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## APPENDIX E

### TRASH COMPACTOR NOISE LETTER



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June 1, 2018

Andy Loos  
SRM Development  
720 6<sup>th</sup> Street South Ste. 200  
Kirkland, Washington 98033

RE: *Predicted noise level from the proposed compactor to be installed at the Cypress Senior Living Project at the adjacent north property line*

Dear Andy,

This letter presents the result of our noise analysis and recommendations for the proposed compactor, the Marathon Vert-I-Pack, at the Cypress Senior Living Project. The purpose of our noise analysis is to determine the noise level from the compactor with respect to the City of Cypress allowable limits. Noise data was not available for the compactor, and noise measurements were conducted in Ballard where the same compactor was used.

### **Zoning**

Cypress municipal code Chapter 13 section 13-67, Designated Noise Zone, divides noise zones into two classifications:

Noise Zone 1: All residential properties zoned RS-15000 or RS-6000.

Noise Zone 2: All residential property not in Noise Zone 1.

The property adjacent to the north of the Cypress Senior Living project is zoned as Planned Business Park and falls under the Noise Zone 2 designation.

### **Noise Ordinance**

CMC Chapter 13 section 13-68, Exterior Noise Standards, defines the noise levels which must be met at each noise zone.

Noise Zone	Noise Level	Time Period
1	55 dB(A)	7:00 a.m.—10:00 p.m.
	50 dB(A)	10:00 p.m.—7:00 a.m.
2	60 dB(A)	7:00 a.m.—10:00 p.m.
	55 dB(A)	10:00 p.m.—7:00 a.m.

Any sound that has a simple tone noise reduces the above levels by 5 dBA.

Based on this information, levels from the trash compactor cannot exceed 55 dBA from 7am to 10pm, and 50 dBA from 10pm to 7am.

### **Measured Noise Levels**

Noise levels were measured from an existing Marathon Vert-I-Pack compactor installed at Merrill Gardens, located at 418 NW 56<sup>th</sup> St in Seattle WA. The resulting level measured was 74 dBA at 3 feet with a tone at 400 Hz.



### **Property Line Calculation**

Using the measured level from the trash compactor at Merrill Gardens and the drawings provided, the predicted noise level at the property line is given below.

<b>Application Factor</b>	<b>dBA</b>
Sound Pressure Level at 3 ft (dBA), Lp1	74
Distance Factor (DF)	-21
Inverse-Square Law (Free Field): $DF = 20 * \log (d1/d2)$	(32 ft)
Predicted Noise Level from the Compactor at the North Property Line (Add lines 1 & 2)	<b>53</b>
Cypress Municipal Code Exterior Noise Standard (Tone / Day)	<b>55</b>
Cypress Municipal Code Exterior Noise Standard (Tone / Night)	<b>50</b>

### **Summary**

The proposed trash compactor will meet the required Cypress Noise Code Exterior Noise Levels during daytime hours, but exceeds during nighttime hours. The compactor should not be run during nighttime hours.

If you have any questions, please don't hesitate to contact us.

Sincerely,  
A<sup>3</sup> Acoustics, LLP

**DREW LODAREK**  
STAFF CONSULTANT

**MOHAMED AIT ALLAOUA**  
SENIOR ACOUSTICAL CONSULTANT