**HELIX Environmental Planning, Inc.**
11 Natoma Street, Suite 155
Folsom, CA 95630
916.365.8700 tel
619.462.0552 fax
www.**helixepi**.com

April 13, 2022 Project 02576.00036.001

Mr. Steve Banks, Principal Planner
City of Folsom, Community Development Department
50 Natoma Street
Folsom, CA 95630

**Subject: AC Hotel by Marriott Project Noise and Vibration Assessment**

Dear Mr. Banks:

HELIX Environmental Planning, Inc. (HELIX) has assessed the analyzed potential noise and vibration impacts associated with the construction and operation of the proposed AC Hotel by Mariott Project (project). Analysis within this report was prepared to support impact analysis pursuant to the California Environmental Quality Act (CEQA; Public Resources Code Sections 21000 et seq.), CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations).

## PROJECT LOCATION

The project site is comprised of a 1.45-acre portion of Assessor's Parcel Number (APN) 072-308-042 located in the southeastern corner of the intersection of East Bidwell Street and Broadstone Parkway in the City of Folsom (City), California. The project site is in the middle of an existing parking lot, and is bounded by Via Serena to the northeast, Broadstone Parkway to the west, the Palladio at Broadstone shopping center to the east, and Palladio Parkway to the south. Access to the project site would be provided by two 27-foot-wide driveways that would be accessible by Via Serena, Broadstone Parkway, Palladio Parkway, and East Bidwell Street. See Figure 1, *Vicinity Map*, and Figure 2, *Site Plan*, attached to this letter.

## PROJECT DESCRIPTION

The proposed project includes the construction of a new hotel on a 1.45-acre project site within a total 14.22-acre parcel. A total of 130 hotel rooms and 8 executive units would be constructed in an "L-shaped" five (5) story tower. The first floor of the five-story hotel would be 16,000 square feet (sf), the second floor would be 17,423 sf, and floors three through five would be 17,350 sf. The total square footage of the hotel building would be 85,473 sf. The hotel building would include indoor and outdoor amenities including a lobby and lounge area, an outdoor patio, a library, office space, a restaurant and bar, a fitness center, meeting rooms, restrooms, a kitchen, a laundry room, and pedestrian/bicycle

pathways. Other site improvements include associated hotel parking, an emergency generator, utility connection lines, a solid waste collection enclosure, signage, lighting, and landscaping.

## NOISE METRICS

All noise-level and sound-level values presented herein are expressed in terms of decibels (dB), with A weighting, abbreviated "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. Maximum noise levels are expressed by the symbol "$L_{MAX}$." Some of the data also may be presented as octave-band-filtered and/or A-octave band-filtered data, which are a series of sound spectra centered on each stated frequency, with half of the bandwidth above and half of the bandwidth below, the stated frequency. These data are typically used for machinery noise analysis and barrier-effectiveness calculations. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. This is similar to the Day Night sound level ($L_{DN}$), which is a 24-hour average with an added 10 dBA weighting on the same nighttime hours but no added weighting on the evening hours.

Because decibels are logarithmic units, $S_{PL}$ cannot be added or subtracted through standard arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than from one source under the same conditions. For example, if one automobile produces an $S_{PL}$ of 70 dBA when it passes an observer, two cars passing simultaneously would not produce 140 dBA—rather, they would combine to produce 73 dBA. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dBA louder than one source.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1 dBA changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hertz [Hz]–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dBA are generally not perceptible. It is widely accepted, however, that people begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5 dBA increase is generally perceived as a distinctly noticeable increase, and a 10 dBA increase is generally perceived as a doubling of loudness.

## VIBRATION METRICS

Groundborne vibration consists of rapidly fluctuating motions or waves transmitted through the ground with an average motion of zero. Sources of groundborne vibrations include natural phenomena and anthropogenic causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions). Peak particle velocity (PPV) is commonly used to quantify vibration amplitude. The PPV, with units of inches per second (in/sec), is defined as the maximum instantaneous positive or negative peak of the vibration wave. Decibels are also used compress the range of numbers required to describe vibration. Vibration velocity level (LV) with units of VdB are commonly used in evaluating human reactions to vibrations.

# ENVIRONMENTAL SETTING

## Existing Noise Environment

The project site is located within the northwest parking lot of the Palladio at Broadstone shopping center. Noise sources in the project vicinity are dominated by traffic noise from East Bidwell Street and Broadstone Parkway. Additional noise sources in the area include building heating, ventilation, and air conditioning (HVAC) systems for the shopping center to the southeast and typical parking lot noise.

## Noise-Sensitive Land Uses

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, including residences, hospitals, schools, hotels, resorts, libraries, sensitive wildlife habitat, or similar facilities where quiet is an important attribute of the environment. Noise receptors (receivers) are individual locations that may be affected by noise. The closest existing NSLUs to the project site are the apartments in the Sherwood at Broadstone Apartment complex, approximately 230 feet west of the project site at the intersection of Clarksville Road and Broadstone Parkway. Additional future NSLUs in the project vicinity are multi-family residences at the Broadstone Villas project, approximately 600 feet northeast of the project site, across East Bidwell Street. As of this analysis, the Broadstone Villas project has been approved by the City but has not been constructed. See Figure 3*, Measurement and NSLU Locations*, attached to this letter.

## Noise Survey

A site visit and noise survey were on conducted on March 22, 2022, which included two short-term (10 minute) ambient noise measurements. Measurement M1 was conducted on the eastern corner of the project site on the sidewalk next to Via Serena (an internal street for the Palladio at Broadstone shopping center). Measurement M2 was conducted on the southeast side of Broadstone Parkway, between the intersection with Clarksville Road and Via Serena. See Figure 3 for measurement locations. Traffic counts were conducted during measurement M2. The noise measurement survey notes are included as Attachment A to this report. The measured noise levels are shown on Table 1, *Noise Measurement Results*.

**Table 1**
**NOISE MEASUREMENT RESULTS**

| | |
|---|---|
| **M1** | |
| Date | March 22, 2022 |
| Time | 1:51 p.m. – 2:01 p.m. |
| Location | Via Serena, eastern corner of the project site |
| Noise Level | 53.6 dBA $L_{EQ}$ |
| Notes | Noise primarily from vehicular traffic on East Bidwell Street, Via Serena, and within the Palladio at Broadstone parking lots |
| **M2** | |
| Date | March 22, 2022 |
| Time | 2:07 p.m. – 2:17 p.m. |
| Location | Southeast side of Broadstone Parkway, between Clarksville Road and Via Serena |
| Noise Level | 62.5 dBA $L_{EQ}$ |
| Notes | Noise primarily from traffic on Broadstone Parkway. Traffic count: 99 cars, 1 medium truck |

# REGULATORY FRAMEWORK

## City of Folsom General Plan Noise Element

The Safety and Noise Element of the City of Folsom General Plan regulates noise emissions from public roadway traffic on new development of residential or other noise sensitive land uses. Policy SN 6.1.2 and Table SN-1 from the General Plan provide noise compatibility standards for land uses. For transient lodging (e.g., motels, hotels) noise due to traffic on public roadways, railroad line operations, and aircraft shall be reduced to or below 65 CNEL for outdoor activity areas and reduced to or below 45 CNEL for interior use areas. For other land uses that may be affected by project-generated traffic noise, the exterior noise compatibility limit is: 60 CNEL for single-family residential uses; 65 CNEL for multi-family residential uses; and 70 CNEL for commercial residential uses (City 2021).

