

Noise Addendum V Memo

To: Miles Kemp, Air and Noise Senior Team Lead
Georgia Department of Transportation

From: Josh Earhart, Sr. NEPA Planner

CC: Austin Meadows
PMC

Debbie Wilson
Kimley-Horn and Associates

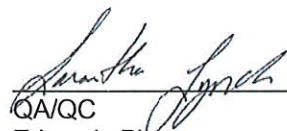
Date: 6/20/2018

Subject: PI No. 721850-, Fulton County
SR 400 Collector / Distributor Lanes

Summary

North Perimeter Contractors (NPC) provided a wall envelope for Noise Barrier 6 based on the current project design. A validation of the wall envelope has determined that the NPC design of Noise Barrier 6 would achieve the "meet or exceed" criteria in contract documents without requiring a noise barrier in excess of 30 feet, thereby complying with current GDOT Noise Policy.


Prepared By _____ Date 4/20/18
Edwards-Pitman


QA/QC _____ Date 4/20/18
Edwards-Pitman


Approved By _____ Date _____
Georgia Department of Transportation

Introduction

A Noise Impact Assessment and four subsequent Noise Addenda have been prepared and approved for this project.

Noise Addendum V is being prepared as a result of validation efforts to assess the effectiveness of Noise Barrier 6 modifications prepared by NPC, based on their current design. The validation of the NPC noise barrier data did not require modification of the Costing Plan Transportation Noise Model (TNM) design in Noise Addendum III prepared in 2016 (Addendum IV was a no change memo). Noise Barrier 6 in Addendum III was used as the basis for comparison of the current NPC Noise Barrier 6 design.

North Perimeter Contractors has also modified designs for the other feasible and reasonable noise barriers for PI No. 721850-; 1a, 1b, 3, 4, 5a, 5b, and 8. However, these walls are currently being redesigned by NPC to achieve the “meet or exceed” criteria, and their validation is not included in this Addendum. Results of validation of these remaining walls will be included in future addendums and reevaluations.

Methodology

Georgia Department of Transportation (GDOT) was provided data from NPC for use to generate a wall envelope in TNM 2.5 and compare results to the Costing Plan Noise Barrier in Addendum III.

The primary criteria to determine if the NPC noise barrier is valid is contract language that states, in part, that the noise barrier must “meet or exceed” noise abatement levels for impacted receivers provided by Noise Barrier 6 in Addendum III. A second goal was to achieve this “meet or exceed” criteria with a noise barrier that does not exceed the maximum allowable height of 30 feet included in the current GDOT Noise Policy (effective February 1, 2016).

North Perimeter Contractors provided data for Noise Barrier 6 in April 2018. The data included x, y, and z coordinate and wall height data from TNM. This data was input into TNM 2.5 to create the NPC Noise Barrier 6 design. Once in TNM 2.5 the noise barrier was perturbed to achieve the “meet or exceed” criteria for each impacted receiver. Input and output files from TNM are included in the attachment.

Results

Figure 1 shows the alignment of the Costing Plan Noise Barrier 6 location compared to the NPC design. Table 1 includes the data provided by NPC used to recreate Noise Barrier 6, noise barrier heights provided by NPC, and any adjusted noise barrier heights required to achieve the “meet or exceed” criteria. Table 2 is a comparison of noise levels and insertion loss from the Addendum III Noise Barrier 6 and the NPC design. Impacted receiver numbers are shaded gray, and indicate that the modified Noise Barrier 6 by NPC does “meet or exceed” insertion loss provided in the Addendum III design.

Conclusions of the Noise Addendum

Based on data provided by NPC, the redesigned Noise Barrier 6 can “meet or exceed” the same noise insertion loss as Noise Barrier 6 in Addendum III for all impacted receivers. The noise barrier can also achieve this criteria without exceeding the 30-foot maximum height specified in the current GDOT Noise Policy. The new Noise Barrier 6 would be approximately 4,257 feet long and varies in height from 14 to 26 feet.

