BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT



February 27, 2020

Leonidas Payne
Siting, Transmission and Environmental Protection Division
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

RE: Sequoia Data Center Project – Initial Study and Proposed Mitigated Negative Declaration

Dear Mr. Payne,

Bay Area Air Quality Management District (Air District) staff has reviewed the Initial Study and Proposed Mitigated Negative Declaration (MND) for the proposed Sequoia Data Center (Project). The project applicant, C1-Santa Clara, LLC, proposes to construct a four-story, 703,450 square foot data center building and a back-up energy generating facility with a generation capacity up to 96.5 megawatts (MW) in the City of Santa Clara. As the lead agency, CEC can grant the project applicant a Small Power Plant Exemption if it finds that the proposed project would not create a substantial adverse impact on the environment or energy resources. Although this project meets the Air District's current rules and regulations to obtain a permit, we encourage CEC to promote the use of cleaner technologies. Additionally, we are providing the following comments as suggestions on how the CEC could enhance its CEQA analysis and minimize emissions from the Project and future proposed data centers.

## Calculation of Greenhouse Gas Emissions

The greenhouse gas (GHG) emissions analysis in the MND estimates that the Project would generate 1,395 $MTCO_2e$ during construction, 4,301 $MTCO_2e$ per year for readiness testing and maintenance of the back-up generators, and 88,646 $MTCO_2e$ per year from operation of the data center (e.g., electricity use and other non-stationary sources). The MND concludes that the project's GHG emissions associated with construction and the back-up generators "would not have a significant direct or indirect impact on the environment," and that the GHG emissions associated with the data center operations "...are determined to have less than significant impacts."

While Air District permitting rules for generators focus on emissions from testing and maintenance, a comprehensive environmental assessment should also consider operational emissions in the significance determination. Based on a

review of the operational emissions calculations, the GHG emissions associated with the maximum possible electricity use appear to be underestimated in the MND. The MND states that "...the data center would consume up to a maximum electrical usage of 867,240 MWh per year," yet the calculation in Appendix F uses an applicant estimate of 655,633 MWh per year. In addition, the $CO_2e$ intensity factor referenced in the MND (i.e., 430 pounds of $CO_2e$/MWh) is different from the $CO_2e$ intensity factor used in Appendix F (i.e., 271 pounds of $CO_2e$/MWh). Air District staff recommends that CEC revise the GHG analysis, include GHG emissions from the maximum electrical usage associated with the data center, and coordinate with the Air District on best practices for quantifying GHG emissions.

**Consistency With Long-Term State Climate Goals**

The MND states that the Project's GHG emissions would not be cumulatively considerable because the Project "would conform with all applicable plans, policies, and regulations adopted for the purpose of GHG reductions." But the MND does not evaluate the project's consistency with State policies and plans requiring reductions in emissions of GHGs beyond 2020, including the SB 32 requirements to achieve GHG emissions reductions equivalent to 40 percent below 1990 levels by 2030, and direction in Executive Orders B-55-18 and S-3-05 to respectively achieve carbon neutrality by 2045 and to achieve GHG emissions reductions equivalent to 80 percent below 1990 levels by 2050. *See Cleveland Nat'l Forest Foundation v. San Diego Ass'n of Governments* (2017) 3 Cal.5th 497, 516 (CEQA analysis should "compare the [project's] projected greenhouse gas emissions ... from 2020 through 2050 with the Executive Order's goal of reducing emissions to 80 percent below 1990 levels by 2050."). To address the Project's impacts on GHG emissions beyond 2020, Air District staff recommends that CEC augment its greenhouse gas discussion to include an analysis of whether the project will be consistent with these State policies and plans.

**Health Risk Assessment and Cumulative Toxic Air Contaminant Impacts**

The Air District's CEQA Guidelines for assessing cumulative health risk impacts recommend that a lead agency evaluate all sources of toxic air contaminants (TACs) within 1,000 feet of a proposed project to ensure that the cumulative health risk from the project plus other nearby sources will not exceed a chronic Hazard Index of 10 or a carcinogenic risk of 100 additional cancers per million exposed population. Although Appendix F includes a health risk assessment (HRA) of the Project, it does not account for the cumulative health risk impacts associated with all nearby sources. In particular, the San Jose International Airport (SJC) is within 1,000 feet of the Project and includes multiple sources. Although the Air District provided emissions for SJC via the Project's submitted Stationary Source Inquiry Form, the emissions for SJC are not included in the cumulative analysis. Staff recommends that CEC revise the TAC analysis to include these additional nearby sources and contact the Air District to obtain updated data.

