DOCKETED	
Docket Number:	21-SPPE-02
Project Title:	STACK Trade Zone Park
TN #:	246767
Document Title:	STACK Responses to CEC Data Request Set 3 - TZP
Description:	N/A
Filer:	Scott Galati
Organization:	DayZenLLC
Submitter Role:	Applicant Representative
Submission Date:	10/24/2022 3:43:33 PM
Docketed Date:	10/24/2022

RESPONSE TO CEC STAFF DATA REQUEST SET 3 (86-99)

STACK Trade Zone Park (21-SPPE-02)

SUBMITTED TO: CALIFORNIA ENERGY COMMISSION
SUBMITTED BY: **STACK Infrastructure**

October 2022

DAYZEN LLC

INTRODUCTION

Attached are STACK Infrastructure's (STACK) responses to California Energy Commission (CEC) Staff Data Request Set No. 3 (86-99) for the Trade Zone Park (TZP) Application for Small Power Plant Exemption (SPPE) (21-SPPE-02). Staff issued Data Request Set No. 1 on October 19, 2022.

The Data Responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as Staff presented them and are keyed to the Data Request numbers (86-99). Additional tables, figures, or documents submitted in response to a data request (e.g., supporting data, stand-alone documents such as plans, folding graphics, etc.) are found in Attachments at the end of the document and labeled with the Data Request Number for ease of reference.

For context, the text of the Background and Data Request precede each Data Response.

GENERAL OBJECTIONS

STACK objects to all data requests that require analysis beyond which is necessary to comply with the California Environmental Quality Act (CEQA) or which require STACK to provide data that is in the control of third parties and not reasonably available to STACK. Notwithstanding this objection, STACK has worked diligently to provide these responses swiftly to allow the CEC Staff to prepare the Draft Environmental Impact Report (DEIR).

AIR QUALITY AND PUBLIC HEALTH

BACKGROUND: Calculations for Volatile Organic Compounds

Atmospheric fuel storage tanks emit volatile organic compounds (VOCs) through two pathways: breathing losses from the normal evaporation of the fuel in the tank and working losses resulting from increased evaporation during filling operations. Page 91 of the SPPE application (TN 240910) states that "each pair of stacked engines will be accompanied by two (2) diesel fuel tanks, i.e., a 12,000- gallon tank at the bottom of the engine pair, and 500-gallon tank under the upper engine of the pair".

Page 91 of the SPPE application also states that VOC working and breathing loss emission calculations for the generator diesel fuel tanks are presented in Appendix AQ-1 (TN 240911-1). However, staff review of Appendix AQ-1 found that the calculations were not included.

Additionally, the revised project description (TN 246142) submitted on September 19, 2022, states that one additional 1-MW diesel generator will be included in the project. Staff requests that the calculations used to quantify fuel tank VOC emissions be provided and that any changes due to the revised project description be included as well.

Staff review of the updated air quality impact analysis (TN 246369) submitted on October 6, 2022, found that updated fuel tank VOC emissions were not included.

DATA REQUESTS

86. Please provide the calculations used to quantify the working and breathing losses from the VOCs in the generator diesel fuel tanks.

Response to Data Request 86

The calculations for the working and breathing loses from the diesel fuel storage tanks are provided and also includes the additional one (1) megawatt (MW) diesel engine fuel storage. The total project VOC emissions from the storage of diesel fuel is as follows:

- TPY 0.0183
- Lbs/yr 37.32
- Lbs/day 0.102
- Lbs/hr 0.00426

87. If spreadsheets are used for these calculations, please provide copies of the spreadsheets with embedded calculations live and intact.

Response to Data Request 87

The active spreadsheets will be provided to staff via secure SharePoint. Staff should send the invite to upload to sgalati@dayzenllc.com

CULTURAL AND TRIBAL CULTURAL RESOURCES

BACKGROUND: Gap in Study Coverage

The figures were prepared for the revised archaeological resources assessment (ARA). PDF Page 8, Paragraph 5 of the ARA defines Project Site and Project Area as – "The Project site (Figure 1-3) is an area defined by all Project related construction, including the proposed new building location, and the length of and both ends of the proposed new above and below ground transmission line." "Following a data request from the CEC, the Project area (Figure 1-4) is defined as the Project site and a one-building-band buffer around it."

The Project Site and Project Area are depicted on Figure 1-4 (ARA PDF Page 12) of the revised Cultural Resource Assessment for the 1849 Fortune Drive And 2400 Ringwood Avenue Project, San José, Santa Clara County, California. However, in the vicinity of Fortune Drive, there appears to be a "gap" in coverage on the east and west sides of the Project Site where the Project Site is not surrounded by a one-building-band depicted as the Project Area.

DATA REQUEST

88. The current Figure 1-4 "gap" appears to contradict the ARA definition of Project Area as a one-building-band around the Project Site. Please revise Figure 1-4 with explanations in text, and/or conduct any additional survey and research necessary to eliminate this "gap."

    Minimally, this may require the survey and evaluation of the two buildings diagonally to the southeast and southwest of the "gap." By way of example, near the intersection of McCandless Drive, Montague Expressway, and Trade Zone Boulevard, the Project Area extends diagonally well beyond the ends of the Underground Transmission Line and the Overhead Transmission Line or the western end of the Project Site.

    Alternatively, the simple extension of the Project Area boundary to the south revising Figures 1-4 to eliminate the "gap" might suffice if PaleoWest staff believe that they have already adequately surveyed this area (this determination might depend on APN boundaries). Regardless, the survey and evaluation of the two buildings diagonal to the "gap," or the simple revising of Figures 1-4 with explanations in text, are requested in order to facilitate the required consideration of all built environment features within a one-building-band of the Project Site.

Response to Data Request 88

The Project area has been updated in the *Cultural Resource Assessment for the 1849 Fortune Drive And 2400 Ringwood Avenue Project, San José, Santa Clara County,*

California (revision date October 13, 2022). The revised Project area can be seen in Figures 1-2 and 1-3 (PDF pages 10–11) and covers the "gap" identified by CEC staff.

Beyond the two Historic Period structures at 2001 Fortune Drive (APN 244-17-003) and 1700 Montague Expressway (APN 244-24-004), all structures within the Project area were constructed during or after 1979. Please see below map showing dates of construction for the structures/parcels within the revised Project area.

