



LYNN ROAD 2019 NOISE SURVEY UPDATE

Prepared by:

Michael P. Bucka

Initial Release: July 2019

Prepared for:

City of Thousand Oaks

Department of Public Works

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION/SUMMARY	1
2.0 NOISE MEASUREMENT SITES	2
3.0 2019 NOISE MEASUREMENT SURVEY	10
4.0 HISTORICAL TRAFFIC AND NOISE DATA	14
4.1 Lynn Rd Vehicle Counts	14
4.2 Blackwood St CNEL Measurements	14

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Microphone Locations used in Blackwood St. Noise Surveys	4
2. Results of 24-hour Noise Monitoring Blackwood Street April-May 2019	11
3. Traffic Counts during April-May 2019 Noise Survey	12
4. Summary midweek CNEL and Traffic Count Data	15
5. Vehicle Classification Data on Lynn Road	18

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. 3841 Blackwood St. Noise Measurement Site 1d	5
2. 3993 and 4111 Blackwood St. Noise Measurement Site 2c and 3d	6
3. 4169 Blackwood St. Noise Measurement Site 4c	7
4. Section view of Measurement Sites 1d and 2c	8
5. Section view of Measurement Sites 3d and 4c	9
6. 2019 Blackwood Street Noise Survey and Traffic Counts Results	13
7. Blackwood Street Historical Traffic Counts Results	16
8. Summary of Historical Noise Measurements on Blackwood St	17
Appendix A Measured Hourly Noise Levels	A1

1.0 INTRODUCTION / SUMMARY

The Dos Vientos Ranch EIR and Specific Plans 8 and 9 require that noise measurements be obtained in residential locations affected by the project development during a minimum 48 hour mid-week period before construction began, at various intervals during development, and after project buildout. This report contains the final noise measurement survey performed for the Blackwood Street neighborhood from April 23 through May 9, 2019. The 2019 noise measurement survey was performed because a previous attempt to measure the final noise levels during the period from October 31 to November 14, 2018 was disrupted by the Hill fire disaster and Potrero Road closure.

Earlier measurement programs identified the need for interior noise mitigation measures in the Blackwood St. neighborhood to meet the City standard of 45 dB CNEL for interior residential living areas. A City program to finance residential window retrofits was initiated and implemented in 2004 when the City Council approved disbursement of \$557,500 for Blackwood Street residents interior noise mitigation improvements. Previous measurements showed that there is a potential for traffic noise from Lynn Road to reach the 65 dB CNEL standard adopted by the City for exterior living areas, which would require noise mitigation.

The purpose of the current study is to determine compliance with this standard at the height of the average person in the backyards of the homes on Blackwood Street adjacent to Lynn Road. This report is intended to summarize results of the noise measurement survey performed in the Blackwood Street neighborhood along Lynn Road west of Reino Road in Newbury Park from April 23 through May 9, 2019. Noise levels were measured continuously at four representative residential backyard locations for a two week period to determine the current CNEL (Community Noise Equivalent Level) due to roadway traffic on Lynn Road. The Department of Public Works provided vehicle traffic counts and classifications for the noise measurement period.

The mid-week average CNEL values were between 54 and 60 dB CNEL at the four measurement locations measured on Blackwood Street. The maximum daily CNEL measured (noisiest 24-hour period) was 62.9 dB at the elevated house pad location (3841 Blackwood St) on a Saturday, when a powered lawnmower was operated near the microphone.

Traffic counts obtained during the noise measurement period indicate that the total mid-week 24-hour volume along Lynn Road is currently about 11,687 between Reino Rd and Fernhill Rd,

and about 10,423 west of Fernhill Rd. The traffic counts are nearly equal to that expected after buildout of the Dos Vientos Ranch, estimated to be approximately 10,935 total vehicles per day. The number of heavy truck trips on Lynn Rd west of Reino Rd has decreased from 3.9% of all vehicles in 2007 down to the current level of 1.7% west of Reino Rd and 0.9% west of Fernhill Rd.

2.0 NOISE MEASUREMENT SITES

The automatic noise monitors were placed in four residential backyards on Blackwood St that are adjacent to Lynn Rd. At all four locations, the microphones were located in the outdoor living area behind the house between 10 and 15 feet from the back wall of the house and between 60 and 80 feet from the Lynn Rd centerline. These locations were chosen to represent typical exterior living locations. The height of the microphones above local ground level was 5 to 6 feet at all residences measured in the current survey. The positioning of the microphone follows the practice established in previous noise surveys on Blackwood St. in 1991, 1992, 1998, 2001, 2004, 2006, and 2018, as shown in Table 1.

The April-May 2019 noise measurement survey was conducted to determine current exterior noise levels at Blackwood Street residential backyards due to traffic on Lynn Road. This is an update of noise measurement surveys conducted before and after the extension of Lynn Rd west of Fernhill Rd in 1991 and 1992, and prior to and after the start of occupancy of the Dos Vientos Ranch in 1998, 2001, 2006, 2007, and 2018.

Table 1 lists and Figures 2-4 display the noise measurement locations used in the past and current noise surveys. The locations used for measurement in 1991, 1992, 2006, 2007, and 2018 are representative of the range of house pad elevation conditions relative to Lynn Road and the property line walls that exist in the Blackwood Street neighborhood. The range of conditions are categorized as elevated, level, recessed, and deeply recessed pads, according to actual house pad and Lynn Road elevations from the original Tract maps. Elevated pads are above Lynn Road, level pads are from 2 feet below Lynn Rd to equal elevation, recessed pads are 3 feet to 6 feet below Lynn Road, and deeply recessed pads are 7 to 18 feet below Lynn Road.

Figures 5 and 6 show cross-section views for the measurement sites used in the current noise survey. Site area 1 is adjacent to Lynn Rd between Reino Rd and Greendale Dr. Sites 1a, 1b, 1c, and 1d are elevated house pads (3927, 3915, 3943, and 3841 Blackwood). Sites 1a, 1b, and 1c, were measured in earlier noise surveys as shown in Table 1. Site 1d (3841 Blackwood) was used in the current survey because the homeowner expressed a specific interest in hosting a noise monitor.

Site area 2 is adjacent to Lynn Rd and between Greendale Dr. and Fernhill Rd. Sites 2a and 2b (4057 and 4033 Blackwood St) are deeply recessed house pads measured in previous noise surveys, see Table 1. The current 2019 noise measurements were conducted at 3993 Blackwood St (site 2c) which is a "level" pad, as shown in Figure 5.

Site area 3 is adjacent to Lynn Rd and also between Greendale Dr. And Fernhill Rd. Previous noise measurements were made at recessed or deeply recessed house pads at sites 3a, 3b, and 3c, as shown in Table 1. The current 2019 survey used site 3d at 4111 Blackwood St to represent the noise levels at recessed homes.

In previous surveys, site area 4 was located west of Fernhill Rd adjacent to Lynn Rd. The recessed and deeply recessed house pads in this area were represented by sites 4a and 4b in previous noise measurements, as given in Table 1. The current 2019 noise survey used site 4c which is the deeply recessed house pad at 4169 Blackwood St.

Table 1. Microphone Locations used in Blackwood St. Noise Surveys

Site No.	Blackwood St. Address	Type	Year(s) Measured	Distance to Lynn Rd C.L.	Distance to House, ft	Height AGL, ft
1	3841	Elevated	2019	80	15	6
	3915	Elevated	1992, 2018	67	12	6
	3927	Elevated	1991	65	10	6
	3943	Elevated	2004, 2006	65	15	6
2	3993	Level	2019	65	12	6
	4033	Deep Recess	2004, 2006	65	15	8
	4057	Deep Recess	1991, 1992	55*	22*	17
	4057	Recessed	2018	67	10	14
3	4111	Recessed	2019	60	15	6
	4127	Recessed	2004, 2006	70	15	6
	4151	Deep Recess	2018	70	15	6
	4191	Deep Recess	1991, 1992, 1998, 2001	70	5	16
4	4169	Deep Recess	2019	65	12	6
	4243	Recessed	1991, 1992, 2006	60	30	6
	4267	Deep Recess	2018	70	15	8

* At this address in 1991 and 1992, the microphone was improperly placed on the top of a detached shed 17 feet above house pad level and 10 feet from the property line wall, with a direct line-of-sight to the Lynn Rd traffic noise source. This was not an exterior living area, and so in 2018 the microphone was placed at a more representative location that is consistent with all other Blackwood St. addresses tested.

