City of Del Mar

March 16, 2016

Since the September 2015 KAABOO event, the City of Del Mar has been working with the 22nd District Agricultural Association (owner of the San Diego County Fairgrounds) and the organizers of KAABOO to address community concerns related to noise and adherence with the 2013 Settlement Agreement and 22nd DAA Noise Ordinance requirements.

The City of Del Mar retained the services of Recon to analyze data provided by the Del Mar Fairgrounds from noise meters on the Fairgrounds property. The data was from the September 2015 KAABOO weekend and a concert in November held as part of the Fall Race Meet.

The City continues to work with the DAA to ensure compliance with the noise ordinance for KAABOO 2016, as well as all other activities at the Fairgrounds. In addition, the Fairgrounds also has a study underway related to analyzing noise, and the KAABOO organizers are evaluating noise mitigation measures and operational changes that they are proposing to incorporate into their event for 2016.

The 22nd DAA Board will consider an agreement for KAABOO's use of the Fairgrounds for their event at a Board meeting in April or May. For 22nd DAA Board agendas, visit: http://www.delmarfairgrounds.com/index.php?fuseaction=about.meeting_agenda.

The San Diego Fairgrounds is owned and operated by the 22nd DAA, a State of California agency. The City of Del Mar has no authority to approve/disapprove activities held on the Fairgrounds property or to independently enforce noise ordinance restrictions. The Fairgrounds is governed by a Board of Directors, each of whom is appointed by the Governor, which meets on the second Tuesday of each month.

For additional information, please contact:

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Management Services Director
(858) 755-9313 x1132
kcrane@delmar.ca.us

RECON

An Employee-Owned Company

March 4, 2016

Mr. Scott Huth
City of Del Mar, City Manager
1050 Camino Del Mar
Del Mar, CA 92014

Reference: Del Mar Fairgrounds Noise Measurement Evaluation (RECON Number 8228)

Dear Mr. Huth,

Per your request, RECON Environmental, Inc. (RECON) has assessed the noise measurement data collected by Harris & Associates for events at the Del Mar Fairgrounds (Fairgrounds) against applicable noise level limits. The measurement data included measurements before, during, and after the 2015 Kaboo Music Festival (Festival) that occurred between September 18 through 20 and the post-race concert (Concert) on November 21, 2015.

This analysis provides an assessment of data recorded at three measurement locations and an assessment of Festival and Concert noise levels against applicable noise level limits from the Fairgrounds' *Del Mar Fairgrounds Noise Enforcement Plan*.

Applicable Noise Regulations

The Fairgrounds are located within the City of Del Mar (City). Activities at the Fairgrounds are subject to the *Del Mar Fairgrounds Noise Enforcement Plan*. As outlined in the Noise Enforcement Plan, the Fairgrounds is not permitted to generate noise between 10:00 p.m. and 7:00 a.m. Between the hours of 7:00 a.m. and 10:00 p.m., the Fairgrounds is not permitted to operate such that noise levels at the residential neighborhoods* surrounding the Fairgrounds exceed:

- 60 A-weighted decibels [dB(A)] equivalent noise level (L_{eq}) for a given hour;
- 63 dB(A) L_{eq} for any cumulative period of 30 minutes in a given hour;
- 66 dB(A) L_{eq} for any cumulative period of 15 minutes in a given hour;
- 68 dB(A) L_{eq} for any cumulative period of 10 minutes in a given hour;
- 71 dB(A) L_{eq} for any cumulative period of 5 minutes in a given hour; or
- 75 dB(A) L_{eq} for any cumulative period of 2 minutes in a given hour.

Ambient Noise Sources

Ambient noise sources in the vicinity of the Fairgrounds include transportation-related noise sources such as vehicle traffic, trains on the railroad to the west of the Fairgrounds, fire engine sirens associated with the Del Mar Fire Station, and other ambient noise sources, such as the ocean and activities associated with

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* The Noise Enforcement Plan states that ambient noise levels may not exceed the noise level limits... For the purposes of this analysis the intent of the Noise Enforcement Plan is that *noise generated by the Fairgrounds* may not result in noise levels that exceed noise level limits i.e. if ambient noise sources are dominant, then Fairground noise would not be considered a violation.

adjacent residential and commercial uses. In general, transportation-related noise sources are the dominant source of ambient noise.

Major roads include Jimmy Durante Boulevard, Via De La Valle, Camino Del Mar, and Interstate 5 (I-5). The section of Jimmy Durante Boulevard adjacent to the Fairgrounds is a four-lane road with a speed limit of 45 miles per hour (miles per hour). South of the Del Mar Fire Station, Jimmy Durante Boulevard narrows to a two-lane road and the speed limit drops to 45 mph. The section of Via De La Valle adjacent to the Fairgrounds is generally a two-lane road with a speed limit of 45 mph. Near to, and east of, Jimmy Durante Boulevard Via De La Valle expands to a four-lane road. The section of I-5 adjacent to the Fairgrounds is an eleven-lane divided highway with a speed limit of 65 mph; the Fairgrounds is half of a mile to a full mile from the I-5.

The railroad is used by the North Bounty Transit District's (NTCD) COASTER commuter trains, Amtrak's Pacific Surfliner (Los Angeles to San Luis Obispo) intercity trains, and Santa Fe Railroad freight trains. Based on the NTCD's COASTER Schedule, 22 COASTER trains use the railroad each day and 22 Amtrak Pacific Surfliner trains use the railroad each day (NTCD 2015). These train passes generally occur between approximately 6:30 a.m. and 10:00 p.m. Based on the previous study by Harris & Associates, freight trains are estimated to use the railroad four to six times a day (Harris & Associated 2016). The time of these train passes is irregular as freight trains typically are not constrained to a specific interval. Based on the train schedule and the number of freight trains, trains pass the Fairgrounds roughly three times per hour during daytime hours.

The Del Mar Fire Station is located on the south end of the Fairgrounds, at 2200 Jimmy Durante Boulevard. The Del Mar Fire Station operates one front-line fire engine, one rescue unit, and a reserve fire engine (City of Del Mar 2016). The primary noise source associated with fire stations is sirens on emergency vehicles. Sirens are only used during emergency responses. Due to the nature of emergency services, the frequency of call responses is highly variable. During each emergency response, sirens would generate substantial noise levels for a brief interval as the emergency vehicles left the station and passed by on the road.

Fairground Events

The measurement data included measurements on September 17, 18, 19, 20, and 21, 2015 and on November 21, 2015. Based on the Fairgrounds' Event Calendar, activities during these days included horseracing, the Festival, Bingo, and the Concert (Del Mar Fairgrounds 2016). Scheduled events are summarized in Table 1 below.