Policy SN 6.1.8 requires construction projects and new development anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby noise-sensitive uses based on Federal Transit Administration criteria. Table SN-3 from the General Plan provides vibration impact criteria. For construction with infrequent vibration events, impacts would be significant if nearby residences are subject to ground borne vibrations in excess of 80 VdB (City 2021).

## City of Folsom Municipal Code

For stationary noise sources, the City has adopted a Noise Ordinance as Section 8.42 of the City Municipal Code (City 1993). The Noise Ordinance establishes hourly noise level performance standards that are most commonly quantified in terms of the one-hour average noise level ($L_{EQ}$). Using the limits specified in Section 8.42.040 of the Noise Ordinance, noise levels generated on the project site for 30 or more minutes in any hour would be significant if they exceed 50 dBA $L_{EQ}$ from 7:00 a.m. to 10:00 p.m. and 45 dBA $L_{EQ}$ from 10:00 p.m. to 7:00 a.m., measured at off-site residential property boundaries. Section 8.42.060 exempts construction noise from these standards provided that construction does not occur before 7:00 a.m. or after 6:00 p.m. on weekdays, or before 8:00 a.m. or after 5:00 p.m. on Saturday or Sunday.

# METHODOLOGY AND ASSUMPTIONS

## Noise Modeling Software

Project construction noise was analyzed using the U.S. Department of Transportation (USDOT) Roadway Construction Noise Model ([RCNM]; USDOT 2008), which utilizes estimates of sound levels from standard construction equipment.

Modeling of the exterior noise environment for this report was accomplished using the Computer Aided Noise Abatement (CadnaA) model version 2021. Traffic noise was evaluated within CadnaA using the U.S. Department of Transportation Federal Highway Administration (FHWA) Traffic Noise Model (TNM) version 2.5 (USDOT 2004). The noise models used in this analysis were developed from the site plan provided by the project architect. Input variables included building mechanical equipment reference noise levels, road alignment, lane configuration, projected traffic volumes, estimated truck composition percentages, and vehicle speeds.

## Off-Site Traffic Noise

The one-hour $L_{EQ}$ traffic noise level is calculated utilizing peak-hour traffic. The model-calculated afternoon peak hour (PM peak hour) $L_{EQ}$ noise output is the equivalent to the CNEL (Caltrans 2009). The modeling includes the project buildings but does not account for terrain or off-site buildings and structures. The project Transportation Impact Analysis (TIA) did not include an intersection analysis or data for calculation of peak hour traffic volumes on streets in the project vicinity (T. Kear 2022). Existing and future traffic for East Bidwell Street and Broadstone Parkway Traffic was estimated from intersection turning counts included in the TIA for the Broadstone Villas project (T. Kear 2021). Because the project trip distribution was not available, all project PM peak hour trips reported in the project TIA (six total) were conservatively assumed to travel on all analyzed roadway segments. The PM peak hour traffic volumes used in the analysis is shown in Table 2, *PM Peak Hour Traffic Volumes*. The noise modeling input and output is included as Attachment B to this report. Traffic was assumed to be comprised of a typical mix of vehicles for suburban streets in California: 96 percent cars and light trucks; 3 percent medium trucks and buses; and 1 percent heavy trucks.

**Table 2**
**PM PEAK HOUR TRAFFIC VOLUMES**

| Roadway Segment | Existing (2021) | Existing (2021) + Project | Cumulative (2026)[1] | Cumulative (2026) + Project[1] |
|---|---|---|---|---|
| East Bidwell Street – Iron Point Road to Broadstone Parkway | 3,894 | 3,900 | 4,621 | 4,627 |
| East Bidwell Street – Broadstone Parkway to Scholar Way | 3,469 | 3,475 | 4,103 | 4,109 |
| Broadstone Parkway – Iron Point Road to East Bidwell Street | 1,822 | 1,828 | 1,842 | 1,848 |
| Broadstone Parkway – East Bidwell Street to Scholar Way | 1,795 | 1,801 | 1,802 | 1,808 |

Source: T. Kear 2021; T. Kear 2022
[1] Cumulative traffic volumes include approved projects.

## Heating, Ventilation, and Air Conditioning

The project would use commercial-sized HVAC units located on the rooftop of the building. The units would be located behind a parapet wall of equal or greater height to the HVAC unit, which would provide substantial noise attenuation. The exact HVAC model has not been determined as of this analysis. For the purposes of this analysis, twenty Carrier 50PG 12-ton HVAC units, with a sound power level ($S_{WL}$) of 80.0 dBA, were used to model the noise impacts from the proposed project's HVAC system (Carrier 2008). The manufacturer's noise data for the HVAC units is provided below in Table 3, *HVAC Condenser Noise Data.* Standard HVAC planning assumes approximately one ton of HVAC for every 350 SF of habitable space (American Society of Heating, Refrigeration, and Air Conditioning Engineers [ASHRAE] 2012). Based on the 85,473 SF building size, approximately 244 tons of HVAC would be required for the project … which equals twenty Carrier 50PG 12-ton units (or similar systems).

**Table 3**
**HVAC CONDENSER NOISE DATA ($S_{WL}$ dBA)**

| 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1 kHz | 2 kHz | 4 kHz | 8 kHz | Overall Noise Level |
|---|---|---|---|---|---|---|---|---|
| 90.4 | 83.1 | 80.9 | 77.8 | 75.2 | 70.0 | 66.1 | 57.6 | 80.0 |

Source: Carrier 2008
$S_{WL}$ = sound power level; Hz = Hertz; kHz = kilohertz

## Emergency Generator

The project would include an approximately 77-kilowatt (kW) emergency generator. The site plan shows a security enclosure around the generator. However, the details of the enclosure construction were not known at the time of this analysis. Therefore, no noise reduction from noise barriers around the generator was assumed in the modeling. The specific model of generator has not been determined as of this analysis. For the purposes of this analysis, a GENERAC model QT080 80 kW generator with a rated sound output of 74 dBA measured at 23 feet was used to model the noise impacts from the proposed project's generator (GENERAC 2022).

## STANDARDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, implementation of the project would result in a significant adverse impact if it would:

1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the City of Folsom General Plan or noise ordinance;

2. Generate excessive ground-borne vibration or ground borne noise levels; or

3. For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public use airport or private airstrip, expose people residing or working in the project area to excessive noise.

Per the City General Plan, impacts related to the generation of noise on the project site would be significant if noise levels generated on the project site would be significant if they exceed 50 dBA $L_{EQ}$ from 7:00 a.m. to 10:00 p.m. and 45 dBA $L_{EQ}$ from 10:00 p.m. to 7:00 a.m. at off-site residential property boundaries. For traffic-related noise, impacts would be considered significant if the project would cause ambient noise levels at nearby NSLUs to exceed the noise compatibility limits defined in the City General Plan or would increase by ambient noise levels by 1.5 CNEL or more.

In accordance with the City Municipal Code, any noise from project construction activity would be considered significant for construction occurring before 7:00 a.m. or after 6:00 p.m. on weekdays, or before 8:00 a.m. or after 5:00 p.m. on Saturday or Sunday. In addition, construction noise measured at off-site NSLUs would be significant if it resulted in a perceived doubling of loudness, estimated to be an increase of 10 dBA above ambient noise levels.

In accordance with the City Municipal Code, excessive ground-borne vibration would occur if construction-related ground-borne vibration exceeds 80 VdB at nearby residential properties.

