

# Attachment J

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January 27, 2020  
Project No: 18-06604

Joseph Sidor, Associate Planner  
Monterey County RMA-Planning  
1441 Schilling Place  
Salinas, California 93901

**Re: River View at Las Palma Assisted Living Senior Facility – PLN150372**

Dear Mr. Sidor:

On January 13, 2020, Valerie Smith of Charles M. Salter Associates submitted a letter to the County with comments on the River View at Las Palmas Assisted Living Senior Facility Subsequent EIR ("SEIR"). The purpose of this letter is to respond to Ms. Smith's comments regarding the noise analysis presented in the Draft and Final SEIR. Ms. Smith provided 14 numbered comments, and this letter responds to each comment sequentially.

- 1) The commenter asserts that the Final SEIR's short-term noise measurements were taken with the sound level meter set to "fast" weighting even though "slow" weighting is typically used for such measurements. The commenter claims that this difference in methodology could reduce the recorded noise level by several decibels. In Rincon's experience, however, taking sound level measurements using fast and slow weightings for multiple response times, there is no discernible difference in the hourly equivalent noise level ( $L_{eq}$ ) or the background noise level ( $L_{90}$ ). While fast weighting would likely result in a higher maximum ( $L_{max}$ ) and lower minimum ( $L_{min}$ ) as it responds faster and can capture the dips and peaks of ambient noise in greater resolution, this would not substantially affect the overall  $L_{eq}$ . However, if the commenter were correct, the analysis would be more conservative and would likely produce impacts where none would occur due to the lower ambient level used for comparison. Therefore, noise measurements taken using the fast weighting are adequate and appropriate for use in the Final SEIR.
- 2) The commenter asks for confirmation that the reported noise levels below 40 dB in Appendix J of the Final SEIR are accurate because the sound level meters were set to a "level range" of 40 to 100 dBA. The measurements provided in Appendix J were taken with an ANSI Type II integrating sound level meter. For such meters, interval data below or above the level range is recorded and factors into the overall  $L_{eq}$  value; however, it is not subject to the meter's guarantee of recording data within 2 dBA of the actual noise level. Infrequent interval data below 40 dBA could marginally decrease the measurement's accuracy but would not substantially alter the  $L_{eq}$ . The equivalent noise level depends heavily on the loudness and frequency of noise-generating events such as motor vehicles passing the project site, which are within the 40 to 100 dBA level range. Additionally, as discussed, if the ambient noise levels were reported as lower than they actually are the analysis would be more conservative and would likely produce impacts where none would occur. Therefore, the sound level measurements are sufficient for use in the Final SEIR.

- 3) The commenter asserts that the Final SEIR does not accurately portray the ambient noise environment because it reports the 24-hour noise measurements in terms of a single  $L_{eq}$  value instead of breaking the results into daytime and nighttime noise levels. The commenter also equates the equivalent level to an average; however, this is an incorrect comparison as a mathematical average eliminates the highest and lowest measured values, whereas an equivalent noise level does not eliminate any noise levels. As acknowledged by the commenter, the full range of interval noise data in each 24-hour noise measurement is available for viewing in Appendix J of the Final SEIR. The requested data has been included in the table below. This data is additional to and does not conflict with the information presented in the Final SEIR.

Time	$L_{eq}$	Time	$L_{eq}$
10:00	67	22:00	58
11:00	70	23:00	52
12:00	69	0:00	40
13:00	68	1:00	47
14:00	70	2:00	53
15:00	69	3:00	60
16:00	69	4:00	67
17:00	68	5:00	70
18:00	67	6:00	69
19:00	69	7:00	70
20:00	61	8:00	68
21:00	64	9:00	67

- 4) The commenter states that continuously operating rooftop HVAC equipment that generates a noise level of 46 dBA  $L_{eq}$  at a distance of 250 feet would exceed the nighttime standard of 45 dBA  $L_{eq}$  in the County's noise ordinance. It is correct that rooftop HVAC equipment on the project site would operate continuously and would be subject to this nighttime noise standard. In the process of responding to this comment, Rincon has reassessed the estimated distance between proposed HVAC equipment and the nearest residences. Accounting for an approximately 200-foot buffer between development on the project site and nearby residences, it is estimated that rooftop HVAC equipment at the assisted care and memory care living facility buildings would be set back approximately 375 feet from the nearest residences on Country Park Road. (The Final SEIR underestimated this distance as 250 feet, which resulted in an analysis of HVAC noise that was overly conservative.) As discussed in the Final SEIR, HVAC noise from stationary equipment would attenuate at a rate of approximately 6 dBA per doubling of distance. Based on this attenuation rate, HVAC units would generate an estimated noise level of 42 dBA  $L_{eq}$  at a distance of 375 feet. Based on this refined understanding, HVAC noise would not exceed the County's hourly nighttime standard of 45 dBA  $L_{eq}$ .

The Final SEIR's noise analysis also did not account for the placement of HVAC equipment within "roof wells." HVAC units would either be lowered into wells below the basic roof level or would be enclosed by low walls. In either case, the equipment would be 3-4 feet below the surrounding rooftop level. This placement would effectively block the line of sight between HVAC equipment and residences, further reducing their noise exposure to an estimated 37 dBA

$L_{eq}$ . Therefore, as determined in the Final SEIR, the impact of on-site operational noise from HVAC equipment would be less than significant.