Table 1
Scheduled Del Mar Fairground Events

Day	Event	Time	Notes/Description
Thursday, Sept. 17th	Horse Racing	9:00 a.m. to 10:45 a.m.	Surfside Race Place, event is centered on the race track
Friday, Sept. 18th	Horse Racing	9:00 a.m. to 10:45 a.m.	Surfside Race Place, event is centered on the race track
	Festival Day 1	11:00 a.m. to 10:00 p.m.	Outdoor live music festival, event is focused in the Carnival Area
Saturday, Sept. 19th	Horse Racing	9:00 a.m. to 10:45 a.m.	Surfside Race Place, event is centered on the race track
	Festival Day 2	11:00 a.m. to 10:00 p.m.	Outdoor live music festival, event is focused in the Carnival Area
Sunday, Sept. 20th	Horse Racing	9:00 a.m. to 10:45 a.m.	Surfside Race Place, event is centered on the race track
	Bingo Del Mar	1:00 p.m. to 4:00 p.m.	Surfside Race Place, event primarily occurs indoors (outdoor patios available)

Table 1 Scheduled Del Mar Fairground Events			
Day	Event	Time	Notes/Description
	Festival Day 3	11:00 a.m. to 10:00 p.m.	Outdoor live music festival, event is focused in the Carnival Area
Monday, Sept. 21th	No event-	-	-
Saturday, Nov. 21th	Horse Racing	12:00 p.m. to ~5:00 p.m.	Del mar Horse Racing, event is centered on the race track
	Del Mar Antique Show	10:00 a.m. to 7:00 p.m.	Event primarily occurs in the Exhibition Hall
	Concert	Starts at ~5:00 p.m. No Scheduled End	Event is focused in the Carnival Area. Event begins at the conclusion of the horse racing
SOURCE: Del Mar Fairgrounds 2016			

Noise Measurements

Noise measurements were taken by Harris & Associates at three measurement locations as shown on Figure 1. For ease of reference, these noise measurement locations are designated as (1) the Fire Station Meter, (2) the Red Lot Meter, and (3) the Solana Gate Meter. Table 2 summarizes the intervals of each measurement and the time each meter was operational.

The first meter location is immediately south of the Del Mar Fire Station. Ambient noise sources in the vicinity of this location include traffic on Jimmy Durante Boulevard, traffic on I-5 approximately two thirds of a mile to the east, and sirens on emergency response vehicles associated with the Del Mar Fire Station. Site drawings do not provide sufficient detail to estimate the precise location of this measurement relative to Jimmy Durante Road or nearby buildings and walls.

The second location is in the southwest corner of Fairgrounds General Parking Red Lot. This location is 500 feet south of the approximate stage area. Ambient noise sources in the vicinity of this location include the railroad approximately 125 feet to the west.

The third location is immediately east of the Fairgrounds Solana Gate. This location is 2,000 feet north of the approximate stage area and 60 feet south Via De La Valle. Ambient noise in the vicinity of this location is primarily attributable to traffic on Via De La Valle.

Table 2 Noise Measurements Intervals			
	Measurement Locations		
Day	Fire Station Meter	Red Lot Meter	Solana Gate Meter
Thursday, Sept. 17th	24-hour	-	-
Friday, Sept. 18th	24-hour	-	-
Saturday,Sept. 19th	24-hour	After 10:00 a.m.*	-
Sunday, Sept. 20th	24-hour	24-hour	-
Monday, Sept. 21th	-	Before 3:23 p.m.	-
Saturday, Nov. 21th	-	After 7:36 a.m.	After 7:50 a.m.
* No data was collected between 5:18 p.m. and 5:43 p.m. due to a meter malfunction (dead battery). SOURCE: Harris & Associates 2016			

Image Source: SANDAG (flown November 2014)

● Noise Measurement Locations

RECON

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FIGURE 1

Noise Measurement Locations

Noise Measurement Data and Analysis

Due to the volume of data collected by Harris & Associates, this analysis focuses on the data collected at each location separately and summarizes only the relevant data collected at each location. For a more detailed monitoring data see Attachment 1.

Fire Station Meter

The Fire Station Meter was active September 17 through September 20. Fairground events on September 17 only included horseracing, Fairground events on September 18 through 20 included the Festival. Ambient noise sources at this location include Jimmy Durante Boulevard, I-5, and the Del Mar Fire Station.

As measurement data gathered at this location includes full measurement of days with and without the Festival, measurement data can be compared to draw conclusions on the relative noise levels attributable to the Festival versus ambient noise sources. Figure 2 displays the noise levels* on each measurement day between 7:00 a.m. and 10:00 p.m. Also identified in Figure 2, is the scheduled start time for the Festival and the trend line for noise levels on the day without Festival (September 17).

Qualitative Assessment of Festival Noise Levels

As shown in Figure 2, noise levels were noticeably elevated on days when the Festival occurred; the difference became more defined after approximately 1:00 p.m. and noise levels remained elevated for the remainder of the day. As noise levels during Festival days were elevated by more than 3 dB(A), a doubling of sound energy, the Festival is believed to have been the dominant noise source at the Fire Station Meter.

Evaluation of Festival Compliance with the Noise Enforcement Plan

Although measurement data at the Fire Station Meter displays a clear correlation between noise levels and the Festival, measurement data from this location is insufficient to draw accurate conclusions regarding Festival compliance with the *Noise Enforcement Plan*. Unknown variables that may preclude accurate noise modeling based on this data include the lack of accurate documentation on the location of the meter relative to ambient noise sources and structures that may or may not provide noise attenuation. In the absence of more accurate documentation of the meter location, it is not possible to isolate Festival noise or identify noise attenuation between the stage and the meter.

Subsequent noise measurements may be improved by relocation of the meter to an area that is further from the Del Mar Fire Station and Jimmy Durante Road, and has a clear line-of-sight to the stage. In addition, noise measurement data would be more useful by providing documentation of the noise meter location, such as identifying the location on aerial maps, identifying the coordinates through a global positioning system, and photographing the location of the meter and its surroundings.

If possible, further data regarding the number and time of emergency response calls performed by the Del Mar Fire Department could also facilitate isolation of event noise from ambient noise sources.

Red Lot Meter

The Red Lot Meter was active during portions of September 19 through September 21 and was also active for a portion of November 21. During these intervals, Fairground events included the Festival on September 19 and 20 and the Concert on November 21. No Fairground events occurred on September 21. Ambient noise at the Red Lot Meter is primarily influenced noise from train passes.

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* Noise level measurement data was recorded for 10 second intervals, however this level of detail is not necessary to compare noise levels with and without the Festival. Noise levels displayed in Figure 2 are presented as aggregate noise level (L_{eq}) for 10 minute intervals to improve Figure clarity.

