Appendix R-4

Alternative 5 Noise Analysis

MEMORANDUM

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DATE: August 24, 2023
TO: Timothy Reeves, Lewis Management Corp.
FROM: Bill Lawson, Urban Crossroads, Inc.
JOB NO: 14064-24 Alt5 Noise Memo

WEST CAMPUS UPPER PLATEAU ALTERNATIVE 5 NOISE ANALYSIS

Urban Crossroads, Inc. is pleased to provide the following West Campus Upper Plateau Alternative 5 (**Project**) Noise Analysis. The Project is located west of Cactus Avenue's current terminus, east and south of the Mission Grove neighborhood, and to the north of the Orangecrest neighborhood within the jurisdiction of the March Joint Powers Authority (**March JPA**).

The purpose of this evaluation is to assess the West Campus Upper Plateau Alternative 5 off-site traffic noise level impacts with the West Campus Upper Plateau Noise and Vibration Impact Analysis, October 12, 2022, prepared by Urban Crossroads, Inc., referred to hereafter as the (**2022 Noise Study**).

ALTERNATIVE 5

Specifically, Project Alternative 5 assumes the development of 374,398 square feet of commercial retail use (0.25 floor-to-area ratio or **FAR**) and 4,243,244 square feet of office park use (0.45 FAR). Warehouse uses would not be permitted under Project Alternative 5. The Project also includes 18.08-acre public park, 42.2-acre active park, and 445-acre Conservation Area. The public park, active park, and conservation area are consistent with the currently proposed Project. The land use plan for Project Alternative 5 is shown on Exhibit 1, where the red represents commercial retail uses and the blue identifies the office park uses. Access to the office park use will be accommodated via Cactus Avenue to the east, however, the commercial retail component will also accommodate access off of Barton Street as it will include neighborhood serving uses.

EXHIBIT 1: ALTERNATIVE 5 LAND USE PLAN

OFF-SITE TRAFFIC NOISE ANALYSIS

According to the West Campus Upper Plateau Alternative 5 Trip Generation Assessment prepared by Urban Crossroads, Inc. on May 8, 2023, Project Alternative 5 is anticipated to generate a total of 65,516 daily vehicles trips with 34 truck trips. The proposed Project evaluated in the 2022 Noise Study included 33,260 daily vehicle trips with 2,054 truck trips. Therefore, Project Alternative 5 represents a near doubling of the vehicle trips (+32,222) and a substantial reduction of truck trips (-2,020). The FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 1 presents a summary of the Project related off-site traffic noise level increases. As shown on Table 1, the unmitigated off-site traffic noise levels increase evaluated for the Project (2022 Noise Study) will range from 0.0 to 4.4 dBA CNEL. The off-site traffic noise level increases for Project Alternative 5 will range from 0.0 to 1.8 dBA CNEL. Table 1 shows that the off-site traffic noise level increases are reduced with Project Alternative 5 due to the reduction in the number of heavy trucks. Table 2 shows that Segment #13 (Cactus Avenue east of Meridian Parkway) will experience potentially significant off-site traffic noise level increases due to the proposed Project evaluated in the 2022 Noise Study. Based on the significance criteria for off-site traffic noise presented in the (2022 Noise Study), land uses adjacent to all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Project Alternative 5-related traffic. If you have any questions or comments, I can be reached at blawson@urbanxroads.com.

TABLE 1: OFF-SITE TRAFFIC NOISE LEVEL INCREASE SUMMARY

ID	Road	Segment	Receiving Land Use[1]	Incremental Noise Level Increase (dBA CNEL)[2]							
				Project				Project Alternative 5			
				E	EA	OYC	HY	E	EA	OYC	HY
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Barton St.	n/o Van Buren Blvd.	Sensitive	0.1	0.1	0.1	0.0	0.3	0.3	0.2	0.1
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	0.6	0.5	0.5	0.4	0.2	0.1	0.1	0.1
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	1.6	1.4	1.3	1.1	1.3	1.2	1.0	0.9
7	Day St.	n/o Alessandro Blvd.	Sensitive	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1
9	Alessandro Blvd.	w/o Barton St.	Sensitive	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.2
10	Alessandro Blvd.	e/o Barton St.	Sensitive	0.1	0.1	0.2	0.1	0.3	0.2	0.3	0.2
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	0.2	0.2	0.2	0.2	0.4	0.3	0.3	0.3
12	Alessandro Blvd.	w/o Day St.	Sensitive	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	4.4	4.0	4.0	3.4	1.8	1.6	1.6	1.3
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	0.2	0.2	0.1	0.1	0.4	0.3	0.3	0.2
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	0.5	0.4	0.2	0.2	0.1	0.1	0.0	0.1

