ATTACHMENT A

CEQA CHECKLIST RESPONSES- NOISE
CEQA CHECKLIST RESPONSES - NOISE

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less-Than-Significant Impact)

A project will normally have a significant effect on the environment related to noise if it would substantially increase the ambient noise levels for adjoining areas or conflict with the adopted environmental plans and goals of the community in which it is located. Noise impacts can be described in three categories. The first is audible impacts that increase noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 decibels (dB) or greater since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, is the change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant. For the purpose of this analysis, the proposed Project creates a significant noise impact if the Project-related noise increase at an existing sensitive receptor is greater than 3 dB and the resulting noise level is greater than the standards cited below or if the Project-related increase in noise is greater than 5 A-weighted decibels (dBA), yet the resulting noise levels are within the applicable land use compatibility standards for the sensitive use.

Certain land uses are considered more sensitive to noise than others. Examples of these includeresidential areas, educational facilities, hospitals, childcare facilities, and senior housing. The proposed Project is located in an urban area within the City and is surrounded by a mix of uses, including residential and commercial uses. The closest sensitive receptors are residential uses located immediately adjacent to the Project site.

The primary existing noise sources contributing to ambient noise in the Project area are traffic associated with University Avenue and other noise from motor vehicles generated by engine vibrations, the interaction between the tires and the road, and vehicle exhaust systems.

The adopted City of Berkeley General Plan addresses noise in the Environmental Management Element. The Environmental Management Element provides policies and actions to protect the community from excessive noise levels. The General Plan also includes a map of the existing noise levels throughout the City. According to the General Plan, the Project site is exposed to noise levels reaching 75 dBA L_{dn}. The Environmental Management Element also sets noise and land use compatibility guidelines, as shown in Table 1 below.

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Exterior Noise Exposure (L_{dn})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential, Hotels, and Motels</td>
<td>• 55 • 60 • 65 • 70 • 75 • 80</td>
</tr>
<tr>
<td>Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds</td>
<td></td>
</tr>
<tr>
<td>Schools, Libraries, Museums,</td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Exterior and Interior Noise Limits

<table>
<thead>
<tr>
<th>Zoning District</th>
<th>Time Period</th>
<th>Hourly Noise Level (dBA $L_{eq}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior Noise Limits</td>
<td>7:00 a.m. – 10:00 p.m.</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>10:00 p.m. – 7:00 a.m.</td>
<td>45</td>
</tr>
</tbody>
</table>
The following exterior noise standards are outlined in Section 13.40.050 of the BMC:

A. Maximum permissible sound levels shall be determined by the zoning district of the property subject to the noise, not the property from which the noise originates.
   1) The noise standards for the various categories of land use in Table 2 shall, unless otherwise specifically indicated in other codes, apply to all such property within a designated zone.
   2) No person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the sound level when measured on any other property to exceed:
      a. The noise standard for that land use as specified in Table 2 for a cumulative period of more than 30 minutes in any hour; or
      b. The noise standard for that land use as specified in Table 2 plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or
      c. The noise standard for that land use as specified in Table 2 plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or
      d. The noise standard for that land use as specified in Table 2 plus 15 dBA for a cumulative period of more than 1 minute in any hour; or
      e. The noise standard for that land use as specified in Table 2 plus 20 dBA for any period of time.

The following interior noise standards are outlined in Section 13.40.060 of the BMC:

3) No person shall operate or cause to be operated within a multi-family dwelling unit any source of sound or allow the creation of any noise which causes the sound level when measured inside a neighboring dwelling unit to exceed:
   a. The noise standard as specified in Table 2 for a cumulative period of more than 5 minutes in any hour; or
   b. The noise standard as specified in Table 2 plus 5 dBA for a cumulative period of more than one minute in any hour; or
   c. The noise standard as specified in Table 2 plus 10 dBA for any period of time.

