 2	78	1	0.0	60.0	66	60.0	10	----	59.9	0.1	8	-7.9
Bolling 3	79	1	0.0	60.4	66	60.4	10	----	60.2	0.2	8	-7.8
Bolling 4	80	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 5	81	1	0.0	60.9	66	60.9	10	----	60.8	0.1	8	-7.9
Bolling 6	82	1	0.0	61.4	66	61.4	10	----	61.2	0.2	8	-7.8
Bolling 7	83	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 8	84	1	0.0	61.1	66	61.1	10	----	60.8	0.3	8	-7.7
Bolling 9	85	1	0.0	61.9	66	61.9	10	----	61.6	0.3	8	-7.7
Bolling 10	86	1	0.0	62.9	66	62.9	10	----	62.7	0.2	8	-7.8
Bolling 11	87	1	0.0	63.2	66	63.2	10	----	62.9	0.3	8	-7.7
Bolling 12	88	1	0.0	63.6	66	63.6	10	----	63.3	0.3	8	-7.7
Bolling 13	89	1	0.0	64.2	66	64.2	10	----	63.9	0.3	8	-7.7
Bolling 14	90	1	0.0	62.6	66	62.6	10	----	62.0	0.6	8	-7.4
Bolling 15	91	1	0.0	60.7	66	60.7	10	----	59.6	1.1	8	-6.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	91	0.1	2.2	6.3
All Impacted	36	0.6	4.4	6.3
All that meet NR Goal	0	0.0	0.0	0.0

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	63.8	66	63.8	10	----	62.6	1.2	8	-6.8
Rutledge 2	2	1	0.0	68.3	66	68.3	10	Snd Lvl	66.1	2.2	8	-5.8
Rutledge 3	3	1	0.0	66.0	66	66.0	10	Snd Lvl	62.7	3.3	8	-4.7
Rutledge 4	4	1	0.0	64.3	66	64.3	10	----	60.6	3.7	8	-4.3
Rutledge 5	5	1	0.0	62.7	66	62.7	10	----	58.7	4.0	8	-4.0
Rutledge 6	6	1	0.0	61.7	66	61.7	10	----	57.6	4.1	8	-3.9
Rutledge 7	7	1	0.0	61.3	66	61.3	10	----	57.1	4.2	8	-3.8
Rutledge 8	8	1	0.0	60.9	66	60.9	10	----	56.7	4.2	8	-3.8
Rutledge 9	9	1	0.0	60.2	66	60.2	10	----	56.4	3.8	8	-4.2
Rutledge 10	10	1	0.0	60.7	66	60.7	10	----	56.6	4.1	8	-3.9
Rutledge 11	11	1	0.0	59.9	66	59.9	10	----	56.3	3.6	8	-4.4
Rutledge 12	12	1	0.0	59.1	66	59.1	10	----	56.0	3.1	8	-4.9
Crowley 1	13	1	0.0	58.8	66	58.8	10	----	55.8	3.0	8	-5.0
Crowley 2	14	1	0.0	61.2	66	61.2	10	----	58.1	3.1	8	-4.9
Crowley 3	15	1	0.0	65.2	66	65.2	10	----	62.1	3.1	8	-4.9
Crowley 4	16	1	0.0	72.2	66	72.2	10	Snd Lvl	67.7	4.5	8	-3.5
Crowley 5	17	1	0.0	75.6	66	75.6	10	Snd Lvl	72.1	3.5	8	-4.5
Crowley 6	18	1	0.0	76.2	66	76.2	10	Snd Lvl	74.8	1.4	8	-6.6
Crowley 7	19	1	0.0	76.3	66	76.3	10	Snd Lvl	75.4	0.9	8	-7.1
Crowley 8	20	1	0.0	76.6	66	76.6	10	Snd Lvl	75.8	0.8	8	-7.2
Crowley 9	21	1	0.0	76.6	66	76.6	10	Snd Lvl	75.8	0.8	8	-7.2
Crowley 10	22	1	0.0	76.8	66	76.8	10	Snd Lvl	76.1	0.7	8	-7.3
Crowley 11	23	1	0.0	76.8	66	76.8	10	Snd Lvl	76.4	0.4	8	-7.6

Crowley 12	24	1	0.0	76.7	66	76.7	10	Snd Lvl	76.0	0.7	8	-7.3
Crowley 13	25	1	0.0	75.7	66	75.7	10	Snd Lvl	73.4	2.3	8	-5.7
Crowley 14	26	1	0.0	74.9	66	74.9	10	Snd Lvl	70.8	4.1	8	-3.9
Crowley 15	27	1	0.0	73.3	66	73.3	10	Snd Lvl	68.4	4.9	8	-3.1
Crowley 16	28	1	0.0	61.0	66	61.0	10	----	58.7	2.3	8	-5.7
Crowley 17	29	1	0.0	63.1	66	63.1	10	----	60.4	2.7	8	-5.3
Crowley 18	30	1	0.0	65.6	66	65.6	10	----	63.2	2.4	8	-5.6
Crowley 19	31	1	0.0	67.1	66	67.1	10	Snd Lvl	65.7	1.4	8	-6.6
Crowley 37	32	1	0.0	64.3	66	64.3	10	----	62.5	1.8	8	-6.2
Crowley 38	33	1	0.0	61.8	66	61.8	10	----	59.9	1.9	8	-6.1
Crowley 39	34	1	0.0	60.7	66	60.7	10	----	58.8	1.9	8	-6.1
Crowley 40	35	1	0.0	60.2	66	60.2	10	----	58.4	1.8	8	-6.2
Crowley 20	36	1	0.0	67.2	66	67.2	10	Snd Lvl	66.2	1.0	8	-7.0
Crowley 21	37	1	0.0	66.1	66	66.1	10	Snd Lvl	64.9	1.2	8	-6.8
Crowley 41	38	1	0.0	64.6	66	64.6	10	----	63.3	1.3	8	-6.7
Crowley 42	39	1	0.0	63.8	66	63.8	10	----	62.6	1.2	8	-6.8
Crowley 22	40	1	0.0	64.9	66	64.9	10	----	63.4	1.5	8	-6.5
Crowley 23	41	1	0.0	61.4	66	61.4	10	----	59.6	1.8	8	-6.2
Crowley 24	42	1	0.0	60.3	66	60.3	10	----	58.5	1.8	8	-6.2
Crowley 25	43	1	0.0	59.8	66	59.8	10	----	57.8	2.0	8	-6.0
Crowley 26	44	1	0.0	63.5	66	63.5	10	----	61.6	1.9	8	-6.1
Crowley 27	45	1	0.0	62.0	66	62.0	10	----	59.6	2.4	8	-5.6
Crowley 28	46	1	0.0	60.6	66	60.6	10	----	58.1	2.5	8	-5.5
Crowley 29	47	1	0.0	58.2	66	58.2	10	----	55.9	2.3	8	-5.7
Crowley 30	48	1	0.0	72.1	66	72.1	10	Snd Lvl	66.8	5.3	8	-2.7
Crowley 31	49	1	0.0	69.1	66	69.1	10	Snd Lvl	64.8	4.3	8	-3.7
Crowley 32	50	1	0.0	67.4	66	67.4	10	Snd Lvl	63.2	4.2	8	-3.8
Crowley 33	51	1	0.0	65.6	66	65.6	10	----	61.4	4.2	8	-3.8
Crowley 34	52	1	0.0	61.4	66	61.4	10	----	58.4	3.0	8	-5.0
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	56.4	2.9	8	-5.1
Crowley 36	54	1	0.0	58.0	66	58.0	10	----	55.4	2.6	8	-5.4
Long Pond 1	55	1	0.0	56.7	66	56.7	10	----	54.0	2.7	8	-5.3
Long Pond 2	56	1	0.0	57.9	66	57.9	10	----	55.1	2.8	8	-5.2
Long Pond 3	57	1	0.0	59.7	66	59.7	10	----	56.5	3.2	8	-4.8
Long Pond 4	58	1	0.0	62.4	66	62.4	10	----	58.8	3.6	8	-4.4
Long Pond 5	59	1	0.0	66.2	66	66.2	10	Snd Lvl	61.6	4.6	8	-3.4
Long Pond 6	60	1	0.0	71.9	66	71.9	10	Snd Lvl	65.3	6.6	8	-1.4
Long Pond 7	61	1	0.0	73.5	66	73.5	10	Snd Lvl	67.7	5.8	8	-2.2
Long Pond 8	62	1	0.0	74.0	66	74.0	10	Snd Lvl	69.7	4.3	8	-3.7
Long Pond 9	63	1	0.0	74.3	66	74.3	10	Snd Lvl	71.1	3.2	8	-4.8
Long Pond 10	64	1	0.0	73.7	66	73.7	10	Snd Lvl	71.1	2.6	8	-5.4

Long Pond 11	65	1	0.0	73.4	66	73.4	10	Snd Lvl	70.6	2.8	8	-5.2
Long Pond 12	66	1	0.0	73.9	66	73.9	10	Snd Lvl	69.5	4.4	8	-3.6
Long Pond 13	67	1	0.0	73.5	66	73.5	10	Snd Lvl	68.5	5.0	8	-3.0
Long Pond 14	68	1	0.0	73.0	66	73.0	10	Snd Lvl	68.3	4.7	8	-3.3
Long Pond 15	69	1	0.0	73.2	66	73.2	10	Snd Lvl	68.4	4.8	8	-3.2
Long Pond 16	70	1	0.0	73.0	66	73.0	10	Snd Lvl	68.5	4.5	8	-3.5
Long Pond 17	71	1	0.0	73.7	66	73.7	10	Snd Lvl	69.2	4.5	8	-3.5
Long Pond 18	72	1	0.0	74.3	66	74.3	10	Snd Lvl	69.4	4.9	8	-3.1
Long Pond 19	73	1	0.0	73.6	66	73.6	10	Snd Lvl	69.1	4.5	8	-3.5
Long Pond 20	74	1	0.0	72.9	66	72.9	10	Snd Lvl	68.5	4.4	8	-3.6
Long Pond 21	75	1	0.0	72.4	66	72.4	10	Snd Lvl	68.3	4.1	8	-3.9
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	68.8	4.0	8	-4.0
Chardonnay 1	77	1	0.0	62.1	66	62.1	10	----	58.8	3.3	8	-4.7
Chardonnay 2	78	1	0.0	64.0	66	64.0	10	----	60.4	3.6	8	-4.4
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	63.4	3.7	8	-4.3
Chardonnay 4	80	1	0.0	68.1	66	68.1	10	Snd Lvl	60.7	7.4	8	-0.6
Chardonnay 5	81	1	0.0	65.7	66	65.7	10	----	59.9	5.8	8	-2.2
Chardonnay 6	82	1	0.0	62.9	66	62.9	10	----	59.0	3.9	8	-4.1
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	57.5	3.6	8	-4.4
Dunbrooke	84	1	0.0	64.6	66	64.6	10	----	58.9	5.7	8	-2.3
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	59.4	2.5	8	-5.5
Long Pond 24	86	1	0.0	62.0	66	62.0	10	----	59.9	2.1	8	-5.9
Long Pond 25	87	1	0.0	60.3	66	60.3	10	----	59.6	0.7	8	-7.3
Long Pond 26	88	1	0.0	60.1	66	60.1	10	----	59.8	0.3	8	-7.7
Long Pond 27	89	1	0.0	58.7	66	58.7	10	----	58.1	0.6	8	-7.4

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	89	0.3	3.1	7.4
All Impacted	40	0.4	3.5	7.4
All that meet NR Goal	0	0.0	0.0	0.0

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA F BM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Fox 35	1	1	0.0	71.5	66	71.5	10	Snd Lvl	63.9	7.6	8	-0.4
Good Life 45	2	1	0.0	76.1	66	76.1	10	Snd Lvl	68.9	7.2	8	-0.8
Candlewood Pool	3	1	0.0	73.8	66	73.8	10	Snd Lvl	73.8	0.0	8	-8.0
Filutowski	4	1	0.0	73.3	66	73.3	10	Snd Lvl	73.3	0.0	8	-8.0
La Quinta pool	5	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
Homestead pool	6	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
Extended Stay America	7	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	7	0.0	2.1	7.6
All Impacted	7	0.0	2.1	7.6
All that meet NR Goal	0	0.0	0.0	0.0

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G GM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 2	2	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 6	6	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 7	7	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 8	8	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 9	9	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 10	10	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 11	11	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 12	12	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 1	13	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 2	14	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 3	15	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 4	16	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 5	17	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 6	18	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 7	19	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 8	20	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 9	21	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 10	22	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 11	23	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Crowley 12	24	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 13	25	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 14	26	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 15	27	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 16	28	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 17	29	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 18	30	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 19	31	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 37	32	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 38	33	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 39	34	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 40	35	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 20	36	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 21	37	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 41	38	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 42	39	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 22	40	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 23	41	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 24	42	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 25	43	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 26	44	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 27	45	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 28	46	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 29	47	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 30	48	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 31	49	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 32	50	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 33	51	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 34	52	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 35	53	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 36	54	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 1	55	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 2	56	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 3	57	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 4	58	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 5	59	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 6	60	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 7	61	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 8	62	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 9	63	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 10	64	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Long Pond 11	65	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 12	66	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 13	67	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 14	68	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 15	69	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 16	70	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 17	71	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 18	72	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 19 out	73	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 20	74	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Long Pond 21	75	1	0.0	72.5	66	72.5	10	Snd Lvl	72.5	0.0	8	-8.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Chardonnay 1	77	1	0.0	62.0	66	62.0	10	----	60.5	1.5	8	-6.5
Chardonnay 2	78	1	0.0	63.9	66	63.9	10	----	62.4	1.5	8	-6.5
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	65.6	1.5	8	-6.5
Chardonnay 4	80	1	0.0	68.0	66	68.0	10	Snd Lvl	62.1	5.9	8	-2.1
Chardonnay 5	81	1	0.0	65.6	66	65.6	10	----	60.8	4.8	8	-3.2
Chardonnay 6	82	1	0.0	62.8	66	62.8	10	----	60.3	2.5	8	-5.5
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	58.5	2.6	8	-5.4
Dunbrooke	84	1	0.0	64.5	66	64.5	10	----	59.7	4.8	8	-3.2
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	61.0	0.9	8	-7.1
Long Pond 24	86	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	60.1	0.1	8	-7.9
Long Pond 26	88	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Long Pond 27	89	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0
Dunbrooke 1	90	1	0.0	62.3	66	62.3	10	----	59.0	3.3	8	-4.7
Dunbrooke 2	91	1	0.0	64.6	66	64.6	10	----	58.6	6.0	8	-2.0
Dunbrooke 3	92	1	0.0	64.7	66	64.7	10	----	58.3	6.4	8	-1.6
Dunbrooke 4	93	1	0.0	64.4	66	64.4	10	----	58.1	6.3	8	-1.7
Dunbrooke 5	94	1	0.0	63.6	66	63.6	10	----	58.1	5.5	8	-2.5
Dunbrooke 6	95	1	0.0	62.9	66	62.9	10	----	57.7	5.2	8	-2.8
Dunbrooke 7	96	1	0.0	60.4	66	60.4	10	----	57.1	3.3	8	-4.7
Dunbrooke 8	97	1	0.0	59.5	66	59.5	10	----	56.2	3.3	8	-4.7
Dunbrooke 9	98	1	0.0	61.3	66	61.3	10	----	57.3	4.0	8	-4.0
Dunbrooke 10	99	1	0.0	63.7	66	63.7	10	----	57.3	6.4	8	-1.6
Dunbrooke 11	100	1	0.0	63.5	66	63.5	10	----	56.7	6.8	8	-1.2
Tennis Ct.	101	1	0.0	63.6	66	63.6	10	----	56.7	6.9	8	-1.1
Dunbrooke 12	102	1	0.0	61.4	66	61.4	10	----	56.8	4.6	8	-3.4
Dunbrooke 13	103	1	0.0	59.4	66	59.4	10	----	56.0	3.4	8	-4.6
Oakmonte g	104	1	0.0	70.0	66	70.0	10	Snd Lvl	63.0	7.0	8	-1.0
Oakmonte f	105	1	0.0	69.7	66	69.7	10	Snd Lvl	63.5	6.2	8	-1.8

Oakmonte e	106	1	0.0	69.3	66	69.3	10	Snd Lvl	63.6	5.7	8	-2.3
Oakmonte d	107	1	0.0	68.9	66	68.9	10	Snd Lvl	63.9	5.0	8	-3.0
Oakmonte c	108	1	0.0	67.2	66	67.2	10	Snd Lvl	63.4	3.8	8	-4.2
Oakmonte b	109	1	0.0	65.8	66	65.8	10	----	61.5	4.3	8	-3.7
Oakmonte a	110	1	0.0	64.8	66	64.8	10	----	60.8	4.0	8	-4.0
Oakmonte 1	111	1	0.0	63.8	66	63.8	10	----	60.2	3.6	8	-4.4
Oakmonte 2	112	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 3	113	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 4	114	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 5	115	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 6	116	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 7	117	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 8	118	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 9	119	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 10	120	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
ITT	121	1	0.0	74.3	66	74.3	10	Snd Lvl	73.9	0.4	8	-7.6
Dunbrooke 13	103	1	0.0	58.8	66	58.8	10	----	57.9	0.9	8	-7.1
Notting Hill 1	122	1	0.0	59.6	66	59.6	10	----	58.6	1.0	8	-7.0
Notting Hill 2	123	1	0.0	59.8	66	59.8	10	----	58.9	0.9	8	-7.1
Notting Hill 3	124	1	0.0	62.7	66	62.7	10	----	61.9	0.8	8	-7.2
Notting Hill 4	125	1	0.0	62.4	66	62.4	10	----	61.6	0.8	8	-7.2
Notting Hill 5	126	1	0.0	64.3	66	64.3	10	----	63.7	0.6	8	-7.4
Notting Hill 6	127	1	0.0	64.5	66	64.5	10	----	64.1	0.4	8	-7.6
Notting Hill 7	128	1	0.0	64.9	66	64.9	10	----	64.5	0.4	8	-7.6
Notting Hill 8	129	1	0.0	65.4	66	65.4	10	----	65.1	0.3	8	-7.7
Notting Hill 9	130	1	0.0	65.3	66	65.3	10	----	65.1	0.2	8	-7.8
Notting Hill 10	131	1	0.0	65.3	66	65.3	10	----	65.1	0.2	8	-7.8
Notting Hill 11	132	1	0.0	65.1	66	65.1	10	----	65.0	0.1	8	-7.9
Notting Hill 12	133	1	0.0	64.3	66	64.3	10	----	64.2	0.1	8	-7.9
Notting Hill 13	134	1	0.0	64.1	66	64.1	10	----	64.0	0.1	8	-7.9
Notting Hill 14	135	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9
Notting Hill 15	136	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Notting Hill 16	137	1	0.0	64.1	66	64.1	10	----	64.0	0.1	8	-7.9
Notting Hill 17	138	1	0.0	63.6	66	63.6	10	----	63.5	0.1	8	-7.9
Notting Hill 18	139	1	0.0	63.2	66	63.2	10	----	63.1	0.1	8	-7.9
Notting Hill 19	140	1	0.0	65.3	66	65.3	10	----	65.2	0.1	8	-7.9
Notting Hill 20	141	1	0.0	64.6	66	64.6	10	----	64.5	0.1	8	-7.9
Notting Hill 21	142	1	0.0	65.5	66	65.5	10	----	65.4	0.1	8	-7.9
Notting Hill 22	143	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
Notting Hill 23	144	1	0.0	64.7	66	64.7	10	----	64.6	0.1	8	-7.9
Notting Hill 24	145	1	0.0	64.6	66	64.6	10	----	64.5	0.1	8	-7.9

Notting Hill 25	146	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
Notting Hill 26	147	1	0.0	62.8	66	62.8	10	----	62.7	0.1	8	-7.9
Notting Hill 27	148	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
Notting Hill 28	149	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0
Notting Hill 29	150	1	0.0	60.1	66	60.1	10	----	60.0	0.1	8	-7.9
Notting Hill 30	151	1	0.0	58.9	66	58.9	10	----	58.8	0.1	8	-7.9
Notting Hill 31	152	1	0.0	60.4	66	60.4	10	----	60.4	0.0	8	-8.0
Courtyard Pool	153	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte A	154	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte B	155	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte C	156	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte D	157	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte E	158	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte F	159	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte G	160	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	161	0.0	0.9	7.0
All Impacted	11	0.0	3.2	7.0
All that meet NR Goal	0	0.0	0.0	0.0

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA H & I
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Fox 35	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Good Life 45	2	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Candlewood Pool	3	1	0.0	73.8	66	73.8	10	Snd Lvl	66.2	7.6	8	-0.4
Filutowski	4	1	0.0	73.4	66	73.4	10	Snd Lvl	65.2	8.2	8	0.2
La Quinta pool	5	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
Homestead pool	6	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
Extended Stay America	7	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	7	0.0	2.3	8.2
All Impacted	5	0.0	3.2	8.2
All that meet NR Goal	1	8.2	8.2	8.2

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA J
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
North Cove Park	6	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver7	7	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver8	8	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver9	9	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver10	10	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver11	11	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver12	12	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver13	13	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver14	14	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver15	15	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver16	16	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver17	17	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver18	18	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver19	19	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver21	21	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver22	22	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver23	23	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver24	24	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver25	25	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Receiver26	26	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver27	27	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver28	28	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver29	29	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver30	30	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver31	31	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver32	32	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver33	33	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver34	34	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver35	35	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver36	36	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver37	37	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver38	38	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver39	39	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver41	41	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver42	42	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver43	43	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver44	44	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver45	45	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver46	46	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver47	47	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver48	48	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver49	49	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver50	50	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver51	51	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver52	52	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver53	53	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver54	54	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver55	55	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver56	56	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver57	57	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver58	58	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver59	59	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver61	61	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver63	63	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver65	65	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver66	66	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver67	67	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver68	68	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver69	69	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Receiver70	70	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver71	71	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver73	73	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver74	74	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver75	75	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver76	76	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver77	77	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver78	78	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver79	79	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver80	80	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver81	81	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver82	82	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver83	83	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver84	84	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver85	85	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver86	86	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver87	87	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver88	88	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver89	89	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver90	90	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver91	91	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Tennis ct.	93	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
church of higher call	95	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
pool	97	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver99	99	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver101	101	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver102	102	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
play field	104	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
play ground	106	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver108	108	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver109	109	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver110	110	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver111	111	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver112	112	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Fox 35	114	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Good Life 45	118	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Candlewood Pool	120	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Filutowski	122	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
La Quinta pool	124	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Homestead pool	126	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Extended Stay America	128	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Homewood Suites	131	1	0.0	63.1	66	63.1	10	----	63.1	0.0	8	-8.0
Hilton Garden	133	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0
Trail 1	135	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 2	136	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 3	137	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 4	138	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 5	139	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 6	140	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	142	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	143	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	144	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	145	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	146	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
courtyard pool	148	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Hyatt Place	150	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver152	152	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	121	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA K
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
North Cove Park	6	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver7	7	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver8	8	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver9	9	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver10	10	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver11	11	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver12	12	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver13	13	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver14	14	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver15	15	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver16	16	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver17	17	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver18	18	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver19	19	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver21	21	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver22	22	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver23	23	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver24	24	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver25	25	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Receiver26	26	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver27	27	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver28	28	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver29	29	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver30	30	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver31	31	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver32	32	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver33	33	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver34	34	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver35	35	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver36	36	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver37	37	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver38	38	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver39	39	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver41	41	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver42	42	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver43	43	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver44	44	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver45	45	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver46	46	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver47	47	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver48	48	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver49	49	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver50	50	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver51	51	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver52	52	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver53	53	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver54	54	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver55	55	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver56	56	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver57	57	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver58	58	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver59	59	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver61	61	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver63	63	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver65	65	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver66	66	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver67	67	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver68	68	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver69	69	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Receiver70	70	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver71	71	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver73	73	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver74	74	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver75	75	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver76	76	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver77	77	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver78	78	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver79	79	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver80	80	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver81	81	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver82	82	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver83	83	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver84	84	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver85	85	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver86	86	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver87	87	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver88	88	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver89	89	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver90	90	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver91	91	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Tennis ct.	93	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
church of higher call	95	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
pool	97	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver99	99	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver101	101	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver102	102	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
play field	104	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
play ground	106	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver108	108	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver109	109	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver110	110	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver111	111	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver112	112	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Fox 35	114	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Good Life 45	118	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Candlewood Pool	120	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Filutowski	122	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
La Quinta pool	124	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Homestead pool	126	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Extended Stay America	128	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Homewood Suites	131	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Hilton Garden	133	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 1	135	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 2	136	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 3	137	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 4	138	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 5	139	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail 6	140	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	142	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	143	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	144	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	145	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Trail	146	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
courtyard pool	148	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Hyatt Place	150	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Residence Inn	152	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8	-8.0
Marriott Lake Mary	154	1	0.0	54.2	66	54.2	10	----	54.2	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	122	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA L
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver152	152	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver153	153	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver154	154	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver155	155	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver156	156	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver157	157	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver158	158	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver159	159	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver160	160	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver161	161	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver162	162	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver163	163	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver164	164	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver165	165	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver166	166	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver167	167	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver168	168	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver169	169	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver207	207	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver208	208	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver209	209	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver210	210	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver211	211	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Receiver212	212	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver213	213	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver214	214	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver215	215	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver216	216	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver217	217	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver218	218	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver219	219	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver220	220	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver221	221	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver222	222	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver223	223	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver224	224	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver225	225	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver226	226	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver227	227	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver228	228	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver229	229	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver230	230	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver231	231	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver232	232	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver233	233	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver234	234	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver235	235	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver236	236	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver237	237	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver238	238	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver239	239	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver240	240	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
playground	241	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver242	242	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver243	243	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver244	244	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver245	245	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver246	246	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver247	247	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver248	248	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver249	249	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver250	250	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver251	251	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver252	252	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Receiver253	253	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver254	254	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver255	255	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver256	256	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver257	257	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver258	258	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver259	259	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver260	260	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver261	261	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
Receiver262	262	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
Comfort pool	264	1	0.0	73.6	66	73.6	10	Snd Lvl	66.6	7.0	8	-1.0
Super 8 pool	266	1	0.0	72.1	66	72.1	10	Snd Lvl	67.2	4.9	8	-3.1
Spring Hill Pool	268	1	0.0	60.4	66	60.4	10	----	60.3	0.1	8	-7.9
Cracker Barrel	270	1	0.0	68.7	66	68.7	10	Snd Lvl	64.9	3.8	8	-4.2

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	78	0.0	0.2	7.0
All Impacted	3	3.8	5.2	7.0
All that meet NR Goal	0	0.0	0.0	0.0

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA M
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver152	152	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
Receiver153	153	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0
Receiver154	154	1	0.0	56.0	66	56.0	10	----	56.0	0.0	8	-8.0
Receiver155	155	1	0.0	56.4	66	56.4	10	----	56.4	0.0	8	-8.0
Receiver156	156	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
Receiver157	157	1	0.0	57.4	66	57.4	10	----	57.4	0.0	8	-8.0
Receiver158	158	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
Receiver159	159	1	0.0	58.4	66	58.4	10	----	58.4	0.0	8	-8.0
Receiver160	160	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0
Receiver161	161	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0
Receiver162	162	1	0.0	59.5	66	59.5	10	----	59.5	0.0	8	-8.0
Receiver163	163	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Receiver164	164	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Receiver165	165	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
Receiver166	166	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
Receiver167	167	1	0.0	60.9	66	60.9	10	----	60.9	0.0	8	-8.0
Receiver168	168	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
Receiver169	169	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
Receiver207	207	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
Receiver208	208	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
Receiver209	209	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
Receiver210	210	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Receiver211	211	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0

Receiver212	212	1	0.0	61.4	66	61.4	10	----	61.4	0.0	8	-8.0
Receiver213	213	1	0.0	60.4	66	60.4	10	----	60.4	0.0	8	-8.0
Receiver214	214	1	0.0	59.4	66	59.4	10	----	59.4	0.0	8	-8.0
Receiver215	215	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Receiver216	216	1	0.0	60.9	66	60.9	10	----	60.9	0.0	8	-8.0
Receiver217	217	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
Receiver218	218	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0
Receiver219	219	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
Receiver220	220	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0
Receiver221	221	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0
Receiver222	222	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
Receiver223	223	1	0.0	57.4	66	57.4	10	----	57.4	0.0	8	-8.0
Receiver224	224	1	0.0	58.5	66	58.5	10	----	58.5	0.0	8	-8.0
Receiver225	225	1	0.0	58.1	66	58.1	10	----	58.1	0.0	8	-8.0
Receiver226	226	1	0.0	57.0	66	57.0	10	----	57.0	0.0	8	-8.0
Receiver227	227	1	0.0	56.6	66	56.6	10	----	56.6	0.0	8	-8.0
Receiver228	228	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
Receiver229	229	1	0.0	57.1	66	57.1	10	----	57.1	0.0	8	-8.0
Receiver230	230	1	0.0	56.2	66	56.2	10	----	56.2	0.0	8	-8.0
Receiver231	231	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
Receiver232	232	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
Receiver233	233	1	0.0	56.4	66	56.4	10	----	56.4	0.0	8	-8.0
Receiver234	234	1	0.0	55.5	66	55.5	10	----	55.5	0.0	8	-8.0
Receiver235	235	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
Receiver236	236	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
Receiver237	237	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
Receiver238	238	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
Receiver239	239	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
Receiver240	240	1	0.0	54.4	66	54.4	10	----	54.4	0.0	8	-8.0
playground	241	1	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0
Receiver242	242	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
Receiver243	243	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0
Receiver244	244	1	0.0	58.3	66	58.3	10	----	58.3	0.0	8	-8.0
Receiver245	245	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
Receiver246	246	1	0.0	56.9	66	56.9	10	----	56.9	0.0	8	-8.0
Receiver247	247	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
Receiver248	248	1	0.0	55.5	66	55.5	10	----	55.5	0.0	8	-8.0
Receiver249	249	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
Receiver250	250	1	0.0	54.8	66	54.8	10	----	54.8	0.0	8	-8.0
Receiver251	251	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
Receiver252	252	1	0.0	53.9	66	53.9	10	----	53.9	0.0	8	-8.0

Receiver253	253	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
Receiver254	254	1	0.0	56.5	66	56.5	10	----	56.5	0.0	8	-8.0
Receiver255	255	1	0.0	57.3	66	57.3	10	----	57.3	0.0	8	-8.0
Receiver256	256	1	0.0	58.0	66	58.0	10	----	58.0	0.0	8	-8.0
Receiver257	257	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0
Receiver258	258	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
Receiver259	259	1	0.0	55.6	66	55.6	10	----	55.6	0.0	8	-8.0
Receiver260	260	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
Receiver261	261	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
Receiver262	262	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	74	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA N & O
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver152	152	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
Receiver153	153	1	0.0	55.5	66	55.5	10	----	55.5	0.0	8	-8.0
Receiver154	154	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
Receiver155	155	1	0.0	56.2	66	56.2	10	----	56.2	0.0	8	-8.0
Receiver156	156	1	0.0	56.6	66	56.6	10	----	56.6	0.0	8	-8.0
Receiver157	157	1	0.0	57.2	66	57.2	10	----	57.2	0.0	8	-8.0
Receiver158	158	1	0.0	57.7	66	57.7	10	----	57.7	0.0	8	-8.0
Receiver159	159	1	0.0	58.3	66	58.3	10	----	58.3	0.0	8	-8.0
Receiver160	160	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0
Receiver161	161	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0
Receiver162	162	1	0.0	59.5	66	59.5	10	----	59.5	0.0	8	-8.0
Receiver163	163	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Receiver164	164	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Receiver165	165	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
Receiver166	166	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
Receiver167	167	1	0.0	60.9	66	60.9	10	----	60.9	0.0	8	-8.0
Receiver168	168	1	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0
Receiver169	169	1	0.0	54.7	66	54.7	10	----	54.7	0.0	8	-8.0
Receiver207	207	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
Receiver208	208	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
Receiver209	209	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
Receiver210	210	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Receiver211	211	1	0.0	60.2	66	60.2	10	----	60.2	0.0	8	-8.0

Receiver212	212	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
Receiver213	213	1	0.0	60.4	66	60.4	10	----	60.4	0.0	8	-8.0
Receiver214	214	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0
Receiver215	215	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
Receiver216	216	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
Receiver217	217	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
Receiver218	218	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0
Receiver219	219	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
Receiver220	220	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0
Receiver221	221	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0
Receiver222	222	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
Receiver223	223	1	0.0	57.1	66	57.1	10	----	57.1	0.0	8	-8.0
Receiver224	224	1	0.0	58.3	66	58.3	10	----	58.3	0.0	8	-8.0
Receiver225	225	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
Receiver226	226	1	0.0	56.7	66	56.7	10	----	56.7	0.0	8	-8.0
Receiver227	227	1	0.0	56.2	66	56.2	10	----	56.2	0.0	8	-8.0
Receiver228	228	1	0.0	57.5	66	57.5	10	----	57.5	0.0	8	-8.0
Receiver229	229	1	0.0	56.9	66	56.9	10	----	56.9	0.0	8	-8.0
Receiver230	230	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
Receiver231	231	1	0.0	56.6	66	56.6	10	----	56.6	0.0	8	-8.0
Receiver232	232	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
Receiver233	233	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
Receiver234	234	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
Receiver235	235	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
Receiver236	236	1	0.0	54.7	66	54.7	10	----	54.7	0.0	8	-8.0
Receiver237	237	1	0.0	55.5	66	55.5	10	----	55.5	0.0	8	-8.0
Receiver238	238	1	0.0	54.4	66	54.4	10	----	54.4	0.0	8	-8.0
Receiver239	239	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
Receiver240	240	1	0.0	54.0	66	54.0	10	----	54.0	0.0	8	-8.0
playground	241	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
Receiver242	242	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Receiver243	243	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0
Receiver244	244	1	0.0	58.0	66	58.0	10	----	58.0	0.0	8	-8.0
Receiver245	245	1	0.0	57.2	66	57.2	10	----	57.2	0.0	8	-8.0
Receiver246	246	1	0.0	56.4	66	56.4	10	----	56.4	0.0	8	-8.0
Receiver247	247	1	0.0	55.6	66	55.6	10	----	55.6	0.0	8	-8.0
Receiver248	248	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
Receiver249	249	1	0.0	54.6	66	54.6	10	----	54.6	0.0	8	-8.0
Receiver250	250	1	0.0	54.2	66	54.2	10	----	54.2	0.0	8	-8.0
Receiver251	251	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
Receiver252	252	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0

Receiver253	253	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
Receiver254	254	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
Receiver255	255	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
Receiver256	256	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
Receiver257	257	1	0.0	58.4	66	58.4	10	----	58.4	0.0	8	-8.0
Receiver258	258	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
Receiver259	259	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
Receiver260	260	1	0.0	54.5	66	54.5	10	----	54.5	0.0	8	-8.0
Receiver261	261	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
Receiver262	262	1	0.0	53.9	66	53.9	10	----	53.8	0.1	8	-7.9
Chestnut 1	265	1	0.0	67.1	66	67.1	10	Snd Lvl	63.8	3.3	8	-4.7
Chestnut 2	266	1	0.0	64.3	66	64.3	10	----	61.3	3.0	8	-5.0
Chestnut 3	267	1	0.0	63.2	66	63.2	10	----	60.3	2.9	8	-5.1
Chestnut 4	268	1	0.0	62.6	66	62.6	10	----	59.9	2.7	8	-5.3
Chestnut 5	271	1	0.0	61.5	66	61.5	10	----	59.2	2.3	8	-5.7
Chestnut 6	273	1	0.0	65.9	66	65.9	10	----	62.7	3.2	8	-4.8
Chestnut 7	275	1	0.0	60.7	66	60.7	10	----	58.5	2.2	8	-5.8
Chestnut 8	276	1	0.0	60.0	66	60.0	10	----	58.1	1.9	8	-6.1
Chestnut 9	277	1	0.0	58.8	66	58.8	10	----	57.0	1.8	8	-6.2
Chestnut 10	278	1	0.0	61.3	66	61.3	10	----	59.1	2.2	8	-5.8
Chestnut 11	279	1	0.0	62.7	66	62.7	10	----	60.7	2.0	8	-6.0
Chestnut 12	280	1	0.0	63.2	66	63.2	10	----	61.3	1.9	8	-6.1
Receiver282	282	1	0.0	71.9	66	71.9	10	Snd Lvl	71.9	0.0	8	-8.0
Receiver283	283	1	0.0	71.6	66	71.6	10	Snd Lvl	71.6	0.0	8	-8.0
Receiver284	284	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
Receiver285	285	1	0.0	62.2	66	62.2	10	----	62.2	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	90	0.0	0.3	3.3
All Impacted	4	0.0	0.8	3.3
All that meet NR Goal	0	0.0	0.0	0.0

Barrier Analysis

NSA C

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C
BARRIER DESIGN: GM-22

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
WB NSA A GM	W	22.00	22.00	22.00	2663	58586				1757593
17' Wall B	W	17.00	17.00	17.00	1554	26422				0
17" existing	W	17.00	17.00	17.00	1318	22411				0
									Total Cost:	1757593

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C
BARRIER DESIGN: GM-22
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Church of Higher Call	1	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
Pool	2	1	0.0	69.1	66	69.1	10	Snd Lvl	68.9	0.2	8	-7.8
Markham Meadows 28	3	1	0.0	72.4	66	72.4	10	Snd Lvl	63.3	9.1	8	1.1
Markham Meadows 24	4	1	0.0	66.4	66	66.4	10	Snd Lvl	60.8	5.6	8	-2.4
Markham Meadows 21	5	1	0.0	71.0	66	71.0	10	Snd Lvl	61.5	9.5	8	1.5
Play Field	6	1	0.0	71.7	66	71.7	10	Snd Lvl	61.0	10.7	8	2.7
Church	8	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Ferne 1	9	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
Ferne 2	10	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
Ferne 3	11	1	0.0	66.2	66	66.2	10	Snd Lvl	66.1	0.1	8	-7.9
Trail 1	12	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
Markham Meadows 20	13	1	0.0	71.0	66	71.0	10	Snd Lvl	61.2	9.8	8	1.8
Markham Meadows 19	14	1	0.0	68.1	66	68.1	10	Snd Lvl	60.0	8.1	8	0.1
Markham Meadows 16	15	1	0.0	65.9	66	65.9	10	----	58.8	7.1	8	-0.9
Markham Meadows 13	16	1	0.0	64.9	66	64.9	10	----	58.0	6.9	8	-1.1
Markham Meadows 6	17	1	0.0	64.2	66	64.2	10	----	57.9	6.3	8	-1.7
Markham Meadows 2	18	1	0.0	61.1	66	61.1	10	----	56.0	5.1	8	-2.9
Markham Meadows 28	19	1	0.0	65.2	66	65.2	10	----	61.5	3.7	8	-4.3
Markham Meadows 27	20	1	0.0	61.7	66	61.7	10	----	59.7	2.0	8	-6.0
Markham Meadows 26	21	1	0.0	61.2	66	61.2	10	----	58.7	2.5	8	-5.5
Markham Meadows 25	22	1	0.0	63.2	66	63.2	10	----	59.7	3.5	8	-4.5
Markham Meadows 24	23	1	0.0	60.5	66	60.5	10	----	57.6	2.9	8	-5.1
Markham Meadows 23	24	1	0.0	62.6	66	62.6	10	----	58.6	4.0	8	-4.0

Markham Meadows 18	25	1	0.0	61.9	66	61.9	10	----	57.8	4.1	8	-3.9
Markham Meadows 17	26	1	0.0	59.6	66	59.6	10	----	56.5	3.1	8	-4.9
Markham Meadows 15	27	1	0.0	60.1	66	60.1	10	----	55.9	4.2	8	-3.8
Markham Meadows 14	28	1	0.0	57.2	66	57.2	10	----	54.4	2.8	8	-5.2
Markham Meadows 12	29	1	0.0	60.3	66	60.3	10	----	55.5	4.8	8	-3.2
Markham Meadows 11	30	1	0.0	58.1	66	58.1	10	----	54.4	3.7	8	-4.3
Markham Meadows 10	31	1	0.0	56.8	66	56.8	10	----	53.7	3.1	8	-4.9
Markham Meadows 7	32	1	0.0	56.1	66	56.1	10	----	52.9	3.2	8	-4.8
Markham Meadows 8	33	1	0.0	57.7	66	57.7	10	----	53.6	4.1	8	-3.9
Markham Meadows 9	34	1	0.0	60.3	66	60.3	10	----	55.0	5.3	8	-2.7
Markham Meadows 5	35	1	0.0	59.9	66	59.9	10	----	54.6	5.3	8	-2.7
Markham Meadows 4	36	1	0.0	57.8	66	57.8	10	----	53.4	4.4	8	-3.6
Markham Meadows 3	37	1	0.0	56.6	66	56.6	10	----	52.8	3.8	8	-4.2
Markham Meadows 1	38	1	0.0	58.1	66	58.1	10	----	53.6	4.5	8	-3.5
play ground	39	1	0.0	80.0	66	80.0	10	Snd Lvl	63.7	16.3	8	8.3

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	38	0.0	4.5	16.3
All Impacted	10	0.0	6.9	16.3
All that meet NR Goal	6	8.1	10.6	16.3

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C
BARRIER DESIGN: GM-20

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
WB NSA A GM	W	20.00	20.00	20.00	2663	53260				1597812
17' Wall B	W	17.00	17.00	17.00	1554	26422				0
17" existing	W	17.00	17.00	17.00	1318	22411				0
									Total Cost:	1597812

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C
BARRIER DESIGN: GM-20
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Church of Higher Call	1	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
Pool	2	1	0.0	69.1	66	69.1	10	Snd Lvl	68.9	0.2	8	-7.8
Markham Meadows 28	3	1	0.0	72.4	66	72.4	10	Snd Lvl	63.7	8.7	8	0.7
Markham Meadows 24	4	1	0.0	66.4	66	66.4	10	Snd Lvl	61.2	5.2	8	-2.8
Markham Meadows 21	5	1	0.0	71.0	66	71.0	10	Snd Lvl	62.0	9.0	8	1.0
Play Field	6	1	0.0	71.7	66	71.7	10	Snd Lvl	61.6	10.1	8	2.1
Church	8	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Ferne 1	9	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
Ferne 2	10	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
Ferne 3	11	1	0.0	66.2	66	66.2	10	Snd Lvl	66.1	0.1	8	-7.9
Trail 1	12	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
Markham Meadows 20	13	1	0.0	71.0	66	71.0	10	Snd Lvl	61.8	9.2	8	1.2
Markham Meadows 19	14	1	0.0	68.1	66	68.1	10	Snd Lvl	60.6	7.5	8	-0.5
Markham Meadows 16	15	1	0.0	65.9	66	65.9	10	----	59.5	6.4	8	-1.6
Markham Meadows 13	16	1	0.0	64.9	66	64.9	10	----	58.6	6.3	8	-1.7
Markham Meadows 6	17	1	0.0	64.2	66	64.2	10	----	58.4	5.8	8	-2.2
Markham Meadows 2	18	1	0.0	61.1	66	61.1	10	----	56.4	4.7	8	-3.3
Markham Meadows 28	19	1	0.0	65.2	66	65.2	10	----	61.7	3.5	8	-4.5
Markham Meadows 27	20	1	0.0	61.7	66	61.7	10	----	59.8	1.9	8	-6.1
Markham Meadows 26	21	1	0.0	61.2	66	61.2	10	----	58.8	2.4	8	-5.6
Markham Meadows 25	22	1	0.0	63.2	66	63.2	10	----	59.9	3.3	8	-4.7
Markham Meadows 24	23	1	0.0	60.5	66	60.5	10	----	57.8	2.7	8	-5.3
Markham Meadows 23	24	1	0.0	62.6	66	62.6	10	----	58.9	3.7	8	-4.3

