3.12 NOISE

This section assesses the potential for implementation of the Orchard Park Redevelopment site to result in impacts related to short-term construction, long-term operational noise sources, and the siting of new sensitive receptors at the project-specific level. This analysis addresses impacts at the project level that are not fully addressed in Section 3.12, "Noise," in Volume 1 of this EIR.

In response to the NOP, one comment was received regarding potential noise issues with respect to increases in student and faculty populations and the subsequent increase in noise levels. As this comment does not pertain specifically to implementation of the Orchard Park Redevelopment component of the 2018 LRDP, these impacts are addressed within programmatic context and as part of Section 3.12, "Noise," in Volume 1 of this EIR.

3.12.1 Regulatory Setting

Plans, policies, regulations, and laws applicable to the project are provided in Section 3.12, "Noise," in Volume 1 of this EIR. As the regulatory setting provided in Volume 1 considers potential development, including the Orchard Park Redevelopment component, within the entirety of the UC Davis campus as envisioned through the 2018 LRDP, no additional regulatory setting is provided for the project.

3.12.2 Environmental Setting

EXISTING NOISE SOURCES AND SENSITIVE LAND USES

Section 3.12, "Noise," in Volume 1 includes the regional environmental setting for the UC Davis campus. The Orchard Park site is located on the northern border of the UC Davis campus with Russell Boulevard directly north of the site and State Route (SR) 113 directly west of the site. Uses to the south include the Domes student housing facility, community garden space, and the Student Farm. Until recently, the Orchard Park site included a vacant 200-unit apartment complex, consisting of 22 two-story apartment buildings. In 2017, UC Davis evaluated demolition of the previous on-site structures as part of an Initial Study/Negative Declaration to ensure campus safety/security and then subsequently initiated demolition of the existing Orchard Park housing area in November 2017. As of the writing of this analysis, demolition of on-site structures is largely complete, and removal is expected to be complete in Spring 2018. For the purposes of this analysis, the site is considered undeveloped.

The noise environment at the Orchard Park site is primarily influenced by vehicle traffic on SR 113 to the west, Russell Boulevard to the north, and Orchard Park Drive directly to the east. Intermittent noise sources include aircraft take-offs and landings at the University Airport, which is located approximately 1.1 mile southwest of the site. The Orchard Park site is not located within existing noise contours for the University Airport, as shown in Section 3.12, "Noise" of Volume 1 of this EIR. Noise-sensitive land uses surrounding the site includes the Russell Court Apartments student housing complex approximately 60 feet to the east of the Orchard Park site, the Domes apartments to the south, and medium-density apartments located approximately 200 feet to the north, across Russell Boulevard and within the City of Davis.

As described in detail in Section 3.12, "Noise," of Volume 1, one long-term measurement (LT-2) was conducted in November 2016. The location of the noise measurement is approximately 630 feet west of the Orchard Park site, directly west of SR 113 and south of Russell Boulevard. The noise measurement location is shown in Exhibit 3.12-1 in Volume 1 of this EIR. As summarized in Table 3.12-11 in Volume 1, existing noise levels at this location were measured to be 63.4 A-weighted decibels (dBA) community noise level (CNEL). Noise levels on the opposite side of SR 113, closest to the site, would be expected to be comparable because the noise measurement includes traffic-noise on SR 113 as the dominant noise source. Considering that traffic volumes from both roadway directions were captured in the noise measurement, noise levels on both sides of SR 113 are anticipated to be similar. Thus, this measurement serves as a reference for ambient noise levels in the proximity of the Orchard Park site under existing conditions.

3.12.3 Environmental Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Refer to Section 3.12, "Noise," in Volume 1 of this EIR for a discussion of applicable Significance Criteria.

ANALYSIS METHODOLOGY

Refer to Section 3.12, "Noise," in Volume 1 of this EIR for analytical background relative to noise. Overall noise impacts associated with the implementation of the 2018 LRDP are evaluated at the programmatic level in Volume 1. Technical noise modeling and propagation calculation methods used in this analysis are the same as those described in Volume 1.

This analysis focuses specifically on the noise related impacts associated with implementation of the Orchard Park Redevelopment component. The analysis focused on potential noise impacts of short-term construction activities and long-term operational activities associated with implementation of the Orchard Park Redevelopment component as well as the potential impacts from existing noise on the siting of new noise sensitive land uses that would result from implementation of the Orchard Park Redevelopment component. Results of the analysis were compared to the significance criteria established in Table 3.12-13 in Volume 1 of this EIR.

ISSUES NOT EVALUATED FURTHER

The following impacts were identified as part of the analysis of the 2018 LRDP and are either (1) adequately evaluated at the program level of analysis of the 2018 LRDP, or (2) not applicable to the Orchard Park Redevelopment component.