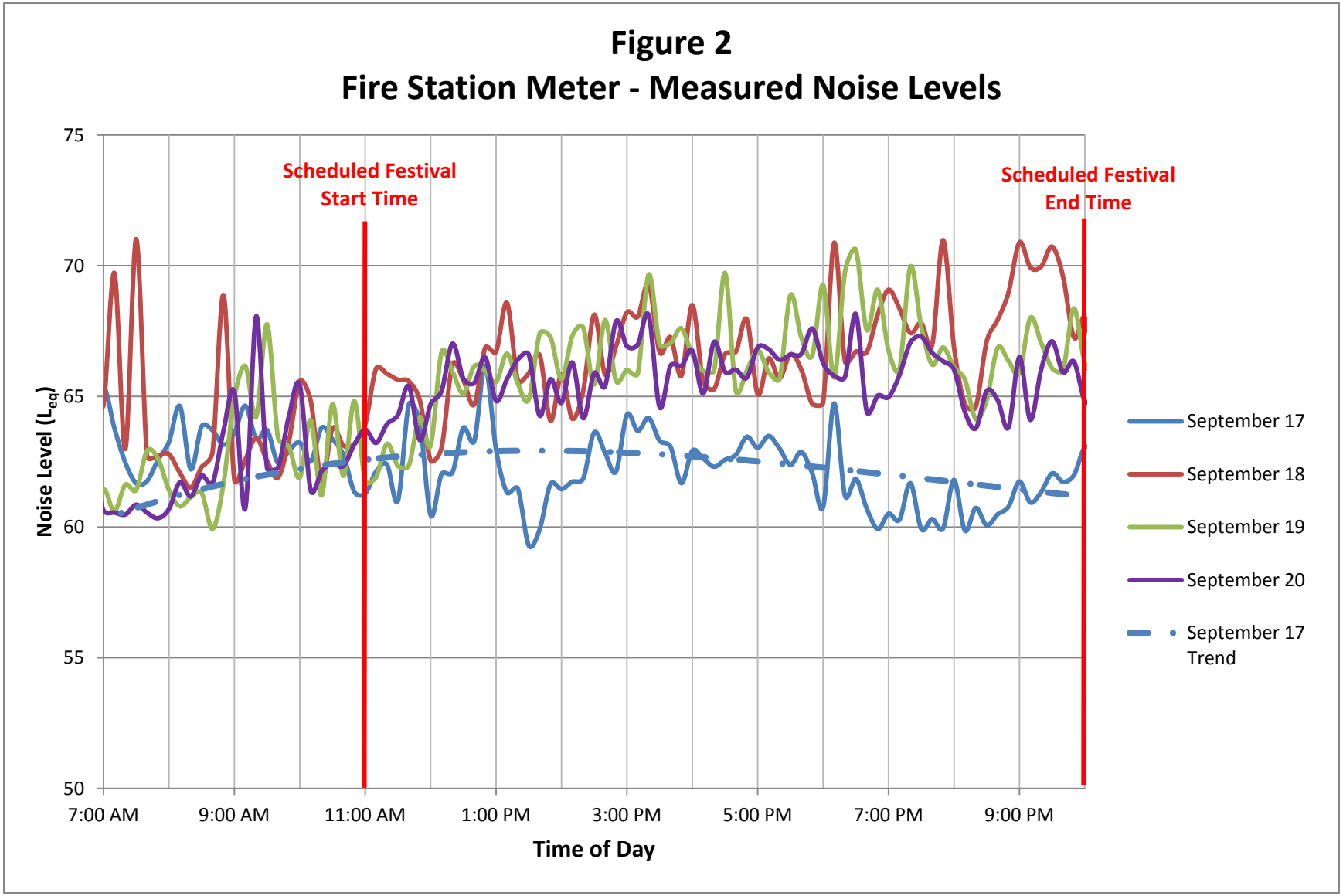
Figure 2
Fire Station Meter - Measured Noise Levels
Scheduled Festival Start Time
Scheduled Festival End Time
Noise Level (L_{eq})
75
70
65
60
55
50
7:00 AM
9:00 AM
11:00 AM
1:00 PM
3:00 PM
5:00 PM
7:00 PM
9:00 PM
Time of Day
September 17
September 18
September 19
September 20
September 17 Trend

Although noise measurement data at the Red Lot Meter includes measurement data with and without the events, measurements were fragmented and do not include a complete baseline a day without an event*. Figures 3 and 4 summarize noise levels† on Festival days and Figure 5 summarizes noise levels on the day of the Concert.

Qualitative Assessment of Festival Noise Levels

As shown in Figures 3 and 4, noise levels on Festival days included temporary noise level increases, which generally included noise levels between 75 and 85 dB(A). Noise level increases on September 19 occur from exactly 1:00 p.m. to 2:00 p.m., from 2:37 p.m. to 3:30 p.m., from 4:00 p.m. to 5:29 p.m., from 6:00 p.m. to 7:30 p.m., and from 8:00 p.m. to 10:00 p.m. Noise level increases on September 21th occur from exactly 1:00 p.m. to 2:14 p.m., from 2:45 p.m. to 4:00 p.m., from 4:31 p.m. to 5:58 p.m. from 6:30 p.m. to 7:57 p.m., 8:33 p.m. to 9:58 p.m. As temporary noise increases occur over clearly defined intervals, it is unlikely that ambient noise were the source. Additionally, the identified noise increases tend to begin and end on the hour, half hour, or quarter hour intervals. This trend supports the conclusion that temporary noise increases are attributable to planned events, such as music performances. Therefore, the Festival is believed to have been the dominant noise source during the identified intervals.

Evaluation of Festival Compliance with the Noise Enforcement Plan

The Red Lot Meter is approximately 500 feet south of the stage area. The nearest residences to the stage are located to the southeast, across the San Dieguito Lagoon, and approximately 850‡ feet from the stage. There are no structures between the stage and the Red Lot Meter. Between the stage and the residences, are the railroad piers in the San Dieguito Lagoon. As these piers do not form a contiguous barrier, this is considered a transparent barrier, which would not provide noise attenuation to the residences. Therefore, noise levels at the residences were estimated based on standard sound propagation. Using standard propagation, sound attenuates at a rate of approximately 6 dB(A) per doubling distance. Table 3 displays the hourly average noise levels measured on Festival days for all hours during which the Festival is believed to have been the dominant noise source.

As shown in Table 3, for hours in which the Festival is the dominant noise source, modeled noise levels at the nearest residences consistently exceed the noise level limit, 60 dB(A) Leq. Modeled noise levels during these hours range between 8 and 20 dB(A) over the noise level limit identified in the Fairground Noise Enforcement Plan. Therefore, the measurement data indicates that the Festival resulted in noise levels that exceeded the applicable noise level limits.

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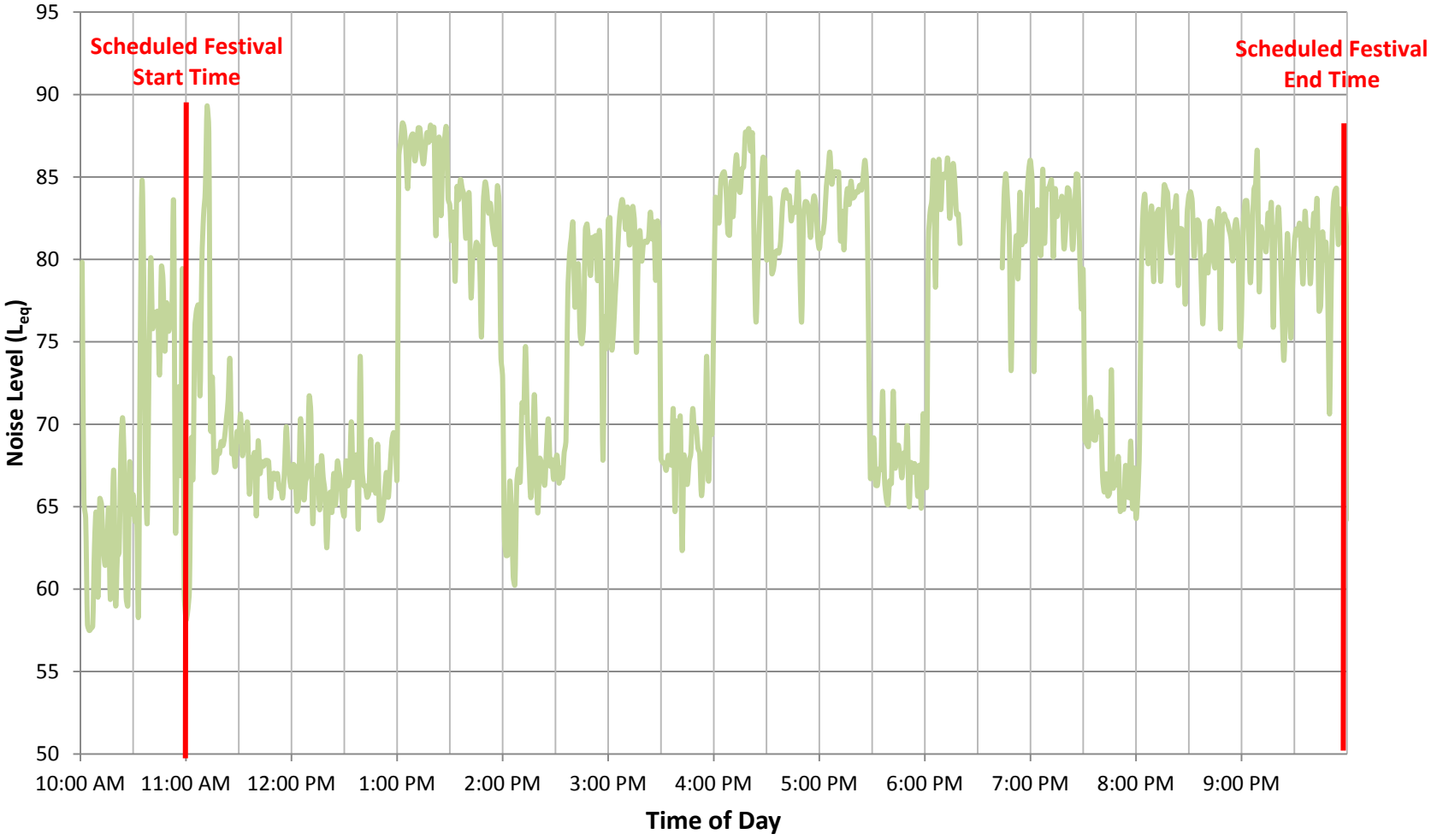
* Noise measurement data for September 21st is only available until 3:23 P.M.