Markham Meadows 18	25	1	0.0	61.9	66	61.9	10	----	58.2	3.7	8	-4.3
Markham Meadows 17	26	1	0.0	59.6	66	59.6	10	----	56.8	2.8	8	-5.2
Markham Meadows 15	27	1	0.0	60.1	66	60.1	10	----	56.2	3.9	8	-4.1
Markham Meadows 14	28	1	0.0	57.2	66	57.2	10	----	54.5	2.7	8	-5.3
Markham Meadows 12	29	1	0.0	60.3	66	60.3	10	----	55.9	4.4	8	-3.6
Markham Meadows 11	30	1	0.0	58.1	66	58.1	10	----	54.6	3.5	8	-4.5
Markham Meadows 10	31	1	0.0	56.8	66	56.8	10	----	53.9	2.9	8	-5.1
Markham Meadows 7	32	1	0.0	56.1	66	56.1	10	----	53.1	3.0	8	-5.0
Markham Meadows 8	33	1	0.0	57.7	66	57.7	10	----	53.8	3.9	8	-4.1
Markham Meadows 9	34	1	0.0	60.3	66	60.3	10	----	55.4	4.9	8	-3.1
Markham Meadows 5	35	1	0.0	59.9	66	59.9	10	----	55.0	4.9	8	-3.1
Markham Meadows 4	36	1	0.0	57.8	66	57.8	10	----	53.6	4.2	8	-3.8
Markham Meadows 3	37	1	0.0	56.6	66	56.6	10	----	53.0	3.6	8	-4.4
Markham Meadows 1	38	1	0.0	58.1	66	58.1	10	----	53.8	4.3	8	-3.7
play ground	39	1	0.0	80.0	66	80.0	10	Snd Lvl	64.4	15.6	8	7.6

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	38	0.0	4.2	15.6
All Impacted	10	0.0	6.6	15.6
All that meet NR Goal	5	8.7	10.5	15.6

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C
BARRIER DESIGN: GM-18

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
WB NSA A GM	W	18.00	18.00	18.00	2663	47934				1438030
17' Wall B	W	17.00	17.00	17.00	1554	26422				0
17" existing	W	17.00	17.00	17.00	1318	22411				0
									Total Cost:	1438030

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C
BARRIER DESIGN: GM-18
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Church of Higher Call	1	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
Pool	2	1	0.0	69.1	66	69.1	10	Snd Lvl	68.9	0.2	8	-7.8
Markham Meadows 28	3	1	0.0	72.4	66	72.4	10	Snd Lvl	64.2	8.2	8	0.2
Markham Meadows 24	4	1	0.0	66.4	66	66.4	10	Snd Lvl	61.6	4.8	8	-3.2
Markham Meadows 21	5	1	0.0	71.0	66	71.0	10	Snd Lvl	62.6	8.4	8	0.4
Play Field	6	1	0.0	71.7	66	71.7	10	Snd Lvl	62.3	9.4	8	1.4
Church	8	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Ferne 1	9	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
Ferne 2	10	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
Ferne 3	11	1	0.0	66.2	66	66.2	10	Snd Lvl	66.1	0.1	8	-7.9
Trail 1	12	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
Markham Meadows 20	13	1	0.0	71.0	66	71.0	10	Snd Lvl	62.4	8.6	8	0.6
Markham Meadows 19	14	1	0.0	68.1	66	68.1	10	Snd Lvl	61.2	6.9	8	-1.1
Markham Meadows 16	15	1	0.0	65.9	66	65.9	10	----	60.2	5.7	8	-2.3
Markham Meadows 13	16	1	0.0	64.9	66	64.9	10	----	59.3	5.6	8	-2.4
Markham Meadows 6	17	1	0.0	64.2	66	64.2	10	----	59.0	5.2	8	-2.8
Markham Meadows 2	18	1	0.0	61.1	66	61.1	10	----	56.7	4.4	8	-3.6
Markham Meadows 28	19	1	0.0	65.2	66	65.2	10	----	61.9	3.3	8	-4.7
Markham Meadows 27	20	1	0.0	61.7	66	61.7	10	----	59.9	1.8	8	-6.2
Markham Meadows 26	21	1	0.0	61.2	66	61.2	10	----	59.0	2.2	8	-5.8
Markham Meadows 25	22	1	0.0	63.2	66	63.2	10	----	60.1	3.1	8	-4.9
Markham Meadows 24	23	1	0.0	60.5	66	60.5	10	----	58.0	2.5	8	-5.5
Markham Meadows 23	24	1	0.0	62.6	66	62.6	10	----	59.2	3.4	8	-4.6

Markham Meadows 18	25	1	0.0	61.9	66	61.9	10	----	58.6	3.3	8	-4.7
Markham Meadows 17	26	1	0.0	59.6	66	59.6	10	----	57.0	2.6	8	-5.4
Markham Meadows 15	27	1	0.0	60.1	66	60.1	10	----	56.6	3.5	8	-4.5
Markham Meadows 14	28	1	0.0	57.2	66	57.2	10	----	54.7	2.5	8	-5.5
Markham Meadows 12	29	1	0.0	60.3	66	60.3	10	----	56.4	3.9	8	-4.1
Markham Meadows 11	30	1	0.0	58.1	66	58.1	10	----	54.9	3.2	8	-4.8
Markham Meadows 10	31	1	0.0	56.8	66	56.8	10	----	54.1	2.7	8	-5.3
Markham Meadows 7	32	1	0.0	56.1	66	56.1	10	----	53.3	2.8	8	-5.2
Markham Meadows 8	33	1	0.0	57.7	66	57.7	10	----	54.1	3.6	8	-4.4
Markham Meadows 9	34	1	0.0	60.3	66	60.3	10	----	55.9	4.4	8	-3.6
Markham Meadows 5	35	1	0.0	59.9	66	59.9	10	----	55.4	4.5	8	-3.5
Markham Meadows 4	36	1	0.0	57.8	66	57.8	10	----	54.0	3.8	8	-4.2
Markham Meadows 3	37	1	0.0	56.6	66	56.6	10	----	53.2	3.4	8	-4.6
Markham Meadows 1	38	1	0.0	58.1	66	58.1	10	----	54.1	4.0	8	-4.0
play ground	39	1	0.0	80.0	66	80.0	10	Snd Lvl	65.5	14.5	8	6.5

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	38	0.0	3.9	14.5
All Impacted	10	0.0	6.1	14.5
All that meet NR Goal	5	8.2	9.8	14.5

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C BM
BARRIER DESIGN: BM 14'

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA A BM	W	14.00	14.00	14.00	2659	37229				1116866
17' Wall B	W	17.00	17.00	17.00	1554	26422				0
17" existing	W	17.00	17.00	17.00	1318	22411				0
									Total Cost:	1116866

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA C BM
BARRIER DESIGN: BM 14'

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Church of Higher Call	1	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
Pool	2	1	0.0	69.2	66	69.2	10	Snd Lvl	68.9	0.3	8	-7.7
Play Field	6	1	0.0	66.1	66	66.1	10	Snd Lvl	60.7	5.4	8	-2.6
Church	8	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Ferne 1	9	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
Ferne 2	10	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
Ferne 3	11	1	0.0	66.2	66	66.2	10	Snd Lvl	66.1	0.1	8	-7.9
Trail 1	12	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
Markham Meadows 1	38	1	0.0	57.0	66	57.0	10	----	53.2	3.8	8	-4.2
Markham Meadows 2	18	1	0.0	60.0	66	60.0	10	----	55.6	4.4	8	-3.6
Markham Meadows 3	37	1	0.0	55.8	66	55.8	10	----	52.5	3.3	8	-4.7
Markham Meadows 4	36	1	0.0	56.7	66	56.7	10	----	53.1	3.6	8	-4.4
Markham Meadows 6	17	1	0.0	62.1	66	62.1	10	----	57.1	5.0	8	-3.0
Markham Meadows 5	35	1	0.0	58.3	66	58.3	10	----	54.1	4.2	8	-3.8
Markham Meadows 7	32	1	0.0	55.7	66	55.7	10	----	52.8	2.9	8	-5.1
Markham Meadows 8	33	1	0.0	56.7	66	56.7	10	----	53.3	3.4	8	-4.6
Markham Meadows 9	34	1	0.0	58.5	66	58.5	10	----	54.5	4.0	8	-4.0
Markham Meadows 11	30	1	0.0	57.5	66	57.5	10	----	54.3	3.2	8	-4.8
Markham Meadows 10	31	1	0.0	56.5	66	56.5	10	----	53.8	2.7	8	-5.3
Markham Meadows 12	29	1	0.0	58.9	66	58.9	10	----	55.4	3.5	8	-4.5
Markham Meadows 13	16	1	0.0	62.5	66	62.5	10	----	58.1	4.4	8	-3.6
Markham Meadows 14	28	1	0.0	57.2	66	57.2	10	----	54.5	2.7	8	-5.3
Markham Meadows 15	27	1	0.0	59.3	66	59.3	10	----	55.9	3.4	8	-4.6

Markham Meadows 16	15	1	0.0	64.3	66	64.3	10	----	59.2	5.1	8	-2.9
Markham Meadows 17	26	1	0.0	60.0	66	60.0	10	----	56.8	3.2	8	-4.8
Markham Meadows 18	25	1	0.0	62.2	66	62.2	10	----	58.3	3.9	8	-4.1
Markham Meadows 19	14	1	0.0	67.1	66	67.1	10	Snd Lvl	60.9	6.2	8	-1.8
Markham Meadows 20	13	1	0.0	70.9	66	70.9	10	Snd Lvl	63.2	7.7	8	-0.3
Markham Meadows 21	5	1	0.0	72.3	66	72.3	10	Snd Lvl	64.6	7.7	8	-0.3
Markham Meadows 23	24	1	0.0	63.7	66	63.7	10	----	59.5	4.2	8	-3.8
Markham Meadows 24	23	1	0.0	61.3	66	61.3	10	----	58.1	3.2	8	-4.8
Markham Meadows 24	4	1	0.0	68.4	66	68.4	10	Snd Lvl	62.9	5.5	8	-2.5
Markham Meadows 25	22	1	0.0	64.4	66	64.4	10	----	60.6	3.8	8	-4.2
Markham Meadows 26	21	1	0.0	62.1	66	62.1	10	----	59.3	2.8	8	-5.2
Markham Meadows 27	20	1	0.0	62.5	66	62.5	10	----	60.1	2.4	8	-5.6
Markham Meadows 28	19	1	0.0	66.4	66	66.4	10	Snd Lvl	62.5	3.9	8	-4.1
Markham Meadows 28	3	1	0.0	73.1	66	73.1	10	Snd Lvl	66.3	6.8	8	-1.2
play ground	39	1	0.0	79.5	66	79.5	10	Snd Lvl	69.5	10.0	8	2.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	38	0.0	3.6	10.0
All Impacted	11	0.0	4.9	10.0
All that meet NR Goal	1	10.0	10.0	10.0

Barrier Analysis

NSA D – North Cove

Stantec 7 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 22

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NC GM 1	W	22.00	22.00	22.00	1603	35256				1057687
NC GM 2	W	22.00	22.00	22.00	1767	38870				1166114
									Total Cost:	2223800

Stantec
M. Drauer

7 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 22
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Woodlands 1	1	1	0.0	64.7	66	64.7	10	----	64.5	0.2	8	-7.8
Woodlands 2	39	1	0.0	61.5	66	61.5	10	----	58.9	2.6	8	-5.4
Woodlands 3	40	1	0.0	60.1	66	60.1	10	----	57.5	2.6	8	-5.4
Woodlands 5	41	1	0.0	58.1	66	58.1	10	----	55.7	2.4	8	-5.6
Woodlands 4	42	1	0.0	59.2	66	59.2	10	----	56.2	3.0	8	-5.0
North Cove 1	2	1	0.0	70.2	66	70.2	10	Snd Lvl	65.9	4.3	8	-3.7
North Cove 2	3	1	0.0	71.2	66	71.2	10	Snd Lvl	63.7	7.5	8	-0.5
North Cove Park	4	1	0.0	70.1	66	70.1	10	Snd Lvl	62.3	7.8	8	-0.2
North Cove 3	5	1	0.0	69.2	66	69.2	10	Snd Lvl	61.3	7.9	8	-0.1
North Cove 4	19	1	0.0	66.1	66	66.1	10	Snd Lvl	59.3	6.8	8	-1.2
North Cove 5	20	1	0.0	64.4	66	64.4	10	----	58.2	6.2	8	-1.8
North Cove 6	21	1	0.0	62.8	66	62.8	10	----	57.1	5.7	8	-2.3
North Cove 7	22	1	0.0	61.1	66	61.1	10	----	55.9	5.2	8	-2.8
North Cove 8	23	1	0.0	60.2	66	60.2	10	----	55.0	5.2	8	-2.8
North Cove 9	24	1	0.0	58.9	66	58.9	10	----	53.9	5.0	8	-3.0
North Cove 10	25	1	0.0	57.5	66	57.5	10	----	53.0	4.5	8	-3.5
North Cove 11	26	1	0.0	56.7	66	56.7	10	----	52.3	4.4	8	-3.6
North Cove 12	27	1	0.0	56.2	66	56.2	10	----	51.6	4.6	8	-3.4
North Cove 13	28	1	0.0	55.2	66	55.2	10	----	51.1	4.1	8	-3.9
North Cove 14	29	1	0.0	54.4	66	54.4	10	----	51.7	2.7	8	-5.3
North Cove 15	30	1	0.0	54.7	66	54.7	10	----	51.7	3.0	8	-5.0
North Cove 16	31	1	0.0	54.5	66	54.5	10	----	51.7	2.8	8	-5.2
North Cove 17	32	1	0.0	57.3	66	57.3	10	----	53.0	4.3	8	-3.7

North Cove 18	33	1	0.0	56.3	66	56.3	10	----	52.5	3.8	8	-4.2
North Cove 19	59	1	0.0	55.6	66	55.6	10	----	52.0	3.6	8	-4.4
North Cove 20	35	1	0.0	55.2	66	55.2	10	----	51.8	3.4	8	-4.6
North Cove 21	36	1	0.0	55.0	66	55.0	10	----	51.3	3.7	8	-4.3
North Cove 22	37	1	0.0	54.7	66	54.7	10	----	51.7	3.0	8	-5.0
North Cove 23	38	1	0.0	54.1	66	54.1	10	----	51.6	2.5	8	-5.5
North Cove 24	43	1	0.0	57.5	66	57.5	10	----	53.3	4.2	8	-3.8
North Cove 25	44	1	0.0	56.9	66	56.9	10	----	53.2	3.7	8	-4.3
North Cove 26	45	1	0.0	56.5	66	56.5	10	----	53.1	3.4	8	-4.6
North Cove 27	46	1	0.0	55.9	66	55.9	10	----	52.8	3.1	8	-4.9
North Cove 28	47	1	0.0	55.8	66	55.8	10	----	52.6	3.2	8	-4.8
North Cove 29	48	1	0.0	55.4	66	55.4	10	----	52.5	2.9	8	-5.1
North Cove 30	49	1	0.0	55.3	66	55.3	10	----	52.3	3.0	8	-5.0
North Cove 31	50	1	0.0	54.8	66	54.8	10	----	52.1	2.7	8	-5.3
North Cove 32	51	1	0.0	56.3	66	56.3	10	----	52.7	3.6	8	-4.4
North Cove 33	52	1	0.0	56.4	66	56.4	10	----	52.7	3.7	8	-4.3
North Cove 34	53	1	0.0	56.1	66	56.1	10	----	52.3	3.8	8	-4.2
North Cove 35	54	1	0.0	54.9	66	54.9	10	----	51.8	3.1	8	-4.9
North Cove 36	55	1	0.0	54.7	66	54.7	10	----	52.0	2.7	8	-5.3
North Cove 37	56	1	0.0	55.1	66	55.1	10	----	51.9	3.2	8	-4.8
North Cove 38	57	1	0.0	54.4	66	54.4	10	----	51.9	2.5	8	-5.5
North Cove 39	58	1	0.0	55.1	66	55.1	10	----	52.2	2.9	8	-5.1
North Cove 62	82	1	0.0	54.5	66	54.5	10	----	52.7	1.8	8	-6.2
North Cove 63	83	1	0.0	54.5	66	54.5	10	----	53.0	1.5	8	-6.5
North Cove 64	84	1	0.0	54.2	66	54.2	10	----	52.8	1.4	8	-6.6
North Cove 65	85	1	0.0	53.9	66	53.9	10	----	52.5	1.4	8	-6.6
Northridge 12	60	1	0.0	76.6	66	76.6	10	Snd Lvl	65.5	11.1	8	3.1
Northridge 11	61	1	0.0	64.9	66	64.9	10	----	58.2	6.7	8	-1.3
Northridge 10	62	1	0.0	65.0	66	65.0	10	----	58.4	6.6	8	-1.4
Northridge 9	63	1	0.0	65.9	66	65.9	10	----	59.3	6.6	8	-1.4
Northridge 8	64	1	0.0	68.0	66	68.0	10	Snd Lvl	60.7	7.3	8	-0.7
Northridge 7	65	1	0.0	69.9	66	69.9	10	Snd Lvl	62.1	7.8	8	-0.2
Northridge 6	66	1	0.0	67.6	66	67.6	10	Snd Lvl	60.9	6.7	8	-1.3
Northridge 5	67	1	0.0	65.3	66	65.3	10	----	59.8	5.5	8	-2.5
Northridge 3	68	1	0.0	62.0	66	62.0	10	----	57.1	4.9	8	-3.1
Northridge 2	69	1	0.0	59.9	66	59.9	10	----	56.0	3.9	8	-4.1
Northridge 1	70	1	0.0	59.3	66	59.3	10	----	56.0	3.3	8	-4.7
Bay Poiint 12	71	1	0.0	56.9	66	56.9	10	----	55.2	1.7	8	-6.3
Bay Point 11	72	1	0.0	56.4	66	56.4	10	----	54.7	1.7	8	-6.3
Bay Point 10	73	1	0.0	56.0	66	56.0	10	----	54.2	1.8	8	-6.2
Bay Point 9	74	1	0.0	55.6	66	55.6	10	----	53.7	1.9	8	-6.1

bay Point 8	75	1	0.0	55.2	66	55.2	10	----	53.3	1.9	8	-6.1
Bay Point 7	76	1	0.0	54.8	66	54.8	10	----	52.8	2.0	8	-6.0
Bay Point 6	77	1	0.0	54.2	66	54.2	10	----	52.4	1.8	8	-6.2
Bay Point 5	78	1	0.0	54.7	66	54.7	10	----	53.3	1.4	8	-6.6
Bay Point 4	79	1	0.0	54.5	66	54.5	10	----	53.2	1.3	8	-6.7
Bay Point 3	80	1	0.0	54.1	66	54.1	10	----	53.0	1.1	8	-6.9
Bay Point 2	81	1	0.0	53.7	66	53.7	10	----	52.6	1.1	8	-6.9
Bay Point 1	86	1	0.0	53.5	66	53.5	10	----	52.4	1.1	8	-6.9
Tennis Ct.	87	1	0.0	74.5	66	74.5	10	Snd Lvl	62.8	11.7	8	3.7
Northridge 13	91	1	0.0	69.3	66	69.3	10	Snd Lvl	63.3	6.0	8	-2.0
Northridge 14	92	1	0.0	66.1	66	66.1	10	Snd Lvl	61.8	4.3	8	-3.7
Northridge 15	93	1	0.0	63.6	66	63.6	10	----	60.9	2.7	8	-5.3
Northridge 4	94	1	0.0	60.9	66	60.9	10	----	57.9	3.0	8	-5.0
North Cove 77	6	1	0.0	64.9	66	64.9	10	----	61.6	3.3	8	-4.7
North Cove 76	7	1	0.0	63.6	66	63.6	10	----	59.7	3.9	8	-4.1
North Cove 75	8	1	0.0	63.1	66	63.1	10	----	58.6	4.5	8	-3.5
North Cove 74	9	1	0.0	62.2	66	62.2	10	----	57.8	4.4	8	-3.6
North Cove 73	10	1	0.0	62.0	66	62.0	10	----	58.4	3.6	8	-4.4
North Cove 72	11	1	0.0	60.6	66	60.6	10	----	57.3	3.3	8	-4.7
North Cove 69	12	1	0.0	58.7	66	58.7	10	----	55.5	3.2	8	-4.8
North Cove 70	13	1	0.0	59.4	66	59.4	10	----	55.8	3.6	8	-4.4
North Cove 71	14	1	0.0	60.0	66	60.0	10	----	55.8	4.2	8	-3.8
North Cove 65	15	1	0.0	58.8	66	58.8	10	----	54.7	4.1	8	-3.9
North Cove 66	16	1	0.0	58.2	66	58.2	10	----	54.4	3.8	8	-4.2
North Cove 67	17	1	0.0	57.8	66	57.8	10	----	54.4	3.4	8	-4.6
North Cove 68	18	1	0.0	57.3	66	57.3	10	----	53.8	3.5	8	-4.5
Bolling 1	95	1	0.0	55.6	66	55.6	10	----	55.1	0.5	8	-7.5
Bolling 2	96	1	0.0	59.3	66	59.3	10	----	58.6	0.7	8	-7.3
Bolling 3	97	1	0.0	59.8	66	59.8	10	----	59.3	0.5	8	-7.5
Bolling 4	98	1	0.0	60.2	66	60.2	10	----	59.8	0.4	8	-7.6
Bolling 5	99	1	0.0	60.6	66	60.6	10	----	60.3	0.3	8	-7.7
Bolling 6	100	1	0.0	61.0	66	61.0	10	----	60.7	0.3	8	-7.7
Bolling 7	101	1	0.0	61.2	66	61.2	10	----	61.0	0.2	8	-7.8
Bolling 8	102	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 9	103	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
Bolling 10	104	1	0.0	59.9	66	59.9	10	----	59.7	0.2	8	-7.8
Bolling 11	105	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 12	106	1	0.0	61.9	66	61.9	10	----	61.8	0.1	8	-7.9
Bolling 13	107	1	0.0	63.0	66	63.0	10	----	62.9	0.1	8	-7.9
Bolling 14	108	1	0.0	63.3	66	63.3	10	----	63.2	0.1	8	-7.9
Bolling 15	109	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9

Bolling 16	110	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Bolling 17	111	1	0.0	61.2	66	61.2	10	----	61.1	0.1	8	-7.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	107	0.1	3.3	11.7
All Impacted	12	4.3	7.4	11.7
All that meet NR Goal	2	11.1	11.4	11.7

Stantec 7 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 20

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NC GM 1	W	20.00	20.00	20.00	1603	32051				961533
NC GM 2	W	20.00	20.00	20.00	1767	35337				1060104
									Total Cost:	2021637

Stantec
M. Drauer

7 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 20
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Woodlands 1	1	1	0.0	64.7	66	64.7	10	----	64.5	0.2	8	-7.8
Woodlands 2	39	1	0.0	61.5	66	61.5	10	----	59.0	2.5	8	-5.5
Woodlands 3	40	1	0.0	60.1	66	60.1	10	----	57.6	2.5	8	-5.5
Woodlands 5	41	1	0.0	58.1	66	58.1	10	----	55.8	2.3	8	-5.7
Woodlands 4	42	1	0.0	59.2	66	59.2	10	----	56.3	2.9	8	-5.1
North Cove 1	2	1	0.0	70.2	66	70.2	10	Snd Lvl	66.0	4.2	8	-3.8
North Cove 2	3	1	0.0	71.2	66	71.2	10	Snd Lvl	64.0	7.2	8	-0.8
North Cove Park	4	1	0.0	70.1	66	70.1	10	Snd Lvl	62.7	7.4	8	-0.6
North Cove 3	5	1	0.0	69.2	66	69.2	10	Snd Lvl	61.7	7.5	8	-0.5
North Cove 4	19	1	0.0	66.1	66	66.1	10	Snd Lvl	59.7	6.4	8	-1.6
North Cove 5	20	1	0.0	64.4	66	64.4	10	----	58.5	5.9	8	-2.1
North Cove 6	21	1	0.0	62.8	66	62.8	10	----	57.4	5.4	8	-2.6
North Cove 7	22	1	0.0	61.1	66	61.1	10	----	56.2	4.9	8	-3.1
North Cove 8	23	1	0.0	60.2	66	60.2	10	----	55.2	5.0	8	-3.0
North Cove 9	24	1	0.0	58.9	66	58.9	10	----	54.1	4.8	8	-3.2
North Cove 10	25	1	0.0	57.5	66	57.5	10	----	53.2	4.3	8	-3.7
North Cove 11	26	1	0.0	56.7	66	56.7	10	----	52.5	4.2	8	-3.8
North Cove 12	27	1	0.0	56.2	66	56.2	10	----	51.8	4.4	8	-3.6
North Cove 13	28	1	0.0	55.2	66	55.2	10	----	51.3	3.9	8	-4.1
North Cove 14	29	1	0.0	54.4	66	54.4	10	----	51.8	2.6	8	-5.4
North Cove 15	30	1	0.0	54.7	66	54.7	10	----	51.8	2.9	8	-5.1
North Cove 16	31	1	0.0	54.5	66	54.5	10	----	51.8	2.7	8	-5.3
North Cove 17	32	1	0.0	57.3	66	57.3	10	----	53.1	4.2	8	-3.8

North Cove 18	33	1	0.0	56.3	66	56.3	10	----	52.6	3.7	8	-4.3
North Cove 19	59	1	0.0	55.6	66	55.6	10	----	52.1	3.5	8	-4.5
North Cove 20	35	1	0.0	55.2	66	55.2	10	----	52.0	3.2	8	-4.8
North Cove 21	36	1	0.0	55.0	66	55.0	10	----	51.4	3.6	8	-4.4
North Cove 22	37	1	0.0	54.7	66	54.7	10	----	51.8	2.9	8	-5.1
North Cove 23	38	1	0.0	54.1	66	54.1	10	----	51.7	2.4	8	-5.6
North Cove 24	43	1	0.0	57.5	66	57.5	10	----	53.5	4.0	8	-4.0
North Cove 25	44	1	0.0	56.9	66	56.9	10	----	53.3	3.6	8	-4.4
North Cove 26	45	1	0.0	56.5	66	56.5	10	----	53.2	3.3	8	-4.7
North Cove 27	46	1	0.0	55.9	66	55.9	10	----	52.9	3.0	8	-5.0
North Cove 28	47	1	0.0	55.8	66	55.8	10	----	52.7	3.1	8	-4.9
North Cove 29	48	1	0.0	55.4	66	55.4	10	----	52.6	2.8	8	-5.2
North Cove 30	49	1	0.0	55.3	66	55.3	10	----	52.4	2.9	8	-5.1
North Cove 31	50	1	0.0	54.8	66	54.8	10	----	52.1	2.7	8	-5.3
North Cove 32	51	1	0.0	56.3	66	56.3	10	----	52.8	3.5	8	-4.5
North Cove 33	52	1	0.0	56.4	66	56.4	10	----	52.8	3.6	8	-4.4
North Cove 34	53	1	0.0	56.1	66	56.1	10	----	52.4	3.7	8	-4.3
North Cove 35	54	1	0.0	54.9	66	54.9	10	----	51.9	3.0	8	-5.0
North Cove 36	55	1	0.0	54.7	66	54.7	10	----	52.0	2.7	8	-5.3
North Cove 37	56	1	0.0	55.1	66	55.1	10	----	52.0	3.1	8	-4.9
North Cove 38	57	1	0.0	54.4	66	54.4	10	----	52.0	2.4	8	-5.6
North Cove 39	58	1	0.0	55.1	66	55.1	10	----	52.3	2.8	8	-5.2
North Cove 62	82	1	0.0	54.5	66	54.5	10	----	52.8	1.7	8	-6.3
North Cove 63	83	1	0.0	54.5	66	54.5	10	----	53.1	1.4	8	-6.6
North Cove 64	84	1	0.0	54.2	66	54.2	10	----	52.9	1.3	8	-6.7
North Cove 65	85	1	0.0	53.9	66	53.9	10	----	52.6	1.3	8	-6.7
Northridge 12	60	1	0.0	76.6	66	76.6	10	Snd Lvl	66.7	9.9	8	1.9
Northridge 11	61	1	0.0	64.9	66	64.9	10	----	58.6	6.3	8	-1.7
Northridge 10	62	1	0.0	65.0	66	65.0	10	----	58.8	6.2	8	-1.8
Northridge 9	63	1	0.0	65.9	66	65.9	10	----	59.6	6.3	8	-1.7
Northridge 8	64	1	0.0	68.0	66	68.0	10	Snd Lvl	61.1	6.9	8	-1.1
Northridge 7	65	1	0.0	69.9	66	69.9	10	Snd Lvl	62.7	7.2	8	-0.8
Northridge 6	66	1	0.0	67.6	66	67.6	10	Snd Lvl	61.3	6.3	8	-1.7
Northridge 5	67	1	0.0	65.3	66	65.3	10	----	60.1	5.2	8	-2.8
Northridge 3	68	1	0.0	62.0	66	62.0	10	----	57.3	4.7	8	-3.3
Northridge 2	69	1	0.0	59.9	66	59.9	10	----	56.2	3.7	8	-4.3
Northridge 1	70	1	0.0	59.3	66	59.3	10	----	56.1	3.2	8	-4.8
Bay Poiint 12	71	1	0.0	56.9	66	56.9	10	----	55.3	1.6	8	-6.4
Bay Point 11	72	1	0.0	56.4	66	56.4	10	----	54.8	1.6	8	-6.4
Bay Point 10	73	1	0.0	56.0	66	56.0	10	----	54.2	1.8	8	-6.2
Bay Point 9	74	1	0.0	55.6	66	55.6	10	----	53.7	1.9	8	-6.1

bay Point 8	75	1	0.0	55.2	66	55.2	10	----	53.3	1.9	8	-6.1
Bay Point 7	76	1	0.0	54.8	66	54.8	10	----	52.9	1.9	8	-6.1
Bay Point 6	77	1	0.0	54.2	66	54.2	10	----	52.5	1.7	8	-6.3
Bay Point 5	78	1	0.0	54.7	66	54.7	10	----	53.3	1.4	8	-6.6
Bay Point 4	79	1	0.0	54.5	66	54.5	10	----	53.3	1.2	8	-6.8
Bay Point 3	80	1	0.0	54.1	66	54.1	10	----	53.1	1.0	8	-7.0
Bay Point 2	81	1	0.0	53.7	66	53.7	10	----	52.7	1.0	8	-7.0
Bay Point 1	86	1	0.0	53.5	66	53.5	10	----	52.4	1.1	8	-6.9
Tennis Ct.	87	1	0.0	74.5	66	74.5	10	Snd Lvl	63.2	11.3	8	3.3
Northridge 13	91	1	0.0	69.3	66	69.3	10	Snd Lvl	63.6	5.7	8	-2.3
Northridge 14	92	1	0.0	66.1	66	66.1	10	Snd Lvl	62.0	4.1	8	-3.9
Northridge 15	93	1	0.0	63.6	66	63.6	10	----	61.0	2.6	8	-5.4
Northridge 4	94	1	0.0	60.9	66	60.9	10	----	58.0	2.9	8	-5.1
North Cove 77	6	1	0.0	64.9	66	64.9	10	----	61.7	3.2	8	-4.8
North Cove 76	7	1	0.0	63.6	66	63.6	10	----	59.8	3.8	8	-4.2
North Cove 75	8	1	0.0	63.1	66	63.1	10	----	58.8	4.3	8	-3.7
North Cove 74	9	1	0.0	62.2	66	62.2	10	----	58.0	4.2	8	-3.8
North Cove 73	10	1	0.0	62.0	66	62.0	10	----	58.5	3.5	8	-4.5
North Cove 72	11	1	0.0	60.6	66	60.6	10	----	57.4	3.2	8	-4.8
North Cove 69	12	1	0.0	58.7	66	58.7	10	----	55.6	3.1	8	-4.9
North Cove 70	13	1	0.0	59.4	66	59.4	10	----	55.9	3.5	8	-4.5
North Cove 71	14	1	0.0	60.0	66	60.0	10	----	55.9	4.1	8	-3.9
North Cove 65	15	1	0.0	58.8	66	58.8	10	----	54.8	4.0	8	-4.0
North Cove 66	16	1	0.0	58.2	66	58.2	10	----	54.5	3.7	8	-4.3
North Cove 67	17	1	0.0	57.8	66	57.8	10	----	54.5	3.3	8	-4.7
North Cove 68	18	1	0.0	57.3	66	57.3	10	----	53.9	3.4	8	-4.6
Bolling 1	95	1	0.0	55.6	66	55.6	10	----	55.1	0.5	8	-7.5
Bolling 2	96	1	0.0	59.3	66	59.3	10	----	58.6	0.7	8	-7.3
Bolling 3	97	1	0.0	59.8	66	59.8	10	----	59.3	0.5	8	-7.5
Bolling 4	98	1	0.0	60.2	66	60.2	10	----	59.8	0.4	8	-7.6
Bolling 5	99	1	0.0	60.6	66	60.6	10	----	60.3	0.3	8	-7.7
Bolling 6	100	1	0.0	61.0	66	61.0	10	----	60.7	0.3	8	-7.7
Bolling 7	101	1	0.0	61.2	66	61.2	10	----	61.0	0.2	8	-7.8
Bolling 8	102	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 9	103	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
Bolling 10	104	1	0.0	59.9	66	59.9	10	----	59.7	0.2	8	-7.8
Bolling 11	105	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 12	106	1	0.0	61.9	66	61.9	10	----	61.8	0.1	8	-7.9
Bolling 13	107	1	0.0	63.0	66	63.0	10	----	62.9	0.1	8	-7.9
Bolling 14	108	1	0.0	63.3	66	63.3	10	----	63.2	0.1	8	-7.9
Bolling 15	109	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9

Bolling 16	110	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Bolling 17	111	1	0.0	61.2	66	61.2	10	----	61.1	0.1	8	-7.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	107	0.1	3.1	11.3
All Impacted	12	4.1	7.0	11.3
All that meet NR Goal	2	9.9	10.6	11.3

Stantec 7 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 18

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NC GM 1	W	18.00	18.00	18.00	1603	28846				865380
NC GM 2	W	18.00	18.00	18.00	1767	31803				954093
									Total Cost:	1819473

Stantec
M. Drauer

7 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 18
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Woodlands 1	1	1	0.0	64.7	66	64.7	10	----	64.5	0.2	8	-7.8
Woodlands 2	39	1	0.0	61.5	66	61.5	10	----	59.1	2.4	8	-5.6
Woodlands 3	40	1	0.0	60.1	66	60.1	10	----	57.7	2.4	8	-5.6
Woodlands 5	41	1	0.0	58.1	66	58.1	10	----	55.9	2.2	8	-5.8
Woodlands 4	42	1	0.0	59.2	66	59.2	10	----	56.4	2.8	8	-5.2
North Cove 1	2	1	0.0	70.2	66	70.2	10	Snd Lvl	66.1	4.1	8	-3.9
North Cove 2	3	1	0.0	71.2	66	71.2	10	Snd Lvl	64.3	6.9	8	-1.1
North Cove Park	4	1	0.0	70.1	66	70.1	10	Snd Lvl	63.1	7.0	8	-1.0
North Cove 3	5	1	0.0	69.2	66	69.2	10	Snd Lvl	62.2	7.0	8	-1.0
North Cove 4	19	1	0.0	66.1	66	66.1	10	Snd Lvl	60.1	6.0	8	-2.0
North Cove 5	20	1	0.0	64.4	66	64.4	10	----	58.9	5.5	8	-2.5
North Cove 6	21	1	0.0	62.8	66	62.8	10	----	57.7	5.1	8	-2.9
North Cove 7	22	1	0.0	61.1	66	61.1	10	----	56.4	4.7	8	-3.3
North Cove 8	23	1	0.0	60.2	66	60.2	10	----	55.4	4.8	8	-3.2
North Cove 9	24	1	0.0	58.9	66	58.9	10	----	54.4	4.5	8	-3.5
North Cove 10	25	1	0.0	57.5	66	57.5	10	----	53.4	4.1	8	-3.9
North Cove 11	26	1	0.0	56.7	66	56.7	10	----	52.7	4.0	8	-4.0
North Cove 12	27	1	0.0	56.2	66	56.2	10	----	52.0	4.2	8	-3.8
North Cove 13	28	1	0.0	55.2	66	55.2	10	----	51.5	3.7	8	-4.3
North Cove 14	29	1	0.0	54.4	66	54.4	10	----	51.9	2.5	8	-5.5
North Cove 15	30	1	0.0	54.7	66	54.7	10	----	51.9	2.8	8	-5.2
North Cove 16	31	1	0.0	54.5	66	54.5	10	----	51.9	2.6	8	-5.4
North Cove 17	32	1	0.0	57.3	66	57.3	10	----	53.3	4.0	8	-4.0

North Cove 18	33	1	0.0	56.3	66	56.3	10	----	52.8	3.5	8	-4.5
North Cove 19	59	1	0.0	55.6	66	55.6	10	----	52.3	3.3	8	-4.7
North Cove 20	35	1	0.0	55.2	66	55.2	10	----	52.1	3.1	8	-4.9
North Cove 21	36	1	0.0	55.0	66	55.0	10	----	51.6	3.4	8	-4.6
North Cove 22	37	1	0.0	54.7	66	54.7	10	----	52.0	2.7	8	-5.3
North Cove 23	38	1	0.0	54.1	66	54.1	10	----	51.8	2.3	8	-5.7
North Cove 24	43	1	0.0	57.5	66	57.5	10	----	53.6	3.9	8	-4.1
North Cove 25	44	1	0.0	56.9	66	56.9	10	----	53.5	3.4	8	-4.6
North Cove 26	45	1	0.0	56.5	66	56.5	10	----	53.3	3.2	8	-4.8
North Cove 27	46	1	0.0	55.9	66	55.9	10	----	53.0	2.9	8	-5.1
North Cove 28	47	1	0.0	55.8	66	55.8	10	----	52.8	3.0	8	-5.0
North Cove 29	48	1	0.0	55.4	66	55.4	10	----	52.7	2.7	8	-5.3
North Cove 30	49	1	0.0	55.3	66	55.3	10	----	52.5	2.8	8	-5.2
North Cove 31	50	1	0.0	54.8	66	54.8	10	----	52.2	2.6	8	-5.4
North Cove 32	51	1	0.0	56.3	66	56.3	10	----	53.0	3.3	8	-4.7
North Cove 33	52	1	0.0	56.4	66	56.4	10	----	53.0	3.4	8	-4.6
North Cove 34	53	1	0.0	56.1	66	56.1	10	----	52.5	3.6	8	-4.4
North Cove 35	54	1	0.0	54.9	66	54.9	10	----	52.1	2.8	8	-5.2
North Cove 36	55	1	0.0	54.7	66	54.7	10	----	52.1	2.6	8	-5.4
North Cove 37	56	1	0.0	55.1	66	55.1	10	----	52.1	3.0	8	-5.0
North Cove 38	57	1	0.0	54.4	66	54.4	10	----	52.1	2.3	8	-5.7
North Cove 39	58	1	0.0	55.1	66	55.1	10	----	52.4	2.7	8	-5.3
North Cove 62	82	1	0.0	54.5	66	54.5	10	----	52.9	1.6	8	-6.4
North Cove 63	83	1	0.0	54.5	66	54.5	10	----	53.1	1.4	8	-6.6
North Cove 64	84	1	0.0	54.2	66	54.2	10	----	52.9	1.3	8	-6.7
North Cove 65	85	1	0.0	53.9	66	53.9	10	----	52.6	1.3	8	-6.7
Northridge 12	60	1	0.0	76.6	66	76.6	10	Snd Lvl	68.2	8.4	8	0.4
Northridge 11	61	1	0.0	64.9	66	64.9	10	----	59.1	5.8	8	-2.2
Northridge 10	62	1	0.0	65.0	66	65.0	10	----	59.2	5.8	8	-2.2
Northridge 9	63	1	0.0	65.9	66	65.9	10	----	60.0	5.9	8	-2.1
Northridge 8	64	1	0.0	68.0	66	68.0	10	Snd Lvl	61.6	6.4	8	-1.6
Northridge 7	65	1	0.0	69.9	66	69.9	10	Snd Lvl	63.2	6.7	8	-1.3
Northridge 6	66	1	0.0	67.6	66	67.6	10	Snd Lvl	61.7	5.9	8	-2.1
Northridge 5	67	1	0.0	65.3	66	65.3	10	----	60.4	4.9	8	-3.1
Northridge 3	68	1	0.0	62.0	66	62.0	10	----	57.6	4.4	8	-3.6
Northridge 2	69	1	0.0	59.9	66	59.9	10	----	56.4	3.5	8	-4.5
Northridge 1	70	1	0.0	59.3	66	59.3	10	----	56.2	3.1	8	-4.9
Bay Poiint 12	71	1	0.0	56.9	66	56.9	10	----	55.4	1.5	8	-6.5
Bay Point 11	72	1	0.0	56.4	66	56.4	10	----	54.8	1.6	8	-6.4
Bay Point 10	73	1	0.0	56.0	66	56.0	10	----	54.3	1.7	8	-6.3
Bay Point 9	74	1	0.0	55.6	66	55.6	10	----	53.8	1.8	8	-6.2

bay Point 8	75	1	0.0	55.2	66	55.2	10	----	53.4	1.8	8	-6.2
Bay Point 7	76	1	0.0	54.8	66	54.8	10	----	53.0	1.8	8	-6.2
Bay Point 6	77	1	0.0	54.2	66	54.2	10	----	52.5	1.7	8	-6.3
Bay Point 5	78	1	0.0	54.7	66	54.7	10	----	53.4	1.3	8	-6.7
Bay Point 4	79	1	0.0	54.5	66	54.5	10	----	53.3	1.2	8	-6.8
Bay Point 3	80	1	0.0	54.1	66	54.1	10	----	53.1	1.0	8	-7.0
Bay Point 2	81	1	0.0	53.7	66	53.7	10	----	52.7	1.0	8	-7.0
Bay Point 1	86	1	0.0	53.5	66	53.5	10	----	52.5	1.0	8	-7.0
Tennis Ct.	87	1	0.0	74.5	66	74.5	10	Snd Lvl	63.7	10.8	8	2.8
Northridge 13	91	1	0.0	69.3	66	69.3	10	Snd Lvl	63.8	5.5	8	-2.5
Northridge 14	92	1	0.0	66.1	66	66.1	10	Snd Lvl	62.2	3.9	8	-4.1
Northridge 15	93	1	0.0	63.6	66	63.6	10	----	61.1	2.5	8	-5.5
Northridge 4	94	1	0.0	60.9	66	60.9	10	----	58.2	2.7	8	-5.3
North Cove 77	6	1	0.0	64.9	66	64.9	10	----	61.8	3.1	8	-4.9
North Cove 76	7	1	0.0	63.6	66	63.6	10	----	60.0	3.6	8	-4.4
North Cove 75	8	1	0.0	63.1	66	63.1	10	----	59.1	4.0	8	-4.0
North Cove 74	9	1	0.0	62.2	66	62.2	10	----	58.2	4.0	8	-4.0
North Cove 73	10	1	0.0	62.0	66	62.0	10	----	58.6	3.4	8	-4.6
North Cove 72	11	1	0.0	60.6	66	60.6	10	----	57.5	3.1	8	-4.9
North Cove 69	12	1	0.0	58.7	66	58.7	10	----	55.7	3.0	8	-5.0
North Cove 70	13	1	0.0	59.4	66	59.4	10	----	56.1	3.3	8	-4.7
North Cove 71	14	1	0.0	60.0	66	60.0	10	----	56.1	3.9	8	-4.1
North Cove 65	15	1	0.0	58.8	66	58.8	10	----	55.0	3.8	8	-4.2
North Cove 66	16	1	0.0	58.2	66	58.2	10	----	54.6	3.6	8	-4.4
North Cove 67	17	1	0.0	57.8	66	57.8	10	----	54.6	3.2	8	-4.8
North Cove 68	18	1	0.0	57.3	66	57.3	10	----	54.0	3.3	8	-4.7
Bolling 1	95	1	0.0	55.6	66	55.6	10	----	55.2	0.4	8	-7.6
Bolling 2	96	1	0.0	59.3	66	59.3	10	----	58.6	0.7	8	-7.3
Bolling 3	97	1	0.0	59.8	66	59.8	10	----	59.3	0.5	8	-7.5
Bolling 4	98	1	0.0	60.2	66	60.2	10	----	59.8	0.4	8	-7.6
Bolling 5	99	1	0.0	60.6	66	60.6	10	----	60.3	0.3	8	-7.7
Bolling 6	100	1	0.0	61.0	66	61.0	10	----	60.7	0.3	8	-7.7
Bolling 7	101	1	0.0	61.2	66	61.2	10	----	61.0	0.2	8	-7.8
Bolling 8	102	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 9	103	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
Bolling 10	104	1	0.0	59.9	66	59.9	10	----	59.7	0.2	8	-7.8
Bolling 11	105	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 12	106	1	0.0	61.9	66	61.9	10	----	61.8	0.1	8	-7.9
Bolling 13	107	1	0.0	63.0	66	63.0	10	----	62.9	0.1	8	-7.9
Bolling 14	108	1	0.0	63.3	66	63.3	10	----	63.2	0.1	8	-7.9
Bolling 15	109	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9

Bolling 16	110	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Bolling 17	111	1	0.0	61.2	66	61.2	10	----	61.1	0.1	8	-7.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	107	0.1	3.0	10.8
All Impacted	12	3.9	6.5	10.8
All that meet NR Goal	2	8.4	9.6	10.8

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 22 gap

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NC GM 1	W	22.00	22.00	22.00	962	21153				634591
NC GM 2	W	22.00	22.00	22.00	1552	34137				1024106
									Total Cost:	1658697

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 22 gap
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Woodlands 1	1	1	0.0	64.7	66	64.7	10	----	64.5	0.2	8	-7.8
Woodlands 2	39	1	0.0	61.5	66	61.5	10	----	59.2	2.3	8	-5.7
Woodlands 3	40	1	0.0	60.1	66	60.1	10	----	57.8	2.3	8	-5.7
Woodlands 5	41	1	0.0	58.1	66	58.1	10	----	56.1	2.0	8	-6.0
Woodlands 4	42	1	0.0	59.2	66	59.2	10	----	56.7	2.5	8	-5.5
North Cove 1	2	1	0.0	70.2	66	70.2	10	Snd Lvl	65.9	4.3	8	-3.7
North Cove 2	3	1	0.0	71.2	66	71.2	10	Snd Lvl	63.8	7.4	8	-0.6
North Cove Park	4	1	0.0	70.1	66	70.1	10	Snd Lvl	62.5	7.6	8	-0.4
North Cove 3	5	1	0.0	69.2	66	69.2	10	Snd Lvl	61.8	7.4	8	-0.6
North Cove 4	19	1	0.0	66.1	66	66.1	10	Snd Lvl	60.3	5.8	8	-2.2
North Cove 5	20	1	0.0	64.4	66	64.4	10	----	59.6	4.8	8	-3.2
North Cove 6	21	1	0.0	62.8	66	62.8	10	----	58.9	3.9	8	-4.1
North Cove 7	22	1	0.0	61.1	66	61.1	10	----	57.9	3.2	8	-4.8
North Cove 8	23	1	0.0	60.2	66	60.2	10	----	57.2	3.0	8	-5.0
North Cove 9	24	1	0.0	58.9	66	58.9	10	----	56.6	2.3	8	-5.7
North Cove 10	25	1	0.0	57.5	66	57.5	10	----	55.4	2.1	8	-5.9
North Cove 11	26	1	0.0	56.7	66	56.7	10	----	54.7	2.0	8	-6.0
North Cove 12	27	1	0.0	56.2	66	56.2	10	----	54.3	1.9	8	-6.1
North Cove 13	28	1	0.0	55.2	66	55.2	10	----	53.7	1.5	8	-6.5
North Cove 14	29	1	0.0	54.4	66	54.4	10	----	52.8	1.6	8	-6.4
North Cove 15	30	1	0.0	54.7	66	54.7	10	----	53.1	1.6	8	-6.4
North Cove 16	31	1	0.0	54.5	66	54.5	10	----	52.8	1.7	8	-6.3
North Cove 17	32	1	0.0	57.3	66	57.3	10	----	54.7	2.6	8	-5.4

North Cove 18	33	1	0.0	56.3	66	56.3	10	----	54.2	2.1	8	-5.9
North Cove 19	59	1	0.0	55.6	66	55.6	10	----	53.7	1.9	8	-6.1
North Cove 20	35	1	0.0	55.2	66	55.2	10	----	53.4	1.8	8	-6.2
North Cove 21	36	1	0.0	55.0	66	55.0	10	----	53.4	1.6	8	-6.4
North Cove 22	37	1	0.0	54.7	66	54.7	10	----	53.1	1.6	8	-6.4
North Cove 23	38	1	0.0	54.1	66	54.1	10	----	52.7	1.4	8	-6.6
North Cove 24	43	1	0.0	57.5	66	57.5	10	----	54.9	2.6	8	-5.4
North Cove 25	44	1	0.0	56.9	66	56.9	10	----	54.6	2.3	8	-5.7
North Cove 26	45	1	0.0	56.5	66	56.5	10	----	54.2	2.3	8	-5.7
North Cove 27	46	1	0.0	55.9	66	55.9	10	----	53.6	2.3	8	-5.7
North Cove 28	47	1	0.0	55.8	66	55.8	10	----	53.7	2.1	8	-5.9
North Cove 29	48	1	0.0	55.4	66	55.4	10	----	53.5	1.9	8	-6.1
North Cove 30	49	1	0.0	55.3	66	55.3	10	----	53.1	2.2	8	-5.8
North Cove 31	50	1	0.0	54.8	66	54.8	10	----	52.9	1.9	8	-6.1
North Cove 32	51	1	0.0	56.3	66	56.3	10	----	54.1	2.2	8	-5.8
North Cove 33	52	1	0.0	56.4	66	56.4	10	----	54.2	2.2	8	-5.8
North Cove 34	53	1	0.0	56.1	66	56.1	10	----	54.1	2.0	8	-6.0
North Cove 35	54	1	0.0	54.9	66	54.9	10	----	53.1	1.8	8	-6.2
North Cove 36	55	1	0.0	54.7	66	54.7	10	----	52.8	1.9	8	-6.1
North Cove 37	56	1	0.0	55.1	66	55.1	10	----	53.4	1.7	8	-6.3
North Cove 38	57	1	0.0	54.4	66	54.4	10	----	52.6	1.8	8	-6.2
North Cove 39	58	1	0.0	55.1	66	55.1	10	----	53.2	1.9	8	-6.1
North Cove 62	82	1	0.0	54.5	66	54.5	10	----	53.4	1.1	8	-6.9
North Cove 63	83	1	0.0	54.5	66	54.5	10	----	53.5	1.0	8	-7.0
North Cove 64	84	1	0.0	54.2	66	54.2	10	----	53.2	1.0	8	-7.0
North Cove 65	85	1	0.0	53.9	66	53.9	10	----	52.9	1.0	8	-7.0
Northridge 12	60	1	0.0	76.6	66	76.6	10	Snd Lvl	65.5	11.1	8	3.1
Northridge 11	61	1	0.0	64.9	66	64.9	10	----	58.9	6.0	8	-2.0
Northridge 10	62	1	0.0	65.0	66	65.0	10	----	58.9	6.1	8	-1.9
Northridge 9	63	1	0.0	65.9	66	65.9	10	----	59.5	6.4	8	-1.6
Northridge 8	64	1	0.0	68.0	66	68.0	10	Snd Lvl	60.8	7.2	8	-0.8
Northridge 7	65	1	0.0	69.9	66	69.9	10	Snd Lvl	62.2	7.7	8	-0.3
Northridge 6	66	1	0.0	67.6	66	67.6	10	Snd Lvl	61.0	6.6	8	-1.4
Northridge 5	67	1	0.0	65.3	66	65.3	10	----	59.9	5.4	8	-2.6
Northridge 3	68	1	0.0	62.0	66	62.0	10	----	57.7	4.3	8	-3.7
Northridge 2	69	1	0.0	59.9	66	59.9	10	----	56.7	3.2	8	-4.8
Northridge 1	70	1	0.0	59.3	66	59.3	10	----	56.5	2.8	8	-5.2
Bay Poiint 12	71	1	0.0	56.9	66	56.9	10	----	55.7	1.2	8	-6.8
Bay Point 11	72	1	0.0	56.4	66	56.4	10	----	55.3	1.1	8	-6.9
Bay Point 10	73	1	0.0	56.0	66	56.0	10	----	54.8	1.2	8	-6.8
Bay Point 9	74	1	0.0	55.6	66	55.6	10	----	54.4	1.2	8	-6.8

bay Point 8	75	1	0.0	55.2	66	55.2	10	----	54.0	1.2	8	-6.8
Bay Point 7	76	1	0.0	54.8	66	54.8	10	----	53.5	1.3	8	-6.7
Bay Point 6	77	1	0.0	54.2	66	54.2	10	----	53.1	1.1	8	-6.9
Bay Point 5	78	1	0.0	54.7	66	54.7	10	----	53.7	1.0	8	-7.0
Bay Point 4	79	1	0.0	54.5	66	54.5	10	----	53.7	0.8	8	-7.2
Bay Point 3	80	1	0.0	54.1	66	54.1	10	----	53.4	0.7	8	-7.3
Bay Point 2	81	1	0.0	53.7	66	53.7	10	----	53.0	0.7	8	-7.3
Bay Point 1	86	1	0.0	53.5	66	53.5	10	----	52.8	0.7	8	-7.3
Tennis Ct.	87	1	0.0	74.5	66	74.5	10	Snd Lvl	62.8	11.7	8	3.7
Northridge 13	91	1	0.0	69.3	66	69.3	10	Snd Lvl	63.4	5.9	8	-2.1
Northridge 14	92	1	0.0	66.1	66	66.1	10	Snd Lvl	61.9	4.2	8	-3.8
Northridge 15	93	1	0.0	63.6	66	63.6	10	----	60.9	2.7	8	-5.3
Northridge 4	94	1	0.0	60.9	66	60.9	10	----	57.9	3.0	8	-5.0
North Cove 77	6	1	0.0	64.9	66	64.9	10	----	61.8	3.1	8	-4.9
North Cove 76	7	1	0.0	63.6	66	63.6	10	----	60.1	3.5	8	-4.5
North Cove 75	8	1	0.0	63.1	66	63.1	10	----	59.2	3.9	8	-4.1
North Cove 74	9	1	0.0	62.2	66	62.2	10	----	58.6	3.6	8	-4.4
North Cove 73	10	1	0.0	62.0	66	62.0	10	----	58.9	3.1	8	-4.9
North Cove 72	11	1	0.0	60.6	66	60.6	10	----	57.8	2.8	8	-5.2
North Cove 69	12	1	0.0	58.7	66	58.7	10	----	56.1	2.6	8	-5.4
North Cove 70	13	1	0.0	59.4	66	59.4	10	----	56.6	2.8	8	-5.2
North Cove 71	14	1	0.0	60.0	66	60.0	10	----	56.8	3.2	8	-4.8
North Cove 65	15	1	0.0	58.8	66	58.8	10	----	56.0	2.8	8	-5.2
North Cove 66	16	1	0.0	58.2	66	58.2	10	----	55.5	2.7	8	-5.3
North Cove 67	17	1	0.0	57.8	66	57.8	10	----	55.3	2.5	8	-5.5
North Cove 68	18	1	0.0	57.3	66	57.3	10	----	54.6	2.7	8	-5.3
Bolling 1	95	1	0.0	55.6	66	55.6	10	----	55.2	0.4	8	-7.6
Bolling 2	96	1	0.0	59.3	66	59.3	10	----	58.6	0.7	8	-7.3
Bolling 3	97	1	0.0	59.8	66	59.8	10	----	59.3	0.5	8	-7.5
Bolling 4	98	1	0.0	60.2	66	60.2	10	----	59.8	0.4	8	-7.6
Bolling 5	99	1	0.0	60.6	66	60.6	10	----	60.3	0.3	8	-7.7
Bolling 6	100	1	0.0	61.0	66	61.0	10	----	60.7	0.3	8	-7.7
Bolling 7	101	1	0.0	61.2	66	61.2	10	----	61.0	0.2	8	-7.8
Bolling 8	102	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 9	103	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
Bolling 10	104	1	0.0	59.9	66	59.9	10	----	59.7	0.2	8	-7.8
Bolling 11	105	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 12	106	1	0.0	61.9	66	61.9	10	----	61.8	0.1	8	-7.9
Bolling 13	107	1	0.0	63.0	66	63.0	10	----	62.9	0.1	8	-7.9
Bolling 14	108	1	0.0	63.3	66	63.3	10	----	63.2	0.1	8	-7.9
Bolling 15	109	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9

Bolling 16	110	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Bolling 17	111	1	0.0	61.2	66	61.2	10	----	61.1	0.1	8	-7.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	107	0.1	2.5	11.7
All Impacted	12	4.2	7.2	11.7
All that meet NR Goal	2	11.1	11.4	11.7

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 22 right

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NC GM 1	W	0.00	0.00	0.00	0	0				0
NC GM 2	W	22.00	22.00	22.00	1767	38870				1166114
									Total Cost:	1166114

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 22 right
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Woodlands 1	1	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0
Woodlands 2	39	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
Woodlands 3	40	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
Woodlands 5	41	1	0.0	58.1	66	58.1	10	----	58.0	0.1	8	-7.9
Woodlands 4	42	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0
North Cove 1	2	1	0.0	70.2	66	70.2	10	Snd Lvl	70.1	0.1	8	-7.9
North Cove 2	3	1	0.0	71.2	66	71.2	10	Snd Lvl	71.2	0.0	8	-8.0
North Cove Park	4	1	0.0	70.1	66	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
North Cove 3	5	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0
North Cove 4	19	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
North Cove 5	20	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
North Cove 6	21	1	0.0	62.8	66	62.8	10	----	62.7	0.1	8	-7.9
North Cove 7	22	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
North Cove 8	23	1	0.0	60.2	66	60.2	10	----	60.1	0.1	8	-7.9
North Cove 9	24	1	0.0	58.9	66	58.9	10	----	58.8	0.1	8	-7.9
North Cove 10	25	1	0.0	57.5	66	57.5	10	----	57.3	0.2	8	-7.8
North Cove 11	26	1	0.0	56.7	66	56.7	10	----	56.4	0.3	8	-7.7
North Cove 12	27	1	0.0	56.2	66	56.2	10	----	55.8	0.4	8	-7.6
North Cove 13	28	1	0.0	55.2	66	55.2	10	----	54.7	0.5	8	-7.5
North Cove 14	29	1	0.0	54.4	66	54.4	10	----	54.0	0.4	8	-7.6
North Cove 15	30	1	0.0	54.7	66	54.7	10	----	54.4	0.3	8	-7.7
North Cove 16	31	1	0.0	54.5	66	54.5	10	----	54.2	0.3	8	-7.7
North Cove 17	32	1	0.0	57.3	66	57.3	10	----	57.1	0.2	8	-7.8

North Cove 18	33	1	0.0	56.3	66	56.3	10	----	56.1	0.2	8	-7.8
North Cove 19	59	1	0.0	55.6	66	55.6	10	----	55.3	0.3	8	-7.7
North Cove 20	35	1	0.0	55.2	66	55.2	10	----	54.9	0.3	8	-7.7
North Cove 21	36	1	0.0	55.0	66	55.0	10	----	54.5	0.5	8	-7.5
North Cove 22	37	1	0.0	54.7	66	54.7	10	----	54.1	0.6	8	-7.4
North Cove 23	38	1	0.0	54.1	66	54.1	10	----	53.6	0.5	8	-7.5
North Cove 24	43	1	0.0	57.5	66	57.5	10	----	57.4	0.1	8	-7.9
North Cove 25	44	1	0.0	56.9	66	56.9	10	----	56.8	0.1	8	-7.9
North Cove 26	45	1	0.0	56.5	66	56.5	10	----	56.3	0.2	8	-7.8
North Cove 27	46	1	0.0	55.9	66	55.9	10	----	55.8	0.1	8	-7.9
North Cove 28	47	1	0.0	55.8	66	55.8	10	----	55.6	0.2	8	-7.8
North Cove 29	48	1	0.0	55.4	66	55.4	10	----	55.2	0.2	8	-7.8
North Cove 30	49	1	0.0	55.3	66	55.3	10	----	55.1	0.2	8	-7.8
North Cove 31	50	1	0.0	54.8	66	54.8	10	----	54.7	0.1	8	-7.9
North Cove 32	51	1	0.0	56.3	66	56.3	10	----	56.1	0.2	8	-7.8
North Cove 33	52	1	0.0	56.4	66	56.4	10	----	56.2	0.2	8	-7.8
North Cove 34	53	1	0.0	56.1	66	56.1	10	----	55.9	0.2	8	-7.8
North Cove 35	54	1	0.0	54.9	66	54.9	10	----	54.6	0.3	8	-7.7
North Cove 36	55	1	0.0	54.7	66	54.7	10	----	54.5	0.2	8	-7.8
North Cove 37	56	1	0.0	55.1	66	55.1	10	----	54.8	0.3	8	-7.7
North Cove 38	57	1	0.0	54.4	66	54.4	10	----	54.2	0.2	8	-7.8
North Cove 39	58	1	0.0	55.1	66	55.1	10	----	54.9	0.2	8	-7.8
North Cove 62	82	1	0.0	54.5	66	54.5	10	----	54.0	0.5	8	-7.5
North Cove 63	83	1	0.0	54.5	66	54.5	10	----	54.0	0.5	8	-7.5
North Cove 64	84	1	0.0	54.2	66	54.2	10	----	53.7	0.5	8	-7.5
North Cove 65	85	1	0.0	53.9	66	53.9	10	----	53.3	0.6	8	-7.4
Northridge 12	60	1	0.0	76.6	66	76.6	10	Snd Lvl	65.5	11.1	8	3.1
Northridge 11	61	1	0.0	64.9	66	64.9	10	----	58.6	6.3	8	-1.7
Northridge 10	62	1	0.0	65.0	66	65.0	10	----	58.7	6.3	8	-1.7
Northridge 9	63	1	0.0	65.9	66	65.9	10	----	59.4	6.5	8	-1.5
Northridge 8	64	1	0.0	68.0	66	68.0	10	Snd Lvl	60.7	7.3	8	-0.7
Northridge 7	65	1	0.0	69.9	66	69.9	10	Snd Lvl	62.2	7.7	8	-0.3
Northridge 6	66	1	0.0	67.6	66	67.6	10	Snd Lvl	61.0	6.6	8	-1.4
Northridge 5	67	1	0.0	65.3	66	65.3	10	----	59.9	5.4	8	-2.6
Northridge 3	68	1	0.0	62.0	66	62.0	10	----	57.7	4.3	8	-3.7
Northridge 2	69	1	0.0	59.9	66	59.9	10	----	56.7	3.2	8	-4.8
Northridge 1	70	1	0.0	59.3	66	59.3	10	----	56.5	2.8	8	-5.2
Bay Poiint 12	71	1	0.0	56.9	66	56.9	10	----	55.7	1.2	8	-6.8
Bay Point 11	72	1	0.0	56.4	66	56.4	10	----	55.2	1.2	8	-6.8
Bay Point 10	73	1	0.0	56.0	66	56.0	10	----	54.8	1.2	8	-6.8
Bay Point 9	74	1	0.0	55.6	66	55.6	10	----	54.4	1.2	8	-6.8

bay Point 8	75	1	0.0	55.2	66	55.2	10	----	54.1	1.1	8	-6.9
Bay Point 7	76	1	0.0	54.8	66	54.8	10	----	53.7	1.1	8	-6.9
Bay Point 6	77	1	0.0	54.2	66	54.2	10	----	53.3	0.9	8	-7.1
Bay Point 5	78	1	0.0	54.7	66	54.7	10	----	53.9	0.8	8	-7.2
Bay Point 4	79	1	0.0	54.5	66	54.5	10	----	53.8	0.7	8	-7.3
Bay Point 3	80	1	0.0	54.1	66	54.1	10	----	53.6	0.5	8	-7.5
Bay Point 2	81	1	0.0	53.7	66	53.7	10	----	53.2	0.5	8	-7.5
Bay Point 1	86	1	0.0	53.5	66	53.5	10	----	53.0	0.5	8	-7.5
Tennis Ct.	87	1	0.0	74.5	66	74.5	10	Snd Lvl	62.8	11.7	8	3.7
Northridge 13	91	1	0.0	69.3	66	69.3	10	Snd Lvl	63.4	5.9	8	-2.1
Northridge 14	92	1	0.0	66.1	66	66.1	10	Snd Lvl	61.9	4.2	8	-3.8
Northridge 15	93	1	0.0	63.6	66	63.6	10	----	60.9	2.7	8	-5.3
Northridge 4	94	1	0.0	60.9	66	60.9	10	----	58.0	2.9	8	-5.1
North Cove 77	6	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
North Cove 76	7	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0
North Cove 75	8	1	0.0	63.1	66	63.1	10	----	63.1	0.0	8	-8.0
North Cove 74	9	1	0.0	62.2	66	62.2	10	----	62.1	0.1	8	-7.9
North Cove 73	10	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
North Cove 72	11	1	0.0	60.6	66	60.6	10	----	60.6	0.0	8	-8.0
North Cove 69	12	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0
North Cove 70	13	1	0.0	59.4	66	59.4	10	----	59.4	0.0	8	-8.0
North Cove 71	14	1	0.0	60.0	66	60.0	10	----	59.9	0.1	8	-7.9
North Cove 65	15	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0
North Cove 66	16	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
North Cove 67	17	1	0.0	57.8	66	57.8	10	----	57.8	0.0	8	-8.0
North Cove 68	18	1	0.0	57.3	66	57.3	10	----	57.2	0.1	8	-7.9
Bolling 1	95	1	0.0	55.6	66	55.6	10	----	55.2	0.4	8	-7.6
Bolling 2	96	1	0.0	59.3	66	59.3	10	----	58.6	0.7	8	-7.3
Bolling 3	97	1	0.0	59.8	66	59.8	10	----	59.3	0.5	8	-7.5
Bolling 4	98	1	0.0	60.2	66	60.2	10	----	59.8	0.4	8	-7.6
Bolling 5	99	1	0.0	60.6	66	60.6	10	----	60.3	0.3	8	-7.7
Bolling 6	100	1	0.0	61.0	66	61.0	10	----	60.7	0.3	8	-7.7
Bolling 7	101	1	0.0	61.2	66	61.2	10	----	61.0	0.2	8	-7.8
Bolling 8	102	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 9	103	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
Bolling 10	104	1	0.0	59.9	66	59.9	10	----	59.7	0.2	8	-7.8
Bolling 11	105	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 12	106	1	0.0	61.9	66	61.9	10	----	61.8	0.1	8	-7.9
Bolling 13	107	1	0.0	63.0	66	63.0	10	----	62.9	0.1	8	-7.9
Bolling 14	108	1	0.0	63.3	66	63.3	10	----	63.2	0.1	8	-7.9
Bolling 15	109	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9

Bolling 16	110	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Bolling 17	111	1	0.0	61.2	66	61.2	10	----	61.1	0.1	8	-7.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	107	0.0	1.1	11.7
All Impacted	12	0.0	4.5	11.7
All that meet NR Goal	2	11.1	11.4	11.7

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 22 left

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NC GM 1	W	22.00	22.00	22.00	1603	35256				1057687
NC GM 2	W	0.00	0.00	0.00	0	0				0
									Total Cost:	1057687

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove
BARRIER DESIGN: GM 22 left
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Woodlands 1	1	1	0.0	64.7	66	64.7	10	----	64.5	0.2	8	-7.8
Woodlands 2	39	1	0.0	61.5	66	61.5	10	----	59.0	2.5	8	-5.5
Woodlands 3	40	1	0.0	60.1	66	60.1	10	----	57.5	2.6	8	-5.4
Woodlands 5	41	1	0.0	58.1	66	58.1	10	----	55.7	2.4	8	-5.6
Woodlands 4	42	1	0.0	59.2	66	59.2	10	----	56.2	3.0	8	-5.0
North Cove 1	2	1	0.0	70.2	66	70.2	10	Snd Lvl	65.9	4.3	8	-3.7
North Cove 2	3	1	0.0	71.2	66	71.2	10	Snd Lvl	63.7	7.5	8	-0.5
North Cove Park	4	1	0.0	70.1	66	70.1	10	Snd Lvl	62.3	7.8	8	-0.2
North Cove 3	5	1	0.0	69.2	66	69.2	10	Snd Lvl	61.4	7.8	8	-0.2
North Cove 4	19	1	0.0	66.1	66	66.1	10	Snd Lvl	59.5	6.6	8	-1.4
North Cove 5	20	1	0.0	64.4	66	64.4	10	----	58.3	6.1	8	-1.9
North Cove 6	21	1	0.0	62.8	66	62.8	10	----	57.2	5.6	8	-2.4
North Cove 7	22	1	0.0	61.1	66	61.1	10	----	56.1	5.0	8	-3.0
North Cove 8	23	1	0.0	60.2	66	60.2	10	----	55.1	5.1	8	-2.9
North Cove 9	24	1	0.0	58.9	66	58.9	10	----	54.3	4.6	8	-3.4
North Cove 10	25	1	0.0	57.5	66	57.5	10	----	53.5	4.0	8	-4.0
North Cove 11	26	1	0.0	56.7	66	56.7	10	----	52.9	3.8	8	-4.2
North Cove 12	27	1	0.0	56.2	66	56.2	10	----	52.4	3.8	8	-4.2
North Cove 13	28	1	0.0	55.2	66	55.2	10	----	52.0	3.2	8	-4.8
North Cove 14	29	1	0.0	54.4	66	54.4	10	----	52.2	2.2	8	-5.8
North Cove 15	30	1	0.0	54.7	66	54.7	10	----	52.2	2.5	8	-5.5
North Cove 16	31	1	0.0	54.5	66	54.5	10	----	52.1	2.4	8	-5.6
North Cove 17	32	1	0.0	57.3	66	57.3	10	----	53.3	4.0	8	-4.0

North Cove 18	33	1	0.0	56.3	66	56.3	10	----	52.8	3.5	8	-4.5
North Cove 19	59	1	0.0	55.6	66	55.6	10	----	52.5	3.1	8	-4.9
North Cove 20	35	1	0.0	55.2	66	55.2	10	----	52.3	2.9	8	-5.1
North Cove 21	36	1	0.0	55.0	66	55.0	10	----	52.2	2.8	8	-5.2
North Cove 22	37	1	0.0	54.7	66	54.7	10	----	52.4	2.3	8	-5.7
North Cove 23	38	1	0.0	54.1	66	54.1	10	----	52.2	1.9	8	-6.1
North Cove 24	43	1	0.0	57.5	66	57.5	10	----	53.6	3.9	8	-4.1
North Cove 25	44	1	0.0	56.9	66	56.9	10	----	53.5	3.4	8	-4.6
North Cove 26	45	1	0.0	56.5	66	56.5	10	----	53.3	3.2	8	-4.8
North Cove 27	46	1	0.0	55.9	66	55.9	10	----	53.0	2.9	8	-5.1
North Cove 28	47	1	0.0	55.8	66	55.8	10	----	52.9	2.9	8	-5.1
North Cove 29	48	1	0.0	55.4	66	55.4	10	----	52.8	2.6	8	-5.4
North Cove 30	49	1	0.0	55.3	66	55.3	10	----	52.5	2.8	8	-5.2
North Cove 31	50	1	0.0	54.8	66	54.8	10	----	52.3	2.5	8	-5.5
North Cove 32	51	1	0.0	56.3	66	56.3	10	----	53.0	3.3	8	-4.7
North Cove 33	52	1	0.0	56.4	66	56.4	10	----	53.0	3.4	8	-4.6
North Cove 34	53	1	0.0	56.1	66	56.1	10	----	52.7	3.4	8	-4.6
North Cove 35	54	1	0.0	54.9	66	54.9	10	----	52.2	2.7	8	-5.3
North Cove 36	55	1	0.0	54.7	66	54.7	10	----	52.3	2.4	8	-5.6
North Cove 37	56	1	0.0	55.1	66	55.1	10	----	52.3	2.8	8	-5.2
North Cove 38	57	1	0.0	54.4	66	54.4	10	----	52.2	2.2	8	-5.8
North Cove 39	58	1	0.0	55.1	66	55.1	10	----	52.5	2.6	8	-5.4
North Cove 62	82	1	0.0	54.5	66	54.5	10	----	53.2	1.3	8	-6.7
North Cove 63	83	1	0.0	54.5	66	54.5	10	----	53.5	1.0	8	-7.0
North Cove 64	84	1	0.0	54.2	66	54.2	10	----	53.4	0.8	8	-7.2
North Cove 65	85	1	0.0	53.9	66	53.9	10	----	53.1	0.8	8	-7.2
Northridge 12	60	1	0.0	76.6	66	76.6	10	Snd Lvl	76.6	0.0	8	-8.0
Northridge 11	61	1	0.0	64.9	66	64.9	10	----	64.7	0.2	8	-7.8
Northridge 10	62	1	0.0	65.0	66	65.0	10	----	64.9	0.1	8	-7.9
Northridge 9	63	1	0.0	65.9	66	65.9	10	----	65.9	0.0	8	-8.0
Northridge 8	64	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
Northridge 7	65	1	0.0	69.9	66	69.9	10	Snd Lvl	69.9	0.0	8	-8.0
Northridge 6	66	1	0.0	67.6	66	67.6	10	Snd Lvl	67.6	0.0	8	-8.0
Northridge 5	67	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
Northridge 3	68	1	0.0	62.0	66	62.0	10	----	61.7	0.3	8	-7.7
Northridge 2	69	1	0.0	59.9	66	59.9	10	----	59.5	0.4	8	-7.6
Northridge 1	70	1	0.0	59.3	66	59.3	10	----	59.0	0.3	8	-7.7
Bay Poiint 12	71	1	0.0	56.9	66	56.9	10	----	56.4	0.5	8	-7.5
Bay Point 11	72	1	0.0	56.4	66	56.4	10	----	55.9	0.5	8	-7.5
Bay Point 10	73	1	0.0	56.0	66	56.0	10	----	55.4	0.6	8	-7.4
Bay Point 9	74	1	0.0	55.6	66	55.6	10	----	55.0	0.6	8	-7.4

bay Point 8	75	1	0.0	55.2	66	55.2	10	----	54.6	0.6	8	-7.4
Bay Point 7	76	1	0.0	54.8	66	54.8	10	----	54.0	0.8	8	-7.2
Bay Point 6	77	1	0.0	54.2	66	54.2	10	----	53.5	0.7	8	-7.3
Bay Point 5	78	1	0.0	54.7	66	54.7	10	----	54.2	0.5	8	-7.5
Bay Point 4	79	1	0.0	54.5	66	54.5	10	----	53.9	0.6	8	-7.4
Bay Point 3	80	1	0.0	54.1	66	54.1	10	----	53.6	0.5	8	-7.5
Bay Point 2	81	1	0.0	53.7	66	53.7	10	----	53.2	0.5	8	-7.5
Bay Point 1	86	1	0.0	53.5	66	53.5	10	----	52.9	0.6	8	-7.4
Tennis Ct.	87	1	0.0	74.5	66	74.5	10	Snd Lvl	74.5	0.0	8	-8.0
Northridge 13	91	1	0.0	69.3	66	69.3	10	Snd Lvl	69.3	0.0	8	-8.0
Northridge 14	92	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
Northridge 15	93	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0
Northridge 4	94	1	0.0	60.9	66	60.9	10	----	60.8	0.1	8	-7.9
North Cove 77	6	1	0.0	64.9	66	64.9	10	----	61.6	3.3	8	-4.7
North Cove 76	7	1	0.0	63.6	66	63.6	10	----	59.8	3.8	8	-4.2
North Cove 75	8	1	0.0	63.1	66	63.1	10	----	58.7	4.4	8	-3.6
North Cove 74	9	1	0.0	62.2	66	62.2	10	----	57.8	4.4	8	-3.6
North Cove 73	10	1	0.0	62.0	66	62.0	10	----	58.4	3.6	8	-4.4
North Cove 72	11	1	0.0	60.6	66	60.6	10	----	57.4	3.2	8	-4.8
North Cove 69	12	1	0.0	58.7	66	58.7	10	----	55.6	3.1	8	-4.9
North Cove 70	13	1	0.0	59.4	66	59.4	10	----	55.9	3.5	8	-4.5
North Cove 71	14	1	0.0	60.0	66	60.0	10	----	55.9	4.1	8	-3.9
North Cove 65	15	1	0.0	58.8	66	58.8	10	----	54.8	4.0	8	-4.0
North Cove 66	16	1	0.0	58.2	66	58.2	10	----	54.5	3.7	8	-4.3
North Cove 67	17	1	0.0	57.8	66	57.8	10	----	54.5	3.3	8	-4.7
North Cove 68	18	1	0.0	57.3	66	57.3	10	----	53.9	3.4	8	-4.6
Bolling 1	95	1	0.0	55.6	66	55.6	10	----	55.5	0.1	8	-7.9
Bolling 2	96	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0
Bolling 3	97	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Bolling 4	98	1	0.0	60.2	66	60.2	10	----	60.2	0.0	8	-8.0
Bolling 5	99	1	0.0	60.6	66	60.6	10	----	60.6	0.0	8	-8.0
Bolling 6	100	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
Bolling 7	101	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0
Bolling 8	102	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
Bolling 9	103	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
Bolling 10	104	1	0.0	59.9	66	59.9	10	----	59.9	0.0	8	-8.0
Bolling 11	105	1	0.0	60.6	66	60.6	10	----	60.6	0.0	8	-8.0
Bolling 12	106	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
Bolling 13	107	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
Bolling 14	108	1	0.0	63.3	66	63.3	10	----	63.3	0.0	8	-8.0
Bolling 15	109	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0

Bolling 16	110	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
Bolling 17	111	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	107	0.0	2.1	7.8
All Impacted	12	0.0	2.8	7.8
All that meet NR Goal	0	0.0	0.0	0.0

Stantec 7 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove BM
BARRIER DESIGN: BM 14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NC BM	W	14.00	14.00	14.00	3231	45235				1357061
17' Wall B	W	17.00	17.00	17.00	1554	26422				0
									Total Cost:	1357061

Stantec
M. Drauer

7 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 North Cove BM
BARRIER DESIGN: BM 14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Woodlands 1	1	1	0.0	64.7	66	64.7	10	----	64.6	0.1	8	-7.9
North Cove 1	2	1	0.0	71.9	66	71.9	10	Snd Lvl	66.7	5.2	8	-2.8
North Cove 2	3	1	0.0	75.7	66	75.7	10	Snd Lvl	66.3	9.4	8	1.4
North Cove Park	4	1	0.0	75.7	66	75.7	10	Snd Lvl	65.5	10.2	8	2.2
North Cove 3	5	1	0.0	74.8	66	74.8	10	Snd Lvl	64.7	10.1	8	2.1
North Cove 77	6	1	0.0	66.6	66	66.6	10	Snd Lvl	62.1	4.5	8	-3.5
North Cove 76	7	1	0.0	65.6	66	65.6	10	----	60.7	4.9	8	-3.1
North Cove 75	8	1	0.0	65.2	66	65.2	10	----	60.1	5.1	8	-2.9
North Cove 74	9	1	0.0	64.1	66	64.1	10	----	59.0	5.1	8	-2.9
North Cove 73	10	1	0.0	63.6	66	63.6	10	----	59.2	4.4	8	-3.6
North Cove 72	11	1	0.0	61.9	66	61.9	10	----	57.9	4.0	8	-4.0
North Cove 69	12	1	0.0	59.8	66	59.8	10	----	55.9	3.9	8	-4.1
North Cove 70	13	1	0.0	60.5	66	60.5	10	----	56.5	4.0	8	-4.0
North Cove 71	14	1	0.0	61.2	66	61.2	10	----	56.7	4.5	8	-3.5
North Cove 65	15	1	0.0	59.7	66	59.7	10	----	55.6	4.1	8	-3.9
North Cove 66	16	1	0.0	59.7	66	59.7	10	----	55.1	4.6	8	-3.4
North Cove 67	17	1	0.0	59.2	66	59.2	10	----	54.9	4.3	8	-3.7
North Cove 68	18	1	0.0	58.5	66	58.5	10	----	54.3	4.2	8	-3.8
North Cove 4	19	1	0.0	69.9	66	69.9	10	Snd Lvl	62.1	7.8	8	-0.2
North Cove 5	20	1	0.0	67.0	66	67.0	10	Snd Lvl	60.4	6.6	8	-1.4
North Cove 6	21	1	0.0	64.5	66	64.5	10	----	58.8	5.7	8	-2.3
North Cove 7	22	1	0.0	62.5	66	62.5	10	----	57.3	5.2	8	-2.8
North Cove 8	23	1	0.0	61.3	66	61.3	10	----	56.2	5.1	8	-2.9

North Cove 9	24	1	0.0	60.1	66	60.1	10	----	55.0	5.1	8	-2.9
North Cove 10	25	1	0.0	59.4	66	59.4	10	----	53.9	5.5	8	-2.5
North Cove 11	26	1	0.0	59.0	66	59.0	10	----	53.4	5.6	8	-2.4
North Cove 12	27	1	0.0	57.7	66	57.7	10	----	52.6	5.1	8	-2.9
North Cove 13	28	1	0.0	57.5	66	57.5	10	----	52.2	5.3	8	-2.7
North Cove 14	29	1	0.0	55.0	66	55.0	10	----	52.2	2.8	8	-5.2
North Cove 15	30	1	0.0	55.9	66	55.9	10	----	52.3	3.6	8	-4.4
North Cove 16	31	1	0.0	54.9	66	54.9	10	----	52.2	2.7	8	-5.3
North Cove 17	32	1	0.0	58.0	66	58.0	10	----	53.8	4.2	8	-3.8
North Cove 18	33	1	0.0	57.2	66	57.2	10	----	53.1	4.1	8	-3.9
North Cove 19	59	1	0.0	56.8	66	56.8	10	----	52.7	4.1	8	-3.9
North Cove 20	35	1	0.0	56.2	66	56.2	10	----	52.5	3.7	8	-4.3
North Cove 21	36	1	0.0	56.4	66	56.4	10	----	52.0	4.4	8	-3.6
North Cove 22	37	1	0.0	55.9	66	55.9	10	----	52.3	3.6	8	-4.4
North Cove 23	38	1	0.0	55.1	66	55.1	10	----	52.2	2.9	8	-5.1
Woodlands 2	39	1	0.0	62.4	66	62.4	10	----	59.3	3.1	8	-4.9
Woodlands 3	40	1	0.0	60.8	66	60.8	10	----	57.8	3.0	8	-5.0
Woodlands 5	41	1	0.0	59.1	66	59.1	10	----	56.1	3.0	8	-5.0
Woodlands 4	42	1	0.0	60.0	66	60.0	10	----	56.9	3.1	8	-4.9
North Cove 24	43	1	0.0	58.0	66	58.0	10	----	54.0	4.0	8	-4.0
North Cove 25	44	1	0.0	57.5	66	57.5	10	----	53.9	3.6	8	-4.4
North Cove 26	45	1	0.0	57.1	66	57.1	10	----	53.6	3.5	8	-4.5
North Cove 27	46	1	0.0	56.3	66	56.3	10	----	53.2	3.1	8	-4.9
North Cove 28	47	1	0.0	56.4	66	56.4	10	----	53.1	3.3	8	-4.7
North Cove 29	48	1	0.0	55.9	66	55.9	10	----	52.9	3.0	8	-5.0
North Cove 30	49	1	0.0	55.5	66	55.5	10	----	52.7	2.8	8	-5.2
North Cove 31	50	1	0.0	54.9	66	54.9	10	----	52.4	2.5	8	-5.5
North Cove 32	51	1	0.0	56.4	66	56.4	10	----	53.2	3.2	8	-4.8
North Cove 33	52	1	0.0	56.8	66	56.8	10	----	53.3	3.5	8	-4.5
North Cove 34	53	1	0.0	56.4	66	56.4	10	----	52.9	3.5	8	-4.5
North Cove 35	54	1	0.0	55.3	66	55.3	10	----	52.4	2.9	8	-5.1
North Cove 36	55	1	0.0	55.5	66	55.5	10	----	52.5	3.0	8	-5.0
North Cove 37	56	1	0.0	55.2	66	55.2	10	----	52.4	2.8	8	-5.2
North Cove 38	57	1	0.0	54.9	66	54.9	10	----	52.4	2.5	8	-5.5
North Cove 39	58	1	0.0	55.2	66	55.2	10	----	52.6	2.6	8	-5.4
Northridge 12	60	1	0.0	76.7	66	76.7	10	Snd Lvl	73.2	3.5	8	-4.5
Northridge 11	61	1	0.0	65.0	66	65.0	10	----	60.9	4.1	8	-3.9
Northridge 10	62	1	0.0	65.0	66	65.0	10	----	61.0	4.0	8	-4.0
Northridge 9	63	1	0.0	66.0	66	66.0	10	Snd Lvl	61.9	4.1	8	-3.9
Northridge 8	64	1	0.0	68.1	66	68.1	10	Snd Lvl	63.8	4.3	8	-3.7
Northridge 7	65	1	0.0	69.9	66	69.9	10	Snd Lvl	65.5	4.4	8	-3.6

Northridge 6	66	1	0.0	67.7	66	67.7	10	Snd Lvl	63.7	4.0	8	-4.0
Northridge 5	67	1	0.0	65.3	66	65.3	10	----	61.8	3.5	8	-4.5
Northridge 3	68	1	0.0	62.2	66	62.2	10	----	58.7	3.5	8	-4.5
Northridge 2	69	1	0.0	60.4	66	60.4	10	----	56.9	3.5	8	-4.5
Northridge 1	70	8	0.0	59.9	66	59.9	10	----	56.7	3.2	8	-4.8
Bay Poiint 12	71	1	0.0	58.4	66	58.4	10	----	55.7	2.7	8	-5.3
Bay Point 11	72	1	0.0	57.8	66	57.8	10	----	55.1	2.7	8	-5.3
Bay Point 10	73	1	0.0	57.2	66	57.2	10	----	54.6	2.6	8	-5.4
Bay Point 9	74	1	0.0	56.7	66	56.7	10	----	54.1	2.6	8	-5.4
bay Point 8	75	1	0.0	56.2	66	56.2	10	----	53.7	2.5	8	-5.5
Bay Point 7	76	1	0.0	55.6	66	55.6	10	----	53.2	2.4	8	-5.6
Bay Point 6	77	1	0.0	54.9	66	54.9	10	----	52.8	2.1	8	-5.9
Bay Point 5	78	1	0.0	56.8	66	56.8	10	----	53.6	3.2	8	-4.8
Bay Point 4	79	1	0.0	56.7	66	56.7	10	----	53.5	3.2	8	-4.8
Bay Point 3	80	1	0.0	56.3	66	56.3	10	----	53.3	3.0	8	-5.0
Bay Point 2	81	1	0.0	56.0	66	56.0	10	----	53.0	3.0	8	-5.0
North Cove 62	82	1	0.0	55.6	66	55.6	10	----	53.2	2.4	8	-5.6
North Cove 63	83	1	0.0	56.3	66	56.3	10	----	53.5	2.8	8	-5.2
North Cove 64	84	1	0.0	55.9	66	55.9	10	----	53.3	2.6	8	-5.4
North Cove 65	85	1	0.0	55.4	66	55.4	10	----	52.9	2.5	8	-5.5
Bay Point 1	86	1	0.0	55.5	66	55.5	10	----	52.7	2.8	8	-5.2
Tennis Ct.	87	1	0.0	75.0	66	75.0	10	Snd Lvl	66.2	8.8	8	0.8
Northridge 13	91	1	0.0	70.3	66	70.3	10	Snd Lvl	65.1	5.2	8	-2.8
Northridge 14	92	1	0.0	67.3	66	67.3	10	Snd Lvl	63.1	4.2	8	-3.8
Receiver93	93	1	0.0	65.1	66	65.1	10	----	61.6	3.5	8	-4.5
Northridge 4	94	1	0.0	63.4	66	63.4	10	----	59.0	4.4	8	-3.6
Bolling 2	96	1	0.0	59.7	66	59.7	10	----	58.7	1.0	8	-7.0
Bolling 3	97	1	0.0	60.1	66	60.1	10	----	59.3	0.8	8	-7.2
Bolling 4	98	1	0.0	60.5	66	60.5	10	----	59.8	0.7	8	-7.3
Bolling 5	99	1	0.0	60.8	66	60.8	10	----	60.3	0.5	8	-7.5
Bolling 6	100	1	0.0	61.2	66	61.2	10	----	60.7	0.5	8	-7.5
Bolling 7	101	1	0.0	61.4	66	61.4	10	----	61.0	0.4	8	-7.6
Bolling 8	102	1	0.0	62.0	66	62.0	10	----	61.7	0.3	8	-7.7
Bolling 9	103	1	0.0	61.2	66	61.2	10	----	61.0	0.2	8	-7.8
Bolling 10	104	1	0.0	60.0	66	60.0	10	----	59.7	0.3	8	-7.7
Bolling 11	105	1	0.0	60.7	66	60.7	10	----	60.5	0.2	8	-7.8
Bolling 12	106	1	0.0	62.0	66	62.0	10	----	61.8	0.2	8	-7.8
Bolling 13	107	1	0.0	63.0	66	63.0	10	----	62.9	0.1	8	-7.9
Bolling 14	108	1	0.0	63.4	66	63.4	10	----	63.2	0.2	8	-7.8
Bolling 15	109	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9
Bolling 16	110	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9