- 5) The commenter asserts that a project of this size would likely have multiple pieces of rooftop HVAC equipment, resulting in a higher combined noise level than estimated in the Final SEIR. However, this estimate of HVAC noise was derived from measurements conducted by an acoustical engineering firm (Illingworth & Rodkin 2009). Illingworth & Rodkin, Inc. collected the reference noise level of 70 dBA  $L_{eq}$  at a distance of 15 feet from "rooftop equipment" located at "commercial centers and large supermarkets" throughout the southern California region. Thus, the empirical equipment noise levels are appropriate for estimating HVAC noise generated by large-scale commercial operations as it is reflective of combined noise from multiple pieces of rooftop equipment. Therefore, the Final SEIR's estimate of HVAC noise generated by the proposed project is inclusive of combined noise from more than one HVAC unit.
- 6) The commenter indicates that a noise level of 46 dBA  $L_{eq}$  from HVAC equipment could have a substantial impact because measured ambient noise is at or below 46 dBA  $L_{eq}$  for large portions of the nighttime hours. However, as discussed in Response 4 above, this letter includes a corrected noise analysis which finds that HVAC equipment would generate an estimated noise level of 37 dBA  $L_{eq}$  at the nearest residences. This noise level would not exceed the County's hourly nighttime standard of 45 dBA  $L_{eq}$ . Therefore, HVAC noise would not be excessive during nighttime hours and would not contribute to a substantial increase in ambient noise levels.
- 7) The commenter states that the Final SEIR does not address the timing or loudness of noise from delivery trucks serving dining and laundry uses. A schedule of deliveries serving the proposed project is not available at this time. For a project of this type and scale, it is assumed that delivery truck activity would be infrequent and may not occur on a daily basis. Loading dock activities generate estimated noise levels around 61 dBA  $L_{eq}$  over a one-hour period at 50 feet from the source (Salter 2014). This loading activity includes use of air brakes, backup alarms, idling, truck pass-bys, and engine acceleration over a period of 15 minutes. The distance between drop-off points where delivery trucks would idle on the proposed driveway and the nearest residences is approximately 250 feet. Based on an attenuation rate of 6 dBA per doubling of distance from a stationary source, noise levels from idling trucks on the project site would be an estimated 47 dBA  $L_{eq}$  at a distance of 250 feet. This noise level would not exceed the County's maximum of 85 dBA from noise-producing devices when measured at a distance of 50 feet (County Code Section 10.60.030). Additionally, given the ambient noise conditions, this noise level would have no effect on the existing hourly noise levels between 4:00 a.m. and 11:00 p.m.

It is assumed that delivery trucks would typically serve the project site during daytime hours, for which the County Code of Ordinances does not have specific noise standards. For nighttime hours, County Code Section 10.60.040 sets a maximum exterior noise level of 65 dBA from 9 p.m. to 7 a.m. on any day of the week. Delivery truck noise would not exceed this standard. In addition, California limits idling by heavy-duty trucks to 5 minutes or less. It is assumed that deliveries would not occur between 11:00 p.m. and 4:00 a.m. Therefore, noise from delivery trucks would not have a significant impact on residences near the project site.

- 8) The commenter asserts that the Final SEIR does not address noise from the arriving, departing, and idling of the proposed shuttle service for residents. Response 11 provides an additional analysis of the project's impact on traffic noise, including medium truck traffic to and from the

site. This analysis accounts for noise from shuttle service trucks on the project's driveway. As discussed in Response 11, the project would have a less than significant impact on traffic noise. Idling shuttle trucks on the project site would generate a noise level similar to that of delivery trucks. As found in Response 7, idling trucks would not generate noise levels exceeding County standards. Therefore, noise from shuttle vehicles would not have a significant impact on residences.

- 9) The commenter states that the Final SEIR does not explain the extent of the Subdivision's "no-siren zone." This zone applies to the entire Subdivision. Therefore, emergency vehicles would not generate noise from sirens after entering the Subdivision from River Road. It is acknowledged that the project may result in additional siren noise on River Road, outside the bounds of the Subdivision. However, as discussed in the Final SEIR, Section 10.60.040.C.3 of the County Code exempts "emergency vehicles being operated by authorized personnel or equipment used in an emergency, such as chain saws" from noise regulation. Emergency vehicles are exempt from the County's noise ordinance and would not result in a significant noise impact at residences in the Subdivision.
- 10) The commenter states that the Final SEIR does not address noise associated with trash collection including the frequency and time of collection. A trash collection schedule for the proposed project is not available at this time. Idling garbage and recycling trucks would generate noise on the project site. As discussed in Response 7, idling trucks generate an estimated noise level of 61 dBA  $L_{eq}$  at a distance of 50 feet from the source. It is anticipated that this activity would occur on the project driveway approximately 250 feet from the nearest residences, resulting in a short-term noise level of 47 dBA  $L_{eq}$  at these sensitive receptors. This noise level would not exceed applicable daytime standards in the County's noise ordinance. Additionally, the noise from trash collection currently occurs within the Subdivision and would not represent a new or unusual noise source or substantially increase the ambient noise levels at nearby noise-sensitive land uses. Therefore, noise from trash collection would not result in a new significant impact.
- 11) The commenter asserts that project-generated vehicle trips on Woodridge Court's steep grade to the project site would likely increase traffic noise at residences. As discussed in the Final SEIR, project-generated trips would increase traffic volumes on residential streets in the Subdivision that lead to the project site, including Las Palmas Road, River Run Road, and Woodridge Court. According to the Traffic Impact Analysis prepared for the project by Keith Higgins in June 2017, the project would generate an estimated 363 average daily trips, including 22 AM peak hour trips and 33 PM peak hour trips. All new trips to and from the project site would occur on Woodridge Court and the connecting private driveway to the project site. The steep grade cited by the commenter does not apply to Woodridge Court, which is relatively flat, but rather to the proposed private driveway extending from Woodridge Court to the project site.