Cultural Resource Assessment: 1849 Fortune Drive and 2400 Ringwood Avenue Project PaleoWest Project No. 21-0887

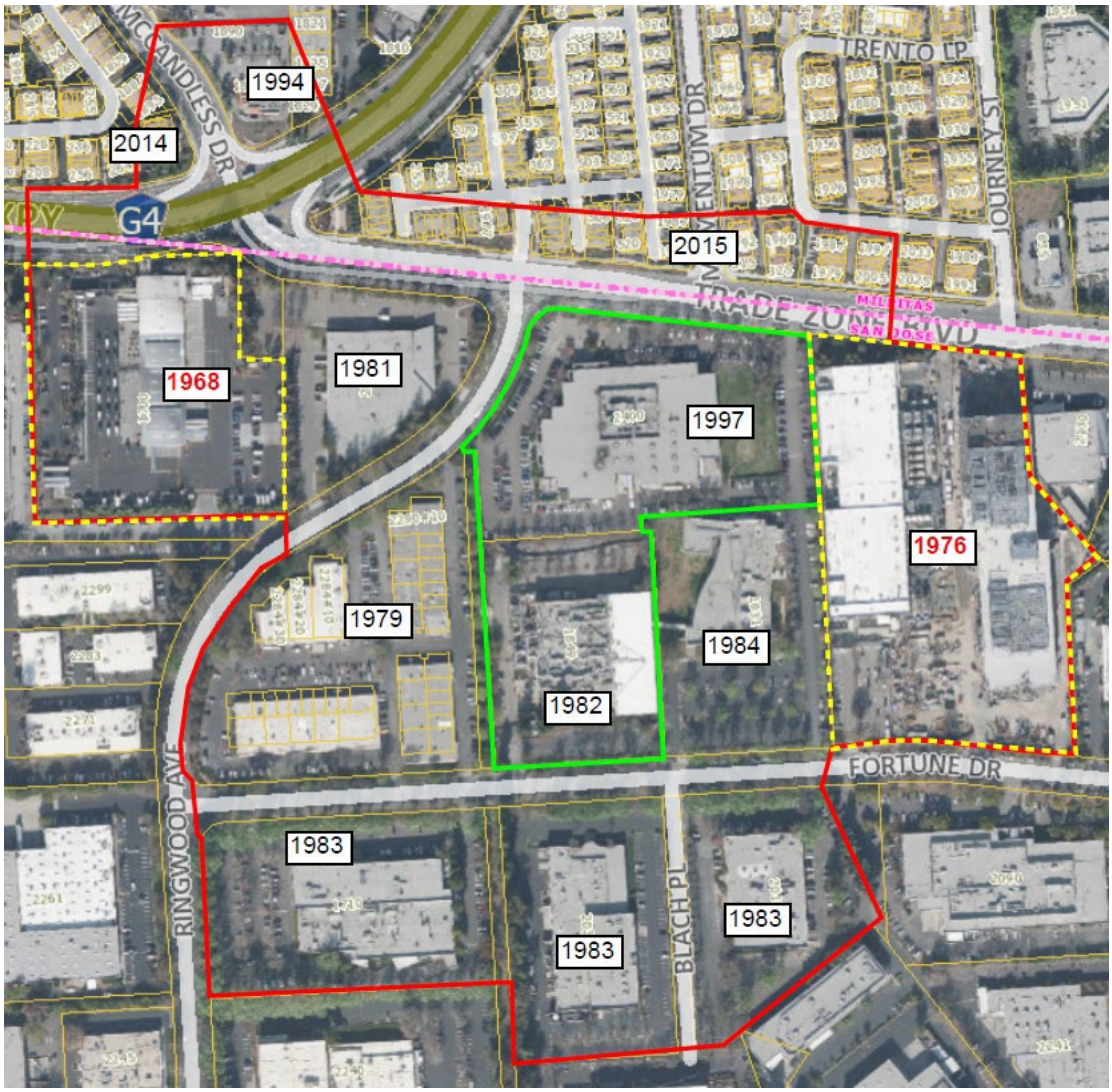


Figure 1. Dates of construction for structures/parcels within Project site (green border) and Project area (red border). Yellow dashed lines indicate structures/parcels 45+ years in age that were evaluated as part of the report.

GREENHOUSE GAS EMISSIONS

BACKGROUND: Generator for the Advanced Manufacturing Building

The revised project description (TN 246142) states that the capacity of the emergency backup generating facility would be increased from 90 MW to 91 MW because of the addition of one 1-MW diesel-fired backup generator for the Advanced Manufacturing Building (AMB). However, the response to CEC staff Data Requests Set 2 number 64 (TN 245892) confirmed that the AMB would need 3 MW of electricity. Staff needs clarification regarding how the additional 1-MW diesel-fired backup generator would be able to provide enough electricity for the 3-MW AMB during an emergency.

DATA REQUEST

89. Please clarify how the additional 1-MW diesel-fired backup generator would be able to provide enough electricity for the 3-MW AMB during an emergency.

Response to Data Request 89

The purpose of the 1-MW backup generator for the AMB is solely to provide electricity for life safety emergency services during an outage. Is it not designed to replace the entire building load of the AMB in the same way the larger generators operate for a data center.

BACKGROUND: Natural Gas for Comfort Heating

Page 88 of the SPPE application states that emissions from natural gas use for comfort heating were included in the secondary operational emissions calculation. However, on December 1, 2020, the San José City Council approved an ordinance, known as a building "reach code" (Ordinance No. 30502), to prohibit natural gas infrastructure in all new construction in San José, starting on August 1, 2021. The ordinance provides an exception until December 31, 2024 for hospitals and for facilities with a distributed energy resource and a limited exemption for manufacturing and industrial facilities.

Staff needs clarification whether the project would use natural gas for comfort heating. If not, staff needs to confirm whether the project would use electric heating and whether the electricity used for comfort heating would be accounted for in the total maximum energy consumption of 93 MW.

DATA REQUESTS

90. Please clarify whether the project would use natural gas for comfort heating.

Response to Data Request 90

The reference to natural gas use for comfort heating in the Air Quality section of the SPPE Application is incorrect and is in conflict with Section 2.3.8.1 of the Revised Project Description. The TZP is not proposing the use of natural gas at the site.

91. Please confirm whether the project would use electric heating.

Response to Data Request 91

The TZP will use electric heating.

92. Please confirm whether the electricity used for comfort heating would be accounted for in the total maximum energy consumption of 93 MW.

Response to Data Request 92

The total maximum energy consumption estimate of 93 MW includes comfort heating.