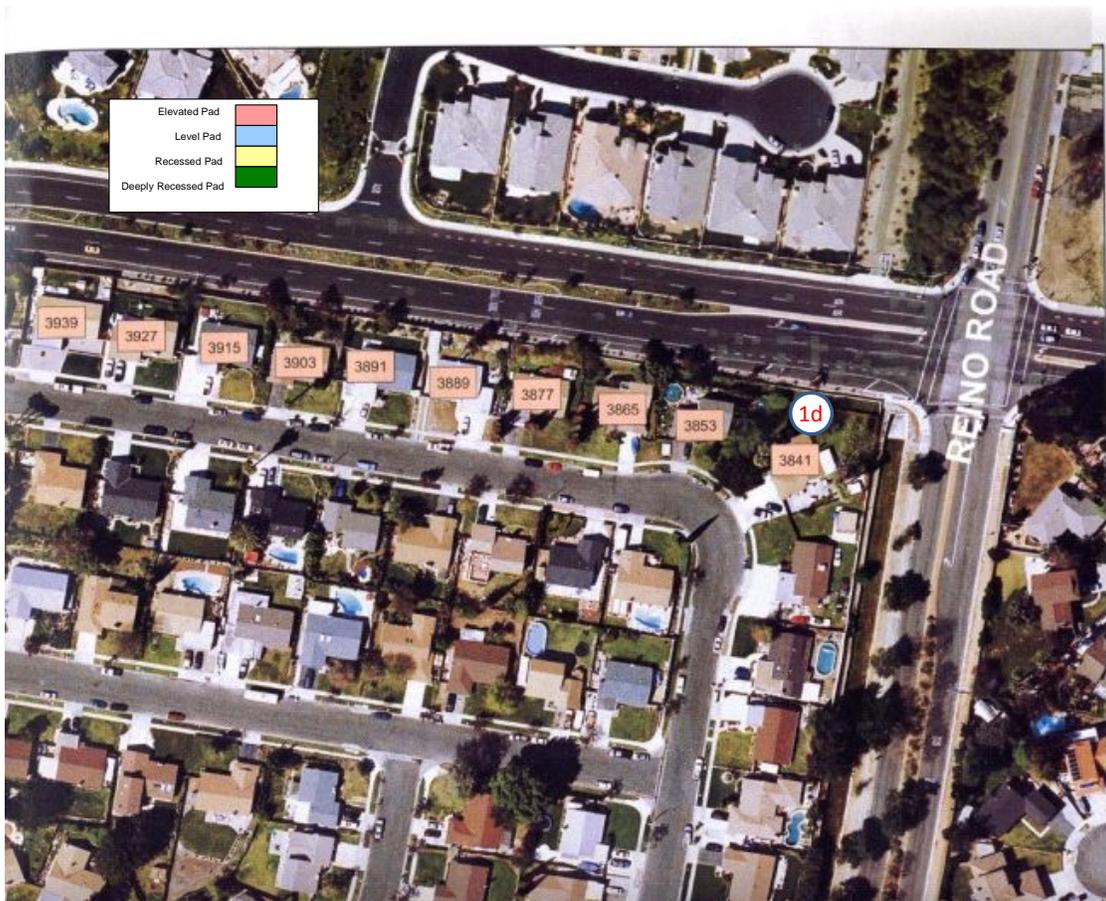


Figure 1. 3841 Blackwood St. Noise Measurement Site 1d

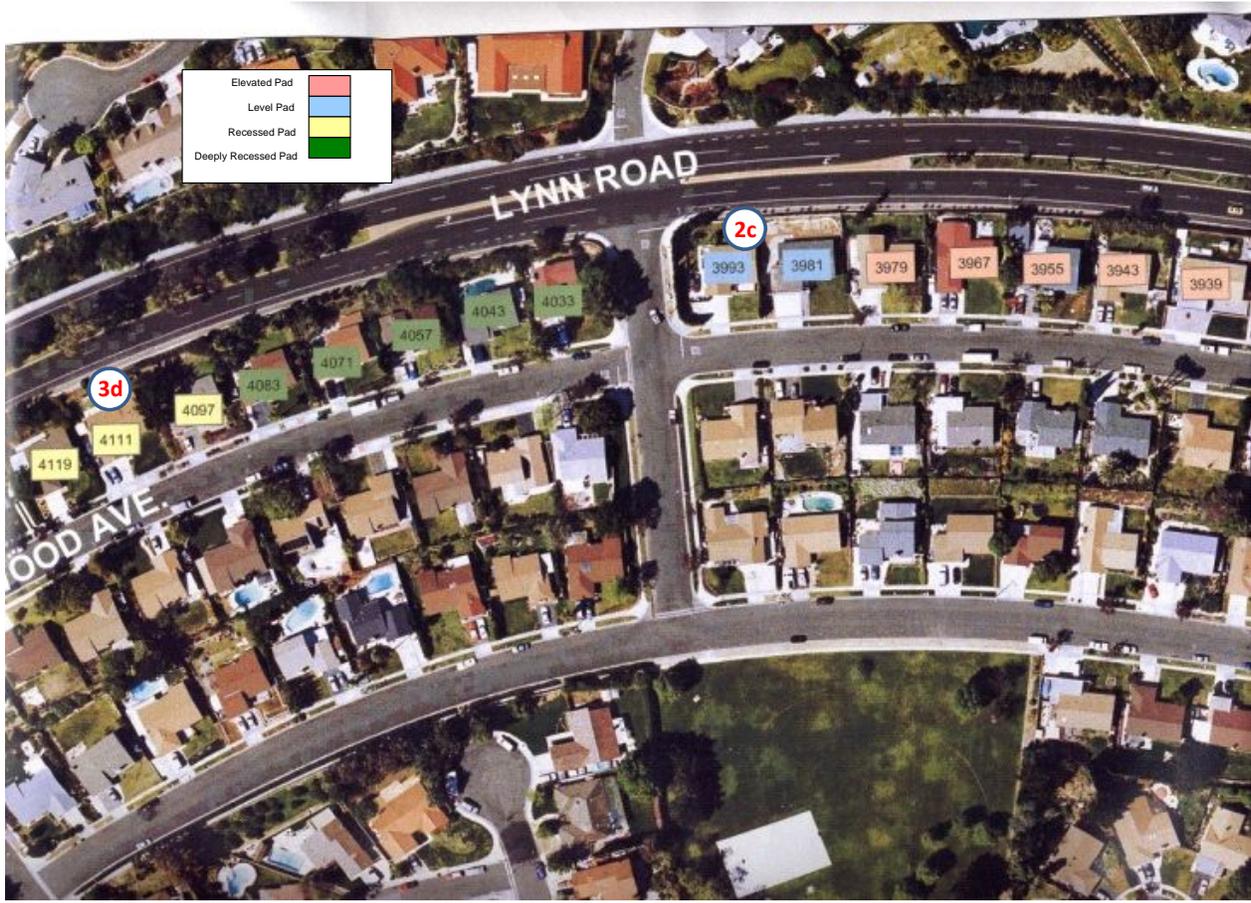


Figure 2. 3993 and 4111 Blackwood St. Noise Measurement Sites 2c and 3d



Figure 3. 4169 Blackwood St. Noise Measurement Site 4c

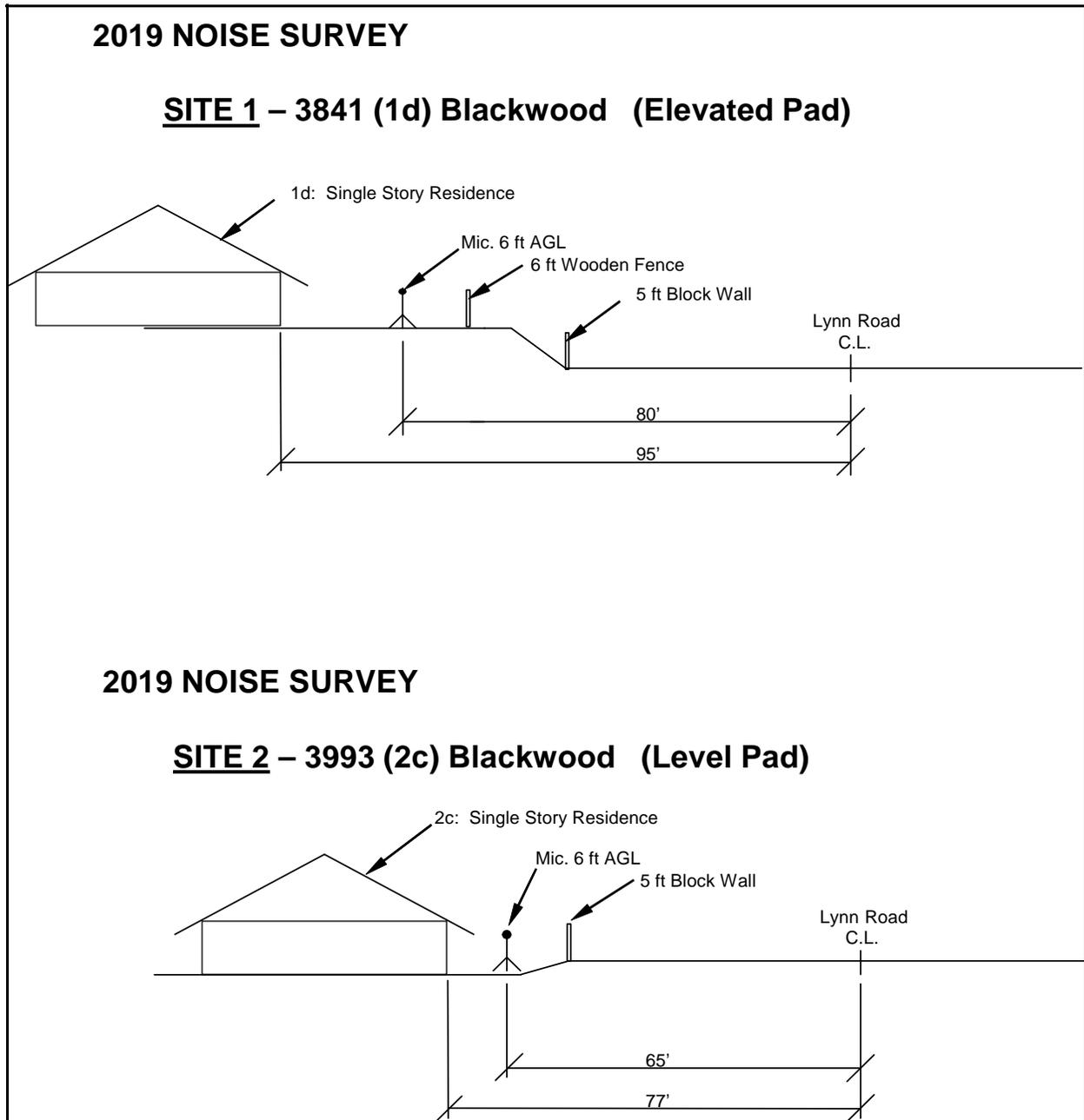


Figure 4. Section view of Measurement Sites 1d and 2c

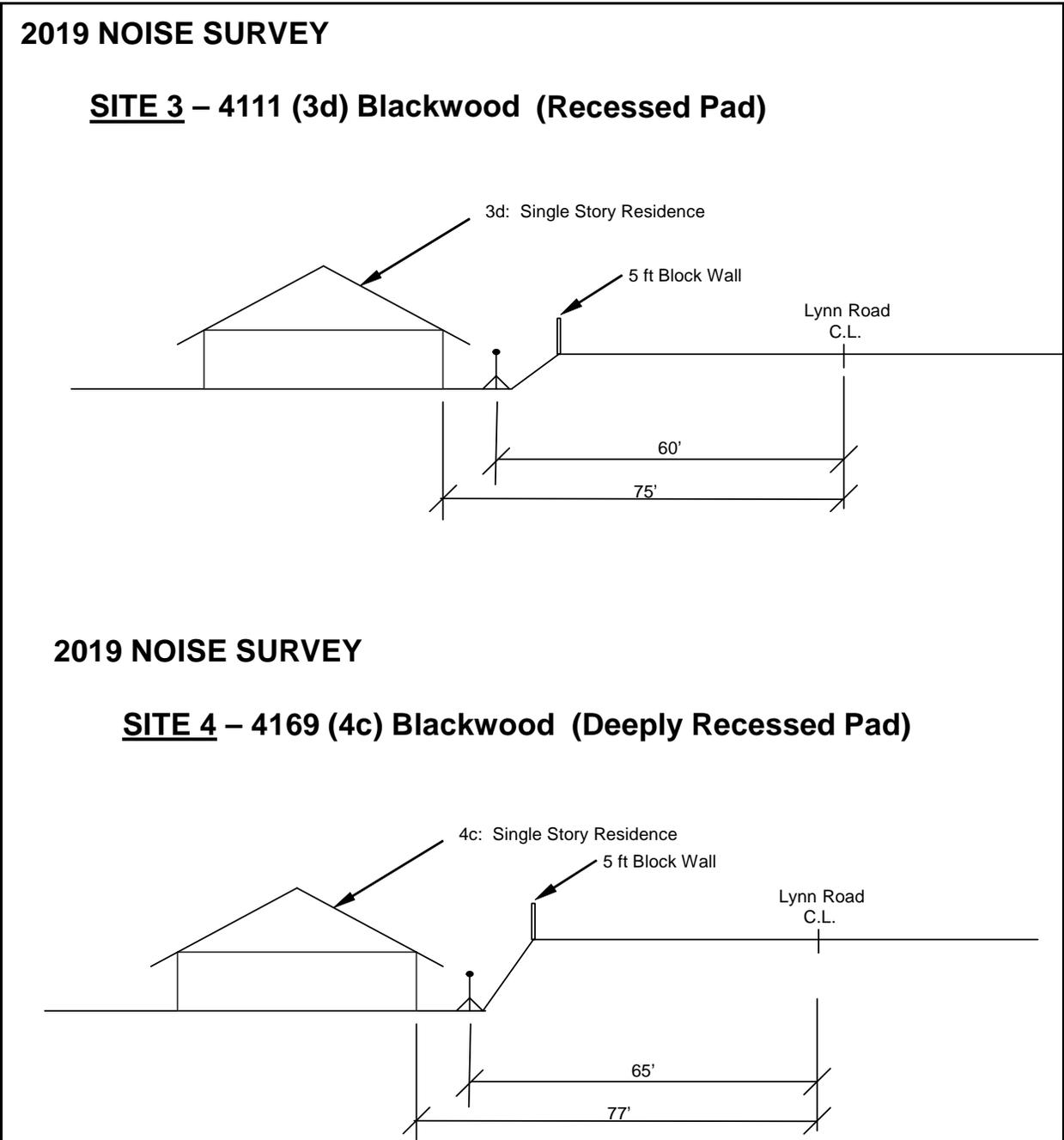


Figure 5. Section view of Measurement Sites 3d and 4c

3.0 2019 NOISE MEASUREMENT SURVEY

The 2019 Lynn Road noise measurement survey in the Blackwood Street area was conducted over the 16 day period from Tuesday April 23 through Thursday May 9, 2019. Four identical automatic noise monitoring systems were installed at the locations listed in bold font in Table 1 late morning to mid-day on April 23 and removed at about the same time on either May 7 or May 9.

Noise monitoring equipment at all monitoring locations consisted of Larson-Davis Laboratories (LDL) Model 870 integrating sound level meters equipped with Bruel & Kjaer (B&K) Type 4176 1/2" microphones, which comply with the specifications of the American National Standards Institute (ANSI) and the International Electrotechnical Commission (IEC) for Type 1 (Precision) sound level meters. The measurement systems were calibrated in the field prior to, at intervals during, and after use with a Bruel & Kjaer Type 4231 acoustic calibrator to ensure the accuracy of the measurements.

The purpose of these measurements is to quantify existing (2019) traffic Community Noise Equivalent Level (CNEL) and document fluctuations in noise levels over a two week period, including several continuous mid-week 24-hour periods, as required in the Dos Vientos Specific Plan project conditions⁴. Appendix A contains a tabulated summary of the continuous noise level measurement results showing the Leq (Equivalent A-weighted Sound Level, dBA) at hourly intervals during the measurement period at each site.

The data show that the measured noise levels fall into two distinct groups. Measured levels at 3841 Blackwood St. (elevated), 3993 Blackwood St. (level) and 4111 Blackwood St. (recessed) are typically 5 dB higher than those measured at 4169 Blackwood St. (deeply recessed). An interesting feature is the higher noise "floor" at site 3 (4111) during very early morning hours due to the presence of a small water fountain at that location.