The steep grade of the driveway would increase engine noise from vehicles accessing the project site. However, as stated in the Final SEIR, traffic in portions of the Subdivision near River Road does not substantially contribute to ambient noise levels relative to traffic on River Road. Based on the roadway traffic volumes presented in the traffic study, the volume of average daily traffic on River Road would be approximately five to ten times higher than the volume of existing traffic plus project-generated trips on Subdivision streets. Therefore, traffic on River Road is the primary driver of ambient noise levels near the project site. This would remain the

case with the addition of project-generated trips. New trips on the driveway would represent approximately 2.5% of the average daily traffic volume on River Road under existing plus project conditions (estimated at 14,311 trips).

To quantify the effect of project-generated traffic on the steep driveway, the HUD DNL Calculator was run at a location 300 feet from the centerline of River Road and 130 feet from the driveway, which is representative of existing residences on Country Park Road near Woodridge Court. It was assumed that the modal split of new trips would be 90 percent passenger vehicles, 5 percent medium (2-axle) trucks, and 5 percent heavy (3+ axle) trucks. This is a conservative modal split with a relatively high percentage of heavy trucks. The driveway's steep grade from Woodridge Court to the project site was estimated at 12 percent.

Based on these assumptions, existing traffic noise at this location is estimated at 64 dBA  $L_{dn}$  (see attached for the modeling results). With the addition of project-generated trips, traffic noise would reach an estimated 65 dBA  $L_{dn}$ . Project-generated traffic on the driveway would increase the ambient noise level by an estimated 1 dBA  $L_{dn}$ , a change which would not be perceptible to the average human ear, or at nearby residences. This result is consistent with the observation that River Road, not local residential streets, is the primary source of ambient noise in the vicinity of the Subdivision. Therefore, as determined in the Final SEIR, the project would have a less than significant impact from increasing traffic noise.

- 12) The commenter asserts that the SEIR should model the project's effect on traffic noise along Woodridge Court. Please refer to Response 11 for an additional HUD DNL Calculator analysis at the steep project driveway connecting to Woodridge Court. As determined in Response 11, additional traffic to the project site would have a less than significant impact on traffic noise.
- 13) The commenter states that the Final SEIR does not address on-site operational noise from outdoor plazas, including amplified music, events, and dining activities. The proposed outdoor plazas would be located on the northwest part of the project site, opposite from existing residences located southeast of the site. These plazas also would be shielded by the proposed assisted care and memory care living facilities. Their distance from residences and shielding by proposed buildings would minimize exposure of noise generated by activities at outdoor plazas. No amplified music or sound systems would be used outside buildings.

It is anticipated that the outdoor plazas would host a few small family-based events per year, such as an Easter egg hunt; events would not be open to the general public. Outdoor gatherings would generate temporary noise from conversations. The normal speaking voice reaches about 65 dBA at a distance of 3 feet. Making a highly conservative assumption of 1,000 people at a given event, the noise level from conversations would reach an estimated 70 dBA at 50 feet from the center of the gathering. Because the plazas would be located behind proposed buildings, which would reduce noise levels by approximately 20 dBA, and at a distance of 250 feet from residences, resultant noise levels would be approximately 35 dBA at residences. This noise level would not exceed existing measured ambient noise levels in the daytime and evening hours. Therefore, the outdoor plazas would not generate noise resulting in a significant noise impact at sensitive receptors, and the Final SEIR's noise analysis is adequate.

- 14) The commenter states that the Final SEIR does not address noise from alarm systems and claims that they could have a significant noise impact. However, the commenter does not provide specific evidence that alarm systems could generate sufficient noise to result in a significant



impact. Noise generated by alarm systems is typically outside the scope of noise analysis in CEQA documents because of the rarity of testing and activation of alarm systems. Many alarm systems for modern buildings similar to those proposed are silent and only alert the police and alarm company; they do not usually have loud horns or sirens. If a noise-generating alarm system were installed, it is assumed that incidents involving activation of alarms would be extremely rare. The City's noise standards are also weighted over time, so rare and brief incidences of loud alarms would not exceed these standards. Therefore, this issue would not result in a significant noise impact, and the Final SEIR's noise analysis is adequate.

While addressing Salter's comments, Rincon has also discovered and corrected an error in the 24-hour noise measurement results disclosed in the Final SEIR. Table 11-1 in the Final SEIR reported a 70.0 dBA  $L_{eq}$  at the 24-hour measurement location on the project site. After correcting the  $L_{eq}$  calculation generated automatically by the noise meter, the actual ambient noise level at this site is 67.3 dBA  $L_{eq}$ . The difference of 2.7 dBA from the Final SEIR's reported noise level does not alter the CEQA document's impact determinations related to noise. This correction is simply provided in the interest of full disclosure (see appendix for the updated noise measurement results).

