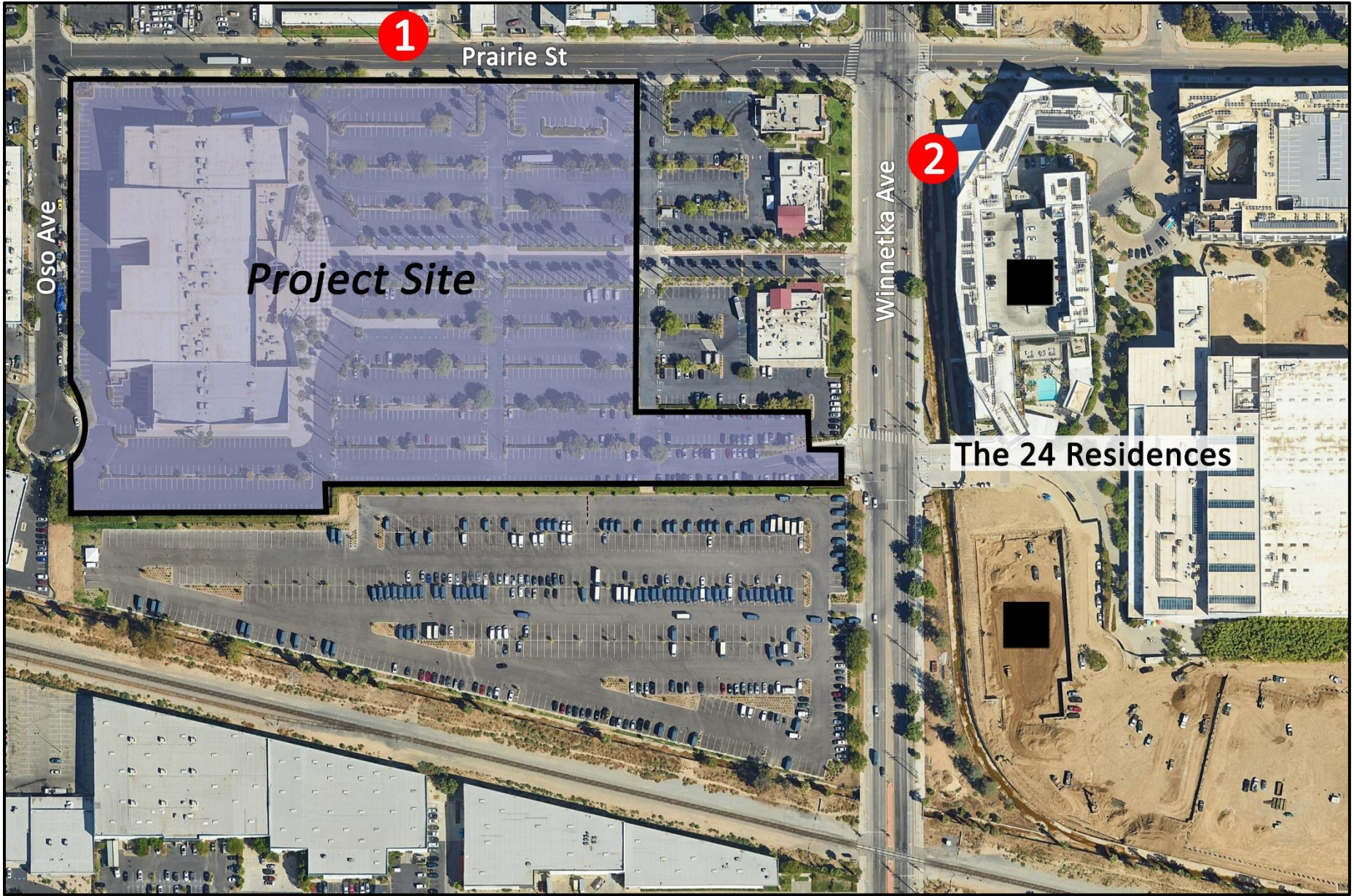


Appendix E

Noise Technical Modeling



*NOISE RECEPTOR & MEASUREMENT LOCATION MAP
Winnetka Tesla Project
Imagery via Google*