Bolling 17	111	1	0.0	61.2	66	61.2	10	----	61.1	0.1	8	-7.9

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	106	0.1	3.4	10.2
All Impacted	15	3.5	6.2	10.2
All that meet NR Goal	4	8.8	9.6	10.2

Barrier Analysis

NSA D – Pine Bay

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 22

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Pine Bay	W	22.00	22.00	22.00	1802	39643				1189300
									Total Cost:	1189300

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 22
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	71.3	66	71.3	10	Snd Lvl	63.8	7.5	8	-0.5
Pine Bay 2	2	1	0.0	71.4	66	71.4	10	Snd Lvl	62.9	8.5	8	0.5
Pine Bay 3	3	1	0.0	71.4	66	71.4	10	Snd Lvl	62.6	8.8	8	0.8
Pine Bay 4	4	1	0.0	71.6	66	71.6	10	Snd Lvl	62.3	9.3	8	1.3
Pine Bay 5	5	1	0.0	71.6	66	71.6	10	Snd Lvl	62.1	9.5	8	1.5
Pine Bay 6	6	1	0.0	71.5	66	71.5	10	Snd Lvl	61.9	9.6	8	1.6
Pine Bay 7	7	1	0.0	71.6	66	71.6	10	Snd Lvl	61.9	9.7	8	1.7
Pine Bay 8	8	1	0.0	71.5	66	71.5	10	Snd Lvl	61.8	9.7	8	1.7
Pine Bay 9	9	1	0.0	71.5	66	71.5	10	Snd Lvl	61.5	10.0	8	2.0
Pine Bay 10	10	1	0.0	71.4	66	71.4	10	Snd Lvl	61.5	9.9	8	1.9
Pine Bay 11	11	1	0.0	71.6	66	71.6	10	Snd Lvl	61.4	10.2	8	2.2
Pine Bay 12	12	1	0.0	71.6	66	71.6	10	Snd Lvl	61.3	10.3	8	2.3
Pine Bay 13	13	1	0.0	71.6	66	71.6	10	Snd Lvl	61.3	10.3	8	2.3
Pine Bay 14	14	1	0.0	71.5	66	71.5	10	Snd Lvl	61.4	10.1	8	2.1
Pine Bay 15	15	1	0.0	71.0	66	71.0	10	Snd Lvl	61.3	9.7	8	1.7
Pine Bay 16	16	1	0.0	70.8	66	70.8	10	Snd Lvl	61.5	9.3	8	1.3
Pine Bay 17	17	1	0.0	70.7	66	70.7	10	Snd Lvl	61.5	9.2	8	1.2
Pine Bay 18	18	1	0.0	70.7	66	70.7	10	Snd Lvl	61.6	9.1	8	1.1
Pine Bay 19	19	1	0.0	70.4	66	70.4	10	Snd Lvl	61.5	8.9	8	0.9
Pine Bay 20	20	1	0.0	70.3	66	70.3	10	Snd Lvl	61.8	8.5	8	0.5
Pine Bay 21	21	1	0.0	70.3	66	70.3	10	Snd Lvl	62.0	8.3	8	0.3
Pine Bay 22	22	1	0.0	70.3	66	70.3	10	Snd Lvl	62.2	8.1	8	0.1
Pine Bay 23	23	1	0.0	70.3	66	70.3	10	Snd Lvl	62.5	7.8	8	-0.2

Pine Bay 24	24	1	0.0	69.9	66	69.9	10	Snd Lvl	62.9	7.0	8	-1.0
Pine Bay 25	25	1	0.0	69.9	66	69.9	10	Snd Lvl	63.4	6.5	8	-1.5
Pine Bay 26	26	1	0.0	69.6	66	69.6	10	Snd Lvl	64.0	5.6	8	-2.4
Pine Bay 27	27	1	0.0	69.7	66	69.7	10	Snd Lvl	64.6	5.1	8	-2.9
Pine Bay 28	28	1	0.0	70.3	66	70.3	10	Snd Lvl	66.4	3.9	8	-4.1
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.1	2.7	8	-5.3
Pine Bay 30	30	1	0.0	69.0	66	69.0	10	Snd Lvl	67.1	1.9	8	-6.1
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.2	1.6	8	-6.4
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.1	1.5	8	-6.5
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.2	1.4	8	-6.6
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.3	1.4	8	-6.6
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.0	1.2	8	-6.8
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.4	1.1	8	-6.9
Pine Bay 37	37	1	0.0	62.9	66	62.9	10	----	62.0	0.9	8	-7.1
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.5	1.0	8	-7.0
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.1	0.9	8	-7.1
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.6	0.9	8	-7.1
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.5	0.8	8	-7.2
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.0	0.8	8	-7.2
Pine Bay 43	43	1	0.0	60.1	66	60.1	10	----	59.1	1.0	8	-7.0
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	59.5	1.1	8	-6.9
Pine Bay 45	45	1	0.0	61.0	66	61.0	10	----	59.7	1.3	8	-6.7
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	59.9	1.4	8	-6.6
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	60.5	1.5	8	-6.5
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	60.8	1.7	8	-6.3
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	61.3	1.8	8	-6.2
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	61.7	2.0	8	-6.0
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	62.1	2.2	8	-5.8
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	62.9	2.3	8	-5.7
Pine Bay 53	53	1	0.0	66.3	66	66.3	10	Snd Lvl	63.4	2.9	8	-5.1
Pine Bay 54	54	1	0.0	66.2	66	66.2	10	Snd Lvl	62.8	3.4	8	-4.6
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	62.3	3.7	8	-4.3
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	61.9	4.0	8	-4.0
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	61.4	3.0	8	-5.0
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	60.9	2.6	8	-5.4
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	60.4	2.1	8	-5.9
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	59.8	1.8	8	-6.2
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	59.5	1.6	8	-6.4
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.1	1.3	8	-6.7
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	58.9	1.1	8	-6.9
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	61.2	4.9	8	-3.1

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	60.9	4.9	8	-3.1
Pine Bay 66	66	1	0.0	64.7	66	64.7	10	----	59.5	5.2	8	-2.8
Pine Bay 67	67	1	0.0	64.6	66	64.6	10	----	59.5	5.1	8	-2.9
Pine Bay 68	68	1	0.0	64.4	66	64.4	10	----	59.5	4.9	8	-3.1
Pine Bay 69	69	1	0.0	64.4	66	64.4	10	----	59.6	4.8	8	-3.2
Pine Bay 70	70	1	0.0	64.6	66	64.6	10	----	59.6	5.0	8	-3.0
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	59.9	4.7	8	-3.3
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	59.9	4.5	8	-3.5
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	60.2	4.1	8	-3.9
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	60.4	3.6	8	-4.4
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	58.4	2.0	8	-6.0
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	58.1	1.7	8	-6.3

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	76	0.8	4.7	10.3
All Impacted	36	1.5	7.3	10.3
All that meet NR Goal	21	8.1	9.4	10.3

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 20

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Pine Bay	W	20.00	20.00	20.00	1802	36039				1081182
									Total Cost:	1081182

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 20

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	71.3	66	71.3	10	Snd Lvl	64.0	7.3	8	-0.7
Pine Bay 2	2	1	0.0	71.4	66	71.4	10	Snd Lvl	63.1	8.3	8	0.3
Pine Bay 3	3	1	0.0	71.4	66	71.4	10	Snd Lvl	62.9	8.5	8	0.5
Pine Bay 4	4	1	0.0	71.6	66	71.6	10	Snd Lvl	62.6	9.0	8	1.0
Pine Bay 5	5	1	0.0	71.6	66	71.6	10	Snd Lvl	62.4	9.2	8	1.2
Pine Bay 6	6	1	0.0	71.5	66	71.5	10	Snd Lvl	62.3	9.2	8	1.2
Pine Bay 7	7	1	0.0	71.6	66	71.6	10	Snd Lvl	62.2	9.4	8	1.4
Pine Bay 8	8	1	0.0	71.5	66	71.5	10	Snd Lvl	62.1	9.4	8	1.4
Pine Bay 9	9	1	0.0	71.5	66	71.5	10	Snd Lvl	61.8	9.7	8	1.7
Pine Bay 10	10	1	0.0	71.4	66	71.4	10	Snd Lvl	61.9	9.5	8	1.5
Pine Bay 11	11	1	0.0	71.6	66	71.6	10	Snd Lvl	61.7	9.9	8	1.9
Pine Bay 12	12	1	0.0	71.6	66	71.6	10	Snd Lvl	61.7	9.9	8	1.9
Pine Bay 13	13	1	0.0	71.6	66	71.6	10	Snd Lvl	61.7	9.9	8	1.9
Pine Bay 14	14	1	0.0	71.5	66	71.5	10	Snd Lvl	61.7	9.8	8	1.8
Pine Bay 15	15	1	0.0	71.0	66	71.0	10	Snd Lvl	61.6	9.4	8	1.4
Pine Bay 16	16	1	0.0	70.8	66	70.8	10	Snd Lvl	61.8	9.0	8	1.0
Pine Bay 17	17	1	0.0	70.7	66	70.7	10	Snd Lvl	61.8	8.9	8	0.9
Pine Bay 18	18	1	0.0	70.7	66	70.7	10	Snd Lvl	62.0	8.7	8	0.7
Pine Bay 19	19	1	0.0	70.4	66	70.4	10	Snd Lvl	61.9	8.5	8	0.5
Pine Bay 20	20	1	0.0	70.3	66	70.3	10	Snd Lvl	62.1	8.2	8	0.2
Pine Bay 21	21	1	0.0	70.3	66	70.3	10	Snd Lvl	62.3	8.0	8	0.0
Pine Bay 22	22	1	0.0	70.3	66	70.3	10	Snd Lvl	62.5	7.8	8	-0.2
Pine Bay 23	23	1	0.0	70.3	66	70.3	10	Snd Lvl	62.8	7.5	8	-0.5

Pine Bay 24	24	1	0.0	69.9	66	69.9	10	Snd Lvl	63.1	6.8	8	-1.2
Pine Bay 25	25	1	0.0	69.9	66	69.9	10	Snd Lvl	63.5	6.4	8	-1.6
Pine Bay 26	26	1	0.0	69.6	66	69.6	10	Snd Lvl	64.1	5.5	8	-2.5
Pine Bay 27	27	1	0.0	69.7	66	69.7	10	Snd Lvl	64.7	5.0	8	-3.0
Pine Bay 28	28	1	0.0	70.3	66	70.3	10	Snd Lvl	66.5	3.8	8	-4.2
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.1	2.7	8	-5.3
Pine Bay 30	30	1	0.0	69.0	66	69.0	10	Snd Lvl	67.1	1.9	8	-6.1
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.3	1.5	8	-6.5
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.2	1.4	8	-6.6
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.2	1.4	8	-6.6
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.4	1.3	8	-6.7
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.1	1.1	8	-6.9
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.4	1.1	8	-6.9
Pine Bay 37	37	1	0.0	62.9	66	62.9	10	----	62.0	0.9	8	-7.1
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.6	0.9	8	-7.1
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.1	0.9	8	-7.1
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.6	0.9	8	-7.1
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.6	0.7	8	-7.3
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.1	0.7	8	-7.3
Pine Bay 43	43	1	0.0	60.1	66	60.1	10	----	59.1	1.0	8	-7.0
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	59.5	1.1	8	-6.9
Pine Bay 45	45	1	0.0	61.0	66	61.0	10	----	59.7	1.3	8	-6.7
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.0	1.3	8	-6.7
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	60.6	1.4	8	-6.6
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	60.9	1.6	8	-6.4
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	61.3	1.8	8	-6.2
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	61.8	1.9	8	-6.1
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	62.2	2.1	8	-5.9
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	62.9	2.3	8	-5.7
Pine Bay 53	53	1	0.0	66.3	66	66.3	10	Snd Lvl	63.4	2.9	8	-5.1
Pine Bay 54	54	1	0.0	66.2	66	66.2	10	Snd Lvl	62.9	3.3	8	-4.7
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	62.5	3.5	8	-4.5
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	62.0	3.9	8	-4.1
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	61.5	2.9	8	-5.1
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	60.9	2.6	8	-5.4
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	60.5	2.0	8	-6.0
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	59.9	1.7	8	-6.3
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	59.6	1.5	8	-6.5
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.2	1.2	8	-6.8
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	58.9	1.1	8	-6.9
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	61.4	4.7	8	-3.3

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	61.1	4.7	8	-3.3
Pine Bay 66	66	1	0.0	64.7	66	64.7	10	----	59.8	4.9	8	-3.1
Pine Bay 67	67	1	0.0	64.6	66	64.6	10	----	59.7	4.9	8	-3.1
Pine Bay 68	68	1	0.0	64.4	66	64.4	10	----	59.7	4.7	8	-3.3
Pine Bay 69	69	1	0.0	64.4	66	64.4	10	----	59.8	4.6	8	-3.4
Pine Bay 70	70	1	0.0	64.6	66	64.6	10	----	59.9	4.7	8	-3.3
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	60.1	4.5	8	-3.5
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	60.1	4.3	8	-3.7
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	60.4	3.9	8	-4.1
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	60.5	3.5	8	-4.5
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	58.5	1.9	8	-6.1
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	58.2	1.6	8	-6.4

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	76	0.7	4.5	9.9
All Impacted	36	1.4	7.1	9.9
All that meet NR Goal	20	8.0	9.1	9.9

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 18

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Pine Bay	W	18.00	18.00	18.00	1802	32435				973064
									Total Cost:	973064

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 18
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	71.3	66	71.3	10	Snd Lvl	64.2	7.1	8	-0.9
Pine Bay 2	2	1	0.0	71.4	66	71.4	10	Snd Lvl	63.4	8.0	8	0.0
Pine Bay 3	3	1	0.0	71.4	66	71.4	10	Snd Lvl	63.2	8.2	8	0.2
Pine Bay 4	4	1	0.0	71.6	66	71.6	10	Snd Lvl	62.9	8.7	8	0.7
Pine Bay 5	5	1	0.0	71.6	66	71.6	10	Snd Lvl	62.8	8.8	8	0.8
Pine Bay 6	6	1	0.0	71.5	66	71.5	10	Snd Lvl	62.6	8.9	8	0.9
Pine Bay 7	7	1	0.0	71.6	66	71.6	10	Snd Lvl	62.6	9.0	8	1.0
Pine Bay 8	8	1	0.0	71.5	66	71.5	10	Snd Lvl	62.5	9.0	8	1.0
Pine Bay 9	9	1	0.0	71.5	66	71.5	10	Snd Lvl	62.3	9.2	8	1.2
Pine Bay 10	10	1	0.0	71.4	66	71.4	10	Snd Lvl	62.3	9.1	8	1.1
Pine Bay 11	11	1	0.0	71.6	66	71.6	10	Snd Lvl	62.2	9.4	8	1.4
Pine Bay 12	12	1	0.0	71.6	66	71.6	10	Snd Lvl	62.1	9.5	8	1.5
Pine Bay 13	13	1	0.0	71.6	66	71.6	10	Snd Lvl	62.1	9.5	8	1.5
Pine Bay 14	14	1	0.0	71.5	66	71.5	10	Snd Lvl	62.1	9.4	8	1.4
Pine Bay 15	15	1	0.0	71.0	66	71.0	10	Snd Lvl	62.0	9.0	8	1.0
Pine Bay 16	16	1	0.0	70.8	66	70.8	10	Snd Lvl	62.2	8.6	8	0.6
Pine Bay 17	17	1	0.0	70.7	66	70.7	10	Snd Lvl	62.2	8.5	8	0.5
Pine Bay 18	18	1	0.0	70.7	66	70.7	10	Snd Lvl	62.3	8.4	8	0.4
Pine Bay 19	19	1	0.0	70.4	66	70.4	10	Snd Lvl	62.2	8.2	8	0.2
Pine Bay 20	20	1	0.0	70.3	66	70.3	10	Snd Lvl	62.4	7.9	8	-0.1
Pine Bay 21	21	1	0.0	70.3	66	70.3	10	Snd Lvl	62.6	7.7	8	-0.3
Pine Bay 22	22	1	0.0	70.3	66	70.3	10	Snd Lvl	62.8	7.5	8	-0.5
Pine Bay 23	23	1	0.0	70.3	66	70.3	10	Snd Lvl	63.0	7.3	8	-0.7

Pine Bay 24	24	1	0.0	69.9	66	69.9	10	Snd Lvl	63.3	6.6	8	-1.4
Pine Bay 25	25	1	0.0	69.9	66	69.9	10	Snd Lvl	63.8	6.1	8	-1.9
Pine Bay 26	26	1	0.0	69.6	66	69.6	10	Snd Lvl	64.3	5.3	8	-2.7
Pine Bay 27	27	1	0.0	69.7	66	69.7	10	Snd Lvl	64.9	4.8	8	-3.2
Pine Bay 28	28	1	0.0	70.3	66	70.3	10	Snd Lvl	66.6	3.7	8	-4.3
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.2	2.6	8	-5.4
Pine Bay 30	30	1	0.0	69.0	66	69.0	10	Snd Lvl	67.2	1.8	8	-6.2
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.3	1.5	8	-6.5
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.2	1.4	8	-6.6
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.3	1.3	8	-6.7
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.4	1.3	8	-6.7
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.1	1.1	8	-6.9
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.4	1.1	8	-6.9
Pine Bay 37	37	1	0.0	62.9	66	62.9	10	----	62.0	0.9	8	-7.1
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.6	0.9	8	-7.1
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.1	0.9	8	-7.1
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.6	0.9	8	-7.1
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.6	0.7	8	-7.3
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.1	0.7	8	-7.3
Pine Bay 43	43	1	0.0	60.1	66	60.1	10	----	59.2	0.9	8	-7.1
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	59.6	1.0	8	-7.0
Pine Bay 45	45	1	0.0	61.0	66	61.0	10	----	59.8	1.2	8	-6.8
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.1	1.2	8	-6.8
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	60.7	1.3	8	-6.7
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	60.9	1.6	8	-6.4
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	61.4	1.7	8	-6.3
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	61.8	1.9	8	-6.1
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	62.3	2.0	8	-6.0
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	63.0	2.2	8	-5.8
Pine Bay 53	53	1	0.0	66.3	66	66.3	10	Snd Lvl	63.6	2.7	8	-5.3
Pine Bay 54	54	1	0.0	66.2	66	66.2	10	Snd Lvl	63.0	3.2	8	-4.8
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	62.6	3.4	8	-4.6
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	62.2	3.7	8	-4.3
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	61.6	2.8	8	-5.2
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	61.0	2.5	8	-5.5
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	60.6	1.9	8	-6.1
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	59.9	1.7	8	-6.3
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	59.6	1.5	8	-6.5
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.3	1.1	8	-6.9
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	59.0	1.0	8	-7.0
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	61.6	4.5	8	-3.5

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	61.3	4.5	8	-3.5
Pine Bay 66	66	1	0.0	64.7	66	64.7	10	----	60.0	4.7	8	-3.3
Pine Bay 67	67	1	0.0	64.6	66	64.6	10	----	60.0	4.6	8	-3.4
Pine Bay 68	68	1	0.0	64.4	66	64.4	10	----	60.0	4.4	8	-3.6
Pine Bay 69	69	1	0.0	64.4	66	64.4	10	----	60.1	4.3	8	-3.7
Pine Bay 70	70	1	0.0	64.6	66	64.6	10	----	60.2	4.4	8	-3.6
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	60.4	4.2	8	-3.8
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	60.4	4.0	8	-4.0
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	60.6	3.7	8	-4.3
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	60.7	3.3	8	-4.7
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	58.6	1.8	8	-6.2
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	58.3	1.5	8	-6.5

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	76	0.7	4.4	9.5
All Impacted	36	1.4	6.8	9.5
All that meet NR Goal	18	8.0	8.9	9.5

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 16

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Pine Bay	W	16.00	16.00	16.00	1802	28832				864945
									Total Cost:	864945

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 16
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	71.3	66	71.3	10	Snd Lvl	64.5	6.8	8	-1.2
Pine Bay 2	2	1	0.0	71.4	66	71.4	10	Snd Lvl	63.8	7.6	8	-0.4
Pine Bay 3	3	1	0.0	71.4	66	71.4	10	Snd Lvl	63.5	7.9	8	-0.1
Pine Bay 4	4	1	0.0	71.6	66	71.6	10	Snd Lvl	63.3	8.3	8	0.3
Pine Bay 5	5	1	0.0	71.6	66	71.6	10	Snd Lvl	63.2	8.4	8	0.4
Pine Bay 6	6	1	0.0	71.5	66	71.5	10	Snd Lvl	63.0	8.5	8	0.5
Pine Bay 7	7	1	0.0	71.6	66	71.6	10	Snd Lvl	63.0	8.6	8	0.6
Pine Bay 8	8	1	0.0	71.5	66	71.5	10	Snd Lvl	62.9	8.6	8	0.6
Pine Bay 9	9	1	0.0	71.5	66	71.5	10	Snd Lvl	62.7	8.8	8	0.8
Pine Bay 10	10	1	0.0	71.4	66	71.4	10	Snd Lvl	62.7	8.7	8	0.7
Pine Bay 11	11	1	0.0	71.6	66	71.6	10	Snd Lvl	62.6	9.0	8	1.0
Pine Bay 12	12	1	0.0	71.6	66	71.6	10	Snd Lvl	62.6	9.0	8	1.0
Pine Bay 13	13	1	0.0	71.6	66	71.6	10	Snd Lvl	62.5	9.1	8	1.1
Pine Bay 14	14	1	0.0	71.5	66	71.5	10	Snd Lvl	62.6	8.9	8	0.9
Pine Bay 15	15	1	0.0	71.0	66	71.0	10	Snd Lvl	62.4	8.6	8	0.6
Pine Bay 16	16	1	0.0	70.8	66	70.8	10	Snd Lvl	62.5	8.3	8	0.3
Pine Bay 17	17	1	0.0	70.7	66	70.7	10	Snd Lvl	62.6	8.1	8	0.1
Pine Bay 18	18	1	0.0	70.7	66	70.7	10	Snd Lvl	62.7	8.0	8	0.0
Pine Bay 19	19	1	0.0	70.4	66	70.4	10	Snd Lvl	62.5	7.9	8	-0.1
Pine Bay 20	20	1	0.0	70.3	66	70.3	10	Snd Lvl	62.7	7.6	8	-0.4
Pine Bay 21	21	1	0.0	70.3	66	70.3	10	Snd Lvl	62.9	7.4	8	-0.6
Pine Bay 22	22	1	0.0	70.3	66	70.3	10	Snd Lvl	63.1	7.2	8	-0.8
Pine Bay 23	23	1	0.0	70.3	66	70.3	10	Snd Lvl	63.3	7.0	8	-1.0

Pine Bay 24	24	1	0.0	69.9	66	69.9	10	Snd Lvl	63.6	6.3	8	-1.7
Pine Bay 25	25	1	0.0	69.9	66	69.9	10	Snd Lvl	64.0	5.9	8	-2.1
Pine Bay 26	26	1	0.0	69.6	66	69.6	10	Snd Lvl	64.5	5.1	8	-2.9
Pine Bay 27	27	1	0.0	69.7	66	69.7	10	Snd Lvl	65.0	4.7	8	-3.3
Pine Bay 28	28	1	0.0	70.3	66	70.3	10	Snd Lvl	66.7	3.6	8	-4.4
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.2	2.6	8	-5.4
Pine Bay 30	30	1	0.0	69.0	66	69.0	10	Snd Lvl	67.2	1.8	8	-6.2
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.4	1.4	8	-6.6
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.3	1.3	8	-6.7
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.3	1.3	8	-6.7
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.5	1.2	8	-6.8
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.1	1.1	8	-6.9
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.5	1.0	8	-7.0
Pine Bay 37	37	1	0.0	62.9	66	62.9	10	----	62.0	0.9	8	-7.1
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.6	0.9	8	-7.1
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.2	0.8	8	-7.2
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.7	0.8	8	-7.2
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.6	0.7	8	-7.3
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.1	0.7	8	-7.3
Pine Bay 43	43	1	0.0	60.1	66	60.1	10	----	59.3	0.8	8	-7.2
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	59.7	0.9	8	-7.1
Pine Bay 45	45	1	0.0	61.0	66	61.0	10	----	59.9	1.1	8	-6.9
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.1	1.2	8	-6.8
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	60.7	1.3	8	-6.7
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	61.0	1.5	8	-6.5
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	61.5	1.6	8	-6.4
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	61.9	1.8	8	-6.2
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	62.4	1.9	8	-6.1
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	63.1	2.1	8	-5.9
Pine Bay 53	53	1	0.0	66.3	66	66.3	10	Snd Lvl	63.7	2.6	8	-5.4
Pine Bay 54	54	1	0.0	66.2	66	66.2	10	Snd Lvl	63.2	3.0	8	-5.0
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	62.8	3.2	8	-4.8
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	62.4	3.5	8	-4.5
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	61.8	2.6	8	-5.4
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	61.2	2.3	8	-5.7
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	60.7	1.8	8	-6.2
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	60.0	1.6	8	-6.4
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	59.7	1.4	8	-6.6
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.4	1.0	8	-7.0
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	59.1	0.9	8	-7.1
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	61.8	4.3	8	-3.7

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	61.6	4.2	8	-3.8
Pine Bay 66	66	1	0.0	64.7	66	64.7	10	----	60.4	4.3	8	-3.7
Pine Bay 67	67	1	0.0	64.6	66	64.6	10	----	60.3	4.3	8	-3.7
Pine Bay 68	68	1	0.0	64.4	66	64.4	10	----	60.3	4.1	8	-3.9
Pine Bay 69	69	1	0.0	64.4	66	64.4	10	----	60.4	4.0	8	-4.0
Pine Bay 70	70	1	0.0	64.6	66	64.6	10	----	60.5	4.1	8	-3.9
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	60.6	4.0	8	-4.0
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	60.6	3.8	8	-4.2
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	60.8	3.5	8	-4.5
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	60.9	3.1	8	-4.9
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	58.7	1.7	8	-6.3
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	58.4	1.4	8	-6.6

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	76	0.7	4.1	9.1
All Impacted	36	1.3	6.5	9.1
All that meet NR Goal	14	8.1	8.6	9.1

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Pine Bay	W	14.00	14.00	14.00	1802	25228				756827
									Total Cost:	756827

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	71.3	66	71.3	10	Snd Lvl	64.8	6.5	8	-1.5
Pine Bay 2	2	1	0.0	71.4	66	71.4	10	Snd Lvl	64.1	7.3	8	-0.7
Pine Bay 3	3	1	0.0	71.4	66	71.4	10	Snd Lvl	63.9	7.5	8	-0.5
Pine Bay 4	4	1	0.0	71.6	66	71.6	10	Snd Lvl	63.7	7.9	8	-0.1
Pine Bay 5	5	1	0.0	71.6	66	71.6	10	Snd Lvl	63.6	8.0	8	0.0
Pine Bay 6	6	1	0.0	71.5	66	71.5	10	Snd Lvl	63.5	8.0	8	0.0
Pine Bay 7	7	1	0.0	71.6	66	71.6	10	Snd Lvl	63.4	8.2	8	0.2
Pine Bay 8	8	1	0.0	71.5	66	71.5	10	Snd Lvl	63.3	8.2	8	0.2
Pine Bay 9	9	1	0.0	71.5	66	71.5	10	Snd Lvl	63.1	8.4	8	0.4
Pine Bay 10	10	1	0.0	71.4	66	71.4	10	Snd Lvl	63.1	8.3	8	0.3
Pine Bay 11	11	1	0.0	71.6	66	71.6	10	Snd Lvl	63.1	8.5	8	0.5
Pine Bay 12	12	1	0.0	71.6	66	71.6	10	Snd Lvl	63.0	8.6	8	0.6
Pine Bay 13	13	1	0.0	71.6	66	71.6	10	Snd Lvl	63.0	8.6	8	0.6
Pine Bay 14	14	1	0.0	71.5	66	71.5	10	Snd Lvl	63.0	8.5	8	0.5
Pine Bay 15	15	1	0.0	71.0	66	71.0	10	Snd Lvl	62.9	8.1	8	0.1
Pine Bay 16	16	1	0.0	70.8	66	70.8	10	Snd Lvl	62.9	7.9	8	-0.1
Pine Bay 17	17	1	0.0	70.7	66	70.7	10	Snd Lvl	63.0	7.7	8	-0.3
Pine Bay 18	18	1	0.0	70.7	66	70.7	10	Snd Lvl	63.0	7.7	8	-0.3
Pine Bay 19	19	1	0.0	70.4	66	70.4	10	Snd Lvl	62.9	7.5	8	-0.5
Pine Bay 20	20	1	0.0	70.3	66	70.3	10	Snd Lvl	63.1	7.2	8	-0.8
Pine Bay 21	21	1	0.0	70.3	66	70.3	10	Snd Lvl	63.2	7.1	8	-0.9
Pine Bay 22	22	1	0.0	70.3	66	70.3	10	Snd Lvl	63.4	6.9	8	-1.1
Pine Bay 23	23	1	0.0	70.3	66	70.3	10	Snd Lvl	63.6	6.7	8	-1.3

Pine Bay 24	24	1	0.0	69.9	66	69.9	10	Snd Lvl	63.8	6.1	8	-1.9
Pine Bay 25	25	1	0.0	69.9	66	69.9	10	Snd Lvl	64.2	5.7	8	-2.3
Pine Bay 26	26	1	0.0	69.6	66	69.6	10	Snd Lvl	64.7	4.9	8	-3.1
Pine Bay 27	27	1	0.0	69.7	66	69.7	10	Snd Lvl	65.2	4.5	8	-3.5
Pine Bay 28	28	1	0.0	70.3	66	70.3	10	Snd Lvl	66.8	3.5	8	-4.5
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.3	2.5	8	-5.5
Pine Bay 30	30	1	0.0	69.0	66	69.0	10	Snd Lvl	67.3	1.7	8	-6.3
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.5	1.3	8	-6.7
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.4	1.2	8	-6.8
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.4	1.2	8	-6.8
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.5	1.2	8	-6.8
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.2	1.0	8	-7.0
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.5	1.0	8	-7.0
Pine Bay 37	37	1	0.0	62.9	66	62.9	10	----	62.1	0.8	8	-7.2
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.7	0.8	8	-7.2
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.2	0.8	8	-7.2
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.7	0.8	8	-7.2
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.6	0.7	8	-7.3
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.2	0.6	8	-7.4
Pine Bay 43	43	1	0.0	60.1	66	60.1	10	----	59.4	0.7	8	-7.3
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	59.7	0.9	8	-7.1
Pine Bay 45	45	1	0.0	61.0	66	61.0	10	----	60.0	1.0	8	-7.0
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.2	1.1	8	-6.9
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	60.8	1.2	8	-6.8
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	61.1	1.4	8	-6.6
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	61.6	1.5	8	-6.5
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	62.1	1.6	8	-6.4
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	62.5	1.8	8	-6.2
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	63.3	1.9	8	-6.1
Pine Bay 53	53	1	0.0	66.3	66	66.3	10	Snd Lvl	63.8	2.5	8	-5.5
Pine Bay 54	54	1	0.0	66.2	66	66.2	10	Snd Lvl	63.4	2.8	8	-5.2
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	63.0	3.0	8	-5.0
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	62.6	3.3	8	-4.7
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	62.0	2.4	8	-5.6
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	61.3	2.2	8	-5.8
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	60.8	1.7	8	-6.3
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	60.2	1.4	8	-6.6
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	59.8	1.3	8	-6.7
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.5	0.9	8	-7.1
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	59.2	0.8	8	-7.2
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	62.1	4.0	8	-4.0

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	61.9	3.9	8	-4.1
Pine Bay 66	66	1	0.0	64.7	66	64.7	10	----	60.7	4.0	8	-4.0
Pine Bay 67	67	1	0.0	64.6	66	64.6	10	----	60.7	3.9	8	-4.1
Pine Bay 68	68	1	0.0	64.4	66	64.4	10	----	60.6	3.8	8	-4.2
Pine Bay 69	69	1	0.0	64.4	66	64.4	10	----	60.7	3.7	8	-4.3
Pine Bay 70	70	1	0.0	64.6	66	64.6	10	----	60.8	3.8	8	-4.2
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	60.9	3.7	8	-4.3
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	60.9	3.5	8	-4.5
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	61.1	3.2	8	-4.8
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	61.1	2.9	8	-5.1
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	58.9	1.5	8	-6.5
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	58.6	1.2	8	-6.8

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	76	0.6	3.9	8.6
All Impacted	36	1.2	6.2	8.6
All that meet NR Goal	11	8.0	8.3	8.6

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 12

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Pine Bay	W	12.00	12.00	12.00	1802	21624				648709
									Total Cost:	648709

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay GM
BARRIER DESIGN: GM 12
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	71.3	66	71.3	10	Snd Lvl	65.1	6.2	8	-1.8
Pine Bay 2	2	1	0.0	71.4	66	71.4	10	Snd Lvl	64.5	6.9	8	-1.1
Pine Bay 3	3	1	0.0	71.4	66	71.4	10	Snd Lvl	64.3	7.1	8	-0.9
Pine Bay 4	4	1	0.0	71.6	66	71.6	10	Snd Lvl	64.2	7.4	8	-0.6
Pine Bay 5	5	1	0.0	71.6	66	71.6	10	Snd Lvl	64.0	7.6	8	-0.4
Pine Bay 6	6	1	0.0	71.5	66	71.5	10	Snd Lvl	63.9	7.6	8	-0.4
Pine Bay 7	7	1	0.0	71.6	66	71.6	10	Snd Lvl	63.9	7.7	8	-0.3
Pine Bay 8	8	1	0.0	71.5	66	71.5	10	Snd Lvl	63.8	7.7	8	-0.3
Pine Bay 9	9	1	0.0	71.5	66	71.5	10	Snd Lvl	63.6	7.9	8	-0.1
Pine Bay 10	10	1	0.0	71.4	66	71.4	10	Snd Lvl	63.6	7.8	8	-0.2
Pine Bay 11	11	1	0.0	71.6	66	71.6	10	Snd Lvl	63.6	8.0	8	0.0
Pine Bay 12	12	1	0.0	71.6	66	71.6	10	Snd Lvl	63.6	8.0	8	0.0
Pine Bay 13	13	1	0.0	71.6	66	71.6	10	Snd Lvl	63.5	8.1	8	0.1
Pine Bay 14	14	1	0.0	71.5	66	71.5	10	Snd Lvl	63.5	8.0	8	0.0
Pine Bay 15	15	1	0.0	71.0	66	71.0	10	Snd Lvl	63.3	7.7	8	-0.3
Pine Bay 16	16	1	0.0	70.8	66	70.8	10	Snd Lvl	63.4	7.4	8	-0.6
Pine Bay 17	17	1	0.0	70.7	66	70.7	10	Snd Lvl	63.4	7.3	8	-0.7
Pine Bay 18	18	1	0.0	70.7	66	70.7	10	Snd Lvl	63.5	7.2	8	-0.8
Pine Bay 19	19	1	0.0	70.4	66	70.4	10	Snd Lvl	63.3	7.1	8	-0.9
Pine Bay 20	20	1	0.0	70.3	66	70.3	10	Snd Lvl	63.5	6.8	8	-1.2
Pine Bay 21	21	1	0.0	70.3	66	70.3	10	Snd Lvl	63.6	6.7	8	-1.3
Pine Bay 22	22	1	0.0	70.3	66	70.3	10	Snd Lvl	63.8	6.5	8	-1.5
Pine Bay 23	23	1	0.0	70.3	66	70.3	10	Snd Lvl	64.0	6.3	8	-1.7

Pine Bay 24	24	1	0.0	69.9	66	69.9	10	Snd Lvl	64.2	5.7	8	-2.3
Pine Bay 25	25	1	0.0	69.9	66	69.9	10	Snd Lvl	64.5	5.4	8	-2.6
Pine Bay 26	26	1	0.0	69.6	66	69.6	10	Snd Lvl	64.9	4.7	8	-3.3
Pine Bay 27	27	1	0.0	69.7	66	69.7	10	Snd Lvl	65.5	4.2	8	-3.8
Pine Bay 28	28	1	0.0	70.3	66	70.3	10	Snd Lvl	67.0	3.3	8	-4.7
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.4	2.4	8	-5.6
Pine Bay 30	30	1	0.0	69.0	66	69.0	10	Snd Lvl	67.3	1.7	8	-6.3
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.5	1.3	8	-6.7
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.5	1.1	8	-6.9
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.5	1.1	8	-6.9
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.6	1.1	8	-6.9
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.3	0.9	8	-7.1
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.6	0.9	8	-7.1
Pine Bay 37	37	1	0.0	62.9	66	62.9	10	----	62.2	0.7	8	-7.3
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.7	0.8	8	-7.2
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.3	0.7	8	-7.3
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.8	0.7	8	-7.3
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.7	0.6	8	-7.4
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.2	0.6	8	-7.4
Pine Bay 43	43	1	0.0	60.1	66	60.1	10	----	59.5	0.6	8	-7.4
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	59.9	0.7	8	-7.3
Pine Bay 45	45	1	0.0	61.0	66	61.0	10	----	60.1	0.9	8	-7.1
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.4	0.9	8	-7.1
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	61.0	1.0	8	-7.0
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	61.3	1.2	8	-6.8
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	61.8	1.3	8	-6.7
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	62.2	1.5	8	-6.5
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	62.7	1.6	8	-6.4
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	63.4	1.8	8	-6.2
Pine Bay 53	53	1	0.0	66.3	66	66.3	10	Snd Lvl	64.0	2.3	8	-5.7
Pine Bay 54	54	1	0.0	66.2	66	66.2	10	Snd Lvl	63.6	2.6	8	-5.4
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	63.2	2.8	8	-5.2
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	62.9	3.0	8	-5.0
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	62.2	2.2	8	-5.8
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	61.5	2.0	8	-6.0
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	61.0	1.5	8	-6.5
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	60.3	1.3	8	-6.7
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	60.0	1.1	8	-6.9
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.6	0.8	8	-7.2
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	59.3	0.7	8	-7.3
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	62.5	3.6	8	-4.4

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	62.3	3.5	8	-4.5
Pine Bay 66	66	1	0.0	64.7	66	64.7	10	----	61.1	3.6	8	-4.4
Pine Bay 67	67	1	0.0	64.6	66	64.6	10	----	61.1	3.5	8	-4.5
Pine Bay 68	68	1	0.0	64.4	66	64.4	10	----	61.1	3.3	8	-4.7
Pine Bay 69	69	1	0.0	64.4	66	64.4	10	----	61.1	3.3	8	-4.7
Pine Bay 70	70	1	0.0	64.6	66	64.6	10	----	61.2	3.4	8	-4.6
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	61.3	3.3	8	-4.7
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	61.3	3.1	8	-4.9
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	61.4	2.9	8	-5.1
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	61.4	2.6	8	-5.4
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	59.0	1.4	8	-6.6
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	58.7	1.1	8	-6.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	76	0.6	3.6	8.1
All Impacted	36	1.1	5.8	8.1
All that meet NR Goal	4	8.0	8.0	8.1

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay BM
BARRIER DESIGN: BM 14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
PB BM	W	14.00	14.00	14.00	1746	24447				733400
									Total Cost:	733400

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay BM
BARRIER DESIGN: BM 14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	72.0	66	72.0	10	Snd Lvl	65.0	7.0	8	-1.0
Pine Bay 2	2	1	0.0	72.3	66	72.3	10	Snd Lvl	64.3	8.0	8	0.0
Pine Bay 3	3	1	0.0	72.1	66	72.1	10	Snd Lvl	64.2	7.9	8	-0.1
Pine Bay 4	4	1	0.0	72.4	66	72.4	10	Snd Lvl	63.8	8.6	8	0.6
Pine Bay 5	5	1	0.0	72.4	66	72.4	10	Snd Lvl	63.8	8.6	8	0.6
Pine Bay 6	6	1	0.0	72.3	66	72.3	10	Snd Lvl	63.6	8.7	8	0.7
Pine Bay 7	7	1	0.0	72.5	66	72.5	10	Snd Lvl	63.6	8.9	8	0.9
Pine Bay 8	8	1	0.0	72.4	66	72.4	10	Snd Lvl	63.4	9.0	8	1.0
Pine Bay 9	9	1	0.0	72.4	66	72.4	10	Snd Lvl	63.4	9.0	8	1.0
Pine Bay 10	10	1	0.0	72.2	66	72.2	10	Snd Lvl	63.3	8.9	8	0.9
Pine Bay 11	11	1	0.0	72.4	66	72.4	10	Snd Lvl	63.3	9.1	8	1.1
Pine Bay 12	12	1	0.0	72.3	66	72.3	10	Snd Lvl	63.2	9.1	8	1.1
Pine Bay 13	13	1	0.0	72.3	66	72.3	10	Snd Lvl	63.2	9.1	8	1.1
Pine Bay 14	14	1	0.0	72.2	66	72.2	10	Snd Lvl	63.2	9.0	8	1.0
Pine Bay 15	15	1	0.0	71.5	66	71.5	10	Snd Lvl	63.1	8.4	8	0.4
Pine Bay 16	16	1	0.0	71.3	66	71.3	10	Snd Lvl	63.1	8.2	8	0.2
Pine Bay 17	17	1	0.0	71.2	66	71.2	10	Snd Lvl	63.1	8.1	8	0.1
Pine Bay 18	18	1	0.0	71.2	66	71.2	10	Snd Lvl	63.2	8.0	8	0.0
Pine Bay 19	19	1	0.0	70.8	66	70.8	10	Snd Lvl	63.1	7.7	8	-0.3
Pine Bay 20	20	1	0.0	70.6	66	70.6	10	Snd Lvl	63.2	7.4	8	-0.6
Pine Bay 21	21	1	0.0	70.7	66	70.7	10	Snd Lvl	63.4	7.3	8	-0.7
Pine Bay 22	22	1	0.0	70.7	66	70.7	10	Snd Lvl	63.6	7.1	8	-0.9
Pine Bay 23	23	1	0.0	70.6	66	70.6	10	Snd Lvl	63.9	6.7	8	-1.3

