# Memo

455 Capitol Mall, Suite 300
Sacramento, CA 95814
916.444.7301

Date: August 28, 2024

To: Sean Whelan

From: Dimitri Antoniou (Ascent)

Subject: Noise Compatibility Assessment for the 10002-10090 Jibboom Street Project

# 1 INTRODUCTION AND PROJECT DESCRIPTION

The applicant proposes to construct four mixed-used buildings containing ground-floor commercial uses and residential uses on the upper floors on a 1.67-acre parcel located at 10002-10090 Jibboom Street in The Town of Truckee (Town). The project is seeking an exemption from the California Environmental Quality Act (CEQA); however, approval of development projects, including noise-sensitive uses, is still required to comply with the adopted Truckee Development Code and policies in the Town of Truckee 2040 General Plan pertaining to noise. This memorandum provides a description of existing noise conditions and applicable noise codes, objective standards of analysis, and a qualitative noise compatibility assessment.

## 1.1 EXISTING CONDITIONS AND REGULATORY CONTEXT

### Existing Noise Sources

The project site is located at 10002 – 10090 Jibboom Street in Truckee, CA. Major noise sources in the project vicinity include vehicular traffic noise associated with Interstate 80, located approximately 525 feet north of the project site, and trains passing by (passenger and freight) associated with the nearby rail line, located approximately 400 feet south of the project site. The Truckee Tahoe Airport is located approximately 9,114 feet (1.78 miles) southeast of the project site (measured from the property boundary to the nearest runway). Based on Exhibit 3-4 of the Truckee Tahoe Airport Land Use Compatibility Plan (Truckee Tahoe ALUCP), the project site is located within the Airport Influence Area (AIA) and the Truckee Railyard Redevelopment Area but not within the mapped noise contours for the airport (TTALUC 2016). An existing 24-hour noise` measurement was taken at the corner of Jibboom Street and Spring Street (Town of Truckee 2022). This location is in between the railroad track to the south and Interstate 80 to the north adjacent to the project site; thus, captures noise levels from the primary noise sources in the project vicinity. Noise levels were measured to be 63.5 dBA CNEL. The project site and noise measurement location is shown below in Figure 1.


Source:

Figure 1 Existing Noise Measurement Location and Proposed Project Site

# Regulatory Context

Noise is generally regulated at the local level through General Plan policies and adopted municipal code ordinances. In addition, for areas located near an airport, the applicable airport land use compatibility plan (ALCUP) would apply. Applicable adopted noise ordinances and ALUCP requirements are summarized below.

## TOWN OF TRUCKEE 2040 GENERAL PLAN

Chapter 8 Safety and Noise Element of the 2040 General Plan contains the following noise policies applicable to the project,

### SN-8.1 Noise Compatibility Standards

Require new development to ensure the noise compatibility standards shown in Table SN-1 are met, using existing noise data (e.g., roadway noise contour map, available documentation) or a project-specific noise analysis/acoustical study. Require all feasible noise reduction measured identified in the study to be incorporated into the project.

### SN-8.3 Location of Noise-Sensitive Receptors

Discourage location of noise-sensitive uses (such as senior living, hospital, churches, daycare centers, residences) in locations with noise exposure exceeded "normally acceptable" levels. If relocation is infeasible, require all feasible noise reduction measures identified by a noise analysis/acoustical study.

### SN-8.5 Insultation Standards for Interior Noise

Enforce the California Title 24 Noise Insulation Standards for interior noise levels attributable to exterior sources for all new residential uses to ensure interior noise levels for residential uses do not exceed a community noise equivalent level of 45 decibels.

### SN 8.16 Airport Land Use Compatibility

When considering new development proposals in the vicinity of Truckee Tahoe Airport, enforce the noise compatibility criteria and policies set forth in the adopted Tahoe Airport Land Use Compatibility Plan.