† Noise level measurement data was recorded for 10 second intervals. As qualitative assessment reviews the specific interval of temporary noise increases, noise levels displayed in Figure 3-5 are in aggregate noise levels (L_{eq}) for one minute intervals.

‡ The measurement data and previous report do not identify the location of the stage; however, the report did identify the approximate distance between the stage and the Red Lot Meter and the stage and the Solana Gate Meter. Based on these distances, the location of the stage, and the distance to the residences was approximated.

Figure 3
Red Lot Meter - September 19 - Measured Noise Levels



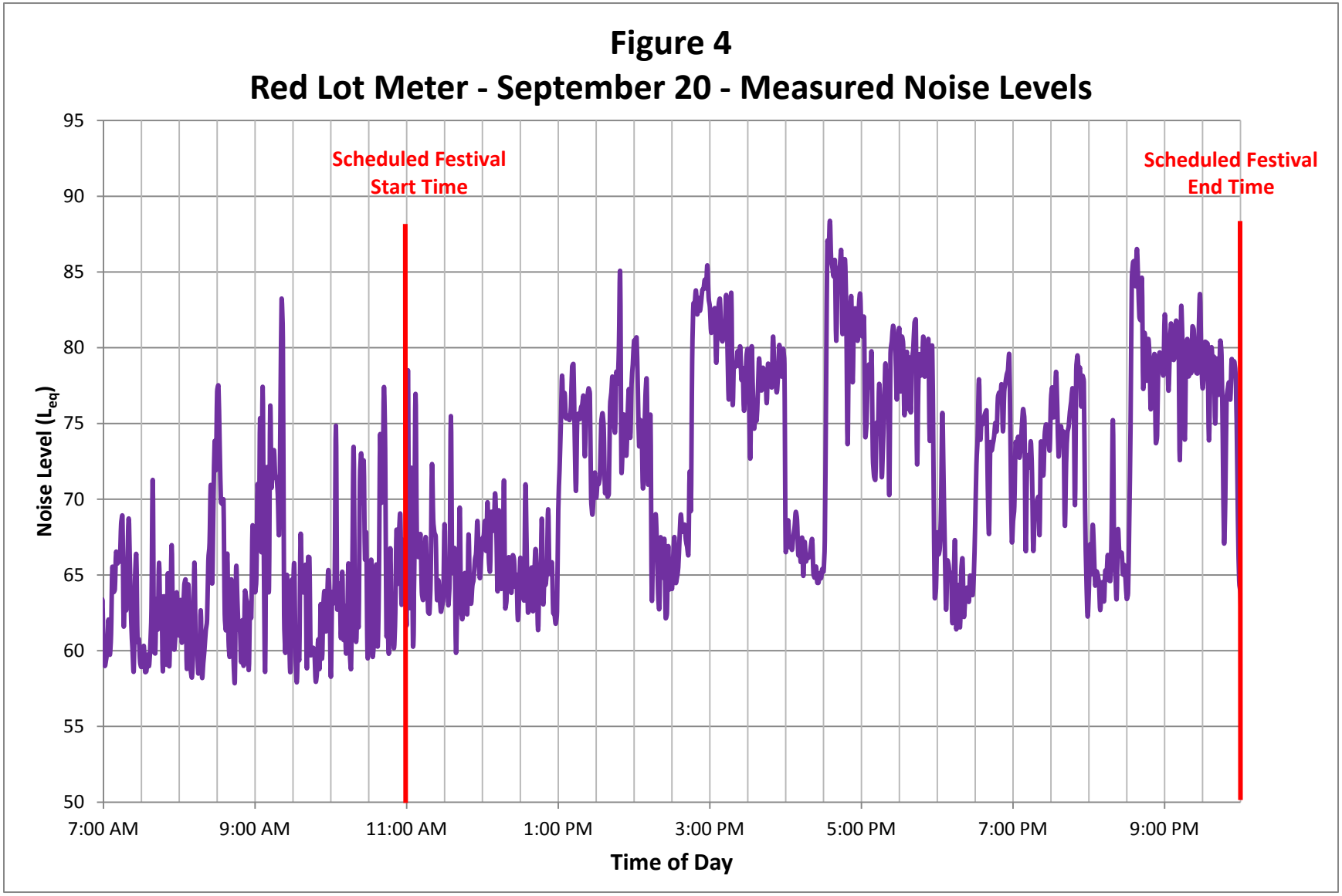


Figure 4
Red Lot Meter - September 20 - Measured Noise Levels
Scheduled Festival Start Time
Scheduled Festival End Time
Noise Level (L_{eq})
95
90
85
80
75
70
65
60
55
50
7:00 AM
9:00 AM
11:00 AM
1:00 PM
3:00 PM
5:00 PM
7:00 PM
9:00 PM
Time of Day