Pine Bay 24	24	1	0.0	70.2	66	70.2	10	Snd Lvl	64.1	6.1	8	-1.9
Pine Bay 25	25	1	0.0	70.1	66	70.1	10	Snd Lvl	64.5	5.6	8	-2.4
Pine Bay 26	26	1	0.0	69.9	66	69.9	10	Snd Lvl	65.1	4.8	8	-3.2
Pine Bay 27	27	1	0.0	70.0	66	70.0	10	Snd Lvl	65.7	4.3	8	-3.7
Pine Bay 28	28	1	0.0	70.7	66	70.7	10	Snd Lvl	67.4	3.3	8	-4.7
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.5	2.3	8	-5.7
Pine Bay 30	30	1	0.0	69.1	66	69.1	10	Snd Lvl	67.4	1.7	8	-6.3
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.6	1.2	8	-6.8
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.5	1.1	8	-6.9
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.4	1.2	8	-6.8
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.5	1.2	8	-6.8
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.2	1.0	8	-7.0
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.5	1.0	8	-7.0
Pine Bay 37	37	1	0.0	63.0	66	63.0	10	----	62.1	0.9	8	-7.1
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.7	0.8	8	-7.2
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.2	0.8	8	-7.2
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.7	0.8	8	-7.2
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.7	0.6	8	-7.4
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.2	0.6	8	-7.4
Pine Bay 43	43	1	0.0	60.0	66	60.0	10	----	59.3	0.7	8	-7.3
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	59.7	0.9	8	-7.1
Pine Bay 45	45	1	0.0	60.9	66	60.9	10	----	59.9	1.0	8	-7.0
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.2	1.1	8	-6.9
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	60.8	1.2	8	-6.8
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	61.1	1.4	8	-6.6
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	61.6	1.5	8	-6.5
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	62.1	1.6	8	-6.4
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	62.5	1.8	8	-6.2
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	63.3	1.9	8	-6.1
Pine Bay 53	53	1	0.0	66.2	66	66.2	10	Snd Lvl	63.9	2.3	8	-5.7
Pine Bay 54	54	1	0.0	66.1	66	66.1	10	Snd Lvl	63.5	2.6	8	-5.4
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	63.1	2.9	8	-5.1
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	62.7	3.2	8	-4.8
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	62.0	2.4	8	-5.6
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	61.3	2.2	8	-5.8
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	60.8	1.7	8	-6.3
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	60.1	1.5	8	-6.5
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	59.8	1.3	8	-6.7
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.4	1.0	8	-7.0
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	59.1	0.9	8	-7.1
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	62.2	3.9	8	-4.1

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	62.0	3.8	8	-4.2
Pine Bay 66	66	1	0.0	64.8	66	64.8	10	----	60.7	4.1	8	-3.9
Pine Bay 67	67	1	0.0	64.7	66	64.7	10	----	60.6	4.1	8	-3.9
Pine Bay 68	68	1	0.0	64.6	66	64.6	10	----	60.6	4.0	8	-4.0
Pine Bay 69	69	1	0.0	64.6	66	64.6	10	----	60.6	4.0	8	-4.0
Pine Bay 70	70	1	0.0	64.8	66	64.8	10	----	60.7	4.1	8	-3.9
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	60.9	3.7	8	-4.3
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	60.9	3.5	8	-4.5
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	61.1	3.2	8	-4.8
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	61.1	2.9	8	-5.1
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	58.8	1.6	8	-6.4
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	58.5	1.3	8	-6.7
Bolling 1	77	1	0.0	59.5	66	59.5	10	----	59.4	0.1	8	-7.9
Bolling 2	78	1	0.0	60.0	66	60.0	10	----	59.8	0.2	8	-7.8
Bolling 3	79	1	0.0	60.4	66	60.4	10	----	60.2	0.2	8	-7.8
Bolling 4	80	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 5	81	1	0.0	60.9	66	60.9	10	----	60.8	0.1	8	-7.9
Bolling 6	82	1	0.0	61.4	66	61.4	10	----	61.2	0.2	8	-7.8
Bolling 7	83	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 8	84	1	0.0	61.1	66	61.1	10	----	60.8	0.3	8	-7.7
Bolling 9	85	1	0.0	61.9	66	61.9	10	----	61.6	0.3	8	-7.7
Bolling 10	86	1	0.0	62.9	66	62.9	10	----	62.6	0.3	8	-7.7
Bolling 11	87	1	0.0	63.2	66	63.2	10	----	62.9	0.3	8	-7.7
Bolling 12	88	1	0.0	63.6	66	63.6	10	----	63.2	0.4	8	-7.6
Bolling 13	89	1	0.0	64.2	66	64.2	10	----	63.8	0.4	8	-7.6
Bolling 14	90	1	0.0	62.6	66	62.6	10	----	61.8	0.8	8	-7.2
Bolling 15	91	1	0.0	60.7	66	60.7	10	----	59.3	1.4	8	-6.6

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	91	0.1	3.4	9.1
All Impacted	36	1.1	6.4	9.1
All that meet NR Goal	15	8.0	8.7	9.1

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay BM
BARRIER DESIGN: BM 12

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
PB BM	W	12.00	12.00	12.00	1746	20954				628628
									Total Cost:	628628

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay BM
BARRIER DESIGN: BM 12
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	72.0	66	72.0	10	Snd Lvl	65.4	6.6	8	-1.4
Pine Bay 2	2	1	0.0	72.3	66	72.3	10	Snd Lvl	64.8	7.5	8	-0.5
Pine Bay 3	3	1	0.0	72.1	66	72.1	10	Snd Lvl	64.8	7.3	8	-0.7
Pine Bay 4	4	1	0.0	72.4	66	72.4	10	Snd Lvl	64.4	8.0	8	0.0
Pine Bay 5	5	1	0.0	72.4	66	72.4	10	Snd Lvl	64.4	8.0	8	0.0
Pine Bay 6	6	1	0.0	72.3	66	72.3	10	Snd Lvl	64.2	8.1	8	0.1
Pine Bay 7	7	1	0.0	72.5	66	72.5	10	Snd Lvl	64.2	8.3	8	0.3
Pine Bay 8	8	1	0.0	72.4	66	72.4	10	Snd Lvl	64.1	8.3	8	0.3
Pine Bay 9	9	1	0.0	72.4	66	72.4	10	Snd Lvl	64.0	8.4	8	0.4
Pine Bay 10	10	1	0.0	72.2	66	72.2	10	Snd Lvl	63.9	8.3	8	0.3
Pine Bay 11	11	1	0.0	72.4	66	72.4	10	Snd Lvl	63.9	8.5	8	0.5
Pine Bay 12	12	1	0.0	72.3	66	72.3	10	Snd Lvl	63.9	8.4	8	0.4
Pine Bay 13	13	1	0.0	72.3	66	72.3	10	Snd Lvl	63.9	8.4	8	0.4
Pine Bay 14	14	1	0.0	72.2	66	72.2	10	Snd Lvl	63.8	8.4	8	0.4
Pine Bay 15	15	1	0.0	71.5	66	71.5	10	Snd Lvl	63.6	7.9	8	-0.1
Pine Bay 16	16	1	0.0	71.3	66	71.3	10	Snd Lvl	63.6	7.7	8	-0.3
Pine Bay 17	17	1	0.0	71.2	66	71.2	10	Snd Lvl	63.6	7.6	8	-0.4
Pine Bay 18	18	1	0.0	71.2	66	71.2	10	Snd Lvl	63.7	7.5	8	-0.5
Pine Bay 19	19	1	0.0	70.8	66	70.8	10	Snd Lvl	63.6	7.2	8	-0.8
Pine Bay 20	20	1	0.0	70.6	66	70.6	10	Snd Lvl	63.7	6.9	8	-1.1
Pine Bay 21	21	1	0.0	70.7	66	70.7	10	Snd Lvl	63.9	6.8	8	-1.2
Pine Bay 22	22	1	0.0	70.7	66	70.7	10	Snd Lvl	64.0	6.7	8	-1.3
Pine Bay 23	23	1	0.0	70.6	66	70.6	10	Snd Lvl	64.3	6.3	8	-1.7

Pine Bay 24	24	1	0.0	70.2	66	70.2	10	Snd Lvl	64.5	5.7	8	-2.3
Pine Bay 25	25	1	0.0	70.1	66	70.1	10	Snd Lvl	64.8	5.3	8	-2.7
Pine Bay 26	26	1	0.0	69.9	66	69.9	10	Snd Lvl	65.3	4.6	8	-3.4
Pine Bay 27	27	1	0.0	70.0	66	70.0	10	Snd Lvl	65.9	4.1	8	-3.9
Pine Bay 28	28	1	0.0	70.7	66	70.7	10	Snd Lvl	67.6	3.1	8	-4.9
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.6	2.2	8	-5.8
Pine Bay 30	30	1	0.0	69.1	66	69.1	10	Snd Lvl	67.5	1.6	8	-6.4
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.7	1.1	8	-6.9
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.6	1.0	8	-7.0
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.6	1.0	8	-7.0
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.6	1.1	8	-6.9
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.3	0.9	8	-7.1
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.6	0.9	8	-7.1
Pine Bay 37	37	1	0.0	63.0	66	63.0	10	----	62.2	0.8	8	-7.2
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.7	0.8	8	-7.2
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.3	0.7	8	-7.3
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.8	0.7	8	-7.3
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.7	0.6	8	-7.4
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.2	0.6	8	-7.4
Pine Bay 43	43	1	0.0	60.0	66	60.0	10	----	59.4	0.6	8	-7.4
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	59.8	0.8	8	-7.2
Pine Bay 45	45	1	0.0	60.9	66	60.9	10	----	60.1	0.8	8	-7.2
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.4	0.9	8	-7.1
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	61.0	1.0	8	-7.0
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	61.3	1.2	8	-6.8
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	61.8	1.3	8	-6.7
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	62.2	1.5	8	-6.5
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	62.7	1.6	8	-6.4
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	63.5	1.7	8	-6.3
Pine Bay 53	53	1	0.0	66.2	66	66.2	10	Snd Lvl	64.1	2.1	8	-5.9
Pine Bay 54	54	1	0.0	66.1	66	66.1	10	Snd Lvl	63.7	2.4	8	-5.6
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	63.4	2.6	8	-5.4
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	63.0	2.9	8	-5.1
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	62.2	2.2	8	-5.8
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	61.5	2.0	8	-6.0
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	61.0	1.5	8	-6.5
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	60.3	1.3	8	-6.7
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	60.0	1.1	8	-6.9
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.6	0.8	8	-7.2
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	59.3	0.7	8	-7.3
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	62.6	3.5	8	-4.5

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	62.3	3.5	8	-4.5
Pine Bay 66	66	1	0.0	64.8	66	64.8	10	----	61.1	3.7	8	-4.3
Pine Bay 67	67	1	0.0	64.7	66	64.7	10	----	61.0	3.7	8	-4.3
Pine Bay 68	68	1	0.0	64.6	66	64.6	10	----	61.0	3.6	8	-4.4
Pine Bay 69	69	1	0.0	64.6	66	64.6	10	----	61.1	3.5	8	-4.5
Pine Bay 70	70	1	0.0	64.8	66	64.8	10	----	61.2	3.6	8	-4.4
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	61.3	3.3	8	-4.7
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	61.2	3.2	8	-4.8
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	61.4	2.9	8	-5.1
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	61.4	2.6	8	-5.4
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	59.0	1.4	8	-6.6
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	58.7	1.1	8	-6.9
Bolling 1	77	1	0.0	59.5	66	59.5	10	----	59.4	0.1	8	-7.9
Bolling 2	78	1	0.0	60.0	66	60.0	10	----	59.8	0.2	8	-7.8
Bolling 3	79	1	0.0	60.4	66	60.4	10	----	60.2	0.2	8	-7.8
Bolling 4	80	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 5	81	1	0.0	60.9	66	60.9	10	----	60.8	0.1	8	-7.9
Bolling 6	82	1	0.0	61.4	66	61.4	10	----	61.2	0.2	8	-7.8
Bolling 7	83	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 8	84	1	0.0	61.1	66	61.1	10	----	60.8	0.3	8	-7.7
Bolling 9	85	1	0.0	61.9	66	61.9	10	----	61.6	0.3	8	-7.7
Bolling 10	86	1	0.0	62.9	66	62.9	10	----	62.6	0.3	8	-7.7
Bolling 11	87	1	0.0	63.2	66	63.2	10	----	62.9	0.3	8	-7.7
Bolling 12	88	1	0.0	63.6	66	63.6	10	----	63.3	0.3	8	-7.7
Bolling 13	89	1	0.0	64.2	66	64.2	10	----	63.8	0.4	8	-7.6
Bolling 14	90	1	0.0	62.6	66	62.6	10	----	61.9	0.7	8	-7.3
Bolling 15	91	1	0.0	60.7	66	60.7	10	----	59.4	1.3	8	-6.7

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	91	0.1	3.2	8.5
All Impacted	36	1.0	6.0	8.5
All that meet NR Goal	11	8.0	8.3	8.5

Stantec 8 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay BM
BARRIER DESIGN: BM 10

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
PB BM	W	10.00	10.00	10.00	1746	17462				523857
									Total Cost:	523857

Stantec
M. Drauer

8 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 Pine Bay BM
BARRIER DESIGN: BM 10

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Pine Bay 1	1	1	0.0	72.0	66	72.0	10	Snd Lvl	66.0	6.0	8	-2.0
Pine Bay 2	2	1	0.0	72.3	66	72.3	10	Snd Lvl	65.5	6.8	8	-1.2
Pine Bay 3	3	1	0.0	72.1	66	72.1	10	Snd Lvl	65.5	6.6	8	-1.4
Pine Bay 4	4	1	0.0	72.4	66	72.4	10	Snd Lvl	65.2	7.2	8	-0.8
Pine Bay 5	5	1	0.0	72.4	66	72.4	10	Snd Lvl	65.2	7.2	8	-0.8
Pine Bay 6	6	1	0.0	72.3	66	72.3	10	Snd Lvl	65.0	7.3	8	-0.7
Pine Bay 7	7	1	0.0	72.5	66	72.5	10	Snd Lvl	65.0	7.5	8	-0.5
Pine Bay 8	8	1	0.0	72.4	66	72.4	10	Snd Lvl	64.9	7.5	8	-0.5
Pine Bay 9	9	1	0.0	72.4	66	72.4	10	Snd Lvl	64.8	7.6	8	-0.4
Pine Bay 10	10	1	0.0	72.2	66	72.2	10	Snd Lvl	64.7	7.5	8	-0.5
Pine Bay 11	11	1	0.0	72.4	66	72.4	10	Snd Lvl	64.7	7.7	8	-0.3
Pine Bay 12	12	1	0.0	72.3	66	72.3	10	Snd Lvl	64.7	7.6	8	-0.4
Pine Bay 13	13	1	0.0	72.3	66	72.3	10	Snd Lvl	64.6	7.7	8	-0.3
Pine Bay 14	14	1	0.0	72.2	66	72.2	10	Snd Lvl	64.6	7.6	8	-0.4
Pine Bay 15	15	1	0.0	71.5	66	71.5	10	Snd Lvl	64.3	7.2	8	-0.8
Pine Bay 16	16	1	0.0	71.3	66	71.3	10	Snd Lvl	64.3	7.0	8	-1.0
Pine Bay 17	17	1	0.0	71.2	66	71.2	10	Snd Lvl	64.3	6.9	8	-1.1
Pine Bay 18	18	1	0.0	71.2	66	71.2	10	Snd Lvl	64.3	6.9	8	-1.1
Pine Bay 19	19	1	0.0	70.8	66	70.8	10	Snd Lvl	64.2	6.6	8	-1.4
Pine Bay 20	20	1	0.0	70.6	66	70.6	10	Snd Lvl	64.2	6.4	8	-1.6
Pine Bay 21	21	1	0.0	70.7	66	70.7	10	Snd Lvl	64.4	6.3	8	-1.7
Pine Bay 22	22	1	0.0	70.7	66	70.7	10	Snd Lvl	64.5	6.2	8	-1.8
Pine Bay 23	23	1	0.0	70.6	66	70.6	10	Snd Lvl	64.7	5.9	8	-2.1

Pine Bay 24	24	1	0.0	70.2	66	70.2	10	Snd Lvl	64.9	5.3	8	-2.7
Pine Bay 25	25	1	0.0	70.1	66	70.1	10	Snd Lvl	65.2	4.9	8	-3.1
Pine Bay 26	26	1	0.0	69.9	66	69.9	10	Snd Lvl	65.6	4.3	8	-3.7
Pine Bay 27	27	1	0.0	70.0	66	70.0	10	Snd Lvl	66.2	3.8	8	-4.2
Pine Bay 28	28	1	0.0	70.7	66	70.7	10	Snd Lvl	67.8	2.9	8	-5.1
Pine Bay 29	29	1	0.0	70.8	66	70.8	10	Snd Lvl	68.8	2.0	8	-6.0
Pine Bay 30	30	1	0.0	69.1	66	69.1	10	Snd Lvl	67.7	1.4	8	-6.6
Pine Bay 31	31	1	0.0	67.8	66	67.8	10	Snd Lvl	66.8	1.0	8	-7.0
Pine Bay 32	32	1	0.0	66.6	66	66.6	10	Snd Lvl	65.7	0.9	8	-7.1
Pine Bay 33	33	1	0.0	65.6	66	65.6	10	----	64.7	0.9	8	-7.1
Pine Bay 34	34	1	0.0	64.7	66	64.7	10	----	63.9	0.8	8	-7.2
Pine Bay 35	35	1	0.0	64.2	66	64.2	10	----	63.5	0.7	8	-7.3
Pine Bay 36	36	1	0.0	63.5	66	63.5	10	----	62.9	0.6	8	-7.4
Pine Bay 37	37	1	0.0	63.0	66	63.0	10	----	62.4	0.6	8	-7.4
Pine Bay 38	38	1	0.0	62.5	66	62.5	10	----	61.9	0.6	8	-7.4
Pine Bay 39	39	1	0.0	62.0	66	62.0	10	----	61.5	0.5	8	-7.5
Pine Bay 40	40	1	0.0	61.5	66	61.5	10	----	60.9	0.6	8	-7.4
Pine Bay 41	41	1	0.0	61.3	66	61.3	10	----	60.9	0.4	8	-7.6
Pine Bay 42	42	1	0.0	60.8	66	60.8	10	----	60.4	0.4	8	-7.6
Pine Bay 43	43	1	0.0	60.0	66	60.0	10	----	59.6	0.4	8	-7.6
Pine Bay 44	44	1	0.0	60.6	66	60.6	10	----	60.1	0.5	8	-7.5
Pine Bay 45	45	1	0.0	60.9	66	60.9	10	----	60.3	0.6	8	-7.4
Pine Bay 46	46	1	0.0	61.3	66	61.3	10	----	60.7	0.6	8	-7.4
Pine Bay 47	47	1	0.0	62.0	66	62.0	10	----	61.3	0.7	8	-7.3
Pine Bay 48	48	1	0.0	62.5	66	62.5	10	----	61.7	0.8	8	-7.2
Pine Bay 49	49	1	0.0	63.1	66	63.1	10	----	62.2	0.9	8	-7.1
Pine Bay 50	50	1	0.0	63.7	66	63.7	10	----	62.7	1.0	8	-7.0
Pine Bay 51	51	1	0.0	64.3	66	64.3	10	----	63.2	1.1	8	-6.9
Pine Bay 52	52	1	0.0	65.2	66	65.2	10	----	63.9	1.3	8	-6.7
Pine Bay 53	53	1	0.0	66.2	66	66.2	10	Snd Lvl	64.5	1.7	8	-6.3
Pine Bay 54	54	1	0.0	66.1	66	66.1	10	Snd Lvl	64.2	1.9	8	-6.1
Pine Bay 55	55	1	0.0	66.0	66	66.0	10	Snd Lvl	63.9	2.1	8	-5.9
Pine Bay 56	56	1	0.0	65.9	66	65.9	10	----	63.6	2.3	8	-5.7
Pine Bay 57	57	1	0.0	64.4	66	64.4	10	----	62.8	1.6	8	-6.4
Pine Bay 58	58	1	0.0	63.5	66	63.5	10	----	62.1	1.4	8	-6.6
Pine Bay 59	59	1	0.0	62.5	66	62.5	10	----	61.5	1.0	8	-7.0
Pine Bay 60	60	1	0.0	61.6	66	61.6	10	----	60.8	0.8	8	-7.2
Pine Bay 61	61	1	0.0	61.1	66	61.1	10	----	60.3	0.8	8	-7.2
Pine Bay 62	62	1	0.0	60.4	66	60.4	10	----	59.9	0.5	8	-7.5
Pine Bay 63	63	1	0.0	60.0	66	60.0	10	----	59.5	0.5	8	-7.5
Pine Bay 64	64	1	0.0	66.1	66	66.1	10	Snd Lvl	63.3	2.8	8	-5.2

Pine Bay 65	65	1	0.0	65.8	66	65.8	10	----	63.1	2.7	8	-5.3
Pine Bay 66	66	1	0.0	64.8	66	64.8	10	----	62.4	2.4	8	-5.6
Pine Bay 67	67	1	0.0	64.7	66	64.7	10	----	62.3	2.4	8	-5.6
Pine Bay 68	68	1	0.0	64.6	66	64.6	10	----	62.3	2.3	8	-5.7
Pine Bay 69	69	1	0.0	64.6	66	64.6	10	----	62.4	2.2	8	-5.8
Pine Bay 70	70	1	0.0	64.8	66	64.8	10	----	62.6	2.2	8	-5.8
Pine Bay 71	71	1	0.0	64.6	66	64.6	10	----	62.6	2.0	8	-6.0
Pine Bay 72	72	1	0.0	64.4	66	64.4	10	----	62.4	2.0	8	-6.0
Pine Bay 73	73	1	0.0	64.3	66	64.3	10	----	62.5	1.8	8	-6.2
Pine Bay 74	74	1	0.0	64.0	66	64.0	10	----	62.4	1.6	8	-6.4
Pine Bay 75	75	1	0.0	60.4	66	60.4	10	----	59.5	0.9	8	-7.1
Pine Bay 76	76	1	0.0	59.8	66	59.8	10	----	59.1	0.7	8	-7.3
Bolling 1	77	1	0.0	59.5	66	59.5	10	----	59.4	0.1	8	-7.9
Bolling 2	78	1	0.0	60.0	66	60.0	10	----	59.9	0.1	8	-7.9
Bolling 3	79	1	0.0	60.4	66	60.4	10	----	60.2	0.2	8	-7.8
Bolling 4	80	1	0.0	60.6	66	60.6	10	----	60.5	0.1	8	-7.9
Bolling 5	81	1	0.0	60.9	66	60.9	10	----	60.8	0.1	8	-7.9
Bolling 6	82	1	0.0	61.4	66	61.4	10	----	61.2	0.2	8	-7.8
Bolling 7	83	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Bolling 8	84	1	0.0	61.1	66	61.1	10	----	60.8	0.3	8	-7.7
Bolling 9	85	1	0.0	61.9	66	61.9	10	----	61.6	0.3	8	-7.7
Bolling 10	86	1	0.0	62.9	66	62.9	10	----	62.7	0.2	8	-7.8
Bolling 11	87	1	0.0	63.2	66	63.2	10	----	62.9	0.3	8	-7.7
Bolling 12	88	1	0.0	63.6	66	63.6	10	----	63.3	0.3	8	-7.7
Bolling 13	89	1	0.0	64.2	66	64.2	10	----	63.9	0.3	8	-7.7
Bolling 14	90	1	0.0	62.6	66	62.6	10	----	62.0	0.6	8	-7.4
Bolling 15	91	1	0.0	60.7	66	60.7	10	----	59.6	1.1	8	-6.9

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	91	0.1	2.7	7.7
All Impacted	36	0.9	5.4	7.7
All that meet NR Goal	0	0.0	0.0	0.0

Barrier Analysis

NSA E

Stantec 12 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 22

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E GM	W	22.00	22.00	22.00	8024	176527				5295824
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	5295824

Stantec
M. Drauer

12 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 22
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	62.6	66	62.6	10	----	60.6	2.0	8	-6.0
Rutledge 2	2	1	0.0	66.7	66	66.7	10	Snd Lvl	62.4	4.3	8	-3.7
Rutledge 3	3	1	0.0	65.2	66	65.2	10	----	60.4	4.8	8	-3.2
Rutledge 4	4	1	0.0	63.7	66	63.7	10	----	58.9	4.8	8	-3.2
Rutledge 5	5	1	0.0	62.1	66	62.1	10	----	57.3	4.8	8	-3.2
Rutledge 6	6	1	0.0	61.1	66	61.1	10	----	56.5	4.6	8	-3.4
Rutledge 7	7	1	0.0	60.6	66	60.6	10	----	56.0	4.6	8	-3.4
Rutledge 8	8	1	0.0	60.2	66	60.2	10	----	55.5	4.7	8	-3.3
Rutledge 9	9	1	0.0	59.1	66	59.1	10	----	54.7	4.4	8	-3.6
Rutledge 10	10	1	0.0	59.8	66	59.8	10	----	55.2	4.6	8	-3.4
Rutledge 11	11	1	0.0	58.7	66	58.7	10	----	54.3	4.4	8	-3.6
Rutledge 12	12	1	0.0	57.8	66	57.8	10	----	53.6	4.2	8	-3.8
Crowley 1	13	1	0.0	57.3	66	57.3	10	----	53.0	4.3	8	-3.7
Crowley 2	14	1	0.0	59.5	66	59.5	10	----	54.7	4.8	8	-3.2
Crowley 3	15	1	0.0	63.8	66	63.8	10	----	57.2	6.6	8	-1.4
Crowley 4	16	1	0.0	71.6	66	71.6	10	Snd Lvl	61.9	9.7	8	1.7
Crowley 5	17	1	0.0	75.2	66	75.2	10	Snd Lvl	61.9	13.3	8	5.3
Crowley 6	18	1	0.0	75.8	66	75.8	10	Snd Lvl	62.1	13.7	8	5.7
Crowley 7	19	1	0.0	75.8	66	75.8	10	Snd Lvl	62.3	13.5	8	5.5
Crowley 8	20	1	0.0	76.0	66	76.0	10	Snd Lvl	62.1	13.9	8	5.9
Crowley 9	21	1	0.0	76.0	66	76.0	10	Snd Lvl	61.9	14.1	8	6.1
Crowley 10	22	1	0.0	76.4	66	76.4	10	Snd Lvl	61.9	14.5	8	6.5
Crowley 11	23	1	0.0	76.5	66	76.5	10	Snd Lvl	61.9	14.6	8	6.6

Crowley 12	24	1	0.0	76.2	66	76.2	10	Snd Lvl	61.7	14.5	8	6.5
Crowley 13	25	1	0.0	74.3	66	74.3	10	Snd Lvl	61.2	13.1	8	5.1
Crowley 14	26	1	0.0	72.9	66	72.9	10	Snd Lvl	61.1	11.8	8	3.8
Crowley 15	27	1	0.0	72.5	66	72.5	10	Snd Lvl	61.0	11.5	8	3.5
Crowley 16	28	1	0.0	58.7	66	58.7	10	----	54.3	4.4	8	-3.6
Crowley 17	29	1	0.0	60.7	66	60.7	10	----	55.5	5.2	8	-2.8
Crowley 18	30	1	0.0	63.6	66	63.6	10	----	56.5	7.1	8	-0.9
Crowley 19	31	1	0.0	65.8	66	65.8	10	----	57.1	8.7	8	0.7
Crowley 37	32	1	0.0	61.9	66	61.9	10	----	55.3	6.6	8	-1.4
Crowley 38	33	1	0.0	59.5	66	59.5	10	----	53.7	5.8	8	-2.2
Crowley 39	34	1	0.0	58.4	66	58.4	10	----	53.0	5.4	8	-2.6
Crowley 40	35	1	0.0	58.2	66	58.2	10	----	52.7	5.5	8	-2.5
Crowley 20	36	1	0.0	65.6	66	65.6	10	----	57.0	8.6	8	0.6
Crowley 21	37	1	0.0	64.5	66	64.5	10	----	56.6	7.9	8	-0.1
Crowley 41	38	1	0.0	62.8	66	62.8	10	----	55.4	7.4	8	-0.6
Crowley 42	39	1	0.0	62.3	66	62.3	10	----	55.0	7.3	8	-0.7
Crowley 22	40	1	0.0	63.6	66	63.6	10	----	56.2	7.4	8	-0.6
Crowley 23	41	1	0.0	59.3	66	59.3	10	----	53.6	5.7	8	-2.3
Crowley 24	42	1	0.0	58.4	66	58.4	10	----	53.1	5.3	8	-2.7
Crowley 25	43	1	0.0	58.2	66	58.2	10	----	52.9	5.3	8	-2.7
Crowley 26	44	1	0.0	62.5	66	62.5	10	----	55.7	6.8	8	-1.2
Crowley 27	45	1	0.0	60.8	66	60.8	10	----	55.0	5.8	8	-2.2
Crowley 28	46	1	0.0	59.6	66	59.6	10	----	54.1	5.5	8	-2.5
Crowley 29	47	1	0.0	56.8	66	56.8	10	----	52.1	4.7	8	-3.3
Crowley 30	48	1	0.0	73.4	66	73.4	10	Snd Lvl	61.2	12.2	8	4.2
Crowley 31	49	1	0.0	71.0	66	71.0	10	Snd Lvl	60.2	10.8	8	2.8
Crowley 32	50	1	0.0	69.2	66	69.2	10	Snd Lvl	59.5	9.7	8	1.7
Crowley 33	51	1	0.0	67.0	66	67.0	10	Snd Lvl	58.6	8.4	8	0.4
Crowley 34	52	1	0.0	61.3	66	61.3	10	----	55.9	5.4	8	-2.6
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	54.2	5.1	8	-2.9
Crowley 36	54	1	0.0	57.2	66	57.2	10	----	52.7	4.5	8	-3.5
Long Pond 1	55	1	0.0	56.0	66	56.0	10	----	52.1	3.9	8	-4.1
Long Pond 2	56	1	0.0	57.7	66	57.7	10	----	53.3	4.4	8	-3.6
Long Pond 3	57	1	0.0	59.9	66	59.9	10	----	54.9	5.0	8	-3.0
Long Pond 4	58	1	0.0	62.9	66	62.9	10	----	56.8	6.1	8	-1.9
Long Pond 5	59	1	0.0	66.4	66	66.4	10	Snd Lvl	58.7	7.7	8	-0.3
Long Pond 6	60	1	0.0	71.7	66	71.7	10	Snd Lvl	61.1	10.6	8	2.6
Long Pond 7	61	1	0.0	72.8	66	72.8	10	Snd Lvl	61.7	11.1	8	3.1
Long Pond 8	62	1	0.0	73.1	66	73.1	10	Snd Lvl	61.9	11.2	8	3.2
Long Pond 9	63	1	0.0	73.6	66	73.6	10	Snd Lvl	62.2	11.4	8	3.4
Long Pond 10	64	1	0.0	73.2	66	73.2	10	Snd Lvl	62.0	11.2	8	3.2

Long Pond 11	65	1	0.0	72.7	66	72.7	10	Snd Lvl	61.4	11.3	8	3.3
Long Pond 12	66	1	0.0	72.5	66	72.5	10	Snd Lvl	61.3	11.2	8	3.2
Long Pond 13	67	1	0.0	71.3	66	71.3	10	Snd Lvl	60.9	10.4	8	2.4
Long Pond 14	68	1	0.0	71.0	66	71.0	10	Snd Lvl	60.8	10.2	8	2.2
Long Pond 15	69	1	0.0	71.1	66	71.1	10	Snd Lvl	61.0	10.1	8	2.1
Long Pond 16	70	1	0.0	71.2	66	71.2	10	Snd Lvl	61.1	10.1	8	2.1
Long Pond 17	71	1	0.0	71.8	66	71.8	10	Snd Lvl	61.5	10.3	8	2.3
Long Pond 18	72	1	0.0	72.2	66	72.2	10	Snd Lvl	61.8	10.4	8	2.4
Long Pond 19	73	1	0.0	71.6	66	71.6	10	Snd Lvl	61.9	9.7	8	1.7
Long Pond 20	74	1	0.0	70.9	66	70.9	10	Snd Lvl	61.9	9.0	8	1.0
Long Pond 21	75	1	0.0	70.5	66	70.5	10	Snd Lvl	62.7	7.8	8	-0.2
Long Pond 22	76	1	0.0	71.0	66	71.0	10	Snd Lvl	64.2	6.8	8	-1.2
Chardonnay 1	77	1	0.0	61.1	66	61.1	10	----	56.9	4.2	8	-3.8
Chardonnay 2	78	1	0.0	62.6	66	62.6	10	----	58.2	4.4	8	-3.6
Chardonnay 3	79	1	0.0	65.5	66	65.5	10	----	59.4	6.1	8	-1.9
Chardonnay 4	80	1	0.0	67.5	66	67.5	10	Snd Lvl	59.2	8.3	8	0.3
Chardonnay 5	81	1	0.0	65.2	66	65.2	10	----	59.0	6.2	8	-1.8
Chardonnay 6	82	1	0.0	62.1	66	62.1	10	----	58.1	4.0	8	-4.0
Chardonnay 7	83	1	0.0	60.6	66	60.6	10	----	56.5	4.1	8	-3.9
Dunbrooke	84	1	0.0	64.2	66	64.2	10	----	58.3	5.9	8	-2.1
Long Pond 23	85	1	0.0	61.0	66	61.0	10	----	56.6	4.4	8	-3.6
Long Pond 24	86	1	0.0	60.7	66	60.7	10	----	56.6	4.1	8	-3.9
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	55.6	4.6	8	-3.4
Long Pond 26	88	1	0.0	60.2	66	60.2	10	----	55.8	4.4	8	-3.6
Long Pond 27	89	1	0.0	59.0	66	59.0	10	----	55.8	3.2	8	-4.8

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	89	2.0	7.6	14.6
All Impacted	36	4.3	10.9	14.6
All that meet NR Goal	34	8.3	11.3	14.6

Stantec 12 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 20

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E GM	W	20.00	20.00	20.00	8024	160480				4814386
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	4814386

Stantec
M. Drauer

12 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 20
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	62.6	66	62.6	10	----	60.7	1.9	8	-6.1
Rutledge 2	2	1	0.0	66.7	66	66.7	10	Snd Lvl	62.6	4.1	8	-3.9
Rutledge 3	3	1	0.0	65.2	66	65.2	10	----	60.6	4.6	8	-3.4
Rutledge 4	4	1	0.0	63.7	66	63.7	10	----	59.1	4.6	8	-3.4
Rutledge 5	5	1	0.0	62.1	66	62.1	10	----	57.5	4.6	8	-3.4
Rutledge 6	6	1	0.0	61.1	66	61.1	10	----	56.7	4.4	8	-3.6
Rutledge 7	7	1	0.0	60.6	66	60.6	10	----	56.1	4.5	8	-3.5
Rutledge 8	8	1	0.0	60.2	66	60.2	10	----	55.7	4.5	8	-3.5
Rutledge 9	9	1	0.0	59.1	66	59.1	10	----	54.9	4.2	8	-3.8
Rutledge 10	10	1	0.0	59.8	66	59.8	10	----	55.4	4.4	8	-3.6
Rutledge 11	11	1	0.0	58.7	66	58.7	10	----	54.5	4.2	8	-3.8
Rutledge 12	12	1	0.0	57.8	66	57.8	10	----	53.8	4.0	8	-4.0
Crowley 1	13	1	0.0	57.3	66	57.3	10	----	53.3	4.0	8	-4.0
Crowley 2	14	1	0.0	59.5	66	59.5	10	----	55.0	4.5	8	-3.5
Crowley 3	15	1	0.0	63.8	66	63.8	10	----	57.6	6.2	8	-1.8
Crowley 4	16	1	0.0	71.6	66	71.6	10	Snd Lvl	62.3	9.3	8	1.3
Crowley 5	17	1	0.0	75.2	66	75.2	10	Snd Lvl	62.5	12.7	8	4.7
Crowley 6	18	1	0.0	75.8	66	75.8	10	Snd Lvl	62.8	13.0	8	5.0
Crowley 7	19	1	0.0	75.8	66	75.8	10	Snd Lvl	63.1	12.7	8	4.7
Crowley 8	20	1	0.0	76.0	66	76.0	10	Snd Lvl	62.8	13.2	8	5.2
Crowley 9	21	1	0.0	76.0	66	76.0	10	Snd Lvl	62.6	13.4	8	5.4
Crowley 10	22	1	0.0	76.4	66	76.4	10	Snd Lvl	62.5	13.9	8	5.9
Crowley 11	23	1	0.0	76.5	66	76.5	10	Snd Lvl	62.5	14.0	8	6.0

Crowley 12	24	1	0.0	76.2	66	76.2	10	Snd Lvl	62.3	13.9	8	5.9
Crowley 13	25	1	0.0	74.3	66	74.3	10	Snd Lvl	61.8	12.5	8	4.5
Crowley 14	26	1	0.0	72.9	66	72.9	10	Snd Lvl	61.7	11.2	8	3.2
Crowley 15	27	1	0.0	72.5	66	72.5	10	Snd Lvl	61.6	10.9	8	2.9
Crowley 16	28	1	0.0	58.7	66	58.7	10	----	54.6	4.1	8	-3.9
Crowley 17	29	1	0.0	60.7	66	60.7	10	----	55.8	4.9	8	-3.1
Crowley 18	30	1	0.0	63.6	66	63.6	10	----	56.8	6.8	8	-1.2
Crowley 19	31	1	0.0	65.8	66	65.8	10	----	57.4	8.4	8	0.4
Crowley 37	32	1	0.0	61.9	66	61.9	10	----	55.7	6.2	8	-1.8
Crowley 38	33	1	0.0	59.5	66	59.5	10	----	54.1	5.4	8	-2.6
Crowley 39	34	1	0.0	58.4	66	58.4	10	----	53.3	5.1	8	-2.9
Crowley 40	35	1	0.0	58.2	66	58.2	10	----	53.0	5.2	8	-2.8
Crowley 20	36	1	0.0	65.6	66	65.6	10	----	57.4	8.2	8	0.2
Crowley 21	37	1	0.0	64.5	66	64.5	10	----	56.9	7.6	8	-0.4
Crowley 41	38	1	0.0	62.8	66	62.8	10	----	55.8	7.0	8	-1.0
Crowley 42	39	1	0.0	62.3	66	62.3	10	----	55.4	6.9	8	-1.1
Crowley 22	40	1	0.0	63.6	66	63.6	10	----	56.6	7.0	8	-1.0
Crowley 23	41	1	0.0	59.3	66	59.3	10	----	53.9	5.4	8	-2.6
Crowley 24	42	1	0.0	58.4	66	58.4	10	----	53.4	5.0	8	-3.0
Crowley 25	43	1	0.0	58.2	66	58.2	10	----	53.2	5.0	8	-3.0
Crowley 26	44	1	0.0	62.5	66	62.5	10	----	56.1	6.4	8	-1.6
Crowley 27	45	1	0.0	60.8	66	60.8	10	----	55.4	5.4	8	-2.6
Crowley 28	46	1	0.0	59.6	66	59.6	10	----	54.5	5.1	8	-2.9
Crowley 29	47	1	0.0	56.8	66	56.8	10	----	52.3	4.5	8	-3.5
Crowley 30	48	1	0.0	73.4	66	73.4	10	Snd Lvl	61.8	11.6	8	3.6
Crowley 31	49	1	0.0	71.0	66	71.0	10	Snd Lvl	60.8	10.2	8	2.2
Crowley 32	50	1	0.0	69.2	66	69.2	10	Snd Lvl	60.1	9.1	8	1.1
Crowley 33	51	1	0.0	67.0	66	67.0	10	Snd Lvl	59.1	7.9	8	-0.1
Crowley 34	52	1	0.0	61.3	66	61.3	10	----	56.3	5.0	8	-3.0
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	54.5	4.8	8	-3.2
Crowley 36	54	1	0.0	57.2	66	57.2	10	----	53.0	4.2	8	-3.8
Long Pond 1	55	1	0.0	56.0	66	56.0	10	----	52.4	3.6	8	-4.4
Long Pond 2	56	1	0.0	57.7	66	57.7	10	----	53.6	4.1	8	-3.9
Long Pond 3	57	1	0.0	59.9	66	59.9	10	----	55.2	4.7	8	-3.3
Long Pond 4	58	1	0.0	62.9	66	62.9	10	----	57.2	5.7	8	-2.3
Long Pond 5	59	1	0.0	66.4	66	66.4	10	Snd Lvl	59.3	7.1	8	-0.9
Long Pond 6	60	1	0.0	71.7	66	71.7	10	Snd Lvl	61.7	10.0	8	2.0
Long Pond 7	61	1	0.0	72.8	66	72.8	10	Snd Lvl	62.4	10.4	8	2.4
Long Pond 8	62	1	0.0	73.1	66	73.1	10	Snd Lvl	62.7	10.4	8	2.4
Long Pond 9	63	1	0.0	73.6	66	73.6	10	Snd Lvl	62.9	10.7	8	2.7
Long Pond 10	64	1	0.0	73.2	66	73.2	10	Snd Lvl	62.6	10.6	8	2.6

Long Pond 11	65	1	0.0	72.7	66	72.7	10	Snd Lvl	62.0	10.7	8	2.7
Long Pond 12	66	1	0.0	72.5	66	72.5	10	Snd Lvl	61.8	10.7	8	2.7
Long Pond 13	67	1	0.0	71.3	66	71.3	10	Snd Lvl	61.4	9.9	8	1.9
Long Pond 14	68	1	0.0	71.0	66	71.0	10	Snd Lvl	61.3	9.7	8	1.7
Long Pond 15	69	1	0.0	71.1	66	71.1	10	Snd Lvl	61.5	9.6	8	1.6
Long Pond 16	70	1	0.0	71.2	66	71.2	10	Snd Lvl	61.6	9.6	8	1.6
Long Pond 17	71	1	0.0	71.8	66	71.8	10	Snd Lvl	62.0	9.8	8	1.8
Long Pond 18	72	1	0.0	72.2	66	72.2	10	Snd Lvl	62.3	9.9	8	1.9
Long Pond 19	73	1	0.0	71.6	66	71.6	10	Snd Lvl	62.3	9.3	8	1.3
Long Pond 20	74	1	0.0	70.9	66	70.9	10	Snd Lvl	62.2	8.7	8	0.7
Long Pond 21	75	1	0.0	70.5	66	70.5	10	Snd Lvl	63.0	7.5	8	-0.5
Long Pond 22	76	1	0.0	71.0	66	71.0	10	Snd Lvl	64.4	6.6	8	-1.4
Chardonnay 1	77	1	0.0	61.1	66	61.1	10	----	57.0	4.1	8	-3.9
Chardonnay 2	78	1	0.0	62.6	66	62.6	10	----	58.3	4.3	8	-3.7
Chardonnay 3	79	1	0.0	65.5	66	65.5	10	----	59.6	5.9	8	-2.1
Chardonnay 4	80	1	0.0	67.5	66	67.5	10	Snd Lvl	59.3	8.2	8	0.2
Chardonnay 5	81	1	0.0	65.2	66	65.2	10	----	59.0	6.2	8	-1.8
Chardonnay 6	82	1	0.0	62.1	66	62.1	10	----	58.1	4.0	8	-4.0
Chardonnay 7	83	1	0.0	60.6	66	60.6	10	----	56.6	4.0	8	-4.0
Dunbrooke	84	1	0.0	64.2	66	64.2	10	----	58.3	5.9	8	-2.1
Long Pond 23	85	1	0.0	61.0	66	61.0	10	----	56.8	4.2	8	-3.8
Long Pond 24	86	1	0.0	60.7	66	60.7	10	----	56.9	3.8	8	-4.2
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	55.9	4.3	8	-3.7
Long Pond 26	88	1	0.0	60.2	66	60.2	10	----	56.2	4.0	8	-4.0
Long Pond 27	89	1	0.0	59.0	66	59.0	10	----	56.3	2.7	8	-5.3

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	89	1.9	7.2	14.0
All Impacted	36	4.1	10.4	14.0
All that meet NR Goal	33	8.2	10.8	14.0

Stantec 12 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 18

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E GM	W	18.00	18.00	18.00	8024	144432				4332947
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	4332947