BACKGROUND: Hydrofluorocarbon Sale and Distribution Prohibition

On September 30, 2022, the Governor approved Senate Bill (SB) 1206 (https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1206), which would prohibit a person from offering for sale or distribution, or otherwise entering into commerce in the state, bulk hydrofluorocarbons (HFCs) or bulk blends containing HFCs that exceed a specified global warming potential limit beginning January 1, 2025, and; lower global warming potential limits beginning January 1, 2030, and January 1, 2033. However, the bill does not restrict the authority of the California Air Resources Board (CARB) to establish regulations lowering the maximum allowable global warming potential limit below the limits established by the bill.

Given the restrictions established by the bill and the potential for more stringent limits to be imposed by CARB in the future, staff needs to know how the proposed refrigerant for the air-cooled chillers, R-134a, would be initially charged, handled during maintenance and repair, and replenished after the sale and distribution prohibition timelines established in SB 1206.

DATA REQUESTS

93. Please explain how the proposed refrigerant for the air-cooled chillers, R-134a, would be initially charged, handled during maintenance and repair, and replenished after the sale and distribution prohibition timelines established in SB 1206.

Response to Data Request 93

STACK will be purchasing air cooled chillers that use R-513a. Below is a table of the potential GHG emissions associated with the potential leakage of R-513a.

Parameter	Data
Refrigerant Used	R-513a
# of Chiller Units	78
R-513a Charge Amount/Unit	750 lbs
Leak Rate	0.5%/yr
R-513a Emissions/Unit	3.75 lbs/yr
R-513a Total Annual Emissions	292.5 lbs/yr
GWP (NRI)	573
Total CO_2e	76.01 Mtons/yr

GWP Values: https://ww2.arb.ca.gov/ghg-gwps

Leak rate sources:

1. https://www.trane.com/Commercial/Uploads/PDF/11612/Related_Literature/Refrigerant/HVAC_Refrigerants.pdf
2. https://www.trane.com › content › dam › Trane › Commercial › global › products-systems › education-training › industry-articles › ENV-APN001A-EN_2015_refrigerants.pdf
3. NRI – National Refrigeration, Inc., 3/2020

HAZARDS AND HAZARDOUS MATERIALS

BACKGROUND: Building Demolition Hazardous Material Identification and Handling

The project calls for demolition of the two existing buildings and infrastructure that cannot be reused. This will generate a significant volume of waste material. Demolition of the buildings may require the handling, storage, and disposal of waste materials that are classified as hazardous materials or that have been contaminated by hazardous materials use during former business operations.

DATA REQUESTS

94. Please describe the materials management measures that are planned for prior to and during demolition activities to identify hazardous materials or contaminated materials in the buildings, and strategies for separation and storage of these materials, and disposal of these materials at an appropriate facility or landfill.

Response to Data Request 94

The CEC has not requested this information for prior SPPE projects where demolition of a building was part of the project description because it is not necessary to perform its CEQA analysis. For an SPPE, the CEC is not issuing a permit, is not performing an analysis to demonstrate compliance with Laws, Ordinances, Regulations and Standards (LORS), and is not acting as the Chief Building Official, as it would if it were processing an Application For Certification (AFC). To that end, the information requested is not necessary for Staff to conclude that the project will not result in a significant impact during construction. The following are excerpts from the certified EIR for the CA3BGF (also which included the demolition of a former tech building) where the CEC appropriately relied on existing laws and best practices to support a finding of no significant impact. This approach is also appropriate given that the City of San Jose will be issuing demolition and building permits and enforcing them.

> Less Than Significant Impact. During the construction phase of the project, the only hazardous materials used would be paints, cleaners, solvents, gasoline, motor oil, welding gases, and lubricants. When not in use, any hazardous material would be stored in designated construction staging areas in compliance with local, state, and federal requirements. Any impacts resulting from spills or other accidental releases of these materials would be limited to the site due to the small quantities involved and their infrequent use, hence reduced chances of release. Temporary containment berms would also be used to help contain any spills during the construction of the project.

> During construction, all 44 2.75 MW diesel generators fuel tanks would have to be filled. The transportation of the diesel fuel to the site would take many tanker trucks trips. Deliveries of diesel fuel during the project's operation would be scheduled on an as needed basis resulting in four fuel tanker truck trips annually. Diesel fuel has a long history of being routinely transported and used as a common motor fuel. It is appropriate to rely upon the extensive regulatory framework that applies to the shipment of hazardous materials on California highways and roads to ensure safe handling in general transportation (see Federal Hazardous Materials Transportation Law 49 USC § 5101 et seq., DOT regulations 49 CFR subpart H, §§ 172–700, and California Department of Motor Vehicles (DMV) regulations on hazardous cargo). The site contains no unique feature that would prohibit existing regulations from serving as adequate mitigation; therefore, the transportation of diesel fuel would pose a less than significant risk to the surrounding public.
>
> The routine transport use or disposal of hazardous materials would have a less than significant impact to the public or the environment. (CA3BGF FEIR, page 4.9-6)

and

> As described under the discussion for impact criteria "a", project construction would require the limited use of hazardous materials, such as fuels, lubricants, and solvents. The storage and use of hazardous materials during construction could result in the accidental release of small quantities of hazardous materials typically associated with minor spills or leaks. However, as discussed in impact criteria "a", hazardous materials would be stored, handled, and used in accordance with applicable regulations. Personnel would be required to follow instructions on health and safety precautions and procedures to follow in the event of a release of hazardous materials. All equipment and materials storage would be routinely inspected for leaks. Records would be maintained for documenting compliance with the storage and handling of hazardous materials.
>
> For the above reasons, the project impacts would be less than significant

While the FEIR in the CA3BGF proceeding did not specifically call out demolition, demolition was part of the project description and appears to be treated as part of construction. For the TZP, Staff should acknowledge that the City of San Jose has a distinct permit for the demolition of structures, compliance with would ensure that materials are segregated, treated and disposed of properly and in accordance with applicable local, state and federal law. At this time, since the TZP has not obtained the

SPPE from the CEC, it has not submitted demolition permits for the buildings that will be demolished.

95. Please provide an estimate of the volume and types of waste material that will be generated by project demolition.

Response to Data Request 95

This information is not available. It will be developed as part of compliance with the demolition permit that must be issued by the City of San Jose after the CEC SPPE process is complete.

BACKGROUND: Hazardous Materials Used During Construction

The project will include grading and construction of several buildings, a switchyard, a parking structure, generator enclosures, and miscellaneous above and below ground infrastructure. The construction contractor will likely use and store various hazardous materials onsite during construction.

DATA REQUEST

96. Please describe what types of hazardous materials would or may be stored and used onsite during project construction, including:
    a. Where and how would these materials be stored?
    b. Would any equipment fueling take place onsite during construction activities?
    c. Please describe measures to reduce the potential for leaks or spills of hazardous materials and measures to be taken if leaks were to occur.

Response to Data Request 96

See Response to Data Request 95.

NOISE

BACKGROUND: Cooling Unit Noise

The SPPE application (TN 242506 and TN 242507) provided the project's noise assessment with 78 cooling units accounted for, 30 units on the rooftop of the northern data center building, SVY05, and 48 cooling units on the rooftop of the southern data center unit, SVY06. There was no mention of any units on the rooftop of the advanced manufacturing building (AMB). However, the revised Noise Mitigation Assessment (TN 244212), filed with the Energy Commission's Docket after the filing of the SPPE application, lists a total of 121 cooling units: 69 on the rooftop of the three northern buildings (SVY05, AMB, and associated office building), and 52 units on the rooftop of the southern data center building, SVY06.

It is unclear if the original Noise Mitigation Assessment (TN 244212) accounts for all the 121 cooling units, as it has apparently assumed the project's noise level impacts with the original 78 units on the rooftops of the data center buildings with no mention of any units on the rooftop of AMB (SPPE application Tables 3.13-6 & 3.13-7).

DATA REQUESTS

97. If the noise impacts of all the 121 cooling units have been considered by the project applicant, please provide supporting documents.

Response to Data Request 97

Noise impacts of all 121 cooling units have been considered. The revised tech memo is contained in Appendix Noise DR 97, Attached and shows all cooling units on Figure 1 and Table 1.

98. If the noise impacts of all the 121 cooling units have not been considered, please provide the following:

    a. An identification of the placement and number of the cooling units on each of the project's buildings.

    b. An updated project noise assessment and contour map that include the project's operational noise impacts, with these units incorporated, at receivers R1 though R7 (identified in the SPPE application).

    c. A list of any mitigation measures to reduce noise impacts at these receivers, if additional measures beyond those identified in the Noise Mitigation Assessment are needed for the project to comply with the city's noise limits.

Response to Data Request 98

The placement of the coolers is shown in Figure 1 and Table 1 of the revised noise tech memo. Receivers R1 through R7 from the Illingworth & Rodkin analysis have been added to the revised tech memo, Figures 1, 2 and Table 2. No additional mitigation measures have been added beyond those summarized in the revised tech memo.

BACKGROUND: Generator Noise

The Revised Project Description (TN 246142) revises the total number of backup generators, with the addition of a 1-MW generator that would be installed near the southwest corner of the AMB. This revised filing does not assess the noise impacts from testing and maintenance of the additional 1-MW genset during normal operations, which include all the cooling units, on nearby receptors.

DATA REQUEST

99. Provide an updated project noise assessment and contour map from testing and maintenance of the additional 1-MW genset during normal operations, at receivers R1 through R7 (identified in the SPPE application).

Response to Data Request 99

As described in the revised tech memo, models, as well as Figures 1, 3 and Tables have been revised to include the additional 1-MW genset.

Appendix Noise DR-97

Revised Noise Tech Memo

Technical Memorandum

TO: Nyssa Hughes, Corgan Architecture and Planning

FROM: Amy Maule and Kristen Wallace

DATE: October 24, 2022

RE: **Noise Mitigation Assessment**
STACK SVY05/06 Data Center Development
San Jose, California
Landau Project No. 2016001.010

Introduction

At the request of Corgan Architecture and Planning (Corgan), Landau Associates, Inc. (Landau) prepared this noise analysis, which describes modeled noise levels and recommended noise control measures for the proposed SVY05/06 Data Center (Facility), to be located at 2400 Ringwood Avenue and 2000 Trade Zone Boulevard in San Jose, California.

This technical memorandum supplements the Trade Zone Park Environmental Noise and Vibration Assessment (Illingworth & Rodkin 2022) and specifically addresses noise levels from data center buildings SVY05 and SVY06 and associated equipment on the property located southeast of the Facility, currently used for commercial purposes (offices), and the residences to the north of the Facility. This study did not include an evaluation of noise associated with the planned parking garage and substation to be located immediately east of the SVY05 building. The Illingworth & Rodkin study addressed construction-related noise and vibration.

Facility Information

Land Use and Applicable Regulatory Noise Limits

The proposed Facility will be located on a San Jose parcel zoned Industrial Park. Land use surrounding the Facility to the east, west, and south is also zoned Industrial Park. Land adjacent to the southeast is currently used as an office facility. As described in Illingworth & Rodkin's report, the City of San Jose's Municipal Code contains a Zoning Ordinance that limits noise levels at adjacent properties. Chapter 20.50.300 states that sound pressure levels generated by any use or combination of uses on a property zoned for industrial use shall not exceed 60 A-weighted decibels (dBA) at any property line shared with land used or zoned for commercial purposes. Chapter 20.80.2030 limits testing of generators to the hours of 7 a.m. to 7 p.m., Monday through Friday.

Land adjacent to the north, opposite Trade Zone Boulevard, is located in the city of Milpitas. As described in Illingworth & Rodkin's report, the Noise Element of the Milpitas General Plan provides policies applicable to noise associated with the proposed project. At any property zoned for residential use, the daytime (7 a.m. to 10 p.m.) exterior average-hourly noise level (L_{eq}) standard is 55 dBA and the nighttime L_{eq} standard is 45 dBA. In situations where the existing noise levels exceed

the noise level standards, any new noise source must include mitigation that reduces the noise level of the noise source to at least the existing level plus 3 dBA. Illingworth & Rodkin conducted a noise measurement survey including a long-term measurement at the residences to the north of the Facility and reported existing L_{eq} ranging from 63 to 73 dBA.

Emergency work is exempt from the sound-level limits. Therefore, noise generated by the emergency generators to deliver electricity to the Facility during power outages would be exempt from the noise requirements noted above (Galati 2022).