**Recommendations for Achieving Additional Emission Reductions**

To the extent that a revised analysis concludes that the project's emissions would be cumulatively considerable, the project will need to incorporate mitigation measures to reduce its emissions. The Air District provides the following recommendations for potential mitigation measures. Furthermore, even if the revised analysis does not conclude that the project's emissions will be cumulatively considerable, the Air District encourages CEC to incorporate additional emission reduction measures into its approval of the project. These recommended measures will help ensure that the project's emissions impacts are reduced to the maximum extent possible, regardless of whether they are legally required to mitigate a significant impact.

The MND identifies the predominant source of the Project's GHG emissions as electricity use, which would be provided by the city-operated, publicly-owned utility, Silicon Valley Power (SVP). Although SVP has a higher power mix of renewable energy sources than the Statewide power mix, the Project could significantly reduce GHG emissions by purchasing all its electricity from renewable sources. Specifically, Air District staff recommend that the Project join SVP's Santa Clara Green Power program and thus commit to purchase 100 percent renewable energy, or otherwise negotiate an electricity contract with SVP for 100 percent renewable energy.

Additionally, Measure 2.3 in the City of Santa Clara's Climate Action Plan (CAP) calls for data centers to achieve a power usage effectiveness (PUE) rating of 1.2 or lower. Although the MND indicates that the Project is consistent with the CAP and is not required to achieve a PUE rating of 1.2 or lower based on its average rack power rating, the Air District recommends that the Project meet this standard since industry best practices indicate that a PUE of lower than 1.2 is achievable (e.g., Google Data Centers). Achieving lower PUE can be accomplished not only through improved efficiency design, but also through onsite generation of electricity. As such, the Air District recommends that the project applicant install solar photovoltaic (PV) panels paired with battery storage, which also aligns with CAP Measure 2.4 and could replace some of the diesel back-up generators.

According to the MND, the Project would include 54 Tier 2 diesel back-up generators, designed to provide 24 hours of emergency generation at full demand. These generators would use ultra-low sulfur diesel and comply with the Air District's permit requirements and Best Available Control Technology (BACT). At this time, data center projects using Tier 2 diesel back-up generators may be permitted by the Air District. However, to meet State and regional climate goals, the Air District encourages projects go above and beyond permitting requirements. In September 2018, the Air District launched Diesel Free by '33 to eliminate diesel emissions from our communities. Mayor Lisa Gillmor of the City of Santa Clara signed Diesel Free by '33 to pledge the City's commitment to cut diesel use to zero by the end of 2033. To this end, the Air District recommends that the project applicant use the cleanest available technologies such as solar battery power, fuel cells, or Tier 4 generators.

The MND also states that the Project would use R-134a refrigerants in the cooling system. According to the MND, the industry standard leak rate is two percent per year. Refrigerants such as R-134a have a high global warming potential (GWP). The Air District recommends that the Project consider using low-GWP refrigerant alternatives.

Furthermore, Air District staff encourages the project applicant to use the most efficient GHG reduction strategies available at the time of Project approval and construction. The MND includes ten GHG mitigation measures, some of which are commitments. However, Applicant Proposed Measures (APMs) GHG-1 and GHG-6 are not commitments and it is unclear how these APMs will "reduce GHG impacts" and result in a less than significant GHG impact. The Air District recommends that all APMs be made commitments to reduce GHG emissions.

Air District staff understands that several data centers of similar size and accompanying back-up diesel generators are planned for development in the area. That being the case, Air District staff recommends that CEC assess and justify how power plant projects such as the back-up generators associated with these data centers will meet the electricity sector's share of the statewide goals in the Scoping Plan.

Lastly, Air District staff strongly recommends that CEC work with SVP, the City of Santa Clara, the Air District, and the project proponents for this and similar proposed data center projects to explore alternative options to reducing GHG emissions. For example, the Air District awarded a Climate Protection Grant of $300,000 to SVP to conduct a pilot project to demonstrate the viability of replacing data center back-up diesel generators with electric energy storage systems, and CEC has previously provided Electric Program Investment Charge (EPIC) awards for data center microgrids. We also encourage proponents of the Project and future data centers to seek available grant funding for zero-emitting alternatives to diesel back-up generators.

Air District staff is available to assist CEC in addressing these comments. If you have any questions or would like to discuss Air District recommendations further, please contact Josephine Fong, Environmental Planner, at (415) 749-8637 or jfong@baaqmd.gov, or Jakub Zielkiewicz, Advanced Projects Advisor, at (415) 749-8429 or jzielkiewicz@baaqmd.gov.

Sincerely,

Greg Nudd
Deputy Air Pollution Control Officer

cc: BAAQMD Director Margaret Abe-Koga
BAAQMD Vice Chair Cindy Chavez
BAAQMD Director Liz Kniss
BAAQMD Chair Rod G. Sinks