Table 1 - Barrier 6

TNM X Coordinate	TNM Y Coordinate	TNM Z Coordinate	Barrier Height (ft)	Adj Wall Height
2238373.5	1434990	1022	18	
2238372	1435040	1020	18	
2238371.8	1435090	1017	18	
2238372.8	1435140	1015	18	
2238374.5	1435190	1012	18	
2238376.5	1435240	1009	18	
2238378.8	1435290	1007	18	
2238380.8	1435340	1005	18	
2238382.8	1435390	1003	18	
2238384.8	1435440	1001	20	
2238386.8	1435490	1000	20	
2238388.8	1435539	999	18	
2238390.8	1435589	998	18	
2238393	1435639	998	18	
2238395	1435689	997	18	
2238397	1435739	996	18	
2238399	1435789	996	18	
2238401	1435839	995	18	
2238403	1435889	995	18	
2238405	1435939	994	18	
2238407	1435989	993	18	
2238409	1436039	992	18	
2238411	1436089	991	18	
2238413.3	1436139	990	18	
2238415.3	1436189	988	18	
2238417.3	1436239	987	18	
2238419.3	1436289	985	18	
2238421.5	1436339	983	18	
2238424	1436389	982	20	
2238426.8	1436439	980	18	
2238429.5	1436489	979	18	
2238432.8	1436538	979	18	
2238436.3	1436588	978	18	
2238439.8	1436638	978	18	
2238443.8	1436688	978	20	
2238447.3	1436738	978	20	
2238451.3	1436788	979	20	
2238456	1436838	980	18	
2238451.5	1436877	980	18	
2238464	1436917	981	18	
2238468.5	1436967	982	18	
2238473	1437017	983	18	
2238477.5	1437067	984	18	
2238481.5	1437117	985	18	
2238485	1437166	986	18	
2238488.5	1437216	988	18	
2238491.8	1437266	988	18	
2238495	1437316	989	18	
2238497.8	1437366	990	18	
2238500.5	1437416	990	18	
2238503.5	1437466	991	18	
2238507	1437516	992	18	
2238511	1437566	992	18	
2238515.5	1437615	993	18	
2238520.3	1437665	994	18	
2238525.5	1437715	994	20	
2238531	1437764	995	20	
2238537.5	1437814	995	22	
2238543.8	1437864	996	22	
2238550.5	1437913	997	22	
2238558	1437963	997	22	
2238565.5	1438012	998	22	
2238574	1438061	999	18	
2238582.5	1438111	999	18	

2238591.5	1438160	1000	16	
2238583.3	1438197	992	26	
2238604.8	1438229	1001	16	
2238614.8	1438278	1002	16	
2238621	1438327	1000	22	
2238627	1438377	1002	22	
2238633	1438426	1002	24	
2238639	1438476	1005	22	
2238645	1438526	1007	24	
2238650.8	1438575	1009	26	
2238656.8	1438625	1012	26	
2238662.8	1438675	1015	24	
2238675	1438723	1018	22	
2238689.8	1438771	1020	22	
2238704.5	1438819	1021	22	
2238719.3	1438866	1019	18	
2238734.5	1438914	1021	18	
2238750	1438961	1023	18	
2238765.8	1439009	1020	18	
2238775.5	1439057	1020	18	
2238777.5	1439107	1023	18	
2238778	1439117	1024	16	
2238779.5	1439157	1029	14	
2238781.5	1439207	1034	14	