## IMPACT ANALYSIS

*1) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the Folsom General Plan or noise ordinance?*

**Less than Significant Impact.**

### Construction Noise

The nearest NSLUs to the project site area are multi-family residences approximately 230 feet west of the project site. Heavy earthmoving equipment would have the potential to be used along the project's periphery, including rubber-tired dozers, backhoes, and graders. Modeling shows that the combined noise from a dozer, backhoe and grader would result in 69.9 dBA $L_{EQ}$ at the closest residential property. Because construction equipment would be mobile as it moves across the project site, the noise level experienced by the neighboring uses would vary throughout the day. The modeling output for the anticipated construction equipment is included in Attachment B to this report.

According to the City Code Section 8.42.060, noise sources associated with construction of the project which are conducted between the hours of 7:00 a.m. and 6:00 p.m., on Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday, are exempt from the City noise standard (City 1993). Furthermore, the calculated short-term construction noise would be approximately 3 dBA higher than the calculated ambient traffic noise (see the off-site traffic noise discussions, below). A 3 dBA increase in ambient noise levels is generally just perceptible in typical outdoor environments and daytime construction noise increases would be less than significant. Nighttime construction noise is not anticipated for the project. However, nighttime construction is not exempt from the City Noise Ordinance and would exceed the nighttime standard of 45 dBA if it were to occur, resulting in a temporarily significant noise impact.

### Operational Noise

#### Off-Site Traffic Noise

As described above, modeling of the exterior noise environment for this report was accomplished using CadnaA and the TNM. According to the TIA, the project is expected to generate approximately 504 daily trips and 6 trips during the PM peak hour (T. Kear 2022). Future traffic noise levels presented in this analysis are based on traffic volumes (as described above) for the existing (2021), existing (2021) plus project; cumulative (2026); and cumulative (2026) plus project scenarios. The modeling does not account for intervening terrain or structures (e.g., sound walls, buildings).

The calculated off-site traffic noise levels are shown in Table 4, *Off-Site Traffic Noise Levels*. In typical outdoor environments, a 3 dBA increase in ambient noise level is considered just perceptible and a 5 dBA increase is considered distinctly perceptible. In areas where existing or future ambient noise exceeds the land use compatibility standards, an individual project's contribution to increases in ambient noise level could be considered significant if it exceeds 1.5 dBA. Because most of the areas along the analyzed road segments already exceed the land use noise compatibility standard listed in the city General Plan (60 dBA CNEL for low density residential; 65 dBA CNEL for multi-family residential and hotels, and 70 dBA for commercial), this analysis uses a threshold of a 1.5 dBA CNEL increase to determine significance of the impact.

As shown in Table 4, the maximum change in CNEL as a result of project-generated traffic would be 0.1 dBA CNEL, a change in ambient noise level that is lower than the threshold and is not discernable. Therefore, impacts related to the project generating a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of General Plan standards from project-generated traffic would be less than significant.

**Table 4**
**OFF-SITE TRAFFIC NOISE LEVELS**

| Roadway Segment | Existing 2021 (CNEL) | Existing + Project (CNEL) | Change in CNEL | 2026 (CNEL) | 2026 + Project (CNEL) | Change in CNEL |
|---|---|---|---|---|---|---|
| East Bidwell Street – Iron Point Road to Broadstone Parkway (multi- family residential uses) | 67.0 | 67.0 | <0.1 | 67.1 | 67.1 | <0.1 |
| East Bidwell Street – Broadstone Parkway to Scholar Way (commercial uses) | 69.5 | 69.5 | <0.1 | 69.6 | 69.6 | <0.1 |
| Broadstone Parkway – Iron Point Road to East Bidwell Street (multi- family residential uses) | 69.5 | 69.5 | <0.1 | 70.1 | 70.2 | 0.1 |
| Broadstone Parkway – East Bidwell Street to Scholar Way (single- family residential uses) | 72.4 | 72.4 | <0.1 | 73.1 | 73.1 | <0.1 |

Source: TNM version 2.5

## On-Site Noise

Potential noise sources on the project site, including roof-top mounted HVAC systems and a ground level mounted emergency generator, were analyzed using the CadnaA software. Modeling assumed one hour of continuous operation of all equipment. Modeled noise levels were analyzed at receivers placed at the property line of nearby NSLUs (see Figure 3 for NSLU areas), and at the closest buildings of the Palladio at Broadstone shopping center to the southeast, at a height of five feet above the ground. The modeled 1-hour ($L_{EQ}$) noise level at the adjacent property lines is compared with the City nighttime standard in Table 5, *Operational On-Site Noise*. As shown in Table 5, noise from the project's HVAC systems would not exceed the City noise ordinance nighttime standard of 45 dBA $L_{EQ}$. Since the City's daytime noise ordinance standard (50 dBA $L_{EQ}$) is higher than the nighttime standard, impacts from project on-site noise would be less than significant.

**Table 5**
**OPERATIONAL ON-SITE NOISE**

| Receptor | Description | Modeled Nighttime Noise | Nighttime Standard | Exceed Standards? |
|---|---|---|---|---|
| R1 | Multi-family residences across Broadstone Parkway | 28.9 | 45 | No |
| R2 | Future multi-family residences across East Bidwell Street | 28.5 | 45 | No |
| C1 | Palladio at Broadstone retail building | 31.2 | 45 | No[1] |
| C2 | Palladio at Broadstone retail building | 32.1 | 45 | No[1] |

Source: CadnaA; City Noise Ordinance Sections 8.42.050
[1] Commercial land uses are not considered noise sensitive and the ordinance standard does not apply.

## On-site Traffic Noise

Modeling of the exterior noise environment on the project site was accomplished using the CadnaA model and the road segment traffic volumes, as described above.

### Exterior Noise

As discussed above, the City General Plan Safety and Noise Element has established an exterior noise standard of 65 dBA CNEL for transient lodging outdoor activity areas, defined as: "Outdoor activity areas for nonresidential developments are considered to be those common areas where people generally congregate, including outdoor seating areas." (City 2021). The patio located at the eastern corner of the hotel would be the outdoor activity areas for the project The modeling shows ground level noise for the patio area would be approximately 64 dBA CNEL. This noise level would not exceed the City exterior noise standard and the impact would be less than significant.

### Interior Noise

Standard building design and construction using current building codes provides approximately 20 dBA of exterior to interior noise reduction with the windows and doors closed. The noise at the exterior facades for the project buildings was modeled for hotel rooms on the second through fifth floors facing towards East Bidwell Street (northeast) and Broadstone Parkway (northwest), and is shown in Table 6, *Building Exterior Noise Levels*.

**Table 6**
**BUILDING EXTERIOR NOISE LEVELS**

| Hotel Room Floor | Northeast Wall (CNEL) | Northwest Wall (CNEL) |
|---|---|---|
| Second | 63.7 | 63.7 |
| Third | 63.6 | 63.7 |
| Fourth | 63.6 | 63.7 |
| Fifth | 63.6 | 63.8 |

Source: CadnaA version 2021

Buildings with exterior noise levels exceeding 65 dBA could result in interior noise levels in excess of the City General Plan Safety and Noise Element standard of 45 dBA CNEL. As shown in Table 6, no exterior noise levels would exceed 65 dBA CNEL. Interior noise impacts would be less than significant.

## Impact Conclusion

If project construction activities were to occur outside the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and 9:00 a.m. to 5:00 p.m. on Saturday, construction noise generated by the project would not be exempt for the City's noise ordinance nighttime exterior standard of 45 dBA, and the impact would be potentially significant. Implementation of mitigation measure NOI-1 would restrict construction hours.