Facility Configuration

Figure 1 shows the modeled plan for future full buildout of the Facility. The noise model was developed based on architectural plans provided by Corgan, which identify the following numbers and locations of the primary noise-producing equipment, totaling 121 cooling units and 39 emergency generators:

- 69 cooling units on the roofs of the three northern buildings (Advanced Manufacturing [AMB], SVY05, and associated offices)
- 15 emergency backup generators plus one house generator in the SVY05 generator yard
- One emergency backup generator located at ground level, west of the AMB, surrounded by a 15-foot (4.6-meter) solid wall
- 52 cooling units on the roof of the SVY06 building
- 21 data center generators plus one house generator in the SVY06 generator yard.

The equipment sound levels are provided in Table 1.

Emergency Generators

Each planned emergency generator will be housed in an enclosure rated to attenuate noise from the generator to a maximum level of 70 dBA at 23 feet (7 meters) from the enclosure. Emergency generators will be stacked two-high, with the exception of the house generators (located at ground level) and the easternmost SVY05 and SVY06 generators, which are single units.

Vendor-supplied noise specifications for generator exhaust stacks were provided to Landau by STACK (Table 1). Each exhaust stack will be equipped with a diesel particulate filter (DPF) and selective catalytic reduction (SCR) emission controls. Noise reduction associated with the SCR was conservatively modeled at 35 dBA.

House generators were assumed to have the same maximum noise level as the large generators. The size of house generators was roughly estimated based on plan drawings.

Rooftop Cooling Units

Model numbers and vendor-supplied noise specifications for proposed rooftop equipment were provided to Landau by Corgan. A visual screen wall surrounding all rooftop equipment is not expected to provide noise attenuation, and was not included in the model. York YVFA0359 rooftop units were assumed to be equipped with silencers to reduce noise levels by approximately 3 dBA.

Noise Modeling Approach

Modeled Noise Sources

This study included noise emission calculations and computerized noise propagation modeling for the Facility. Figure 1 shows the locations of the noise-generating equipment at the Facility relative to the property boundaries and nearby receivers. Table 1 lists the noise sources and the octave-band sound power level (PWL) noise emissions from each piece of equipment, calculated based on information provided by the project design team and Landau's experience with typical equipment noise levels.

For the loudest-case operations scenario, all rooftop cooling equipment was assumed to operate at maximum rated cooling capacity, in anticipation of an exceptionally hot day. Based on preliminary modeling by Landau and Illingworth & Rodkin, modeled noise levels at the residences to the north (city of Milpitas) were identified as requiring further analysis. The interior southeast corner of the Facility was identified as a location where modeled noise levels exceeded the relevant noise threshold (60 dBA) during generator maintenance operation of a single generator at a time.

Screening models were run to identify maximally affected receiver locations for the purposes of identifying maximum noise levels. Partial levels, or noise contributions from each source at the receivers, were used to determine the noise levels associated with single-generator operations at those receivers (generator maintenance scenario). In the maintenance scenario, all rooftop cooling equipment was assumed to operate at maximum rated cooling capacity during maintenance of a single generator.

Model Assumptions

The ambient sound pressure levels (SPLs) at the commercial property were modeled using the Computer-Aided Noise Abatement (CadnaA) computer model. The following modeling assumptions were used:

- The building layout and building heights for the data center were determined based on site plans and dimensions provided by the data center design team.
- The building walls, rooftops, and parapets of the data center building were assumed to be hard, reflective surfaces.
- The ground between the Facility yard and surrounding properties was assumed to be a combination of reflective pavement and absorptive vegetation.

- All rooftop equipment was modeled to serve as noise barriers for other nearby equipment. The sidewalls of all rooftop equipment were assumed to be reflective.
- The structure surrounding and supporting the stacked generator enclosures was assumed to be acoustically transparent; however, the enclosures themselves were modeled to serve as noise barriers and were assumed to be reflective.
- The topography of the surrounding area, including undeveloped portions of the Facility and adjacent and nearby land, was estimated using Google Earth to be relatively flat.

Receivers were placed at approximately 5 feet (1.5 meters) above the ground surface, to approximate human standing height.

Noise Model Results

Modeled daytime noise levels included operation of all rooftop cooling equipment at maximum rated cooling capacity plus the single emergency generator with the highest noise contribution to each receiver, to represent a generator maintenance scenario. Modeled nighttime noise levels included operation of rooftop cooling equipment only.

Table 2 shows the modeled daytime and nighttime noise levels at each maximally impacted receiver location compared to applicable noise limits. Two locations were identified as requiring additional analysis, the Milpitas residential property line to the north of the facility, opposite Trade Zone Boulevard, and the southeast interior corner of the Facility adjacent to property used for offices.

Modeled noise levels at the residential property line to the north, represented by receiver R1b (56 dBA daytime, 51 dBA nighttime) exceed the daytime and nighttime noise limits of 55 dBA and 45 dBA, respectively. Illingworth & Rodkin conducted a noise measurement survey including a long-term measurement at the residences to the north of the Facility and reported minimum ambient noise levels of 69 dBA (daytime) and 63 dBA (nighttime). Modeled noise levels are well below the measured ambient sound levels and would not be considered to result in a significant noise impact.

The interior southeast corner of the Facility was identified as a location where modeled noise levels exceeded the relevant noise threshold (60 dBA) during generator maintenance operation of a single generator at a time. Mitigation measures were identified as described below.

Noise contours are provided on Figures 2 and 3.

Identification of Potential Mitigation Measures

To identify mitigation strategies that could be employed to reduce noise levels at the adjacent commercial property to 60 dBA or below during maintenance operation of a single generator, Landau modeled a selection of potential mitigation measures individually and in combination and analyzed

the noise levels of each strategy on maximally affected receiver located southeast of the interior southeastern corner of the Facility (R6, shown on Figure 1).

Potential mitigation measures included mitigation of noise produced by rooftop units, extension of the parapet wall on the sides of the buildings facing the commercial property, mitigation of generator exhaust noise, and addition of a noise wall along the central-eastern property line (see Figure 1).

Conclusions and Recommendations

The detailed modeling analysis demonstrated that the Facility is not expected to cause significant noise impacts at adjacent receivers. A reduction of noise levels to below 60 dBA at the southeast-adjacent commercial property during business hours can be achieved using a combination of the following measures:

- Mitigation of noise produced by some or all of the York YVFA0359 rooftop units by approximately 3 dBA
- Extension of the parapet wall on the sides of the data center buildings facing the commercial property to approximately 16 feet (5 meters) above roof height
- Mitigation of generator exhaust noise using SCR controls and additional silencers on some or all generator exhaust stacks (approximately 45 dBA reduction)
- Addition of an approximately 16-foot (5-meter)-high noise wall along the central-eastern property line
- Addition of a parapet wall on the northern and eastern sides of the single-story portion of SVY06, approximately 6.6 feet (2 meters) above roof height.