### SN-8.19 Additional Construction Noise Control Measures

Require the following additional construction noise control measures at construction sites where construction activity excluding single-family construction, would take place outside of the timeframes exempt from the noise standards established in the Town Development Code and is anticipated to generate exterior noise levels at sensitive receptors that exceed the applicably nighttime noise standards of 50 $L_{eq}$ or 70 $L_{max}$.

- Temporary noise barriers, such as curtains, piled snow, or hay bales
- Noise-reducing enclosures and techniques around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors) to break the line of sight between the noise source and receiver
- Operation of heavy-duty construction equipment at the lowest operating power possible.

## TOWN OF TRUCKEE DEVELOPMENT CODE

The proposed project is subject to the Town of Truckee Development Code, Section 18.44.050 Residential Interior Noise standards, which are summarized below.

### Chapter 18.44.050 – Residential Interior Noise Standards

Single-family and multi-family residential development shall be designed and constructed to comply with the interior noise standards of this Section.

A. Interior noise standard. Whenever a new single-family or multi-family dwelling unit is proposed on a parcel where the existing ambient noise level may exceed 60 dB(A) CNEL, the land use permit application shall include an acoustical analysis showing the swelling unit has been designed to limit intruding noise to an interior CNEL of 45 dB, in compliance with California Code of Regulations Title 24, Part 2.

B. Residential development affected by aircraft noise. Land use permit applications for residential structures proposed within the Airport 55 dB CNEL contour shall comply with the provisions of Section 19.64.060 (Airport Noise Zones).

C. Noise mitigation measures. Whenever interior noise levels may exceed 45 dB CNEL, residential developments shall incorporate the following noise mitigation measures, where appropriate:

1. Increase the distance between the noise source and the receiver;
2. Locate bedrooms on the side of the structure away from major public rights-of-way; and/or
3. Locate land uses not sensitive to noise (e.g., garages, maintenance facilities, parking lots, utility areas, etc.) between the noise source and the receiver.

D. Noise barrier standards. The minimum acceptable surface weight for a noise barrier is four pounds per square foot (equivalent to three-fourths inch plywood). Noise barriers shall interrupt the line-of-sight between the noise source and the receiver. The barrier shall be of continuous material which is resistant to sound and may include the following:

1. Earth berm; or
2. Split-faced masonry block; or
3. Precast or board-form concrete.

## TRUCKEE TAHOE AIRPORT LAND USE COMPATIBILITY PLAN

Section 5.1.4. ***Maximum Acceptable Interior Noise Levels:*** Land uses for which interior activities may be easily disrupted by noise shall be required to comply with the following interior noise level criteria.

(a) The maximum, aircraft-related, interior noise level that shall be considered acceptable for land uses near Truckee Tahoe Airport is 45 dB CNEL in:

(1) Any habitable room of single- or multi-family residences;

(2) Long-term lodging;

(3) Family day care homes (≤14 children);

(4) Hotels and motels;

(5) Hospitals and nursing homes or other congregate care facilities;

(6) Churches, meeting halls, office buildings, and mortuaries; and

(7) Schools, libraries, and museums.

(b) The noise contours depicted in Exhibit 3-4 in Chapter 3 of this Compatibility Plan shall be used in calculating compliance with these criteria. The calculations should assume that windows are closed.

(C) When reviewed as part of the general plan or zoning ordinance amendment or as a major land use action, evidence that proposed structures will be designed to comply with the above criteria shall be submitted to TTALUC under the following circumstances:

(1) Any mobile home situated within the Airport's 55-dB CNEL Contour

[A typical mobile home has an exterior-to-interior noise level reduction (NLR) of approximately 15 dB with windows closed.

(2) Any single-or-multi-family residence situated within the Airport's 60-dB CNEL Contour.

[Wood frame buildings constructed to meet 1990s standards for energy efficiency typically have an NLR of approximately 20 dB with windows closed.]