Section 13.40.070 of the BMC restricts construction activities to weekdays between the hours of 7:00 a.m. and 7:00 p.m. and on weekends and holidays, between 9:00 a.m. and 8:00 p.m., except for emergency work. Construction activities are divided into two categories: mobile equipment and stationary equipment. Mobile equipment, as defined by the Section 13.40.070, would be sound levels for nonscheduled, intermittent, short-term operation of less than 10 days of jackhammers, drills, saws, sander grinder, etc. Stationary equipment, according to the Section 13.40.070, would be repetitively scheduled and relatively long term operation for longer than 10 days of stationary equipment. For purposes of the
proposed Project’s construction schedule, the construction impacts would be considered stationary equipment such that construction would last longer than 10 days. Where technically and economically feasible, construction activities shall be conducted in such a manner that maximum sound levels at affected properties will not exceed those listed in Table 3 below.

### Table 3: Maximum Stationary Equipment Construction Noise Levels (dBA)

<table>
<thead>
<tr>
<th>Construction Periods</th>
<th>R-1, R-2 Residential</th>
<th>R-3 and above Multi-Family Residential</th>
<th>Commercial/Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekdays 7:00 a.m. to 7:00 p.m.</td>
<td>60</td>
<td>65</td>
<td>70</td>
</tr>
<tr>
<td>Weekends 9:00 a.m. to 8:00 p.m. and legal holidays</td>
<td>50</td>
<td>55</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: Identified maximum noise levels are required where technically and economically feasible.


### Short-Term (Construction) Noise Impacts

Short-term noise impacts would occur during demolition, grading and site preparation activities. Table 4 lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the Project area but would no longer occur once construction of the Project is completed.

### Table 4: Typical Construction Equipment Maximum Noise Levels, Lmax

<table>
<thead>
<tr>
<th>Type of Equipment</th>
<th>Range of Maximum Sound Levels (dBA at 50 feet)</th>
<th>Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pile Drivers</td>
<td>81 to 96</td>
<td>93</td>
</tr>
<tr>
<td>Rock Drills</td>
<td>83 to 99</td>
<td>96</td>
</tr>
<tr>
<td>Jackhammers</td>
<td>75 to 85</td>
<td>82</td>
</tr>
<tr>
<td>Pneumatic Tools</td>
<td>78 to 88</td>
<td>85</td>
</tr>
<tr>
<td>Pumps</td>
<td>74 to 84</td>
<td>80</td>
</tr>
<tr>
<td>Scrapers</td>
<td>83 to 91</td>
<td>87</td>
</tr>
<tr>
<td>Haul Trucks</td>
<td>83 to 94</td>
<td>88</td>
</tr>
<tr>
<td>Cranes</td>
<td>79 to 86</td>
<td>82</td>
</tr>
<tr>
<td>Portable Generators</td>
<td>71 to 87</td>
<td>80</td>
</tr>
<tr>
<td>Rollers</td>
<td>75 to 82</td>
<td>80</td>
</tr>
<tr>
<td>Dozers</td>
<td>77 to 90</td>
<td>85</td>
</tr>
<tr>
<td>Tractors</td>
<td>77 to 82</td>
<td>80</td>
</tr>
<tr>
<td>Front-End Loaders</td>
<td>77 to 90</td>
<td>86</td>
</tr>
<tr>
<td>Hydraulic Backhoe</td>
<td>81 to 90</td>
<td>86</td>
</tr>
<tr>
<td>Hydraulic Excavators</td>
<td>81 to 90</td>
<td>86</td>
</tr>
<tr>
<td>Graders</td>
<td>79 to 89</td>
<td>86</td>
</tr>
<tr>
<td>Air Compressors</td>
<td>76 to 89</td>
<td>86</td>
</tr>
<tr>
<td>Trucks</td>
<td>81 to 87</td>
<td>86</td>
</tr>
</tbody>
</table>

Two types of short-term noise impacts could occur during construction of the proposed Project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site for the proposed Project, which would incrementally increase noise levels on roads leading to the site. As shown in Table 2, there would be a relatively high single-event noise exposure potential at a maximum level of 87 dBA \( L_{max} \) with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during demolition, grading, and construction on the Project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table 2 lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 91 dBA \( L_{max} \) at 50 feet during the noisiest construction phases. The site preparation phase, including excavation and grading of the site, tends to generate the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Sensitive receptors are located immediately adjacent to the proposed project. The closest off-site residences may be subject to short-term construction noise reaching 101 dBA \( L_{max} \) when construction is occurring at the project site. Construction noise is permitted by the City when activities occur between the hours of 7:00 a.m. and 7:00 p.m. and on weekdays and holidays, between 9:00 a.m. and 8:00 p.m., except for emergency work.