Table 2 - Noise Barrier 6

Barrier	Revised Barrier Dimensions NPC Design (2018)	Property Type	Receiver #	Build Sound Level Addendum (7/25/16) (A)	With Barrier Sound Level Costing (7/25/16) (B)	Barrier Decibel Reduction Addendum (7/25/16) (C)	With Barrier Sound Level NPC Design (2018) (D)	Decibel Reduction (E) = (D) - (A)	Meet or Exceed? (F) (E) ≥ (C)
6	4,257 feet long 14 to 26 feet high 81,083 sq. ft.	Single-Family	166	63.8	57.7	6.1	58.2	5.6	Yes
6		Single-Family	167	68	60	8	59.5	8.5	Yes
6		Single-Family	168	56.4	54	2.4	54	2.4	Yes
6		Single-Family	169	56.8	54.1	2.7	53.8	3	Yes
6		Single-Family	170	55	53.1	1.9	53.4	1.6	Yes
6		Single-Family	188	58	55.8	2.2	55.1	2.9	Yes
6		Single-Family	189	76.4	64.6	11.8	61.8	14.6	Yes
6		Single-Family	190	60.5	55.8	4.7	55.2	5.3	Yes
6		Single-Family	191	62.3	59.1	3.2	57.6	4.7	Yes
6		Single-Family	192	60.9	55.5	5.4	54.7	6.2	Yes
6		Single-Family	193	60.8	54.7	6.1	53.9	6.9	Yes
6		Single-Family	194	59	54.3	4.7	53.9	5.1	Yes
6		Single-Family	195	59.3	54.9	4.4	54.3	5	Yes
6		Single-Family	196	76.7	67.6	9.1	63.5	13.2	Yes
6		Single-Family	197	77.2	63.1	14.1	61.6	15.6	Yes
6		Single-Family	198	73	60.5	12.5	60.4	12.6	Yes
6		Single-Family	199	66	58.8	7.2	57.8	8.2	Yes
6		Single-Family	200	62.8	57.8	5	57.5	5.3	Yes
6		Single-Family	201	65.5	58.3	7.2	57.6	7.9	Yes
6		Single-Family	202	62.3	56.7	5.6	56.1	6.2	Yes
6		Single-Family	203	59.6	55.8	3.8	55.2	4.4	Yes
6		Single-Family	204	62.3	56.7	5.6	55.8	6.5	Yes
6		Single-Family	205	70.8	63.7	7.1	62.8	8	Yes
6		Single-Family	206	68.8	61.6	7.2	60.9	7.9	Yes
6		Single-Family	207	64.7	59.7	5	59.3	5.4	Yes

Attachment
TNM Input and Output Files

INPUT: BARRIERS

SR400

NPC
 19 April 2018
 Juan Segui
 TNM 2.5

INPUT: BARRIERS
 PROJECT/CONTRACT:

SR400
 Barrier 6 extended

RUN:

Barrier Name	Type	Height Min	Max	If Wall		If Berm		Top \$ per Unit	Run: Rise	Add'l \$ per Unit Length	Points				Coordinates (bottom)				Height at Point		Segment			Important Reflec- tions?
				Area	\$ /sq ft	Vol.	Width				Name	No.	X	Y	Z	ft	ft	ft	ft	Incr- ment	#Up #Dn	Struct?		
																							ft	
Noise Wall 4	W	0.00	99.99	0.00						0.00	point22	22	2,238,464.0	1,435,116.2	1,015.00	8.00	0.00	0	0					
											point23	23	2,238,479.0	1,435,638.9	1,011.06	8.00	0.00	0	0					
											point24	24	2,238,480.5	1,435,707.2	1,006.98	8.00								
Noise Wall 5	W	0.00	99.99	0.00						0.00	point25	25	2,238,431.0	1,435,065.9	1,018.00	10.50	0.00	0	0					
											point26	26	2,238,434.5	1,435,262.1	1,016.00	10.50	0.00	0	0					
											point27	27	2,238,443.2	1,435,552.0	1,008.00	10.50	0.00	0	0					
											point28	28	2,238,452.0	1,435,859.2	990.00	10.50	0.00	0	0					
											point29	29	2,238,462.5	1,436,154.4	980.67	10.50	0.00	0	0					
											point30	30	2,238,469.2	1,436,338.5	973.14	10.50	0.00	0	0					
											point31	31	2,238,474.0	1,436,446.1	970.29	10.50								
Barrier 6 Revised	W	0.00	99.99	0.00						0.00	point428	428	2,238,373.5	1,434,989.8	1,022.00	0.00	2.00	20	0					
											point429	429	2,238,372.0	1,435,039.8	1,020.00	0.00	2.00	20	0					
											point430	430	2,238,371.8	1,435,089.8	1,017.00	0.00	2.00	20	0					
											point431	431	2,238,372.8	1,435,139.8	1,015.00	0.00	2.00	20	0					
											point432	432	2,238,374.5	1,435,189.8	1,012.00	0.00	2.00	20	0					
											point433	433	2,238,376.5	1,435,239.8	1,009.00	0.00	2.00	20	0					
											point434	434	2,238,378.8	1,435,289.6	1,007.00	0.00	2.00	20	0					
											point435	435	2,238,380.8	1,435,339.6	1,005.00	0.00	2.00	20	0					
											point436	436	2,238,382.8	1,435,389.5	1,003.00	0.00	2.00	20	0					
											point437	437	2,238,384.8	1,435,439.5	1,001.00	0.00	2.00	20	0					
											point438	438	2,238,386.8	1,435,489.5	1,000.00	0.00	2.00	20	0					
											point439	439	2,238,388.8	1,435,539.4	999.00	0.00	2.00	20	0					
											point440	440	2,238,390.8	1,435,589.4	998.00	0.00	2.00	20	0					
											point441	441	2,238,393.0	1,435,639.2	998.00	0.00	2.00	20	0					
											point442	442	2,238,395.0	1,435,689.2	997.00	0.00	2.00	20	0					
											point443	443	2,238,397.0	1,435,739.2	996.00	0.00	2.00	20	0					
											point444	444	2,238,399.0	1,435,789.2	996.00	0.00	2.00	20	0					
											point445	445	2,238,401.0	1,435,839.2	995.00	0.00	2.00	20	0					
											point446	446	2,238,403.0	1,435,889.1	995.00	0.00	2.00	20	0					
											point447	447	2,238,405.0	1,435,939.1	994.00	0.00	2.00	20	0					
											point448	448	2,238,407.0	1,435,989.0	993.00	0.00	2.00	20	0					
											point449	449	2,238,409.0	1,436,039.0	992.00	0.00	2.00	20	0					
											point450	450	2,238,411.0	1,436,089.0	991.00	0.00	2.00	20	0					
											point451	451	2,238,413.2	1,436,138.9	990.00	0.00	2.00	20	0					
											point452	452	2,238,415.2	1,436,188.9	988.00	0.00	2.00	20	0					

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SR400

[illegible]

SR400

point501	501	2,238,650.8	1,438,575.4	1,009.00	0.00	2.00	20	0
point502	502	2,238,656.8	1,438,625.0	1,012.00	0.00	2.00	20	0
point503	503	2,238,662.8	1,438,674.6	1,015.00	0.00	2.00	20	0
point504	504	2,238,675.0	1,438,723.0	1,018.00	0.00	2.00	20	0
point505	505	2,238,689.8	1,438,770.8	1,020.00	0.00	2.00	20	0
point506	506	2,238,704.5	1,438,818.5	1,021.00	0.00	2.00	20	0
point507	507	2,238,719.2	1,438,866.2	1,019.00	0.00	2.00	20	0
point508	508	2,238,734.5	1,438,913.9	1,021.00	0.00	2.00	20	0
point509	509	2,238,750.0	1,438,961.4	1,023.00	0.00	2.00	20	0
point510	510	2,238,765.8	1,439,008.9	1,020.00	0.00	2.00	20	0
point511	511	2,238,775.5	1,439,057.4	1,020.00	0.00	2.00	20	0
point512	512	2,238,777.5	1,439,107.4	1,023.00	0.00	2.00	20	0
point513	513	2,238,778.0	1,439,117.4	1,024.00	0.00	2.00	20	0
point514	514	2,238,779.5	1,439,157.4	1,029.00	0.00	2.00	20	0
point515	515	2,238,781.5	1,439,207.2	1,034.00	0.00			

RESULTS: BARRIER DESCRIPTIONS

SR400

NPC

19 April 2018

Juan Segui

TNM 2.5

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:

SR400

RUN:

Barrier 6 extended

BARRIER DESIGN:

Bar6_NPC-EXTENDED

Barriers										
Name	Type	Heights along Barrier			Length	If Wall		If Berm	Cost	
		Min	Avg	Max		Area	sq ft	Volume	Run:Rise	\$
		ft	ft	ft	ft			cu yd	ft:ft	
Barrier 6 Revised	W	14.00	19.04	26.00	4257	81083				0
Noise Wall 5	W	10.50	10.50	10.50	1381	14500				0
Noise Wall 4	W	8.00	8.00	8.00	591	4730				0
						Total Cost:				0

RESULTS: BARRIER-SEGMENT DESCRIPTIONS

SR400

NPC

Juan Segui

19 April 2018

TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS

PROJECT/CONTRACT:

SR400

RUN: Barrier 6 extended

BARRIER DESIGN: Bar6_NPC-EXTENDED

Barriers		Segments														
Name	Type	Name	No.	Heights		Average		Second		Length	If Wall		On	Important	If Berm	Cost
				First	Point	ft	ft	ft	Point	ft	ft	sq ft	Struc?	Reflections?	Volume	\$
Barrier 6 Revised																
		W	point428	428	18.00		18.00	18.00	18.00	50	900					0
			point429	429	18.00		18.00	18.00	18.00	50	900					0
			point430	430	18.00		18.00	18.00	18.00	50	900					0
			point431	431	18.00		18.00	18.00	18.00	50	901					0
			point432	432	18.00		18.00	18.00	18.00	50	901					0
			point433	433	18.00		18.00	18.00	18.00	50	899					0
			point434	434	18.00		18.00	18.00	18.00	50	901					0
			point435	435	18.00		18.00	18.00	18.00	50	898					0
			point436	436	18.00		18.00	18.00	18.00	50	901					0
			point437	437	20.00		20.00	20.00	20.00	50	1001					0
			point438	438	20.00		20.00	20.00	20.00	50	998					0
			point439	439	18.00		18.00	18.00	18.00	50	901					0
			point440	440	18.00		18.00	18.00	18.00	50	899					0
			point441	441	18.00		18.00	18.00	18.00	50	901					0
		point442	442	18.00		18.00	18.00	18.00	50	901					0	
		point443	443	18.00		18.00	18.00	18.00	50	901					0	
		point444	444	18.00		18.00	18.00	18.00	50	901					0	
		point445	445	18.00		18.00	18.00	18.00	50	898					0	
		point446	446	18.00		18.00	18.00	18.00	50	901					0	
		point447	447	18.00		18.00	18.00	18.00	50	898					0	
		point448	448	18.00		18.00	18.00	18.00	50	901					0	
		point449	449	18.00		18.00	18.00	18.00	50	901					0	
		point450	450	18.00		18.00	18.00	18.00	50	899					0	
		point451	451	18.00		18.00	18.00	18.00	50	901					0	
		point452	452	18.00		18.00	18.00	18.00	50	898					0	