# 2 OBJECTIVE STANDARDS OF ANALYSIS

## Noise Compatibility Standards

New single-family and multi-family residential projects are subject to exterior and interior noise level standards to limit noise exposure to acceptable levels for these land uses. Based on Section 18.44.050 of the Town of Truckee's Development Code, noise exposure at the proposed residential land uses would be considered adverse and excessive if the following were to occur:

- Exposure of new residential land uses to Interior noise levels that exceed 45 dBA CNEL
- Conflict with the applicable Truckee Tahoe ALUCP Noise Policies (Section 5.1.4).

# 3 NOISE COMPATIBILITY ASSESSMENT

## Development Code

Based on the measurement conducted, the proposed project site's ambient noise levels are 63.5 dBA CNEL. In accordance with Truckee Development Code Section 18.44.050, new residential development in areas where existing noise exceeds 60 dBA CNEL must be evaluated for compliance with interior noise standards of 45 dBA CNEL.

All structures provide some level of noise level reduction (NLR). Variables that influence the ultimate NLR include materials used for building frame and exterior (e.g., wood, concrete, metal), type of insulation, size/location/type of windows, and the overall integrity and quality of the construction. Structures that have failing weather sealing, windows, or insulation can result in lower NLR, and construction that uses higher-density material (e.g., concrete) or sound-rated windows can achieve higher NLR. In general, the windows and building openings (e.g., vents, cracks, failing sealants) are the areas that tend to be the weakest in terms of NLR.

In accordance with the guidance in the Truckee Tahoe ALCUP (see Section 5.1.4 (c)), "wood frame buildings constructed to meet 1990s standards for energy efficiency typically have an NLR of approximately 20 dB with windows closed." It is common practice in environmental acoustics to consider the complete and closed structure for determining exterior-to-interior noise levels as an individual project has no control over the individual actions of users. This methodology is also consistent with how the Town of Truckee measures interior noise (TTALUC 2016).

Further, the current California Building Code (2022 California Building Code Appendix Ak) establishes a sound transmission class (STC) rating of 45 for wall and floor-ceiling assemblies. An STC rating is a rating system for individual building components and assembled structures that is used to measure how much sound would be blocked by the component being measured. As such, a window with an STC rating of 30, for example, could reduce a noise source of 70 dBA to 40 dBA on the receiving side of the noise source. It should be noted, however, that generally, STC ratings provided by manufacturers can vary depending on site-specific conditions (e.g., installation methods, construction quality) and due to the various materials that block the sound of different frequencies differently. The building code requires individual wall and floor-ceiling assemblies to achieve an STC rating of 45; thus, it can be determined that the proposed project would achieve anywhere from a 20 to a 45 dBA NLR. Considering that existing noise levels at the project site are 63.5 dBA CNEL, the interior noise levels within the project site would be reduced to at least 43.5 dBA CNEL but likely would be reduced beyond this level due to increased energy efficiency requirements of the current California Building Code.

# Tahoe Truckee Airport

Regarding airport compatibility, the project site is located within the AIA of the Tahoe Truckee Airport; however, it is not located within any of the mapped noise contours (i.e., 60 dBA, 65 dBA, or 70 dBA), per Exhibit 3-4 of the Truckee Tahoe ALUCP (TTALUC 2016). The project is not subject to any special requirements per the Tahoe Truckee ALCUP.

# Town of Truckee 2040 General Plan

The following table includes a consistency analysis with applicable general plan noise polices.