Figure 5
Red Lot Meter - November 21 - Measured Noise Levels

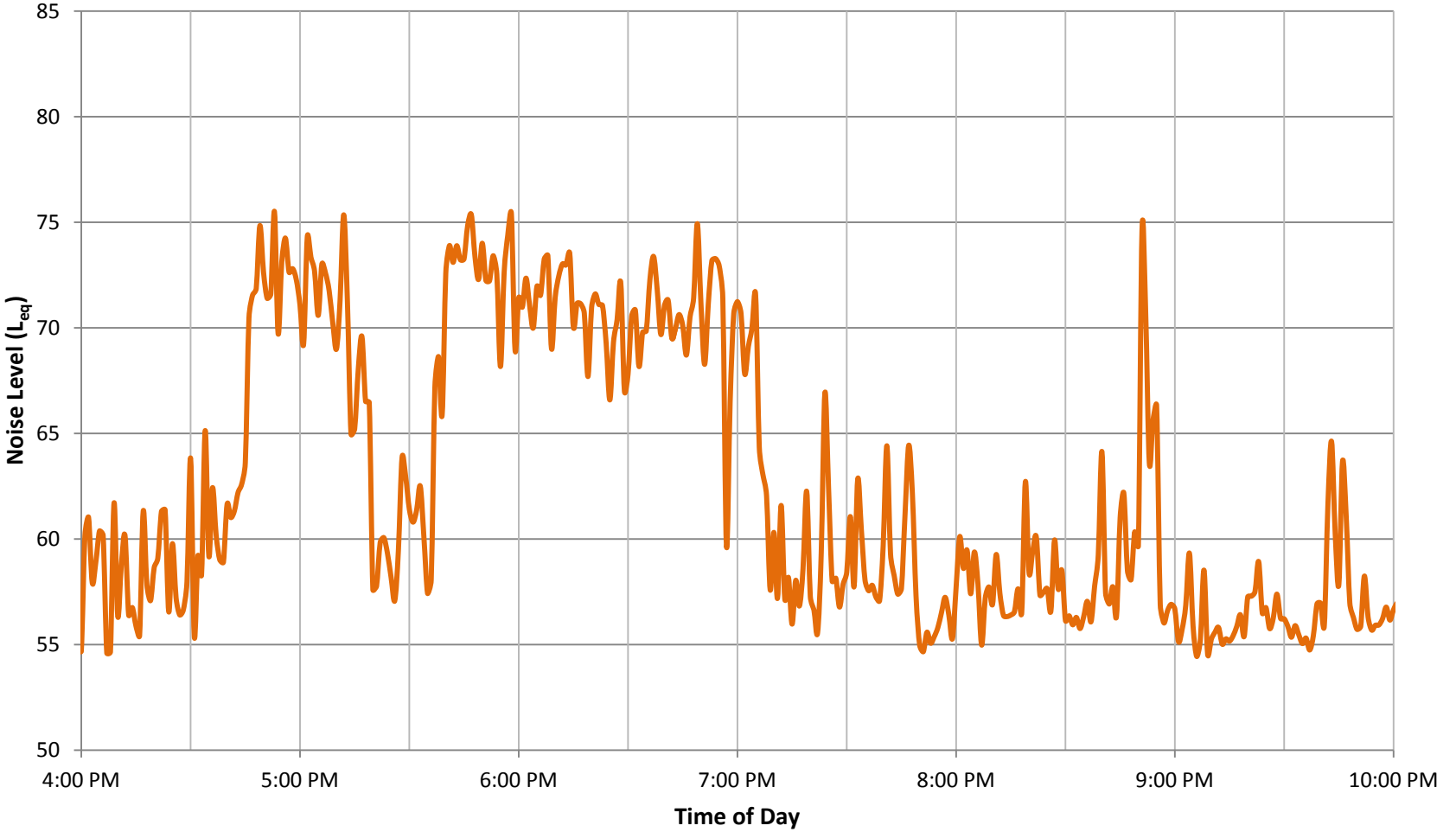


Table 3
Modeled Noise Levels – Festival Days

Day	Hour	Noise Level (L_{eq})		Exceeds Noise Level Limit?
		Red Lot Meter	Residences*	
Saturday, Sept. 19th	1:00 p.m.	85.1	80	***Yes***
	2:00 p.m.	76.2	72	***Yes***
	3:00 p.m.	78.5	74	***Yes***
	4:00 p.m.	83.8	79	***Yes***
	5:00 p.m.	80.9	76	***Yes***
	6:00 p.m.	81.2	77	***Yes***
	7:00 p.m.	80.1	75	***Yes***
	8:00 p.m.	81.6	77	***Yes***
	9:00 p.m.	81.6	77	***Yes***
Sunday, Sept. 20th	1:00 p.m.	76.2	72	***Yes***
	2:00 p.m.	78.2	74	***Yes***
	3:00 p.m.	79.4	75	***Yes***
	4:00 p.m.	80.9	76	***Yes***
	5:00 p.m.	78.3	74	***Yes***
	6:00 p.m.	73.1	68	***Yes***
	7:00 p.m.	74.6	70	***Yes***
	8:00 p.m.	78.4	74	***Yes***
	9:00 p.m.	79.0	74	***Yes***

* While measured noise levels are reported in tenths of a decibel, modeled noise levels are reported in whole decibels to prevent overstatement of model accuracy.

Qualitative Assessment of Concert Noise Levels

As shown in Figure 5, noise levels on the day of the Concert included temporary increases from 4:47 p.m. and 5:13 p.m. and between 5:38 p.m. and 7:07 p.m. As compared to temporary noise increases during the Festival, temporary noise increases during the Concert were generally quieter, with noise levels between approximately 67 and 75 dB(A). As temporary noise increases occur over clearly defined intervals, it is unlikely that ambient noise were the source. Therefore, the Concert is believed to have been the dominant noise source during the identified intervals.

Evaluation of Concert Compliance with the Noise Enforcement Plan

Similar to the analysis of Festival noise, Concert noise was modeled based on standard propagation of sound, and the distance from the stage to residences*. Table 4 displays the hourly noise levels measured on the day of the Concert for all hours during which the Concert is believed to have been the dominant noise source.

* The previous report only identifies one distance from the measurement locations to the stage. Therefore, this analysis assumes that the stage was located in substantially the same location for both the Festival and Concert.

Table 4 Modeled Noise Levels – Concert Day				
Day	Hour	Noise Level (L_{eq})		Exceeds Noise Level Limit?
		Red Lot Meter	Residences*	
Saturday,Nov. 21th	4:00 p.m.	67.3	63	***Yes***
	5:00 p.m.	70.8	66	***Yes***
	6:00 p.m.	71.1	67	***Yes***
	7:00 p.m.	62.3	58	***No***
* While measured noise levels are reported in tenths of a decibel, modeled noise levels are reported in whole decibels to prevent overstatement of model accuracy.				

As shown in Table 4, for hours in which the Concert is believed to have been the dominant noise source, modeled noise levels at the nearest residences exceed the noise level limit, 60 dB(A) L_{eq}, for the 4:00 p.m., 5:00 p.m., and 6:00 p.m. hour. Modeled noise levels for the 7:00 p.m. hour, which only included elevated noise levels from the start of the hour until 7:07 p.m., did not exceed the noise level limit. Therefore, the measurement data indicates that the Concert resulted in noise levels that exceeded the applicable noise level limits.

Solana Gate Meter

As shown in Tables 1 and 2, the Red Lot Meter was only active for parts of November 21. During this interval, Fairground events included the Concert. Ambient noise sources at the Red Lot Meter include noise from Via De La Valle. Figure 6 summarizes measured noise levels* on the day of the Concert. As the Concert began after the final horse race, no scheduled start time is identified. Typically, this type of concert begins around 5:00 p.m.

Qualitative Assessment of Concert Noise Levels

As shown in Figure 6, noise levels showed a temporary noise level increase from 5:56 p.m. to 10:49 p.m. These noise levels show little correlation with noise levels measured at the Red Lot Meter during the same interval and the interval of the temporary noise level increase does not appear to align with the Concert.