RESULTS: BARRIER-SEGMENT DESCRIPTIONS

SR400

	point453	453	18.00	18.00	18.00	18.00	50	901			0
	point454	454	18.00	18.00	18.00	18.00	50	901			0
	point455	455	18.00	18.00	18.00	18.00	50	901			0
	point456	456	20.00	20.00	20.00	20.00	50	999			0
	point457	457	18.00	18.00	18.00	18.00	50	899			0
	point458	458	18.00	18.00	18.00	18.00	50	900			0
	point459	459	18.00	18.00	18.00	18.00	50	900			0
	point460	460	18.00	18.00	18.00	18.00	50	902			0
	point461	461	18.00	18.00	18.00	18.00	50	898			0
	point462	462	20.00	20.00	20.00	20.00	50	1000			0
	point463	463	20.00	20.00	20.00	20.00	50	1001			0
	point464	464	20.00	20.00	20.00	20.00	50	1000			0
	point465	465	18.00	18.00	18.00	18.00	40	711			0
	point466	466	18.00	18.00	18.00	18.00	42	763			0
	point467	467	18.00	18.00	18.00	18.00	50	899			0
	point468	468	18.00	18.00	18.00	18.00	50	899			0
	point469	469	18.00	18.00	18.00	18.00	50	901			0
	point470	470	18.00	18.00	18.00	18.00	50	901			0
	point471	471	18.00	18.00	18.00	18.00	50	898			0
	point472	472	18.00	18.00	18.00	18.00	50	902			0
	point473	473	18.00	18.00	18.00	18.00	50	900			0
	point474	474	18.00	18.00	18.00	18.00	50	900			0
	point475	475	18.00	18.00	18.00	18.00	50	899			0
	point476	476	18.00	18.00	18.00	18.00	50	899			0
	point477	477	18.00	18.00	18.00	18.00	50	902			0
	point478	478	18.00	18.00	18.00	18.00	50	900			0
	point479	479	18.00	18.00	18.00	18.00	50	901			0
	point480	480	18.00	18.00	18.00	18.00	50	899			0
	point481	481	18.00	18.00	18.00	18.00	50	900			0
	point482	482	18.00	18.00	18.00	18.00	50	900			0
	point483	483	20.00	20.00	20.00	20.00	50	999			0
	point484	484	20.00	20.00	20.00	20.00	50	1001			0
	point485	485	22.00	22.00	22.00	22.00	50	1100			0
	point486	486	22.00	22.00	22.00	22.00	50	1102			0
	point487	487	22.00	22.00	22.00	22.00	50	1099			0
	point488	488	22.00	22.00	22.00	22.00	50	1099			0
	point489	489	22.00	22.00	22.00	22.00	50	1100			0
	point490	490	18.00	18.00	18.00	18.00	50	902			0
	point491	491	18.00	18.00	18.00	18.00	50	899			0

RESULTS: BARRIER-SEGMENT DESCRIPTIONS

SR400

		point492	492	16.00	16.00	16.00	38	610			0
		point493	493	26.00	26.00	26.00	38	994			0
		point494	494	16.00	16.00	16.00	50	798			0
		point495	495	16.00	16.00	16.00	50	800			0
		point496	496	22.00	22.00	22.00	50	1100			0
		point497	497	22.00	22.00	22.00	50	1100			0
		point498	498	24.00	24.00	24.00	50	1203			0
		point499	499	22.00	22.00	22.00	50	1100			0
		point500	500	24.00	24.00	24.00	50	1199			0
		point501	501	26.00	26.00	26.00	50	1300			0
		point502	502	26.00	26.00	26.00	50	1300			0
		point503	503	24.00	24.00	24.00	50	1198			0
		point504	504	22.00	22.00	22.00	50	1099			0
		point505	505	22.00	22.00	22.00	50	1099			0
		point506	506	22.00	22.00	22.00	50	1099			0
		point507	507	18.00	18.00	18.00	50	900			0
		point508	508	18.00	18.00	18.00	50	899			0
		point509	509	18.00	18.00	18.00	50	901			0
		point510	510	18.00	18.00	18.00	49	890			0
		point511	511	18.00	18.00	18.00	50	901			0
		point512	512	18.00	18.00	18.00	10	180			0
		point513	513	16.00	16.00	16.00	40	640			0
		point514	514	14.00	14.00	14.00	50	699			0
Noise Wall 5	W	point25	25	10.50	10.50	10.50	196	2061			0
		point26	26	10.50	10.50	10.50	290	3045			0
		point27	27	10.50	10.50	10.50	307	3227			0
		point28	28	10.50	10.50	10.50	295	3101			0
		point29	29	10.50	10.50	10.50	184	1935			0
		point30	30	10.50	10.50	10.50	108	1131			0
Noise Wall 4	W	point22	22	8.00	8.00	8.00	523	4183			0
		point23	23	8.00	8.00	8.00	68	547			0