The addition of permanent project-generated traffic vicinity on roadways would not result in a discernable increase in ambient noise levels. The project would not expose future project customers to noise levels that exceed compatibility guidelines in the General Plan.

Long-term operation of project would not result in noise levels from on-site sources, including HVAC systems and an emergency generator, exceeding the city noise ordinance standards, measured at the property line of the closest NSLUs to the project site.

Therefore, with implementation of mitigation measure NOI-01, the project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the Folsom General Plan or noise ordinance and the impact would be less than significant.

**Mitigation Measure NOI-01: Construction Noise Reduction Measures**

> Construction Hours/Scheduling: Construction activities for all phases of construction, including servicing of construction equipment shall only be permitted during the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. to 5:00 p.m. on Saturdays. Construction shall be prohibited on Sundays and on all holidays. Delivery of materials or equipment to the site and truck traffic coming to and from the site shall be restricted to the same construction hours specified above.

*1) Generate excessive ground-borne vibration or ground borne noise levels?*

An on-site source of vibration during project construction would be a vibratory roller (primarily used to achieve soil compaction as part of the foundation and paving construction), which could be used within approximately 230 feet of the multi-family residences across Broadstone Parkway to the west. A large vibratory roller creates approximately 0.21 in/sec PPV at a distance of 25 feet, or 94.4 VdB. At a distance of 230 feet, a vibratory roller would create a PPV of 0.018 in/sec, or 73 VdB.[1] This would not exceed the City General Plan residential standard of 80 VdB for infrequent events. Once operational, the project would not be a source of groundborne vibrations. Therefore, the project would not result in the

[1] Equipment PPV = Reference PPV * $(25/D)^n$(in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receptor in feet, and n= 1.1 (the value related to the attenuation rate through the ground); formula from Caltrans 2020. VdB = 20 * Log(PPV/4/$10^{-6}$).

generation of excessive groundborne vibration or groundborne noise levels, and the impact would be less than significant.

3) *For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public use airport or private airstrip, expose people residing or working in the project area to excessive noise.*

The closest airports to the project site are the Cameron Park Airport, approximately 7.6 miles to the northeast, and Mather Airport, approximately 10.7 miles to the southwest. The project site is not located within the influence area or noise contours for the Cameron Park Airport (El Dorado County 2012). The project site is located within the review area identified in the Mather Airport Land Use Compatibility Plan (ALUCP). The project site is beneath the approach paths for runways 22 Left and 22 Right, however, the project site is not with the 60 dBA noise contour for the airport (Sacramento County Association of Governments 2020). Therefore, although the project site is subject to overflight by aircraft approaching and departing Mather Airport, the customers of the proposed project or people working in the project area would not be exposed to excessive levels of noise due to aircraft or airport operations, and the impact would be less than significant.

## SUMMARY

As described above, with implementation of mitigation measure NOI-01 to restrict the hours of construction, the project would not result in a temporary or permanent increase in ambient noise levels in excess of City Standards. The project would not result in the generation of excessive groundborne vibration, and the project would not expose persons to excessive noise from aircraft or airport operations.

Sincerely,

Martin Rolph
Noise Specialist

Jason Runyan
Noise Specialist, QA/QC

**Attachments:**

Figure 1: Vicinity Map
Figure 2: Site Plan
Figure 3: Measurement and NSLU Locations
Attachment A: Noise Measurement Survey Notes
Attachment B: Noise Modeling Input and Output

## REFERENCES

American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE). 2012. ASHRAE Handbook.

California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual. April. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf.

2009. Technical Noise Supplement (TeNS). November.

Carrier. 2008. 50PG03 – 28 Product Data. Available at: http://www.aireclima.com/carrier/pdf/50PG-5PD.pdf.

City of Folsom. 2021. 2035 General Plan Safety and Noise Element. Available at: https://www.folsom.ca.us/home/showpublisheddocument/7565/637667924531470000. Amended August 24.

1993. Folsom Municipal Code Chapter 8.42, Noise Control. Available at: http://www.codepublishing.com/CA/Folsom/.

El Dorado, County of. 2012. El Dorado County Airport Land Use Compatibility Plan: Cameron Airpark Airport; Georgetown Airport; Placerville Airport. Available at: https://www.edctc.org/airport-land-use-compatability-plans-and-fee-schedule.

GENERAC. 2022. Standby Generators, Liquid Cooled Gaseous engine; Models QT070 to QT150. Available at: https://www.generac.com/generaccorporate/media/library/content/all-products/generators/home-generators/qt-series/generac-home-backup-generators-qt-series-70kw-80kw-100kw-130kw-150kw_spec-sheet.pdf.

Sacramento County Association of Governments. 2020. Mather Airport – Airport Land Use Compatibility Plan. September. Available at: https://www.sacog.org/sites/main/files/file-attachments/mather_draft_alucp.pdf?1601659275.

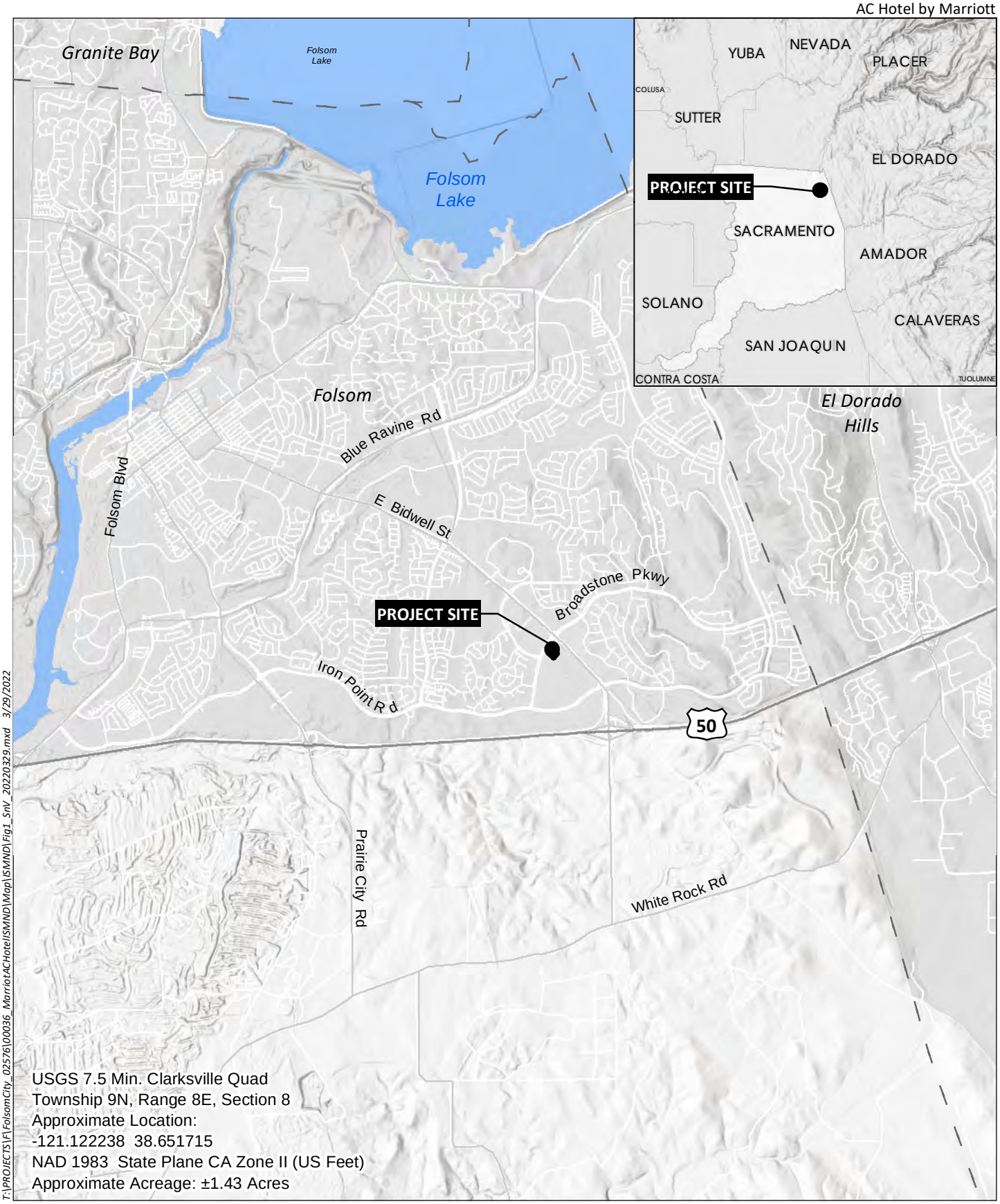
T. Kear Transportation Planning and Management, Inc. 2022. AC Hotel by Marriott Transportation Impact Analysis. April.