Measurement Report

Report Summary

Meter's File Name	831_Data.043.s	Computer's File Name	831_0001371-20210831 120902-831_Data.043.ldbin		
Meter	831 0001371				
Firmware	2.314				
User		Location	1. PRAIRIE ST NORTH OF PROJECT		
Job Description	Winnetka Project				
Note					
Start Time	2021-08-31 12:09:02	Duration	0:15:00.0		
End Time	2021-08-31 12:24:02	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

L _{Aeq}	61.0 dB			
L _{AE}	90.5 dB	SEA	--- dB	
EA	125.7 μPa ² h			
L _{Zpeak}	113.2 dB		2021-08-31 12:09:11	
L _{ASmax}	76.8 dB		2021-08-31 12:20:06	
L _{ASmin}	38.5 dB		2021-08-31 12:22:13	
L _{Aeq}	61.0 dB			
L _{Ceq}	62.2 dB	L _{Ceq} - L _{Aeq}	1.2 dB	
L _{AIeq}	64.6 dB	L _{AIeq} - L _{Aeq}	3.6 dB	

Exceedances

	Count	Duration
L _{AS} > 65.0 dB	24	0:01:31.9
L _{AS} > 85.0 dB	0	0:00:00.0
L _{Zpeak} > 135.0 dB	0	0:00:00.0
L _{Zpeak} > 137.0 dB	0	0:00:00.0
L _{Zpeak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
61.0 dB	61.0 dB	0.0 dB	
LDEN	LDay	LEve	LNight
61.0 dB	61.0 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	61.0 dB		62.2 dB		70.9 dB	
L _{S(max)}	76.8 dB	2021-08-31 12:20:06	86.9 dB	2021-08-31 12:09:11	97.4 dB	2021-08-31 12:09:12
L _{F(max)}	81.5 dB	2021-08-31 12:09:11	94.8 dB	2021-08-31 12:09:11	102.3 dB	2021-08-31 12:09:11
L _{I(max)}	85.8 dB	2021-08-31 12:09:11	98.4 dB	2021-08-31 12:09:11	106.5 dB	2021-08-31 12:09:11
L _{S(min)}	38.5 dB	2021-08-31 12:22:13	38.5 dB	2021-08-31 12:21:29	42.6 dB	2021-08-31 12:21:19
L _{F(min)}	38.0 dB	2021-08-31 12:22:08	37.7 dB	2021-08-31 12:22:05	39.9 dB	2021-08-31 12:21:34
L _{I(min)}	38.1 dB	2021-08-31 12:22:12	38.3 dB	2021-08-31 12:21:25	42.5 dB	2021-08-31 12:11:44
L _{Peak(max)}	107.8 dB	2021-08-31 12:09:11	111.6 dB	2021-08-31 12:09:11	113.2 dB	2021-08-31 12:09:11