Increases in Vibration Levels

As discussed in Section 3.12, "Noise," in Volume 1 of this EIR, construction activities that might expose persons to excessive groundborne vibration or groundborne noise could cause a potentially significant impact. This component is anticipated to involve construction activities using conventional construction techniques and equipment (i.e., non-impact equipment) and would not generate substantial levels of vibration or groundborne noise. Pile driving, blasting, or other substantial vibration-inducing construction equipment or techniques are not anticipated to be used for construction of the types of facilities identified under the 2018 LRDP, thus excessive ground vibration and ground-borne noise during construction would not occur. Further, the land use associated with the Orchard Park Redevelopment component is residential and would not result in

new or unique vibration levels that could be considered excessive during operation. Therefore, construction and operation of the Orchard Park Redevelopment component would not result in excessive vibration levels, and no additional project-level analysis is necessary.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: Construction noise.

Implementation of the Orchard Park Redevelopment component would result in construction-related noise impacts associated with the use of heavy-duty construction equipment. Based on construction noise modeling conducted, noise levels would not exceed applicable noise limits, including those established by the City of Davis for off-site receptors. However, if construction were to occur during the more sensitive nighttime hours, nearby receptors could be exposed to disruptive noise levels. This impact would be **significant.**

As discussed in detail in Chapter 2, "Project Description," the Orchard Park component would consist of 200 student housing units (apartments) and up to 1,200 additional beds for graduate students, transfer, and undergraduate students. Construction of the Orchard Park Redevelopment component would occur over 24 months beginning as early as August 2018.

Implementation of the Orchard Park Redevelopment component would include various phases of construction activity resulting in short-term noise sources associated with the use of heavy-duty construction equipment. It is assumed that construction activity would include the typical phases involved in the development of mid-rise apartment buildings. Noise modeling was conducted for this component of the 2018 LRDP using heavy-duty construction typical of the loudest construction phase (i.e., site preparation, grading). Equipment modeled for noise impacts included an excavator, a dozer, a dump truck, a front-end loader, and a grader. Modeling results demonstrate that noise levels during the loudest phase of construction could approach 86 dBA maximum noise level (L_{max}) at the nearest on-site noise sensitive land use (i.e. Russell Court Apartments) depending on the number of pieces of equipment operating less than 100 feet from the existing housing units. Residential units located across Russell Boulevard, within the City of Davis, could be exposed to noise levels of 81.6 dBA L_{max} at 150 feet from proposed construction.

Daytime construction activity would not exceed applicable standards of 86 dBA L_{max} at the nearest sensitive receptors located off-site within the City of Davis. However, specific construction schedule and timing is unknown. If construction were to occur during the nighttime hours such that nearby on-campus receptors could experience sleep disturbance or if multiple pieces of equipment were operating simultaneously at the southern boundary of the Orchard Park site, construction could result in elevated noise levels at adjacent on-campus housing. This impact would be **significant.**

OPR Mitigation Measure 3.12-1: Reduce construction noise.

Implement 2018 LRDP Mitigation Measure 3.12-1.

Significance after Mitigation

Implementation of OPR Mitigation Measure 3.12-1 would reduce temporary noise levels at existing on-campus receptors and ensure that construction activities are limited to the less-sensitive, daytime hours when people are typically not sleeping. As a result, this impact would be reduced to a **less-than-significant** level.

Impact 3.12-2: Increase in non-transportation noise sources.

Implementation of the Orchard Park Redevelopment component would result in the development of apartment buildings that would include new stationary sources such as heating ventilation and air condition units (HVAC) equipment and emergency backup generators. Because locations of new noise sources are unknown and could expose existing or new receptors to excessive noise levels, this impact would be **significant.**

As discussed in detail in Chapter 2, "Project Description," the Orchard Park Redevelopment component would consist of 200 student housing units (apartments) and up to 1,200 additional beds for graduate students, transfer, and undergraduate students. Stationary equipment included in the design of the new apartment buildings could include mechanical HVAC equipment and emergency electrical generators. Impact 3.12-2 in Section 3.12, "Noise" in Volume 1 evaluated noise from these types of sources. Because site plans have not been finalized and specific location of mechanical equipment in proximity to dwelling units is unknown, it is possible that new and existing adjacent receptors could be exposed to excessive noise levels from these new sources.

Other potential long-term operational noise sources associated with implementation of the Orchard Park Redevelopment component would include operation of landscaping equipment as part of site maintenance as well as noise associated with the parking lots (e.g. car engines running/idling, doors slamming, car alarms going off, cars honking). These noise sources could be noticeable, but noise level increases would be temporary and intermittent in nature and are not anticipated to generate excessive noise that exceeds applicable standards.

The Orchard Park Redevelopment component would result in new stationary sources that could expose existing or future receptors to excessive noise levels depending on final building design and location. Because locations of new noise sources are unknown and could expose existing or new receptors to disturbing noise levels, this impact would be **significant.**

OPR Mitigation Measure 3.12-2: Reduce noise exposure from new stationary noise sources.

Implement 2018 LRDP Mitigation Measure 3.12-2.