The hourly Leq values were combined to compute the weighted 24-hour noise exposure, CNEL. As shown in Table 2 and Figure 6, all daily and average CNEL values were well below the 65 dB criterion level set by the City of Thousand Oaks for residential exterior living areas.

Table 2. Results of 24-hour Noise Monitoring Blackwood Street April - May 2019

		Blackwood Street Address			
		3841	3993	4111	4169
		Elevated	Level	Recessed	Deep Recess
		6 ft AGL	6 ft AGL	6 ft AGL	6 ft AGL
Day	Date	Site 1	Site 2	Site 3	Site 4
Wed	04/24	60.0	58.4	60.0	55.2
Thur	04/25	60.3	57.9	58.5	56.5
Fri	04/26	59.7	58.6	59.1	54.2
Sat	04/27	62.9	58.0	59.3	50.5
Sun	04/28	59.0	57.2	58.8	50.6
Mon	04/29	58.1	58.6	59.7	55.6
Tue	04/30	57.9	58.2	61.0	51.5
Wed	05/01	54.1	57.8	57.9	54.2
Thur	05/02	61.7	58.8	60.2	51.6
Fri	05/03	61.8	59.5	60.2	53.0
Sat	05/04	59.3	56.7	59.6	51.2
Sun	05/05	58.3		59.2	50.6
Mon	05/06	59.3	55.1	59.5	52.4
Tue	05/07	60.6	58.7	59.7	55.0
Wed	05/08		58.7	59.6	
Thur	05/09		58.4	58.6	
Averages:	All	59.5	58.1	59.6	53.0
	Weekday	59.9	58.5	59.7	53.9
	Mid-week	59.1	58.4	59.7	54.0
	Weekend	59.9	57.3	59.3	50.7
	Maximum	62.9	59.5	61.0	56.5

Less than 24 hours of data - excluded from averages.

The traffic counts maintained during the 2019 noise survey (summarized in Table 3) show that the average mid-weekday traffic was 11,687 vehicles from April 23 - May 8, 2018. This total is slightly more than the Annual Average Daily Traffic expected (10,935) on Lynn Road west of Reino Road after Dos Vientos Ranch project buildout. Using the ratio of ADT's and the FHWA Traffic Noise Model, the adjustment from measurement to buildout conditions is -0.3 dB, which is insignificant.

Table 3. Traffic Counts during April-May 2019 Noise Survey

		Daily Traffic Counted	
		West of Fernhill	West of Reino
Day	Date		
Wed	04/24	10597	11933
Thur	04/25	10493	11791
Fri	04/26	11138	12434
Sat	04/27	8767	9931
Sun	04/28	7683	8680
Mon	04/29	9765	10975
Tue	04/30	10091	11324
Wed	05/01	10481	11687
Thur	05/02	10772	11946
Fri	05/03	11356	12552
Sat	05/04	9840	10396
Sun	05/05	7970	8916
Mon	05/06	9784	10908
Tue	05/07	10232	11575
Averages:	All	9926	11075
	Weekday	10471	11713
	Mid-week	10444	11709
	Weekend	8565	9481
	Maximum	11356	12552

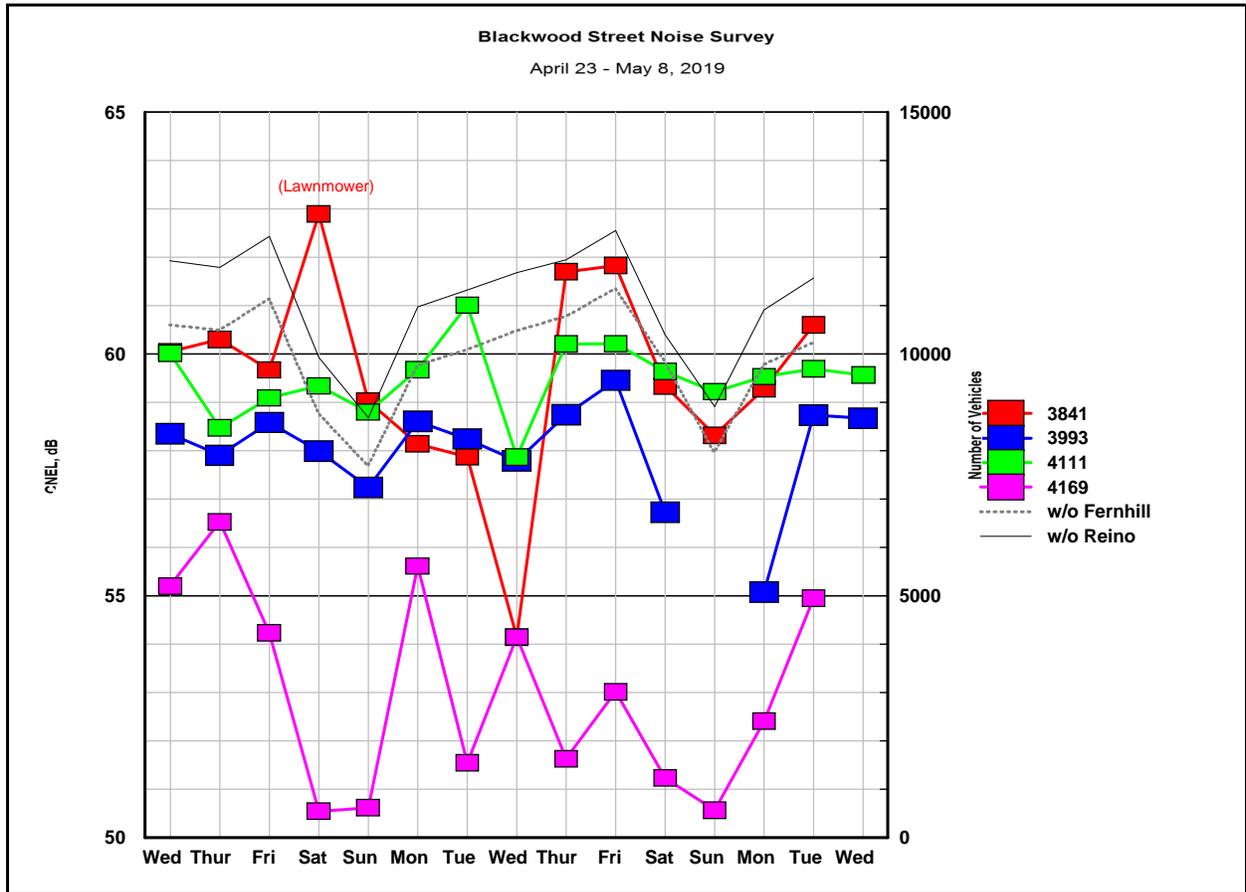


Figure 6. 2019 Blackwood Street Noise Survey and Traffic Counts Results

4.0 HISTORICAL TRAFFIC AND NOISE DATA

4.1 Lynn Road Vehicle Counts

Table 4 and Figure 7 show the traffic counts obtained at different locations along Lynn Rd at irregular intervals over the past 28 years. As shown, traffic volumes increased between 1991 and 1992 along Lynn Road when it was extended to Potrero Road, allowing through-traffic. Heavy truck volumes were less than 1% of the total in 1991 and 1992. The total volumes along Lynn Road remained nearly constant until 1997. At that time, heavy truck trips comprised about 1.8 % of the total counted. The traffic volume east of Reino Road was slightly higher than west of Reino Road in 1997. By 2000-2001, total traffic volumes along Lynn Road had increased sharply, particularly west of Reino Road, where heavy truck trips were 3.5 % of the total volume. More recent counts (February-March 2004) show slightly lower total traffic than in 2000, but with heavy trucks comprising 4.3% of the volume west of Reino Road on Lynn Road. The 2006 traffic counts show the average total volume (10,892) nearly equal to that expected after buildout of the Dos Vientos Ranch (10,935). Heavy truck trips were 3.3% of the total during the 2006 measurements. By 2019, after completion of the Dos Vientos Ranch, the daily total traffic volume averaged 11,713 west of Reino Road and 10,423 west of Fernhill Rd. Heavy truck trips comprised 1.7% of the total number of vehicles west of Reino Rd and 0.9 % west of Fernhill Rd.