Sincerely,

**Rincon Consultants, Inc.**

A handwritten signature in blue ink, appearing to read 'Jonathan Berlin'.

Jonathan Berlin, MESM  
Senior Environmental Planner

A handwritten signature in blue ink, appearing to read 'Megan Jones'.

Megan Jones, MPP  
Principal



	Data Logger	240
Weighting	A	
Response	SLOW	
Range	40-100	
L05		72.8
L10		71.6
L50		64
L90		41.3
L95		37.3
Lmax		92.5
Time	6/27/2019 8:42	
SEL		119.3
Leq		67.3

No.s	Date Time	Duration	dB	
1	6/26/2019 10:55	240	68.6	1.74E+09
2	6/26/2019 10:59	240	64	6.03E+08
3	6/26/2019 11:03	240	69.2	2.00E+09
4	6/26/2019 11:07	240	65.8	9.12E+08
5	6/26/2019 11:11	240	55	7.59E+07
6	6/26/2019 11:15	240	65.1	7.77E+08
7	6/26/2019 11:19	240	66.7	1.12E+09
8	6/26/2019 11:23	240	63	4.79E+08
9	6/26/2019 11:27	240	69.9	2.35E+09
10	6/26/2019 11:31	240	57.4	1.32E+08
11	6/26/2019 11:35	240	62.1	3.89E+08
12	6/26/2019 11:39	240	71.4	3.31E+09
13	6/26/2019 11:43	240	53.3	5.13E+07
14	6/26/2019 11:47	240	57.4	1.32E+08
15	6/26/2019 11:51	240	67.8	1.45E+09
16	6/26/2019 11:55	240	71.1	3.09E+09
17	6/26/2019 11:59	240	59.6	2.19E+08
18	6/26/2019 12:03	240	62.9	4.68E+08
19	6/26/2019 12:07	240	67.1	1.23E+09
20	6/26/2019 12:11	240	69.3	2.04E+09
21	6/26/2019 12:15	240	73.7	5.63E+09
22	6/26/2019 12:19	240	71.5	3.39E+09
23	6/26/2019 12:23	240	67.1	1.23E+09
24	6/26/2019 12:27	240	68.4	1.66E+09
25	6/26/2019 12:31	240	68.9	1.86E+09
26	6/26/2019 12:35	240	66.8	1.15E+09
27	6/26/2019 12:39	240	74.7	7.08E+09
28	6/26/2019 12:43	240	75.5	8.52E+09
29	6/26/2019 12:47	240	69.9	2.35E+09
30	6/26/2019 12:51	240	64.1	6.17E+08
31	6/26/2019 12:55	240	59.4	2.09E+08
32	6/26/2019 12:59	240	60.8	2.89E+08

33	6/26/2019 13:03	240	74.1	6.17E+09
34	6/26/2019 13:07	240	70.7	2.82E+09
35	6/26/2019 13:11	240	68.5	1.70E+09
36	6/26/2019 13:15	240	62.3	4.08E+08
37	6/26/2019 13:19	240	63.2	5.01E+08
38	6/26/2019 13:23	240	71	3.02E+09
39	6/26/2019 13:27	240	70	2.40E+09
40	6/26/2019 13:31	240	63	4.79E+08
41	6/26/2019 13:35	240	69.5	2.14E+09
42	6/26/2019 13:39	240	71.1	3.09E+09
43	6/26/2019 13:43	240	65.8	9.12E+08
44	6/26/2019 13:47	240	70.9	2.95E+09
45	6/26/2019 13:51	240	66.6	1.10E+09
46	6/26/2019 13:55	240	70.5	2.69E+09
47	6/26/2019 13:59	240	61.3	3.24E+08
48	6/26/2019 14:03	240	67.6	1.38E+09
49	6/26/2019 14:07	240	68.3	1.62E+09
50	6/26/2019 14:11	240	66.4	1.05E+09
51	6/26/2019 14:15	240	70.3	2.57E+09
52	6/26/2019 14:19	240	62.1	3.89E+08
53	6/26/2019 14:23	240	67.5	1.35E+09
54	6/26/2019 14:27	240	64.6	6.92E+08
55	6/26/2019 14:31	240	69.9	2.35E+09
56	6/26/2019 14:35	240	65.4	8.32E+08
57	6/26/2019 14:39	240	69.6	2.19E+09
58	6/26/2019 14:43	240	68.2	1.59E+09
59	6/26/2019 14:47	240	70.8	2.89E+09
60	6/26/2019 14:51	240	59.5	2.14E+08
61	6/26/2019 14:55	240	71.6	3.47E+09
62	6/26/2019 14:59	240	59.5	2.14E+08
63	6/26/2019 15:03	240	72.3	4.08E+09
64	6/26/2019 15:07	240	72.5	4.27E+09
65	6/26/2019 15:11	240	71	3.02E+09
66	6/26/2019 15:15	240	59.5	2.14E+08
67	6/26/2019 15:19	240	64.7	7.08E+08
68	6/26/2019 15:23	240	56.9	1.18E+08
69	6/26/2019 15:27	240	73.9	5.89E+09
70	6/26/2019 15:31	240	73.2	5.01E+09
71	6/26/2019 15:35	240	73.8	5.76E+09
72	6/26/2019 15:39	240	68.1	1.55E+09
73	6/26/2019 15:43	240	66.8	1.15E+09
74	6/26/2019 15:47	240	62.7	4.47E+08
75	6/26/2019 15:51	240	70.1	2.46E+09
76	6/26/2019 15:55	240	70	2.40E+09
77	6/26/2019 15:59	240	69.4	2.09E+09
78	6/26/2019 16:03	240	71.1	3.09E+09
79	6/26/2019 16:07	240	71.8	3.63E+09