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

TABLE 2: OFF-SITE TRAFFIC NOISE LEVEL INCREASE SUMMARY

ID	Road	Segment	Receiving Land Use[1]	Limit	Incremental Noise Level Increase Threshold Exceeded?[2]							
					Project				Project Alternative 5			
					E	EA	OYC	HY	E	EA	OYC	HY
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	1.5	No	No	No	No	No	No	No	No
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	1.5	No	No	No	No	No	No	No	No
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	1.5	No	No	No	No	No	No	No	No
4	Barton St.	n/o Van Buren Blvd.	Sensitive	1.5	No	No	No	No	No	No	No	No
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	3.0	No	No	No	No	No	No	No	No
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	3.0	No	No	No	No	No	No	No	No
7	Day St.	n/o Alessandro Blvd.	Sensitive	1.5	No	No	No	No	No	No	No	No
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	3.0	No	No	No	No	No	No	No	No
9	Alessandro Blvd.	w/o Barton St.	Sensitive	1.5	No	No	No	No	No	No	No	No
10	Alessandro Blvd.	e/o Barton St.	Sensitive	1.5	No	No	No	No	No	No	No	No
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	3.0	No	No	No	No	No	No	No	No
12	Alessandro Blvd.	w/o Day St.	Sensitive	1.5	No	No	No	No	No	No	No	No
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	3.0	**Yes**	**Yes**	**Yes**	**Yes**	No	No	No	No
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	3.0	No	No	No	No	No	No	No	No
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	1.5	No	No	No	No	No	No	No	No
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	1.5	No	No	No	No	No	No	No	No
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	1.5	No	No	No	No	No	No	No	No
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	1.5	No	No	No	No	No	No	No	No
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	3.0	No	No	No	No	No	No	No	No

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

ON-SITE NOISE ANALYSIS

As discussed in the Project Noise Study, the on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning, trash enclosure activity, and parking lot vehicle movements, truck movements, and park activities. The Reference Noise Level Measurements, Table 9-1 of the Project Noise Study presented below on Table 3 includes loading dock activities and truck movements represent the noisiest Project related operational activities.

TABLE 3: PROJECT REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source[1]	Noise Source Height (Feet)	Min./ Hour[2]		Reference Noise Level (dBA L_{eq}) @ 50 Feet	Sound Power Level (dBA)[3]
		Day	Night		
Loading Dock Activity	8'	60	60	65.7	111.5
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Trash Enclosure Activity	5'	10	10	57.3	89.0
Parking Lot Vehicle Movements	5'	60	60	56.1	87.8
Truck Movements	8'	-[4]	-[4]	59.8	93.2
Park Activities	5'	60'	0'	49.4	81.1

[1] As measured by Urban Crossroads, Inc.
[2] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.
[3] Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings.
[4] Truck Movements are calculated based on the number of events by time of day.

For Project Alternative 5, on-site related noise sources are expected to include similar types of noise source activities without the heavy truck movements associated with loading docks or truck movements needed to support the Project industrial/warehouse land uses. In addition, due to the commercial retail/office park use associated with Alternative 5, other noise sources activities may be included as part of the Alternative 5 land use. This could include noise source activities such as fast-food restaurant drive-through speakerphones and/or gas stations fueling. Table 4 presents a summary of the reference noise level measurements needed to assess the on-site Alternative 5 land uses. As shown on Table 4, none of the on-site Alternative 5 operational noise sources are as loud as loading dock activity and truck movements.

Alternative 5 will involve a similar amount of development as the Project but will not include noise from loading dock activity or truck movements. It is anticipated Project Alternative 5's on-site operational noise will be reduced as compared to the Project.

TABLE 4: ALTERNATIVE 5 REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source[1]	Noise Source Height (Feet)	Min./ Hour[2]		Reference Noise Level (dBA L_{eq}) @ 50 Feet	Sound Power Level (dBA)[3]
		Day	Night		
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Drive-Thru Activity	**3'**	**60**	**60**	**51.5**	**83.2**
Trash Enclosure Activity	5'	10	10	57.3	89.0
Gas Station Activity	**5'**	**60**	**60**	**48.2**	**79.9**
Park Activities	5'	60	0	49.4	81.1

[1] As measured by Urban Crossroads, Inc.
[2] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.
[3] Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings.