APPENDIX F

Noise Impact Analysis

NOISE IMPACT ANALYSIS

U.S. 17 WIDENING EA AND PERMITTING
JASPER COUNTY, SOUTH CAROLINA

November, 2016

Prepared For:

South Carolina Department of Transportation

and
Jasper County, South Carolina

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EXECUTIVE SUMMARY

The following noise assessment has been prepared in compliance with Title 23 of the Code of Federal Regulations, Part 772 (23 CFR Part 772), and the South Carolina Department of Transportation (SCDOT) *Traffic Noise Abatement Policy* (September 2014). This report will be provided to local officials in an attempt to minimize potential future traffic noise impacts.

The proposed Type I project consists of improvements to U.S. 17 (Speedway Boulevard) in Jasper County, South Carolina from Georgia SR 404 Spur on Hutchinson Island in Chatham County, Georgia, to SC 315 (the South Okatie Highway). Four build alternatives were being evaluated as part of this noise analysis, as well as the no-build alternative. The four build alternatives (Alts. 1 through 4) each include widening to four 12-foot lanes with a new bridge over Back River to accommodate the two additional lanes. The following summarizes the distinguishing characteristics between the build alternatives.

Alternative 1: widened primarily west of existing roadway (to SC 315) with a 36-foot wide depressed grass median and 10-foot wide inside and outside shoulders with 4:1 side slopes (Preferred Alternative).

Alternative 2: widened symmetrical from the existing centerline (to SC 315) with a 36-foot wide depressed grass median and 10-foot wide inside and outside shoulders with 4:1 side slopes.

Alternative 3: widened primarily east of existing roadway (to SC 315) with a 36-foot wide depressed grass median and 10-foot wide inside and outside shoulders with 4:1 side slopes (preferred alternative).

Alternative 4: widened symmetrical from the existing centerline with a 48-foot wide depressed grass median and 10-foot wide inside and outside shoulders with 6:1 side slopes.

There are no residential receivers in the study area. The receivers in the study area are comprised of athletic fields, bars (gentlemen's clubs) and retail land uses. The land uses in the project area are primarily undeveloped and/or forested.

Overall, there were no receivers impacted in the project study area. As a result, there was no warrant for mitigation according to the SCDOT *Traffic Noise Abatement Policy*. Therefore, further noise abatement consideration is not required for the proposed project.

TABLE OF CONTENTS

I. INTRODUCTION AND PROJECT DESCRIPTION

A. Introduction

The following noise assessment has been prepared in compliance with Title 23 of the Code of Federal Regulations, Part 772 (23 CFR Part 772), and the South Carolina Department of Transportation (SCDOT) *Traffic Noise Abatement Policy* (September 2014). This report will be provided to local officials in an attempt to minimize potential future traffic noise impacts.

This Type I project is located on U.S. 17 (Speedway Boulevard) in Jasper County, South Carolina (Figure 1). The project corridor begins at Georgia SR 404 Spur on Hutchinson Island in Chatham County, Georgia, traverses north for approximately 5 miles and ends just north of the US 17 intersection with SC 315 (South Okatie Highway). Four build alternatives were being evaluated as part of this noise analysis, as well as the no-build alternative. The four build alternatives (Alts. 1 through 4) each include widening to four 12-foot lanes with a new bridge over Back River to accommodate the two additional lanes. The following summarizes the distinguishing characteristics between the build alternatives.

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Alternative 4: widened symmetrical from the existing centerline with a 48-foot wide depressed grass median and 10-foot wide inside and outside shoulders with 6:1 side slopes.

There are no residential receivers in the study area. The receivers in the study area are comprised of athletic fields, bars (gentlemen's clubs) and retail land uses. Please note that the project includes the bridge to Hutchinson Island as a cooperative endeavor between SCDOT and Georgia DOT. There are no noise-sensitive receivers on Hutchinson Island close enough to be studied for noise impacts. The nearest potential receivers were located at The Club At Savannah Harbor. However, the distance to US 17 from the golf course is about 1,400 feet and the distance to the US 17 ramps is approximately 700 feet. Residential receptors (unbuilt house lots) are located approximately 1,800 and 1,100 feet, respectively. These are too far away to be impacted and were not analyzed. (According to the current GDOT Noise Abatement Policy, the actual limits of a noise study area usually does not extend beyond 500 feet from a project's proposed edge of pavement unless impacts are shown beyond that distance. For this widening project, the predicted and unabated 66 dBA distance line is approximately 160 feet.)

Figure 1 – U.S. 17 (Speedway Boulevard) Project Location

B. Purpose and Need, Existing Facility, Traffic/Roadway Conditions, and Existing Land Uses

The purpose of the proposed project is to relieve congestion and improve safety along the Speedway Boulevard corridor in Jasper County near the Georgia state line by accommodating existing and future traffic volumes and promoting a safe tie-in with the bridge to Savannah, GA.

Speedway Boulevard is currently a two-lane roadway with a posted speed limit of 55 miles per hour (mph). US 17 has a 2020 Average Annual Daily Traffic (AADT) volume of 17,700 vehicles per day (vpd), which is forecasted to increase to 23,300 vpd in 2040. Traffic volumes are shown in Appendix A.

Much of the land uses along US 17 in this area is undeveloped. There are only four fairly isolated noise receivers in the project study area; the farmer's market, two nightclubs and the Savannah College of Arts and Design (SCAD) athletic fields as shown in Figure 2.

II. ANALYSIS METHODOLOGY

A. Model Used and Assumptions

The Federal Highway Administration (FHWA) noise prediction model (TNM 2.5) was used to derive existing and future noise levels. The environmental traffic data was developed by Michael Baker International, LLC with data provided from SCDOT count data. A "K factor" of 10 percent was used to simulate design hourly volumes. A truck factor of ten percent (three percent medium trucks and seven percent heavy trucks) was used, based on input provided by SCDOT. The posted speed limit of 55 mph was used for all the alternatives in the analysis.

B. Receptor Locations

Sensitive receivers and/or land use types were identified using aerial photography and street level views from http://maps.live.com and http://maps.google.com and field verified when noise measurements were taken. Figure 2 depicts the location of these receivers. Receptor land use categories that are within the study area include open land, retail/commercial, restaurant/bar and the SCAD recreational fields.

C. Field Measurements

Ambient noise field measurements were taken at two different locations, (receptors 3 and 4 shown in Figure 2), in accordance with the FHWA publication "Measurement of Highway-related Noise." Noise measurements were taken in the afternoon between approximately 4:40 and 5:20 PM. Vehicles were counted and the type of vehicle was noted during the field measurements. In addition, the meteorological conditions, if any obstructions were present between the measurement location and traffic, as well as any unusual noises were noted for each site. Field measurement data sheets are shown in Appendix B. Table 1 summarizes the information for the ambient noise field measurements.

Figure 2 – Noise Receptors

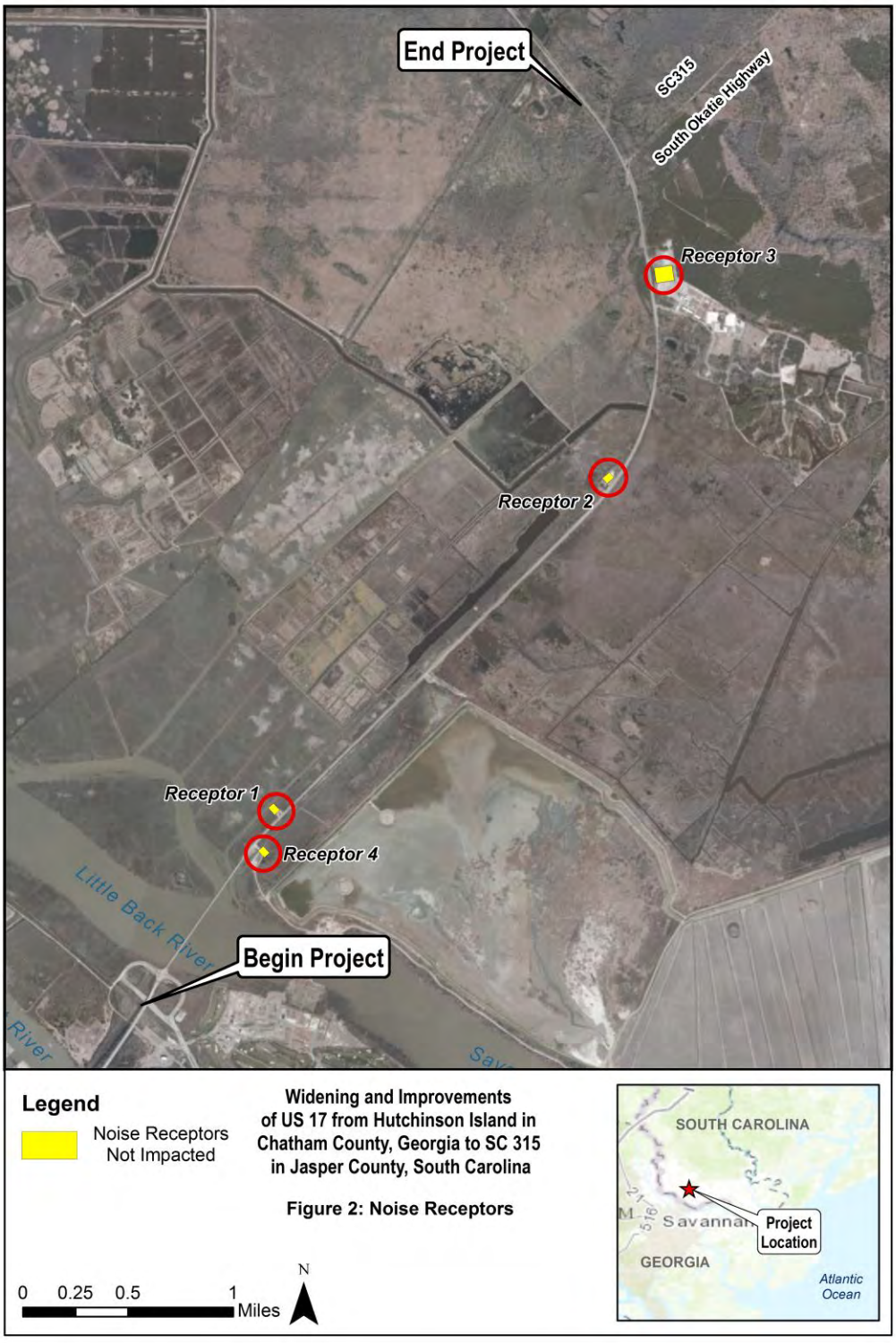


Table 1 Hourly Traffic at Noise Reading Locations based on Concurrent Traffic Counts								
Measurement Site	**Time**	**Dir.**	**Autos**	**Med Trucks**	**Heavy Trucks**	**Buses**	**Motorcycles**	**Measured Leq**
SCAD athletic fields; receptor 3 (at locked fence)	4:40-4:55	NB	620	12	16	0	0	67.3
		SB	112	28	28	0	0	
Farmer's Market; receptor 4 (front of market)	5:06-5:21	NB	800	12	12	0	0	69.6
		SB	620	24	28	0	0	
SOURCE: THE LPA Group, Inc./Michael Baker International, LLC, January 8, 2014. NOTE 1: Meteorological conditions: 50 degrees, clear and sunny, light wind (between 5-10 mph). NOTE 2: Measurement was taken at the entrance to the athletic fields since the area was gated and closed. NOTE 3: Measurement was taken in front of the farmer's market area as access to the property was denied.								

D. Model Validation

Using the ambient noise field measurements listed in Table 1, the TNM 2.5 model was validated for accuracy, per the requirements in 23 CFR §772.11(d)(2). Table 2 compares the measured Leq versus modeled Leq for the two sites. Based on SCDOT's Policy, if the measured Leq and modeled Leq are within 3 dBA, the model is valid. The measured Leq compared to the modeled Leq for the two sites were within 3 dBA. Therefore, the use of the TNM computer model is considered valid for predicting sound levels for the existing, no-build, and build alternative scenarios.

Table 2 FHWA TNM Model Validation				
Measurement Site	Time Period	Measured Leq	Modeled Leq	Difference
SCAD athletic fields; receptor 3 (at locked fence)	4:40-4:55	67.3	64.8	+2.5
Farmer's Market; receptor 4 (front of market)	5:06-5:21	69.6	68.7	+0.9
NOTES: Modeled Leq based on traffic counts from Table 1. Difference = Measured Leq minus Modeled Leq.				

III. TRAFFIC NOISE IMPACTS

The FHWA has developed noise abatement criteria and procedures in 23 CFR Part 772, as shown in Table 3, that states that traffic noise impacts occur when either:

1) the predicted traffic noise levels approach or exceed the FHWA Noise Abatement Criteria (NAC) for the applicable activity category shown below; or,
2) the predicted traffic noise levels substantially exceed the existing noise levels by ≥15 dBA.

Table 3
23 CFR 772 (Table 1) Noise Abatement Criteria (NAC)

Activity Category	L_{eq} (h)\1,2\	L_{10} (h) \1,2\	Evaluation Location	Description of Activity Category
A	57	60	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\3\	67	70	Exterior	Residential.
C\3\	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	55	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\3\	72	75	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.

SOURCE: SCDOT Traffic Noise Abatement Policy, March, 2011.

\1\ Either Leq(h) or L10(h) (but not both) may be used on a project.
\2\ The Leq(h) and L10(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.
\3\ Includes undeveloped lands permitted for this activity category.

The modeling results for the 2020 existing condition, 2040 design year no-build scenario, and 2040 design year build scenarios can be found in Appendix C, and are summarized in Table 4. Based on the SCDOT *Traffic Noise Abatement Policy*, SCDOT considers a predicted noise level within 1 dBA as "approaching" the NAC. A predicted increase of 15 dBA or more is also considered by SCDOT to substantially exceed the existing noise level.

A. Modeled Existing Year (2020) Noise Levels

Currently there are no receivers that approach or exceed the 67 dBA NAC criteria for Category C or 72 dBA NAC for Category E, as shown in Table 4.

B. Modeled Design Year (Future 2040) No-build Scenario Noise Levels

The sound levels are predicted to increase by approximately 1 dBA over the existing condition as a result of the predicted traffic growth on US 17. There are no receivers predicted to approach or exceed 67 dBA for Category C or 72 dBA NAC for Category E, as shown in Table 4.

C. Modeled Design Year (Future 2040) Build Alternative Noise Levels

The sound levels are predicted to increase over the existing condition by 2.4-4.7 dBA for Preferred Alternative 1, 2.8-4.5 dBA for Alternative 2, 3.1-3.5 dBA for Alternative 3 and 2.9-4.9 dBA for Alternative 4. There are no receivers predicted to have substantial increase impacts or predicted to approach or exceed 67 dBA (Category C) or 72 dBA (Category E), as shown in Table 4.

IV. FEASIBLE AND REASONABLE CONSIDERATION OF ABATEMENT

Since traffic noise impacts were not predicted with the proposed project, abatement consideration is not warranted.

A. Public Involvement

The results of this noise analysis will be incorporated into the Environmental Assessment being prepared for the proposed project. There will be an opportunity for a public hearing as part of the project, which will be determined at a later time. The public will have an opportunity to view the results of the noise analysis as part of the Environmental Assessment during this public hearing and also during the 30-day public comment period.

V. FINDINGS AND RECOMMENDATIONS

Overall, there are no receivers that exceed the criteria in the 2038 build condition for any alternative. As a result, noise abatement consideration is not required based on the detailed analysis according to SCDOT *Traffic Noise Abatement Policy*.

Overall, subsequent project design changes and/or revised data may require a reevaluation of the abatement analysis. If this condition were to occur, the new future build alternative scenario would be analyzed for noise impacts and mitigation as reasonable, i.e, if the proposed action were to be significantly modified in such a way as to change the predicted sound level environment and/or clearly indicate a possibility for reasonable and feasible mitigation.

VI. CONSTRUCTION NOISE

If the Build Alternative is chosen, temporary increases in noise levels will occur during the time period that construction takes place. Noise levels due to construction, although temporary, can

impact areas adjacent to the project. The major noise sources from construction would be the heavy equipment operated at the site. However, other construction site noise sources would include hand tools and trucks supplying and removing materials.

Typical noise levels generated by different types of construction equipment are presented in Table 5. Construction operations are typically broken down into several phases including clearing and grubbing, earthwork, erection, paving and finishing. Although these phases can overlap, each has their own noise characteristics and objective.

Table 4
US 17 Widening (Speedway Boulevard) - Existing and Design Year Sound Levels

RECEPTOR NUMBER	EXISTING 2020	2040 NO-BUILD	2040 Alt 1	2040 Alt 2	2040 Alt 3	2040 Alt 4	INCREASE OVER EXISTING				NAC IMPACT?	SUBSTANTIAL INCREASE IMPACT?	NAC	Land Use - NAC Criteria (including approach)
							Alt 1	Alt 2	Alt 3	Alt 4				
1	63.8	65.0	68.5	68.3	67.3	68.7	4.7	4.5	3.5	4.9	No	No	E	Bar/Gentlemen's Club-71 dBA
2	62.6	63.8	67.0	66.2	65.7	66.6	4.4	3.6	3.1	4.0	No	No	E	Bar/Gentlemen's Club-71 dBA
3	58.9	60.1	61.3	61.7	62.2	61.8	2.4	2.8	3.3	2.9	No	No	C	SCAD-athletic fields-66 dBA
4	-	-	-	-	-	-	-	-	-	-	-	-	F	Farmer's Market, Retail (N/A)

Source: Michael Baker International, August, 2016.

Table 5
Leq Noise Level (dBA) at 50 Feet for Construction Equipment

Equipment	dBA Leq @ 50 feet
Earth Moving:	
Front Loader	79
Back Hoe	85
Dozer	80
Tractor	80
Scraper	88
Grader	85
Truck	91
Paver	89
Materials Handling:	
Concrete Mixer	85
Concrete Pump	82
Crane	83
Derrick	88
Stationary:	
Pump	76
Generator	78
Compressor	81
Impact:	
Pile Driver	100
Jackhammer	88
Rock Drill	98
Other:	
Saw	78
Vibrator	76

SOURCE: Grant, Charles A. and Reagan, Jerry, A., *Highway Construction Noise: Measurement, Prediction and Mitigation.*

SCDOT's "2007 Standard Specifications for Highway Construction" includes various references to construction noise, including Sections 107.6-paragraph 3, 606.3.1.6.3-paragraph 1, 607.3.1.6.3-paragraph 1, 607.3.2.6.3-paragraph 1, and 702.4.15-paragraph 3. The SCDOT specifications cited above are generalized for nuisance noise avoidance. Detailed specifications suggested for consideration for inclusion in the proposed project's construction documents may consist of the following:

- Construction equipment powered by an internal combustion engine shall be equipped with a properly maintained muffler.
- Air compressors shall meet current USEPA noise emission exhaust standards.
- Air powered equipment shall be fitted with pneumatic exhaust silencers.
- Stationary equipment powered by an internal combustion engine shall not be operated within 150 feet of noise sensitive areas without portable noise barriers placed between the equipment and noise sensitive sites. Noise sensitive sites include residential buildings, motels, hotels, schools, churches, hospitals, nursing homes, libraries and public recreation areas.
- Portable noise barriers shall be constructed of plywood or tongue and groove boards with a noise absorbent treatment on the interior surface (facing the equipment).
- Powered construction equipment shall not be operated during the traditional evening and/or sleeping hours within 150 feet of a noise sensitive site, to be decided either by local ordinances and/or agreement with the SCDOT.

VII. COORDINATION WITH LOCAL OFFICIALS

SCDOT has no authority over local land use planning and development. SCDOT can only encourage local officials and developers to consider highway traffic noise in the planning, zoning and development of property neat existing and proposed highway corridors. The lack of consideration of highway traffic noise in land use planning at the local level has added to the highway traffic noise problem which will continue to grow as development continues adjacent to major highway long after these highways were proposed and/or constructed.

In order to help local officials and developers consider highway traffic noise in the vicinity of proposed Type I project, SCDOT will inform them of he predicted future noise levels and the required distance from such projects needed to ensure that noise levels remain below the NAC for each type of land use. The detailed noise analysis will be made available during the public availability period for the proposed project. Additionally, the following 66 and 71 dBA contour distances in Table 6 will be provided to local officials with Jasper County for planning purposes, per the requirements in 23 CFR Part 772.

Table 6
Noise Planning Contour Distances for US 17 (Speedway Boulevard)

Undeveloped Areas	Land Use	Impact Contour	Approximate Distance from Edge of nearest Travel Lane
US 17	Residential	66 dBA	160 feet
	Commercial	71 dBA	75 feet

SOURCE: Michael Baker International, August, 2016.

APPENDIX A

U.S. 17 Traffic Data

Appendix A - US 17 Speedway Boulevard Traffic Data						
SC/GA State Line to SC 315	**EXISTING 2020**		**DESIGN YEAR NO-BUILD 2040**		**DESIGN YEAR 2040 ALTS 1, 2, 3, 4**	
AADT	17,700		23,300		23,300	
DHV factor	10%		10%		10%	
PEAK	1,770		2,330		2,330	
Speed	55 MPH		55 MPH		55 MPH	
Lane Width	12-foot		12-foot		12-foot	
Number of lanes in each direction	1		1		2	
Directional Split	50/50		50/50		50/50	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound (per lane)	Westbound (per lane)
90% Autos	797	797	1049	1049	524	524
3% Medium Trucks	27	27	35	35	17	17
7% Heavy Trucks	62	62	82	82	41	41

APPENDIX B

Noise Measurement Field Data Sheets

NOISE SURVEY SHEET

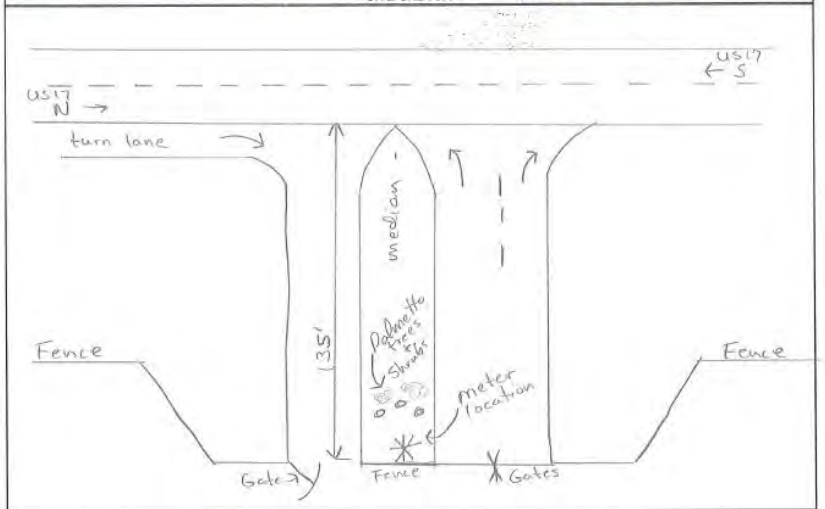
EQUIPMENT: METER Norsonics 132 CALIBRATOR EXTECH 407744
CALIBRATION: START 93.8 dB END 94.0 dB
RESPONSE: FAST ____ SLOW X A-WEIGHTING X BATTERY CHECK X

WEATHER DATA: Clear Sunny 49° F

TRAFFIC DATA		
ROAD	US17 N	US17 S
AUTOS	155	28
MED TRKS	3	7
HVY TRKS	4	7
DURATION	15 min	15 min

DATE: 1/8/2014
SITE #: 2
START: 4:40 PM
END: 4:55 PM
LEQ: ____
SPEED: Posted 55 mph

SITE SKETCH



BACKGROUND NOISE ____
MAJOR SOURCES US. 17 traffic
UNUSUAL EVENTS n/a
OTHER NOTES ____

Michael Baker Jr., Inc. 2005

NOISE SURVEY SHEET

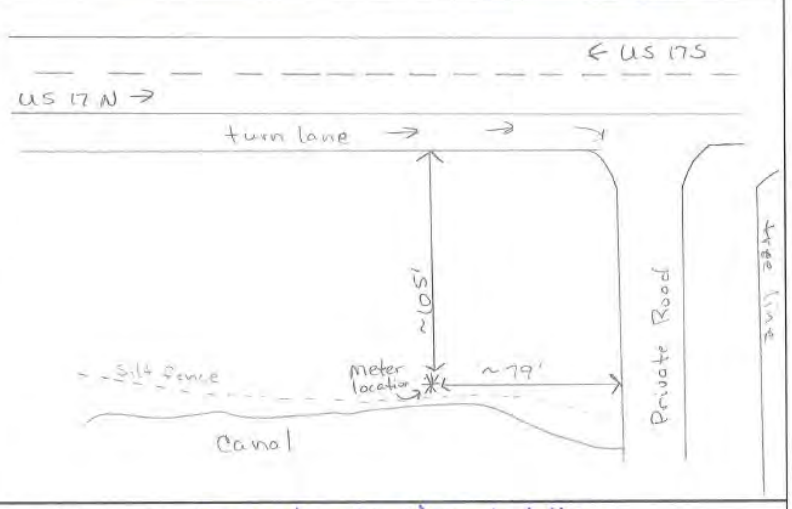
EQUIPMENT: METER Norsonics 132 CALIBRATOR EXTECH 407744
CALIBRATION: START 93.8 dB END 94.0 dB
RESPONSE: FAST ____ SLOW X A-WEIGHTING X BATTERY CHECK X

WEATHER DATA: clear, sunny, 46°F

TRAFFIC DATA		
ROAD	US17 N	US17 S
AUTOS	200	165
MED TRKS	3	3
HVY TRKS	6	7
DURATION	15 min	15 min

DATE: 1/8/2014
SITE #: 1
START: 5:06 PM
END: 5:21 PM
LEQ: ____
SPEED: Posted 55 mph

SITE SKETCH



BACKGROUND NOISE Dog barking (0 min) people talking
MAJOR SOURCES US 17 traffic
UNUSUAL EVENTS n/a
OTHER NOTES ____

Michael Baker Jr., Inc. 2005

APPENDIX C

TNM Data Files

TNM Data Files for
2020 Existing (Base) Scenario

MBI 18 August 2016
APK TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Existing

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

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 17 NB	20.0	point1	1	72,694.4	97,549.9	10.00				Average	
		point2	2	73,357.8	98,829.7	8.00				Average	
		point34	34	73,546.8	99,088.2	6.00				Average	
		point3	3	73,744.6	99,336.9	5.00				Average	
		point33	33	73,906.5	99,520.0	5.00				Average	
		point32	32	74,092.6	99,706.1	5.00				Average	
		point4	4	74,458.8	100,065.3	5.00				Average	
		point5	5	76,627.6	102,221.2	5.00				Average	
		point71	71	78,090.4	103,669.3	5.00				Average	
		point6	6	78,551.7	105,121.0	6.00				Average	
		point7	7	82,093.0	107,639.2	6.00				Average	
		point8	8	82,421.2	107,976.8	6.00				Average	
		point9	9	82,679.4	108,289.6	6.00				Average	
		point31	31	82,841.0	108,504.5	6.00				Average	
		point10	10	82,967.6	108,694.5	6.00				Average	
		point30	30	83,081.2	108,878.0	7.00				Average	
		point11	11	83,185.1	109,063.5	7.00				Average	
		point12	12	83,371.6	109,431.0	8.00				Average	
		point13	13	83,549.4	109,869.6	8.00				Average	
		point14	14	83,699.2	110,352.7	8.00				Average	
		point15	15	83,794.6	110,780.6	8.00				Average	
		point29	29	83,842.7	111,082.2	8.00				Average	
		point16	16	83,875.2	111,386.1	8.00				Average	
		point17	17	83,890.9	111,885.3	8.00				Average	
		point18	18	83,859.2	112,405.1	8.00				Average	
		point19	19	83,793.1	112,848.8	8.00				Average	

		point20	20	83,617.0	113,983.7	8.00				Average	
		point21	21	83,550.9	114,395.9	7.00				Average	
		point22	22	83,450.6	115,040.4	7.00				Average	
		point23	23	83,388.6	115,358.8	6.00				Average	
		point24	24	83,302.4	115,698.5	5.00				Average	
		point25	25	83,176.4	116,095.1	5.00				Average	
		point26	26	83,043.0	116,422.7	5.00				Average	
		point27	27	82,922.3	116,687.0	5.00				Average	
		point28	28	82,674.1	117,123.7	5.00					
US 17 SB	20.0	point35	35	82,640.7	117,128.5	0.00				Average	
		point36	36	82,664.7	117,117.1	5.00				Average	
		point37	37	82,912.9	116,680.4	5.00				Average	
		point38	38	83,033.6	116,416.1	5.00				Average	
		point39	39	83,167.0	116,088.5	5.00				Average	
		point40	40	83,293.0	115,692.0	5.00				Average	
		point41	41	83,379.2	115,352.2	6.00				Average	
		point42	42	83,441.2	115,033.8	7.00				Average	
		point43	43	83,541.5	114,389.4	7.00				Average	
		point44	44	83,607.6	113,977.1	8.00				Average	
		point45	45	83,782.4	112,841.9	8.00				Average	
		point46	46	83,848.5	112,398.2	8.00				Average	
		point47	47	83,881.5	111,878.7	8.00				Average	
		point48	48	83,865.9	111,379.5	8.00				Average	
		point49	49	83,829.0	111,079.9	8.00				Average	
		point50	50	83,782.7	110,778.3	8.00				Average	
		point51	51	83,686.4	110,348.8	8.00				Average	
		point52	52	83,537.2	109,866.7	8.00				Average	
		point53	53	83,359.3	109,432.2	8.00				Average	
		point54	54	83,171.7	109,060.4	7.00				Average	
		point55	55	83,067.8	108,874.8	7.00				Average	
		point56	56	82,953.4	108,693.9	6.00				Average	
		point57	57	82,828.0	108,502.9	6.00				Average	
		point58	58	82,666.1	108,291.0	6.00				Average	
		point59	59	82,407.0	107,979.7	6.00				Average	
		point60	60	82,078.3	107,642.4	6.00				Average	
		point61	61	79,537.0	105,124.2	6.00				Average	
		point70	70	78,074.5	103,672.0	5.00				Average	
		point62	62	76,612.9	102,224.0	5.00				Average	
		point63	63	74,444.2	100,069.0	5.00				Average	

		point64	64	74,073.0	99,704.9	5.00				Average	
		point65	65	73,892.1	99,524.2	5.00				Average	
		point66	66	73,724.6	99,339.6	5.00				Average	
		point67	67	73,529.9	99,087.0	6.00				Average	
		point68	68	73,341.7	98,828.1	8.00				Average	
		point69	69	72,681.2	97,545.0	10.00					

MBI 18 August 201
APK TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Existing

Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
US 17 NB	point1	1	885	90	55	3	55	7	55	0	0	0	0
	point2	2	885	90	55	3	55	7	55	0	0	0	0
	point34	34	885	90	55	3	55	7	55	0	0	0	0
	point3	3	885	90	55	3	55	7	55	0	0	0	0
	point33	33	885	90	55	3	55	7	55	0	0	0	0
	point32	32	885	90	55	3	55	7	55	0	0	0	0
	point4	4	885	90	55	3	55	7	55	0	0	0	0
	point5	5	885	90	55	3	55	7	55	0	0	0	0
	point71	71	885	90	55	3	55	7	55	0	0	0	0
	point6	6	885	90	55	3	55	7	55	0	0	0	0
	point7	7	885	90	55	3	55	7	55	0	0	0	0
	point8	8	885	90	55	3	55	7	55	0	0	0	0
	point9	9	885	90	55	3	55	7	55	0	0	0	0
	point31	31	885	90	55	3	55	7	55	0	0	0	0
	point10	10	885	90	55	3	55	7	55	0	0	0	0
	point30	30	885	90	55	3	55	7	55	0	0	0	0
	point11	11	885	90	55	3	55	7	55	0	0	0	0
	point12	12	885	90	55	3	55	7	55	0	0	0	0
	point13	13	885	90	55	3	55	7	55	0	0	0	0
	point14	14	885	90	55	3	55	7	55	0	0	0	0
	point15	15	885	90	55	3	55	7	55	0	0	0	0
	point29	29	885	90	55	3	55	7	55	0	0	0	0
	point16	16	885	90	55	3	55	7	55	0	0	0	0

	point17	17	885	90	55	3	55	7	55	0	0	0	0
	point18	18	885	90	55	3	55	7	55	0	0	0	0
	point19	19	885	90	55	3	55	7	55	0	0	0	0
	point20	20	885	90	55	3	55	7	55	0	0	0	0
	point21	21	885	90	55	3	55	7	55	0	0	0	0
	point22	22	885	90	55	3	55	7	55	0	0	0	0
	point23	23	885	90	55	3	55	7	55	0	0	0	0
	point24	24	885	90	55	3	55	7	55	0	0	0	0
	point25	25	885	90	55	3	55	7	55	0	0	0	0
	point26	26	885	90	55	3	55	7	55	0	0	0	0
	point27	27	885	90	55	3	55	7	55	0	0	0	0
	point28	28											
US 17 SB	point35	35	885	90	55	3	55	7	55	0	0	0	0
	point36	36	885	90	55	3	55	7	55	0	0	0	0
	point37	37	885	90	55	3	55	7	55	0	0	0	0
	point38	38	885	90	55	3	55	7	55	0	0	0	0
	point39	39	885	90	55	3	55	7	55	0	0	0	0
	point40	40	885	90	55	3	55	7	55	0	0	0	0
	point41	41	885	90	55	3	55	7	55	0	0	0	0
	point42	42	885	90	55	3	55	7	55	0	0	0	0
	point43	43	885	90	55	3	55	7	55	0	0	0	0
	point44	44	885	90	55	3	55	7	55	0	0	0	0
	point45	45	885	90	55	3	55	7	55	0	0	0	0
	point46	46	885	90	55	3	55	7	55	0	0	0	0
	point47	47	885	90	55	3	55	7	55	0	0	0	0
	point48	48	885	90	55	3	55	7	55	0	0	0	0
	point49	49	885	90	55	3	55	7	55	0	0	0	0
	point50	50	885	90	55	3	55	7	55	0	0	0	0
	point51	51	885	90	55	3	55	7	55	0	0	0	0
	point52	52	885	90	55	3	55	7	55	0	0	0	0
	point53	53	885	90	55	3	55	7	55	0	0	0	0
	point54	54	885	90	55	3	55	7	55	0	0	0	0
	point55	55	885	90	55	3	55	7	55	0	0	0	0
	point56	56	885	90	55	3	55	7	55	0	0	0	0
	point57	57	885	90	55	3	55	7	55	0	0	0	0

	point58	58	885	90	55	3	55	7	55	0	0	0	0
	point59	59	885	90	55	3	55	7	55	0	0	0	0
	point60	60	885	90	55	3	55	7	55	0	0	0	0
	point61	61	885	90	55	3	55	7	55	0	0	0	0
	point70	70	885	90	55	3	55	7	55	0	0	0	0
	point62	62	885	90	55	3	55	7	55	0	0	0	0
	point63	63	885	90	55	3	55	7	55	0	0	0	0
	point64	64	885	90	55	3	55	7	55	0	0	0	0
	point65	65	885	90	55	3	55	7	55	0	0	0	0
	point66	66	885	90	55	3	55	7	55	0	0	0	0
	point67	67	885	90	55	3	55	7	55	0	0	0	0
	point68	68	885	90	55	3	55	7	55	0	0	0	0
	point69	69											

MBI 18 August 2016
APK TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Existing

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
1-Restaurant/Bar	1	1	74,297.8	100,164.7	5.00	4.92	0.00	71	10.0	8.0	Y
2-Restaurant/Bar	3	1	82,622.8	108,552.0	5.00	4.92	0.00	71	10.0	8.0	Y
3-SCAD Athletic Fields	5	1	83,961.0	113,667.1	5.00	4.92	0.00	66	10.0	8.0	Y

MBI 18 August 2016
APK TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Existing
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
1-Restaurant/Bar	1	1	0.0	63.8	71	63.8	10	----	63.8	0.0	8	-8.0
2-Restaurant/Bar	3	1	0.0	62.6	71	62.6	10	----	62.6	0.0	8	-8.0
3-SCAD Athletic Fields	5	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	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

TNM Data Files for
2040 No-build Scenario

MBI 18 August 2016
APK TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Des Yr No-Build

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

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 17 NB	20.0	point1	1	72,694.4	97,549.9	10.00				Average	
		point2	2	73,357.8	98,829.7	8.00				Average	
		point34	34	73,546.8	99,088.2	6.00				Average	
		point3	3	73,744.6	99,336.9	5.00				Average	
		point33	33	73,906.5	99,520.0	5.00				Average	
		point32	32	74,092.6	99,706.1	5.00				Average	
		point4	4	74,458.8	100,065.3	5.00				Average	
		point5	5	76,627.6	102,221.2	5.00				Average	
		point71	71	78,090.4	103,669.3	5.00				Average	
		point6	6	79,551.7	105,121.0	6.00				Average	
		point7	7	82,093.0	107,639.2	6.00				Average	
		point8	8	82,421.2	107,976.8	6.00				Average	
		point9	9	82,679.4	108,289.6	6.00				Average	
		point31	31	82,841.0	108,504.5	6.00				Average	
		point10	10	82,967.6	108,694.5	6.00				Average	
		point30	30	83,081.2	108,878.0	7.00				Average	
		point11	11	83,185.1	109,063.5	7.00				Average	
		point12	12	83,371.6	109,431.0	8.00				Average	
		point13	13	83,549.4	109,869.6	8.00				Average	
		point14	14	83,699.2	110,352.7	8.00				Average	
		point15	15	83,794.6	110,780.6	8.00				Average	
		point29	29	83,842.7	111,082.2	8.00				Average	
		point16	16	83,875.2	111,386.1	8.00				Average	
		point17	17	83,890.9	111,885.3	8.00				Average	
		point18	18	83,859.2	112,405.1	8.00				Average	
		point19	19	83,793.1	112,848.8	8.00				Average	

		point20	20	83,617.0	113,983.7	8.00				Average	
		point21	21	83,550.9	114,395.9	7.00				Average	
		point22	22	83,450.6	115,040.4	7.00				Average	
		point23	23	83,388.6	115,358.8	6.00				Average	
		point24	24	83,302.4	115,698.5	5.00				Average	
		point25	25	83,176.4	116,095.1	5.00				Average	
		point26	26	83,043.0	116,422.7	5.00				Average	
		point27	27	82,922.3	116,687.0	5.00				Average	
		point28	28	82,674.1	117,123.7	5.00					
US 17 SB	20.0	point35	35	82,640.7	117,128.5	0.00				Average	
		point36	36	82,664.7	117,117.1	5.00				Average	
		point37	37	82,912.9	116,680.4	5.00				Average	
		point38	38	83,033.6	116,416.1	5.00				Average	
		point39	39	83,167.0	116,088.5	5.00				Average	
		point40	40	83,293.0	115,692.0	5.00				Average	
		point41	41	83,379.2	115,352.2	6.00				Average	
		point42	42	83,441.2	115,033.8	7.00				Average	
		point43	43	83,541.5	114,389.4	7.00				Average	
		point44	44	83,607.6	113,977.1	8.00				Average	
		point45	45	83,782.4	112,841.9	8.00				Average	
		point46	46	83,848.5	112,398.2	8.00				Average	
		point47	47	83,881.5	111,878.7	8.00				Average	
		point48	48	83,865.9	111,379.5	8.00				Average	
		point49	49	83,829.0	111,079.9	8.00				Average	
		point50	50	83,782.7	110,778.3	8.00				Average	
		point51	51	83,686.4	110,348.8	8.00				Average	
		point52	52	83,537.2	109,836.7	8.00				Average	
		point53	53	83,359.3	109,432.2	8.00				Average	
		point54	54	83,171.7	109,030.4	7.00				Average	
		point55	55	83,067.8	108,874.8	7.00				Average	
		point56	56	82,953.4	108,693.9	6.00				Average	
		point57	57	82,828.0	108,502.9	6.00				Average	
		point58	58	82,666.1	108,231.0	6.00				Average	
		point59	59	82,407.0	107,979.7	6.00				Average	
		point60	60	82,078.3	107,642.4	6.00				Average	
		point61	61	79,537.0	105,124.2	6.00				Average	
		point70	70	78,074.5	103,672.0	5.00				Average	
		point62	62	76,612.9	102,224.0	5.00				Average	
		point63	63	74,444.2	100,039.0	5.00				Average	

		point64	64	74,073.0	99,704.9	5.00				Average	
		point65	65	73,892.1	99,524.2	5.00				Average	
		point66	66	73,724.6	99,339.6	5.00				Average	
		point67	67	73,529.9	99,087.0	6.00				Average	
		point68	68	73,341.7	98,828.1	8.00				Average	
		point69	69	72,681.2	97,545.0	10.00					

MBI 18 August 201
APK TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Des Yr No-Build

Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		NTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
US 17 NB	point1	1	1165	90	55	3	55	7	55	0	0	0	0
	point2	2	1165	90	55	3	55	7	55	0	0	0	0
	point34	34	1165	90	55	3	55	7	55	0	0	0	0
	point3	3	1165	90	55	3	55	7	55	0	0	0	0
	point33	33	1165	90	55	3	55	7	55	0	0	0	0
	point32	32	1165	90	55	3	55	7	55	0	0	0	0
	point4	4	1165	90	55	3	55	7	55	0	0	0	0
	point5	5	1165	90	55	3	55	7	55	0	0	0	0
	point71	71	1165	90	55	3	55	7	55	0	0	0	0
	point6	6	1165	90	55	3	55	7	55	0	0	0	0
	point7	7	1165	90	55	3	55	7	55	0	0	0	0
	point8	8	1165	90	55	3	55	7	55	0	0	0	0
	point9	9	1165	90	55	3	55	7	55	0	0	0	0
	point31	31	1165	90	55	3	55	7	55	0	0	0	0
	point10	10	1165	90	55	3	55	7	55	0	0	0	0
	point30	30	1165	90	55	3	55	7	55	0	0	0	0
	point11	11	1165	90	55	3	55	7	55	0	0	0	0
	point12	12	1165	90	55	3	55	7	55	0	0	0	0
	point13	13	1165	90	55	3	55	7	55	0	0	0	0
	point14	14	1165	90	55	3	55	7	55	0	0	0	0
	point15	15	1165	90	55	3	55	7	55	0	0	0	0
	point29	29	1165	90	55	3	55	7	55	0	0	0	0
	point16	16	1165	90	55	3	55	7	55	0	0	0	0

	point17	17	1165	90	55	3	55	7	55	0	0	0	0
	point18	18	1165	90	55	3	55	7	55	0	0	0	0
	point19	19	1165	90	55	3	55	7	55	0	0	0	0
	point20	20	1165	90	55	3	55	7	55	0	0	0	0
	point21	21	1165	90	55	3	55	7	55	0	0	0	0
	point22	22	1165	90	55	3	55	7	55	0	0	0	0
	point23	23	1165	90	55	3	55	7	55	0	0	0	0
	point24	24	1165	90	55	3	55	7	55	0	0	0	0
	point25	25	1165	90	55	3	55	7	55	0	0	0	0
	point26	26	1165	90	55	3	55	7	55	0	0	0	0
	point27	27	1165	90	55	3	55	7	55	0	0	0	0
	point28	28											
US 17 SB	point35	35	1165	90	55	3	55	7	55	0	0	0	0
	point36	36	1165	90	55	3	55	7	55	0	0	0	0
	point37	37	1165	90	55	3	55	7	55	0	0	0	0
	point38	38	1165	90	55	3	55	7	55	0	0	0	0
	point39	39	1165	90	55	3	55	7	55	0	0	0	0
	point40	40	1165	90	55	3	55	7	55	0	0	0	0
	point41	41	1165	90	55	3	55	7	55	0	0	0	0
	point42	42	1165	90	55	3	55	7	55	0	0	0	0
	point43	43	1165	90	55	3	55	7	55	0	0	0	0
	point44	44	1165	90	55	3	55	7	55	0	0	0	0
	point45	45	1165	90	55	3	55	7	55	0	0	0	0
	point46	46	1165	90	55	3	55	7	55	0	0	0	0
	point47	47	1165	90	55	3	55	7	55	0	0	0	0
	point48	48	1165	90	55	3	55	7	55	0	0	0	0
	point49	49	1165	90	55	3	55	7	55	0	0	0	0
	point50	50	1165	90	55	3	55	7	55	0	0	0	0
	point51	51	1165	90	55	3	55	7	55	0	0	0	0
	point52	52	1165	90	55	3	55	7	55	0	0	0	0
	point53	53	1165	90	55	3	55	7	55	0	0	0	0
	point54	54	1165	90	55	3	55	7	55	0	0	0	0
	point55	55	1165	90	55	3	55	7	55	0	0	0	0
	point56	56	1165	90	55	3	55	7	55	0	0	0	0
	point57	57	1165	90	55	3	55	7	55	0	0	0	0

	point58	58	1165	90	55	3	55	7	55	0	0	0	0
	point59	59	1165	90	55	3	55	7	55	0	0	0	0
	point60	60	1165	90	55	3	55	7	55	0	0	0	0
	point61	61	1165	90	55	3	55	7	55	0	0	0	0
	point70	70	1165	90	55	3	55	7	55	0	0	0	0
	point62	62	1165	90	55	3	55	7	55	0	0	0	0
	point63	63	1165	90	55	3	55	7	55	0	0	0	0
	point64	64	1165	90	55	3	55	7	55	0	0	0	0
	point65	65	1165	90	55	3	55	7	55	0	0	0	0
	point66	66	1165	90	55	3	55	7	55	0	0	0	0
	point67	67	1165	90	55	3	55	7	55	0	0	0	0
	point68	68	1165	90	55	3	55	7	55	0	0	0	0
	point69	69											

MBI 18 August 2016
APK TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Des Yr No-Build

Receiver

Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
1-Restaurant/Bar	1	1	74,297.8	100,164.7	5.00	4.92	0.00	71	10.0	8.0	Y
2-Restaurant/Bar	3	1	82,622.8	108,552.0	5.00	4.92	0.00	71	10.0	8.0	Y
3-SCAD Athletic Fields	5	1	83,961.0	113,667.1	5.00	4.92	0.00	66	10.0	8.0	Y

MBI 18 August 2016
APK TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Des Yr No-Build
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
1-Restaurant/Bar	1	1	0.0	65.0	71	65.0	10	----	65.0	0.0	8	-8.0
2-Restaurant/Bar	3	1	0.0	63.8	71	63.8	10	----	63.8	0.0	8	-8.0
3-SCAD Athletic Fields	5	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	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

TNM Data Files for
2040 Build Scenarios (Alts, 1, 2, 3, 4)

MBI 18 August 2016
APK TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 1 FINAL

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

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 17 NB	32.0	point1	1	72,726.5	97,532.2	10.00				Average	
		point2	2	73,384.1	98,822.7	8.00				Average	
		point34	34	73,548.8	99,083.9	6.00				Average	
		point3	3	73,740.8	99,331.6	5.00				Average	
		point33	33	73,910.6	99,515.9	5.00				Average	
		point32	32	74,097.6	99,702.3	5.00				Average	
		point4	4	74,460.0	100,063.6	5.00				Average	
		point5	5	76,634.1	102,215.2	5.00				Average	
		point71	71	78,094.0	103,658.0	5.00				Average	
		point6	6	79,551.6	105,110.0	6.00				Average	
		point7	7	82,095.1	107,632.9	6.00				Average	
		point8	8	82,432.2	107,970.4	6.00				Average	
		point9	9	82,690.2	108,290.0	6.00				Average	
		point31	31	82,852.6	108,508.6	6.00				Average	
		point10	10	82,981.5	108,687.4	6.00				Average	
		point30	30	83,085.4	108,866.2	7.00				Average	
		point11	11	83,193.4	109,047.3	7.00				Average	
		point12	12	83,377.1	109,417.0	8.00				Average	
		point76	76	83,471.3	109,638.6	8.00				Average	
		point13	13	83,557.9	109,862.7	8.00				Average	
		point74	74	83,638.1	110,100.9	8.00				Average	
		point14	14	83,706.2	110,343.6	8.00				Average	
		point15	15	83,804.1	110,776.5	8.00				Average	
		point29	29	83,850.4	111,075.7	8.00				Average	
		point16	16	83,886.3	111,451.6	8.00				Average	
		point17	17	83,896.0	111,882.1	8.00				Average	