80	6/26/2019 16:11	240	67	1.20E+09
81	6/26/2019 16:15	240	66.7	1.12E+09
82	6/26/2019 16:19	240	73.2	5.01E+09
83	6/26/2019 16:23	240	73.9	5.89E+09
84	6/26/2019 16:27	240	72.1	3.89E+09
85	6/26/2019 16:31	240	61.9	3.72E+08
86	6/26/2019 16:35	240	61	3.02E+08
87	6/26/2019 16:39	240	65.2	7.95E+08
88	6/26/2019 16:43	240	66.4	1.05E+09
89	6/26/2019 16:47	240	69.5	2.14E+09
90	6/26/2019 16:51	240	62.8	4.57E+08
91	6/26/2019 16:55	240	65.9	9.34E+08
92	6/26/2019 16:59	240	64.6	6.92E+08
93	6/26/2019 17:03	240	56.4	1.05E+08
94	6/26/2019 17:07	240	70.6	2.76E+09
95	6/26/2019 17:11	240	68.3	1.62E+09
96	6/26/2019 17:15	240	63.3	5.13E+08
97	6/26/2019 17:19	240	64	6.03E+08
98	6/26/2019 17:23	240	69	1.91E+09
99	6/26/2019 17:27	240	72.3	4.08E+09
100	6/26/2019 17:31	240	71.9	3.72E+09
101	6/26/2019 17:35	240	60.5	2.69E+08
102	6/26/2019 17:39	240	67.8	1.45E+09
103	6/26/2019 17:43	240	70.3	2.57E+09
104	6/26/2019 17:47	240	69.4	2.09E+09
105	6/26/2019 17:51	240	63.8	5.76E+08
106	6/26/2019 17:55	240	71.8	3.63E+09
107	6/26/2019 17:59	240	64.3	6.46E+08
108	6/26/2019 18:03	240	70.6	2.76E+09
109	6/26/2019 18:07	240	76.2	1.00E+10
110	6/26/2019 18:11	240	65.7	8.92E+08
111	6/26/2019 18:15	240	67.5	1.35E+09
112	6/26/2019 18:19	240	57.9	1.48E+08
113	6/26/2019 18:23	240	64.1	6.17E+08
114	6/26/2019 18:27	240	51.4	3.31E+07
115	6/26/2019 18:31	240	66.7	1.12E+09
116	6/26/2019 18:35	240	55.5	8.52E+07
117	6/26/2019 18:39	240	58.8	1.82E+08
118	6/26/2019 18:43	240	53.2	5.01E+07
119	6/26/2019 18:47	240	67	1.20E+09
120	6/26/2019 18:51	240	63.7	5.63E+08
121	6/26/2019 18:55	240	63.5	5.37E+08
122	6/26/2019 18:59	240	65.2	7.95E+08
123	6/26/2019 19:03	240	69.7	2.24E+09
124	6/26/2019 19:07	240	63	4.79E+08
125	6/26/2019 19:11	240	72.1	3.89E+09
126	6/26/2019 19:15	240	57	1.20E+08

127	6/26/2019 19:19	240	60	2.40E+08
128	6/26/2019 19:23	240	53.8	5.76E+07
129	6/26/2019 19:27	240	65.8	9.12E+08
130	6/26/2019 19:31	240	54	6.03E+07
131	6/26/2019 19:35	240	59.4	2.09E+08
132	6/26/2019 19:39	240	68.3	1.62E+09
133	6/26/2019 19:43	240	64.2	6.31E+08
134	6/26/2019 19:47	240	61.6	3.47E+08
135	6/26/2019 19:51	240	68.4	1.66E+09
136	6/26/2019 19:55	240	63.5	5.37E+08
137	6/26/2019 19:59	240	71.6	3.47E+09
138	6/26/2019 20:03	240	55.1	7.77E+07
139	6/26/2019 20:07	240	69.7	2.24E+09
140	6/26/2019 20:11	240	60.6	2.76E+08
141	6/26/2019 20:15	240	71.9	3.72E+09
142	6/26/2019 20:19	240	52.5	4.27E+07
143	6/26/2019 20:23	240	62.3	4.08E+08
144	6/26/2019 20:27	240	71.2	3.16E+09
145	6/26/2019 20:31	240	64.1	6.17E+08
146	6/26/2019 20:35	240	75.4	8.32E+09
147	6/26/2019 20:39	240	72.4	4.17E+09
148	6/26/2019 20:43	240	62.9	4.68E+08
149	6/26/2019 20:47	240	64.2	6.31E+08
150	6/26/2019 20:51	240	69.7	2.24E+09
151	6/26/2019 20:55	240	70.4	2.63E+09
152	6/26/2019 20:59	240	70.2	2.51E+09
153	6/26/2019 21:03	240	60.1	2.46E+08
154	6/26/2019 21:07	240	48	1.51E+07
155	6/26/2019 21:11	240	69.4	2.09E+09
156	6/26/2019 21:15	240	64.1	6.17E+08
157	6/26/2019 21:19	240	46.3	1.02E+07
158	6/26/2019 21:23	240	53.8	5.76E+07
159	6/26/2019 21:27	240	56.6	1.10E+08
160	6/26/2019 21:31	240	57.3	1.29E+08
161	6/26/2019 21:35	240	59.7	2.24E+08
162	6/26/2019 21:39	240	50.2	2.51E+07
163	6/26/2019 21:43	240	50.2	2.51E+07
164	6/26/2019 21:47	240	61.9	3.72E+08
165	6/26/2019 21:51	240	52.8	4.57E+07
166	6/26/2019 21:55	240	50.3	2.57E+07
167	6/26/2019 21:59	240	65.4	8.32E+08
168	6/26/2019 22:03	240	58.6	1.74E+08
169	6/26/2019 22:07	240	51.9	3.72E+07
170	6/26/2019 22:11	240	55.5	8.52E+07
171	6/26/2019 22:15	240	62	3.80E+08
172	6/26/2019 22:19	240	61.8	3.63E+08
173	6/26/2019 22:23	240	50.7	2.82E+07