As discussed above, construction noise would result in a temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. Implementation of the following Standard Conditions of Approval would help reduce construction noise impacts on the off-site nearby sensitive receptors and would require the applicant to implement all technically and economically feasible measures to reduce construction noise, consistent with the requirements of Section 13.40.070 of the Berkeley Community Noise Ordinance.

**SCA NOI-1:** At least two weeks prior to initiating any construction activities at the Project site, the applicant shall provide notice to businesses and residents within 500 feet of the Project site, including: 1) a description of the Project; 2) description of construction activities; 3) daily construction schedule (i.e., time of day) and expected duration (number of weeks of months); 4) the name and phone number of the “Noise Management Individual” for the Project; 5) commitment to notify neighbors at least four days in advance of any authorized extended work hours and the reason for extended hours; 6) that construction work is about to commence; and 7) designate a “Noise Management Individual” who would be responsible for responding to any local complaints about construction noise. The noise manager would determine the cause of the noise complaints (e.g., starting too early, bad muffler) and institute reasonable measures to correct the problem. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval.

**SCA NOI-2:** The Project applicant shall develop a site specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible,
subject to review and approval of the Zoning Officer. The noise reduction program shall include the time
limits for construction listed above, and measures needed to ensure that construction complies with BMC
Section 13.40.070. The noise reduction program should include, but shall not be limited to, the following
available controls to reduce construction noise levels as low as practical:

- All construction activities (including the loading and unloading of materials and truck movements)
  shall be limited to the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between the hours of 9:00
  a.m. and 8:00 p.m. on weekends or holidays.
- Construction equipment should be well maintained and used judiciously to be as quiet as practical.
- All internal combustion engine-driven equipment shall be equipped with mufflers, which are in good
  condition and appropriate for the equipment.
- Utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
  Select hydraulically or electrically powered equipment and avoid pneumatically powered equipment
  where feasible.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when
  adjoining construction sites. Construct temporary noise barriers or partial enclosures to acoustically
  shield such equipment where feasible.
- Prohibit unnecessary idling of internal combustion engines. Construction equipment that would not
  be used for more than 5 minutes should be turned off completely.
- Construct solid plywood fences around construction sites adjacent to operational business, residences
  or other noise-sensitive land uses where the noise control plan analysis determines that a barrier
  would be effective at reducing noise.
- Erect temporary noise control blanket barriers, if necessary, along building facades facing
  construction sites. This mitigation would only be necessary if conflicts occurred which were
  irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected.
- Route construction related traffic along major roadways and away from sensitive receptors where
  feasible.
- Implementation of SCA NOI-1 and NOI-2 would reduce the construction noise impacts to the extent
  feasible, as required by Section 13.40.070 of the Berkeley Community Noise Ordinance. With
  implementation of SCA NOI-1 and NOI-2 and, construction noise impacts would be considered less
  than significant.

Long-Term Noise Impacts. The Project would generate long-term noise impacts from both traffic and
stationary noise sources, as discussed below.

Traffic Noise Impacts. As identified in the traffic analysis memorandum, the increase in traffic associated
with the proposed Project would be minimal. As such, Project-related increases in traffic noise levels are
also anticipated to be minimal along University Avenue and McGee Avenue and are not anticipated to be
perceptible by the human ear. Therefore, Project-related traffic noise on off-site land uses would be less
than significant, and no mitigation would be required.

