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Ara Tchaghlassion  
AVA Property Investments, LLC  
144407 Alondra Boulevard  
La Mirada, CA 90638

Subject: Sky Canyon Retail Center Project Car Wash Noise Analysis at Biologically Sensitive Habitat

Dear Mr. Tchaghlassion:

HELIX Environmental Planning, Inc. (HELIX) has performed a noise analysis for the operational noise impacts of a future car wash within the proposed Sky Canyon Retail Center Project (project), focusing on potential noise impacts to the nearby biologically sensitive habitat. This letter supplements the full noise impact analysis for the project prepared by HELIX in June 2019, which analyses additional aspects of project components, including construction (HELIX 2019).

## **PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING**

The project would construct a commercial and retail center with five buildings on a 7.3-acre site. Project components include a 31,900 square foot (SF) Smart and Final grocery store, 10,000 SF of retail space, a 7,500 SF tire shop, 3,000 SF restaurant with attached drive-thru, and a 4,300 SF car wash. The car wash building would be the southernmost building in the project, with cars entering the car wash tunnel to the south. Noise-producing equipment would be located internally within the enclosed car wash building.

The project would include a southern extension of the existing Sky Canyon Drive from its current terminus just north of the project. Sky Canyon Drive would connect to Willows Avenue at an existing turnout approximately 340 feet east of the intersection of Willows Avenue and Winchester Road. Access to the project would be provided by driveways onto nearby roadways, including one on Winchester Road, and three on Sky Canyon Drive.

According to the project's General Biological Resources Assessment (HELIX 2018), southern riparian forest habitat was observed south of the study area across Willows Avenue. Two least Bell's vireo (LBVI) pairs were observed during a focused survey, approximately 175 feet (on the property at the southeast corner of Willows Avenue and Winchester Road) and 400 feet (within Tocalota Creek) south of the project.

## TERMINOLOGY

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels of one hour are expressed by the symbol  $L_{EQ}$ , unless a different time period is specified.

## NOISE MODELING SOFTWARE

Modeling of the car wash operations was accomplished using Computer Aided Noise Abatement (CadnaA) version 2018. CadnaA is a model-based computer program developed by *DataKustik* for predicting noise impacts in a wide variety of conditions. CadnaA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project-related information, such as noise source data, barriers, structures, and topography to create a detailed model for the prediction of outdoor noise impacts.

## NOISE STANDARDS

### Biologically Sensitive Habitat

Some studies, such as that completed by the Bioacoustics Research Team (1997), have concluded that 60 dBA is a criterion to use as a starting point for passerine (perching birds) impacts until more specific research is done. Associated guidelines produced by the U.S. Fish and Wildlife Service (USFWS) require that project noise be limited to a level not to exceed 60 dBA  $L_{EQ}$  or, if the existing ambient noise level is above 60 dBA  $L_{EQ}$ , limit increases to the ambient noise level by 3 dBA  $L_{EQ}$  at the edge of occupied habitat during the avian species breeding season.

## EXISTING NOISE CONDITIONS

### Area Measurement

An ambient noise survey of the project site was conducted on February 1, 2018 for the project's Acoustical Analysis Report (HELIX 2019). One measurement (Site 1) was taken near the habitat, and it was noted that noise from Winchester Road was the dominant noise source. The measurement was taken east of the biologically sensitive habitat, at a farther distance from Winchester Road (see Figure 1, *Car Wash Noise Contours*, for location). The measurement site is located approximately 70 feet north of the centerline of Willows Avenue, 325 feet east of its intersection with Winchester Road. An ambient noise level of 60.7 dBA  $L_{EQ}$  was measured at this location.

### Traffic Noise

As noted above, the dominant noise source at the project site and the biologically sensitive habitat is traffic along Winchester Road. Noise levels at three locations (R1 through R3 as shown on Figure 1) within the biologically sensitive habitat were calculated based on modeling conducted for the project's Acoustical Analysis Report, which used the Traffic Noise Model (TNM) version 2.5 to calculate traffic noise levels (HELIX 2019). These noise levels are calculated based on the traffic volumes from the project's Traffic Impact Analysis (Linscott, Law & Greenspan 2018). Winchester Road generates 3,363 trips during the PM peak hour, and Willows Avenue generates 445 trips during the PM peak hour. Traffic

noise levels at each receiver are displayed in Table 1, *Biologically Sensitive Habitat – Existing Noise Levels*. The locations of these receivers are depicted in Figure 1.

**Table 1**  
**BIOLOGICALLY SENSITIVE HABITAT – EXISTING NOISE LEVELS**

Receiver <sup>1</sup>	Winchester Road Noise Levels	Willows Avenue Noise Levels	Combined Noise Levels
R1	66.3 dBA L <sub>EQ</sub>	59.9 dBA L <sub>EQ</sub>	67.2 dBA L <sub>EQ</sub>
R2	58.8 dBA L <sub>EQ</sub>	59.9 dBA L <sub>EQ</sub>	62.4 dBA L <sub>EQ</sub>
R3	57.7 dBA L <sub>EQ</sub>	59.9 dBA L <sub>EQ</sub>	61.9 dBA L <sub>EQ</sub>

<sup>1</sup>Receivers measured at a 5-foot height.

The ambient noise measurement and calculations based on modeling of existing traffic conditions indicates that noise levels at the biologically sensitive habitat are currently above the 60 dBA L<sub>EQ</sub> limit.