Through a combination of the above-described measures, noise levels can be reduced to below 60 dBA at the east-adjacent commercial property during individual maintenance operation of all but a limited number of emergency generators. Those remaining generators (generators SVY0619, 20, and 21—upper-level units in the eastern portion of the SVY06 generator yard, as shown on Figure 1) whose individual operation results in noise levels above 60 dBA will be operated for scheduled maintenance only between 5 p.m. and 7 p.m. on weekdays, to avoid impacts to employees during work hours.

* * * * *

We trust this report meets your needs. If you have any questions, please do not hesitate to call the undersigned at 206.631.8680 if Landau can be of further assistance.

LANDAU ASSOCIATES, INC.

Amy Maule
Senior Scientist

Kristen Wallace
Principal

AEM/KLW/ccy
P:\2016\001\R\Landau_San Jose Noise Mitigation Assessment_tm - Updated - 10-24-22.docx

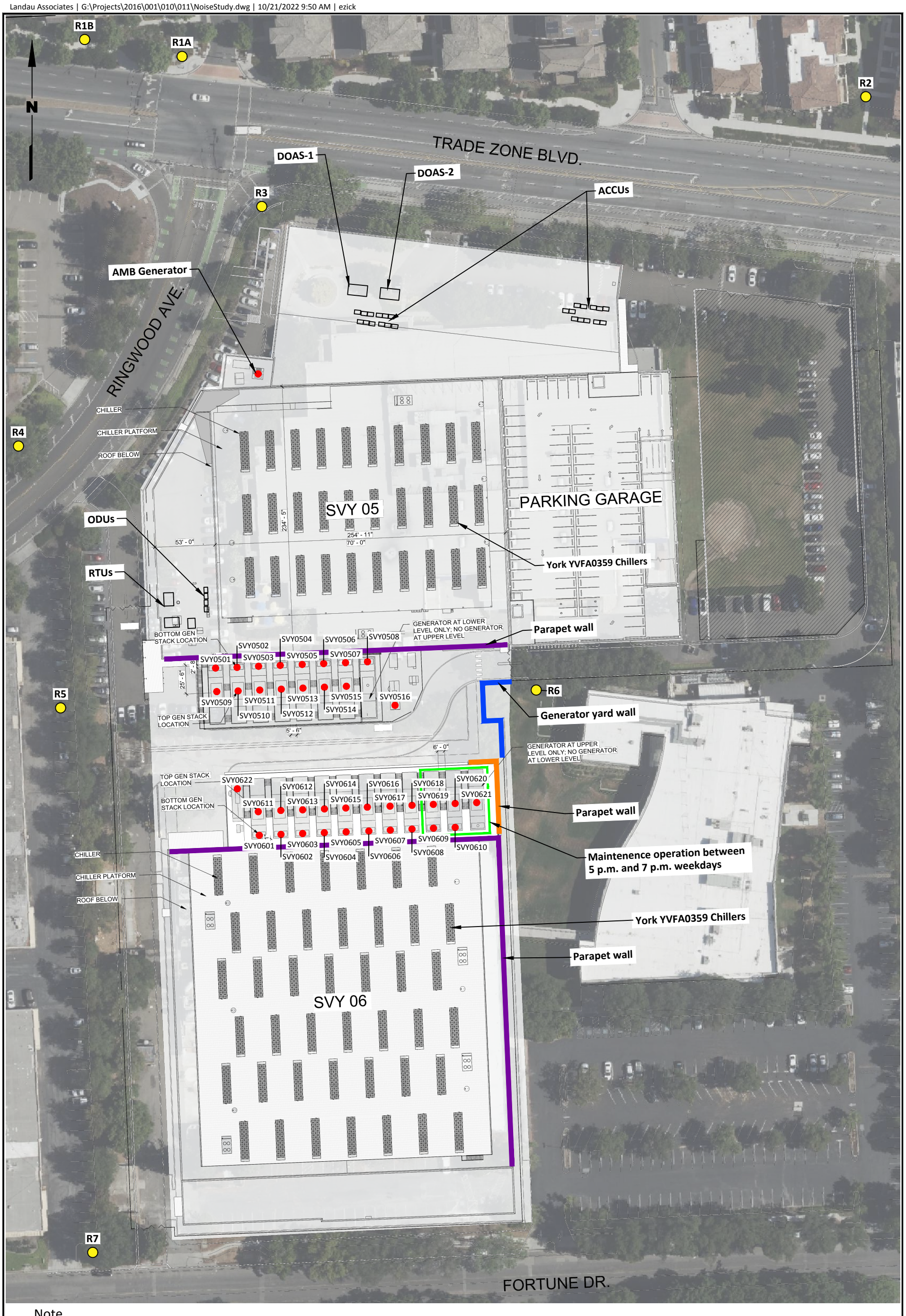
References

Galati, S. 2022. "Re: Stack - SVY04/05 - Acoustical Consultant." From Scott Galati, President, DayZen, LLC, to Nyssa Hughes, Corgan Architecture and Planning; Kimberly Wight, Critical Project Services, LLC; Michael Lisenbee, David J. Powers & Associates, Inc.; Joseph Oberto, Stack Infrastructure; Desiree DeiRossi, David J. Powers & Associates, Inc. January 3.

Illingworth & Rodkin. 2022. Report: Trade Zone Park Environmental Noise and Vibration Assessment, San Jose, California. Illingworth & Rodkin, Inc. March 30.