		point72	72	83,888.6	112,148.0	8.00				Average	
		point18	18	83,866.8	112,400.0	8.00				Average	
		point19	19	83,808.0	112,848.9	8.00				Average	
		point79	79	83,716.0	113,417.1	8.00				Average	
		point20	20	83,623.1	113,983.0	8.00				Average	
		point21	21	83,560.0	114,398.6	7.00				Average	
		point22	22	83,457.0	115,046.9	7.00				Average	
		point23	23	83,397.7	115,360.8	6.00				Average	
		point24	24	83,300.0	115,740.5	5.00				Average	
		point25	25	83,180.4	116,104.1	5.00				Average	
		point26	26	83,043.0	116,443.2	5.00				Average	
		point27	27	82,916.5	116,696.6	5.00				Average	
		point28	28	82,681.3	117,126.4	5.00					
US 17 SB	32.0	point36	36	82,616.2	117,088.0	5.00				Average	
		point37	37	82,855.1	116,655.2	5.00				Average	
		point38	38	82,984.9	116,388.6	5.00				Average	
		point39	39	83,120.2	116,065.3	5.00				Average	
		point40	40	83,243.2	115,683.9	5.00				Average	
		point41	41	83,321.4	115,348.6	6.00				Average	
		point42	42	83,381.0	115,027.5	7.00				Average	
		point43	43	83,488.5	114,380.2	7.00				Average	
		point44	44	83,553.2	113,971.3	8.00				Average	
		point78	78	83,643.7	113,406.7	8.00				Average	
		point45	45	83,739.8	112,839.2	8.00				Average	
		point46	46	83,799.9	112,392.6	8.00				Average	
		point73	73	83,820.3	112,134.2	8.00				Average	
		point47	47	83,828.6	111,877.1	8.00				Average	
		point48	48	83,818.8	111,453.4	8.00				Average	
		point49	49	83,780.7	111,088.1	8.00				Average	
		point50	50	83,735.9	110,786.0	8.00				Average	
		point51	51	83,638.4	110,351.3	8.00				Average	
		point75	75	83,571.0	110,113.0	8.00				Average	
		point52	52	83,487.6	109,878.5	8.00				Average	
		point77	77	83,403.9	109,656.5	8.00				Average	
		point53	53	83,307.4	109,446.4	8.00				Average	
		point54	54	83,120.2	109,075.3	7.00				Average	
		point55	55	83,016.5	108,891.6	7.00				Average	
		point56	56	82,913.7	108,719.7	6.00				Average	
		point57	57	82,791.8	108,539.4	6.00				Average	

		point58	58	82,636.8	108,332.4	6.00			Average	
		point59	59	82,374.3	108,022.4	6.00			Average	
		point60	60	82,034.0	107,686.2	6.00			Average	
		point61	61	79,501.1	105,159.0	6.00			Average	
		point70	70	78,047.2	103,701.7	5.00			Average	
		point62	62	76,586.3	102,260.1	5.00			Average	
		point63	63	74,418.1	100,105.0	5.00			Average	
		point64	64	74,043.9	99,741.4	5.00			Average	
		point65	65	73,862.9	99,559.8	5.00			Average	
		point66	66	73,689.2	99,369.1	5.00			Average	
		point67	67	73,497.3	99,116.0	6.00			Average	
		point68	68	73,324.4	98,847.7	8.00			Average	
		point69	69	72,667.7	97,557.3	10.00				
US 17 NB outer	32.0	point81	81	72,735.5	97,524.7	10.00			Average	
		point82	82	73,394.4	98,816.2	8.00			Average	
		point83	83	73,559.1	99,077.4	6.00			Average	
		point84	84	73,750.5	99,325.1	5.00			Average	
		point85	85	73,920.3	99,509.4	5.00			Average	
		point86	86	74,106.4	99,693.8	5.00			Average	
		point87	87	74,468.8	100,055.0	5.00			Average	
		point88	88	76,644.1	102,208.9	5.00			Average	
		point89	89	78,104.0	103,651.7	5.00			Average	
		point90	90	79,561.6	105,102.6	6.00			Average	
		point91	91	82,105.1	107,621.8	6.00			Average	
		point92	92	82,441.9	107,962.7	6.00			Average	
		point93	93	82,699.9	108,282.3	6.00			Average	
		point94	94	82,862.6	108,501.2	6.00			Average	
		point95	95	82,991.5	108,680.0	6.00			Average	
		point96	96	83,095.4	108,860.0	7.00			Average	
		point97	97	83,204.6	109,040.5	7.00			Average	
		point98	98	83,388.3	109,410.2	8.00			Average	
		point99	99	83,481.6	109,630.9	8.00			Average	
		point100	100	83,568.2	109,855.0	8.00			Average	
		point101	101	83,649.8	110,095.8	8.00			Average	
		point102	102	83,717.1	110,338.2	8.00			Average	
		point103	103	83,814.9	110,771.1	8.00			Average	
		point104	104	83,862.3	111,071.5	8.00			Average	
		point105	105	83,899.0	111,450.3	8.00			Average	
		point106	106	83,909.8	111,878.0	8.00			Average	

		point107	107	83,902.5	112,146.1	8.00				Average	
		point108	108	83,878.1	112,402.2	8.00				Average	
		point109	109	83,819.1	112,852.5	8.00				Average	
		point110	110	83,728.7	113,420.4	8.00				Average	
		point111	111	83,636.9	113,987.3	8.00				Average	
		point112	112	83,574.2	114,401.4	7.00				Average	
		point113	113	83,470.1	115,048.4	7.00				Average	
		point114	114	83,409.5	115,362.2	6.00				Average	
		point115	115	83,312.7	115,745.5	5.00				Average	
		point116	116	83,192.3	116,110.1	5.00				Average	
		point117	117	83,053.1	116,449.5	5.00				Average	
		point118	118	82,926.2	116,704.3	5.00				Average	
		point119	119	82,687.6	117,129.9	5.00					
US 17 SB inner	32.0	point121	121	82,622.0	117,090.5	5.00				Average	
		point122	122	82,867.0	116,661.2	5.00				Average	
		point123	123	82,996.8	116,394.6	5.00				Average	
		point124	124	83,133.3	116,066.9	5.00				Average	
		point125	125	83,256.3	115,685.5	5.00				Average	
		point126	126	83,334.7	115,351.5	6.00				Average	
		point127	127	83,393.8	115,030.2	7.00				Average	
		point128	128	83,501.3	114,382.9	7.00				Average	
		point129	129	83,568.0	113,973.3	8.00				Average	
		point130	130	83,658.0	113,408.1	8.00				Average	
		point131	131	83,752.7	112,842.3	8.00				Average	
		point132	132	83,813.0	112,396.2	8.00				Average	
		point133	133	83,832.2	112,137.6	8.00				Average	
		point134	134	83,842.8	111,880.4	8.00				Average	
		point135	135	83,833.2	111,455.4	8.00				Average	
		point136	136	83,795.1	111,090.1	8.00				Average	
		point137	137	83,750.9	110,788.1	8.00				Average	
		point138	138	83,653.4	110,353.5	8.00				Average	
		point139	139	83,585.1	110,109.6	8.00				Average	
		point140	140	83,501.8	109,875.1	8.00				Average	
		point141	141	83,418.4	109,653.5	8.00				Average	
		point142	142	83,321.9	109,443.3	8.00				Average	
		point143	143	83,132.8	109,068.7	7.00				Average	
		point144	144	83,029.0	108,884.9	7.00				Average	
		point145	145	82,928.3	108,716.6	6.00				Average	
		point146	146	82,806.4	108,536.4	6.00				Average	

		point147	147	82,648.9	108,323.7	6.00				Average	
		point148	148	82,384.4	108,015.0	6.00				Average	
		point149	149	82,043.2	107,676.1	6.00				Average	
		point150	150	79,509.7	105,149.9	6.00				Average	
		point151	151	78,055.5	103,694.2	5.00				Average	
		point152	152	76,595.2	102,253.1	5.00				Average	
		point153	153	74,426.2	100,096.8	5.00				Average	
		point154	154	74,052.2	99,732.7	5.00				Average	
		point155	155	73,870.3	99,550.9	5.00				Average	
		point156	156	73,696.9	99,359.7	5.00				Average	
		point157	157	73,506.2	99,108.6	6.00				Average	
		point158	158	73,335.6	98,841.7	8.00				Average	
		point159	159	72,679.0	97,552.6	10.00					

MBI 18 August 201
APK TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 1 FINAL

Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
US 17 NB	point1	1	582	90	55	3	55	7	55	0	0	0	0
	point2	2	582	90	55	3	55	7	55	0	0	0	0
	point34	34	582	90	55	3	55	7	55	0	0	0	0
	point3	3	582	90	55	3	55	7	55	0	0	0	0
	point33	33	582	90	55	3	55	7	55	0	0	0	0
	point32	32	582	90	55	3	55	7	55	0	0	0	0
	point4	4	582	90	55	3	55	7	55	0	0	0	0
	point5	5	582	90	55	3	55	7	55	0	0	0	0
	point71	71	582	90	55	3	55	7	55	0	0	0	0
	point6	6	582	90	55	3	55	7	55	0	0	0	0
	point7	7	582	90	55	3	55	7	55	0	0	0	0
	point8	8	582	90	55	3	55	7	55	0	0	0	0
	point9	9	582	90	55	3	55	7	55	0	0	0	0
	point31	31	582	90	55	3	55	7	55	0	0	0	0
	point10	10	582	90	55	3	55	7	55	0	0	0	0
	point30	30	582	90	55	3	55	7	55	0	0	0	0
	point11	11	582	90	55	3	55	7	55	0	0	0	0
	point12	12	582	90	55	3	55	7	55	0	0	0	0
	point76	76	582	90	55	3	55	7	55	0	0	0	0
	point13	13	582	90	55	3	55	7	55	0	0	0	0
	point74	74	582	90	55	3	55	7	55	0	0	0	0
	point14	14	582	90	55	3	55	7	55	0	0	0	0
	point15	15	582	90	55	3	55	7	55	0	0	0	0

	point29	29	582	90	55	3	55	7	55	0	0	0	0
	point16	16	582	90	55	3	55	7	55	0	0	0	0
	point17	17	582	90	55	3	55	7	55	0	0	0	0
	point72	72	582	90	55	3	55	7	55	0	0	0	0
	point18	18	582	90	55	3	55	7	55	0	0	0	0
	point19	19	582	90	55	3	55	7	55	0	0	0	0
	point79	79	582	90	55	3	55	7	55	0	0	0	0
	point20	20	582	90	55	3	55	7	55	0	0	0	0
	point21	21	582	90	55	3	55	7	55	0	0	0	0
	point22	22	582	90	55	3	55	7	55	0	0	0	0
	point23	23	582	90	55	3	55	7	55	0	0	0	0
	point24	24	582	90	55	3	55	7	55	0	0	0	0
	point25	25	582	90	55	3	55	7	55	0	0	0	0
	point26	26	582	90	55	3	55	7	55	0	0	0	0
	point27	27	582	90	55	3	55	7	55	0	0	0	0
	point28	28											
US 17 SB	point36	36	582	90	55	3	55	7	55	0	0	0	0
	point37	37	582	90	55	3	55	7	55	0	0	0	0
	point38	38	582	90	55	3	55	7	55	0	0	0	0
	point39	39	582	90	55	3	55	7	55	0	0	0	0
	point40	40	582	90	55	3	55	7	55	0	0	0	0
	point41	41	582	90	55	3	55	7	55	0	0	0	0
	point42	42	582	90	55	3	55	7	55	0	0	0	0
	point43	43	582	90	55	3	55	7	55	0	0	0	0
	point44	44	582	90	55	3	55	7	55	0	0	0	0
	point78	78	582	90	55	3	55	7	55	0	0	0	0
	point45	45	582	90	55	3	55	7	55	0	0	0	0
	point46	46	582	90	55	3	55	7	55	0	0	0	0
	point73	73	582	90	55	3	55	7	55	0	0	0	0
	point47	47	582	90	55	3	55	7	55	0	0	0	0
	point48	48	582	90	55	3	55	7	55	0	0	0	0
	point49	49	582	90	55	3	55	7	55	0	0	0	0
	point50	50	582	90	55	3	55	7	55	0	0	0	0
	point51	51	582	90	55	3	55	7	55	0	0	0	0
	point75	75	582	90	55	3	55	7	55	0	0	0	0

	point52	52	582	90	55	3	55	7	55	0	0	0	0
	point77	77	582	90	55	3	55	7	55	0	0	0	0
	point53	53	582	90	55	3	55	7	55	0	0	0	0
	point54	54	582	90	55	3	55	7	55	0	0	0	0
	point55	55	582	90	55	3	55	7	55	0	0	0	0
	point56	56	582	90	55	3	55	7	55	0	0	0	0
	point57	57	582	90	55	3	55	7	55	0	0	0	0
	point58	58	582	90	55	3	55	7	55	0	0	0	0
	point59	59	582	90	55	3	55	7	55	0	0	0	0
	point60	60	582	90	55	3	55	7	55	0	0	0	0
	point61	61	582	90	55	3	55	7	55	0	0	0	0
	point70	70	582	90	55	3	55	7	55	0	0	0	0
	point62	62	582	90	55	3	55	7	55	0	0	0	0
	point63	63	582	90	55	3	55	7	55	0	0	0	0
	point64	64	582	90	55	3	55	7	55	0	0	0	0
	point65	65	582	90	55	3	55	7	55	0	0	0	0
	point66	66	582	90	55	3	55	7	55	0	0	0	0
	point67	67	582	90	55	3	55	7	55	0	0	0	0
	point68	68	582	90	55	3	55	7	55	0	0	0	0
	point69	69											
US 17 NB outer	point81	81	582	90	55	3	55	7	55	0	0	0	0
	point82	82	582	90	55	3	55	7	55	0	0	0	0
	point83	83	582	90	55	3	55	7	55	0	0	0	0
	point84	84	582	90	55	3	55	7	55	0	0	0	0
	point85	85	582	90	55	3	55	7	55	0	0	0	0
	point86	86	582	90	55	3	55	7	55	0	0	0	0
	point87	87	582	90	55	3	55	7	55	0	0	0	0
	point88	88	582	90	55	3	55	7	55	0	0	0	0
	point89	89	582	90	55	3	55	7	55	0	0	0	0
	point90	90	582	90	55	3	55	7	55	0	0	0	0
	point91	91	582	90	55	3	55	7	55	0	0	0	0
	point92	92	582	90	55	3	55	7	55	0	0	0	0
	point93	93	582	90	55	3	55	7	55	0	0	0	0
	point94	94	582	90	55	3	55	7	55	0	0	0	0
	point95	95	582	90	55	3	55	7	55	0	0	0	0

	point96	96	582	90	55	3	55	7	55	0	0	0	0
	point97	97	582	90	55	3	55	7	55	0	0	0	0
	point98	98	582	90	55	3	55	7	55	0	0	0	0
	point99	99	582	90	55	3	55	7	55	0	0	0	0
	point100	100	582	90	55	3	55	7	55	0	0	0	0
	point101	101	582	90	55	3	55	7	55	0	0	0	0
	point102	102	582	90	55	3	55	7	55	0	0	0	0
	point103	103	582	90	55	3	55	7	55	0	0	0	0
	point104	104	582	90	55	3	55	7	55	0	0	0	0
	point105	105	582	90	55	3	55	7	55	0	0	0	0
	point106	106	582	90	55	3	55	7	55	0	0	0	0
	point107	107	582	90	55	3	55	7	55	0	0	0	0
	point108	108	582	90	55	3	55	7	55	0	0	0	0
	point109	109	582	90	55	3	55	7	55	0	0	0	0
	point110	110	582	90	55	3	55	7	55	0	0	0	0
	point111	111	582	90	55	3	55	7	55	0	0	0	0
	point112	112	582	90	55	3	55	7	55	0	0	0	0
	point113	113	582	90	55	3	55	7	55	0	0	0	0
	point114	114	582	90	55	3	55	7	55	0	0	0	0
	point115	115	582	90	55	3	55	7	55	0	0	0	0
	point116	116	582	90	55	3	55	7	55	0	0	0	0
	point117	117	582	90	55	3	55	7	55	0	0	0	0
	point118	118	582	90	55	3	55	7	55	0	0	0	0
	point119	119											
US 17 SB inner	point121	121	582	90	55	3	55	7	55	0	0	0	0
	point122	122	582	90	55	3	55	7	55	0	0	0	0
	point123	123	582	90	55	3	55	7	55	0	0	0	0
	point124	124	582	90	55	3	55	7	55	0	0	0	0
	point125	125	582	90	55	3	55	7	55	0	0	0	0
	point126	126	582	90	55	3	55	7	55	0	0	0	0
	point127	127	582	90	55	3	55	7	55	0	0	0	0
	point128	128	582	90	55	3	55	7	55	0	0	0	0
	point129	129	582	90	55	3	55	7	55	0	0	0	0
	point130	130	582	90	55	3	55	7	55	0	0	0	0
	point131	131	582	90	55	3	55	7	55	0	0	0	0

	point132	132	582	90	55	3	55	7	55	0	0	0	0
	point133	133	582	90	55	3	55	7	55	0	0	0	0
	point134	134	582	90	55	3	55	7	55	0	0	0	0
	point135	135	582	90	55	3	55	7	55	0	0	0	0
	point136	136	582	90	55	3	55	7	55	0	0	0	0
	point137	137	582	90	55	3	55	7	55	0	0	0	0
	point138	138	582	90	55	3	55	7	55	0	0	0	0
	point139	139	582	90	55	3	55	7	55	0	0	0	0
	point140	140	582	90	55	3	55	7	55	0	0	0	0
	point141	141	582	90	55	3	55	7	55	0	0	0	0
	point142	142	582	90	55	3	55	7	55	0	0	0	0
	point143	143	582	90	55	3	55	7	55	0	0	0	0
	point144	144	582	90	55	3	55	7	55	0	0	0	0
	point145	145	582	90	55	3	55	7	55	0	0	0	0
	point146	146	582	90	55	3	55	7	55	0	0	0	0
	point147	147	582	90	55	3	55	7	55	0	0	0	0
	point148	148	582	90	55	3	55	7	55	0	0	0	0
	point149	149	582	90	55	3	55	7	55	0	0	0	0
	point150	150	582	90	55	3	55	7	55	0	0	0	0
	point151	151	582	90	55	3	55	7	55	0	0	0	0
	point152	152	582	90	55	3	55	7	55	0	0	0	0
	point153	153	582	90	55	3	55	7	55	0	0	0	0
	point154	154	582	90	55	3	55	7	55	0	0	0	0
	point155	155	582	90	55	3	55	7	55	0	0	0	0
	point156	156	582	90	55	3	55	7	55	0	0	0	0
	point157	157	582	90	55	3	55	7	55	0	0	0	0
	point158	158	582	90	55	3	55	7	55	0	0	0	0
	point159	159											

MBI 18 August 2016
APK TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 1 FINAL

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
1-Restaurant/Bar	1	1	74,297.8	100,164.7	5.00	4.92	0.00	71	10.0	8.0	Y
2-Restaurant/Bar	3	1	82,622.8	108,552.0	5.00	4.92	0.00	71	10.0	8.0	Y
3-SCAD Athletic Fields	5	1	83,961.0	113,667.1	5.00	4.92	0.00	66	10.0	8.0	Y

MBI 18 August 2016
APK TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 1 FINAL
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
1-Restaurant/Bar	1	1	0.0	68.5	71	68.5	10	----	68.5	0.0	8	-8.0
2-Restaurant/Bar	3	1	0.0	67.0	71	67.0	10	----	67.0	0.0	8	-8.0
3-SCAD Athletic Fields	5	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	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

MBI 18 August 2016
APK TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 2 FINAL

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

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 17 NB	32.0	point1	1	72,703.5	97,527.9	10.00				Average	
		point2	2	73,374.9	98,800.3	8.00				Average	
		point34	34	73,552.4	99,070.0	6.00				Average	
		point3	3	73,743.8	99,317.7	5.00				Average	
		point33	33	73,908.9	99,500.6	5.00				Average	
		point32	32	74,095.0	99,685.0	5.00				Average	
		point4	4	74,463.9	100,042.2	5.00				Average	
		point78	78	75,554.2	101,116.7	5.00				Average	
		point5	5	76,639.5	102,193.5	5.00				Average	
		point71	71	78,099.7	103,640.0	5.00				Average	
		point6	6	79,554.9	105,084.3	6.00				Average	
		point7	7	82,098.2	107,603.2	6.00				Average	
		point8	8	82,442.1	107,945.3	6.00				Average	
		point9	9	82,703.9	108,259.0	6.00				Average	
		point31	31	82,862.7	108,473.6	6.00				Average	
		point10	10	82,988.8	108,663.0	6.00				Average	
		point30	30	83,103.2	108,846.2	7.00				Average	
		point11	11	83,210.5	109,030.1	7.00				Average	
		point12	12	83,396.8	109,400.1	8.00				Average	
		point76	76	83,491.3	109,622.5	8.00				Average	
		point13	13	83,580.0	109,848.0	8.00				Average	
		point74	74	83,657.2	110,087.6	8.00				Average	
		point14	14	83,728.6	110,328.8	8.00				Average	
		point15	15	83,825.9	110,767.2	8.00				Average	
		point29	29	83,869.3	111,074.6	8.00				Average	
		point16	16	83,907.7	111,451.3	8.00				Average	

		point17	17	83,916.8	111,878.1	8.00				Average	
		point72	72	83,907.1	112,149.1	8.00				Average	
		point18	18	83,887.1	112,406.9	8.00				Average	
		point19	19	83,827.4	112,856.9	8.00				Average	
		point20	20	83,636.1	113,987.9	8.00				Average	
		point21	21	83,570.4	114,401.6	7.00				Average	
		point22	22	83,469.2	115,051.8	7.00				Average	
		point23	23	83,414.0	115,369.2	6.00				Average	
		point24	24	83,319.7	115,708.1	5.00				Average	
		point25	25	83,186.2	116,113.4	5.00				Average	
		point26	26	83,054.6	116,441.1	5.00				Average	
		point27	27	82,932.3	116,704.2	5.00				Average	
		point28	28	82,697.5	117,131.6	5.00					
US 17 SB	32.0	point36	36	82,646.3	117,107.2	5.00				Average	
		point37	37	82,882.2	116,677.4	5.00				Average	
		point38	38	83,007.6	116,406.7	5.00				Average	
		point39	39	83,142.3	116,076.0	5.00				Average	
		point40	40	83,267.2	115,678.1	5.00				Average	
		point41	41	83,346.5	115,364.1	6.00				Average	
		point42	42	83,409.0	115,044.4	7.00				Average	
		point43	43	83,512.2	114,389.9	7.00				Average	
		point44	44	83,577.3	113,979.9	8.00				Average	
		point45	45	83,753.8	112,857.8	8.00				Average	
		point46	46	83,816.7	112,406.9	8.00				Average	
		point73	73	83,841.0	112,142.6	8.00				Average	
		point47	47	83,848.1	111,882.6	8.00				Average	
		point48	48	83,838.9	111,457.6	8.00				Average	
		point49	49	83,802.2	111,085.7	8.00				Average	
		point50	50	83,755.3	110,782.9	8.00				Average	
		point51	51	83,658.2	110,354.9	8.00				Average	
		point75	75	83,586.8	110,114.1	8.00				Average	
		point52	52	83,507.0	109,874.2	8.00				Average	
		point77	77	83,420.9	109,651.9	8.00				Average	
		point53	53	83,328.0	109,436.4	8.00				Average	
		point54	54	83,139.8	109,060.0	7.00				Average	
		point55	55	83,034.2	108,874.5	7.00				Average	
		point56	56	82,929.0	108,706.9	6.00				Average	
		point57	57	82,803.0	108,516.4	6.00				Average	
		point58	58	82,645.6	108,304.3	6.00				Average	

		point59	59	82,387.8	107,998.0	6.00				Average	
		point60	60	82,051.2	107,657.4	6.00				Average	
		point61	61	79,512.5	105,140.1	6.00				Average	
		point70	70	78,047.9	103,687.6	5.00				Average	
		point62	62	76,588.9	102,239.8	5.00				Average	
		point79	79	75,498.9	101,158.6	5.00				Average	
		point63	63	74,410.5	100,081.9	5.00				Average	
		point64	64	74,049.6	99,719.9	5.00				Average	
		point65	65	73,868.7	99,539.2	5.00				Average	
		point66	66	73,700.3	99,353.7	5.00				Average	
		point67	67	73,506.5	99,100.2	6.00				Average	
		point68	68	73,334.5	98,828.6	8.00				Average	
		point69	69	72,674.2	97,538.1	10.00					
US 17 NB outer	32.0	point122	122	72,718.4	97,519.8	10.00				Average	
		point123	123	73,390.8	98,791.1	8.00				Average	
		point124	124	73,564.9	99,060.7	6.00				Average	
		point125	125	73,756.3	99,308.5	5.00				Average	
		point126	126	73,916.8	99,486.7	5.00				Average	
		point127	127	74,102.9	99,671.1	5.00				Average	
		point128	128	74,475.3	100,029.4	5.00				Average	
		point129	129	75,566.3	101,101.7	5.00				Average	
		point130	130	76,650.4	102,181.7	5.00				Average	
		point131	131	78,110.9	103,629.1	5.00				Average	
		point132	132	79,570.0	105,072.8	6.00				Average	
		point133	133	82,111.6	107,590.0	6.00				Average	
		point134	134	82,451.8	107,933.9	6.00				Average	
		point135	135	82,715.0	108,249.9	6.00				Average	
		point136	136	82,876.6	108,467.2	6.00				Average	
		point137	137	83,001.6	108,655.7	6.00				Average	
		point138	138	83,113.3	108,836.1	7.00				Average	
		point139	139	83,220.8	109,020.2	7.00				Average	
		point140	140	83,409.0	109,393.2	8.00				Average	
		point141	141	83,502.4	109,614.1	8.00				Average	
		point142	142	83,593.2	109,841.4	8.00				Average	
		point143	143	83,670.4	110,082.4	8.00				Average	
		point144	144	83,740.5	110,325.8	8.00				Average	
		point145	145	83,837.8	110,764.9	8.00				Average	
		point146	146	83,883.7	111,072.2	8.00				Average	
		point147	147	83,921.9	111,449.4	8.00				Average	

		point148	148	83,930.0	111,880.9	8.00				Average	
		point149	149	83,919.8	112,151.2	8.00				Average	
		point150	150	83,898.4	112,409.8	8.00				Average	
		point151	151	83,838.1	112,859.9	8.00				Average	
		point152	152	83,647.1	113,990.6	8.00				Average	
		point153	153	83,581.7	114,403.6	7.00				Average	
		point154	154	83,479.8	115,053.1	7.00				Average	
		point155	155	83,424.6	115,370.6	6.00				Average	
		point156	156	83,328.3	115,708.4	5.00				Average	
		point157	157	83,196.0	116,115.1	5.00				Average	
		point158	158	83,065.9	116,445.1	5.00				Average	
		point159	159	82,942.0	116,705.1	5.00				Average	
		point160	160	82,701.8	117,135.3	5.00					
US 17 SB outer	32.0	point162	162	82,642.7	117,106.0	5.00				Average	
		point163	163	82,870.9	116,673.5	5.00				Average	
		point164	164	82,998.1	116,402.7	5.00				Average	
		point165	165	83,132.6	116,073.1	5.00				Average	
		point166	166	83,251.4	115,691.0	5.00				Average	
		point167	167	83,336.4	115,360.6	6.00				Average	
		point168	168	83,398.8	115,040.8	7.00				Average	
		point169	169	83,501.0	114,390.3	7.00				Average	
		point170	170	83,566.1	113,980.2	8.00				Average	
		point171	171	83,741.8	112,851.9	8.00				Average	
		point172	172	83,804.7	112,401.0	8.00				Average	
		point173	173	83,827.1	112,141.6	8.00				Average	
		point174	174	83,834.3	111,881.7	8.00				Average	
		point175	175	83,824.5	111,456.5	8.00				Average	
		point176	176	83,787.8	111,084.6	8.00				Average	
		point177	177	83,741.1	110,785.4	8.00				Average	
		point178	178	83,644.0	110,357.4	8.00				Average	
		point179	179	83,574.3	110,118.9	8.00				Average	
		point180	180	83,494.6	109,879.0	8.00				Average	
		point181	181	83,410.2	109,657.2	8.00				Average	
		point182	182	83,317.3	109,441.6	8.00				Average	
		point183	183	83,130.2	109,069.8	7.00				Average	
		point184	184	83,024.7	108,884.3	7.00				Average	
		point185	185	82,916.3	108,713.4	6.00				Average	
		point186	186	82,790.3	108,523.0	6.00				Average	
		point187	187	82,631.4	108,315.3	6.00				Average	

		point188	188	82,373.5	108,009.0	6.00				Average	
		point189	189	82,040.4	107,673.7	6.00				Average	
		point190	190	79,501.8	105,156.5	6.00				Average	
		point191	191	78,038.1	103,701.2	5.00				Average	
		point192	192	76,579.0	102,253.4	5.00				Average	
		point193	193	75,490.0	101,171.2	5.00				Average	
		point194	194	74,403.5	100,096.4	5.00				Average	
		point195	195	74,040.6	99,732.6	5.00				Average	
		point196	196	73,858.0	99,550.0	5.00				Average	
		point197	197	73,691.3	99,362.6	5.00				Average	
		point198	198	73,497.6	99,109.1	6.00				Average	
		point199	199	73,325.6	98,839.4	8.00				Average	
		point200	200	72,660.3	97,546.4	10.00					

MBI 18 August 201
APK TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 2 FINAL

Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
US 17 NB	point1	1	582	90	55	3	55	7	55	0	0	0	0
	point2	2	582	90	55	3	55	7	55	0	0	0	0
	point34	34	582	90	55	3	55	7	55	0	0	0	0
	point3	3	582	90	55	3	55	7	55	0	0	0	0
	point33	33	582	90	55	3	55	7	55	0	0	0	0
	point32	32	582	90	55	3	55	7	55	0	0	0	0
	point4	4	582	90	55	3	55	7	55	0	0	0	0
	point78	78	582	90	55	3	55	7	55	0	0	0	0
	point5	5	582	90	55	3	55	7	55	0	0	0	0
	point71	71	582	90	55	3	55	7	55	0	0	0	0
	point6	6	582	90	55	3	55	7	55	0	0	0	0
	point7	7	582	90	55	3	55	7	55	0	0	0	0
	point8	8	582	90	55	3	55	7	55	0	0	0	0
	point9	9	582	90	55	3	55	7	55	0	0	0	0
	point31	31	582	90	55	3	55	7	55	0	0	0	0
	point10	10	582	90	55	3	55	7	55	0	0	0	0
	point30	30	582	90	55	3	55	7	55	0	0	0	0
	point11	11	582	90	55	3	55	7	55	0	0	0	0
	point12	12	582	90	55	3	55	7	55	0	0	0	0
	point76	76	582	90	55	3	55	7	55	0	0	0	0
	point13	13	582	90	55	3	55	7	55	0	0	0	0
	point74	74	582	90	55	3	55	7	55	0	0	0	0
	point14	14	582	90	55	3	55	7	55	0	0	0	0

	point15	15	582	90	55	3	55	7	55	0	0	0	0
	point29	29	582	90	55	3	55	7	55	0	0	0	0
	point16	16	582	90	55	3	55	7	55	0	0	0	0
	point17	17	582	90	55	3	55	7	55	0	0	0	0
	point72	72	582	90	55	3	55	7	55	0	0	0	0
	point18	18	582	90	55	3	55	7	55	0	0	0	0
	point19	19	582	90	55	3	55	7	55	0	0	0	0
	point20	20	582	90	55	3	55	7	55	0	0	0	0
	point21	21	582	90	55	3	55	7	55	0	0	0	0
	point22	22	582	90	55	3	55	7	55	0	0	0	0
	point23	23	582	90	55	3	55	7	55	0	0	0	0
	point24	24	582	90	55	3	55	7	55	0	0	0	0
	point25	25	582	90	55	3	55	7	55	0	0	0	0
	point26	26	582	90	55	3	55	7	55	0	0	0	0
	point27	27	582	90	55	3	55	7	55	0	0	0	0
	point28	28											
US 17 SB	point36	36	582	90	55	3	55	7	55	0	0	0	0
	point37	37	582	90	55	3	55	7	55	0	0	0	0
	point38	38	582	90	55	3	55	7	55	0	0	0	0
	point39	39	582	90	55	3	55	7	55	0	0	0	0
	point40	40	582	90	55	3	55	7	55	0	0	0	0
	point41	41	582	90	55	3	55	7	55	0	0	0	0
	point42	42	582	90	55	3	55	7	55	0	0	0	0
	point43	43	582	90	55	3	55	7	55	0	0	0	0
	point44	44	582	90	55	3	55	7	55	0	0	0	0
	point45	45	582	90	55	3	55	7	55	0	0	0	0
	point46	46	582	90	55	3	55	7	55	0	0	0	0
	point73	73	582	90	55	3	55	7	55	0	0	0	0
	point47	47	582	90	55	3	55	7	55	0	0	0	0
	point48	48	582	90	55	3	55	7	55	0	0	0	0
	point49	49	582	90	55	3	55	7	55	0	0	0	0
	point50	50	582	90	55	3	55	7	55	0	0	0	0
	point51	51	582	90	55	3	55	7	55	0	0	0	0
	point75	75	582	90	55	3	55	7	55	0	0	0	0
	point52	52	582	90	55	3	55	7	55	0	0	0	0