Stationary Noise. Stationary noise sources associated with the Project could include occasional truck
deliveries, and operations associated with the parking lift system.

As presented above in the regulatory section, operations associated with the proposed project would need
to conform with the time-weighted exterior noise level standards, depending on the individual source
operations, to result in a less that significant impacts. The following list provides the sources associated
with each time-duration controlled noise standard:

- Parking Lift Operations is considered a source that operates for more than 5 minutes but less than
  15 minutes in a given hour, thus requiring conformance with a daytime L_{25} of 60 dBA and a
  nighttime L_{25} of 50 dBA.
- Automobile activities are considered a short-term noise that would amount to less than 1 minute
  of time in any given hour, thus requiring conformance with a daytime L_{2} of 70 dBA and a
  nighttime L_{2} of 60 dBA.
• Truck deliveries are considered a noise source that creates very short, maximum level impacts that are not expected to be a regular source of noise. Given that truck deliveries are only expected to occur during the daytime hours of 7:00 a.m. to 10:00 p.m., these operations would be required to conform with a daytime L\text{max}\ of 75 dBA.

The proposed operations assumed in this analysis are based on field measurements gathered at similar sources as reference measurements, and are conservative in nature (i.e., assuming that up to half of the vehicles using the lift system would do so in a given hour). In order to model the potential noise impacts, the sound-pressure levels associated with each piece of equipment were converted to A-weighted sound power levels (LwA). A description of the sources measured and their respective sound power level included in the analysis is as follows:

• **Lift System:** The proposed 6–by-3 lift system which houses up to 17 vehicles at a time is operated by hydraulics and motors, which move vehicles around, and place the desired vehicle at a specific location at ground level. Based on field observations and measurements, the greatest noise impact from lift operations occurs when the maximum number of ‘movements’ are required to shift a vehicle to a space to leave the garage. This operation consuming the most time would last approximately 60 seconds. The sound-power level during this operation is 89.9 LwA.

• **Automobiles Entering Lift:** It was observed at a similar facility that when a vehicle approaches and enters the garage, there is gap between the garage surface and the lift platform, thus resulting in an impact when the wheels hit the lift platform. This impact lasts for less than a second and does not always occur if a vehicle enters slowly and smoothly. To be conservative, it was assumed that this would occur upon all entrances to the garage. The sound-power level for this activity is 93.8 LwA.

• **Delivery Trucks:** It is expected that deliveries made to the ground floor retail / restaurant uses as well as parcel delivery to the residences may occur in the courtyard parking area at the rear of the building. Impacts associated with these activities are also traditionally very short-term in nature. The sound-power level for this activity is 110.0 LwA.

In order to predict the Project’s potential noise impacts to the adjacent receptors, SoundPlan, a 3-D noise model, was used to properly account for the shielding due to differences in topography as well as the 6-ft. high wall around the parking courtyard as shown on the plans. Table 5 shows the results of the SoundPlan noise modeling for each operation, as well as the required standards for compliance. The results show that the noise levels impacts would remain below the City exterior standards for the applicable time category. Therefore, no significant noise impacts would occur and no mitigation is required. Graphics showing the results of the SoundPlan modeling are provided in Attachment B.

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<thead>
<tr>
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<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Lift Operations</td>
<td>There is a maximum of 17 vehicles in the garage vehicle lift system at any given time. To be conservative, it is assumed that up to half, 9 vehicles, could either arrive or leave within a given hour. The total lift operation time would be less than 10 minutes.</td>
<td>L\text{25} \ 60 \text{ dBA Daytime} \ 50 \text{ dBA Nighttime}</td>
<td>42 – 48 dBA L\text{25}</td>
</tr>
<tr>
<td>Car</td>
<td>Half of the hourly lift operations, 9 in a conservative</td>
<td>L\text{2}</td>
<td>42 – 54 dBA L\text{25}</td>
</tr>
</tbody>
</table>
Impacts

<table>
<thead>
<tr>
<th>Hour</th>
<th>70 dBA Daytime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time period of less than 10 seconds</td>
<td>60 dBA Nighttime</td>
</tr>
</tbody>
</table>