4.2 Blackwood Street CNEL measurements

Table 4 and Figure 8 show the average midweek CNEL data obtained at the various Blackwood Street residential backyards along Lynn Road over the past 28 years. The CNEL measured along Lynn Road west of Reino Road in 1992 was 3 to 5 dB higher than in 1991 due to the extension of Lynn Road. By 1998, the CNEL west of Reino Road along Lynn Road increased another 3.5 dB.

Table 4. Summary of midweek CNEL and Traffic Count Data - Lynn Road Noise Surveys

Year	Blackwood St. Measurement Site No.				Average Weekday Volumes			Heavy Truck %	Heavy Trucks per 24 hours
	<u>1</u> Avg (Max)	<u>2</u> Avg (Max)	<u>3</u> Avg (Max)	<u>4</u> Avg (Max)	West of Reino Rd	West of Greendale	West of Fernhill		
1991	60.1	58.6	49.6	49.8	2662	1007			
1992	63.4	61.3	52.2	52.3	3438	1888			
1996							1768		
1997					3471	1890		5.7%	198
1998			55.6						
2000					9555				
2001			58.2			6342		3.1%	197
2004					9410			5.9%	556
2005									
2006	64.7 (65.6)	56.9 (60.8)	59.2 (61.2)	58.9 (60.5)	10892				
2007	64.8 (65.8)	56.0 (60.2)	57.9 (56.9)	59.1 (63.0)	10365			3.9%	409
2018	59.9 (60.4)	59.4 (60.5)	53.9 (54.7)	54.6 (55.7)	11333		9465		
2019	59.1 (62.9)	58.4 (59.5)	59.7 (61.0)	54.0 (56.5)	11687		10469	1.7%	204

Notes:

- 1 Site Area 1 is the south side of Lynn Rd west of Reino Rd and east of Greendale Rd. Blackwood St. addresses measured were 3927 in 1991, 3915 Blackwood was measured in 1992 and 2018, 3943 was measured in 2004 and 2006, and 3841 tested in 2019.
- 2 Site Area 2 is the south side of Lynn Rd generally west of Greendale Rd and east of Fernhill Ln. Blackwood St. addresses measured were 4057 in 1991, 1992, and 2018, 4033 in 2004 and 2006 and 3993 in 2019.
- 3 Site Area 3 is also the south side of Lynn Rd west of Greendale Rd and east of Fernhill Ln. Blackwood St. addresses measured were 4191 in 1991, 1992, 1998, and 2001, 4127 in 2004 and 2006, 4151 in 2018, and 4111 in 2019.
- 4 Site Area 4 is the south side of Lynn Rd generally west of Fernhill Ln. Blackwood St. addresses measured were 4243 in 1991, 1992, and 2006, 4267 in 2018, and 4169 in 2019.
- 5 "Avg" CNEL refers to the 48 hour mid-weekday average CNEL measurement specified in the project EIR conditions.