Stantec
M. Drauer

12 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 18

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	62.6	66	62.6	10	----	60.7	1.9	8	-6.1
Rutledge 2	2	1	0.0	66.7	66	66.7	10	Snd Lvl	62.8	3.9	8	-4.1
Rutledge 3	3	1	0.0	65.2	66	65.2	10	----	60.8	4.4	8	-3.6
Rutledge 4	4	1	0.0	63.7	66	63.7	10	----	59.4	4.3	8	-3.7
Rutledge 5	5	1	0.0	62.1	66	62.1	10	----	57.7	4.4	8	-3.6
Rutledge 6	6	1	0.0	61.1	66	61.1	10	----	56.9	4.2	8	-3.8
Rutledge 7	7	1	0.0	60.6	66	60.6	10	----	56.3	4.3	8	-3.7
Rutledge 8	8	1	0.0	60.2	66	60.2	10	----	55.9	4.3	8	-3.7
Rutledge 9	9	1	0.0	59.1	66	59.1	10	----	55.1	4.0	8	-4.0
Rutledge 10	10	1	0.0	59.8	66	59.8	10	----	55.6	4.2	8	-3.8
Rutledge 11	11	1	0.0	58.7	66	58.7	10	----	54.7	4.0	8	-4.0
Rutledge 12	12	1	0.0	57.8	66	57.8	10	----	54.0	3.8	8	-4.2
Crowley 1	13	1	0.0	57.3	66	57.3	10	----	53.5	3.8	8	-4.2
Crowley 2	14	1	0.0	59.5	66	59.5	10	----	55.3	4.2	8	-3.8
Crowley 3	15	1	0.0	63.8	66	63.8	10	----	58.0	5.8	8	-2.2
Crowley 4	16	1	0.0	71.6	66	71.6	10	Snd Lvl	62.8	8.8	8	0.8
Crowley 5	17	1	0.0	75.2	66	75.2	10	Snd Lvl	63.2	12.0	8	4.0
Crowley 6	18	1	0.0	75.8	66	75.8	10	Snd Lvl	63.5	12.3	8	4.3
Crowley 7	19	1	0.0	75.8	66	75.8	10	Snd Lvl	63.9	11.9	8	3.9
Crowley 8	20	1	0.0	76.0	66	76.0	10	Snd Lvl	63.6	12.4	8	4.4
Crowley 9	21	1	0.0	76.0	66	76.0	10	Snd Lvl	63.3	12.7	8	4.7
Crowley 10	22	1	0.0	76.4	66	76.4	10	Snd Lvl	63.3	13.1	8	5.1
Crowley 11	23	1	0.0	76.5	66	76.5	10	Snd Lvl	63.2	13.3	8	5.3

Crowley 12	24	1	0.0	76.2	66	76.2	10	Snd Lvl	63.0	13.2	8	5.2
Crowley 13	25	1	0.0	74.3	66	74.3	10	Snd Lvl	62.4	11.9	8	3.9
Crowley 14	26	1	0.0	72.9	66	72.9	10	Snd Lvl	62.2	10.7	8	2.7
Crowley 15	27	1	0.0	72.5	66	72.5	10	Snd Lvl	62.1	10.4	8	2.4
Crowley 16	28	1	0.0	58.7	66	58.7	10	----	54.9	3.8	8	-4.2
Crowley 17	29	1	0.0	60.7	66	60.7	10	----	56.2	4.5	8	-3.5
Crowley 18	30	1	0.0	63.6	66	63.6	10	----	57.1	6.5	8	-1.5
Crowley 19	31	1	0.0	65.8	66	65.8	10	----	57.9	7.9	8	-0.1
Crowley 37	32	1	0.0	61.9	66	61.9	10	----	56.0	5.9	8	-2.1
Crowley 38	33	1	0.0	59.5	66	59.5	10	----	54.4	5.1	8	-2.9
Crowley 39	34	1	0.0	58.4	66	58.4	10	----	53.6	4.8	8	-3.2
Crowley 40	35	1	0.0	58.2	66	58.2	10	----	53.3	4.9	8	-3.1
Crowley 20	36	1	0.0	65.6	66	65.6	10	----	57.9	7.7	8	-0.3
Crowley 21	37	1	0.0	64.5	66	64.5	10	----	57.3	7.2	8	-0.8
Crowley 41	38	1	0.0	62.8	66	62.8	10	----	56.1	6.7	8	-1.3
Crowley 42	39	1	0.0	62.3	66	62.3	10	----	55.8	6.5	8	-1.5
Crowley 22	40	1	0.0	63.6	66	63.6	10	----	57.0	6.6	8	-1.4
Crowley 23	41	1	0.0	59.3	66	59.3	10	----	54.3	5.0	8	-3.0
Crowley 24	42	1	0.0	58.4	66	58.4	10	----	53.7	4.7	8	-3.3
Crowley 25	43	1	0.0	58.2	66	58.2	10	----	53.5	4.7	8	-3.3
Crowley 26	44	1	0.0	62.5	66	62.5	10	----	56.5	6.0	8	-2.0
Crowley 27	45	1	0.0	60.8	66	60.8	10	----	55.8	5.0	8	-3.0
Crowley 28	46	1	0.0	59.6	66	59.6	10	----	54.9	4.7	8	-3.3
Crowley 29	47	1	0.0	56.8	66	56.8	10	----	52.6	4.2	8	-3.8
Crowley 30	48	1	0.0	73.4	66	73.4	10	Snd Lvl	62.4	11.0	8	3.0
Crowley 31	49	1	0.0	71.0	66	71.0	10	Snd Lvl	61.4	9.6	8	1.6
Crowley 32	50	1	0.0	69.2	66	69.2	10	Snd Lvl	60.6	8.6	8	0.6
Crowley 33	51	1	0.0	67.0	66	67.0	10	Snd Lvl	59.6	7.4	8	-0.6
Crowley 34	52	1	0.0	61.3	66	61.3	10	----	56.7	4.6	8	-3.4
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	54.9	4.4	8	-3.6
Crowley 36	54	1	0.0	57.2	66	57.2	10	----	53.3	3.9	8	-4.1
Long Pond 1	55	1	0.0	56.0	66	56.0	10	----	52.7	3.3	8	-4.7
Long Pond 2	56	1	0.0	57.7	66	57.7	10	----	53.9	3.8	8	-4.2
Long Pond 3	57	1	0.0	59.9	66	59.9	10	----	55.4	4.5	8	-3.5
Long Pond 4	58	1	0.0	62.9	66	62.9	10	----	57.6	5.3	8	-2.7
Long Pond 5	59	1	0.0	66.4	66	66.4	10	Snd Lvl	59.8	6.6	8	-1.4
Long Pond 6	60	1	0.0	71.7	66	71.7	10	Snd Lvl	62.3	9.4	8	1.4
Long Pond 7	61	1	0.0	72.8	66	72.8	10	Snd Lvl	63.2	9.6	8	1.6
Long Pond 8	62	1	0.0	73.1	66	73.1	10	Snd Lvl	63.4	9.7	8	1.7
Long Pond 9	63	1	0.0	73.6	66	73.6	10	Snd Lvl	63.6	10.0	8	2.0
Long Pond 10	64	1	0.0	73.2	66	73.2	10	Snd Lvl	63.4	9.8	8	1.8

Long Pond 11	65	1	0.0	72.7	66	72.7	10	Snd Lvl	62.7	10.0	8	2.0
Long Pond 12	66	1	0.0	72.5	66	72.5	10	Snd Lvl	62.4	10.1	8	2.1
Long Pond 13	67	1	0.0	71.3	66	71.3	10	Snd Lvl	61.9	9.4	8	1.4
Long Pond 14	68	1	0.0	71.0	66	71.0	10	Snd Lvl	61.8	9.2	8	1.2
Long Pond 15	69	1	0.0	71.1	66	71.1	10	Snd Lvl	62.0	9.1	8	1.1
Long Pond 16	70	1	0.0	71.2	66	71.2	10	Snd Lvl	62.1	9.1	8	1.1
Long Pond 17	71	1	0.0	71.8	66	71.8	10	Snd Lvl	62.5	9.3	8	1.3
Long Pond 18	72	1	0.0	72.2	66	72.2	10	Snd Lvl	62.8	9.4	8	1.4
Long Pond 19	73	1	0.0	71.6	66	71.6	10	Snd Lvl	62.8	8.8	8	0.8
Long Pond 20	74	1	0.0	70.9	66	70.9	10	Snd Lvl	62.7	8.2	8	0.2
Long Pond 21	75	1	0.0	70.5	66	70.5	10	Snd Lvl	63.3	7.2	8	-0.8
Long Pond 22	76	1	0.0	71.0	66	71.0	10	Snd Lvl	64.6	6.4	8	-1.6
Chardonnay 1	77	1	0.0	61.1	66	61.1	10	----	57.1	4.0	8	-4.0
Chardonnay 2	78	1	0.0	62.6	66	62.6	10	----	58.4	4.2	8	-3.8
Chardonnay 3	79	1	0.0	65.5	66	65.5	10	----	59.9	5.6	8	-2.4
Chardonnay 4	80	1	0.0	67.5	66	67.5	10	Snd Lvl	59.4	8.1	8	0.1
Chardonnay 5	81	1	0.0	65.2	66	65.2	10	----	59.0	6.2	8	-1.8
Chardonnay 6	82	1	0.0	62.1	66	62.1	10	----	58.2	3.9	8	-4.1
Chardonnay 7	83	1	0.0	60.6	66	60.6	10	----	56.6	4.0	8	-4.0
Dunbrooke	84	1	0.0	64.2	66	64.2	10	----	58.3	5.9	8	-2.1
Long Pond 23	85	1	0.0	61.0	66	61.0	10	----	56.9	4.1	8	-3.9
Long Pond 24	86	1	0.0	60.7	66	60.7	10	----	57.2	3.5	8	-4.5
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	56.3	3.9	8	-4.1
Long Pond 26	88	1	0.0	60.2	66	60.2	10	----	56.6	3.6	8	-4.4
Long Pond 27	89	1	0.0	59.0	66	59.0	10	----	56.7	2.3	8	-5.7

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	89	1.9	6.8	13.3
All Impacted	36	3.9	9.8	13.3
All that meet NR Goal	31	8.1	10.4	13.3

Stantec
M. Drauer

12 May 2015
TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 16

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E GM	W	16.00	16.00	16.00	8024	128384				3851508
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	3851508

Stantec
M. Drauer

12 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 16
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	62.6	66	62.6	10	----	60.8	1.8	8	-6.2
Rutledge 2	2	1	0.0	66.7	66	66.7	10	Snd Lvl	63.0	3.7	8	-4.3
Rutledge 3	3	1	0.0	65.2	66	65.2	10	----	61.1	4.1	8	-3.9
Rutledge 4	4	1	0.0	63.7	66	63.7	10	----	59.6	4.1	8	-3.9
Rutledge 5	5	1	0.0	62.1	66	62.1	10	----	57.9	4.2	8	-3.8
Rutledge 6	6	1	0.0	61.1	66	61.1	10	----	57.0	4.1	8	-3.9
Rutledge 7	7	1	0.0	60.6	66	60.6	10	----	56.5	4.1	8	-3.9
Rutledge 8	8	1	0.0	60.2	66	60.2	10	----	56.1	4.1	8	-3.9
Rutledge 9	9	1	0.0	59.1	66	59.1	10	----	55.3	3.8	8	-4.2
Rutledge 10	10	1	0.0	59.8	66	59.8	10	----	55.8	4.0	8	-4.0
Rutledge 11	11	1	0.0	58.7	66	58.7	10	----	54.9	3.8	8	-4.2
Rutledge 12	12	1	0.0	57.8	66	57.8	10	----	54.3	3.5	8	-4.5
Crowley 1	13	1	0.0	57.3	66	57.3	10	----	53.7	3.6	8	-4.4
Crowley 2	14	1	0.0	59.5	66	59.5	10	----	55.5	4.0	8	-4.0
Crowley 3	15	1	0.0	63.8	66	63.8	10	----	58.4	5.4	8	-2.6
Crowley 4	16	1	0.0	71.6	66	71.6	10	Snd Lvl	63.3	8.3	8	0.3
Crowley 5	17	1	0.0	75.2	66	75.2	10	Snd Lvl	64.0	11.2	8	3.2
Crowley 6	18	1	0.0	75.8	66	75.8	10	Snd Lvl	64.3	11.5	8	3.5
Crowley 7	19	1	0.0	75.8	66	75.8	10	Snd Lvl	64.7	11.1	8	3.1
Crowley 8	20	1	0.0	76.0	66	76.0	10	Snd Lvl	64.4	11.6	8	3.6
Crowley 9	21	1	0.0	76.0	66	76.0	10	Snd Lvl	64.1	11.9	8	3.9
Crowley 10	22	1	0.0	76.4	66	76.4	10	Snd Lvl	64.1	12.3	8	4.3
Crowley 11	23	1	0.0	76.5	66	76.5	10	Snd Lvl	64.1	12.4	8	4.4

Crowley 12	24	1	0.0	76.2	66	76.2	10	Snd Lvl	63.7	12.5	8	4.5
Crowley 13	25	1	0.0	74.3	66	74.3	10	Snd Lvl	63.1	11.2	8	3.2
Crowley 14	26	1	0.0	72.9	66	72.9	10	Snd Lvl	62.9	10.0	8	2.0
Crowley 15	27	1	0.0	72.5	66	72.5	10	Snd Lvl	62.8	9.7	8	1.7
Crowley 16	28	1	0.0	58.7	66	58.7	10	----	55.3	3.4	8	-4.6
Crowley 17	29	1	0.0	60.7	66	60.7	10	----	56.6	4.1	8	-3.9
Crowley 18	30	1	0.0	63.6	66	63.6	10	----	57.6	6.0	8	-2.0
Crowley 19	31	1	0.0	65.8	66	65.8	10	----	58.4	7.4	8	-0.6
Crowley 37	32	1	0.0	61.9	66	61.9	10	----	56.4	5.5	8	-2.5
Crowley 38	33	1	0.0	59.5	66	59.5	10	----	54.8	4.7	8	-3.3
Crowley 39	34	1	0.0	58.4	66	58.4	10	----	54.0	4.4	8	-3.6
Crowley 40	35	1	0.0	58.2	66	58.2	10	----	53.6	4.6	8	-3.4
Crowley 20	36	1	0.0	65.6	66	65.6	10	----	58.4	7.2	8	-0.8
Crowley 21	37	1	0.0	64.5	66	64.5	10	----	57.8	6.7	8	-1.3
Crowley 41	38	1	0.0	62.8	66	62.8	10	----	56.6	6.2	8	-1.8
Crowley 42	39	1	0.0	62.3	66	62.3	10	----	56.2	6.1	8	-1.9
Crowley 22	40	1	0.0	63.6	66	63.6	10	----	57.5	6.1	8	-1.9
Crowley 23	41	1	0.0	59.3	66	59.3	10	----	54.7	4.6	8	-3.4
Crowley 24	42	1	0.0	58.4	66	58.4	10	----	54.1	4.3	8	-3.7
Crowley 25	43	1	0.0	58.2	66	58.2	10	----	53.9	4.3	8	-3.7
Crowley 26	44	1	0.0	62.5	66	62.5	10	----	56.9	5.6	8	-2.4
Crowley 27	45	1	0.0	60.8	66	60.8	10	----	56.3	4.5	8	-3.5
Crowley 28	46	1	0.0	59.6	66	59.6	10	----	55.3	4.3	8	-3.7
Crowley 29	47	1	0.0	56.8	66	56.8	10	----	52.9	3.9	8	-4.1
Crowley 30	48	1	0.0	73.4	66	73.4	10	Snd Lvl	63.1	10.3	8	2.3
Crowley 31	49	1	0.0	71.0	66	71.0	10	Snd Lvl	62.1	8.9	8	0.9
Crowley 32	50	1	0.0	69.2	66	69.2	10	Snd Lvl	61.3	7.9	8	-0.1
Crowley 33	51	1	0.0	67.0	66	67.0	10	Snd Lvl	60.1	6.9	8	-1.1
Crowley 34	52	1	0.0	61.3	66	61.3	10	----	57.2	4.1	8	-3.9
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	55.2	4.1	8	-3.9
Crowley 36	54	1	0.0	57.2	66	57.2	10	----	53.6	3.6	8	-4.4
Long Pond 1	55	1	0.0	56.0	66	56.0	10	----	52.9	3.1	8	-4.9
Long Pond 2	56	1	0.0	57.7	66	57.7	10	----	54.2	3.5	8	-4.5
Long Pond 3	57	1	0.0	59.9	66	59.9	10	----	55.8	4.1	8	-3.9
Long Pond 4	58	1	0.0	62.9	66	62.9	10	----	58.0	4.9	8	-3.1
Long Pond 5	59	1	0.0	66.4	66	66.4	10	Snd Lvl	60.3	6.1	8	-1.9
Long Pond 6	60	1	0.0	71.7	66	71.7	10	Snd Lvl	63.2	8.5	8	0.5
Long Pond 7	61	1	0.0	72.8	66	72.8	10	Snd Lvl	63.9	8.9	8	0.9
Long Pond 8	62	1	0.0	73.1	66	73.1	10	Snd Lvl	64.1	9.0	8	1.0
Long Pond 9	63	1	0.0	73.6	66	73.6	10	Snd Lvl	64.4	9.2	8	1.2
Long Pond 10	64	1	0.0	73.2	66	73.2	10	Snd Lvl	64.2	9.0	8	1.0

Long Pond 11	65	1	0.0	72.7	66	72.7	10	Snd Lvl	63.5	9.2	8	1.2
Long Pond 12	66	1	0.0	72.5	66	72.5	10	Snd Lvl	63.1	9.4	8	1.4
Long Pond 13	67	1	0.0	71.3	66	71.3	10	Snd Lvl	62.5	8.8	8	0.8
Long Pond 14	68	1	0.0	71.0	66	71.0	10	Snd Lvl	62.4	8.6	8	0.6
Long Pond 15	69	1	0.0	71.1	66	71.1	10	Snd Lvl	62.6	8.5	8	0.5
Long Pond 16	70	1	0.0	71.2	66	71.2	10	Snd Lvl	62.7	8.5	8	0.5
Long Pond 17	71	1	0.0	71.8	66	71.8	10	Snd Lvl	63.2	8.6	8	0.6
Long Pond 18	72	1	0.0	72.2	66	72.2	10	Snd Lvl	63.4	8.8	8	0.8
Long Pond 19	73	1	0.0	71.6	66	71.6	10	Snd Lvl	63.4	8.2	8	0.2
Long Pond 20	74	1	0.0	70.9	66	70.9	10	Snd Lvl	63.2	7.7	8	-0.3
Long Pond 21	75	1	0.0	70.5	66	70.5	10	Snd Lvl	63.7	6.8	8	-1.2
Long Pond 22	76	1	0.0	71.0	66	71.0	10	Snd Lvl	64.9	6.1	8	-1.9
Chardonnay 1	77	1	0.0	61.1	66	61.1	10	----	57.2	3.9	8	-4.1
Chardonnay 2	78	1	0.0	62.6	66	62.6	10	----	58.5	4.1	8	-3.9
Chardonnay 3	79	1	0.0	65.5	66	65.5	10	----	60.1	5.4	8	-2.6
Chardonnay 4	80	1	0.0	67.5	66	67.5	10	Snd Lvl	59.5	8.0	8	0.0
Chardonnay 5	81	1	0.0	65.2	66	65.2	10	----	59.0	6.2	8	-1.8
Chardonnay 6	82	1	0.0	62.1	66	62.1	10	----	58.0	4.1	8	-3.9
Chardonnay 7	83	1	0.0	60.6	66	60.6	10	----	56.6	4.0	8	-4.0
Dunbrooke	84	1	0.0	64.2	66	64.2	10	----	58.3	5.9	8	-2.1
Long Pond 23	85	1	0.0	61.0	66	61.0	10	----	57.1	3.9	8	-4.1
Long Pond 24	86	1	0.0	60.7	66	60.7	10	----	57.4	3.3	8	-4.7
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	56.6	3.6	8	-4.4
Long Pond 26	88	1	0.0	60.2	66	60.2	10	----	56.9	3.3	8	-4.7
Long Pond 27	89	1	0.0	59.0	66	59.0	10	----	57.1	1.9	8	-6.1

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	89	1.8	6.3	12.5
All Impacted	36	3.7	9.1	12.5
All that meet NR Goal	29	8.0	9.8	12.5

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 22 R

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E GM	W	22.00	22.00	22.00	5617	123572				3707171
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	3707171

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 22 R
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
Rutledge 2	2	1	0.0	66.7	66	66.7	10	Snd Lvl	66.7	0.0	8	-8.0
Rutledge 3	3	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
Rutledge 4	4	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
Rutledge 5	5	1	0.0	62.1	66	62.1	10	----	62.0	0.1	8	-7.9
Rutledge 6	6	1	0.0	61.1	66	61.1	10	----	60.9	0.2	8	-7.8
Rutledge 7	7	1	0.0	60.6	66	60.6	10	----	60.4	0.2	8	-7.8
Rutledge 8	8	1	0.0	60.2	66	60.2	10	----	59.9	0.3	8	-7.7
Rutledge 9	9	1	0.0	59.1	66	59.1	10	----	58.6	0.5	8	-7.5
Rutledge 10	10	1	0.0	59.8	66	59.8	10	----	59.4	0.4	8	-7.6
Rutledge 11	11	1	0.0	58.7	66	58.7	10	----	58.0	0.7	8	-7.3
Rutledge 12	12	1	0.0	57.8	66	57.8	10	----	56.8	1.0	8	-7.0
Crowley 1	13	1	0.0	57.3	66	57.3	10	----	56.0	1.3	8	-6.7
Crowley 2	14	1	0.0	59.5	66	59.5	10	----	57.8	1.7	8	-6.3
Crowley 3	15	1	0.0	63.8	66	63.8	10	----	61.3	2.5	8	-5.5
Crowley 4	16	1	0.0	71.6	66	71.6	10	Snd Lvl	66.6	5.0	8	-3.0
Crowley 5	17	1	0.0	75.2	66	75.2	10	Snd Lvl	64.0	11.2	8	3.2
Crowley 6	18	1	0.0	75.8	66	75.8	10	Snd Lvl	63.1	12.7	8	4.7
Crowley 7	19	1	0.0	75.8	66	75.8	10	Snd Lvl	63.0	12.8	8	4.8
Crowley 8	20	1	0.0	76.0	66	76.0	10	Snd Lvl	62.6	13.4	8	5.4
Crowley 9	21	1	0.0	76.0	66	76.0	10	Snd Lvl	62.3	13.7	8	5.7
Crowley 10	22	1	0.0	76.4	66	76.4	10	Snd Lvl	62.1	14.3	8	6.3
Crowley 11	23	1	0.0	76.5	66	76.5	10	Snd Lvl	62.0	14.5	8	6.5

Crowley 12	24	1	0.0	76.2	66	76.2	10	Snd Lvl	61.7	14.5	8	6.5
Crowley 13	25	1	0.0	74.3	66	74.3	10	Snd Lvl	61.3	13.0	8	5.0
Crowley 14	26	1	0.0	72.9	66	72.9	10	Snd Lvl	61.1	11.8	8	3.8
Crowley 15	27	1	0.0	72.5	66	72.5	10	Snd Lvl	61.0	11.5	8	3.5
Crowley 16	28	1	0.0	58.7	66	58.7	10	----	55.5	3.2	8	-4.8
Crowley 17	29	1	0.0	60.7	66	60.7	10	----	56.6	4.1	8	-3.9
Crowley 18	30	1	0.0	63.6	66	63.6	10	----	58.3	5.3	8	-2.7
Crowley 19	31	1	0.0	65.8	66	65.8	10	----	57.8	8.0	8	0.0
Crowley 37	32	1	0.0	61.9	66	61.9	10	----	56.0	5.9	8	-2.1
Crowley 38	33	1	0.0	59.5	66	59.5	10	----	54.6	4.9	8	-3.1
Crowley 39	34	1	0.0	58.4	66	58.4	10	----	53.7	4.7	8	-3.3
Crowley 40	35	1	0.0	58.2	66	58.2	10	----	53.3	4.9	8	-3.1
Crowley 20	36	1	0.0	65.6	66	65.6	10	----	57.3	8.3	8	0.3
Crowley 21	37	1	0.0	64.5	66	64.5	10	----	56.6	7.9	8	-0.1
Crowley 41	38	1	0.0	62.8	66	62.8	10	----	55.9	6.9	8	-1.1
Crowley 42	39	1	0.0	62.3	66	62.3	10	----	55.4	6.9	8	-1.1
Crowley 22	40	1	0.0	63.6	66	63.6	10	----	56.2	7.4	8	-0.6
Crowley 23	41	1	0.0	59.3	66	59.3	10	----	53.6	5.7	8	-2.3
Crowley 24	42	1	0.0	58.4	66	58.4	10	----	53.1	5.3	8	-2.7
Crowley 25	43	1	0.0	58.2	66	58.2	10	----	52.9	5.3	8	-2.7
Crowley 26	44	1	0.0	62.5	66	62.5	10	----	55.6	6.9	8	-1.1
Crowley 27	45	1	0.0	60.8	66	60.8	10	----	55.0	5.8	8	-2.2
Crowley 28	46	1	0.0	59.6	66	59.6	10	----	54.1	5.5	8	-2.5
Crowley 29	47	1	0.0	56.8	66	56.8	10	----	52.1	4.7	8	-3.3
Crowley 30	48	1	0.0	73.4	66	73.4	10	Snd Lvl	61.2	12.2	8	4.2
Crowley 31	49	1	0.0	71.0	66	71.0	10	Snd Lvl	60.3	10.7	8	2.7
Crowley 32	50	1	0.0	69.2	66	69.2	10	Snd Lvl	59.6	9.6	8	1.6
Crowley 33	51	1	0.0	67.0	66	67.0	10	Snd Lvl	58.7	8.3	8	0.3
Crowley 34	52	1	0.0	61.3	66	61.3	10	----	55.9	5.4	8	-2.6
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	54.2	5.1	8	-2.9
Crowley 36	54	1	0.0	57.2	66	57.2	10	----	52.7	4.5	8	-3.5
Long Pond 1	55	1	0.0	56.0	66	56.0	10	----	52.1	3.9	8	-4.1
Long Pond 2	56	1	0.0	57.7	66	57.7	10	----	53.4	4.3	8	-3.7
Long Pond 3	57	1	0.0	59.9	66	59.9	10	----	54.9	5.0	8	-3.0
Long Pond 4	58	1	0.0	62.9	66	62.9	10	----	56.8	6.1	8	-1.9
Long Pond 5	59	1	0.0	66.4	66	66.4	10	Snd Lvl	58.8	7.6	8	-0.4
Long Pond 6	60	1	0.0	71.7	66	71.7	10	Snd Lvl	61.1	10.6	8	2.6
Long Pond 7	61	1	0.0	72.8	66	72.8	10	Snd Lvl	61.7	11.1	8	3.1
Long Pond 8	62	1	0.0	73.1	66	73.1	10	Snd Lvl	62.0	11.1	8	3.1
Long Pond 9	63	1	0.0	73.6	66	73.6	10	Snd Lvl	62.2	11.4	8	3.4
Long Pond 10	64	1	0.0	73.2	66	73.2	10	Snd Lvl	62.0	11.2	8	3.2

Long Pond 11	65	1	0.0	72.7	66	72.7	10	Snd Lvl	61.5	11.2	8	3.2
Long Pond 12	66	1	0.0	72.5	66	72.5	10	Snd Lvl	61.3	11.2	8	3.2
Long Pond 13	67	1	0.0	71.3	66	71.3	10	Snd Lvl	60.9	10.4	8	2.4
Long Pond 14	68	1	0.0	71.0	66	71.0	10	Snd Lvl	60.8	10.2	8	2.2
Long Pond 15	69	1	0.0	71.1	66	71.1	10	Snd Lvl	61.0	10.1	8	2.1
Long Pond 16	70	1	0.0	71.2	66	71.2	10	Snd Lvl	61.1	10.1	8	2.1
Long Pond 17	71	1	0.0	71.8	66	71.8	10	Snd Lvl	61.5	10.3	8	2.3
Long Pond 18	72	1	0.0	72.2	66	72.2	10	Snd Lvl	61.8	10.4	8	2.4
Long Pond 19	73	1	0.0	71.6	66	71.6	10	Snd Lvl	61.9	9.7	8	1.7
Long Pond 20	74	1	0.0	70.9	66	70.9	10	Snd Lvl	61.9	9.0	8	1.0
Long Pond 21	75	1	0.0	70.5	66	70.5	10	Snd Lvl	62.7	7.8	8	-0.2
Long Pond 22	76	1	0.0	71.0	66	71.0	10	Snd Lvl	64.2	6.8	8	-1.2
Chardonnay 1	77	1	0.0	61.1	66	61.1	10	----	56.9	4.2	8	-3.8
Chardonnay 2	78	1	0.0	62.6	66	62.6	10	----	58.2	4.4	8	-3.6
Chardonnay 3	79	1	0.0	65.5	66	65.5	10	----	59.4	6.1	8	-1.9
Chardonnay 4	80	1	0.0	67.5	66	67.5	10	Snd Lvl	59.2	8.3	8	0.3
Chardonnay 5	81	1	0.0	65.2	66	65.2	10	----	59.0	6.2	8	-1.8
Chardonnay 6	82	1	0.0	62.1	66	62.1	10	----	58.1	4.0	8	-4.0
Chardonnay 7	83	1	0.0	60.6	66	60.6	10	----	56.5	4.1	8	-3.9
Dunbrooke	84	1	0.0	64.2	66	64.2	10	----	58.3	5.9	8	-2.1
Long Pond 23	85	1	0.0	61.0	66	61.0	10	----	56.6	4.4	8	-3.6
Long Pond 24	86	1	0.0	60.7	66	60.7	10	----	56.7	4.0	8	-4.0
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	55.6	4.6	8	-3.4
Long Pond 26	88	1	0.0	60.2	66	60.2	10	----	55.9	4.3	8	-3.7
Long Pond 27	89	1	0.0	59.0	66	59.0	10	----	55.9	3.1	8	-4.9

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	89	0.0	6.7	14.5
All Impacted	36	0.0	10.5	14.5
All that meet NR Goal	33	8.0	11.1	14.5

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 20 R

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E GM	W	20.00	20.00	20.00	5617	112339				3370156
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	3370156

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 20 R
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
Rutledge 2	2	1	0.0	66.7	66	66.7	10	Snd Lvl	66.7	0.0	8	-8.0
Rutledge 3	3	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
Rutledge 4	4	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
Rutledge 5	5	1	0.0	62.1	66	62.1	10	----	62.0	0.1	8	-7.9
Rutledge 6	6	1	0.0	61.1	66	61.1	10	----	60.9	0.2	8	-7.8
Rutledge 7	7	1	0.0	60.6	66	60.6	10	----	60.4	0.2	8	-7.8
Rutledge 8	8	1	0.0	60.2	66	60.2	10	----	59.9	0.3	8	-7.7
Rutledge 9	9	1	0.0	59.1	66	59.1	10	----	58.6	0.5	8	-7.5
Rutledge 10	10	1	0.0	59.8	66	59.8	10	----	59.4	0.4	8	-7.6
Rutledge 11	11	1	0.0	58.7	66	58.7	10	----	58.0	0.7	8	-7.3
Rutledge 12	12	1	0.0	57.8	66	57.8	10	----	56.9	0.9	8	-7.1
Crowley 1	13	1	0.0	57.3	66	57.3	10	----	56.0	1.3	8	-6.7
Crowley 2	14	1	0.0	59.5	66	59.5	10	----	57.8	1.7	8	-6.3
Crowley 3	15	1	0.0	63.8	66	63.8	10	----	61.4	2.4	8	-5.6
Crowley 4	16	1	0.0	71.6	66	71.6	10	Snd Lvl	66.7	4.9	8	-3.1
Crowley 5	17	1	0.0	75.2	66	75.2	10	Snd Lvl	64.4	10.8	8	2.8
Crowley 6	18	1	0.0	75.8	66	75.8	10	Snd Lvl	63.7	12.1	8	4.1
Crowley 7	19	1	0.0	75.8	66	75.8	10	Snd Lvl	63.7	12.1	8	4.1
Crowley 8	20	1	0.0	76.0	66	76.0	10	Snd Lvl	63.2	12.8	8	4.8
Crowley 9	21	1	0.0	76.0	66	76.0	10	Snd Lvl	62.9	13.1	8	5.1
Crowley 10	22	1	0.0	76.4	66	76.4	10	Snd Lvl	62.7	13.7	8	5.7
Crowley 11	23	1	0.0	76.5	66	76.5	10	Snd Lvl	62.6	13.9	8	5.9

Crowley 12	24	1	0.0	76.2	66	76.2	10	Snd Lvl	62.3	13.9	8	5.9
Crowley 13	25	1	0.0	74.3	66	74.3	10	Snd Lvl	61.8	12.5	8	4.5
Crowley 14	26	1	0.0	72.9	66	72.9	10	Snd Lvl	61.7	11.2	8	3.2
Crowley 15	27	1	0.0	72.5	66	72.5	10	Snd Lvl	61.6	10.9	8	2.9
Crowley 16	28	1	0.0	58.7	66	58.7	10	----	55.6	3.1	8	-4.9
Crowley 17	29	1	0.0	60.7	66	60.7	10	----	56.8	3.9	8	-4.1
Crowley 18	30	1	0.0	63.6	66	63.6	10	----	58.5	5.1	8	-2.9
Crowley 19	31	1	0.0	65.8	66	65.8	10	----	58.1	7.7	8	-0.3
Crowley 37	32	1	0.0	61.9	66	61.9	10	----	56.3	5.6	8	-2.4
Crowley 38	33	1	0.0	59.5	66	59.5	10	----	54.8	4.7	8	-3.3
Crowley 39	34	1	0.0	58.4	66	58.4	10	----	53.9	4.5	8	-3.5
Crowley 40	35	1	0.0	58.2	66	58.2	10	----	53.5	4.7	8	-3.3
Crowley 20	36	1	0.0	65.6	66	65.6	10	----	57.6	8.0	8	0.0
Crowley 21	37	1	0.0	64.5	66	64.5	10	----	56.9	7.6	8	-0.4
Crowley 41	38	1	0.0	62.8	66	62.8	10	----	56.2	6.6	8	-1.4
Crowley 42	39	1	0.0	62.3	66	62.3	10	----	55.7	6.6	8	-1.4
Crowley 22	40	1	0.0	63.6	66	63.6	10	----	56.6	7.0	8	-1.0
Crowley 23	41	1	0.0	59.3	66	59.3	10	----	53.9	5.4	8	-2.6
Crowley 24	42	1	0.0	58.4	66	58.4	10	----	53.4	5.0	8	-3.0
Crowley 25	43	1	0.0	58.2	66	58.2	10	----	53.2	5.0	8	-3.0
Crowley 26	44	1	0.0	62.5	66	62.5	10	----	56.1	6.4	8	-1.6
Crowley 27	45	1	0.0	60.8	66	60.8	10	----	55.4	5.4	8	-2.6
Crowley 28	46	1	0.0	59.6	66	59.6	10	----	54.4	5.2	8	-2.8
Crowley 29	47	1	0.0	56.8	66	56.8	10	----	52.3	4.5	8	-3.5
Crowley 30	48	1	0.0	73.4	66	73.4	10	Snd Lvl	61.8	11.6	8	3.6
Crowley 31	49	1	0.0	71.0	66	71.0	10	Snd Lvl	60.8	10.2	8	2.2
Crowley 32	50	1	0.0	69.2	66	69.2	10	Snd Lvl	60.1	9.1	8	1.1
Crowley 33	51	1	0.0	67.0	66	67.0	10	Snd Lvl	59.1	7.9	8	-0.1
Crowley 34	52	1	0.0	61.3	66	61.3	10	----	56.3	5.0	8	-3.0
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	54.5	4.8	8	-3.2
Crowley 36	54	1	0.0	57.2	66	57.2	10	----	53.0	4.2	8	-3.8
Long Pond 1	55	1	0.0	56.0	66	56.0	10	----	52.4	3.6	8	-4.4
Long Pond 2	56	1	0.0	57.7	66	57.7	10	----	53.7	4.0	8	-4.0
Long Pond 3	57	1	0.0	59.9	66	59.9	10	----	55.2	4.7	8	-3.3
Long Pond 4	58	1	0.0	62.9	66	62.9	10	----	57.2	5.7	8	-2.3
Long Pond 5	59	1	0.0	66.4	66	66.4	10	Snd Lvl	59.3	7.1	8	-0.9
Long Pond 6	60	1	0.0	71.7	66	71.7	10	Snd Lvl	61.7	10.0	8	2.0
Long Pond 7	61	1	0.0	72.8	66	72.8	10	Snd Lvl	62.4	10.4	8	2.4
Long Pond 8	62	1	0.0	73.1	66	73.1	10	Snd Lvl	62.7	10.4	8	2.4
Long Pond 9	63	1	0.0	73.6	66	73.6	10	Snd Lvl	62.9	10.7	8	2.7
Long Pond 10	64	1	0.0	73.2	66	73.2	10	Snd Lvl	62.7	10.5	8	2.5

Long Pond 11	65	1	0.0	72.7	66	72.7	10	Snd Lvl	62.1	10.6	8	2.6
Long Pond 12	66	1	0.0	72.5	66	72.5	10	Snd Lvl	61.8	10.7	8	2.7
Long Pond 13	67	1	0.0	71.3	66	71.3	10	Snd Lvl	61.4	9.9	8	1.9
Long Pond 14	68	1	0.0	71.0	66	71.0	10	Snd Lvl	61.3	9.7	8	1.7
Long Pond 15	69	1	0.0	71.1	66	71.1	10	Snd Lvl	61.5	9.6	8	1.6
Long Pond 16	70	1	0.0	71.2	66	71.2	10	Snd Lvl	61.6	9.6	8	1.6
Long Pond 17	71	1	0.0	71.8	66	71.8	10	Snd Lvl	62.0	9.8	8	1.8
Long Pond 18	72	1	0.0	72.2	66	72.2	10	Snd Lvl	62.3	9.9	8	1.9
Long Pond 19	73	1	0.0	71.6	66	71.6	10	Snd Lvl	62.3	9.3	8	1.3
Long Pond 20	74	1	0.0	70.9	66	70.9	10	Snd Lvl	62.3	8.6	8	0.6
Long Pond 21	75	1	0.0	70.5	66	70.5	10	Snd Lvl	63.0	7.5	8	-0.5
Long Pond 22	76	1	0.0	71.0	66	71.0	10	Snd Lvl	64.4	6.6	8	-1.4
Chardonnay 1	77	1	0.0	61.1	66	61.1	10	----	57.0	4.1	8	-3.9
Chardonnay 2	78	1	0.0	62.6	66	62.6	10	----	58.3	4.3	8	-3.7
Chardonnay 3	79	1	0.0	65.5	66	65.5	10	----	59.6	5.9	8	-2.1
Chardonnay 4	80	1	0.0	67.5	66	67.5	10	Snd Lvl	59.3	8.2	8	0.2
Chardonnay 5	81	1	0.0	65.2	66	65.2	10	----	59.0	6.2	8	-1.8
Chardonnay 6	82	1	0.0	62.1	66	62.1	10	----	58.1	4.0	8	-4.0
Chardonnay 7	83	1	0.0	60.6	66	60.6	10	----	56.6	4.0	8	-4.0
Dunbrooke	84	1	0.0	64.2	66	64.2	10	----	58.3	5.9	8	-2.1
Long Pond 23	85	1	0.0	61.0	66	61.0	10	----	56.8	4.2	8	-3.8
Long Pond 24	86	1	0.0	60.7	66	60.7	10	----	56.9	3.8	8	-4.2
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	55.9	4.3	8	-3.7
Long Pond 26	88	1	0.0	60.2	66	60.2	10	----	56.3	3.9	8	-4.1
Long Pond 27	89	1	0.0	59.0	66	59.0	10	----	56.3	2.7	8	-5.3

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	89	0.0	6.4	13.9
All Impacted	36	0.0	10.0	13.9
All that meet NR Goal	31	8.0	10.8	13.9

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 18 R

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E GM	W	18.00	18.00	18.00	5617	101105				3033140
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	3033140

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 18 R
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
Rutledge 2	2	1	0.0	66.7	66	66.7	10	Snd Lvl	66.7	0.0	8	-8.0
Rutledge 3	3	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
Rutledge 4	4	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
Rutledge 5	5	1	0.0	62.1	66	62.1	10	----	62.0	0.1	8	-7.9
Rutledge 6	6	1	0.0	61.1	66	61.1	10	----	60.9	0.2	8	-7.8
Rutledge 7	7	1	0.0	60.6	66	60.6	10	----	60.4	0.2	8	-7.8
Rutledge 8	8	1	0.0	60.2	66	60.2	10	----	59.9	0.3	8	-7.7
Rutledge 9	9	1	0.0	59.1	66	59.1	10	----	58.6	0.5	8	-7.5
Rutledge 10	10	1	0.0	59.8	66	59.8	10	----	59.4	0.4	8	-7.6
Rutledge 11	11	1	0.0	58.7	66	58.7	10	----	58.0	0.7	8	-7.3
Rutledge 12	12	1	0.0	57.8	66	57.8	10	----	56.9	0.9	8	-7.1
Crowley 1	13	1	0.0	57.3	66	57.3	10	----	56.1	1.2	8	-6.8
Crowley 2	14	1	0.0	59.5	66	59.5	10	----	57.9	1.6	8	-6.4
Crowley 3	15	1	0.0	63.8	66	63.8	10	----	61.5	2.3	8	-5.7
Crowley 4	16	1	0.0	71.6	66	71.6	10	Snd Lvl	66.8	4.8	8	-3.2
Crowley 5	17	1	0.0	75.2	66	75.2	10	Snd Lvl	64.8	10.4	8	2.4
Crowley 6	18	1	0.0	75.8	66	75.8	10	Snd Lvl	64.3	11.5	8	3.5
Crowley 7	19	1	0.0	75.8	66	75.8	10	Snd Lvl	64.3	11.5	8	3.5
Crowley 8	20	1	0.0	76.0	66	76.0	10	Snd Lvl	63.9	12.1	8	4.1
Crowley 9	21	1	0.0	76.0	66	76.0	10	Snd Lvl	63.5	12.5	8	4.5
Crowley 10	22	1	0.0	76.4	66	76.4	10	Snd Lvl	63.4	13.0	8	5.0
Crowley 11	23	1	0.0	76.5	66	76.5	10	Snd Lvl	63.4	13.1	8	5.1