Delivery Trucks

<table>
<thead>
<tr>
<th>Sporadic impacts that occur at various times throughout any given week during the daytime hours of 7:00 a.m. and 10:00 p.m.</th>
<th>L_{\text{max}} 75 dBA Daytime</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62 – 70 dBA L_{\text{max}}</td>
</tr>
</tbody>
</table>

dB A \( L_{25} \) = noise level for less than 25% of an hour, 15 minutes, in A-weighted decibels

dB A \( L_{2} \) = noise level for less than 2% of an hour, 1 minute, in A-weighted decibels

dB A \( L_{\text{max}} \) = maximum, instantaneous noise level in A-weighted decibels

Source: LSA (September 2017).

In addition to the previously mentioned sources, the project proposes a rooftop deck area for people to gather. Excessive noise associated with people talking or speaking loudly associated with the rooftop deck would be considered disturbing the peace, which would be handled through the police department.

**Project Land Use Compatibility.** Roadway noise is the predominant source of noise in the Project vicinity. As discussed above, the City’s noise contours map shows that the Project site may be exposed to noise levels reaching 75 dBA L_{dn}. The City’s land use compatibility chart shows that “normally acceptable” noise levels for outdoor environments are 60 dBA L_{dn} for residential land uses and 70 dBA L_{dn} for commercial land uses. For indoor environments, the noise level should not exceed 40 dBA between 10:00 p.m. and 7:00 a.m. or 45 dBA between 7:00 a.m. and 10:00 p.m. for all land uses.

According to the City’s General Plan, a specified land use may be permitted only after detailed analysis of the noise environment and the Project characteristics to determine whether noise insulation or protection features are required. Such noise insulation features may include measures to protect noise-sensitive outdoor activity areas (e.g., at residences, schools, or parks) or may include building sound insulation treatments such as sound-rated windows to protect interior spaces in sensitive receptors. Implementation of SCA NOI-3 would be required to reduce interior noise levels to the extent feasible.

**SCA NOI-3:** Prior to issuance of a building permit, the applicant shall submit an acoustical report to the Building and Safety Division and the Zoning Officer prepared by a qualified acoustic engineer certifying that the interior residential portions of the Project will achieve interior noise levels of 40 dBA L_{dn}.

b) **Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?**

Refer to Section XII.a. No permanent noise sources that would expose persons to excessive groundborne vibration or noise levels would be located within the Project site. Construction activities associated with implementation of the proposed Project are not expected to result in excessive groundborne vibration or groundborne noise levels. Therefore, implementation of the proposed Project would not permanently expose persons within or around the Project site to excessive groundborne vibration or noise.

c) **A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

Refer to Section XII.a. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Implementation of the proposed Project would not result in substantial increases in traffic noise levels on
local roadways in the Project vicinity or operational noise at sensitive receptor locations. Therefore, Project related noise increases would be less than significant.

d) **A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

Although there would be temporary high intermittent construction noise at times in the Project area, construction of the proposed Project would not permanently affect land uses adjacent to the Project site. In addition, construction of the Project would comply with the hourly limits specified by the City, as required by SCA NOI-2. Therefore, the Project would have a less-than-significant impact related to causing substantial temporary or periodic increase in ambient noise levels.

e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

The public airports nearest to the Project site are the Oakland International Airport (approximately 15 miles southeast of the site) and San Francisco International Airport (approximately 23 miles southwest of the site). Aircraft noise is occasionally audible at the Project site; however, no portion of the Project site lies within an airport land use plan area or within the 60 dBA CNEL noise contours of any of these public airports. Therefore, there would be no impact related to the proximity to an airport.

f) **For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?**

The nearest private airport, Children’s Hospital Oakland Heliport (7D1), is located approximately 3 miles south of the Project site. The heliport is used infrequently, and the site does not lie within an airport land use plan area or within the 60 dBA CNEL noise contours of this private airfield. Therefore, there would be no impact.