2021. Broadstone Villas Transportation Impact Analysis. September.

U.S. Department of Transportation (USDOT). 2008. Roadway Construction Noise Model version 1.1. Available at: https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/.

2004. Traffic Noise Model Version 2.5. Available at: https://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v25/.

# Figures




USGS 7.5 Min. Clarksville Quad
Township 9N, Range 8E, Section 8
Approximate Location:
-121.122238 38.651715
NAD 1983 State Plane CA Zone II (US Feet)
Approximate Acreage: ±1.43 Acres

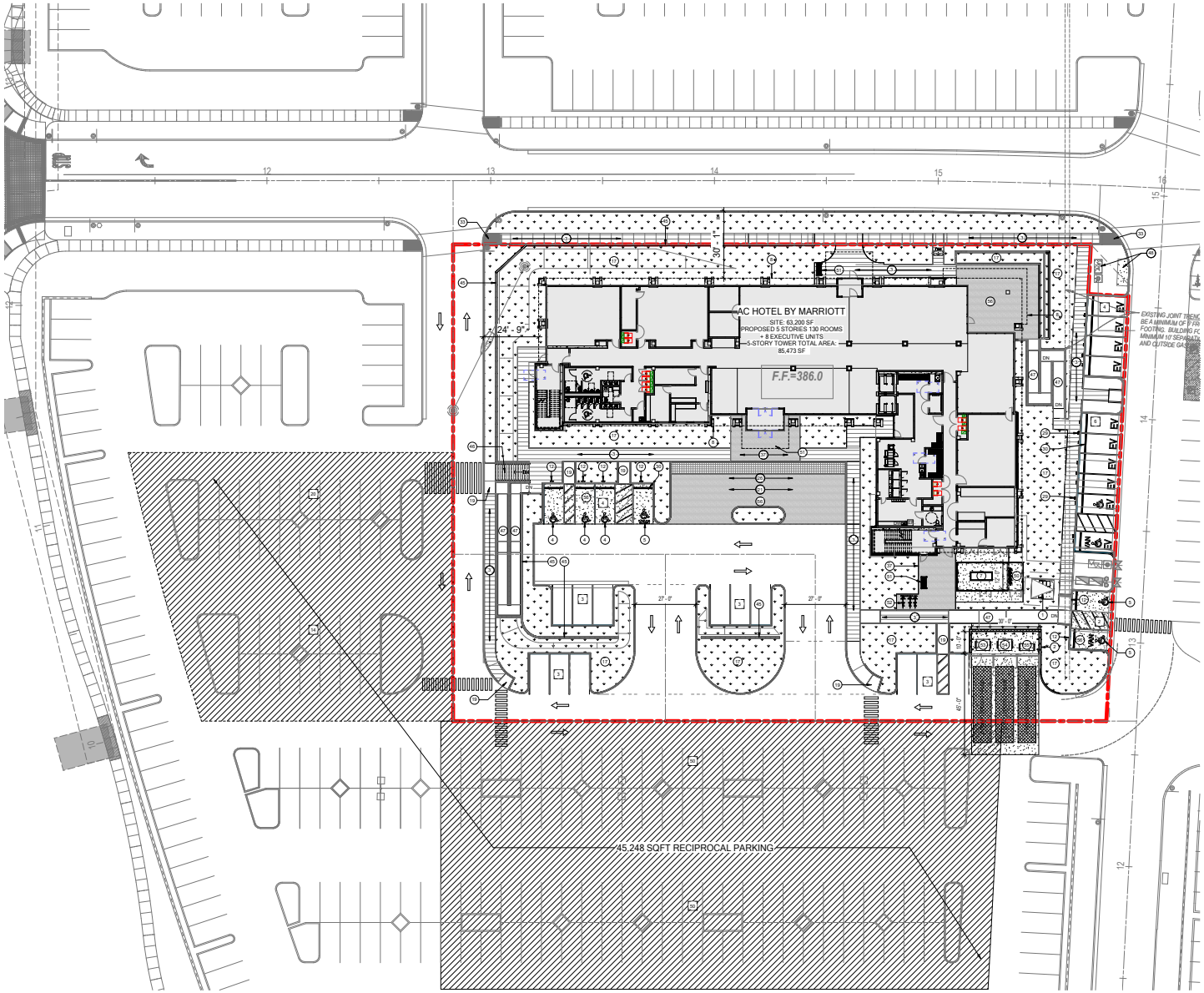
0 1 Miles

Source: Base Map Layers (Esri, USGS, NGA, NASA)

T:\PROJECTS\F\FolsomCity_02576\00036_MarriotACHotel\SMND\Map\SMND\Fig1_SnV_20220329.mxd 3/29/2022

# Vicinity Map

Figure 1




T:\PROJECTS\F\FolsomCity_02576\00036_MarriotACHotel\SMND\Map\SMND\Fig2_Siteplan.indd