Significance after Mitigation

Implementation of OPR Mitigation Measure 3.12-2 would require that all stationary noise sources are oriented, located, and designed in such a way that reduces noise exposure to ensure that stationary noise sources would comply with acceptable noise standards for sensitive receptors, reducing this impact to a **less-than-significant** level.

Impact 3.12-3: Exposure of sensitive receptors to existing noise levels.

Implementation of the Orchard Park Redevelopment component would include new sensitive receptors, but the Orchard Park Redevelopment component is located well beyond distances that could result in excessive noise levels from the UC Davis Airport, the UC Davis Aggie Stadium, and the nearby Union Pacific Railroad. This impact would be **less than significant.**

Implementation of the Orchard Park Redevelopment component would result in the siting of a noise sensitive land use (i.e. residential) in a location that could potentially expose new sensitive receptors to existing noise sources surrounding the site. Of the unique noise sources identified in Section 3.12, "Noise" of Volume 1 of this EIR, only Aggie Stadium, the UC Davis campus' multi-purpose stadium, is located in relative proximity to the site (2,280 feet to the south) and evaluated for potential land use compatibility issues. Major noise sources associated with the stadium are crowd noise, the public-address system, and musical concert events. Implementation of the 2018 LRDP is not anticipated to increase the frequency of events occurring at Aggie Stadium. To present a conservative analysis, noise analysis regarding stadium activity was conducted for the Sacramento Railyards Specific Plan Update within the City of Sacramento is used as a proxy. Noise generated at Aggie Stadium would be less because of the location of stadium seating below ground-level, which would provide a topographical noise attenuating feature (i.e., similar to a noise wall). As part of this analysis, reference noise measurements were conducted at a soccer match at Bonney Field in Sacramento, California in 2015. Noise levels during this event were measured at 72.3 dBA L_{eq} at a distance of 272 feet (City of Sacramento 2016). Based on these measurements and the relative location of the site to the stadium (i.e., 2,280 feet), noise levels at the new sensitive receptors would attenuate to 53.8 dBA L_{eq}. This noise level would be below the significance thresholds for stadium noise sources established in Table 3.12-13 in Volume 1 (i.e., 63.3 dBA L_{eq} and 70 dBA CNEL).

Therefore, new receptors associated with the Orchard Park Redevelopment component would not be located in close proximity to existing noise sources (e.g., Aggie stadium), and thus would not be exposed to excessive noise levels from these sources. Impacts would be **less than significant.**

Mitigation Measures

No mitigation measures are necessary.

Impact 3.12-4: Exposure of new and existing sensitive receptors to operational project-generated traffic noise.

Implementation of the 2018 LRDP would result in new vehicle trips generated from increases in the student, faculty, and staff population on the UC Davis campus. As a result of these new trips, traffic-related noise levels would increase along roadways near the Orchard Park site, specifically along Russell Boulevard directly north of the site. Based on traffic noise modeling conducted for the 2018 LRDP, traffic-related noise increases would remain below established roadway noise thresholds. This impact would be **less than significant.**

Implementation of the Orchard Park Redevelopment component would increase on-site student housing, consistent with the 2018 LRDP. As noted in Volume 1, increases in the UC Davis campus population would result in the generation of new vehicle trips associated with commutes to and from the UC Davis campus as well as non-commute trips associated with an increase in the on-campus student population. A portion of the additional vehicle trips would occur on roadways adjacent to the Orchard Park site and could result in increases in traffic-related noise perceivable by residents at the Orchard Park site.

With respect to the Orchard Park Redevelopment component, Russell Boulevard between SR 113 and La Rue Road was identified as the primary roadway segment that could have a potential noise impact on new or existing sensitive receptors. Under current conditions, this roadway segment experiences 18,630 daily vehicle trips and a resultant noise level of 64.3 dBA CNEL. With

implementation of the 2018 LRDP, this roadway segment would experience an increase of 4,000 daily trips, including vehicle trips associated with the Orchard Park Redevelopment component, resulting in average daily volumes of 22,660 and a noise level of 65.2 dBA CNEL. Based on modeling conducted for the 2018 LRDP (refer to Table 3.12-15 in Section 3.12, "Noise"), this would result in a projected increase of less than 1 dBA along this roadway segment, which would not be considered substantial or audible. Existing and future projected noise levels currently exceed City of Davis normally acceptable levels of 60 dBA CNEL, but would not result in an audible increase in noise.

Based on noise modeling of future roadway conditions conducted for the 2018 LRDP, of which the Orchard Park Redevelopment component is a part, traffic-related noise would increase under future year conditions. However, projected increases along roadways near the Orchard Park site, which would reasonably be anticipated to experience increased roadway volumes associated with redevelopment of the Orchard Park site, would remain below the established significance threshold (i.e., 5 dBA). As a result, no significant impact on the new sensitive receptors to be located on the Orchard Park site or adjacent existing sensitive receptors would occur. This impact would be **less than significant.**

Mitigation Measures

No mitigation measures are necessary.