RESULTS: SOUND LEVELS

SR400

NPC

Juan Segui

19 April 2018

TNM 2.5

Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:

RUN:

Barrier 6 extended

BARRIER DESIGN:

Bar6_NPC-EXTENDED

ATMOSPHERICS:

68 deg F, 50% RH

SR400

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

Receiver		#DUS		Existing		No Barrier		Increase over existing		Type		With Barrier		Noise Reduction		Calculated minus Goal	
Name	No.			LAeq1h	dBA	LAeq1h	dBA	Calculated	Crit'n	Sub'l Inc	Impact	Calculated LAeq1h	dBA	Calculated	Goal	Calculated minus Goal	dB
166	218	1	59.6	64.5	66	4.9	15	---	---	---	---	58.2	6.3	7	7	-0.7	
167	219	5	65.0	66.5	66	1.5	15	Snd Lvl	---	---	---	59.5	7.0	7	7	0.0	
168	220	4	54.7	57.9	66	3.2	15	---	---	---	---	54.0	3.9	7	7	-3.1	
169	221	5	55.1	56.3	66	1.2	15	---	---	---	---	53.8	2.5	7	7	-4.5	
170	222	5	53.9	55.3	66	1.4	15	---	---	---	---	53.4	1.9	7	7	-5.1	
188	276	5	58.2	56.3	66	-1.9	15	---	---	---	---	55.1	1.2	7	7	-5.8	
189	277	5	70.6	75.3	66	4.7	15	Snd Lvl	---	---	---	61.8	13.5	7	7	6.5	
190	278	5	58.9	59.3	66	0.4	15	---	---	---	---	55.2	4.1	7	7	-2.9	
191	279	4	60.3	61.5	66	1.2	15	---	---	---	---	57.6	3.9	7	7	-3.1	
192	280	4	58.2	60.0	66	1.8	15	---	---	---	---	54.7	5.3	7	7	-1.7	
193	281	5	58.3	59.5	66	1.2	15	---	---	---	---	53.9	5.6	7	7	-1.4	
194	282	5	56.5	58.1	66	1.6	15	---	---	---	---	53.9	4.2	7	7	-2.8	
195	283	6	57.2	58.3	66	1.1	15	---	---	---	---	54.3	4.0	7	7	-3.0	
196	284	5	73.5	75.9	66	2.4	15	Snd Lvl	---	---	---	63.5	12.4	7	7	5.4	
197	285	5	74.5	76.5	66	2.0	15	Snd Lvl	---	---	---	61.6	14.9	7	7	7.9	
198	286	5	70.9	72.1	66	1.2	15	Snd Lvl	---	---	---	60.4	11.7	7	7	4.7	
199	287	4	64.4	62.0	66	-2.4	15	---	---	---	---	57.8	4.2	7	7	-2.8	
200	288	3	60.8	61.8	66	1.0	15	---	---	---	---	57.5	4.3	7	7	-2.7	
201	289	1	63.2	64.2	66	1.0	15	---	---	---	---	57.6	6.6	7	7	-0.4	
202	290	3	60.3	60.8	66	0.5	15	---	---	---	---	56.1	4.7	7	7	-2.3	
203	291	3	57.2	57.7	66	0.5	15	---	---	---	---	55.2	2.5	7	7	-4.5	
204	292	2	60.1	60.0	66	-0.1	15	---	---	---	---	55.8	4.2	7	7	-2.8	
205	293	2	67.8	70.3	66	2.5	15	Snd Lvl	---	---	---	62.8	7.5	7	7	0.5	

RESULTS: SOUND LEVELS

SR400

206	294	2	66.4	68.1	66	1.7	15	Snd Lvl	60.9	7.2	7	0.2
207	295	5	61.9	63.5	66	1.6	15	---	59.3	4.2	7	-2.8
Dwelling Units	# DUs	Noise Reduction			Max dB							
		Min dB	Avg dB									
All Selected	99	1.2	5.9	14.9								
All Impacted	29	7.0	10.6	14.9								
All that meet NR Goal	29	7.0	10.6	14.9								