	point77	77	582	90	55	3	55	7	55	0	0	0	0
	point53	53	582	90	55	3	55	7	55	0	0	0	0
	point54	54	582	90	55	3	55	7	55	0	0	0	0
	point55	55	582	90	55	3	55	7	55	0	0	0	0
	point56	56	582	90	55	3	55	7	55	0	0	0	0
	point57	57	582	90	55	3	55	7	55	0	0	0	0
	point58	58	582	90	55	3	55	7	55	0	0	0	0
	point59	59	582	90	55	3	55	7	55	0	0	0	0
	point60	60	582	90	55	3	55	7	55	0	0	0	0
	point61	61	582	90	55	3	55	7	55	0	0	0	0
	point70	70	582	90	55	3	55	7	55	0	0	0	0
	point62	62	582	90	55	3	55	7	55	0	0	0	0
	point79	79	582	90	55	3	55	7	55	0	0	0	0
	point63	63	582	90	55	3	55	7	55	0	0	0	0
	point64	64	582	90	55	3	55	7	55	0	0	0	0
	point65	65	582	90	55	3	55	7	55	0	0	0	0
	point66	66	582	90	55	3	55	7	55	0	0	0	0
	point67	67	582	90	55	3	55	7	55	0	0	0	0
	point68	68	582	90	55	3	55	7	55	0	0	0	0
	point69	69											
US 17 NB outer	point122	122	582	90	55	3	55	7	55	0	0	0	0
	point123	123	582	90	55	3	55	7	55	0	0	0	0
	point124	124	582	90	55	3	55	7	55	0	0	0	0
	point125	125	582	90	55	3	55	7	55	0	0	0	0
	point126	126	582	90	55	3	55	7	55	0	0	0	0
	point127	127	582	90	55	3	55	7	55	0	0	0	0
	point128	128	582	90	55	3	55	7	55	0	0	0	0
	point129	129	582	90	55	3	55	7	55	0	0	0	0
	point130	130	582	90	55	3	55	7	55	0	0	0	0
	point131	131	582	90	55	3	55	7	55	0	0	0	0
	point132	132	582	90	55	3	55	7	55	0	0	0	0
	point133	133	582	90	55	3	55	7	55	0	0	0	0
	point134	134	582	90	55	3	55	7	55	0	0	0	0
	point135	135	582	90	55	3	55	7	55	0	0	0	0
	point136	136	582	90	55	3	55	7	55	0	0	0	0

	point137	137	582	90	55	3	55	7	55	0	0	0	0
	point138	138	582	90	55	3	55	7	55	0	0	0	0
	point139	139	582	90	55	3	55	7	55	0	0	0	0
	point140	140	582	90	55	3	55	7	55	0	0	0	0
	point141	141	582	90	55	3	55	7	55	0	0	0	0
	point142	142	582	90	55	3	55	7	55	0	0	0	0
	point143	143	582	90	55	3	55	7	55	0	0	0	0
	point144	144	582	90	55	3	55	7	55	0	0	0	0
	point145	145	582	90	55	3	55	7	55	0	0	0	0
	point146	146	582	90	55	3	55	7	55	0	0	0	0
	point147	147	582	90	55	3	55	7	55	0	0	0	0
	point148	148	582	90	55	3	55	7	55	0	0	0	0
	point149	149	582	90	55	3	55	7	55	0	0	0	0
	point150	150	582	90	55	3	55	7	55	0	0	0	0
	point151	151	582	90	55	3	55	7	55	0	0	0	0
	point152	152	582	90	55	3	55	7	55	0	0	0	0
	point153	153	582	90	55	3	55	7	55	0	0	0	0
	point154	154	582	90	55	3	55	7	55	0	0	0	0
	point155	155	582	90	55	3	55	7	55	0	0	0	0
	point156	156	582	90	55	3	55	7	55	0	0	0	0
	point157	157	582	90	55	3	55	7	55	0	0	0	0
	point158	158	582	90	55	3	55	7	55	0	0	0	0
	point159	159	582	90	55	3	55	7	55	0	0	0	0
	point160	160											
US 17 SB outer	point162	162	582	90	55	3	55	7	55	0	0	0	0
	point163	163	582	90	55	3	55	7	55	0	0	0	0
	point164	164	582	90	55	3	55	7	55	0	0	0	0
	point165	165	582	90	55	3	55	7	55	0	0	0	0
	point166	166	582	90	55	3	55	7	55	0	0	0	0
	point167	167	582	90	55	3	55	7	55	0	0	0	0
	point168	168	582	90	55	3	55	7	55	0	0	0	0
	point169	169	582	90	55	3	55	7	55	0	0	0	0
	point170	170	582	90	55	3	55	7	55	0	0	0	0
	point171	171	582	90	55	3	55	7	55	0	0	0	0
	point172	172	582	90	55	3	55	7	55	0	0	0	0

	point173	173	582	90	55	3	55	7	55	0	0	0	0
	point174	174	582	90	55	3	55	7	55	0	0	0	0
	point175	175	582	90	55	3	55	7	55	0	0	0	0
	point176	176	582	90	55	3	55	7	55	0	0	0	0
	point177	177	582	90	55	3	55	7	55	0	0	0	0
	point178	178	582	90	55	3	55	7	55	0	0	0	0
	point179	179	582	90	55	3	55	7	55	0	0	0	0
	point180	180	582	90	55	3	55	7	55	0	0	0	0
	point181	181	582	90	55	3	55	7	55	0	0	0	0
	point182	182	582	90	55	3	55	7	55	0	0	0	0
	point183	183	582	90	55	3	55	7	55	0	0	0	0
	point184	184	582	90	55	3	55	7	55	0	0	0	0
	point185	185	582	90	55	3	55	7	55	0	0	0	0
	point186	186	582	90	55	3	55	7	55	0	0	0	0
	point187	187	582	90	55	3	55	7	55	0	0	0	0
	point188	188	582	90	55	3	55	7	55	0	0	0	0
	point189	189	582	90	55	3	55	7	55	0	0	0	0
	point190	190	582	90	55	3	55	7	55	0	0	0	0
	point191	191	582	90	55	3	55	7	55	0	0	0	0
	point192	192	582	90	55	3	55	7	55	0	0	0	0
	point193	193	582	90	55	3	55	7	55	0	0	0	0
	point194	194	582	90	55	3	55	7	55	0	0	0	0
	point195	195	582	90	55	3	55	7	55	0	0	0	0
	point196	196	582	90	55	3	55	7	55	0	0	0	0
	point197	197	582	90	55	3	55	7	55	0	0	0	0
	point198	198	582	90	55	3	55	7	55	0	0	0	0
	point199	199	582	90	55	3	55	7	55	0	0	0	0
	point200	200											

MBI 18 August 2016
APK TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 2 FINAL

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
1-Restaurant/Bar	1	1	74,297.8	100,164.7	5.00	4.92	0.00	71	10.0	8.0	Y
2-Restaurant/Bar	3	1	82,622.8	108,552.0	5.00	4.92	0.00	71	10.0	8.0	Y
3-SCAD Athletic Fields	5	1	83,961.0	113,667.1	5.00	4.92	0.00	66	10.0	8.0	Y

MBI 18 August 2016
APK TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 2 FINAL
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
1-Restaurant/Bar	1	1	0.0	68.3	71	68.3	10	----	68.3	0.0	8	-8.0
2-Restaurant/Bar	3	1	0.0	66.2	71	66.2	10	----	66.2	0.0	8	-8.0
3-SCAD Athletic Fields	5	1	0.0	61.7	66	61.7	10	----	61.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	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

MBI 18 August 2016
APK TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 3 FINAL

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

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 17 NB	32.0	point1	1	72,719.4	97,530.2	10.00				Average	
		point2	2	73,390.7	98,802.5	8.00				Average	
		point34	34	73,568.2	99,072.3	6.00				Average	
		point3	3	73,759.6	99,320.0	5.00				Average	
		point33	33	73,924.8	99,502.9	5.00				Average	
		point32	32	74,110.9	99,687.3	5.00				Average	
		point4	4	74,479.7	100,044.5	5.00				Average	
		point78	78	75,574.0	101,114.9	5.00				Average	
		point5	5	76,660.2	102,191.0	5.00				Average	
		point71	71	78,120.4	103,637.4	5.00				Average	
		point6	6	79,574.8	105,080.9	6.00				Average	
		point7	7	82,118.1	107,599.8	6.00				Average	
		point8	8	82,458.0	107,947.6	6.00				Average	
		point9	9	82,719.7	108,261.3	6.00				Average	
		point31	31	82,878.5	108,475.9	6.00				Average	
		point10	10	83,004.6	108,665.3	6.00				Average	
		point30	30	83,119.1	108,848.5	7.00				Average	
		point11	11	83,226.3	109,032.4	7.00				Average	
		point12	12	83,412.6	109,402.4	8.00				Average	
		point76	76	83,507.1	109,624.8	8.00				Average	
		point13	13	83,595.8	109,850.3	8.00				Average	
		point74	74	83,673.0	110,089.9	8.00				Average	
		point14	14	83,744.4	110,331.1	8.00				Average	
		point15	15	83,841.8	110,769.5	8.00				Average	
		point29	29	83,885.1	111,076.9	8.00				Average	
		point16	16	83,923.5	111,453.5	8.00				Average	

		point17	17	83,932.6	111,880.4	8.00				Average	
		point72	72	83,922.9	112,151.4	8.00				Average	
		point18	18	83,902.9	112,409.1	8.00				Average	
		point19	19	83,843.2	112,859.2	8.00				Average	
		point20	20	83,651.9	113,990.2	8.00				Average	
		point21	21	83,586.2	114,403.9	7.00				Average	
		point22	22	83,485.0	115,054.1	7.00				Average	
		point23	23	83,429.8	115,371.5	6.00				Average	
		point24	24	83,335.5	115,710.4	5.00				Average	
		point25	25	83,202.0	116,115.6	5.00				Average	
		point26	26	83,070.4	116,443.4	5.00				Average	
		point27	27	82,948.1	116,706.5	5.00				Average	
		point28	28	82,713.4	117,133.9	5.00					
US 17 SB	32.0	point36	36	82,656.9	117,108.0	5.00				Average	
		point37	37	82,892.8	116,678.1	5.00				Average	
		point38	38	83,018.2	116,407.4	5.00				Average	
		point39	39	83,153.0	116,076.7	5.00				Average	
		point40	40	83,277.9	115,678.8	5.00				Average	
		point41	41	83,357.2	115,364.9	6.00				Average	
		point42	42	83,419.7	115,045.2	7.00				Average	
		point43	43	83,522.9	114,390.7	7.00				Average	
		point44	44	83,588.0	113,980.6	8.00				Average	
		point45	45	83,764.4	112,858.5	8.00				Average	
		point46	46	83,827.4	112,407.6	8.00				Average	
		point73	73	83,851.7	112,143.4	8.00				Average	
		point47	47	83,858.8	111,883.4	8.00				Average	
		point48	48	83,849.6	111,458.4	8.00				Average	
		point49	49	83,812.9	111,086.5	8.00				Average	
		point50	50	83,765.9	110,783.7	8.00				Average	
		point51	51	83,668.9	110,355.6	8.00				Average	
		point75	75	83,597.4	110,114.8	8.00				Average	
		point52	52	83,517.7	109,874.9	8.00				Average	
		point77	77	83,431.6	109,652.7	8.00				Average	
		point53	53	83,338.7	109,437.1	8.00				Average	
		point54	54	83,150.5	109,060.8	7.00				Average	
		point55	55	83,044.9	108,875.2	7.00				Average	
		point56	56	82,939.7	108,707.6	6.00				Average	
		point57	57	82,813.7	108,517.2	6.00				Average	
		point58	58	82,656.2	108,305.0	6.00				Average	

		point59	59	82,398.4	107,998.8	6.00				Average	
		point60	60	82,065.9	107,652.5	6.00				Average	
		point61	61	79,527.3	105,135.2	6.00				Average	
		point70	70	78,063.4	103,681.9	5.00				Average	
		point62	62	76,604.4	102,234.1	5.00				Average	
		point79	79	75,520.9	101,156.1	5.00				Average	
		point63	63	74,432.5	100,079.4	5.00				Average	
		point64	64	74,060.2	99,720.7	5.00				Average	
		point65	65	73,879.4	99,540.0	5.00				Average	
		point66	66	73,710.9	99,354.4	5.00				Average	
		point67	67	73,517.2	99,101.0	6.00				Average	
		point68	68	73,345.2	98,829.4	8.00				Average	
		point69	69	72,684.9	97,538.9	10.00					
US 17 NB outer	32.0	point122	122	72,734.2	97,522.0	10.00				Average	
		point123	123	73,406.6	98,793.3	8.00				Average	
		point124	124	73,580.8	99,063.0	6.00				Average	
		point125	125	73,772.2	99,310.8	5.00				Average	
		point126	126	73,932.6	99,488.9	5.00				Average	
		point127	127	74,118.7	99,673.3	5.00				Average	
		point128	128	74,491.1	100,031.7	5.00				Average	
		point129	129	75,583.8	101,102.4	5.00				Average	
		point130	130	76,671.1	102,179.1	5.00				Average	
		point131	131	78,131.6	103,626.5	5.00				Average	
		point132	132	79,589.9	105,069.4	6.00				Average	
		point133	133	82,131.4	107,586.7	6.00				Average	
		point134	134	82,467.6	107,936.2	6.00				Average	
		point135	135	82,730.8	108,252.1	6.00				Average	
		point136	136	82,892.4	108,469.5	6.00				Average	
		point137	137	83,017.5	108,658.0	6.00				Average	
		point138	138	83,129.1	108,838.4	7.00				Average	
		point139	139	83,236.6	109,022.4	7.00				Average	
		point140	140	83,424.9	109,395.5	8.00				Average	
		point141	141	83,518.3	109,616.4	8.00				Average	
		point142	142	83,609.0	109,843.7	8.00				Average	
		point143	143	83,686.2	110,084.7	8.00				Average	
		point144	144	83,756.3	110,328.1	8.00				Average	
		point145	145	83,853.6	110,767.2	8.00				Average	
		point146	146	83,899.5	111,074.5	8.00				Average	
		point147	147	83,937.7	111,451.7	8.00				Average	

		point148	148	83,945.8	111,883.2	8.00			Average	
		point149	149	83,935.6	112,153.5	8.00			Average	
		point150	150	83,914.2	112,412.1	8.00			Average	
		point151	151	83,854.0	112,862.1	8.00			Average	
		point152	152	83,663.0	113,992.9	8.00			Average	
		point153	153	83,597.5	114,405.9	7.00			Average	
		point154	154	83,495.6	115,055.4	7.00			Average	
		point155	155	83,440.4	115,372.9	6.00			Average	
		point156	156	83,344.1	115,710.7	5.00			Average	
		point157	157	83,211.9	116,117.4	5.00			Average	
		point158	158	83,081.8	116,447.4	5.00			Average	
		point159	159	82,957.8	116,707.4	5.00			Average	
		point160	160	82,717.6	117,137.6	5.00				
US 17 SB outer	32.0	point162	162	82,653.4	117,106.8	5.00			Average	
		point163	163	82,881.5	116,674.3	5.00			Average	
		point164	164	83,008.8	116,403.4	5.00			Average	
		point165	165	83,143.2	116,073.9	5.00			Average	
		point166	166	83,262.1	115,691.8	5.00			Average	
		point167	167	83,347.1	115,361.3	6.00			Average	
		point168	168	83,409.5	115,041.6	7.00			Average	
		point169	169	83,511.7	114,391.0	7.00			Average	
		point170	170	83,576.8	113,981.0	8.00			Average	
		point171	171	83,752.5	112,852.7	8.00			Average	
		point172	172	83,815.4	112,401.8	8.00			Average	
		point173	173	83,837.8	112,142.4	8.00			Average	
		point174	174	83,844.9	111,882.4	8.00			Average	
		point175	175	83,835.1	111,457.2	8.00			Average	
		point176	176	83,798.5	111,085.4	8.00			Average	
		point177	177	83,751.7	110,786.2	8.00			Average	
		point178	178	83,654.7	110,358.2	8.00			Average	
		point179	179	83,585.0	110,119.7	8.00			Average	
		point180	180	83,505.3	109,879.8	8.00			Average	
		point181	181	83,420.9	109,658.0	8.00			Average	
		point182	182	83,327.9	109,442.4	8.00			Average	
		point183	183	83,140.9	109,070.6	7.00			Average	
		point184	184	83,035.4	108,885.0	7.00			Average	
		point185	185	82,927.0	108,714.2	6.00			Average	
		point186	186	82,801.0	108,523.7	6.00			Average	
		point187	187	82,642.0	108,316.1	6.00			Average	

		point188	188	82,384.2	108,009.8	6.00				Average	
		point189	189	82,055.1	107,668.8	6.00				Average	
		point190	190	79,516.5	105,151.6	6.00				Average	
		point191	191	78,053.6	103,695.5	5.00				Average	
		point192	192	76,594.5	102,247.7	5.00				Average	
		point193	193	75,512.0	101,168.7	5.00				Average	
		point194	194	74,425.5	100,093.9	5.00				Average	
		point195	195	74,051.3	99,733.3	5.00				Average	
		point196	196	73,868.6	99,550.7	5.00				Average	
		point197	197	73,702.0	99,363.4	5.00				Average	
		point198	198	73,508.3	99,109.9	6.00				Average	
		point199	199	73,336.3	98,840.2	8.00				Average	
		point200	200	72,671.0	97,547.2	10.00					