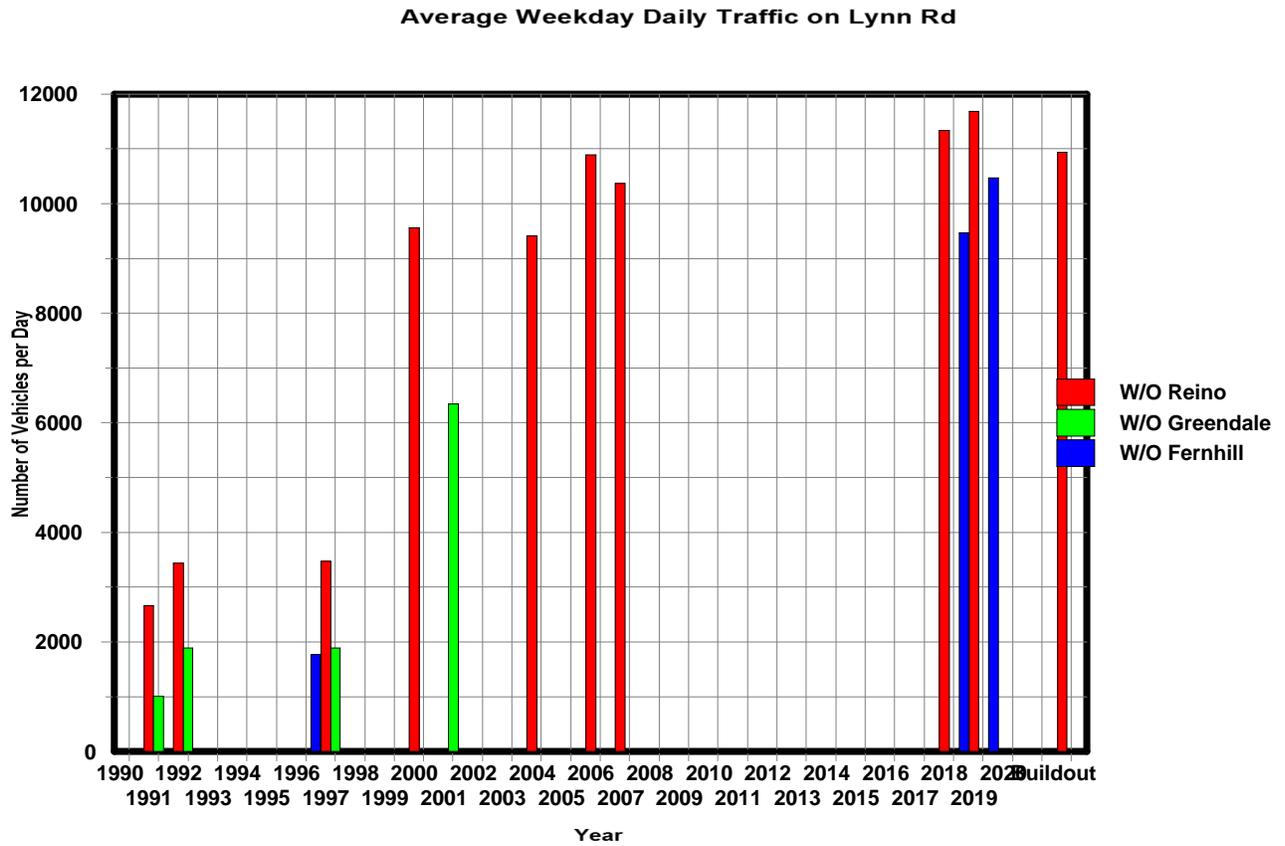


Figure 7. Blackwood Street Historical Traffic Counts Results

Average Midweek CNEL measurements Blackwood Street

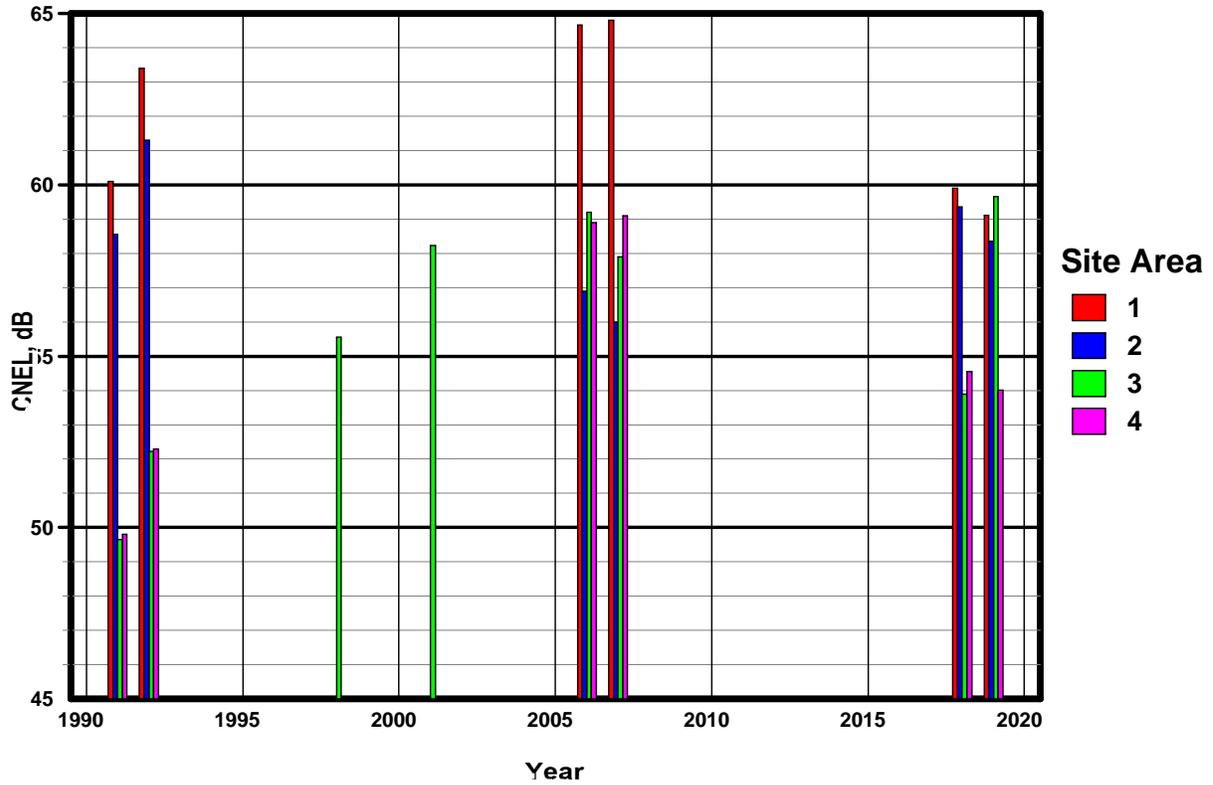


Figure 8. Summary of Historical CNEL Measurements on Blackwood St

It should be noted that no measured CNEL from earlier noise surveys was over the 65 dB Noise Element guideline for residential uses. The results of the noise measurement surveys in 2006 and 2007 showed that although the measured noise levels had increased another 1.5 dB since the previous 1998 survey, the CNEL 65 dB level was not quite reached at any Blackwood St location.

By 2018, exterior noise levels decreased by 5 dB compared to the highest levels measured in 2006 and 2007. The 2018 exterior CNEL's in the Blackwood St area were all well below 65 dB, and were in fact 60 dB or less. These results were repeated in 2019. This decrease is attributed to the completion of construction at Dos Vientos Ranch, resulting in a significant decrease in the number of heavy truck trips on Lynn Rd west of Reino Rd, from 3.9% of all vehicles in 2007, down to the current level of 1.7 % west of Reino Rd and 0.9% west of Fernhill Rd. Table 5 summarizes the vehicle classification data extracted from traffic counts made in 2007 and 2019.

Table 5. Vehicle Classification Data on Lynn Rd

Vehicle Classification Comparison 2007 vs 20

Location	Year	Average	Total/Day	M.C. 1	Cars 2	2 axle long 3	Buses 4	2 axle 3 axle 6 tire 5	3 axle Single 6	4 axle Single 7	<5 axle Double 8	5 axle Double 9	>6 axle Double 10	Multi 11	Multi 12	Multi 13	Not Classified 14
w/o Reino	2007	midweek	10159	109	6894	2381	28	346	31	32	272	14	24	4	9	16	0
w/o Reino	2019	midweek	11687	97	7459	2855	31	848	24	4	158	7	7	4	0	0	195
w/o Fernhill	2019	midweek	10423	85	7901	1631	21	375	22	3	62	5	2	1	1	0	313

Noise Model Categories
Auto Med Trk Hvy Trk
Total/Day 1+2+3+14 4+5 6-13

w/o Reino	2007	midweek	10159	9384	373.5	401
w/o Reino	2019	midweek	11687	10606	879	205
w/o Fernhill	2019	midweek	10423	9930	396	96
w/o Reino	2007	midweek		92.4%	3.7%	3.9%
w/o Reino	2019	midweek		90.8%	7.5%	1.7%
w/o Fernhill	2019	midweek		95.3%	3.8%	0.9%

APPENDIX A - Measured Hourly Noise Levels

This Appendix provides the detailed hourly noise levels measured at each site that were used to compute daily CNEL, as reported in Table 2.

Table A-1. Lynn Rd / Blackwood St Traffic Noise Survey - Measured Noise Levels

		101							
3841 Blackwood Site 1									
Hour	04/23	04/24	04/25	04/26	04/27	04/28	04/29	04/30	
Start	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	
0		52.1	52.1	51.2	58.8	53.9	43.7	46.7	
1		41.4	40.6	54.5	45.4	48.5	42.0	39.4	
2		47.2	32.8	42.7	45.1	47.3	40.5	34.5	
3		39.9	39.7	38.6	41.4	40.9	38.2	38.0	
4		45.8	45.6	42.3	37.3	41.1	44.5	42.6	
5		50.4	50.2	49.4	43.7	44.2	48.7	48.3	
6		55.6	53.2	53.9	50.2	48.9	53.5	53.4	
7		58.1	58.9	57.0	52.7	53.3	57.2	57.9	
8		57.6	57.4	58.0	54.3	55.2	56.9	57.2	
9		55.9	55.2	60.5	55.5	62.1	55.1	54.9	
10	55.0	56.6	55.3	61.4	57.1	59.2	56.0	54.4	
11	56.6	56.3	56.2	55.4	58.0	59.4	60.0	54.4	
12	56.5	56.5	54.5	57.8	57.5	60.2	56.0	55.3	
13	56.3	56.8	55.9	56.3	59.4	58.4	57.6	56.4	
14	55.9	57.5	58.3	56.5	57.6	60.4	56.0	58.7	
15	57.3	58.1	58.8	59.2	70.5	56.4	57.5	57.1	
16	59.8	58.8	57.8	57.8	70.2	61.4	57.6	58.0	
17	57.8	61.1	58.4	60.9	56.6	58.2	57.2	57.8	
18	61.2	60.2	59.5	55.7	56.7	59.9	57.2	55.9	
19	56.1	56.3	63.3	56.6	60.9	54.8	57.3	58.5	
20	56.5	62.2	55.9	57.6	54.7	52.1	55.8	53.8	
21	53.9	52.2	59.5	52.2	57.8	55.7	51.2	51.0	
22	51.9	50.5	53.3	50.7	53.3	49.0	50.0	48.7	
23	59.8	49.1	48.7	49.6	52.0	47.7	47.3	50.9	
Ld	56.6	58.1	57.5	58.5	63.5	59.3	57.2	56.7	
Le	55.6	58.8	60.6	56.0	58.5	54.4	55.4	55.5	
Ln	50.9	50.2	49.6	50.4	51.7	48.5	48.3	48.0	
CNEL	59.2	60.0	60.3	59.7	62.9	59.0	58.1	57.9	

Table A-1. Lynn Rd / Blackwood St Traffic Noise Survey - Measured Noise Levels (continued)

3841 Blackwood Site 1								Combine 1st and final days
Hour Start	05/01 Wednesday	05/02 Thursday	05/03 Friday	05/04 Saturday	05/05 Sunday	05/06 Monday	05/07 Tuesday	
0	39.3	49.9	50.2	51.1	52.6	50.5	51.5	51.5
1	37.5	50.3	50.1	44.2	45.6	40.5	41.8	41.8
2	34.4	50.8	50.7	38.8	48.9	39.8	38.3	38.3
3	30.6	52.6	52.6	39.8	40.7	37.7	35.4	35.4
4	53.3	55.4	55.2	39.1	40.6	44.1	41.9	41.9
5	43.3	58.8	58.6	44.7	41.6	52.1	48.4	48.4
6	48.3	58.9	58.1	48.8	47.3	52.2	55.1	55.1
7	58.9	55.8	56.3	53.4	50.2	58.1	58.6	58.6
8	52.3	56.3	55.6	55.4	53.6	57.0	58.4	58.4
9	49.3	55.5	56.2	55.0	54.6	55.6	55.9	55.9
10	49.6	55.4	55.8	57.7	57.5	55.0	55.3	55.0
11	51.7	55.5	56.8	58.1	64.3	55.4		56.6
12	50.1	56.3	55.4	58.7	58.9	57.1		56.5
13	49.4	59.9	55.8	58.2	58.7	56.0		56.3
14	50.2	58.0	58.0	62.3	59.4	63.0		55.9
15	51.2	64.0	59.4	59.1	56.2	57.6		57.3
16	51.5	58.3	59.9	59.6	60.4	59.0		59.8
17	51.9	56.9	60.6	58.0	56.0	57.3		57.8
18	51.6	54.3	58.7	59.7	55.7	56.8		61.2
19	49.7	53.5	57.8	57.3	54.1	56.5		56.1
20	49.0	51.5	55.7	57.1	54.8	61.7		56.5
21	44.6	51.4	54.0	54.3	53.3	49.9		53.9
22	42.1	50.7	52.9	52.3	48.1	50.4		51.9
23	39.7	50.2	51.9	55.3	49.0	46.6		59.8
Ld	52.5	58.2	57.8	58.5	58.5	57.9	52.5	57.8
Le	48.3	52.2	56.1	56.4	54.1	58.3	0.0	55.6
Ln	45.9	54.6	54.5	49.5	47.7	48.6	48.1	52.7
CNEL	54.1	61.7	61.8	59.3	58.3	59.3	55.2	60.6