Attachments

Figure 1: Facility Layout, Noise Sources, and Modeled Receivers
Figure 2: Noise Contour – Southeast Generator
Figure 3: Noise Contour – AMB Generator
Table 1: Modeled Noise Sources and Sound Power Levels
Table 2: Calculated Noise Levels at Maximally Impacted Receivers



Note

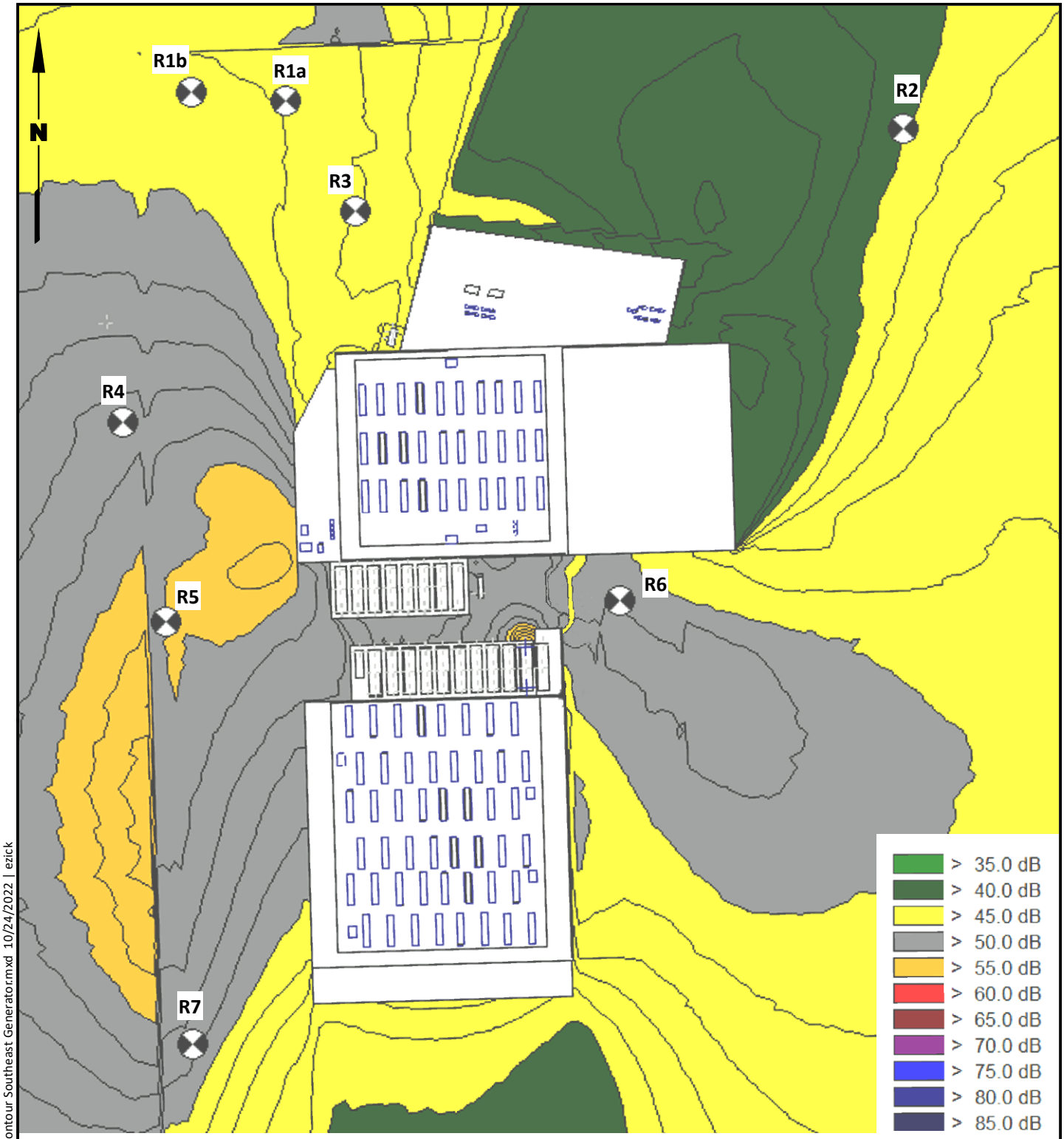
1. Figure is for informational purposes only. See project plan set for equipment locations and unit schedules.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 80 160
Scale in Feet

Source: CEQA Site Plan - Corgan 2022

LANDAU ASSOCIATES

Noise Mitigation Assessment STACK SVY05/06 Data Center Development	**Facility Layout, Noise Sources and Modeled Receivers**	Figure 1