MBI 18 August 201
APK TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 3 FINAL

Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
US 17 NB	point1	1	582	90	55	3	55	7	55	0	0	0	0
	point2	2	582	90	55	3	55	7	55	0	0	0	0
	point34	34	582	90	55	3	55	7	55	0	0	0	0
	point3	3	582	90	55	3	55	7	55	0	0	0	0
	point33	33	582	90	55	3	55	7	55	0	0	0	0
	point32	32	582	90	55	3	55	7	55	0	0	0	0
	point4	4	582	90	55	3	55	7	55	0	0	0	0
	point78	78	582	90	55	3	55	7	55	0	0	0	0
	point5	5	582	90	55	3	55	7	55	0	0	0	0
	point71	71	582	90	55	3	55	7	55	0	0	0	0
	point6	6	582	90	55	3	55	7	55	0	0	0	0
	point7	7	582	90	55	3	55	7	55	0	0	0	0
	point8	8	582	90	55	3	55	7	55	0	0	0	0
	point9	9	582	90	55	3	55	7	55	0	0	0	0
	point31	31	582	90	55	3	55	7	55	0	0	0	0
	point10	10	582	90	55	3	55	7	55	0	0	0	0
	point30	30	582	90	55	3	55	7	55	0	0	0	0
	point11	11	582	90	55	3	55	7	55	0	0	0	0
	point12	12	582	90	55	3	55	7	55	0	0	0	0
	point76	76	582	90	55	3	55	7	55	0	0	0	0
	point13	13	582	90	55	3	55	7	55	0	0	0	0
	point74	74	582	90	55	3	55	7	55	0	0	0	0
	point14	14	582	90	55	3	55	7	55	0	0	0	0

	point15	15	582	90	55	3	55	7	55	0	0	0	0
	point29	29	582	90	55	3	55	7	55	0	0	0	0
	point16	16	582	90	55	3	55	7	55	0	0	0	0
	point17	17	582	90	55	3	55	7	55	0	0	0	0
	point72	72	582	90	55	3	55	7	55	0	0	0	0
	point18	18	582	90	55	3	55	7	55	0	0	0	0
	point19	19	582	90	55	3	55	7	55	0	0	0	0
	point20	20	582	90	55	3	55	7	55	0	0	0	0
	point21	21	582	90	55	3	55	7	55	0	0	0	0
	point22	22	582	90	55	3	55	7	55	0	0	0	0
	point23	23	582	90	55	3	55	7	55	0	0	0	0
	point24	24	582	90	55	3	55	7	55	0	0	0	0
	point25	25	582	90	55	3	55	7	55	0	0	0	0
	point26	26	582	90	55	3	55	7	55	0	0	0	0
	point27	27	582	90	55	3	55	7	55	0	0	0	0
	point28	28											
US 17 SB	point36	36	582	90	55	3	55	7	55	0	0	0	0
	point37	37	582	90	55	3	55	7	55	0	0	0	0
	point38	38	582	90	55	3	55	7	55	0	0	0	0
	point39	39	582	90	55	3	55	7	55	0	0	0	0
	point40	40	582	90	55	3	55	7	55	0	0	0	0
	point41	41	582	90	55	3	55	7	55	0	0	0	0
	point42	42	582	90	55	3	55	7	55	0	0	0	0
	point43	43	582	90	55	3	55	7	55	0	0	0	0
	point44	44	582	90	55	3	55	7	55	0	0	0	0
	point45	45	582	90	55	3	55	7	55	0	0	0	0
	point46	46	582	90	55	3	55	7	55	0	0	0	0
	point73	73	582	90	55	3	55	7	55	0	0	0	0
	point47	47	582	90	55	3	55	7	55	0	0	0	0
	point48	48	582	90	55	3	55	7	55	0	0	0	0
	point49	49	582	90	55	3	55	7	55	0	0	0	0
	point50	50	582	90	55	3	55	7	55	0	0	0	0
	point51	51	582	90	55	3	55	7	55	0	0	0	0
	point75	75	582	90	55	3	55	7	55	0	0	0	0
	point52	52	582	90	55	3	55	7	55	0	0	0	0

	point77	77	582	90	55	3	55	7	55	0	0	0	0
	point53	53	582	90	55	3	55	7	55	0	0	0	0
	point54	54	582	90	55	3	55	7	55	0	0	0	0
	point55	55	582	90	55	3	55	7	55	0	0	0	0
	point56	56	582	90	55	3	55	7	55	0	0	0	0
	point57	57	582	90	55	3	55	7	55	0	0	0	0
	point58	58	582	90	55	3	55	7	55	0	0	0	0
	point59	59	582	90	55	3	55	7	55	0	0	0	0
	point60	60	582	90	55	3	55	7	55	0	0	0	0
	point61	61	582	90	55	3	55	7	55	0	0	0	0
	point70	70	582	90	55	3	55	7	55	0	0	0	0
	point62	62	582	90	55	3	55	7	55	0	0	0	0
	point79	79	582	90	55	3	55	7	55	0	0	0	0
	point63	63	582	90	55	3	55	7	55	0	0	0	0
	point64	64	582	90	55	3	55	7	55	0	0	0	0
	point65	65	582	90	55	3	55	7	55	0	0	0	0
	point66	66	582	90	55	3	55	7	55	0	0	0	0
	point67	67	582	90	55	3	55	7	55	0	0	0	0
	point68	68	582	90	55	3	55	7	55	0	0	0	0
	point69	69											
US 17 NB outer	point122	122	582	90	55	3	55	7	55	0	0	0	0
	point123	123	582	90	55	3	55	7	55	0	0	0	0
	point124	124	582	90	55	3	55	7	55	0	0	0	0
	point125	125	582	90	55	3	55	7	55	0	0	0	0
	point126	126	582	90	55	3	55	7	55	0	0	0	0
	point127	127	582	90	55	3	55	7	55	0	0	0	0
	point128	128	582	90	55	3	55	7	55	0	0	0	0
	point129	129	582	90	55	3	55	7	55	0	0	0	0
	point130	130	582	90	55	3	55	7	55	0	0	0	0
	point131	131	582	90	55	3	55	7	55	0	0	0	0
	point132	132	582	90	55	3	55	7	55	0	0	0	0
	point133	133	582	90	55	3	55	7	55	0	0	0	0
	point134	134	582	90	55	3	55	7	55	0	0	0	0
	point135	135	582	90	55	3	55	7	55	0	0	0	0
	point136	136	582	90	55	3	55	7	55	0	0	0	0

	point137	137	582	90	55	3	55	7	55	0	0	0	0
	point138	138	582	90	55	3	55	7	55	0	0	0	0
	point139	139	582	90	55	3	55	7	55	0	0	0	0
	point140	140	582	90	55	3	55	7	55	0	0	0	0
	point141	141	582	90	55	3	55	7	55	0	0	0	0
	point142	142	582	90	55	3	55	7	55	0	0	0	0
	point143	143	582	90	55	3	55	7	55	0	0	0	0
	point144	144	582	90	55	3	55	7	55	0	0	0	0
	point145	145	582	90	55	3	55	7	55	0	0	0	0
	point146	146	582	90	55	3	55	7	55	0	0	0	0
	point147	147	582	90	55	3	55	7	55	0	0	0	0
	point148	148	582	90	55	3	55	7	55	0	0	0	0
	point149	149	582	90	55	3	55	7	55	0	0	0	0
	point150	150	582	90	55	3	55	7	55	0	0	0	0
	point151	151	582	90	55	3	55	7	55	0	0	0	0
	point152	152	582	90	55	3	55	7	55	0	0	0	0
	point153	153	582	90	55	3	55	7	55	0	0	0	0
	point154	154	582	90	55	3	55	7	55	0	0	0	0
	point155	155	582	90	55	3	55	7	55	0	0	0	0
	point156	156	582	90	55	3	55	7	55	0	0	0	0
	point157	157	582	90	55	3	55	7	55	0	0	0	0
	point158	158	582	90	55	3	55	7	55	0	0	0	0
	point159	159	582	90	55	3	55	7	55	0	0	0	0
	point160	160											
US 17 SB outer	point162	162	582	90	55	3	55	7	55	0	0	0	0
	point163	163	582	90	55	3	55	7	55	0	0	0	0
	point164	164	582	90	55	3	55	7	55	0	0	0	0
	point165	165	582	90	55	3	55	7	55	0	0	0	0
	point166	166	582	90	55	3	55	7	55	0	0	0	0
	point167	167	582	90	55	3	55	7	55	0	0	0	0
	point168	168	582	90	55	3	55	7	55	0	0	0	0
	point169	169	582	90	55	3	55	7	55	0	0	0	0
	point170	170	582	90	55	3	55	7	55	0	0	0	0
	point171	171	582	90	55	3	55	7	55	0	0	0	0
	point172	172	582	90	55	3	55	7	55	0	0	0	0

	point173	173	582	90	55	3	55	7	55	0	0	0	0
	point174	174	582	90	55	3	55	7	55	0	0	0	0
	point175	175	582	90	55	3	55	7	55	0	0	0	0
	point176	176	582	90	55	3	55	7	55	0	0	0	0
	point177	177	582	90	55	3	55	7	55	0	0	0	0
	point178	178	582	90	55	3	55	7	55	0	0	0	0
	point179	179	582	90	55	3	55	7	55	0	0	0	0
	point180	180	582	90	55	3	55	7	55	0	0	0	0
	point181	181	582	90	55	3	55	7	55	0	0	0	0
	point182	182	582	90	55	3	55	7	55	0	0	0	0
	point183	183	582	90	55	3	55	7	55	0	0	0	0
	point184	184	582	90	55	3	55	7	55	0	0	0	0
	point185	185	582	90	55	3	55	7	55	0	0	0	0
	point186	186	582	90	55	3	55	7	55	0	0	0	0
	point187	187	582	90	55	3	55	7	55	0	0	0	0
	point188	188	582	90	55	3	55	7	55	0	0	0	0
	point189	189	582	90	55	3	55	7	55	0	0	0	0
	point190	190	582	90	55	3	55	7	55	0	0	0	0
	point191	191	582	90	55	3	55	7	55	0	0	0	0
	point192	192	582	90	55	3	55	7	55	0	0	0	0
	point193	193	582	90	55	3	55	7	55	0	0	0	0
	point194	194	582	90	55	3	55	7	55	0	0	0	0
	point195	195	582	90	55	3	55	7	55	0	0	0	0
	point196	196	582	90	55	3	55	7	55	0	0	0	0
	point197	197	582	90	55	3	55	7	55	0	0	0	0
	point198	198	582	90	55	3	55	7	55	0	0	0	0
	point199	199	582	90	55	3	55	7	55	0	0	0	0
	point200	200											

MBI 18 August 2016
APK TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 3 FINAL

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
1-Restaurant/Bar	1	1	74,297.8	100,164.7	5.00	4.92	0.00	71	10.0	8.0	Y
2-Restaurant/Bar	3	1	82,622.8	108,552.0	5.00	4.92	0.00	71	10.0	8.0	Y
3-SCAD Athletic Fields	5	1	83,961.0	113,667.1	5.00	4.92	0.00	66	10.0	8.0	Y

MBI 18 August 2016
APK TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 3 FINAL
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
1-Restaurant/Bar	1	1	0.0	67.3	71	67.3	10	----	67.3	0.0	8	-8.0
2-Restaurant/Bar	3	1	0.0	65.7	71	65.7	10	----	65.7	0.0	8	-8.0
3-SCAD Athletic Fields	5	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	3	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

MBI 18 August 2016
APK TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 4 FINAL

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

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 17 NB	32.0	point1	1	72,713.6	97,530.9	10.00				Average	
		point2	2	73,385.0	98,803.3	8.00				Average	
		point34	34	73,562.5	99,073.0	6.00				Average	
		point3	3	73,753.9	99,320.8	5.00				Average	
		point33	33	73,919.0	99,503.6	5.00				Average	
		point32	32	74,105.1	99,688.0	5.00				Average	
		point4	4	74,474.0	100,045.2	5.00				Average	
		point78	78	75,568.3	101,115.6	5.00				Average	
		point5	5	76,654.5	102,191.7	5.00				Average	
		point71	71	78,114.6	103,638.2	5.00				Average	
		point6	6	79,569.1	105,081.7	6.00				Average	
		point7	7	82,112.4	107,600.5	6.00				Average	
		point8	8	82,452.2	107,948.3	6.00				Average	
		point9	9	82,713.9	108,262.0	6.00				Average	
		point31	31	82,872.8	108,476.6	6.00				Average	
		point10	10	82,998.8	108,666.1	6.00				Average	
		point30	30	83,113.3	108,849.3	7.00				Average	
		point11	11	83,220.6	109,033.1	7.00				Average	
		point12	12	83,406.9	109,403.2	8.00				Average	
		point76	76	83,501.4	109,625.5	8.00				Average	
		point13	13	83,590.0	109,851.1	8.00				Average	
		point74	74	83,667.2	110,090.6	8.00				Average	
		point14	14	83,738.7	110,331.9	8.00				Average	
		point15	15	83,836.0	110,770.2	8.00				Average	
		point29	29	83,879.4	111,077.6	8.00				Average	
		point16	16	83,917.8	111,454.3	8.00				Average	

		point17	17	83,926.9	111,881.1	8.00				Average	
		point72	72	83,917.2	112,152.2	8.00				Average	
		point18	18	83,897.2	112,409.9	8.00				Average	
		point19	19	83,837.4	112,860.0	8.00				Average	
		point20	20	83,646.2	113,990.9	8.00				Average	
		point21	21	83,580.5	114,404.6	7.00				Average	
		point22	22	83,479.3	115,054.8	7.00				Average	
		point23	23	83,424.1	115,372.3	6.00				Average	
		point24	24	83,329.8	115,711.1	5.00				Average	
		point25	25	83,196.2	116,116.4	5.00				Average	
		point26	26	83,064.6	116,444.1	5.00				Average	
		point27	27	82,942.4	116,707.2	5.00				Average	
		point28	28	82,707.6	117,134.6	5.00					
US 17 SB	32.0	point36	36	82,637.5	117,108.0	5.00				Average	
		point37	37	82,873.4	116,678.1	5.00				Average	
		point38	38	82,998.8	116,407.4	5.00				Average	
		point39	39	83,133.6	116,076.7	5.00				Average	
		point40	40	83,258.5	115,678.8	5.00				Average	
		point41	41	83,337.8	115,364.9	6.00				Average	
		point42	42	83,400.3	115,045.2	7.00				Average	
		point43	43	83,503.5	114,390.7	7.00				Average	
		point44	44	83,568.6	113,980.6	8.00				Average	
		point45	45	83,745.0	112,858.5	8.00				Average	
		point46	46	83,808.0	112,407.6	8.00				Average	
		point73	73	83,832.3	112,143.4	8.00				Average	
		point47	47	83,839.4	111,883.4	8.00				Average	
		point48	48	83,830.1	111,458.3	8.00				Average	
		point49	49	83,793.5	111,086.5	8.00				Average	
		point50	50	83,746.5	110,783.6	8.00				Average	
		point51	51	83,649.5	110,355.6	8.00				Average	
		point75	75	83,578.0	110,114.8	8.00				Average	
		point52	52	83,498.3	109,874.9	8.00				Average	
		point77	77	83,412.2	109,652.7	8.00				Average	
		point53	53	83,319.3	109,437.1	8.00				Average	
		point54	54	83,131.0	109,060.8	7.00				Average	
		point55	55	83,025.5	108,875.2	7.00				Average	
		point56	56	82,920.3	108,707.6	6.00				Average	
		point57	57	82,794.3	108,517.2	6.00				Average	
		point58	58	82,636.8	108,305.0	6.00				Average	