Sources: Mayse & Associates, 2022

HELIX Environmental Planning

# Site Plan

Figure 2


# Measurement and NSLU Locations

Figure 3

# Attachment A

## Noise Measurement Survey Notes

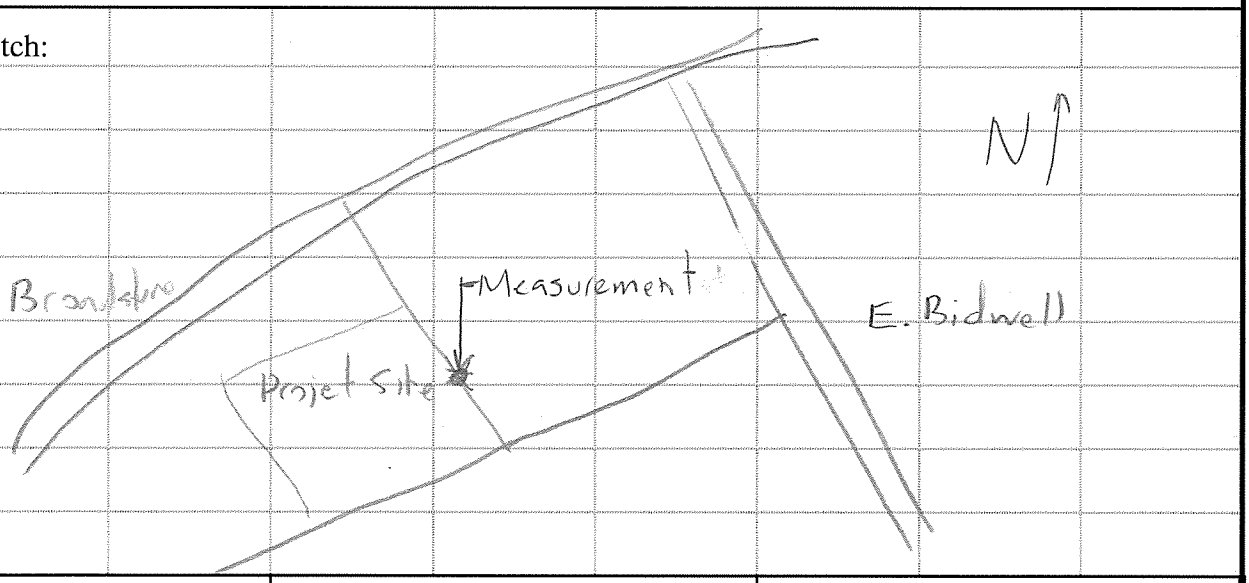
M1

## Site Survey

| | | | |
|---|---|---|---|
| Job # | | Project Name: AC Marriott Hotel | |
| Date: 3/22/2022 | Site #: | Engineer: Martin Rolph | |
| Address: | | | |
| Meter: LxT1 | Serial #: 1013 | Calibrator: Cal150 | Serial #: 5529 |

Notes: Noise from E. Bidwell and cars in parking lot

Sketch:




| | | |
|---|---|---|
| Temp: 75° F | Wind Spd: 4 mph | Humidity: 37 % |
| Start of Measurement: 1:51 p.m. | End of Measurement: 2:21 p.m. | 56.3 dBA $L_{EQ}$ |

| Cars (tally per 5 cars) | Medium Trucks (MT) | Heavy Trucks (HT) |
|---|---|---|
| | | |

Noise Measurement for Information Only

No Through Roadways

No Calibration Analysis Will Be Provided

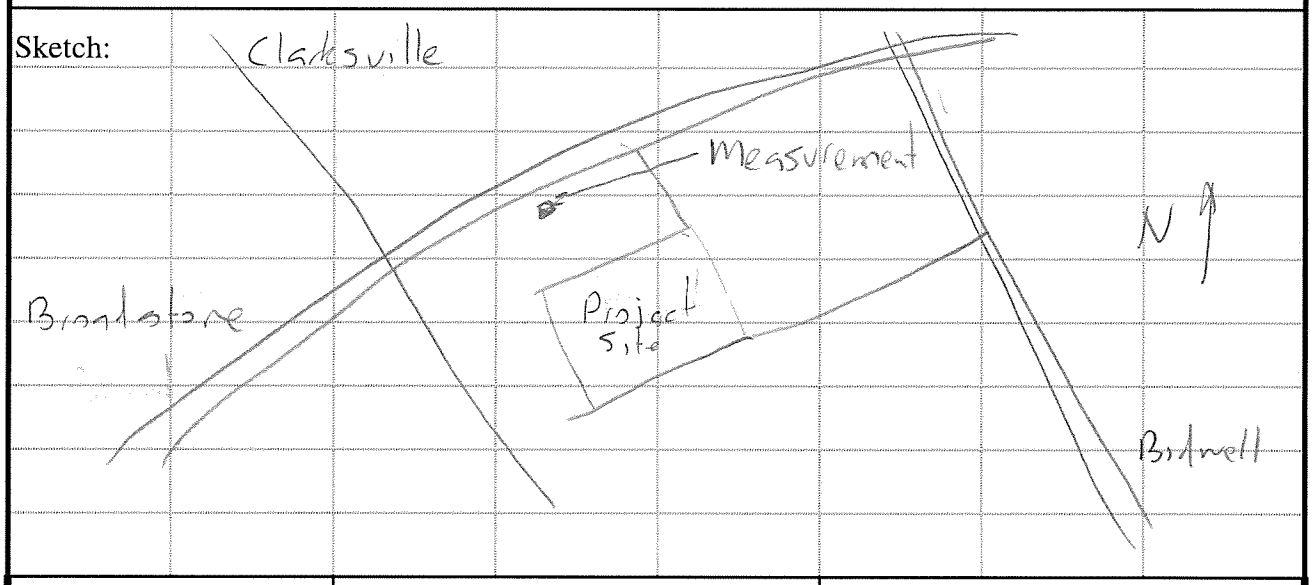
M2

## Site Survey

| | | | |
|---|---|---|---|
| Job # | | Project Name: AC Marriott Hotel | |
| Date: 3/22/2022 | Site #: | Engineer: Martin Rolph | |
| Address: | | | |
| Meter: Lxt1 | Serial #: 1013 | Calibrator: Cal150 | Serial #: 5529 |

Notes:

Sketch:




| | | |
|---|---|---|
| Temp: 75°F | Wind Spd: 4 mph | Humidity: 37 % |
| Start of Measurement: 2:07 P.m. | End of Measurement: 2:17 P.m. | 62.5 dBA $L_{EQ}$ |

| Cars (tally per 5 cars) | Medium Trucks (MT) | Heavy Trucks (HT) |
|---|---|---|
| 𝍸 𝍸 𝍸 \|\|\|\| | 1 | |
| +4 99 | (1) | |

Noise Measurement for Information Only

No Through Roadways

No Calibration Analysis Will Be Provided

# Attachment B

## Noise Modeling Input and Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/12/2022
Case Description: Folsom AC Marriott Hotel

---- Receptor #1 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Multi-Family | Commercial | 65 | 65 | 65 |

| | | | | Equipment | | | |
|---|---|---|---|---|---|---|---|
| | | | | Spec | Actual | Receptor | Estimated |
| | | Impact | | Lmax | Lmax | Distance | Shielding |
| Description | | Device | Usage(%) | (dBA) | (dBA) | (feet) | (dBA) |
| Backhoe | | No | 40 | | 77.6 | 230 | 0 |
| Dozer | | No | 40 | | 81.7 | 230 | 0 |
| Grader | | No | 40 | 85 | | 230 | 0 |

| | | | | Results | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Calculated (dBA) | | | Noise Limits (dBA) | | | | | | Noise Limit Exceedance (dBA) | | | | |
| | | | | Day | | Evening | | Night | | Day | | Evening | | Night | |
| Equipment | | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| Backhoe | | 64.3 | 60.3 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dozer | | 68.4 | 64.4 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Grader | | 71.7 | 67.8 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Total | 71.7 | 69.9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | *Calculated Lmax is the Loudest value. | | | | | | | | | | | | | |

**Folsom AC Marriott Hotel**

**Existing Scenario**

**CadnaA Road Sources**

| Name | M. | ID | Lme | | | Count Data | | exact Count Data | | | | | | Speed Limit | | SCS | Surface | | Gradient | Mult. Reflection | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | DTV | Str.class. | M | | | p (%) | | | Auto | Truck | Dist. | Dstro | Type | | Drefl | Hbuild | Dist. |
| | | | (dBA) | (dBA) | (dBA) | | | Day | Evening | Night | Day | Evening | Night | (km/h) | (km/h) | | (dB) | | (%) | (dB) | (m) | (m) |
| East Bidwell North | | | 69.5 | 0 | 0 | | | 3469 | 0 | 0 | 4 | 0 | 0 | 72 | | w33.5 | 0 | 1 | 0 | 0 | | |
| East Bidwell South | | | 70 | 0 | 0 | | | 3894 | 0 | 0 | 4 | 0 | 0 | 72 | | w33.5 | 0 | 1 | 0 | 0 | | |
| Broadstone West | | | 66.7 | 0 | 0 | | | 1822 | 0 | 0 | 4 | 0 | 0 | 72 | | w30.5 | 0 | 1 | 0 | 0 | | |
| Broadstone East | | | 66.7 | 0 | 0 | | | 1795 | 0 | 0 | 4 | 0 | 0 | 72 | | w30.5 | 0 | 1 | 0 | 0 | | |