Legend

Modeled Noise Receiver Location

0 150 300

Scale in Feet

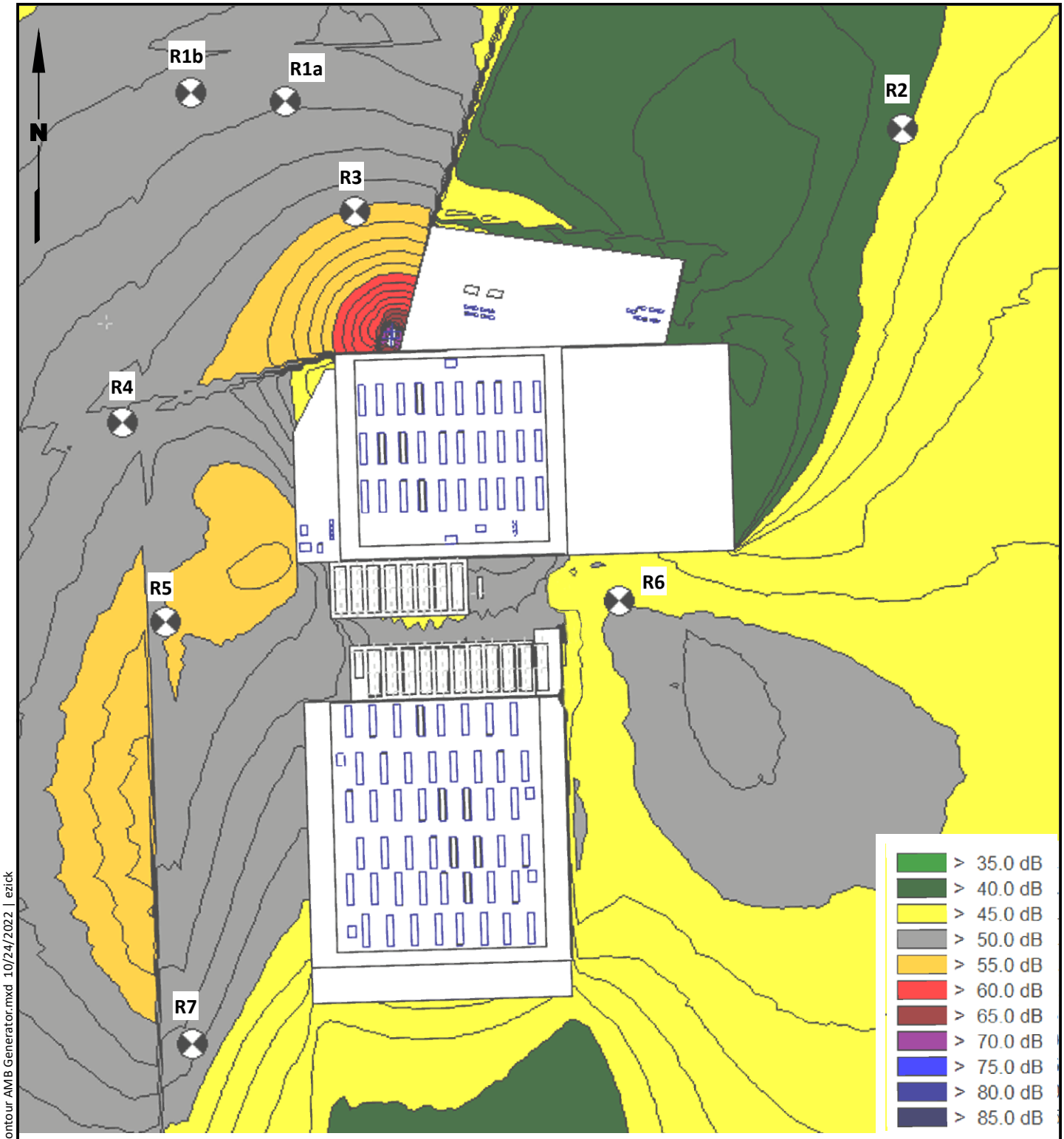
Note

1. dB = decibel.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

G:\Projects\2016\001\010\012\F02 Noise Contour Southeast Generator.mxd 10/24/2022 | ezick

LANDAU ASSOCIATES

Noise Mitigation Assessment STACK SVY05/06 Data Center Development	**Noise Contour – Southeast Generator**	Figure 2



Legend

⊗ Modeled Noise Receiver Location

0 150 300

Scale in Feet

Note

1. dB = decibel.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

G:\Projects\2016\001\010\012\F03 Noise Contour AMB Generator.mxd 10/24/2022 | ezick

LANDAU ASSOCIATES

Noise Mitigation Assessment STACK SVY05/06 Data Center Development	**Noise Contour – AMB Generator**	Figure 3

Table 1
Modeled Noise Sources and Sound Power Levels
STACK SVY05/06 Data Center Development
San Jose, California

Equipment ID* (number per building)	Model No.	Noise Level at Source by Octave Band (unweighted dB, without mitigation)								dBA
		63	125	250	500	1K	2K	4K	8K	
Generators										
Generator Enclosures (36)	TBD	-	118	-	-	-	-	-	-	102
Generator Enclosures (1-SVY05, 1 SVY06, 1-AMB)	TBD	-	116	-	-	-	-	-	-	100
Generator Exhaust Stacks	CAT 3516E - 3MW	-	136.3	130.3	128.6	125.1	119.4	120.2	117.3	139
SVY05/AMB Rooftop Cooling Units										
ODU 2-2 (1)	Daikin REYQ72XAYDA	-	-	79	-	-	-	-	-	70
ODU 1-2 and 3-2 (2)	Daikin REYQ96XAYDA	-	-	80	-	-	-	-	-	71
ODU 1-1 and 2-1 (2)	Daikin REYQ120XAYDA	-	-	81	-	-	-	-	-	72
ODU 3-1 and 4-1 (2)	Daikin REYQ144XAYDA	-	-	87	-	-	-	-	-	78
MAU-1-01 and 1-02 (2)	AAON RN-050	90	89	91	94	90	86	81	77	95
SCP-ACC-#-0# and ACC-#-0# (30)	York YVFA0359	104	97	100	97	97	90	86	83	100
RTU 1-01 (1)	AAON RN-015	96	92	98	88	81	78	76	70	92
RTU 1-02 (1)	AAON RN-013	90	87	89	85	78	74	72	66	86
RTU 1-03 (1)	AAON RN-006	80	75	77	73	66	64	60	54	74
RTU 1-04 (1)	AAON RN-030	91	89	91	88	85	85	84	80	91
DOAS-01 (1)	AAON RN-040	100	98	97	97	94	92	95	91	101
DOAS-02 (1)	AAON RN-016	98	97	99	100	97	96	92	84	103
ACCU-0#-0#X (24)	Daikin REYQ144XAYDA	-	-	87	-	-	-	-	-	78
SVY06 Rooftop Cooling Units										
MAU-1-01 and 1-02 (4)	AAON RN-050	90	89	91	94	90	86	81	77	95
SCP-ACC-#-0# and ACC-#-0# (48)	York YVFA0359	104	97	100	97	97	90	86	83	100

*Equipment ID as shown on mechanical plan drawings.

Abbreviations and Acronyms:

db = decibels

dBA = A-weight decibels

TBD = to be determined

Table 2
Calculated Noise Levels at Maximally Impacted Receivers
STACK SVY05/06 /Data Center Development
San Jose, California

Receiver No.	Receiver Location	Calculated Noise Levels, dBA L_{eq} (a)			
		HVAC Only (Nighttime)		HVAC and Gen Testing (Daytime)	
		Level	Limit	Level	Limit
R1a (b)	Milpitas Residential Property Line to North	50	45 (63) (d)	56	55 (69) (d)
R1b (b)	Milpitas Residential Property Line to Northwest	51	45 (63) (d)	55	55 (69) (d)
R2 (b)	Trento Loop Greenspace	47	45 (63) (d)	48	55 (69) (d)
R3 (c)	Northern Property Line of Project Site	49	60	60	60
R4 (c)	Church Property Line to West	56	60	57	60
R5 (c)	Western Property Line of Project Site	56	60	59	60
R6 (c)	Office Property Line to East	55	60	65/59 (e)	60
R7 (c)	Southwestern Corner of Project Site	54	60	55	60

Notes:

(a) Resulting from onsite operations with 16-foot parapet walls and 3-dBA L_w chiller noise reduction. Results include additional walls/raised parapets on east side of campus (see Figure 1).
(b) In the city of Milpitas, subject to residential noise limits of 55 dBA during the day and 45 dBA at night, or the measured ambient level, whichever is highest.
(c) In the city of San Jose, subject to commercial noise limit.
(d) The level in parentheses (XX) is the lowest measured ambient level representing this location and represents the adjusted noise limit.
(e) Facility sound levels during routine maintenance on generators Gen-SVY0619-Ex, Gen-SVY0620-Ex, and Gen-SVY0621-Ex would produce sound levels between 60 and 65 dBA.

Abbreviations and Acronyms:

dBA = A-weighted decibel
HVAC = heating, ventilation, and air-conditioning
L_{eq} = equivalent sound level
L_w = sound power level