174	6/26/2019 22:27	240	74.2	6.31E+09
175	6/26/2019 22:31	240	56.1	9.78E+07
176	6/26/2019 22:35	240	66.8	1.15E+09
177	6/26/2019 22:39	240	65.5	8.52E+08
178	6/26/2019 22:43	240	61	3.02E+08
179	6/26/2019 22:47	240	50.9	2.95E+07
180	6/26/2019 22:51	240	53	4.79E+07
181	6/26/2019 22:55	240	45.4	8.32E+06
182	6/26/2019 22:59	240	48.2	1.59E+07
183	6/26/2019 23:03	240	63.8	5.76E+08
184	6/26/2019 23:07	240	44	6.03E+06
185	6/26/2019 23:11	240	45.2	7.95E+06
186	6/26/2019 23:15	240	57	1.20E+08
187	6/26/2019 23:19	240	68.4	1.66E+09
188	6/26/2019 23:23	240	45.8	9.12E+06
189	6/26/2019 23:27	240	51.2	3.16E+07
190	6/26/2019 23:31	240	43.9	5.89E+06
191	6/26/2019 23:35	240	50.3	2.57E+07
192	6/26/2019 23:39	240	43.7	5.63E+06
193	6/26/2019 23:43	240	44.2	6.31E+06
194	6/26/2019 23:47	240	46.6	1.10E+07
195	6/26/2019 23:51	240	44.8	7.25E+06
196	6/26/2019 23:55	240	44.3	6.46E+06
197	6/26/2019 23:59	240	54.1	6.17E+07
198	6/27/2019 0:03	240	47.1	1.23E+07
199	6/27/2019 0:07	240	62.1	3.89E+08
200	6/27/2019 0:11	240	47.3	1.29E+07
201	6/27/2019 0:15	240	41.4	3.31E+06
202	6/27/2019 0:19	240	48.3	1.62E+07
203	6/27/2019 0:23	240	51.2	3.16E+07
204	6/27/2019 0:27	240	53.9	5.89E+07
205	6/27/2019 0:31	240	42.8	4.57E+06
206	6/27/2019 0:35	240	46	9.55E+06
207	6/27/2019 0:39	240	44.8	7.25E+06
208	6/27/2019 0:43	240	37.9	1.48E+06
209	6/27/2019 0:47	240	40.4	2.63E+06
210	6/27/2019 0:51	240	40.9	2.95E+06
211	6/27/2019 0:55	240	41.2	3.16E+06
212	6/27/2019 0:59	240	41.7	3.55E+06
213	6/27/2019 1:03	240	38.1	1.55E+06
214	6/27/2019 1:07	240	41.8	3.63E+06
215	6/27/2019 1:11	240	38.1	1.55E+06
216	6/27/2019 1:15	240	39.9	2.35E+06
217	6/27/2019 1:19	240	40.8	2.89E+06
218	6/27/2019 1:23	240	38.9	1.86E+06
219	6/27/2019 1:27	240	38.2	1.59E+06
220	6/27/2019 1:31	240	38	1.51E+06