**Results Table**

| Name | M. | ID | Level Lr | | Limit. Value | | Land Use | | | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Night | Day | Night | Type | Auto | Noise Type | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | | | | (m) | | (m) | (m) | (m) |
| Broadstone West Residential 1 | | R2 | 67 | -69.2 | 0 | 0 | | x | Total | 1.52 | r | 663179.87 | 4279717.38 | 1.52 |
| Broadstone West Residential 2 | | R3 | 70.7 | -65.6 | 0 | 0 | | x | Total | 1.52 | r | 663166.76 | 4279607.91 | 1.52 |
| Broadstone East Residential | | R4 | 69.5 | -66.6 | 0 | 0 | | x | Total | 1.52 | r | 663752.08 | 4280346.15 | 1.52 |
| Bidwell South Residential | | R5 | 69.5 | -69.4 | 0 | 0 | | x | Total | 1.52 | r | 663555.8 | 4279922.95 | 1.52 |
| Bidwell North Commercial | | R6 | 72.4 | -66.4 | 0 | 0 | | x | Total | 1.52 | r | 663232.27 | 4280139.13 | 1.52 |

**Folsom AC Marriott Hotel**

**Existing Plus Project Scenario**

**CadnaA Road Sources**

| Name | M. | ID | Lme | | | Count Data | | exact Count Data | | | | | | Speed Limit | | SCS | Surface | | Gradient | Mult. Reflection | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | DTV | Str.class. | M | | | p (%) | | | Auto | Truck | Dist. | Dstro | Type | | Drefl | Hbuild | Dist. |
| | | | (dBA) | (dBA) | (dBA) | | | Day | Evening | Night | Day | Evening | Night | (km/h) | (km/h) | | (dB) | | (%) | (dB) | (m) | (m) |
| East Bidwell North | | | 69.5 | 0 | 0 | | | 3475 | 0 | 0 | 4 | 0 | 0 | 72 | | w33.5 | 0 | 1 | 0 | 0 | | |
| East Bidwell South | | | 70 | 0 | 0 | | | 3900 | 0 | 0 | 4 | 0 | 0 | 72 | | w33.5 | 0 | 1 | 0 | 0 | | |
| Broadstone West | | | 66.7 | 0 | 0 | | | 1828 | 0 | 0 | 4 | 0 | 0 | 72 | | w30.5 | 0 | 1 | 0 | 0 | | |
| Broadstone East | | | 66.7 | 0 | 0 | | | 1801 | 0 | 0 | 4 | 0 | 0 | 72 | | w30.5 | 0 | 1 | 0 | 0 | | |

**Results Table**

| Name | M. | ID | Level Lr | | Limit. Value | | Land Use | | | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Night | Day | Night | Type | Auto | Noise Type | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | | | | (m) | | (m) | (m) | (m) |
| Broadstone West Residential 1 | | R2 | 67 | -69.2 | 0 | 0 | | x | Total | 1.52 | r | 663179.87 | 4279717.38 | 1.52 |
| Broadstone West Residential 2 | | R3 | 70.7 | -65.6 | 0 | 0 | | x | Total | 1.52 | r | 663166.76 | 4279607.91 | 1.52 |
| Broadstone East Residential | | R4 | 69.5 | -66.6 | 0 | 0 | | x | Total | 1.52 | r | 663752.08 | 4280346.15 | 1.52 |
| Bidwell South Residential | | R5 | 69.5 | -69.4 | 0 | 0 | | x | Total | 1.52 | r | 663555.8 | 4279922.95 | 1.52 |
| Bidwell North Commercial | | R6 | 72.4 | -66.4 | 0 | 0 | | x | Total | 1.52 | r | 663232.27 | 4280139.13 | 1.52 |

**Folsom AC Marriott Hotel**

**Cumulative Scenario**

**CadnaA Road Sources**

| Name | M. | ID | Lme | | | Count Data | | exact Count Data | | | | | | Speed Limit | | SCS | Surface | | Gradient | Mult. Reflection | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | DTV | Str.class. | M | | | p (%) | | | Auto | Truck | Dist. | Dstro | Type | | Drefl | Hbuild | Dist. |
| | | | (dBA) | (dBA) | (dBA) | | | Day | Evening | Night | Day | Evening | Night | (km/h) | (km/h) | | (dB) | | (%) | (dB) | (m) | (m) |
| East Bidwell North | | | 70.3 | 0 | 0 | | | 4103 | 0 | 0 | 4 | 0 | 0 | 72 | | w33.5 | 0 | 1 | 0 | 0 | | |
| East Bidwell South | | | 70.8 | 0 | 0 | | | 4621 | 0 | 0 | 4 | 0 | 0 | 72 | | w33.5 | 0 | 1 | 0 | 0 | | |
| Broadstone West | | | 66.8 | 0 | 0 | | | 1842 | 0 | 0 | 4 | 0 | 0 | 72 | | w30.5 | 0 | 1 | 0 | 0 | | |
| Broadstone East | | | 66.7 | 0 | 0 | | | 1802 | 0 | 0 | 4 | 0 | 0 | 72 | | w30.5 | 0 | 1 | 0 | 0 | | |

**Results Table**

| Name | M. | ID | Level Lr | | Limit. Value | | Land Use | | | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Night | Day | Night | Type | Auto | Noise Type | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | | | | (m) | | (m) | (m) | (m) |
| Broadstone West Residential 1 | | R2 | 67.1 | -69.2 | 0 | 0 | | x | Total | 1.52 | r | 663179.87 | 4279717.38 | 1.52 |
| Broadstone West Residential 2 | | R3 | 70.8 | -65.6 | 0 | 0 | | x | Total | 1.52 | r | 663166.76 | 4279607.91 | 1.52 |
| Broadstone East Residential | | R4 | 69.6 | -66.6 | 0 | 0 | | x | Total | 1.52 | r | 663752.08 | 4280346.15 | 1.52 |
| Bidwell South Residential | | R5 | 70.1 | -69.4 | 0 | 0 | | x | Total | 1.52 | r | 663555.8 | 4279922.95 | 1.52 |
| Bidwell North Commercial | | R6 | 73.1 | -66.4 | 0 | 0 | | x | Total | 1.52 | r | 663232.27 | 4280139.13 | 1.52 |