### CAR WASH NOISE ANALYSIS

Noise generated by the car wash is assumed to be from several internal sources. Noise produced by equipment within the car wash structure would be largely contained within the car wash tunnel. However, noise would emanate from the car wash entrance. To model this noise source, noise levels were measured at an existing car wash facility that includes similar equipment to what is proposed for the project to provide reference noise levels from interior noise-generating equipment. At a distance of 60 feet, noise levels during continuous operation of a car wash generate noise levels of approximately 68 dBA L<sub>EQ</sub><sup>1</sup>. For modeling purposes, all systems were analyzed assuming operational use for 30 minutes per given hour. Refer to Table 2, *Car Wash Entrance Noise Data*, and Attachment 1, *Car Wash Measurements*, for additional measurement information.

**Table 2**  
**CAR WASH ENTRANCE NOISE DATA**

Noise Level in Decibels <sup>1</sup> (dB) Measured at Octave Frequency									Overall dBA
31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
43.0	88.0	88.0	83.0	79.0	85.0	73.0	59.0	57.0	86.3

Hz = hertz, kHz = kilohertz

<sup>1</sup>Sound Power Level (S<sub>WL</sub>)

The loudest single source is the air-blast drying systems (blower) just inside the car wash exit. Exact specifications for the car wash blower system are not available at this point in project design. For the purposes of analysis, a Sonny's Enterprises 45-horsepower blower unit was assumed for the blower unit. The manufacturer's data sheet indicates that the blowers would generate noise levels of 75 dBA L<sub>EQ</sub> at a distance of 100 feet. The sheet is attached as Attachment 2, *Blower Assembly*, and the noise data is shown in Table 3, *Car Wash Blower Noise Data*. All systems were conservatively analyzed assuming

<sup>1</sup> This measurement was taken at a car wash facility located at 5261 Baltimore Drive in La Mesa, California on September 26, 2018. The car wash entrance measurement was measured over the course of approximately 15 minutes. The loudest portion of the car wash cycle was used for this measurement in which a direct line-of-sight was provided. Additional details can be found in Attachment 1.

operational use for 30 minutes per given hour. Although the blower would be the loudest single source of noise, the exit to the car wash tunnel would face north, away from the biologically sensitive habitat.

**Table 3**  
**CAR WASH BLOWER NOISE DATA**

Noise Level in Decibels <sup>1</sup> (dB) Measured at Octave Frequency									Overall dBA
31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
55.5	99.5	99.5	94.5	91.5	97.5	85.5	81.5	69.5	98.8

Hz = hertz, kHz = kilohertz

<sup>1</sup> Sound Power Level ( $S_{wL}$ )

Table 4, *Site Features Included in the Noise Model*, shows the proposed features at the project site that were included in the CadnaA noise model. These features would affect the emission, obstruction, and reflection of noise from the speaker. To isolate noise generation from the car wash, the model did not include existing traffic noise from vehicles along Willows Avenue, Winchester Road, or the future Sky Canyon Drive extension.

**Table 4**  
**SITE FEATURES INCLUDED**  
**IN THE NOISE MODEL**

Description	Height <sup>1</sup>
Proposed Car Wash Building	15 feet
Blower	8 feet
Car Wash Entrance	10 feet

<sup>1</sup> Heights are estimated from architectural plans and from typical heights of objects/buildings.

Noise levels at nine receivers in three locations within the biologically sensitive habitat were calculated in CadnaA using the data described above. Because the biologically sensitive habitat may contain nesting birds at varying heights in trees, each location was modeled at 5-foot, 10-foot, and 15-foot heights. Additionally, the 60 dBA  $L_{EQ}$  noise contours as measured at a 5-foot height were modeled. The noise levels for each receiver are depicted in Table 5, *Operational Noise Levels*. The project site plan is depicted on Figure 1, *Site Plan*. The location of the nine receivers and noise contours are depicted on Figure 2, *Car Wash Noise Contours* (see Attachment 3, *Figures*). At the nearby biologically sensitive habitat, noise levels from operation of the car wash would not exceed 45 dBA  $L_{EQ}$ . When added to the existing traffic noise levels calculated above, operation of the car wash would not be expected to increase noise any biologically sensitive habitat receiver by more than 0.1 dBA  $L_{EQ}$ <sup>2</sup>.

<sup>2</sup> Because decibels are logarithmic units of measurement, they cannot be added by standard arithmetic. A doubling of sound energy corresponds to a 3 dBA increase.

**Table 5**  
**OPERATIONAL NOISE LEVELS**

Receiver	Receiver Height	Car Wash Noise (dBA L <sub>EQ</sub> )
R1	5 feet	43.5
	10 feet	42.3
	15 feet	40.2
R2	5 feet	43.6
	10 feet	42.3
	15 feet	40.2
R3	5 feet	43.7
	10 feet	42.3
	15 feet	40.3

### Conclusions

Existing conditions at the biologically sensitive habitat are currently above 60 dBA L<sub>EQ</sub>. Operation of the project's car wash would generate noise levels below 45 dBA L<sub>EQ</sub>. When car wash noise is combined with existing noise levels, noise levels at the biologically sensitive habitat would not increase by more than 0.1 dBA L<sub>EQ</sub>, which would not exceed the 3 dBA L<sub>EQ</sub> threshold. Impacts to nearby biologically sensitive habitat from car wash noise would be less than significant.



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### Attachments:

Attachment 1: Car Wash Measurements

Attachment 2: Blower Assembly

Attachment 3: Figures

## REFERENCES

Bioacoustics Research Team. 1997. Environmental Effects of Transportation Noise, A Case Study: Noise Criteria for Protection of Endangered Passerine Birds. University of California, Davis, Transportation Noise Control Center Technical Report 97-001.

HELIX Environmental Planning (HELIX). 2019. Sky Canyon Retail Center Project Acoustical Analysis Report. June.

2018. Sky Canyon Retail Center Project General Biological Resources Assessment. August.

Linscott, Law, & Greenspan. 2018. Traffic Impact Analysis Report for the Sky Canyon Retail Center Project. October 16.