221	6/27/2019 1:35	240	39.2	2.00E+06
222	6/27/2019 1:39	240	38.9	1.86E+06
223	6/27/2019 1:43	240	40.4	2.63E+06
224	6/27/2019 1:47	240	46.4	1.05E+07
225	6/27/2019 1:51	240	38.2	1.59E+06
226	6/27/2019 1:55	240	34.5	6.76E+05
227	6/27/2019 1:59	240	35.4	8.32E+05
228	6/27/2019 2:03	240	36.9	1.18E+06
229	6/27/2019 2:07	240	47.3	1.29E+07
230	6/27/2019 2:11	240	56.1	9.78E+07
231	6/27/2019 2:15	240	40.3	2.57E+06
232	6/27/2019 2:19	240	39.2	2.00E+06
233	6/27/2019 2:23	240	35.8	9.12E+05
234	6/27/2019 2:27	240	41.5	3.39E+06
235	6/27/2019 2:31	240	37.5	1.35E+06
236	6/27/2019 2:35	240	51.2	3.16E+07
237	6/27/2019 2:39	240	40.1	2.46E+06
238	6/27/2019 2:43	240	32.3	4.08E+05
239	6/27/2019 2:47	240	31.2	3.16E+05
240	6/27/2019 2:51	240	33	4.79E+05
241	6/27/2019 2:55	240	48.6	1.74E+07
242	6/27/2019 2:59	240	32.3	4.08E+05
243	6/27/2019 3:03	240	35.5	8.52E+05
244	6/27/2019 3:07	240	36.1	9.78E+05
245	6/27/2019 3:11	240	37.5	1.35E+06
246	6/27/2019 3:15	240	46.6	1.10E+07
247	6/27/2019 3:19	240	49.5	2.14E+07
248	6/27/2019 3:23	240	37.9	1.48E+06
249	6/27/2019 3:27	240	39.6	2.19E+06
250	6/27/2019 3:31	240	38.7	1.78E+06
251	6/27/2019 3:35	240	35.6	8.71E+05
252	6/27/2019 3:39	240	39.7	2.24E+06
253	6/27/2019 3:43	240	59.7	2.24E+08
254	6/27/2019 3:47	240	62.8	4.57E+08
255	6/27/2019 3:51	240	50.4	2.63E+07
256	6/27/2019 3:55	240	35	7.59E+05
257	6/27/2019 3:59	240	44.6	6.92E+06
258	6/27/2019 4:03	240	39.3	2.04E+06
259	6/27/2019 4:07	240	45	7.59E+06
260	6/27/2019 4:11	240	46.3	1.02E+07
261	6/27/2019 4:15	240	53	4.79E+07
262	6/27/2019 4:19	240	44.1	6.17E+06
263	6/27/2019 4:23	240	44.4	6.61E+06
264	6/27/2019 4:27	240	53.7	5.63E+07
265	6/27/2019 4:31	240	44.9	7.42E+06
266	6/27/2019 4:35	240	44.9	7.42E+06
267	6/27/2019 4:39	240	46.7	1.12E+07

268	6/27/2019 4:43	240	48.7	1.78E+07
269	6/27/2019 4:47	240	66.3	1.02E+09
270	6/27/2019 4:51	240	70	2.40E+09
271	6/27/2019 4:55	240	47.5	1.35E+07
272	6/27/2019 4:59	240	51.1	3.09E+07
273	6/27/2019 5:03	240	54.1	6.17E+07
274	6/27/2019 5:07	240	56	9.55E+07
275	6/27/2019 5:11	240	56.5	1.07E+08
276	6/27/2019 5:15	240	71.2	3.16E+09
277	6/27/2019 5:19	240	54.3	6.46E+07
278	6/27/2019 5:23	240	62.5	4.27E+08
279	6/27/2019 5:27	240	70.8	2.89E+09
280	6/27/2019 5:31	240	55.9	9.34E+07
281	6/27/2019 5:35	240	71.8	3.63E+09
282	6/27/2019 5:39	240	67.4	1.32E+09
283	6/27/2019 5:43	240	68.6	1.74E+09
284	6/27/2019 5:47	240	70.6	2.76E+09
285	6/27/2019 5:51	240	55.8	9.12E+07
286	6/27/2019 5:55	240	61.9	3.72E+08
287	6/27/2019 5:59	240	66.2	1.00E+09
288	6/27/2019 6:03	240	64.1	6.17E+08
289	6/27/2019 6:07	240	71.6	3.47E+09
290	6/27/2019 6:11	240	69.3	2.04E+09
291	6/27/2019 6:15	240	68.4	1.66E+09
292	6/27/2019 6:19	240	65.9	9.34E+08
293	6/27/2019 6:23	240	70.1	2.46E+09
294	6/27/2019 6:27	240	68.9	1.86E+09
295	6/27/2019 6:31	240	70.5	2.69E+09
296	6/27/2019 6:35	240	73.3	5.13E+09
297	6/27/2019 6:39	240	75.4	8.32E+09
298	6/27/2019 6:43	240	68.8	1.82E+09
299	6/27/2019 6:47	240	71.1	3.09E+09
300	6/27/2019 6:51	240	70.6	2.76E+09
301	6/27/2019 6:55	240	64.4	6.61E+08
302	6/27/2019 6:59	240	68.4	1.66E+09
303	6/27/2019 7:03	240	66.9	1.18E+09
304	6/27/2019 7:07	240	69.9	2.35E+09
305	6/27/2019 7:11	240	69.9	2.35E+09
306	6/27/2019 7:15	240	62	3.80E+08
307	6/27/2019 7:19	240	61.5	3.39E+08
308	6/27/2019 7:23	240	72	3.80E+09
309	6/27/2019 7:27	240	71.4	3.31E+09
310	6/27/2019 7:31	240	68.8	1.82E+09
311	6/27/2019 7:35	240	69.8	2.29E+09
312	6/27/2019 7:39	240	67.1	1.23E+09
313	6/27/2019 7:43	240	67.3	1.29E+09
314	6/27/2019 7:47	240	72.5	4.27E+09