Although identified ambient noise sources include traffic on Via De La Valle, the relatively steady nature noise levels is not consistent with normal traffic patterns†. This analysis is unable to identify the source of this temporary noise increase. Based on previous experience there is a strong possibility that noise measurement data was contaminated by the operation of equipment (e.g., pumps, generators, etc.) in the vicinity of the meter.

Evaluation of Concert Compliance with the Noise Enforcement Plan

As noise measurement data appears to be contaminated by an unidentified noise source, it is not possible to accurately assess Concert noise levels based on measurement data from the Solana Gate Meter.

Subsequent noise measurements may be improved by relocation of the meter to an area that is further from Via De La Valle, has a clear line-of-sight to the stage, and is not in the vicinity of equipment that may interfere with noise measurements. Additionally, periodic inspection of the meters and documented site observations could possibly prevent, or at least identify the cause of, anomalous measurement data.

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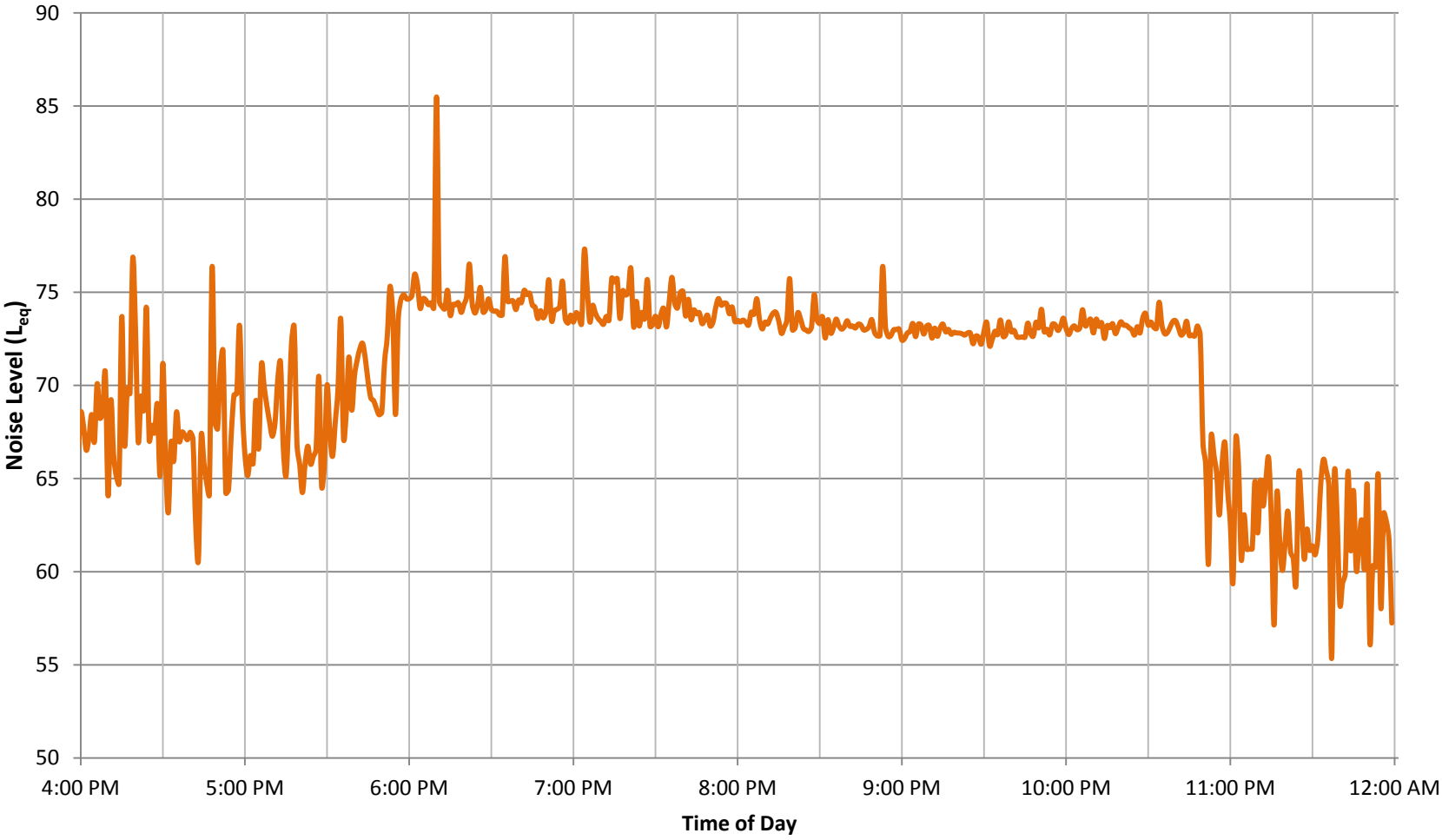
* Noise level measurement data was recorded for individual seconds. As qualitative assessment reviews the specific interval of temporary noise increases, noise levels displayed in Figure 6 are in aggregate noise level (L_{eq}) for each one minutes interval.

† Gridlock traffic could produce relatively steady noise levels, but lesser noise levels. As noise levels are elevated and steady until 10:49 P.M. and then drop is a short period of time, it is unlikely that traffic noise was the source.

Figure 6
Solana Gate Meter - November 21 - Measured Noise Levels



Conclusions

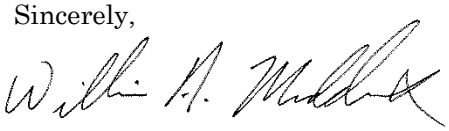
Noise measurements data collected at the Fire Station Meter and Solana Gate Meter are insufficient to determine the exact source of each noise event or draw conclusions on event noise levels. Recommendations for improving subsequent noise measurements include relocation of meters away from ambient noise sources, more detailed documentation of noise meter location, and documented observations during measurements.

Noise measurements data collected at the Red Lot Meter includes temporary noise level increases over clearly defined intervals (see Figures 3-5). During these intervals, the Festival and Concert are believed to have been the dominant noise source. As Festival and Concert noise is readily identifiable, measurement data collected at the Red Lot Meter is sufficient to assess Festival and Concert compliance with the Fairgrounds *Noise Enforcement Plan*.

As illustrated in Tables 3 and 4, noise measurement data during both the Festival and the Concert indicates that noise levels at nearby residences exceeded the noise level limit identified in the Fairground *Noise Enforcement Plan*. During the Festival, noise levels are believed to have exceeded noise level limits consistently between approximately 1:00 p.m. and 10:00 p.m., and resulted in noise levels estimated between 8 and 20 dB(A) over the noise level limit. During the Concert, noise levels are believed to have exceeded noise level limits consistently between the hours of 4:00 p.m. and 7:00 p.m. and resulted in noise levels estimated between 3 and 7 dB(A) over the noise level limit.

If you have any questions please contact me at wamaddux@reconenvironmental.com, or at (619) 308-9333.

Sincerely,



William A. Maddux
Senior Noise Specialist

WAM:jg

References Cited

Del Mar, City of

2016 City of Del Mar Website, Fire Department. Accessed March 2, 2016 at http://www.delmar.ca.us/134/Fire-Department.

Del Mar Fairgrounds

2016 Del Mar Fairgrounds Website, Events Calendar. Accessed March 2, 2016 at http://www.delmarfairgrounds.com/index.php?fuseaction=calendar.home.