Crowley 12	24	1	0.0	76.2	66	76.2	10	Snd Lvl	63.0	13.2	8	5.2
Crowley 13	25	1	0.0	74.3	66	74.3	10	Snd Lvl	62.5	11.8	8	3.8
Crowley 14	26	1	0.0	72.9	66	72.9	10	Snd Lvl	62.3	10.6	8	2.6
Crowley 15	27	1	0.0	72.5	66	72.5	10	Snd Lvl	62.2	10.3	8	2.3
Crowley 16	28	1	0.0	58.7	66	58.7	10	----	55.8	2.9	8	-5.1
Crowley 17	29	1	0.0	60.7	66	60.7	10	----	57.0	3.7	8	-4.3
Crowley 18	30	1	0.0	63.6	66	63.6	10	----	58.7	4.9	8	-3.1
Crowley 19	31	1	0.0	65.8	66	65.8	10	----	58.5	7.3	8	-0.7
Crowley 37	32	1	0.0	61.9	66	61.9	10	----	56.5	5.4	8	-2.6
Crowley 38	33	1	0.0	59.5	66	59.5	10	----	55.0	4.5	8	-3.5
Crowley 39	34	1	0.0	58.4	66	58.4	10	----	54.1	4.3	8	-3.7
Crowley 40	35	1	0.0	58.2	66	58.2	10	----	53.7	4.5	8	-3.5
Crowley 20	36	1	0.0	65.6	66	65.6	10	----	58.0	7.6	8	-0.4
Crowley 21	37	1	0.0	64.5	66	64.5	10	----	57.3	7.2	8	-0.8
Crowley 41	38	1	0.0	62.8	66	62.8	10	----	56.5	6.3	8	-1.7
Crowley 42	39	1	0.0	62.3	66	62.3	10	----	56.0	6.3	8	-1.7
Crowley 22	40	1	0.0	63.6	66	63.6	10	----	57.0	6.6	8	-1.4
Crowley 23	41	1	0.0	59.3	66	59.3	10	----	54.2	5.1	8	-2.9
Crowley 24	42	1	0.0	58.4	66	58.4	10	----	53.7	4.7	8	-3.3
Crowley 25	43	1	0.0	58.2	66	58.2	10	----	53.4	4.8	8	-3.2
Crowley 26	44	1	0.0	62.5	66	62.5	10	----	56.4	6.1	8	-1.9
Crowley 27	45	1	0.0	60.8	66	60.8	10	----	55.8	5.0	8	-3.0
Crowley 28	46	1	0.0	59.6	66	59.6	10	----	54.8	4.8	8	-3.2
Crowley 29	47	1	0.0	56.8	66	56.8	10	----	52.6	4.2	8	-3.8
Crowley 30	48	1	0.0	73.4	66	73.4	10	Snd Lvl	62.4	11.0	8	3.0
Crowley 31	49	1	0.0	71.0	66	71.0	10	Snd Lvl	61.4	9.6	8	1.6
Crowley 32	50	1	0.0	69.2	66	69.2	10	Snd Lvl	60.7	8.5	8	0.5
Crowley 33	51	1	0.0	67.0	66	67.0	10	Snd Lvl	59.6	7.4	8	-0.6
Crowley 34	52	1	0.0	61.3	66	61.3	10	----	56.7	4.6	8	-3.4
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	54.9	4.4	8	-3.6
Crowley 36	54	1	0.0	57.2	66	57.2	10	----	53.3	3.9	8	-4.1
Long Pond 1	55	1	0.0	56.0	66	56.0	10	----	52.7	3.3	8	-4.7
Long Pond 2	56	1	0.0	57.7	66	57.7	10	----	54.0	3.7	8	-4.3
Long Pond 3	57	1	0.0	59.9	66	59.9	10	----	55.4	4.5	8	-3.5
Long Pond 4	58	1	0.0	62.9	66	62.9	10	----	57.6	5.3	8	-2.7
Long Pond 5	59	1	0.0	66.4	66	66.4	10	Snd Lvl	59.8	6.6	8	-1.4
Long Pond 6	60	1	0.0	71.7	66	71.7	10	Snd Lvl	62.4	9.3	8	1.3
Long Pond 7	61	1	0.0	72.8	66	72.8	10	Snd Lvl	63.2	9.6	8	1.6
Long Pond 8	62	1	0.0	73.1	66	73.1	10	Snd Lvl	63.4	9.7	8	1.7
Long Pond 9	63	1	0.0	73.6	66	73.6	10	Snd Lvl	63.6	10.0	8	2.0
Long Pond 10	64	1	0.0	73.2	66	73.2	10	Snd Lvl	63.4	9.8	8	1.8

Long Pond 11	65	1	0.0	72.7	66	72.7	10	Snd Lvl	62.7	10.0	8	2.0
Long Pond 12	66	1	0.0	72.5	66	72.5	10	Snd Lvl	62.4	10.1	8	2.1
Long Pond 13	67	1	0.0	71.3	66	71.3	10	Snd Lvl	61.9	9.4	8	1.4
Long Pond 14	68	1	0.0	71.0	66	71.0	10	Snd Lvl	61.8	9.2	8	1.2
Long Pond 15	69	1	0.0	71.1	66	71.1	10	Snd Lvl	62.0	9.1	8	1.1
Long Pond 16	70	1	0.0	71.2	66	71.2	10	Snd Lvl	62.1	9.1	8	1.1
Long Pond 17	71	1	0.0	71.8	66	71.8	10	Snd Lvl	62.5	9.3	8	1.3
Long Pond 18	72	1	0.0	72.2	66	72.2	10	Snd Lvl	62.8	9.4	8	1.4
Long Pond 19	73	1	0.0	71.6	66	71.6	10	Snd Lvl	62.8	8.8	8	0.8
Long Pond 20	74	1	0.0	70.9	66	70.9	10	Snd Lvl	62.7	8.2	8	0.2
Long Pond 21	75	1	0.0	70.5	66	70.5	10	Snd Lvl	63.3	7.2	8	-0.8
Long Pond 22	76	1	0.0	71.0	66	71.0	10	Snd Lvl	64.6	6.4	8	-1.6
Chardonnay 1	77	1	0.0	61.1	66	61.1	10	----	57.1	4.0	8	-4.0
Chardonnay 2	78	1	0.0	62.6	66	62.6	10	----	58.4	4.2	8	-3.8
Chardonnay 3	79	1	0.0	65.5	66	65.5	10	----	59.9	5.6	8	-2.4
Chardonnay 4	80	1	0.0	67.5	66	67.5	10	Snd Lvl	59.4	8.1	8	0.1
Chardonnay 5	81	1	0.0	65.2	66	65.2	10	----	59.0	6.2	8	-1.8
Chardonnay 6	82	1	0.0	62.1	66	62.1	10	----	58.2	3.9	8	-4.1
Chardonnay 7	83	1	0.0	60.6	66	60.6	10	----	56.7	3.9	8	-4.1
Dunbrooke	84	1	0.0	64.2	66	64.2	10	----	58.3	5.9	8	-2.1
Long Pond 23	85	1	0.0	61.0	66	61.0	10	----	57.0	4.0	8	-4.0
Long Pond 24	86	1	0.0	60.7	66	60.7	10	----	57.2	3.5	8	-4.5
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	56.3	3.9	8	-4.1
Long Pond 26	88	1	0.0	60.2	66	60.2	10	----	56.6	3.6	8	-4.4
Long Pond 27	89	1	0.0	59.0	66	59.0	10	----	56.8	2.2	8	-5.8

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	89	0.0	6.0	13.2
All Impacted	36	0.0	9.5	13.2
All that meet NR Goal	30	8.1	10.3	13.2

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 16 R

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E GM	W	16.00	16.00	16.00	5617	89871				2696124
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	2696124

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E GM
BARRIER DESIGN: GM 16 R
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
Rutledge 2	2	1	0.0	66.7	66	66.7	10	Snd Lvl	66.7	0.0	8	-8.0
Rutledge 3	3	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
Rutledge 4	4	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
Rutledge 5	5	1	0.0	62.1	66	62.1	10	----	62.0	0.1	8	-7.9
Rutledge 6	6	1	0.0	61.1	66	61.1	10	----	60.9	0.2	8	-7.8
Rutledge 7	7	1	0.0	60.6	66	60.6	10	----	60.4	0.2	8	-7.8
Rutledge 8	8	1	0.0	60.2	66	60.2	10	----	59.9	0.3	8	-7.7
Rutledge 9	9	1	0.0	59.1	66	59.1	10	----	58.6	0.5	8	-7.5
Rutledge 10	10	1	0.0	59.8	66	59.8	10	----	59.4	0.4	8	-7.6
Rutledge 11	11	1	0.0	58.7	66	58.7	10	----	58.0	0.7	8	-7.3
Rutledge 12	12	1	0.0	57.8	66	57.8	10	----	56.9	0.9	8	-7.1
Crowley 1	13	1	0.0	57.3	66	57.3	10	----	56.1	1.2	8	-6.8
Crowley 2	14	1	0.0	59.5	66	59.5	10	----	57.9	1.6	8	-6.4
Crowley 3	15	1	0.0	63.8	66	63.8	10	----	61.6	2.2	8	-5.8
Crowley 4	16	1	0.0	71.6	66	71.6	10	Snd Lvl	67.0	4.6	8	-3.4
Crowley 5	17	1	0.0	75.2	66	75.2	10	Snd Lvl	65.3	9.9	8	1.9
Crowley 6	18	1	0.0	75.8	66	75.8	10	Snd Lvl	64.9	10.9	8	2.9
Crowley 7	19	1	0.0	75.8	66	75.8	10	Snd Lvl	65.1	10.7	8	2.7
Crowley 8	20	1	0.0	76.0	66	76.0	10	Snd Lvl	64.7	11.3	8	3.3
Crowley 9	21	1	0.0	76.0	66	76.0	10	Snd Lvl	64.3	11.7	8	3.7
Crowley 10	22	1	0.0	76.4	66	76.4	10	Snd Lvl	64.2	12.2	8	4.2
Crowley 11	23	1	0.0	76.5	66	76.5	10	Snd Lvl	64.2	12.3	8	4.3

Crowley 12	24	1	0.0	76.2	66	76.2	10	Snd Lvl	63.8	12.4	8	4.4
Crowley 13	25	1	0.0	74.3	66	74.3	10	Snd Lvl	63.1	11.2	8	3.2
Crowley 14	26	1	0.0	72.9	66	72.9	10	Snd Lvl	62.9	10.0	8	2.0
Crowley 15	27	1	0.0	72.5	66	72.5	10	Snd Lvl	62.8	9.7	8	1.7
Crowley 16	28	1	0.0	58.7	66	58.7	10	----	55.9	2.8	8	-5.2
Crowley 17	29	1	0.0	60.7	66	60.7	10	----	57.2	3.5	8	-4.5
Crowley 18	30	1	0.0	63.6	66	63.6	10	----	58.9	4.7	8	-3.3
Crowley 19	31	1	0.0	65.8	66	65.8	10	----	58.9	6.9	8	-1.1
Crowley 37	32	1	0.0	61.9	66	61.9	10	----	56.8	5.1	8	-2.9
Crowley 38	33	1	0.0	59.5	66	59.5	10	----	55.3	4.2	8	-3.8
Crowley 39	34	1	0.0	58.4	66	58.4	10	----	54.3	4.1	8	-3.9
Crowley 40	35	1	0.0	58.2	66	58.2	10	----	54.0	4.2	8	-3.8
Crowley 20	36	1	0.0	65.6	66	65.6	10	----	58.5	7.1	8	-0.9
Crowley 21	37	1	0.0	64.5	66	64.5	10	----	57.8	6.7	8	-1.3
Crowley 41	38	1	0.0	62.8	66	62.8	10	----	56.9	5.9	8	-2.1
Crowley 42	39	1	0.0	62.3	66	62.3	10	----	56.4	5.9	8	-2.1
Crowley 22	40	1	0.0	63.6	66	63.6	10	----	57.4	6.2	8	-1.8
Crowley 23	41	1	0.0	59.3	66	59.3	10	----	54.6	4.7	8	-3.3
Crowley 24	42	1	0.0	58.4	66	58.4	10	----	54.1	4.3	8	-3.7
Crowley 25	43	1	0.0	58.2	66	58.2	10	----	53.8	4.4	8	-3.6
Crowley 26	44	1	0.0	62.5	66	62.5	10	----	56.9	5.6	8	-2.4
Crowley 27	45	1	0.0	60.8	66	60.8	10	----	56.2	4.6	8	-3.4
Crowley 28	46	1	0.0	59.6	66	59.6	10	----	55.3	4.3	8	-3.7
Crowley 29	47	1	0.0	56.8	66	56.8	10	----	52.9	3.9	8	-4.1
Crowley 30	48	1	0.0	73.4	66	73.4	10	Snd Lvl	63.2	10.2	8	2.2
Crowley 31	49	1	0.0	71.0	66	71.0	10	Snd Lvl	62.1	8.9	8	0.9
Crowley 32	50	1	0.0	69.2	66	69.2	10	Snd Lvl	61.3	7.9	8	-0.1
Crowley 33	51	1	0.0	67.0	66	67.0	10	Snd Lvl	60.1	6.9	8	-1.1
Crowley 34	52	1	0.0	61.3	66	61.3	10	----	57.2	4.1	8	-3.9
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	55.2	4.1	8	-3.9
Crowley 36	54	1	0.0	57.2	66	57.2	10	----	53.6	3.6	8	-4.4
Long Pond 1	55	1	0.0	56.0	66	56.0	10	----	53.0	3.0	8	-5.0
Long Pond 2	56	1	0.0	57.7	66	57.7	10	----	54.2	3.5	8	-4.5
Long Pond 3	57	1	0.0	59.9	66	59.9	10	----	55.8	4.1	8	-3.9
Long Pond 4	58	1	0.0	62.9	66	62.9	10	----	58.1	4.8	8	-3.2
Long Pond 5	59	1	0.0	66.4	66	66.4	10	Snd Lvl	60.4	6.0	8	-2.0
Long Pond 6	60	1	0.0	71.7	66	71.7	10	Snd Lvl	63.2	8.5	8	0.5
Long Pond 7	61	1	0.0	72.8	66	72.8	10	Snd Lvl	63.9	8.9	8	0.9
Long Pond 8	62	1	0.0	73.1	66	73.1	10	Snd Lvl	64.1	9.0	8	1.0
Long Pond 9	63	1	0.0	73.6	66	73.6	10	Snd Lvl	64.4	9.2	8	1.2
Long Pond 10	64	1	0.0	73.2	66	73.2	10	Snd Lvl	64.2	9.0	8	1.0

Long Pond 11	65	1	0.0	72.7	66	72.7	10	Snd Lvl	63.5	9.2	8	1.2
Long Pond 12	66	1	0.0	72.5	66	72.5	10	Snd Lvl	63.1	9.4	8	1.4
Long Pond 13	67	1	0.0	71.3	66	71.3	10	Snd Lvl	62.5	8.8	8	0.8
Long Pond 14	68	1	0.0	71.0	66	71.0	10	Snd Lvl	62.4	8.6	8	0.6
Long Pond 15	69	1	0.0	71.1	66	71.1	10	Snd Lvl	62.6	8.5	8	0.5
Long Pond 16	70	1	0.0	71.2	66	71.2	10	Snd Lvl	62.7	8.5	8	0.5
Long Pond 17	71	1	0.0	71.8	66	71.8	10	Snd Lvl	63.2	8.6	8	0.6
Long Pond 18	72	1	0.0	72.2	66	72.2	10	Snd Lvl	63.4	8.8	8	0.8
Long Pond 19	73	1	0.0	71.6	66	71.6	10	Snd Lvl	63.4	8.2	8	0.2
Long Pond 20	74	1	0.0	70.9	66	70.9	10	Snd Lvl	63.2	7.7	8	-0.3
Long Pond 21	75	1	0.0	70.5	66	70.5	10	Snd Lvl	63.7	6.8	8	-1.2
Long Pond 22	76	1	0.0	71.0	66	71.0	10	Snd Lvl	64.9	6.1	8	-1.9
Chardonnay 1	77	1	0.0	61.1	66	61.1	10	----	57.2	3.9	8	-4.1
Chardonnay 2	78	1	0.0	62.6	66	62.6	10	----	58.5	4.1	8	-3.9
Chardonnay 3	79	1	0.0	65.5	66	65.5	10	----	60.1	5.4	8	-2.6
Chardonnay 4	80	1	0.0	67.5	66	67.5	10	Snd Lvl	59.5	8.0	8	0.0
Chardonnay 5	81	1	0.0	65.2	66	65.2	10	----	59.0	6.2	8	-1.8
Chardonnay 6	82	1	0.0	62.1	66	62.1	10	----	58.1	4.0	8	-4.0
Chardonnay 7	83	1	0.0	60.6	66	60.6	10	----	56.6	4.0	8	-4.0
Dunbrooke	84	1	0.0	64.2	66	64.2	10	----	58.3	5.9	8	-2.1
Long Pond 23	85	1	0.0	61.0	66	61.0	10	----	57.1	3.9	8	-4.1
Long Pond 24	86	1	0.0	60.7	66	60.7	10	----	57.5	3.2	8	-4.8
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	56.6	3.6	8	-4.4
Long Pond 26	88	1	0.0	60.2	66	60.2	10	----	57.0	3.2	8	-4.8
Long Pond 27	89	1	0.0	59.0	66	59.0	10	----	57.2	1.8	8	-6.2

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	89	0.0	5.6	12.4
All Impacted	36	0.0	8.8	12.4
All that meet NR Goal	28	8.0	9.7	12.4

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: BM 14 left

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E BM	W	14.00	14.00	14.00	5872	82213				2466394
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	2466394

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: BM 14 left
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	63.8	66	63.8	10	----	62.5	1.3	8	-6.7
Rutledge 2	2	1	0.0	68.3	66	68.3	10	Snd Lvl	65.9	2.4	8	-5.6
Rutledge 3	3	1	0.0	66.0	66	66.0	10	Snd Lvl	62.5	3.5	8	-4.5
Rutledge 4	4	1	0.0	64.3	66	64.3	10	----	60.4	3.9	8	-4.1
Rutledge 5	5	1	0.0	62.7	66	62.7	10	----	58.5	4.2	8	-3.8
Rutledge 6	6	1	0.0	61.7	66	61.7	10	----	57.4	4.3	8	-3.7
Rutledge 7	7	1	0.0	61.3	66	61.3	10	----	56.8	4.5	8	-3.5
Rutledge 8	8	1	0.0	60.9	66	60.9	10	----	56.5	4.4	8	-3.6
Rutledge 9	9	1	0.0	60.2	66	60.2	10	----	55.8	4.4	8	-3.6
Rutledge 10	10	1	0.0	60.7	66	60.7	10	----	56.1	4.6	8	-3.4
Rutledge 11	11	1	0.0	59.9	66	59.9	10	----	55.6	4.3	8	-3.7
Rutledge 12	12	1	0.0	59.1	66	59.1	10	----	55.1	4.0	8	-4.0
Crowley 1	13	1	0.0	58.8	66	58.8	10	----	54.9	3.9	8	-4.1
Crowley 2	14	1	0.0	61.2	66	61.2	10	----	56.9	4.3	8	-3.7
Crowley 3	15	1	0.0	65.2	66	65.2	10	----	60.5	4.7	8	-3.3
Crowley 4	16	1	0.0	72.2	66	72.2	10	Snd Lvl	64.7	7.5	8	-0.5
Crowley 5	17	1	0.0	75.6	66	75.6	10	Snd Lvl	68.1	7.5	8	-0.5
Crowley 6	18	1	0.0	76.2	66	76.2	10	Snd Lvl	71.0	5.2	8	-2.8
Crowley 7	19	1	0.0	76.3	66	76.3	10	Snd Lvl	73.2	3.1	8	-4.9
Crowley 8	20	1	0.0	76.6	66	76.6	10	Snd Lvl	73.8	2.8	8	-5.2
Crowley 9	21	1	0.0	76.6	66	76.6	10	Snd Lvl	73.8	2.8	8	-5.2
Crowley 10	22	1	0.0	76.8	66	76.8	10	Snd Lvl	73.8	3.0	8	-5.0
Crowley 11	23	1	0.0	76.8	66	76.8	10	Snd Lvl	73.4	3.4	8	-4.6

Crowley 12	24	1	0.0	76.7	66	76.7	10	Snd Lvl	71.8	4.9	8	-3.1
Crowley 13	25	1	0.0	75.7	66	75.7	10	Snd Lvl	69.3	6.4	8	-1.6
Crowley 14	26	1	0.0	74.9	66	74.9	10	Snd Lvl	67.3	7.6	8	-0.4
Crowley 15	27	1	0.0	73.3	66	73.3	10	Snd Lvl	65.3	8.0	8	0.0
Crowley 16	28	1	0.0	61.0	66	61.0	10	----	57.2	3.8	8	-4.2
Crowley 17	29	1	0.0	63.1	66	63.1	10	----	58.7	4.4	8	-3.6
Crowley 18	30	1	0.0	65.6	66	65.6	10	----	61.1	4.5	8	-3.5
Crowley 19	31	1	0.0	67.1	66	67.1	10	Snd Lvl	63.3	3.8	8	-4.2
Crowley 37	32	1	0.0	64.3	66	64.3	10	----	60.4	3.9	8	-4.1
Crowley 38	33	1	0.0	61.8	66	61.8	10	----	58.0	3.8	8	-4.2
Crowley 39	34	1	0.0	60.7	66	60.7	10	----	57.1	3.6	8	-4.4
Crowley 40	35	1	0.0	60.2	66	60.2	10	----	56.8	3.4	8	-4.6
Crowley 20	36	1	0.0	67.2	66	67.2	10	Snd Lvl	63.9	3.3	8	-4.7
Crowley 21	37	1	0.0	66.1	66	66.1	10	Snd Lvl	62.6	3.5	8	-4.5
Crowley 41	38	1	0.0	64.6	66	64.6	10	----	61.3	3.3	8	-4.7
Crowley 42	39	1	0.0	63.8	66	63.8	10	----	60.7	3.1	8	-4.9
Crowley 22	40	1	0.0	64.9	66	64.9	10	----	61.1	3.8	8	-4.2
Crowley 23	41	1	0.0	61.4	66	61.4	10	----	57.8	3.6	8	-4.4
Crowley 24	42	1	0.0	60.3	66	60.3	10	----	56.8	3.5	8	-4.5
Crowley 25	43	1	0.0	59.8	66	59.8	10	----	56.2	3.6	8	-4.4
Crowley 26	44	1	0.0	63.5	66	63.5	10	----	59.5	4.0	8	-4.0
Crowley 27	45	1	0.0	62.0	66	62.0	10	----	58.1	3.9	8	-4.1
Crowley 28	46	1	0.0	60.6	66	60.6	10	----	56.7	3.9	8	-4.1
Crowley 29	47	1	0.0	58.2	66	58.2	10	----	54.7	3.5	8	-4.5
Crowley 30	48	1	0.0	72.1	66	72.1	10	Snd Lvl	64.3	7.8	8	-0.2
Crowley 31	49	1	0.0	69.1	66	69.1	10	Snd Lvl	62.8	6.3	8	-1.7
Crowley 32	50	1	0.0	67.4	66	67.4	10	Snd Lvl	61.8	5.6	8	-2.4
Crowley 33	51	1	0.0	65.6	66	65.6	10	----	59.9	5.7	8	-2.3
Crowley 34	52	1	0.0	61.4	66	61.4	10	----	57.8	3.6	8	-4.4
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	55.9	3.4	8	-4.6
Crowley 36	54	1	0.0	58.0	66	58.0	10	----	54.9	3.1	8	-4.9
Long Pond 1	55	1	0.0	56.7	66	56.7	10	----	53.6	3.1	8	-4.9
Long Pond 2	56	1	0.0	57.9	66	57.9	10	----	54.8	3.1	8	-4.9
Long Pond 3	57	1	0.0	59.7	66	59.7	10	----	56.4	3.3	8	-4.7
Long Pond 4	58	1	0.0	62.4	66	62.4	10	----	58.1	4.3	8	-3.7
Long Pond 5	59	1	0.0	66.2	66	66.2	10	Snd Lvl	60.5	5.7	8	-2.3
Long Pond 6	60	1	0.0	71.9	66	71.9	10	Snd Lvl	64.0	7.9	8	-0.1
Long Pond 7	61	1	0.0	73.5	66	73.5	10	Snd Lvl	65.8	7.7	8	-0.3
Long Pond 8	62	1	0.0	74.0	66	74.0	10	Snd Lvl	67.2	6.8	8	-1.2
Long Pond 9	63	1	0.0	74.3	66	74.3	10	Snd Lvl	69.0	5.3	8	-2.7
Long Pond 10	64	1	0.0	73.7	66	73.7	10	Snd Lvl	70.5	3.2	8	-4.8

Long Pond 11	65	1	0.0	73.4	66	73.4	10	Snd Lvl	72.4	1.0	8	-7.0
Long Pond 12	66	1	0.0	73.9	66	73.9	10	Snd Lvl	73.6	0.3	8	-7.7
Long Pond 13	67	1	0.0	73.5	66	73.5	10	Snd Lvl	73.3	0.2	8	-7.8
Long Pond 14	68	1	0.0	73.0	66	73.0	10	Snd Lvl	72.9	0.1	8	-7.9
Long Pond 15	69	1	0.0	73.2	66	73.2	10	Snd Lvl	73.1	0.1	8	-7.9
Long Pond 16	70	1	0.0	73.0	66	73.0	10	Snd Lvl	72.9	0.1	8	-7.9
Long Pond 17	71	1	0.0	73.7	66	73.7	10	Snd Lvl	73.6	0.1	8	-7.9
Long Pond 18	72	1	0.0	74.3	66	74.3	10	Snd Lvl	74.3	0.0	8	-8.0
Long Pond 19	73	1	0.0	73.6	66	73.6	10	Snd Lvl	73.6	0.0	8	-8.0
Long Pond 20	74	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
Long Pond 21	75	1	0.0	72.4	66	72.4	10	Snd Lvl	72.4	0.0	8	-8.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Chardonnay 1	77	1	0.0	62.1	66	62.1	10	----	60.5	1.6	8	-6.4
Chardonnay 2	78	1	0.0	64.0	66	64.0	10	----	62.4	1.6	8	-6.4
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	65.6	1.5	8	-6.5
Chardonnay 4	80	1	0.0	68.1	66	68.1	10	Snd Lvl	62.1	6.0	8	-2.0
Chardonnay 5	81	1	0.0	65.7	66	65.7	10	----	60.8	4.9	8	-3.1
Chardonnay 6	82	1	0.0	62.9	66	62.9	10	----	60.2	2.7	8	-5.3
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	58.5	2.6	8	-5.4
Dunbrooke	84	1	0.0	64.6	66	64.6	10	----	59.8	4.8	8	-3.2
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	61.0	0.9	8	-7.1
Long Pond 24	86	1	0.0	62.0	66	62.0	10	----	61.7	0.3	8	-7.7
Long Pond 25	87	1	0.0	60.3	66	60.3	10	----	60.1	0.2	8	-7.8
Long Pond 26	88	1	0.0	60.1	66	60.1	10	----	59.3	0.8	8	-7.2
Long Pond 27	89	1	0.0	58.7	66	58.7	10	----	57.8	0.9	8	-7.1

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	89	0.0	3.5	8.0
All Impacted	40	0.0	3.6	8.0
All that meet NR Goal	1	8.0	8.0	8.0

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: BM 14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E BM	W	14.00	14.00	14.00	5871	82198				2465953
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	2465953

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: BM 14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
Rutledge 2	2	1	0.0	68.3	66	68.3	10	Snd Lvl	68.2	0.1	8	-7.9
Rutledge 3	3	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
Rutledge 4	4	1	0.0	64.3	66	64.3	10	----	64.2	0.1	8	-7.9
Rutledge 5	5	1	0.0	62.7	66	62.7	10	----	62.5	0.2	8	-7.8
Rutledge 6	6	1	0.0	61.7	66	61.7	10	----	61.4	0.3	8	-7.7
Rutledge 7	7	1	0.0	61.3	66	61.3	10	----	60.8	0.5	8	-7.5
Rutledge 8	8	1	0.0	60.9	66	60.9	10	----	60.3	0.6	8	-7.4
Rutledge 9	9	1	0.0	60.2	66	60.2	10	----	59.2	1.0	8	-7.0
Rutledge 10	10	1	0.0	60.7	66	60.7	10	----	60.0	0.7	8	-7.3
Rutledge 11	11	1	0.0	59.9	66	59.9	10	----	58.7	1.2	8	-6.8
Rutledge 12	12	1	0.0	59.1	66	59.1	10	----	57.6	1.5	8	-6.5
Crowley 1	13	1	0.0	58.8	66	58.8	10	----	57.1	1.7	8	-6.3
Crowley 2	14	1	0.0	61.2	66	61.2	10	----	58.9	2.3	8	-5.7
Crowley 3	15	1	0.0	65.2	66	65.2	10	----	62.0	3.2	8	-4.8
Crowley 4	16	1	0.0	72.2	66	72.2	10	Snd Lvl	65.6	6.6	8	-1.4
Crowley 5	17	1	0.0	75.6	66	75.6	10	Snd Lvl	68.4	7.2	8	-0.8
Crowley 6	18	1	0.0	76.2	66	76.2	10	Snd Lvl	71.1	5.1	8	-2.9
Crowley 7	19	1	0.0	76.3	66	76.3	10	Snd Lvl	73.3	3.0	8	-5.0
Crowley 8	20	1	0.0	76.6	66	76.6	10	Snd Lvl	73.8	2.8	8	-5.2
Crowley 9	21	1	0.0	76.6	66	76.6	10	Snd Lvl	73.8	2.8	8	-5.2
Crowley 10	22	1	0.0	76.8	66	76.8	10	Snd Lvl	73.8	3.0	8	-5.0
Crowley 11	23	1	0.0	76.8	66	76.8	10	Snd Lvl	73.4	3.4	8	-4.6

Crowley 12	24	1	0.0	76.7	66	76.7	10	Snd Lvl	71.8	4.9	8	-3.1
Crowley 13	25	1	0.0	75.7	66	75.7	10	Snd Lvl	69.3	6.4	8	-1.6
Crowley 14	26	1	0.0	74.9	66	74.9	10	Snd Lvl	67.3	7.6	8	-0.4
Crowley 15	27	1	0.0	73.3	66	73.3	10	Snd Lvl	65.2	8.1	8	0.1
Crowley 16	28	1	0.0	61.0	66	61.0	10	----	57.7	3.3	8	-4.7
Crowley 17	29	1	0.0	63.1	66	63.1	10	----	59.2	3.9	8	-4.1
Crowley 18	30	1	0.0	65.6	66	65.6	10	----	61.5	4.1	8	-3.9
Crowley 19	31	1	0.0	67.1	66	67.1	10	Snd Lvl	63.4	3.7	8	-4.3
Crowley 37	32	1	0.0	64.3	66	64.3	10	----	60.7	3.6	8	-4.4
Crowley 38	33	1	0.0	61.8	66	61.8	10	----	58.4	3.4	8	-4.6
Crowley 39	34	1	0.0	60.7	66	60.7	10	----	57.4	3.3	8	-4.7
Crowley 40	35	1	0.0	60.2	66	60.2	10	----	57.2	3.0	8	-5.0
Crowley 20	36	1	0.0	67.2	66	67.2	10	Snd Lvl	63.9	3.3	8	-4.7
Crowley 21	37	1	0.0	66.1	66	66.1	10	Snd Lvl	62.5	3.6	8	-4.4
Crowley 41	38	1	0.0	64.6	66	64.6	10	----	61.5	3.1	8	-4.9
Crowley 42	39	1	0.0	63.8	66	63.8	10	----	60.8	3.0	8	-5.0
Crowley 22	40	1	0.0	64.9	66	64.9	10	----	61.0	3.9	8	-4.1
Crowley 23	41	1	0.0	61.4	66	61.4	10	----	57.7	3.7	8	-4.3
Crowley 24	42	1	0.0	60.3	66	60.3	10	----	56.7	3.6	8	-4.4
Crowley 25	43	1	0.0	59.8	66	59.8	10	----	56.1	3.7	8	-4.3
Crowley 26	44	1	0.0	63.5	66	63.5	10	----	59.5	4.0	8	-4.0
Crowley 27	45	1	0.0	62.0	66	62.0	10	----	58.0	4.0	8	-4.0
Crowley 28	46	1	0.0	60.6	66	60.6	10	----	56.7	3.9	8	-4.1
Crowley 29	47	1	0.0	58.2	66	58.2	10	----	54.5	3.7	8	-4.3
Crowley 30	48	1	0.0	72.1	66	72.1	10	Snd Lvl	64.2	7.9	8	-0.1
Crowley 31	49	1	0.0	69.1	66	69.1	10	Snd Lvl	62.5	6.6	8	-1.4
Crowley 32	50	1	0.0	67.4	66	67.4	10	Snd Lvl	61.3	6.1	8	-1.9
Crowley 33	51	1	0.0	65.6	66	65.6	10	----	59.8	5.8	8	-2.2
Crowley 34	52	1	0.0	61.4	66	61.4	10	----	57.8	3.6	8	-4.4
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	55.9	3.4	8	-4.6
Crowley 36	54	1	0.0	58.0	66	58.0	10	----	54.8	3.2	8	-4.8
Long Pond 1	55	1	0.0	56.7	66	56.7	10	----	53.6	3.1	8	-4.9
Long Pond 2	56	1	0.0	57.9	66	57.9	10	----	54.7	3.2	8	-4.8
Long Pond 3	57	1	0.0	59.7	66	59.7	10	----	56.4	3.3	8	-4.7
Long Pond 4	58	1	0.0	62.4	66	62.4	10	----	58.2	4.2	8	-3.8
Long Pond 5	59	1	0.0	66.2	66	66.2	10	Snd Lvl	60.6	5.6	8	-2.4
Long Pond 6	60	1	0.0	71.9	66	71.9	10	Snd Lvl	63.5	8.4	8	0.4
Long Pond 7	61	1	0.0	73.5	66	73.5	10	Snd Lvl	65.1	8.4	8	0.4
Long Pond 8	62	1	0.0	74.0	66	74.0	10	Snd Lvl	66.3	7.7	8	-0.3
Long Pond 9	63	1	0.0	74.3	66	74.3	10	Snd Lvl	67.4	6.9	8	-1.1
Long Pond 10	64	1	0.0	73.7	66	73.7	10	Snd Lvl	67.4	6.3	8	-1.7

Long Pond 11	65	1	0.0	73.4	66	73.4	10	Snd Lvl	66.6	6.8	8	-1.2
Long Pond 12	66	1	0.0	73.9	66	73.9	10	Snd Lvl	65.8	8.1	8	0.1
Long Pond 13	67	1	0.0	73.5	66	73.5	10	Snd Lvl	65.0	8.5	8	0.5
Long Pond 14	68	1	0.0	73.0	66	73.0	10	Snd Lvl	64.8	8.2	8	0.2
Long Pond 15	69	1	0.0	73.2	66	73.2	10	Snd Lvl	65.0	8.2	8	0.2
Long Pond 16	70	1	0.0	73.0	66	73.0	10	Snd Lvl	65.2	7.8	8	-0.2
Long Pond 17	71	1	0.0	73.7	66	73.7	10	Snd Lvl	65.8	7.9	8	-0.1
Long Pond 18	72	1	0.0	74.3	66	74.3	10	Snd Lvl	66.0	8.3	8	0.3
Long Pond 19	73	1	0.0	73.6	66	73.6	10	Snd Lvl	65.8	7.8	8	-0.2
Long Pond 20	74	1	0.0	72.9	66	72.9	10	Snd Lvl	65.4	7.5	8	-0.5
Long Pond 21	75	1	0.0	72.4	66	72.4	10	Snd Lvl	65.4	7.0	8	-1.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	66.3	6.5	8	-1.5
Chardonnay 1	77	1	0.0	62.1	66	62.1	10	----	57.7	4.4	8	-3.6
Chardonnay 2	78	1	0.0	64.0	66	64.0	10	----	59.1	4.9	8	-3.1
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	61.3	5.8	8	-2.2
Chardonnay 4	80	1	0.0	68.1	66	68.1	10	Snd Lvl	59.9	8.2	8	0.2
Chardonnay 5	81	1	0.0	65.7	66	65.7	10	----	59.4	6.3	8	-1.7
Chardonnay 6	82	1	0.0	62.9	66	62.9	10	----	58.3	4.6	8	-3.4
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	56.8	4.3	8	-3.7
Dunbrooke	84	1	0.0	64.6	66	64.6	10	----	58.5	6.1	8	-1.9
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	58.0	3.9	8	-4.1
Long Pond 24	86	1	0.0	62.0	66	62.0	10	----	58.3	3.7	8	-4.3
Long Pond 25	87	1	0.0	60.3	66	60.3	10	----	58.2	2.1	8	-5.9
Long Pond 26	88	1	0.0	60.1	66	60.1	10	----	58.7	1.4	8	-6.6
Long Pond 27	89	1	0.0	58.7	66	58.7	10	----	58.3	0.4	8	-7.6

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	89	0.0	4.4	8.5
All Impacted	40	0.0	6.1	8.5
All that meet NR Goal	9	8.1	8.3	8.5

Stantec 12 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: BM 14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E BM	W	14.00	14.00	14.00	7828	109591				3287729
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	3287729

Stantec
M. Drauer

12 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: BM 14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	63.8	66	63.8	10	----	62.5	1.3	8	-6.7
Rutledge 2	2	1	0.0	68.3	66	68.3	10	Snd Lvl	65.9	2.4	8	-5.6
Rutledge 3	3	1	0.0	66.0	66	66.0	10	Snd Lvl	62.5	3.5	8	-4.5
Rutledge 4	4	1	0.0	64.3	66	64.3	10	----	60.4	3.9	8	-4.1
Rutledge 5	5	1	0.0	62.7	66	62.7	10	----	58.4	4.3	8	-3.7
Rutledge 6	6	1	0.0	61.7	66	61.7	10	----	57.4	4.3	8	-3.7
Rutledge 7	7	1	0.0	61.3	66	61.3	10	----	56.8	4.5	8	-3.5
Rutledge 8	8	1	0.0	60.9	66	60.9	10	----	56.4	4.5	8	-3.5
Rutledge 9	9	1	0.0	60.2	66	60.2	10	----	55.7	4.5	8	-3.5
Rutledge 10	10	1	0.0	60.7	66	60.7	10	----	56.1	4.6	8	-3.4
Rutledge 11	11	1	0.0	59.9	66	59.9	10	----	55.6	4.3	8	-3.7
Rutledge 12	12	1	0.0	59.1	66	59.1	10	----	55.1	4.0	8	-4.0
Crowley 1	13	1	0.0	58.8	66	58.8	10	----	54.8	4.0	8	-4.0
Crowley 2	14	1	0.0	61.2	66	61.2	10	----	56.8	4.4	8	-3.6
Crowley 3	15	1	0.0	65.2	66	65.2	10	----	60.4	4.8	8	-3.2
Crowley 4	16	1	0.0	72.2	66	72.2	10	Snd Lvl	64.7	7.5	8	-0.5
Crowley 5	17	1	0.0	75.6	66	75.6	10	Snd Lvl	68.1	7.5	8	-0.5
Crowley 6	18	1	0.0	76.2	66	76.2	10	Snd Lvl	71.0	5.2	8	-2.8
Crowley 7	19	1	0.0	76.3	66	76.3	10	Snd Lvl	73.2	3.1	8	-4.9
Crowley 8	20	1	0.0	76.6	66	76.6	10	Snd Lvl	73.8	2.8	8	-5.2
Crowley 9	21	1	0.0	76.6	66	76.6	10	Snd Lvl	73.8	2.8	8	-5.2
Crowley 10	22	1	0.0	76.8	66	76.8	10	Snd Lvl	73.8	3.0	8	-5.0
Crowley 11	23	1	0.0	76.8	66	76.8	10	Snd Lvl	73.4	3.4	8	-4.6

Crowley 12	24	1	0.0	76.7	66	76.7	10	Snd Lvl	71.8	4.9	8	-3.1
Crowley 13	25	1	0.0	75.7	66	75.7	10	Snd Lvl	69.3	6.4	8	-1.6
Crowley 14	26	1	0.0	74.9	66	74.9	10	Snd Lvl	67.3	7.6	8	-0.4
Crowley 15	27	1	0.0	73.3	66	73.3	10	Snd Lvl	65.2	8.1	8	0.1
Crowley 16	28	1	0.0	61.0	66	61.0	10	----	57.2	3.8	8	-4.2
Crowley 17	29	1	0.0	63.1	66	63.1	10	----	58.7	4.4	8	-3.6
Crowley 18	30	1	0.0	65.6	66	65.6	10	----	61.1	4.5	8	-3.5
Crowley 19	31	1	0.0	67.1	66	67.1	10	Snd Lvl	63.3	3.8	8	-4.2
Crowley 37	32	1	0.0	64.3	66	64.3	10	----	60.4	3.9	8	-4.1
Crowley 38	33	1	0.0	61.8	66	61.8	10	----	58.0	3.8	8	-4.2
Crowley 39	34	1	0.0	60.7	66	60.7	10	----	57.0	3.7	8	-4.3
Crowley 40	35	1	0.0	60.2	66	60.2	10	----	56.8	3.4	8	-4.6
Crowley 20	36	1	0.0	67.2	66	67.2	10	Snd Lvl	63.9	3.3	8	-4.7
Crowley 21	37	1	0.0	66.1	66	66.1	10	Snd Lvl	62.5	3.6	8	-4.4
Crowley 41	38	1	0.0	64.6	66	64.6	10	----	61.2	3.4	8	-4.6
Crowley 42	39	1	0.0	63.8	66	63.8	10	----	60.7	3.1	8	-4.9
Crowley 22	40	1	0.0	64.9	66	64.9	10	----	61.0	3.9	8	-4.1
Crowley 23	41	1	0.0	61.4	66	61.4	10	----	57.7	3.7	8	-4.3
Crowley 24	42	1	0.0	60.3	66	60.3	10	----	56.7	3.6	8	-4.4
Crowley 25	43	1	0.0	59.8	66	59.8	10	----	56.2	3.6	8	-4.4
Crowley 26	44	1	0.0	63.5	66	63.5	10	----	59.5	4.0	8	-4.0
Crowley 27	45	1	0.0	62.0	66	62.0	10	----	58.0	4.0	8	-4.0
Crowley 28	46	1	0.0	60.6	66	60.6	10	----	56.7	3.9	8	-4.1
Crowley 29	47	1	0.0	58.2	66	58.2	10	----	54.6	3.6	8	-4.4
Crowley 30	48	1	0.0	72.1	66	72.1	10	Snd Lvl	64.2	7.9	8	-0.1
Crowley 31	49	1	0.0	69.1	66	69.1	10	Snd Lvl	62.5	6.6	8	-1.4
Crowley 32	50	1	0.0	67.4	66	67.4	10	Snd Lvl	61.3	6.1	8	-1.9
Crowley 33	51	1	0.0	65.6	66	65.6	10	----	59.8	5.8	8	-2.2
Crowley 34	52	1	0.0	61.4	66	61.4	10	----	57.8	3.6	8	-4.4
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	55.9	3.4	8	-4.6
Crowley 36	54	1	0.0	58.0	66	58.0	10	----	54.8	3.2	8	-4.8
Long Pond 1	55	1	0.0	56.7	66	56.7	10	----	53.6	3.1	8	-4.9
Long Pond 2	56	1	0.0	57.9	66	57.9	10	----	54.7	3.2	8	-4.8
Long Pond 3	57	1	0.0	59.7	66	59.7	10	----	56.4	3.3	8	-4.7
Long Pond 4	58	1	0.0	62.4	66	62.4	10	----	58.2	4.2	8	-3.8
Long Pond 5	59	1	0.0	66.2	66	66.2	10	Snd Lvl	60.6	5.6	8	-2.4
Long Pond 6	60	1	0.0	71.9	66	71.9	10	Snd Lvl	63.5	8.4	8	0.4
Long Pond 7	61	1	0.0	73.5	66	73.5	10	Snd Lvl	65.1	8.4	8	0.4
Long Pond 8	62	1	0.0	74.0	66	74.0	10	Snd Lvl	66.3	7.7	8	-0.3
Long Pond 9	63	1	0.0	74.3	66	74.3	10	Snd Lvl	67.4	6.9	8	-1.1
Long Pond 10	64	1	0.0	73.7	66	73.7	10	Snd Lvl	67.4	6.3	8	-1.7

Long Pond 11	65	1	0.0	73.4	66	73.4	10	Snd Lvl	66.6	6.8	8	-1.2
Long Pond 12	66	1	0.0	73.9	66	73.9	10	Snd Lvl	65.8	8.1	8	0.1
Long Pond 13	67	1	0.0	73.5	66	73.5	10	Snd Lvl	65.0	8.5	8	0.5
Long Pond 14	68	1	0.0	73.0	66	73.0	10	Snd Lvl	64.8	8.2	8	0.2
Long Pond 15	69	1	0.0	73.2	66	73.2	10	Snd Lvl	65.0	8.2	8	0.2
Long Pond 16	70	1	0.0	73.0	66	73.0	10	Snd Lvl	65.2	7.8	8	-0.2
Long Pond 17	71	1	0.0	73.7	66	73.7	10	Snd Lvl	65.8	7.9	8	-0.1
Long Pond 18	72	1	0.0	74.3	66	74.3	10	Snd Lvl	66.0	8.3	8	0.3
Long Pond 19	73	1	0.0	73.6	66	73.6	10	Snd Lvl	65.8	7.8	8	-0.2
Long Pond 20	74	1	0.0	72.9	66	72.9	10	Snd Lvl	65.4	7.5	8	-0.5
Long Pond 21	75	1	0.0	72.4	66	72.4	10	Snd Lvl	65.4	7.0	8	-1.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	66.3	6.5	8	-1.5
Chardonnay 1	77	1	0.0	62.1	66	62.1	10	----	57.7	4.4	8	-3.6
Chardonnay 2	78	1	0.0	64.0	66	64.0	10	----	59.1	4.9	8	-3.1
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	61.3	5.8	8	-2.2
Chardonnay 4	80	1	0.0	68.1	66	68.1	10	Snd Lvl	59.9	8.2	8	0.2
Chardonnay 5	81	1	0.0	65.7	66	65.7	10	----	59.4	6.3	8	-1.7
Chardonnay 6	82	1	0.0	62.9	66	62.9	10	----	58.3	4.6	8	-3.4
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	56.8	4.3	8	-3.7
Dunbrooke	84	1	0.0	64.6	66	64.6	10	----	58.5	6.1	8	-1.9
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	58.0	3.9	8	-4.1
Long Pond 24	86	1	0.0	62.0	66	62.0	10	----	58.2	3.8	8	-4.2
Long Pond 25	87	1	0.0	60.3	66	60.3	10	----	58.2	2.1	8	-5.9
Long Pond 26	88	1	0.0	60.1	66	60.1	10	----	58.7	1.4	8	-6.6
Long Pond 27	89	1	0.0	58.7	66	58.7	10	----	58.3	0.4	8	-7.6