315	6/27/2019 7:51	240	69.6	2.19E+09
316	6/27/2019 7:55	240	54.1	6.17E+07
317	6/27/2019 7:59	240	72.1	3.89E+09
318	6/27/2019 8:03	240	64.6	6.92E+08
319	6/27/2019 8:07	240	69.5	2.14E+09
320	6/27/2019 8:11	240	73.4	5.25E+09
321	6/27/2019 8:15	240	62.5	4.27E+08
322	6/27/2019 8:19	240	72.4	4.17E+09
323	6/27/2019 8:23	240	71.7	3.55E+09
324	6/27/2019 8:27	240	59.5	2.14E+08
325	6/27/2019 8:31	240	69	1.91E+09
326	6/27/2019 8:35	240	65.9	9.34E+08
327	6/27/2019 8:39	240	73	4.79E+09
328	6/27/2019 8:43	240	69.6	2.19E+09
329	6/27/2019 8:47	240	68.4	1.66E+09
330	6/27/2019 8:51	240	74.3	6.46E+09
331	6/27/2019 8:55	240	63.7	5.63E+08
332	6/27/2019 8:59	240	73.3	5.13E+09
333	6/27/2019 9:03	240	59	1.91E+08
334	6/27/2019 9:07	240	71.4	3.31E+09
335	6/27/2019 9:11	240	70	2.40E+09
336	6/27/2019 9:15	240	67.5	1.35E+09
337	6/27/2019 9:19	240	52.6	4.37E+07
338	6/27/2019 9:23	240	67.7	1.41E+09
339	6/27/2019 9:27	240	68.4	1.66E+09
340	6/27/2019 9:31	240	54.3	6.46E+07
341	6/27/2019 9:35	240	75	7.59E+09
342	6/27/2019 9:39	240	61.1	3.09E+08
343	6/27/2019 9:43	240	57.5	1.35E+08
344	6/27/2019 9:47	240	59.9	2.35E+08
345	6/27/2019 9:51	240	56.4	1.05E+08
346	6/27/2019 9:55	240	60	2.40E+08
347	6/27/2019 9:59	240	71.5	3.39E+09
348	6/27/2019 10:03	240	62.3	4.08E+08
349	6/27/2019 10:07	240	68.8	1.82E+09
350	6/27/2019 10:11	240	60.2	2.51E+08
351	6/27/2019 10:15	240	69.4	2.09E+09
352	6/27/2019 10:19	240	72.1	3.89E+09
353	6/27/2019 10:23	240	61.9	3.72E+08
354	6/27/2019 10:27	240	54.4	6.61E+07
355	6/27/2019 10:31	240	72.3	4.08E+09
356	6/27/2019 10:35	240	68.2	1.59E+09
357	6/27/2019 10:39	240	61.6	3.47E+08
358	6/27/2019 10:43	240	59.4	2.09E+08
359	6/27/2019 10:47	240	62.2	3.98E+08
360	6/27/2019 10:51	240	67.7	1.41E+09
		86400		4.64E+11



**67.3**

76.2

Date	Time	Leq		
	19-Mar-19	10:00	67	67
	19-Mar-19	11:00	67	70
	19-Mar-19	12:00	70	69
	19-Mar-19	13:00	69	68
	19-Mar-19	14:00	68	70
	19-Mar-19	15:00	70	69
	20-Mar-19	16:00	69	69
	20-Mar-19	17:00	69	68
	20-Mar-19	18:00	68	67
	20-Mar-19	19:00	67	5 74
	20-Mar-19	20:00	69	5 66
	20-Mar-19	21:00	61	5 69
	20-Mar-19	22:00	64	10 68
	20-Mar-19	23:00	58	10 62
	20-Mar-19	0:00	52	10 50
	20-Mar-19	1:00	40	10 57
	20-Mar-19	2:00	47	10 63
	20-Mar-19	3:00	53	10 70
	20-Mar-19	4:00	60	10 77
	20-Mar-19	5:00	67	10 80
	20-Mar-19	6:00	70	10 79
	20-Mar-19	7:00	69	70
	20-Mar-19	8:00	70	68
	20-Mar-19	9:00	68	67

1.65E+10      **66.6 x**

3.77E+10      **70.2 x**

3.07E+10      **69.3** x

2.28E+10      **68.0** x

3.92E+10      **70.4** x

3.06E+10      **69.3** x

2.65E+10      **68.7** x

2.03E+10      **67.5** x

1.65E+10      **66.6** x

3.15E+10      **69.4 x**

4.82E+09      **61.3 x**

9.88E+09      **64.4 x**

2.54E+09      **58.5 x**

5.60E+08      **51.9 x**

3.70E+07      **40.1 x**

1.75E+08      **46.9 x**

7.59E+08      **53.2 x**

3.65E+09      **60.1 x**

1.78E+10      **66.9** x

3.92E+10      **70.4** x

3.07E+10      **69.3** x



4.01E+10      **70.5 x**

2.24E+10      **67.9 x**

1.93E+10      **67.3 x**

1.65E+10  
 3.77E+10  
 3.07E+10  
 2.28E+10  
 3.92E+10  
 3.06E+10  
 2.65E+10  
 2.03E+10  
 1.65E+10  
 9.97E+10  
 1.53E+10  
 3.13E+10  
 2.54E+10  
 5.60E+09  
 3.70E+08  
 1.75E+09  
 7.59E+09  
 3.65E+10  
 1.78E+11  
 3.92E+11  
 3.07E+11  
 4.01E+10  
 2.24E+10  
 1.93E+10

Time	Leq	Time	Leq
10:00	67	22:00	64
11:00	67	23:00	58
12:00	70	0:00	52
13:00	69	1:00	40
14:00	68	2:00	47
15:00	70	3:00	53
16:00	69	4:00	60
17:00	69	5:00	67
18:00	68	6:00	70
19:00	67	7:00	69
20:00	69	8:00	70
21:00	61	9:00	68
24-Hr Leq	67.3		
CNEL	<b>72.2</b>		



## References

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