Harris & Associates

2016 Review of Event Raw Noise Meter

North County Transit District (NTCD)

2015 COASTER Scheduler, Effective October 5, 2015 – April 3, 2016. Accessed March 2, 2016 at http://www.gonctd.com/wp-content/uploads/Schedules/Coaster-Schedule.pdf.

ATTACHMENT 1

Summary of Noise Measurement Data

Fire Station Meter		
Day	Hour	L_{eq}
17-Sep	12:00	53.9
17-Sep	13:00	53.3
17-Sep	14:00	52.1
17-Sep	15:00	50.8
17-Sep	16:00	56.5
17-Sep	17:00	58.5
17-Sep	18:00	63.1
17-Sep	19:00	62.6
17-Sep	20:00	63.6
17-Sep	21:00	63.4
17-Sep	22:00	62.6
17-Sep	23:00	62.7
17-Sep	0:00	63.6
17-Sep	1:00	60.9
17-Sep	2:00	62.8
17-Sep	3:00	63.2
17-Sep	4:00	62.8
17-Sep	5:00	62.5
17-Sep	6:00	61.8
17-Sep	7:00	60.7
17-Sep	8:00	60.7
17-Sep	9:00	61.9
17-Sep	10:00	62.3
17-Sep	11:00	60.8
18-Sep	12:00	59.4
18-Sep	1:00	59.4
18-Sep	2:00	58.2
18-Sep	3:00	59.8
18-Sep	4:00	60.0
18-Sep	5:00	62.5
18-Sep	6:00	64.8
18-Sep	7:00	66.9
18-Sep	8:00	64.2
18-Sep	9:00	63.4
18-Sep	10:00	63.5
18-Sep	11:00	65.2
18-Sep	12:00	65.7
18-Sep	13:00	66.3
18-Sep	14:00	66.7
18-Sep	15:00	67.8
18-Sep	16:00	66.3
18-Sep	17:00	65.7
18-Sep	18:00	68.3
18-Sep	19:00	68.3
18-Sep	20:00	67.9
18-Sep	21:00	69.4
18-Sep	22:00	67.1
18-Sep	23:00	66.6

Red Lot Meter		
Day	Hour	L_{eq}
17-Sep	12:00	-
17-Sep	13:00	-
17-Sep	14:00	-
17-Sep	15:00	-
17-Sep	16:00	-
17-Sep	17:00	-
17-Sep	18:00	-
17-Sep	19:00	-
17-Sep	20:00	-
17-Sep	21:00	-
17-Sep	22:00	-
17-Sep	23:00	-
17-Sep	0:00	-
17-Sep	1:00	-
17-Sep	2:00	-
17-Sep	3:00	-
17-Sep	4:00	-
17-Sep	5:00	-
17-Sep	6:00	-
17-Sep	7:00	-
17-Sep	8:00	-
17-Sep	9:00	-
17-Sep	10:00	-
17-Sep	11:00	-
18-Sep	12:00	-
18-Sep	1:00	-
18-Sep	2:00	-
18-Sep	3:00	-
18-Sep	4:00	-
18-Sep	5:00	-
18-Sep	6:00	-
18-Sep	7:00	-
18-Sep	8:00	-
18-Sep	9:00	-
18-Sep	10:00	-
18-Sep	11:00	-
18-Sep	12:00	-
18-Sep	13:00	-
18-Sep	14:00	-
18-Sep	15:00	-
18-Sep	16:00	-
18-Sep	17:00	-
18-Sep	18:00	-
18-Sep	19:00	-
18-Sep	20:00	-
18-Sep	21:00	-
18-Sep	22:00	-
18-Sep	23:00	-

Solana Gate Meter		
Day	Hour	L_{eq}
17-Sep	12:00	-
17-Sep	13:00	-
17-Sep	14:00	-
17-Sep	15:00	-
17-Sep	16:00	-
17-Sep	17:00	-
17-Sep	18:00	-
17-Sep	19:00	-
17-Sep	20:00	-
17-Sep	21:00	-
17-Sep	22:00	-
17-Sep	23:00	-
17-Sep	0:00	-
17-Sep	1:00	-
17-Sep	2:00	-
17-Sep	3:00	-
17-Sep	4:00	-
17-Sep	5:00	-
17-Sep	6:00	-
17-Sep	7:00	-
17-Sep	8:00	-
17-Sep	9:00	-
17-Sep	10:00	-
17-Sep	11:00	-
18-Sep	12:00	-
18-Sep	1:00	-
18-Sep	2:00	-
18-Sep	3:00	-
18-Sep	4:00	-
18-Sep	5:00	-
18-Sep	6:00	-
18-Sep	7:00	-
18-Sep	8:00	-
18-Sep	9:00	-
18-Sep	10:00	-
18-Sep	11:00	-
18-Sep	12:00	-
18-Sep	13:00	-
18-Sep	14:00	-
18-Sep	15:00	-
18-Sep	16:00	-
18-Sep	17:00	-
18-Sep	18:00	-
18-Sep	19:00	-
18-Sep	20:00	-
18-Sep	21:00	-
18-Sep	22:00	-
18-Sep	23:00	-

Summary of Noise Measurement Data

Fire Station Meter		
Day	Hour	L_{eq}
19-Sep	12:00	65.0
19-Sep	1:00	62.3
19-Sep	2:00	62.9
19-Sep	3:00	59.7
19-Sep	4:00	62.2
19-Sep	5:00	56.7
19-Sep	6:00	59.4
19-Sep	7:00	61.8
19-Sep	8:00	61.9
19-Sep	9:00	64.9
19-Sep	10:00	63.3
19-Sep	11:00	62.9
19-Sep	12:00	65.9
19-Sep	13:00	66.3
19-Sep	14:00	66.8
19-Sep	15:00	67.5
19-Sep	16:00	66.9
19-Sep	17:00	67.5
19-Sep	18:00	68.6
19-Sep	19:00	67.4
19-Sep	20:00	65.8
19-Sep	21:00	67.1
19-Sep	22:00	66.5
19-Sep	23:00	66.4
20-Sep	12:00	65.4
20-Sep	1:00	64.0
20-Sep	2:00	63.8
20-Sep	3:00	62.0
20-Sep	4:00	59.3
20-Sep	5:00	58.5
20-Sep	6:00	60.3
20-Sep	7:00	60.6
20-Sep	8:00	62.8
20-Sep	9:00	64.5
20-Sep	10:00	62.6
20-Sep	11:00	64.2
20-Sep	12:00	65.9
20-Sep	13:00	65.6
20-Sep	14:00	66.2
20-Sep	15:00	66.6
20-Sep	16:00	66.2
20-Sep	17:00	66.7
20-Sep	18:00	65.9
20-Sep	19:00	66.6
20-Sep	20:00	64.9
20-Sep	21:00	65.8
20-Sep	22:00	65.8
20-Sep	23:00	63.7