		point59	59	82,375.3	107,999.5	6.00				Average	
		point60	60	82,047.1	107,663.1	6.00				Average	
		point61	61	79,508.5	105,145.8	6.00				Average	
		point70	70	78,035.7	103,692.0	5.00				Average	
		point62	62	76,576.6	102,244.2	5.00				Average	
		point79	79	75,494.8	101,166.1	5.00				Average	
		point63	63	74,406.4	100,089.5	5.00				Average	
		point64	64	74,040.0	99,723.2	5.00				Average	
		point65	65	73,860.0	99,540.0	5.00				Average	
		point66	66	73,691.5	99,354.4	5.00				Average	
		point67	67	73,497.8	99,101.0	6.00				Average	
		point68	68	73,325.8	98,829.4	8.00				Average	
		point69	69	72,665.4	97,538.9	10.00					
US 17 NB outer	32.0	point122	122	72,728.5	97,522.8	10.00				Average	
		point123	123	73,400.9	98,794.1	8.00				Average	
		point124	124	73,575.0	99,063.8	6.00				Average	
		point125	125	73,766.4	99,311.5	5.00				Average	
		point126	126	73,926.9	99,489.7	5.00				Average	
		point127	127	74,113.0	99,674.1	5.00				Average	
		point128	128	74,485.4	100,032.5	5.00				Average	
		point129	129	75,578.0	101,103.1	5.00				Average	
		point130	130	76,665.3	102,179.9	5.00				Average	
		point131	131	78,125.9	103,627.3	5.00				Average	
		point132	132	79,584.2	105,070.2	6.00				Average	
		point133	133	82,125.7	107,587.4	6.00				Average	
		point134	134	82,461.8	107,937.0	6.00				Average	
		point135	135	82,725.0	108,252.9	6.00				Average	
		point136	136	82,886.6	108,470.2	6.00				Average	
		point137	137	83,011.7	108,658.7	6.00				Average	
		point138	138	83,123.4	108,839.1	7.00				Average	
		point139	139	83,230.9	109,023.2	7.00				Average	
		point140	140	83,419.1	109,396.2	8.00				Average	
		point141	141	83,512.5	109,617.1	8.00				Average	
		point142	142	83,603.3	109,844.4	8.00				Average	
		point143	143	83,680.5	110,085.4	8.00				Average	
		point144	144	83,750.5	110,328.9	8.00				Average	
		point145	145	83,847.9	110,767.9	8.00				Average	
		point146	146	83,893.8	111,075.3	8.00				Average	
		point147	147	83,932.0	111,452.5	8.00				Average	

		point148	148	83,940.1	111,884.0	8.00				Average	
		point149	149	83,929.9	112,154.2	8.00				Average	
		point150	150	83,908.5	112,412.8	8.00				Average	
		point151	151	83,848.2	112,862.9	8.00				Average	
		point152	152	83,657.2	113,993.7	8.00				Average	
		point153	153	83,591.8	114,406.6	7.00				Average	
		point154	154	83,489.8	115,056.2	7.00				Average	
		point155	155	83,434.7	115,373.6	6.00				Average	
		point156	156	83,338.4	115,711.4	5.00				Average	
		point157	157	83,206.1	116,118.2	5.00				Average	
		point158	158	83,076.0	116,448.1	5.00				Average	
		point159	159	82,952.1	116,708.1	5.00				Average	
		point160	160	82,711.9	117,138.4	5.00					
US 17 SB outer	32.0	point162	162	82,633.9	117,106.8	5.00				Average	
		point163	163	82,862.1	116,674.3	5.00				Average	
		point164	164	82,989.4	116,403.4	5.00				Average	
		point165	165	83,123.8	116,073.8	5.00				Average	
		point166	166	83,242.7	115,691.8	5.00				Average	
		point167	167	83,327.7	115,361.3	6.00				Average	
		point168	168	83,390.1	115,041.6	7.00				Average	
		point169	169	83,492.3	114,391.0	7.00				Average	
		point170	170	83,557.4	113,981.0	8.00				Average	
		point171	171	83,733.1	112,852.7	8.00				Average	
		point172	172	83,796.0	112,401.8	8.00				Average	
		point173	173	83,818.4	112,142.4	8.00				Average	
		point174	174	83,825.5	111,882.4	8.00				Average	
		point175	175	83,815.7	111,457.2	8.00				Average	
		point176	176	83,779.1	111,085.4	8.00				Average	
		point177	177	83,732.3	110,786.2	8.00				Average	
		point178	178	83,635.3	110,358.2	8.00				Average	
		point179	179	83,565.6	110,119.7	8.00				Average	
		point180	180	83,485.9	109,879.8	8.00				Average	
		point181	181	83,401.4	109,658.0	8.00				Average	
		point182	182	83,308.5	109,442.4	8.00				Average	
		point183	183	83,121.5	109,070.6	7.00				Average	
		point184	184	83,015.9	108,885.0	7.00				Average	
		point185	185	82,907.6	108,714.2	6.00				Average	
		point186	186	82,781.6	108,523.7	6.00				Average	
		point187	187	82,622.6	108,316.0	6.00				Average	

		point188	188	82,363.5	108,014.6	6.00			Average	
		point189	189	82,036.4	107,679.4	6.00			Average	
		point190	190	79,497.7	105,162.2	6.00			Average	
		point191	191	78,025.8	103,705.5	5.00			Average	
		point192	192	76,566.8	102,257.7	5.00			Average	
		point193	193	75,485.9	101,178.7	5.00			Average	
		point194	194	74,399.3	100,104.0	5.00			Average	
		point195	195	74,029.4	99,735.8	5.00			Average	
		point196	196	73,849.2	99,550.7	5.00			Average	
		point197	197	73,682.6	99,363.4	5.00			Average	
		point198	198	73,488.9	99,109.9	6.00			Average	
		point199	199	73,316.9	98,840.2	8.00			Average	
		point200	200	72,651.5	97,547.2	10.00				

MBI 18 August 201
APK TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 4 FINAL

Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
US 17 NB	point1	1	582	90	55	3	55	7	55	0	0	0	0
	point2	2	582	90	55	3	55	7	55	0	0	0	0
	point34	34	582	90	55	3	55	7	55	0	0	0	0
	point3	3	582	90	55	3	55	7	55	0	0	0	0
	point33	33	582	90	55	3	55	7	55	0	0	0	0
	point32	32	582	90	55	3	55	7	55	0	0	0	0
	point4	4	582	90	55	3	55	7	55	0	0	0	0
	point78	78	582	90	55	3	55	7	55	0	0	0	0
	point5	5	582	90	55	3	55	7	55	0	0	0	0
	point71	71	582	90	55	3	55	7	55	0	0	0	0
	point6	6	582	90	55	3	55	7	55	0	0	0	0
	point7	7	582	90	55	3	55	7	55	0	0	0	0
	point8	8	582	90	55	3	55	7	55	0	0	0	0
	point9	9	582	90	55	3	55	7	55	0	0	0	0
	point31	31	582	90	55	3	55	7	55	0	0	0	0
	point10	10	582	90	55	3	55	7	55	0	0	0	0
	point30	30	582	90	55	3	55	7	55	0	0	0	0
	point11	11	582	90	55	3	55	7	55	0	0	0	0
	point12	12	582	90	55	3	55	7	55	0	0	0	0
	point76	76	582	90	55	3	55	7	55	0	0	0	0
	point13	13	582	90	55	3	55	7	55	0	0	0	0
	point74	74	582	90	55	3	55	7	55	0	0	0	0
	point14	14	582	90	55	3	55	7	55	0	0	0	0

	point15	15	582	90	55	3	55	7	55	0	0	0	0
	point29	29	582	90	55	3	55	7	55	0	0	0	0
	point16	16	582	90	55	3	55	7	55	0	0	0	0
	point17	17	582	90	55	3	55	7	55	0	0	0	0
	point72	72	582	90	55	3	55	7	55	0	0	0	0
	point18	18	582	90	55	3	55	7	55	0	0	0	0
	point19	19	582	90	55	3	55	7	55	0	0	0	0
	point20	20	582	90	55	3	55	7	55	0	0	0	0
	point21	21	582	90	55	3	55	7	55	0	0	0	0
	point22	22	582	90	55	3	55	7	55	0	0	0	0
	point23	23	582	90	55	3	55	7	55	0	0	0	0
	point24	24	582	90	55	3	55	7	55	0	0	0	0
	point25	25	582	90	55	3	55	7	55	0	0	0	0
	point26	26	582	90	55	3	55	7	55	0	0	0	0
	point27	27	582	90	55	3	55	7	55	0	0	0	0
	point28	28											
US 17 SB	point36	36	582	90	55	3	55	7	55	0	0	0	0
	point37	37	582	90	55	3	55	7	55	0	0	0	0
	point38	38	582	90	55	3	55	7	55	0	0	0	0
	point39	39	582	90	55	3	55	7	55	0	0	0	0
	point40	40	582	90	55	3	55	7	55	0	0	0	0
	point41	41	582	90	55	3	55	7	55	0	0	0	0
	point42	42	582	90	55	3	55	7	55	0	0	0	0
	point43	43	582	90	55	3	55	7	55	0	0	0	0
	point44	44	582	90	55	3	55	7	55	0	0	0	0
	point45	45	582	90	55	3	55	7	55	0	0	0	0
	point46	46	582	90	55	3	55	7	55	0	0	0	0
	point73	73	582	90	55	3	55	7	55	0	0	0	0
	point47	47	582	90	55	3	55	7	55	0	0	0	0
	point48	48	582	90	55	3	55	7	55	0	0	0	0
	point49	49	582	90	55	3	55	7	55	0	0	0	0
	point50	50	582	90	55	3	55	7	55	0	0	0	0
	point51	51	582	90	55	3	55	7	55	0	0	0	0
	point75	75	582	90	55	3	55	7	55	0	0	0	0
	point52	52	582	90	55	3	55	7	55	0	0	0	0

	point77	77	582	90	55	3	55	7	55	0	0	0	0
	point53	53	582	90	55	3	55	7	55	0	0	0	0
	point54	54	582	90	55	3	55	7	55	0	0	0	0
	point55	55	582	90	55	3	55	7	55	0	0	0	0
	point56	56	582	90	55	3	55	7	55	0	0	0	0
	point57	57	582	90	55	3	55	7	55	0	0	0	0
	point58	58	582	90	55	3	55	7	55	0	0	0	0
	point59	59	582	90	55	3	55	7	55	0	0	0	0
	point60	60	582	90	55	3	55	7	55	0	0	0	0
	point61	61	582	90	55	3	55	7	55	0	0	0	0
	point70	70	582	90	55	3	55	7	55	0	0	0	0
	point62	62	582	90	55	3	55	7	55	0	0	0	0
	point79	79	582	90	55	3	55	7	55	0	0	0	0
	point63	63	582	90	55	3	55	7	55	0	0	0	0
	point64	64	582	90	55	3	55	7	55	0	0	0	0
	point65	65	582	90	55	3	55	7	55	0	0	0	0
	point66	66	582	90	55	3	55	7	55	0	0	0	0
	point67	67	582	90	55	3	55	7	55	0	0	0	0
	point68	68	582	90	55	3	55	7	55	0	0	0	0
	point69	69											
US 17 NB outer	point122	122	582	90	55	3	55	7	55	0	0	0	0
	point123	123	582	90	55	3	55	7	55	0	0	0	0
	point124	124	582	90	55	3	55	7	55	0	0	0	0
	point125	125	582	90	55	3	55	7	55	0	0	0	0
	point126	126	582	90	55	3	55	7	55	0	0	0	0
	point127	127	582	90	55	3	55	7	55	0	0	0	0
	point128	128	582	90	55	3	55	7	55	0	0	0	0
	point129	129	582	90	55	3	55	7	55	0	0	0	0
	point130	130	582	90	55	3	55	7	55	0	0	0	0
	point131	131	582	90	55	3	55	7	55	0	0	0	0
	point132	132	582	90	55	3	55	7	55	0	0	0	0
	point133	133	582	90	55	3	55	7	55	0	0	0	0
	point134	134	582	90	55	3	55	7	55	0	0	0	0
	point135	135	582	90	55	3	55	7	55	0	0	0	0
	point136	136	582	90	55	3	55	7	55	0	0	0	0

	point137	137	582	90	55	3	55	7	55	0	0	0	0
	point138	138	582	90	55	3	55	7	55	0	0	0	0
	point139	139	582	90	55	3	55	7	55	0	0	0	0
	point140	140	582	90	55	3	55	7	55	0	0	0	0
	point141	141	582	90	55	3	55	7	55	0	0	0	0
	point142	142	582	90	55	3	55	7	55	0	0	0	0
	point143	143	582	90	55	3	55	7	55	0	0	0	0
	point144	144	582	90	55	3	55	7	55	0	0	0	0
	point145	145	582	90	55	3	55	7	55	0	0	0	0
	point146	146	582	90	55	3	55	7	55	0	0	0	0
	point147	147	582	90	55	3	55	7	55	0	0	0	0
	point148	148	582	90	55	3	55	7	55	0	0	0	0
	point149	149	582	90	55	3	55	7	55	0	0	0	0
	point150	150	582	90	55	3	55	7	55	0	0	0	0
	point151	151	582	90	55	3	55	7	55	0	0	0	0
	point152	152	582	90	55	3	55	7	55	0	0	0	0
	point153	153	582	90	55	3	55	7	55	0	0	0	0
	point154	154	582	90	55	3	55	7	55	0	0	0	0
	point155	155	582	90	55	3	55	7	55	0	0	0	0
	point156	156	582	90	55	3	55	7	55	0	0	0	0
	point157	157	582	90	55	3	55	7	55	0	0	0	0
	point158	158	582	90	55	3	55	7	55	0	0	0	0
	point159	159	582	90	55	3	55	7	55	0	0	0	0
	point160	160											
US 17 SB outer	point162	162	582	90	55	3	55	7	55	0	0	0	0
	point163	163	582	90	55	3	55	7	55	0	0	0	0
	point164	164	582	90	55	3	55	7	55	0	0	0	0
	point165	165	582	90	55	3	55	7	55	0	0	0	0
	point166	166	582	90	55	3	55	7	55	0	0	0	0
	point167	167	582	90	55	3	55	7	55	0	0	0	0
	point168	168	582	90	55	3	55	7	55	0	0	0	0
	point169	169	582	90	55	3	55	7	55	0	0	0	0
	point170	170	582	90	55	3	55	7	55	0	0	0	0
	point171	171	582	90	55	3	55	7	55	0	0	0	0
	point172	172	582	90	55	3	55	7	55	0	0	0	0

	point173	173	582	90	55	3	55	7	55	0	0	0	0
	point174	174	582	90	55	3	55	7	55	0	0	0	0
	point175	175	582	90	55	3	55	7	55	0	0	0	0
	point176	176	582	90	55	3	55	7	55	0	0	0	0
	point177	177	582	90	55	3	55	7	55	0	0	0	0
	point178	178	582	90	55	3	55	7	55	0	0	0	0
	point179	179	582	90	55	3	55	7	55	0	0	0	0
	point180	180	582	90	55	3	55	7	55	0	0	0	0
	point181	181	582	90	55	3	55	7	55	0	0	0	0
	point182	182	582	90	55	3	55	7	55	0	0	0	0
	point183	183	582	90	55	3	55	7	55	0	0	0	0
	point184	184	582	90	55	3	55	7	55	0	0	0	0
	point185	185	582	90	55	3	55	7	55	0	0	0	0
	point186	186	582	90	55	3	55	7	55	0	0	0	0
	point187	187	582	90	55	3	55	7	55	0	0	0	0
	point188	188	582	90	55	3	55	7	55	0	0	0	0
	point189	189	582	90	55	3	55	7	55	0	0	0	0
	point190	190	582	90	55	3	55	7	55	0	0	0	0
	point191	191	582	90	55	3	55	7	55	0	0	0	0
	point192	192	582	90	55	3	55	7	55	0	0	0	0
	point193	193	582	90	55	3	55	7	55	0	0	0	0
	point194	194	582	90	55	3	55	7	55	0	0	0	0
	point195	195	582	90	55	3	55	7	55	0	0	0	0
	point196	196	582	90	55	3	55	7	55	0	0	0	0
	point197	197	582	90	55	3	55	7	55	0	0	0	0
	point198	198	582	90	55	3	55	7	55	0	0	0	0
	point199	199	582	90	55	3	55	7	55	0	0	0	0
	point200	200											

MBI 18 August 2016
APK TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 4 FINAL

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
1-Restaurant/Bar	1	1	74,297.8	100,164.7	5.00	4.92	0.00	71	10.0	8.0	Y
2-Restaurant/Bar	3	1	82,622.8	108,552.0	5.00	4.92	0.00	71	10.0	8.0	Y
3-SCAD Athletic Fields	5	1	83,961.0	113,667.1	5.00	4.92	0.00	66	10.0	8.0	Y

MBI 18 August 2016
APK TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: US 17 - Jasper County
RUN: Alt 4 FINAL
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		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc					
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
1-Restaurant/Bar	1	1	0.0	68.7	71	68.7	10	----	68.7	0.0	8	-8.0
2-Restaurant/Bar	3	1	0.0	66.6	71	66.6	10	----	66.6	0.0	8	-8.0
3-SCAD Athletic Fields	5	1	0.0	61.8	66	61.8	10	----	61.8	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	3	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