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	89	0.4	4.9	8.5
All Impacted	40	2.4	6.2	8.5
All that meet NR Goal	9	8.1	8.3	8.5

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: BM 14 far left

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NSA E BM	W	14.00	14.00	14.00	4696	65743				1972281
14' existing	W	14.00	14.00	14.00	1842	25786				0
									Total Cost:	1972281

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA E BM
BARRIER DESIGN: BM 14 far left
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	63.8	66	63.8	10	----	62.5	1.3	8	-6.7
Rutledge 2	2	1	0.0	68.3	66	68.3	10	Snd Lvl	65.9	2.4	8	-5.6
Rutledge 3	3	1	0.0	66.0	66	66.0	10	Snd Lvl	62.5	3.5	8	-4.5
Rutledge 4	4	1	0.0	64.3	66	64.3	10	----	60.4	3.9	8	-4.1
Rutledge 5	5	1	0.0	62.7	66	62.7	10	----	58.5	4.2	8	-3.8
Rutledge 6	6	1	0.0	61.7	66	61.7	10	----	57.4	4.3	8	-3.7
Rutledge 7	7	1	0.0	61.3	66	61.3	10	----	56.9	4.4	8	-3.6
Rutledge 8	8	1	0.0	60.9	66	60.9	10	----	56.5	4.4	8	-3.6
Rutledge 9	9	1	0.0	60.2	66	60.2	10	----	55.9	4.3	8	-3.7
Rutledge 10	10	1	0.0	60.7	66	60.7	10	----	56.2	4.5	8	-3.5
Rutledge 11	11	1	0.0	59.9	66	59.9	10	----	55.7	4.2	8	-3.8
Rutledge 12	12	1	0.0	59.1	66	59.1	10	----	55.2	3.9	8	-4.1
Crowley 1	13	1	0.0	58.8	66	58.8	10	----	55.0	3.8	8	-4.2
Crowley 2	14	1	0.0	61.2	66	61.2	10	----	56.9	4.3	8	-3.7
Crowley 3	15	1	0.0	65.2	66	65.2	10	----	60.5	4.7	8	-3.3
Crowley 4	16	1	0.0	72.2	66	72.2	10	Snd Lvl	64.7	7.5	8	-0.5
Crowley 5	17	1	0.0	75.6	66	75.6	10	Snd Lvl	68.1	7.5	8	-0.5
Crowley 6	18	1	0.0	76.2	66	76.2	10	Snd Lvl	71.0	5.2	8	-2.8
Crowley 7	19	1	0.0	76.3	66	76.3	10	Snd Lvl	73.2	3.1	8	-4.9
Crowley 8	20	1	0.0	76.6	66	76.6	10	Snd Lvl	73.8	2.8	8	-5.2
Crowley 9	21	1	0.0	76.6	66	76.6	10	Snd Lvl	73.8	2.8	8	-5.2
Crowley 10	22	1	0.0	76.8	66	76.8	10	Snd Lvl	73.8	3.0	8	-5.0
Crowley 11	23	1	0.0	76.8	66	76.8	10	Snd Lvl	73.4	3.4	8	-4.6

Crowley 12	24	1	0.0	76.7	66	76.7	10	Snd Lvl	71.8	4.9	8	-3.1
Crowley 13	25	1	0.0	75.7	66	75.7	10	Snd Lvl	69.4	6.3	8	-1.7
Crowley 14	26	1	0.0	74.9	66	74.9	10	Snd Lvl	67.4	7.5	8	-0.5
Crowley 15	27	1	0.0	73.3	66	73.3	10	Snd Lvl	65.5	7.8	8	-0.2
Crowley 16	28	1	0.0	61.0	66	61.0	10	----	57.4	3.6	8	-4.4
Crowley 17	29	1	0.0	63.1	66	63.1	10	----	58.8	4.3	8	-3.7
Crowley 18	30	1	0.0	65.6	66	65.6	10	----	61.2	4.4	8	-3.6
Crowley 19	31	1	0.0	67.1	66	67.1	10	Snd Lvl	63.4	3.7	8	-4.3
Crowley 37	32	1	0.0	64.3	66	64.3	10	----	60.5	3.8	8	-4.2
Crowley 38	33	1	0.0	61.8	66	61.8	10	----	58.2	3.6	8	-4.4
Crowley 39	34	1	0.0	60.7	66	60.7	10	----	57.2	3.5	8	-4.5
Crowley 40	35	1	0.0	60.2	66	60.2	10	----	57.0	3.2	8	-4.8
Crowley 20	36	1	0.0	67.2	66	67.2	10	Snd Lvl	64.0	3.2	8	-4.8
Crowley 21	37	1	0.0	66.1	66	66.1	10	Snd Lvl	62.7	3.4	8	-4.6
Crowley 41	38	1	0.0	64.6	66	64.6	10	----	61.4	3.2	8	-4.8
Crowley 42	39	1	0.0	63.8	66	63.8	10	----	60.8	3.0	8	-5.0
Crowley 22	40	1	0.0	64.9	66	64.9	10	----	61.3	3.6	8	-4.4
Crowley 23	41	1	0.0	61.4	66	61.4	10	----	58.0	3.4	8	-4.6
Crowley 24	42	1	0.0	60.3	66	60.3	10	----	57.0	3.3	8	-4.7
Crowley 25	43	1	0.0	59.8	66	59.8	10	----	56.6	3.2	8	-4.8
Crowley 26	44	1	0.0	63.5	66	63.5	10	----	59.9	3.6	8	-4.4
Crowley 27	45	1	0.0	62.0	66	62.0	10	----	58.7	3.3	8	-4.7
Crowley 28	46	1	0.0	60.6	66	60.6	10	----	57.7	2.9	8	-5.1
Crowley 29	47	1	0.0	58.2	66	58.2	10	----	55.3	2.9	8	-5.1
Crowley 30	48	1	0.0	72.1	66	72.1	10	Snd Lvl	64.8	7.3	8	-0.7
Crowley 31	49	1	0.0	69.1	66	69.1	10	Snd Lvl	63.8	5.3	8	-2.7
Crowley 32	50	1	0.0	67.4	66	67.4	10	Snd Lvl	63.4	4.0	8	-4.0
Crowley 33	51	1	0.0	65.6	66	65.6	10	----	62.9	2.7	8	-5.3
Crowley 34	52	1	0.0	61.4	66	61.4	10	----	60.1	1.3	8	-6.7
Crowley 35	53	1	0.0	59.3	66	59.3	10	----	57.6	1.7	8	-6.3
Crowley 36	54	1	0.0	58.0	66	58.0	10	----	56.3	1.7	8	-6.3
Long Pond 1	55	1	0.0	56.7	66	56.7	10	----	55.0	1.7	8	-6.3
Long Pond 2	56	1	0.0	57.9	66	57.9	10	----	56.3	1.6	8	-6.4
Long Pond 3	57	1	0.0	59.7	66	59.7	10	----	58.4	1.3	8	-6.7
Long Pond 4	58	1	0.0	62.4	66	62.4	10	----	60.9	1.5	8	-6.5
Long Pond 5	59	1	0.0	66.2	66	66.2	10	Snd Lvl	65.5	0.7	8	-7.3
Long Pond 6	60	1	0.0	71.9	66	71.9	10	Snd Lvl	71.7	0.2	8	-7.8
Long Pond 7	61	1	0.0	73.5	66	73.5	10	Snd Lvl	73.4	0.1	8	-7.9
Long Pond 8	62	1	0.0	74.0	66	74.0	10	Snd Lvl	74.0	0.0	8	-8.0
Long Pond 9	63	1	0.0	74.3	66	74.3	10	Snd Lvl	74.3	0.0	8	-8.0
Long Pond 10	64	1	0.0	73.7	66	73.7	10	Snd Lvl	73.7	0.0	8	-8.0

Long Pond 11	65	1	0.0	73.4	66	73.4	10	Snd Lvl	73.4	0.0	8	-8.0
Long Pond 12	66	1	0.0	73.9	66	73.9	10	Snd Lvl	73.9	0.0	8	-8.0
Long Pond 13	67	1	0.0	73.5	66	73.5	10	Snd Lvl	73.5	0.0	8	-8.0
Long Pond 14	68	1	0.0	73.0	66	73.0	10	Snd Lvl	73.0	0.0	8	-8.0
Long Pond 15	69	1	0.0	73.2	66	73.2	10	Snd Lvl	73.2	0.0	8	-8.0
Long Pond 16	70	1	0.0	73.0	66	73.0	10	Snd Lvl	73.0	0.0	8	-8.0
Long Pond 17	71	1	0.0	73.7	66	73.7	10	Snd Lvl	73.7	0.0	8	-8.0
Long Pond 18	72	1	0.0	74.3	66	74.3	10	Snd Lvl	74.3	0.0	8	-8.0
Long Pond 19	73	1	0.0	73.6	66	73.6	10	Snd Lvl	73.6	0.0	8	-8.0
Long Pond 20	74	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
Long Pond 21	75	1	0.0	72.4	66	72.4	10	Snd Lvl	72.4	0.0	8	-8.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Chardonnay 1	77	1	0.0	62.1	66	62.1	10	----	60.5	1.6	8	-6.4
Chardonnay 2	78	1	0.0	64.0	66	64.0	10	----	62.4	1.6	8	-6.4
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	65.6	1.5	8	-6.5
Chardonnay 4	80	1	0.0	68.1	66	68.1	10	Snd Lvl	62.1	6.0	8	-2.0
Chardonnay 5	81	1	0.0	65.7	66	65.7	10	----	60.8	4.9	8	-3.1
Chardonnay 6	82	1	0.0	62.9	66	62.9	10	----	60.3	2.6	8	-5.4
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	58.5	2.6	8	-5.4
Dunbrooke	84	1	0.0	64.6	66	64.6	10	----	59.8	4.8	8	-3.2
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	61.0	0.9	8	-7.1
Long Pond 24	86	1	0.0	62.0	66	62.0	10	----	61.7	0.3	8	-7.7
Long Pond 25	87	1	0.0	60.3	66	60.3	10	----	60.2	0.1	8	-7.9
Long Pond 26	88	1	0.0	60.1	66	60.1	10	----	59.7	0.4	8	-7.6
Long Pond 27	89	1	0.0	58.7	66	58.7	10	----	58.0	0.7	8	-7.3

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	89	0.0	2.8	7.8
All Impacted	40	0.0	2.6	7.8
All that meet NR Goal	0	0.0	0.0	0.0

Barrier Analysis

NSA F

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA F GM
BARRIER DESIGN: Fox GM

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Fox 1 BM	W	16.00	16.00	16.00	1240	19836				595074
									Total Cost:	595074

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA F GM
BARRIER DESIGN: Fox GM
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Fox 35	1	1	0.0	71.5	66	71.5	10	Snd Lvl	64.0	7.5	8	-0.5
Good Life 45	2	1	0.0	76.1	66	76.1	10	Snd Lvl	69.2	6.9	8	-1.1

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	2	6.9	7.2	7.5
All Impacted	2	6.9	7.2	7.5
All that meet NR Goal	0	0.0	0.0	0.0

Stantec 22 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA F BM
BARRIER DESIGN: Fox BM 14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Fox 1 BM	W	14.00	14.00	14.00	1243	17403				522091
									Total Cost:	522091

Stantec
M. Drauer

22 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA F BM
BARRIER DESIGN: Fox BM 14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Fox 35	1	1	0.0	71.5	66	71.5	10	Snd Lvl	64.4	7.1	8	-0.9
Good Life 45	2	1	0.0	76.1	66	76.1	10	Snd Lvl	69.2	6.9	8	-1.1

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	2	6.9	7.0	7.1
All Impacted	2	6.9	7.0	7.1
All that meet NR Goal	0	0.0	0.0	0.0

Barrier Analysis

NSA G

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G BM
BARRIER DESIGN: Existing 22

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier11	W	0.00	0.00	0.00	0	0				0
14' existing	W	22.00	22.00	22.00	1842	40521				1215636
									Total Cost:	1215636

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G BM
BARRIER DESIGN: Existing 22
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Long Pond 21	75	1	0.0	72.5	66	72.5	10	Snd Lvl	72.5	0.0	8	-8.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Chardonnay 1	77	1	0.0	62.0	66	62.0	10	----	60.2	1.8	8	-6.2
Chardonnay 2	78	1	0.0	63.9	66	63.9	10	----	62.0	1.9	8	-6.1
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	65.4	1.7	8	-6.3
Chardonnay 4	80	1	0.0	68.0	66	68.0	10	Snd Lvl	61.0	7.0	8	-1.0
Chardonnay 5	81	1	0.0	65.6	66	65.6	10	----	59.5	6.1	8	-1.9
Chardonnay 6	82	1	0.0	62.8	66	62.8	10	----	59.5	3.3	8	-4.7
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	58.0	3.1	8	-4.9
Dunbrooke	84	1	0.0	64.5	66	64.5	10	----	58.4	6.1	8	-1.9
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	60.9	1.0	8	-7.0
Dunbrooke 1	90	1	0.0	62.3	66	62.3	10	----	58.2	4.1	8	-3.9
Dunbrooke 2	91	1	0.0	64.6	66	64.6	10	----	56.9	7.7	8	-0.3
Dunbrooke 3	92	1	0.0	64.7	66	64.7	10	----	56.4	8.3	8	0.3
Dunbrooke 4	93	1	0.0	64.4	66	64.4	10	----	56.3	8.1	8	0.1
Dunbrooke 5	94	1	0.0	63.6	66	63.6	10	----	56.7	6.9	8	-1.1
Dunbrooke 6	95	1	0.0	62.9	66	62.9	10	----	56.6	6.3	8	-1.7
Dunbrooke 7	96	1	0.0	60.4	66	60.4	10	----	56.5	3.9	8	-4.1
Dunbrooke 8	97	1	0.0	59.5	66	59.5	10	----	56.3	3.2	8	-4.8
Dunbrooke 9	98	1	0.0	61.3	66	61.3	10	----	56.9	4.4	8	-3.6
Dunbrooke 10	99	1	0.0	63.7	66	63.7	10	----	56.2	7.5	8	-0.5
Dunbrooke 11	100	1	0.0	63.5	66	63.5	10	----	56.2	7.3	8	-0.7
Tennis Ct.	101	1	0.0	63.6	66	63.6	10	----	57.1	6.5	8	-1.5

Dunbrooke 12	102	1	0.0	61.4	66	61.4	10	----	58.4	3.0	8	-5.0
Dunbrooke 13	103	1	0.0	59.4	66	59.4	10	----	57.2	2.2	8	-5.8
Oakmonte g	104	1	0.0	70.0	66	70.0	10	Snd Lvl	70.0	0.0	8	-8.0
Oakmonte f	105	1	0.0	69.7	66	69.7	10	Snd Lvl	69.7	0.0	8	-8.0
Oakmonte e	106	1	0.0	69.3	66	69.3	10	Snd Lvl	69.3	0.0	8	-8.0
Oakmonte d	107	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0
Oakmonte c	108	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
Oakmonte b	109	1	0.0	65.8	66	65.8	10	----	65.8	0.0	8	-8.0
Oakmonte a	110	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
Oakmonte 1	111	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
Oakmonte 2	112	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
Oakmonte 3	113	1	0.0	69.9	66	69.9	10	Snd Lvl	69.9	0.0	8	-8.0
Oakmonte 4	114	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	8	-8.0
Oakmonte 5	115	1	0.0	69.8	66	69.8	10	Snd Lvl	69.8	0.0	8	-8.0
Oakmonte 6	116	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0
Courtyard Pool	153	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
Oakmonte A	154	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
Oakmonte E	158	1	0.0	69.3	66	69.3	10	Snd Lvl	69.3	0.0	8	-8.0
Oakmonte F	159	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
Oakmonte G	160	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	43	0.0	2.6	8.3
All Impacted	17	0.0	0.5	7.0
All that meet NR Goal	2	8.1	8.2	8.3

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G
BARRIER DESIGN: GM-20

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
14' existing	W	20.00	20.00	20.00	1842	36837				1105123
									Total Cost:	1105123

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G
BARRIER DESIGN: GM-20
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Rutledge 1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 2	2	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 6	6	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 7	7	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 8	8	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 9	9	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 10	10	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 11	11	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Rutledge 12	12	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 1	13	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 2	14	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 3	15	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 4	16	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 5	17	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 6	18	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 7	19	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 8	20	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 9	21	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 10	22	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 11	23	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Crowley 12	24	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 13	25	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 14	26	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 15	27	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 16	28	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 17	29	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 18	30	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 19	31	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 37	32	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 38	33	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 39	34	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 40	35	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 20	36	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 21	37	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 41	38	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 42	39	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 22	40	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 23	41	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 24	42	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 25	43	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 26	44	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 27	45	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 28	46	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 29	47	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 30	48	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 31	49	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 32	50	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 33	51	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 34	52	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 35	53	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Crowley 36	54	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 1	55	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 2	56	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 3	57	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 4	58	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 5	59	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 6	60	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 7	61	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 8	62	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 9	63	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 10	64	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Long Pond 11	65	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 12	66	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 13	67	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 14	68	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 15	69	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 16	70	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 17	71	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 18	72	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 19 out	73	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Long Pond 20	74	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Long Pond 21	75	1	0.0	72.5	66	72.5	10	Snd Lvl	72.5	0.0	8	-8.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Chardonnay 1	77	1	0.0	62.0	66	62.0	10	----	60.3	1.7	8	-6.3
Chardonnay 2	78	1	0.0	63.9	66	63.9	10	----	62.1	1.8	8	-6.2
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	65.4	1.7	8	-6.3
Chardonnay 4	80	1	0.0	68.0	66	68.0	10	Snd Lvl	61.2	6.8	8	-1.2
Chardonnay 5	81	1	0.0	65.6	66	65.6	10	----	59.8	5.8	8	-2.2
Chardonnay 6	82	1	0.0	62.8	66	62.8	10	----	59.7	3.1	8	-4.9
Chardonnay 7	83	1	0.0	61.0	66	61.0	10	----	58.2	2.8	8	-5.2
Dunbrooke	84	1	0.0	64.5	66	64.5	10	----	58.7	5.8	8	-2.2
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	60.9	1.0	8	-7.0
Long Pond 24	86	1	0.0	61.9	66	61.9	10	----	61.7	0.2	8	-7.8
Long Pond 25	87	1	0.0	60.2	66	60.2	10	----	60.1	0.1	8	-7.9
Long Pond 26	88	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
Long Pond 27	89	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	89	0.0	0.3	6.8
All Impacted	5	0.0	1.7	6.8
All that meet NR Goal	0	0.0	0.0	0.0

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G BM
BARRIER DESIGN: Existing 18

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier11	W	0.00	0.00	0.00	0	0				0
14' existing	W	18.00	18.00	18.00	1842	33154				994611
									Total Cost:	994611

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G BM
BARRIER DESIGN: Existing 18
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Long Pond 21	75	1	0.0	72.5	66	72.5	10	Snd Lvl	72.5	0.0	8	-8.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Chardonnay 1	77	1	0.0	62.0	66	62.0	10	----	60.4	1.6	8	-6.4
Chardonnay 2	78	1	0.0	63.9	66	63.9	10	----	62.2	1.7	8	-6.3
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	65.5	1.6	8	-6.4
Chardonnay 4	80	1	0.0	68.0	66	68.0	10	Snd Lvl	61.4	6.6	8	-1.4
Chardonnay 5	81	1	0.0	65.6	66	65.6	10	----	60.1	5.5	8	-2.5
Chardonnay 6	82	1	0.0	62.8	66	62.8	10	----	59.9	2.9	8	-5.1
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	58.3	2.8	8	-5.2
Dunbrooke	84	1	0.0	64.5	66	64.5	10	----	59.0	5.5	8	-2.5
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	60.9	1.0	8	-7.0
Dunbrooke 1	90	1	0.0	62.3	66	62.3	10	----	58.6	3.7	8	-4.3
Dunbrooke 2	91	1	0.0	64.6	66	64.6	10	----	57.7	6.9	8	-1.1
Dunbrooke 3	92	1	0.0	64.7	66	64.7	10	----	57.3	7.4	8	-0.6
Dunbrooke 4	93	1	0.0	64.4	66	64.4	10	----	57.2	7.2	8	-0.8
Dunbrooke 5	94	1	0.0	63.6	66	63.6	10	----	57.5	6.1	8	-1.9
Dunbrooke 6	95	1	0.0	62.9	66	62.9	10	----	57.4	5.5	8	-2.5
Dunbrooke 7	96	1	0.0	60.4	66	60.4	10	----	57.0	3.4	8	-4.6
Dunbrooke 8	97	1	0.0	59.5	66	59.5	10	----	56.6	2.9	8	-5.1
Dunbrooke 9	98	1	0.0	61.3	66	61.3	10	----	57.4	3.9	8	-4.1
Dunbrooke 10	99	1	0.0	63.7	66	63.7	10	----	57.0	6.7	8	-1.3
Dunbrooke 11	100	1	0.0	63.5	66	63.5	10	----	56.9	6.6	8	-1.4
Tennis Ct.	101	1	0.0	63.6	66	63.6	10	----	57.6	6.0	8	-2.0

Dunbrooke 12	102	1	0.0	61.4	66	61.4	10	----	58.7	2.7	8	-5.3
Dunbrooke 13	103	1	0.0	59.4	66	59.4	10	----	57.4	2.0	8	-6.0
Oakmonte g	104	1	0.0	70.0	66	70.0	10	Snd Lvl	70.0	0.0	8	-8.0
Oakmonte f	105	1	0.0	69.7	66	69.7	10	Snd Lvl	69.7	0.0	8	-8.0
Oakmonte e	106	1	0.0	69.3	66	69.3	10	Snd Lvl	69.3	0.0	8	-8.0
Oakmonte d	107	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0
Oakmonte c	108	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
Oakmonte b	109	1	0.0	65.8	66	65.8	10	----	65.8	0.0	8	-8.0
Oakmonte a	110	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
Oakmonte 1	111	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
Oakmonte 2	112	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
Oakmonte 3	113	1	0.0	69.9	66	69.9	10	Snd Lvl	69.9	0.0	8	-8.0
Oakmonte 4	114	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	8	-8.0
Oakmonte 5	115	1	0.0	69.8	66	69.8	10	Snd Lvl	69.8	0.0	8	-8.0
Oakmonte 6	116	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0
Courtyard Pool	153	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
Oakmonte A	154	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
Oakmonte E	158	1	0.0	69.3	66	69.3	10	Snd Lvl	69.3	0.0	8	-8.0
Oakmonte F	159	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
Oakmonte G	160	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	43	0.0	2.3	7.4
All Impacted	17	0.0	0.5	6.6
All that meet NR Goal	0	0.0	0.0	0.0

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G BM
BARRIER DESIGN: Oak BM-14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier11	W	14.00	14.00	14.00	1216	17029				510873
14' existing	W	0.00	0.00	0.00	0	0				0
									Total Cost:	510873

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G BM
BARRIER DESIGN: Oak BM-14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Chardonnay 1	77	1	0.0	62.0	66	62.0	10	----	61.9	0.1	8	-7.9
Chardonnay 2	78	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0
Chardonnay 4	80	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
Chardonnay 5	81	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0
Chardonnay 6	82	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	60.9	0.2	8	-7.8
Dunbrooke	84	1	0.0	64.5	66	64.5	10	----	64.4	0.1	8	-7.9
Dunbrooke 1	90	1	0.0	62.3	66	62.3	10	----	62.1	0.2	8	-7.8
Dunbrooke 2	91	1	0.0	64.6	66	64.6	10	----	64.5	0.1	8	-7.9
Dunbrooke 3	92	1	0.0	64.7	66	64.7	10	----	64.6	0.1	8	-7.9
Dunbrooke 4	93	1	0.0	64.4	66	64.4	10	----	64.2	0.2	8	-7.8
Dunbrooke 5	94	1	0.0	63.6	66	63.6	10	----	63.3	0.3	8	-7.7
Dunbrooke 6	95	1	0.0	62.9	66	62.9	10	----	62.4	0.5	8	-7.5
Dunbrooke 7	96	1	0.0	60.4	66	60.4	10	----	59.8	0.6	8	-7.4
Dunbrooke 8	97	1	0.0	59.5	66	59.5	10	----	58.7	0.8	8	-7.2
Dunbrooke 9	98	1	0.0	61.3	66	61.3	10	----	60.4	0.9	8	-7.1
Dunbrooke 10	99	1	0.0	63.7	66	63.7	10	----	62.7	1.0	8	-7.0
Dunbrooke 11	100	1	0.0	63.5	66	63.5	10	----	61.6	1.9	8	-6.1
Tennis Ct.	101	1	0.0	63.6	66	63.6	10	----	61.3	2.3	8	-5.7
Dunbrooke 12	102	1	0.0	61.4	66	61.4	10	----	59.5	1.9	8	-6.1
Dunbrooke 13	103	1	0.0	59.4	66	59.4	10	----	58.1	1.3	8	-6.7
Oakmonte g	104	1	0.0	70.0	66	70.0	10	Snd Lvl	63.3	6.7	8	-1.3

Oakmonte f	105	1	0.0	69.7	66	69.7	10	Snd Lvl	63.7	6.0	8	-2.0
Oakmonte e	106	1	0.0	69.3	66	69.3	10	Snd Lvl	63.9	5.4	8	-2.6
Oakmonte d	107	1	0.0	68.9	66	68.9	10	Snd Lvl	64.1	4.8	8	-3.2
Oakmonte c	108	1	0.0	67.2	66	67.2	10	Snd Lvl	63.6	3.6	8	-4.4
Oakmonte b	109	1	0.0	65.8	66	65.8	10	----	61.7	4.1	8	-3.9
Oakmonte a	110	1	0.0	64.8	66	64.8	10	----	60.9	3.9	8	-4.1
Oakmonte 1	111	1	0.0	63.8	66	63.8	10	----	60.3	3.5	8	-4.5
Oakmonte 2	112	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 3	113	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 4	114	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 5	115	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 6	116	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 7	117	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 8	118	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 9	119	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 10	120	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
ITT	121	1	0.0	74.3	66	74.3	10	Snd Lvl	74.0	0.3	8	-7.7
Dunbrooke 13	103	1	0.0	58.8	66	58.8	10	----	58.0	0.8	8	-7.2
Notting Hill 1	122	1	0.0	59.6	66	59.6	10	----	58.7	0.9	8	-7.1
Notting Hill 2	123	1	0.0	59.8	66	59.8	10	----	59.0	0.8	8	-7.2
Notting Hill 3	124	1	0.0	62.7	66	62.7	10	----	61.9	0.8	8	-7.2
Notting Hill 4	125	1	0.0	62.4	66	62.4	10	----	61.7	0.7	8	-7.3
Notting Hill 5	126	1	0.0	64.3	66	64.3	10	----	63.8	0.5	8	-7.5
Notting Hill 6	127	1	0.0	64.5	66	64.5	10	----	64.1	0.4	8	-7.6
Notting Hill 7	128	1	0.0	64.9	66	64.9	10	----	64.5	0.4	8	-7.6
Notting Hill 8	129	1	0.0	65.4	66	65.4	10	----	65.1	0.3	8	-7.7
Notting Hill 9	130	1	0.0	65.3	66	65.3	10	----	65.1	0.2	8	-7.8
Notting Hill 10	131	1	0.0	65.3	66	65.3	10	----	65.2	0.1	8	-7.9
Notting Hill 11	132	1	0.0	65.1	66	65.1	10	----	65.0	0.1	8	-7.9
Notting Hill 12	133	1	0.0	64.3	66	64.3	10	----	64.2	0.1	8	-7.9
Notting Hill 13	134	1	0.0	64.1	66	64.1	10	----	64.0	0.1	8	-7.9
Notting Hill 14	135	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9
Notting Hill 15	136	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Notting Hill 16	137	1	0.0	64.1	66	64.1	10	----	64.0	0.1	8	-7.9
Notting Hill 17	138	1	0.0	63.6	66	63.6	10	----	63.5	0.1	8	-7.9
Notting Hill 18	139	1	0.0	63.2	66	63.2	10	----	63.1	0.1	8	-7.9
Notting Hill 19	140	1	0.0	65.3	66	65.3	10	----	65.2	0.1	8	-7.9
Notting Hill 20	141	1	0.0	64.6	66	64.6	10	----	64.5	0.1	8	-7.9
Notting Hill 21	142	1	0.0	65.5	66	65.5	10	----	65.4	0.1	8	-7.9
Notting Hill 22	143	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
Notting Hill 23	144	1	0.0	64.7	66	64.7	10	----	64.6	0.1	8	-7.9

Notting Hill 24	145	1	0.0	64.6	66	64.6	10	----	64.5	0.1	8	-7.9
Notting Hill 25	146	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
Notting Hill 26	147	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
Notting Hill 27	148	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
Notting Hill 28	149	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0
Notting Hill 29	150	1	0.0	60.1	66	60.1	10	----	60.0	0.1	8	-7.9
Notting Hill 30	151	1	0.0	58.9	66	58.9	10	----	58.8	0.1	8	-7.9
Courtyard Pool	153	1	0.0	63.0	66	63.0	10	----	59.5	3.5	8	-4.5
Oakmonte A	154	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte B	155	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte C	156	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte D	157	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte E	158	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte F	159	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte G	160	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	79	0.0	0.8	6.7
All Impacted	8	0.0	3.4	6.7
All that meet NR Goal	0	0.0	0.0	0.0

Stantec 29 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G GM
BARRIER DESIGN: Oak 22

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier11	W	22.00	22.00	22.00	1216	26760				802800
14' existing	W	0.00	0.00	0.00	0	0				0
									Total Cost:	802800

Stantec
M. Drauer

29 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segment 3 NSA G GM
BARRIER DESIGN: Oak 22
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Long Pond 21	75	1	0.0	72.5	66	72.5	10	Snd Lvl	72.5	0.0	8	-8.0
Long Pond 22	76	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
Chardonnay 1	77	1	0.0	62.0	66	62.0	10	----	61.9	0.1	8	-7.9
Chardonnay 2	78	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9
Chardonnay 3	79	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0
Chardonnay 4	80	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
Chardonnay 5	81	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0
Chardonnay 6	82	1	0.0	62.8	66	62.8	10	----	62.7	0.1	8	-7.9
Chardonnay 7	83	1	0.0	61.1	66	61.1	10	----	60.9	0.2	8	-7.8
Dunbrooke	84	1	0.0	64.5	66	64.5	10	----	64.4	0.1	8	-7.9
Long Pond 23	85	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
Dunbrooke 1	90	1	0.0	62.3	66	62.3	10	----	62.1	0.2	8	-7.8
Dunbrooke 2	91	1	0.0	64.6	66	64.6	10	----	64.5	0.1	8	-7.9
Dunbrooke 3	92	1	0.0	64.7	66	64.7	10	----	64.5	0.2	8	-7.8
Dunbrooke 4	93	1	0.0	64.4	66	64.4	10	----	64.2	0.2	8	-7.8
Dunbrooke 5	94	1	0.0	63.6	66	63.6	10	----	63.3	0.3	8	-7.7
Dunbrooke 6	95	1	0.0	62.9	66	62.9	10	----	62.3	0.6	8	-7.4
Dunbrooke 7	96	1	0.0	60.4	66	60.4	10	----	59.7	0.7	8	-7.3
Dunbrooke 8	97	1	0.0	59.5	66	59.5	10	----	58.5	1.0	8	-7.0
Dunbrooke 9	98	1	0.0	61.3	66	61.3	10	----	60.3	1.0	8	-7.0
Dunbrooke 10	99	1	0.0	63.7	66	63.7	10	----	62.6	1.1	8	-6.9
Dunbrooke 11	100	1	0.0	63.5	66	63.5	10	----	61.4	2.1	8	-5.9
Tennis Ct.	101	1	0.0	63.6	66	63.6	10	----	61.0	2.6	8	-5.4

Dunbrooke 12	102	1	0.0	61.4	66	61.4	10	----	59.2	2.2	8	-5.8
Dunbrooke 13	103	1	0.0	59.4	66	59.4	10	----	57.8	1.6	8	-6.4
Oakmonte g	104	1	0.0	70.0	66	70.0	10	Snd Lvl	62.3	7.7	8	-0.3
Oakmonte f	105	1	0.0	69.7	66	69.7	10	Snd Lvl	62.9	6.8	8	-1.2
Oakmonte e	106	1	0.0	69.3	66	69.3	10	Snd Lvl	63.2	6.1	8	-1.9
Oakmonte d	107	1	0.0	68.9	66	68.9	10	Snd Lvl	63.5	5.4	8	-2.6
Oakmonte c	108	1	0.0	67.2	66	67.2	10	Snd Lvl	63.2	4.0	8	-4.0
Oakmonte b	109	1	0.0	65.8	66	65.8	10	----	61.2	4.6	8	-3.4
Oakmonte a	110	1	0.0	64.8	66	64.8	10	----	60.5	4.3	8	-3.7
Oakmonte 1	111	1	0.0	63.8	66	63.8	10	----	60.0	3.8	8	-4.2
Oakmonte 2	112	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 3	113	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 4	114	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 5	115	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 6	116	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 7	117	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 8	118	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 9	119	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte 10	120	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
ITT	121	1	0.0	74.3	66	74.3	10	Snd Lvl	73.9	0.4	8	-7.6
Dunbrooke 13	103	1	0.0	58.8	66	58.8	10	----	57.9	0.9	8	-7.1
Notting Hill 1	122	1	0.0	59.6	66	59.6	10	----	58.6	1.0	8	-7.0
Notting Hill 2	123	1	0.0	59.8	66	59.8	10	----	58.9	0.9	8	-7.1
Notting Hill 3	124	1	0.0	62.7	66	62.7	10	----	61.9	0.8	8	-7.2
Notting Hill 4	125	1	0.0	62.4	66	62.4	10	----	61.6	0.8	8	-7.2
Notting Hill 5	126	1	0.0	64.3	66	64.3	10	----	63.7	0.6	8	-7.4
Notting Hill 6	127	1	0.0	64.5	66	64.5	10	----	64.1	0.4	8	-7.6
Notting Hill 7	128	1	0.0	64.9	66	64.9	10	----	64.4	0.5	8	-7.5
Notting Hill 8	129	1	0.0	65.4	66	65.4	10	----	65.1	0.3	8	-7.7
Notting Hill 9	130	1	0.0	65.3	66	65.3	10	----	65.1	0.2	8	-7.8
Notting Hill 10	131	1	0.0	65.3	66	65.3	10	----	65.1	0.2	8	-7.8
Notting Hill 11	132	1	0.0	65.1	66	65.1	10	----	65.0	0.1	8	-7.9
Notting Hill 12	133	1	0.0	64.3	66	64.3	10	----	64.2	0.1	8	-7.9
Notting Hill 13	134	1	0.0	64.1	66	64.1	10	----	64.0	0.1	8	-7.9
Notting Hill 14	135	1	0.0	63.9	66	63.9	10	----	63.8	0.1	8	-7.9
Notting Hill 15	136	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Notting Hill 16	137	1	0.0	64.1	66	64.1	10	----	64.0	0.1	8	-7.9
Notting Hill 17	138	1	0.0	63.6	66	63.6	10	----	63.5	0.1	8	-7.9
Notting Hill 18	139	1	0.0	63.2	66	63.2	10	----	63.1	0.1	8	-7.9
Notting Hill 19	140	1	0.0	65.3	66	65.3	10	----	65.2	0.1	8	-7.9
Notting Hill 20	141	1	0.0	64.6	66	64.6	10	----	64.4	0.2	8	-7.8

Notting Hill 21	142	1	0.0	65.5	66	65.5	10	----	65.4	0.1	8	-7.9
Notting Hill 22	143	1	0.0	64.4	66	64.4	10	----	64.3	0.1	8	-7.9
Notting Hill 23	144	1	0.0	64.7	66	64.7	10	----	64.6	0.1	8	-7.9
Notting Hill 24	145	1	0.0	64.6	66	64.6	10	----	64.5	0.1	8	-7.9
Notting Hill 25	146	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
Notting Hill 26	147	1	0.0	62.8	66	62.8	10	----	62.7	0.1	8	-7.9
Notting Hill 27	148	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
Notting Hill 28	149	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0
Notting Hill 29	150	1	0.0	60.1	66	60.1	10	----	60.0	0.1	8	-7.9
Notting Hill 30	151	1	0.0	58.9	66	58.9	10	----	58.8	0.1	8	-7.9
Courtyard Pool	153	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte A	154	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte B	155	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte C	156	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte D	157	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte E	158	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte F	159	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Oakmonte G	160	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	82	0.0	0.8	7.7
All Impacted	10	0.0	3.0	7.7
All that meet NR Goal	0	0.0	0.0	0.0

Barrier Analysis

NSA H

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA H GM
BARRIER DESIGN: NSA H GM 12

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier6	W	12.00	12.00	12.00	1751	21008				630231
									Total Cost:	630231

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA H GM
BARRIER DESIGN: NSA H GM 12
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Candlewood Pool	3	1	0.0	73.8	66	73.8	10	Snd Lvl	66.2	7.6	8	-0.4
Filutowski	4	1	0.0	73.4	66	73.4	10	Snd Lvl	65.2	8.2	8	0.2
La Quinta pool	5	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
Homestead pool	6	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
Extended Stay America	7	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	3.2	8.2
All Impacted	5	0.0	3.2	8.2
All that meet NR Goal	1	8.2	8.2	8.2

Stantec 26 May 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA H BM
BARRIER DESIGN: NSA H BM14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier6	W	14.00	14.00	14.00	1751	24509				735270
									Total Cost:	735270

Stantec
M. Drauer

26 May 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-4 BtU PD&E
RUN: I-4 Segmnet 3 NSA H BM
BARRIER DESIGN: NSA H BM14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Candlewood Pool	3	1	0.0	73.8	66	73.8	10	Snd Lvl	65.4	8.4	8	0.4
Filutowski	4	1	0.0	73.4	66	73.4	10	Snd Lvl	64.5	8.9	8	0.9
La Quinta pool	5	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
Homestead pool	6	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
Extended Stay America	7	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	3.5	8.9
All Impacted	5	0.0	3.5	8.9
All that meet NR Goal	2	8.4	8.7	8.9

Barrier Analysis

NSA L

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA L
BARRIER DESIGN: Comfort Inn 14

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
SR 46 on	W	14.00	14.00	14.00	1372	19203				576078
									Total Cost:	576078

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA L
BARRIER DESIGN: Comfort Inn 14
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Comfort pool	264	1	0.0	73.6	66	73.6	10	Snd Lvl	64.7	8.9	8	0.9
Super 8 pool	266	1	0.0	72.1	66	72.1	10	Snd Lvl	64.6	7.5	8	-0.5
Cracker Barrel	270	1	0.0	68.7	66	68.7	10	Snd Lvl	62.9	5.8	8	-2.2

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	5.8	7.4	8.9
All Impacted	3	5.8	7.4	8.9
All that meet NR Goal	1	8.9	8.9	8.9

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA L
BARRIER DESIGN: Comfort Inn

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
SR 46 on	W	12.00	12.00	12.00	1372	16459				493781
									Total Cost:	493781

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA L
BARRIER DESIGN: Comfort Inn
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Comfort pool	264	1	0.0	73.6	66	73.6	10	Snd Lvl	65.6	8.0	8	0.0
Super 8 pool	266	1	0.0	72.1	66	72.1	10	Snd Lvl	65.7	6.4	8	-1.6
Cracker Barrel	270	1	0.0	68.7	66	68.7	10	Snd Lvl	63.6	5.1	8	-2.9

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	5.1	6.5	8.0
All Impacted	3	5.1	6.5	8.0
All that meet NR Goal	1	8.0	8.0	8.0

Barrier Analysis

NSA O

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA O
BARRIER DESIGN: O-22

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier25	W	22.00	22.00	22.00	1202	26454				793606
									Total Cost:	793606

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA O
BARRIER DESIGN: O-22
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver282	282	1	0.0	72.6	66	72.6	10	Snd Lvl	62.2	10.4	8	2.4
Receiver283	283	1	0.0	72.2	66	72.2	10	Snd Lvl	61.6	10.6	8	2.6
Receiver284	284	1	0.0	66.2	66	66.2	10	Snd Lvl	60.0	6.2	8	-1.8
Receiver285	285	1	0.0	61.9	66	61.9	10	----	60.4	1.5	8	-6.5

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	4	1.5	7.2	10.6
All Impacted	3	6.2	9.1	10.6
All that meet NR Goal	2	10.4	10.5	10.6

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA O
BARRIER DESIGN: O 20

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier25	W	20.00	20.00	20.00	1202	24049				721460
									Total Cost:	721460

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA O
BARRIER DESIGN: O 20
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	With Barrier Noise Reduction Calculated	With Barrier Noise Reduction Goal	With Barrier Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver282	282	1	0.0	72.6	66	72.6	10	Snd Lvl	62.8	9.8	8	1.8
Receiver283	283	1	0.0	72.2	66	72.2	10	Snd Lvl	62.3	9.9	8	1.9
Receiver284	284	1	0.0	66.2	66	66.2	10	Snd Lvl	60.6	5.6	8	-2.4
Receiver285	285	1	0.0	61.9	66	61.9	10	----	60.6	1.3	8	-6.7

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	4	1.3	6.6	9.9
All Impacted	3	5.6	8.4	9.9
All that meet NR Goal	2	9.8	9.8	9.9

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA O
BARRIER DESIGN: O 18

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier25	W	18.00	18.00	18.00	1202	21644				649314
									Total Cost:	649314

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA O
BARRIER DESIGN: O 18
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver282	282	1	0.0	72.6	66	72.6	10	Snd Lvl	63.4	9.2	8	1.2
Receiver283	283	1	0.0	72.2	66	72.2	10	Snd Lvl	63.2	9.0	8	1.0
Receiver284	284	1	0.0	66.2	66	66.2	10	Snd Lvl	61.3	4.9	8	-3.1
Receiver285	285	1	0.0	61.9	66	61.9	10	----	60.9	1.0	8	-7.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	4	1.0	6.0	9.2
All Impacted	3	4.9	7.7	9.2
All that meet NR Goal	2	9.0	9.1	9.2

Stantec 3 June 2015
M. Drauer TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA O
BARRIER DESIGN: O2

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier25	W	14.00	14.00	14.00	1194	16717				501512
Barrier24	W	0.00	0.00	0.00	0	0				0
									Total Cost:	501512

Stantec
M. Drauer

3 June 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I 4 PD&E
RUN: Segment 3 NSA O
BARRIER DESIGN: O2
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver282	282	1	0.0	72.7	66	72.7	10	Snd Lvl	66.4	6.3	8	-1.7
Receiver283	283	1	0.0	72.8	66	72.8	10	Snd Lvl	68.1	4.7	8	-3.3
Receiver284	284	1	0.0	65.9	66	65.9	10	----	63.2	2.7	8	-5.3
Receiver285	285	1	0.0	61.7	66	61.7	10	----	61.1	0.6	8	-7.4

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	4	0.6	3.6	6.3
All Impacted	2	4.7	5.5	6.3
All that meet NR Goal	0	0.0	0.0	0.0