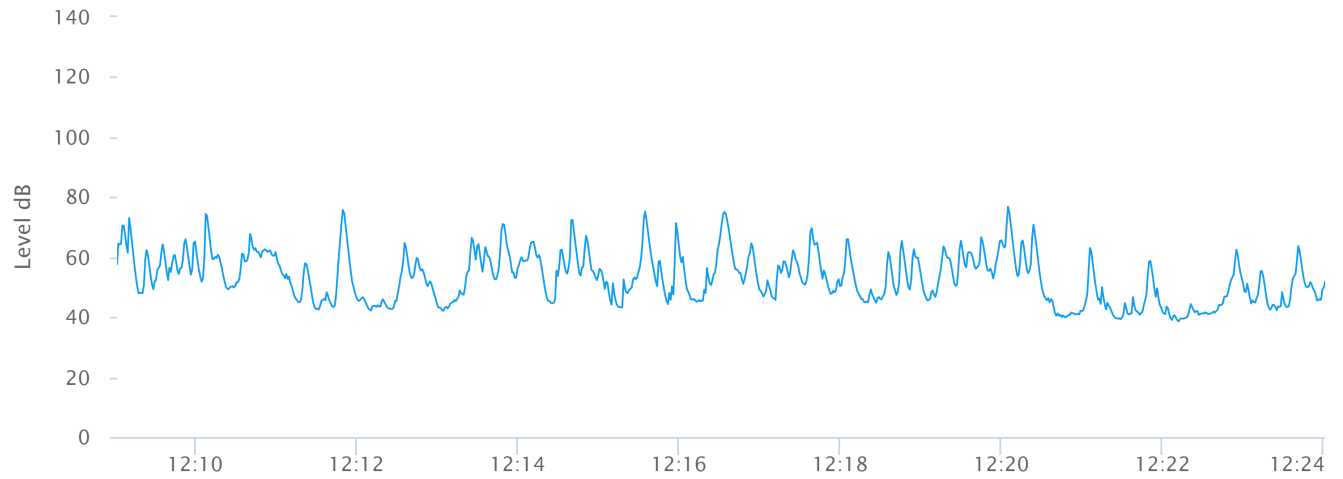
Overloads

Count	Duration
0	0:00:00.0

Statistics

L _{AS} 5.0	66.6 dB
L _{AS} 10.0	63.8 dB
L _{AS} 33.3	56.7 dB
L _{AS} 50.0	52.7 dB
L _{AS} 66.6	48.0 dB
L _{AS} 90.0	42.7 dB

Time History



— LAS: 0.0 dB



Measurement Report

Report Summary

Meter's File Name	831_Data.044.s	Computer's File Name	831_0001371-20210831 122733-831_Data.044.ldbin		
Meter	831 0001371				
Firmware	2.314				
User		Location	2. NEAR THE 24 RESIDENCES		
Job Description	Winnetka Project				
Note					
Start Time	2021-08-31 12:27:33	Duration	0:15:00.0		
End Time	2021-08-31 12:42:33	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	60.9 dB		
LAE	90.5 dB	SEA	--- dB
EA	123.5 μPa ² h		
LZ _{peak}	90.9 dB	2021-08-31 12:33:58	
LAS _{max}	76.4 dB	2021-08-31 12:33:59	
LAS _{min}	46.6 dB	2021-08-31 12:29:28	
LA _{eq}	60.9 dB		
LC _{eq}	59.4 dB	LC _{eq} - LA _{eq}	-1.5 dB
LAI _{eq}	62.6 dB	LAI _{eq} - LA _{eq}	1.7 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	16	0:01:58.9
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
60.9 dB	60.9 dB	0.0 dB	
LDEN	LDay	LEve	LNight
60.9 dB	60.9 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
Leq	60.9 dB		59.4 dB		62.3 dB	
LS _(max)	76.4 dB	2021-08-31 12:33:59	74.7 dB	2021-08-31 12:33:59	75.8 dB	2021-08-31 12:33:59
LF _(max)	78.6 dB	2021-08-31 12:33:59	77.0 dB	2021-08-31 12:33:59	78.2 dB	2021-08-31 12:33:59
LI _(max)	79.7 dB	2021-08-31 12:33:58	78.0 dB	2021-08-31 12:33:58	79.1 dB	2021-08-31 12:31:59
LS _(min)	46.6 dB	2021-08-31 12:29:28	45.1 dB	2021-08-31 12:29:28	48.9 dB	2021-08-31 12:29:27
LF _(min)	45.1 dB	2021-08-31 12:29:28	43.8 dB	2021-08-31 12:29:28	45.8 dB	2021-08-31 12:29:26
LI _(min)	45.5 dB	2021-08-31 12:29:28	44.2 dB	2021-08-31 12:29:28	48.3 dB	2021-08-31 12:29:26
LPeak _(max)	90.9 dB	2021-08-31 12:33:58	89.6 dB	2021-08-31 12:33:58	90.9 dB	2021-08-31 12:33:58