Table A-1. Lynn Rd / Blackwood St Traffic Noise Survey - Measured Noise Levels

3993 Hour Start	102 Blackwood Site 2							
	04/23 Tuesday	04/24 Wednesday	04/25 Thursday	04/26 Friday	04/27 Saturday	04/28 Sunday	04/29 Monday	04/30 Tuesday
0		47.8	45.3	43.4	47.1	49.0	43.0	43.9
1		41.0	39.4	39.8	45.2	48.2	41.1	38.8
2		43.8	30.7	40.2	43.1	46.0	40.0	37.4
3		38.6	38.0	38.3	40.8	41.9	39.8	38.0
4		44.9	45.4	43.6	38.5	41.6	45.8	44.8
5		50.4	49.4	50.4	46.3	44.8	50.4	50.1
6		54.8	53.5	53.8	50.8	49.1	55.0	55.1
7		58.8	58.4	58.2	54.0	52.8	59.2	59.5
8		58.4	58.6	58.3	55.5	55.3	58.9	59.5
9		56.7	55.9	56.8	57.1	57.8	57.0	56.8
10	56.2	55.7	55.9	59.1	57.5	57.6	55.1	55.8
11	55.8	55.7	54.8	56.3	57.9	59.1	57.6	55.9
12	57.1	58.1	55.7	56.9	57.3	58.3	56.1	55.8
13	56.1	56.5	56.3	56.6	57.0	58.0	57.7	56.9
14	56.9	58.1	56.6	57.2	59.7	57.2	57.4	58.1
15	57.4	58.3	58.1	58.4	56.8	56.6	58.4	57.6
16	58.1	58.7	57.5	58.6	58.5	58.1	58.5	58.5
17	57.7	59.2	59.9	62.5	58.2	56.5	58.6	58.7
18	60.8	57.6	57.3	59.3	57.0	56.0	59.0	57.1
19	55.9	55.2	56.2	55.6	55.3	54.5	56.5	57.0
20	54.3	55.1	55.1	54.2	53.5	52.2	54.2	53.6
21	52.9	51.9	53.0	52.1	53.9	51.2	51.7	51.6
22	49.0	48.8	49.6	51.0	52.3	49.2	48.8	48.3
23	50.3	46.2	47.1	49.0	51.4	46.9	47.2	47.0
Ld		57.8	57.3	58.5	57.4	57.2	57.9	57.7
Le		54.3	55.0	54.2	54.3	52.9	54.6	54.6
Ln		48.7	47.8	48.4	48.2	47.1	49.1	48.4
CNEL		58.4	57.9	58.6	58.0	57.2	58.6	58.2

Table A-1. Lynn Rd / Blackwood St Traffic Noise Survey - Measured Noise Levels (continued)

3993 Hour Start	05/01 Wednesday	05/02 Thursday	05/03 Friday	05/04 Saturday	05/05 Sunday	05/06 Monday	05/07 Tuesday	05/08 Wednesday	05/09 Thursday	Combine 1st and final days
0	44.4	44.5	43.6	46.8	0.0	0.0	44.9	41.6	42.7	42.7
1	39.2	39.2	40.9	44.5	0.0	0.0	42.3	42.0	37.4	37.4
2	40.5	35.8	40.0	41.1	0.0	0.0	40.2	37.2	37.3	37.3
3	37.6	41.2	36.9	41.1	0.0	0.0	39.5	40.9	37.7	37.7
4	46.8	45.3	43.7	40.1	0.0	0.0	44.5	44.0	43.9	43.9
5	50.7	50.5	54.5	46.4	0.0	0.0	50.8	51.0	50.1	50.1
6	55.3	55.4	55.0	50.3	0.0	0.0	55.2	55.1	54.8	54.8
7	0.0	59.4	59.1	55.1	0.0	0.0	59.3	59.1	59.1	59.1
8	0.0	60.0	59.5	56.1	0.0	0.0	59.9	60.2	59.0	59.0
9	0.0	56.5	57.7	56.5	0.0	0.0	56.6	56.2	56.5	56.5
10	0.0	58.0	56.8	57.8	0.0	0.0	56.1	55.8	56.2	56.2
11	56.2	57.1	56.9	57.4	0.0	0.0	55.9	56.9		55.8
12	56.6	55.8	56.7	57.9	0.0	0.0	56.8	56.9		57.1
13	56.7	56.2	56.9	59.0	0.0	57.0	57.0	56.6		56.1
14	57.4	57.1	58.0	58.0	0.0	57.3	57.8	57.5		56.9
15	58.3	58.6	59.6	58.5	0.0	58.9	58.5	59.4		57.4
16	58.6	59.8	59.8	57.9	0.0	59.6	59.3	58.9		58.1
17	59.1	59.5	60.3	57.5	0.0	58.9	59.6	58.9		57.7
18	58.3	58.8	58.4	58.1	0.0	57.6	58.0	58.7		60.8
19	57.0	57.0	56.8	0.0	0.0	56.2	56.5	57.5		55.9
20	53.9	54.3	55.0	0.0	0.0	53.7	55.8	54.3		54.3
21	52.2	53.4	53.3	0.0	0.0	51.0	53.1	52.6		52.9
22	48.5	48.2	52.1	0.0	0.0	49.2	49.6	49.2		49.0
23	46.9	48.1	50.7	0.0	0.0	45.6	47.4	47.8		50.3
Ld	56.0	58.3	58.5	57.6	0.0	55.3	58.1	58.1	53.1	57.8
Le	54.8	55.2	55.3	0.0	0.0	54.1	55.4	55.3	0.0	54.5
Ln	48.8	48.8	50.2	44.7	0.0	41.2	48.9	48.7	47.1	48.6
CNEL	57.8	58.8	59.5	56.7	6.7	55.1	58.7	58.7	54.7	58.4

Table A-1. Lynn Rd / Blackwood St Traffic Noise Survey - Measured Noise Levels

		103						
4111 Blackwood Site 3								
Hour	04/23	04/24	04/25	04/26	04/27	04/28	04/29	04/30
Start	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
0		51.3	50.5	0.0	51.2	51.4	50.0	50.0
1		50.5	50.1	0.0	50.8	51.2	49.8	49.5
2		51.0	49.9	0.0	50.7	50.7	49.8	49.4
3		50.4	50.0	0.0	50.3	49.9	49.8	49.4
4		51.3	51.1	0.0	50.1	49.9	50.7	50.3
5		53.0	52.2	0.0	51.1	50.5	52.1	52.0
6		55.4	54.3	0.0	52.7	51.8	55.0	55.2
7		59.0	58.2	0.0	54.1	53.6	58.5	58.8
8		58.3	58.2	0.0	55.6	55.4	58.3	58.5
9		56.3	55.8	0.0	56.2	57.0	56.1	55.9
10	56.6	59.0	55.3	0.0	56.8	56.6	55.1	55.6
11	55.2	55.4	55.0	55.8	57.0	57.5	56.7	55.6
12	55.3	54.9	55.0	57.0	56.7	56.9	55.5	55.2
13	55.5	54.9	55.4	56.1	56.4	56.9	56.2	56.0
14	56.2	57.1	56.0	56.6	58.3	56.3	56.4	57.2
15	56.8	58.4	56.8	57.5	56.3	55.6	57.2	56.9
16	57.5	57.6	57.1	57.9	56.7	56.6	57.4	57.9
17	57.2	58.1	58.1	68.5	56.3	56.0	57.1	70.0
18	60.8	57.1	58.6	56.9	56.4	56.4	57.2	56.2
19	55.5	55.7	0.0	61.1	54.8	54.3	55.5	55.7
20	54.6	55.7	0.0	54.5	53.4	53.1	54.7	53.9
21	53.3	53.5	0.0	53.4	55.1	52.3	52.8	52.8
22	52.0	51.9	0.0	52.6	53.1	51.4	51.4	51.6
23	52.8	51.0	0.0	51.8	52.1	50.7	50.0	51.3
Ld		57.4	56.8	59.4	56.5	56.3	56.9	61.1
Le		55.1	0.0	57.8	54.5	53.3	54.5	54.3
Ln		52.1	50.4	45.7	51.5	50.9	51.8	51.4
CNEL		60.0	58.1	59.1	59.3	58.8	59.7	61.0