Red Lot Meter		
Day	Hour	L_{eq}
19-Sep	12:00	-
19-Sep	1:00	-
19-Sep	2:00	-
19-Sep	3:00	-
19-Sep	4:00	-
19-Sep	5:00	-
19-Sep	6:00	-
19-Sep	7:00	-
19-Sep	8:00	-
19-Sep	9:00	-
19-Sep	10:00	74.3
19-Sep	11:00	76.2
19-Sep	12:00	67.4
19-Sep	13:00	85.1
19-Sep	14:00	76.2
19-Sep	15:00	78.5
19-Sep	16:00	83.8
19-Sep	17:00	80.9
19-Sep	18:00	81.2
19-Sep	19:00	80.1
19-Sep	20:00	81.6
19-Sep	21:00	81.6
19-Sep	22:00	65.3
19-Sep	23:00	66.6
20-Sep	12:00	65.3
20-Sep	1:00	62.6
20-Sep	2:00	61.9
20-Sep	3:00	59.6
20-Sep	4:00	58.8
20-Sep	5:00	57.1
20-Sep	6:00	59.6
20-Sep	7:00	63.7
20-Sep	8:00	67.2
20-Sep	9:00	70.7
20-Sep	10:00	67.7
20-Sep	11:00	68.0
20-Sep	12:00	66.2
20-Sep	13:00	76.2
20-Sep	14:00	78.2
20-Sep	15:00	79.4
20-Sep	16:00	80.9
20-Sep	17:00	78.3
20-Sep	18:00	73.1
20-Sep	19:00	74.6
20-Sep	20:00	78.4
20-Sep	21:00	79.0
20-Sep	22:00	64.8
20-Sep	23:00	66.6

Solana Gate Meter		
Day	Hour	L_{eq}
19-Sep	12:00	-
19-Sep	1:00	-
19-Sep	2:00	-
19-Sep	3:00	-
19-Sep	4:00	-
19-Sep	5:00	-
19-Sep	6:00	-
19-Sep	7:00	-
19-Sep	8:00	-
19-Sep	9:00	-
19-Sep	10:00	-
19-Sep	11:00	-
19-Sep	12:00	-
19-Sep	13:00	-
19-Sep	14:00	-
19-Sep	15:00	-
19-Sep	16:00	-
19-Sep	17:00	-
19-Sep	18:00	-
19-Sep	19:00	-
19-Sep	20:00	-
19-Sep	21:00	-
19-Sep	22:00	-
19-Sep	23:00	-
20-Sep	12:00	-
20-Sep	1:00	-
20-Sep	2:00	-
20-Sep	3:00	-
20-Sep	4:00	-
20-Sep	5:00	-
20-Sep	6:00	-
20-Sep	7:00	-
20-Sep	8:00	-
20-Sep	9:00	-
20-Sep	10:00	-
20-Sep	11:00	-
20-Sep	12:00	-
20-Sep	13:00	-
20-Sep	14:00	-
20-Sep	15:00	-
20-Sep	16:00	-
20-Sep	17:00	-
20-Sep	18:00	-
20-Sep	19:00	-
20-Sep	20:00	-
20-Sep	21:00	-
20-Sep	22:00	-
20-Sep	23:00	-

Summary of Noise Measurement Data

Fire Station Meter		
Day	Hour	L_{eq}
21-Sep	0:00	-
21-Sep	1:00	-
21-Sep	2:00	-
21-Sep	3:00	-
21-Sep	4:00	-
21-Sep	5:00	-
21-Sep	6:00	-
21-Sep	7:00	-
21-Sep	8:00	-
21-Sep	9:00	-
21-Sep	10:00	-
21-Sep	11:00	-
21-Sep	12:00	-
21-Sep	13:00	-
21-Sep	14:00	-
21-Sep	15:00	-
21-Sep	16:00	-
21-Sep	17:00	-
21-Sep	18:00	-
21-Sep	19:00	-
21-Sep	20:00	-
21-Sep	21:00	-
21-Sep	22:00	-
21-Sep	23:00	-
21-Nov	0:00	-
21-Nov	1:00	-
21-Nov	2:00	-
21-Nov	3:00	-
21-Nov	4:00	-
21-Nov	5:00	-
21-Nov	6:00	-
21-Nov	7:00	-
21-Nov	8:00	-
21-Nov	9:00	-
21-Nov	10:00	-
21-Nov	11:00	-
21-Nov	12:00	-
21-Nov	13:00	-
21-Nov	14:00	-
21-Nov	15:00	-
21-Nov	16:00	-
21-Nov	17:00	-
21-Nov	18:00	-
21-Nov	19:00	-
21-Nov	20:00	-
21-Nov	21:00	-
21-Nov	22:00	-
21-Nov	23:00	-

Red Lot Meter		
Day	Hour	L_{eq}
21-Sep	0:00	66.9
21-Sep	1:00	62.0
21-Sep	2:00	65.1
21-Sep	3:00	61.5
21-Sep	4:00	61.6
21-Sep	5:00	60.8
21-Sep	6:00	62.4
21-Sep	7:00	72.5
21-Sep	8:00	72.7
21-Sep	9:00	71.7
21-Sep	10:00	72.5
21-Sep	11:00	70.7
21-Sep	12:00	71.9
21-Sep	13:00	72.7
21-Sep	14:00	71.7
21-Sep	15:00	-
21-Sep	16:00	-
21-Sep	17:00	-
21-Sep	18:00	-
21-Sep	19:00	-
21-Sep	20:00	-
21-Sep	21:00	-
21-Sep	22:00	-
21-Sep	23:00	-
21-Nov	0:00	-
21-Nov	1:00	-
21-Nov	2:00	-
21-Nov	3:00	-
21-Nov	4:00	-
21-Nov	5:00	-
21-Nov	6:00	-
21-Nov	7:00	58.0
21-Nov	8:00	59.9
21-Nov	9:00	58.9
21-Nov	10:00	59.9
21-Nov	11:00	63.1
21-Nov	12:00	62.6
21-Nov	13:00	61.8
21-Nov	14:00	64.9
21-Nov	15:00	63.1
21-Nov	16:00	67.3
21-Nov	17:00	70.8
21-Nov	18:00	71.1
21-Nov	19:00	62.3
21-Nov	20:00	61.7
21-Nov	21:00	57.4
21-Nov	22:00	57.6
21-Nov	23:00	55.1

Solana Gate Meter		
Day	Hour	L_{eq}
21-Sep	0:00	-
21-Sep	1:00	-
21-Sep	2:00	-
21-Sep	3:00	-
21-Sep	4:00	-
21-Sep	5:00	-
21-Sep	6:00	-
21-Sep	7:00	-
21-Sep	8:00	-
21-Sep	9:00	-
21-Sep	10:00	-
21-Sep	11:00	-
21-Sep	12:00	-
21-Sep	13:00	-
21-Sep	14:00	-
21-Sep	15:00	-
21-Sep	16:00	-
21-Sep	17:00	-
21-Sep	18:00	-
21-Sep	19:00	-
21-Sep	20:00	-
21-Sep	21:00	-
21-Sep	22:00	-
21-Sep	23:00	-
21-Nov	0:00	-
21-Nov	1:00	-
21-Nov	2:00	-
21-Nov	3:00	-
21-Nov	4:00	-
21-Nov	5:00	-
21-Nov	6:00	-
21-Nov	7:00	60.6
21-Nov	8:00	68.8
21-Nov	9:00	68.8
21-Nov	10:00	69.9
21-Nov	11:00	69.3
21-Nov	12:00	68.7
21-Nov	13:00	70.2
21-Nov	14:00	68.9
21-Nov	15:00	69.3
21-Nov	16:00	69.3
21-Nov	17:00	70.3
21-Nov	18:00	75.2
21-Nov	19:00	74.3
21-Nov	20:00	73.4
21-Nov	21:00	72.9
21-Nov	22:00	72.4
21-Nov	23:00	62.8