**Folsom AC Marriott Hotel**

**Cumulative Plus Project Scenario**

**CadnaA Road Sources**

| Name | M. | ID | Lme | | | Count Data | | exact Count Data | | | | | | Speed Limit | | SCS | Surface | | Gradient | Mult. Reflection | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | DTV | Str.class. | M | | | p (%) | | | Auto | Truck | Dist. | Dstro | Type | | Drefl | Hbuild | Dist. |
| | | | (dBA) | (dBA) | (dBA) | | | Day | Evening | Night | Day | Evening | Night | (km/h) | (km/h) | | (dB) | | (%) | (dB) | (m) | (m) |
| East Bidwell North | | | 70.3 | 0 | 0 | | | 4109 | 0 | 0 | 4 | 0 | 0 | 72 | | w33.5 | 0 | 1 | 0 | 0 | | |
| East Bidwell South | | | 70.8 | 0 | 0 | | | 4627 | 0 | 0 | 4 | 0 | 0 | 72 | | w33.5 | 0 | 1 | 0 | 0 | | |
| Broadstone West | | | 66.8 | 0 | 0 | | | 1848 | 0 | 0 | 4 | 0 | 0 | 72 | | w30.5 | 0 | 1 | 0 | 0 | | |
| Broadstone East | | | 66.7 | 0 | 0 | | | 1808 | 0 | 0 | 4 | 0 | 0 | 72 | | w30.5 | 0 | 1 | 0 | 0 | | |

**Results Table**

| Name | M. | ID | Level Lr | | Limit. Value | | Land Use | | | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Night | Day | Night | Type | Auto | Noise Type | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | | | | (m) | | (m) | (m) | (m) |
| Broadstone West Residential 1 | | R2 | 67.1 | -69.2 | 0 | 0 | | x | Total | 1.52 | r | 663179.87 | 4279717.38 | 1.52 |
| Broadstone West Residential 2 | | R3 | 70.8 | -65.6 | 0 | 0 | | x | Total | 1.52 | r | 663166.76 | 4279607.91 | 1.52 |
| Broadstone East Residential | | R4 | 69.6 | -66.6 | 0 | 0 | | x | Total | 1.52 | r | 663752.08 | 4280346.15 | 1.52 |
| Bidwell South Residential | | R5 | 70.2 | -69.4 | 0 | 0 | | x | Total | 1.52 | r | 663555.8 | 4279922.95 | 1.52 |
| Bidwell North Commercial | | R6 | 73.1 | -66.4 | 0 | 0 | | x | Total | 1.52 | r | 663232.27 | 4280139.13 | 1.52 |

**Folsom AC Marriott Hotel**

**On-Site Generated Noise**

**CadnaA Point Sources**

| Name | M. | ID | Result. PWL | | | Lw / Li | | | Correction | | | Sound Reduction | | Attenuation | Operating Time | | | K0 | Freq. | Direct. | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | Type | Value | norm. | Day | Evening | Night | R | Area | | Day | Special | Night | | | | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | | | dB(A) | dB(A) | dB(A) | dB(A) | | (m²) | | (min) | (min) | (min) | (dB) | (Hz) | | (m) | | (m) | (m) | (m) |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663396.8 | 4279792 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663390.8 | 4279785 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663386.9 | 4279789 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663392.6 | 4279796 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663388.9 | 4279800 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663383.1 | 4279793 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663378.9 | 4279796 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663385.4 | 4279803 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663382.9 | 4279806 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663375.1 | 4279799 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663370.2 | 4279803 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663377.3 | 4279810 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663391.2 | 4279771 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663397.1 | 4279766 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663388 | 4279764 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663392.6 | 4279759 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663364.4 | 4279807 | 19.49 |
| HVAC | | HVAC | 80.2 | 80.2 | 80.2 | Lw | HVAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1.2 | g | 663371.8 | 4279815 | 19.49 |
| Generator | | Gen | 71.1 | 71.1 | 71.1 | Lw | Gen | | 0 | 0 | 0 | | | | | | | 0 | | (none) | 1 | r | 663387.3 | 4279752 | 1 |

**Sound Level Library**

| Name | ID | Type | 1/3 Oktave Spectrum (dB) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weight. | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | A | lin |
| Carrier 50PG | HVAC | Li | | 90.4 | 83.1 | 80.9 | 77.8 | 75.2 | 70 | 66.1 | 57.6 | 80.2 | 91.9 |
| Generator | Gen | Li | | | | | | 71.1 | | | | 71.1 | 71.1 |

**Results Table**

| Name | M. | ID | Level Lr | | Limit. Value | | Land Use | | | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Night | Day | Night | Type | Auto | Noise Type | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | | | | (m) | | (m) | (m) | (m) |
| Broadstone West Residential | | R1 | 28.9 | 28.9 | 0 | 0 | | x | Total | 1.52 | r | 663184.03 | 4279717.53 | 1.52 |
| Bidwell South Residential | | R2 | 28.5 | 28.5 | 0 | 0 | | x | Total | 1.52 | r | 663543.04 | 4279932.71 | 1.52 |
| Palladio1 | | C1 | 31.2 | 31.2 | 0 | 0 | | x | Total | 1.52 | r | 663429.3 | 4279746.65 | 1.52 |
| Palladio2 | | C2 | 32.1 | 32.1 | 0 | 0 | | x | Total | 1.52 | r | 663458.5 | 4279781.8 | 1.52 |

**Folsom AC Marriott Hotel**

**On-Site Traffic Noise**

**Results Table**

| Name | M. | ID | Level Lr | | Limit. Value | | Land Use | | | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Night | Day | Night | Type | Auto | Noise Type | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | | | | (m) | | (m) | (m) | (m) |
| Patio | | RP | 63.9 | 30.4 | 0 | 0 | | x | Total | 1.52 | r | 663418.26 | 4279780.2 | 1.52 |
| 2nd Floor 1 | | R2-1 | 63.3 | 31.2 | 0 | 0 | | x | Total | 6.4 | r | 663415.02 | 4279781.28 | 6.4 |
| 2nd Floor 2 | | R2-2 | 63.7 | 34.8 | 0 | 0 | | x | Total | 6.4 | r | 663373.25 | 4279820.43 | 6.4 |
| 2nd Floor 3 | | R2-3 | 63.7 | 33.2 | 0 | 0 | | x | Total | 6.4 | r | 663367.55 | 4279820.49 | 6.4 |
| 3rd Floor 1 | | R3-1 | 63.1 | 31.8 | 0 | 0 | | x | Total | 9.75 | r | 663414.34 | 4279781.89 | 9.75 |
| 3rd Floor 2 | | R3-2 | 63.6 | 36 | 0 | 0 | | x | Total | 9.75 | r | 663372.88 | 4279820.8 | 9.75 |
| 3rd Floor 3 | | R3-3 | 63.6 | 34.5 | 0 | 0 | | x | Total | 9.75 | r | 663368.66 | 4279821.54 | 9.75 |
| 4th Floor 1 | | R4-1 | 63 | 32.7 | 0 | 0 | | x | Total | 13.1 | r | 663413.77 | 4279782.46 | 13.1 |
| 4th Floor 2 | | R4-2 | 63.6 | 37.4 | 0 | 0 | | x | Total | 13.1 | r | 663372.52 | 4279821.17 | 13.1 |
| 4th Floor 3 | | R4-3 | 63.7 | 36.1 | 0 | 0 | | x | Total | 13.1 | r | 663368.21 | 4279821.14 | 13.1 |
| 5th Floor 1 | | R5-1 | 63 | 36.2 | 0 | 0 | | x | Total | 16.46 | r | 663413.08 | 4279783.16 | 16.46 |
| 5th Floor 2 | | R5-2 | 63.6 | 39.8 | 0 | 0 | | x | Total | 16.46 | r | 663372.16 | 4279821.49 | 16.46 |
| 5th Floor 3 | | R5-3 | 63.8 | 39 | 0 | 0 | | x | Total | 16.46 | r | 663369.12 | 4279821.95 | 16.46 |