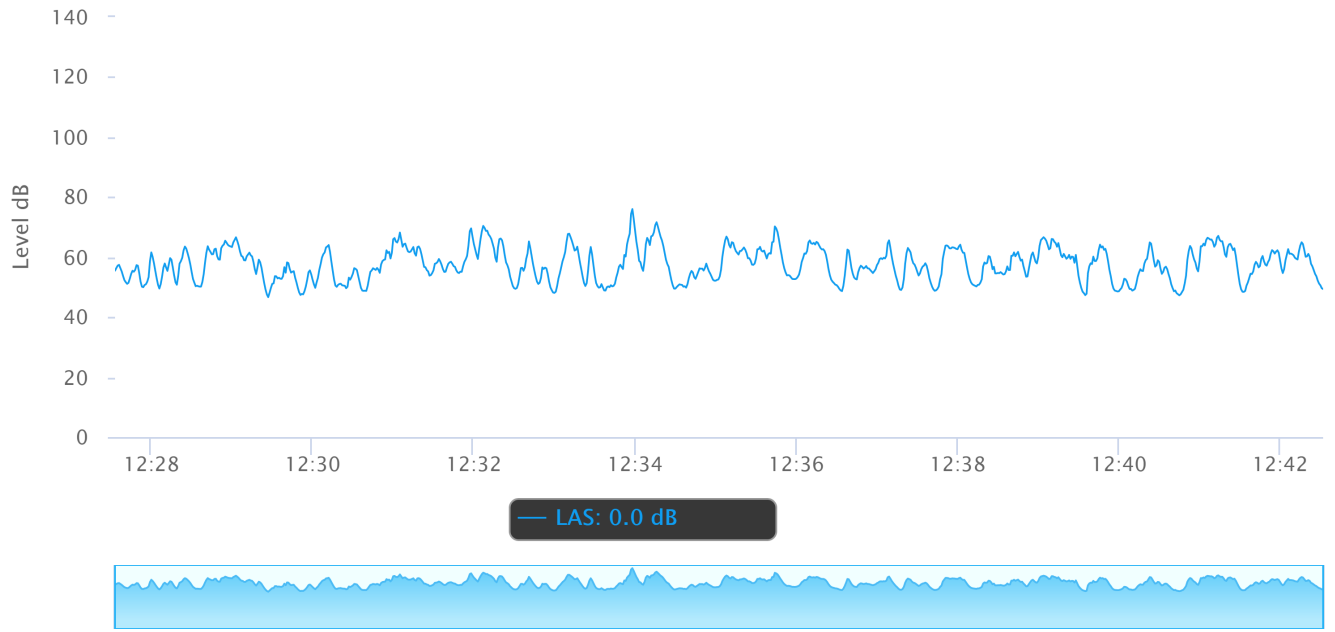
Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	66.1 dB
LAS 10.0	64.7 dB
LAS 33.3	60.3 dB
LAS 50.0	57.3 dB
LAS 66.6	54.9 dB
LAS 90.0	50.2 dB

Time History



Construction Noise Impact Analysis

noah tanski environmental consulting

The 24 Residences: Parking Lot Repaving

Ambient Noise Level: 60.9 dBA Leq

Unmitigated

Equipment Noise Levels

Equipment	Noise Level - dBA		Workday Noise Level - dBA Leq
	Leq	Usage %	
Dump Truck Feeding Paver at 460ft	62.5	0.5	59.5
Roller at 460ft	63.1	0.2	56.1
-	0	1	0.0
-	0	1	0.0
-	0	1	0.0
Combined dBA Leq:			61.1

Construction Noise Impact

Combined Equipment Noise Level	61.1 dBA Leq
Shielding	0 dBA
Ground Factor	0
<hr/>	
Unmitigated Construction Noise Level	61.1 dBA Leq
Ambient Noise Level	60.9 dBA
New Noise Level	64.0 dBA Leq
Unmitigated Noise Increase	3.1 dBA

RESULTS: SOUND LEVELS

Winnetka Tesla

NTEC		5 October 2023										
Noah Tanski		TNM 2.5										
		Calculated with TNM 2.5										
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Winnetka Tesla										
RUN:		Haul Trucks: 4 trips per hour										
BARRIER DESIGN:		INPUT HEIGHTS										
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.										
ATMOSPHERICS:		68 deg F, 50% RH										
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
							Sub'l Inc					
			dB	dB	dB	dB	dB		dB	dB	dB	dB
50ft from centerline	1	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		1	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							

RESULTS: SOUND LEVELS

Winnetka Tesla

NTEC		23 October 2023										
Noah Tanski		TNM 2.5										
		Calculated with TNM 2.5										
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Winnetka Tesla										
RUN:		Prairie E of Oso: AM										
BARRIER DESIGN:		INPUT HEIGHTS										
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.										
ATMOSPHERICS:		68 deg F, 50% RH										
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
							Sub'l Inc					
			dB	dB	dB	dB	dB		dB	dB	dB	dB
50ft from centerline	1	1	0.0	47.4	66	47.4	10	----	47.4	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		1	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							

RESULTS: SOUND LEVELS

Winnetka Tesla

NTEC		23 October 2023										
Noah Tanski		TNM 2.5										
		Calculated with TNM 2.5										
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Winnetka Tesla										
RUN:		Prairie E of Oso: PM										
BARRIER DESIGN:		INPUT HEIGHTS										
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.										
ATMOSPHERICS:		68 deg F, 50% RH										
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
							Sub'l Inc					
			dB	dB	dB	dB	dB		dB	dB	dB	dB
50ft from centerline	1	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		1	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							

RESULTS: SOUND LEVELS

Winnetka Tesla

NTEC													
Noah Tanski													
23 October 2023													
TNM 2.5													
Calculated with TNM 2.5													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT: Winnetka Tesla													
RUN: Winnetka N of Prairie: AM													
BARRIER DESIGN: INPUT HEIGHTS													
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.													
ATMOSPHERICS: 68 deg F, 50% RH													
Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing			Type	With Barrier Calculated LAeq1h	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact		Calculated	Goal	Calculated	minus Goal
			dB	dB	dB	dB	dB		dB	dB	dB	dB	dB
50ft from centerline	1	1	0.0	52.8	66	52.8	10	----	52.8	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	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								

RESULTS: SOUND LEVELS

Winnetka Tesla

NTEC		23 October 2023										
Noah Tanski		TNM 2.5										
		Calculated with TNM 2.5										
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Winnetka Tesla										
RUN:		Winnetka N of Prairie: PM										
BARRIER DESIGN:		INPUT HEIGHTS										
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.										
ATMOSPHERICS:		68 deg F, 50% RH										
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
			dB	dB	dB	dB	dB		dB	dB	dB	dB
50ft from centerline	1	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		1	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							

RESULTS: SOUND LEVELS

Winnetka Tesla

NTEC		23 October 2023										
Noah Tanski		TNM 2.5										
		Calculated with TNM 2.5										
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Winnetka Tesla										
RUN:		Winnetka S of Prairie: AM										
BARRIER DESIGN:		INPUT HEIGHTS										
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.										
ATMOSPHERICS:		68 deg F, 50% RH										
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
							Sub'l Inc					
			dB	dB	dB	dB	dB		dB	dB	dB	dB
50ft from centerline	1	1	0.0	49.4	66	49.4	10	----	49.4	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		1	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							

RESULTS: SOUND LEVELS

Winnetka Tesla

NTEC													
Noah Tanski													
23 October 2023													
TNM 2.5													
Calculated with TNM 2.5													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT: Winnetka Tesla													
RUN: Winnetka S of Prairie: PM													
BARRIER DESIGN: INPUT HEIGHTS													
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.													
ATMOSPHERICS: 68 deg F, 50% RH													
Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing			Type	With Barrier Calculated LAeq1h	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact		Calculated	Goal	Calculated	minus Goal
			dB	dB	dB	dB	dB		dB	dB	dB	dB	dB
50ft from centerline	1	1	0.0	50.3	66	50.3	10	----	50.3	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	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								