**Table 1: Town of Truckee 2040 General Plan Consistency Analysis**

| Town of Truckee 2040 General Plan Policy | Project Consistency Analysis |
|---|---|
| SN-8.1 Noise Compatibility Standards<br><br>Require new development to ensure the noise compatibility standards shown in Table SN-1 are met, using existing noise data (e.g., roadway noise contour map, available documentation) or a project-specific noise analysis/acoustical study. Require all feasible noise reduction measured identified in the study to be incorporated into the project | Table SN-1: Land Use Compatibility Standards for Community Noise Environment establishes an exterior noise level of up to 65 dBA CNEL as "normally acceptable" between 65 dBA CNEL and 70 dBA as "conditionally acceptable" for multi-family projects. As discussed above1, existing noise levels near the project site are 63.5 dBA CNEL; thus, the project would be within the "normally acceptable" range. The project would be consistent. |
| SN-8.3 Location of Noise-Sensitive Receptors<br><br>Discourage location of noise-sensitive uses (such as senior living, hospital, churches, daycare centers, residences) in locations with noise exposure exceeded "normally acceptable" levels. If relocation is infeasible, require all feasible noise reduction measures identified by a noise analysis/acoustical study. | The project would be within the "normally acceptable" range of noise levels. See discussion above. The project would be consistent. |
| SN-8.5 Insultation Standards for Interior Noise<br><br>Enforce the California Title 24 Noise Insulation Standards for interior noise levels attributable to exterior sources for all new residential uses to ensure interior noise levels for residential uses do not exceed a community noise equivalent level of 45 decibels. | As discussed above under the "Development Code" analysis, interior noise levels would adhere to California Title 24 Noise Insulation Standards. The project would be consistent. |
| SN 8.16 Airport Land Use Compatibility<br><br>When considering new development proposals in the vicinity of Truckee Tahoe Airport, enforce the noise compatibility criteria and policies set forth in the adopted Tahoe Airport Land Use Compatibility Plan. | As discussed above under the "Tahoe Truckee Airport" analysis, interior noise levels would not conflict with airport land use compatibility requirements. The project would be consistent. |
| SN-8.19 Additional Construction Noise Control Measures<br><br>Require the following additional construction noise control measures at construction sites where construction activity excluding single-family construction, would take place outside of the | The project would not involve construction activities outside of the exempted daytime hours; thus, the additional measures in this policy would not apply to the project. The project is consistent. |

| | |
|---|---|
| timeframes exempt from the noise standards established in the Town Development Code and is anticipated to generate exterior noise levels at sensitive receptors that exceed the applicably nighttime noise standards of 50 $L_{eq}$ or 70 $L_{max}$.<br>▶ Temporary noise barriers, such as curtains, piled snow, or hay bales<br>▶ Noise-reducing enclosures and techniques around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors) to break the line of sight between the noise source and receiver<br>▶ Operation of heavy-duty construction equipment at the lowest operating power possible. | |

Source: Town of Truckee 2023.

# 4 CONCLUSION

Existing noise levels at the project site were measured to be 63.5 dBA CNEL, requiring further assessment to determine interior noise level exposure at the proposed residential project. Applying standard NLR rates per the Tahoe Truckee ALUCP of 20 dBA CNEL, interior noise levels at the new residential land uses would not exceed the interior noise limit of 45 dBA CNEL (i.e., 63.5 dBA – 20 dBA = 43.5 dBA). In addition, the project site is located outside of the mapped noise contours in the Tahoe Truckee ALUCP and, therefore, is not subject to any special provisions relating to noise. Further, the project would be consistent with all applicable noise policies contained in the Town of Truckee 2040 General Plan. The project site would not be susceptible to excessive or adverse noise levels.

# 5 REFERENCES

ICC. *See* International Code Council.

International Code Council. 2022 California Residential Code, Title 24, Part 2.5. Appendix AK Sound Transmission. Avalable: https://codes.iccsafe.org/content/CARC2022P1/appendix-ak-sound-transmission. Accessed August 2024

Tahoe Truckee Airport Land Use Commission. 2016. Truckee Tahoe Airport Land Use Compatibility Plan. Prepared by Mead & Hunt.

Town of Truckee. 2022. Town of Truckee 2040 General Plan Update and Downtown Truckee Plan Project Draft Environmental Impact Report. Prepared by Ascent. Prepared for the Town of Truckee. Available here: https://www.truckee2040.com/documents. Accessed August 2024

Town of Truckee. 2023. Town of Truckee 2040 General Plan. Available: https://www.townoftruckee.gov/307/2040-General-Plan. Accessed August 2024.

TTALUC. *See* Truckee Airport Land Use Commission.