Table A-1. Lynn Rd / Blackwood St Traffic Noise Survey - Measured Noise Levels (continued)

4111 Hour Start	05/01 Wednesday	05/02 Thursday	05/03 Friday	05/04 Saturday	05/05 Sunday	05/06 Monday	05/07 Tuesday	05/08 Wednesday	05/09 Thursday	Combine 1st and final days
0	0.0	50.4	50.7	51.0	51.8	50.7	50.7	50.1	42.7	42.7
1	0.0	49.9	50.2	50.5	50.7	50.3	50.3	50.1	37.4	37.4
2	0.0	49.9	50.2	50.2	50.6	50.1	50.2	49.9	37.3	37.3
3	0.0	50.3	50.1	50.2	50.5	49.9	50.1	50.1	37.7	37.7
4	0.0	50.8	50.7	50.1	50.4	50.8	50.6	50.4	43.9	43.9
5	0.0	52.6	52.6	51.2	50.8	52.4	52.8	52.6	50.1	50.1
6	0.0	55.4	55.2	52.6	53.0	54.7	55.4	55.0	54.8	54.8
7	0.0	58.8	58.6	55.2	53.1	58.8	58.7	58.5	59.1	59.1
8	0.0	58.9	58.1	55.8	54.2	58.1	58.4	58.7	59.0	59.0
9	0.0	55.8	56.3	56.0	55.5	56.4	55.9	55.9	56.5	56.5
10	0.0	56.3	55.6	56.3	56.5	55.9	55.5	55.0	56.2	56.2
11	56.3	55.5	56.2	56.2	57.8	55.4	55.4	56.0		55.2
12	55.6	55.4	56.2	56.6	57.8	55.9	55.8	55.7		55.3
13	55.6	55.5	56.3	57.8	56.9	56.1	56.2	55.8		55.5
14	56.2	56.3	57.1	58.9	57.6	56.3	56.9	56.5		56.2
15	57.2	59.9	58.2	58.4	56.9	57.8	57.0	57.1		56.8
16	61.4	58.0	58.2	57.7	58.5	58.2	57.6	57.7		57.5
17	63.4	64.0	58.3	59.0	56.7	57.6	57.9	57.6		57.2
18	61.1	58.3	60.6	57.9	55.3	56.9	56.7	57.5		60.8
19	56.2	56.9	58.2	55.7	54.3	55.5	55.9	56.6		55.5
20	54.0	54.3	55.4	54.6	53.9	54.1	54.5	54.1		54.6
21	53.0	53.5	53.6	54.4	52.8	52.8	53.5	53.1		53.3
22	51.5	51.5	53.0	53.0	51.9	52.0	51.6	51.4		52.0
23	50.9	51.4	52.3	53.0	51.5	50.9	51.2	51.2		52.8
Ld	57.6	58.6	57.7	57.3	56.7	57.0	56.9	57.0	53.1	57.5
Le	54.6	55.2	56.2	54.9	53.7	54.3	54.7	54.9	0.0	54.6
Ln	44.7	51.7	52.0	51.5	51.3	51.6	51.8	51.5	47.1	49.6
CNEL	57.9	60.2	60.2	59.6	59.2	59.5	59.7	59.6	54.7	58.6

Table A-1. Lynn Rd / Blackwood St Traffic Noise Survey - Measured Noise Levels

4169 Hour Start	104 Blackwood Site 4							
	04/23 Tuesday	04/24 Wednesday	04/25 Thursday	04/26 Friday	04/27 Saturday	04/28 Sunday	04/29 Monday	04/30 Tuesday
0		40.6	37.1	37.1	39.9	41.9	35.8	38.0
1		35.9	33.8	34.0	38.2	40.4	35.4	33.5
2		40.6	26.7	34.2	36.7	39.0	34.1	30.4
3		34.0	36.9	31.7	34.0	35.0	33.4	30.8
4		50.7	37.7	54.7	31.7	35.5	56.4	37.8
5		45.3	42.5	43.7	38.8	38.8	43.3	44.2
6		49.2	46.6	47.1	43.4	45.2	48.1	48.1
7		59.6	51.8	52.6	47.0	46.7	55.2	53.0
8		52.0	51.4	52.0	48.6	48.2	53.8	52.1
9		51.8	63.8	49.3	49.4	50.8	49.6	49.3
10		49.3	63.5	53.0	50.1	50.1	48.4	49.1
11	50.8	50.4	65.0	50.6	50.2	51.5	51.1	49.1
12	48.8	48.2	48.7	50.8	50.3	51.0	49.7	48.5
13	49.2	48.5	49.1	49.7	49.7	50.4	50.5	49.5
14	50.0	52.5	50.0	50.5	52.5	49.8	50.5	51.1
15	54.7	51.0	50.6	51.4	50.8	49.1	51.4	51.6
16	51.9	57.5	51.4	52.3	50.5	50.6	51.8	51.5
17	55.4	57.0	51.7	52.1	50.2	50.0	51.7	53.4
18	63.2	60.0	50.7	49.9	50.1	50.7	53.1	50.3
19	57.4	52.7	50.5	48.5	47.9	47.8	49.1	49.4
20	48.6	50.3	48.7	47.0	46.1	45.6	48.6	46.8
21	46.0	46.5	47.9	45.7	47.1	44.5	47.0	46.9
22	44.8	43.4	43.2	44.0	45.4	42.2	42.8	41.9
23	44.6	40.2	40.9	42.2	43.2	42.3	37.3	40.2
Ld	54.3	55.1	58.7	51.3	50.1	50.1	51.8	51.0
Le	53.4	50.5	49.2	47.2	47.1	46.2	48.3	47.9
Ln	38.2	45.2	41.1	46.7	40.5	41.1	48.4	41.7
CNEL	53.9	55.2	56.5	54.2	50.5	50.6	55.6	51.5

Table A-1. Lynn Rd / Blackwood St Traffic Noise Survey - Measured Noise Levels (contin

4169 Hour Start	05/01 Wednesday	05/02 Thursday	05/03 Friday	05/04 Saturday	05/05 Sunday	05/06 Monday	05/07 Tuesday
0	39.3	36.7	36.1	39.4	42.2	37.6	38.0
1	37.5	35.3	33.0	37.0	37.3	34.4	35.3
2	34.4	28.7	33.3	33.3	37.6	31.9	33.6
3	30.6	35.0	30.8	35.0	33.6	31.3	32.1
4	53.3	38.4	50.3	34.1	34.9	49.7	37.6
5	43.3	43.7	43.9	39.6	36.9	42.8	43.9
6	48.3	48.5	48.5	43.2	42.3	47.4	48.2
7	58.9	52.6	52.3	48.1	44.3	52.4	52.3
8	52.3	52.0	51.4	48.9	46.3	51.2	51.5
9	49.3	49.3	50.4	48.7	47.9	49.5	48.7
10	49.6	49.9	49.7	49.3	50.5	49.5	48.6
11	51.7	48.7	50.2	49.8	52.2	49.2	49.9
12	50.1	48.5	49.8	50.7	53.6	50.5	0.0
13	49.4	49.3	49.6	51.8	50.6	50.2	0.0
14	50.2	50.4	51.4	53.5	52.3	50.2	0.0
15	51.2	51.0	52.7	52.1	50.5	52.6	0.0
16	51.5	52.3	52.3	51.0	52.7	52.9	0.0
17	51.9	52.8	52.2	50.2	50.2	52.2	0.0
18	51.6	49.9	51.6	50.7	49.0	50.3	0.0
19	49.7	49.6	49.1	49.0	47.4	49.5	0.0
20	49.0	47.0	47.8	47.5	46.6	47.0	0.0
21	44.6	45.8	46.5	47.1	44.4	44.6	0.0
22	42.1	41.7	44.5	44.9	42.3	43.6	0.0
23	39.7	42.8	43.6	45.6	41.9	39.8	0.0
Ld	52.5	50.9	51.2	50.7	50.8	51.1	46.6
Le	48.3	47.8	47.9	47.9	46.3	47.5	0.0
Ln	45.9	42.1	44.7	41.2	39.9	43.7	40.9