

**DOCKETED**

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# Memorandum

**Date:** October 15, 2019  
**Telephone:** (916) 654-4545

**To:** Karen Douglas, Commissioner and Presiding Member  
Janea A. Scott, Vice Chair and Associate Member

**From:** **California Energy Commission – Lisa Worrall**  
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**Subject: CALIFORNIA ENERGY COMMISSION STAFF REPLY TO OPENING TESTIMONY**

In accordance with the Committee's *Orders after July 23, 2019 Status Conference and Revised Scheduling Order*, California Energy Commission staff (staff) submits staff's Reply to Testimony of Robert Sarvey on the Initial Study (TN 229959). The Testimony of Robert Sarvey on the Initial Study was filed to the Laurelwood Data Center docket on October 3, 2019.

## Reply to Opening Testimony

Staff addresses specific assertions made in the Testimony of Robert Sarvey on the Initial Study (TN 229959) below.

## ENERGY COMMISSION STAFF'S REPLY TESTIMONY LAURELWOOD DATA CENTER

**Testimony of Matthew Layton, Shahab Khoshmashrab, Hui-An (Ann) Chu,  
Wenjun Qian, and Brewster Birdsall**

Statements from Robert Sarvey testimony (TN 229959) are presented in *italics*, with staff's response. References to the sections of the IS/Proposed MND (TN 229584), as appropriate, follow each comment.

## JURISDICTION

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**Sarvey-1 (pp. 1-2):** *The project does not qualify for a small power plant exception [sic, exemption] . . . The back-up diesel generators for the LDC [Laurelwood Data Center] are not an innovative technology for producing electricity nor do they prudently conserve and economically use energy. The project does not qualify for SPPE treatment because it clearly does not conform to the purpose of Section 1934 [of Title 20 of the California Code of Regulations] which governs the application of the small-power plant exemption.*

## Staff Response:

The IS/Proposed MND provides a detailed discussion of the jurisdictional determination in Appendix A, including whether the LDC should be processed as an SPPE. Staff's analysis in Appendix A shows that the LDC satisfies the following:

### **California Code of Regulations, Title 20, Section 1936. Scope Filing, Review and Distribution of Applications for Exemption.**

(a) Any person who proposes to construct a thermal power plant with a generating capacity not exceeding 100 megawatts, or proposes a modification to an existing thermal power plant which will add generating capacity not exceeding 100 megawatts may apply for an exemption from the provisions of Chapter 6 of Division 15 of the Public Resources Code.

Furthermore, regarding innovative or alternative technologies, Section 1934, cited by Mr. Sarvey, is a broad policy statement explaining the reasons for the CEC's enactment of the regulations governing SPPEs. It contains no specific requirements to govern staff's review of this SPPE petition.

## AIR QUALITY

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**Sarvey-2 (pp. 2-3):** *Increase in NOx emissions from operation of the project is cumulatively considerable and a significant impact . . . In determining the potential to emit the initial study analysis ignores the BAAQMD policy **titled** [emphasis in original] "Calculating Potential to Emit for Emergency Backup Power Generators," which requires inclusion of emissions from 100 hours per year of emergency operation in determining the potential to emit. Including the 100 hours of emergency operation as required by the BAAQMD regulation leads to an additional 69 tons per year of unmitigated NOx emissions as computed by the applicant. The unmitigated NOx emissions from emergency operation would be considered a cumulative significant impact because it leaves 66.7 tons per year [tpy] of unmitigated NOx emissions which exceeds BAAQMD 10 tpy threshold for significance.*

## Staff Response:

The following paragraph on page 5.3-9 of the IS/Proposed MND provided a detailed analysis of the BAAQMD policy titled "Calculating Potential to Emit for Emergency Backup Power Generators":

On June 3, 2019, the BAAQMD staff issued a new policy regarding the appropriate procedure for calculating a facility's potential to emit (PTE) to determine eligibility for emission reduction credits (ERCs) from the Small Facility Banking Account, for emergency backup power generators (BAAQMD 2019b, added to BAAQMD website on June 12, 2019). According to this policy, when determining the PTE for a facility with emergency backup power generators, the district shall include emissions resulting from emergency operation of 100 hours per year per engine, in

addition to the permitted limit for reliability-related and testing operation (generally 50 hours/year or less per engine). **However, the applicant would only be required to offset the emissions for the testing and reliability-related operation, not the emissions from emergency operation. Emissions offsets represent ongoing emission reductions that continue every year, year after year, in perpetuity. Offsets are used by BAAQMD to counterbalance regular and predictable emissions, not emissions that would only occur infrequently when emergency conditions arise.** [Emphasis added.] The BAAQMD will not allow an owner/operator to accept a permit condition to limit emergency operation to less than 100 hours per year to reduce the source's PTE. However, an owner/operator may reduce PTE for ERC mitigation purposes by accepting lower limits on testing and reliability-related operation or by installing an emissions control device (BAAQMD 2019b).

In addition, the BAAQMD's June 3, 2019 policy states:

. . . in applying Reg. 2-2-606 and Reg. 2-2-607 to determine the cumulative increase that a facility must offset, emissions from an emergency backup power generator will be calculated based on its testing and reliability-related operation only, and not any emergency operation. (p. 4)

For CEQA purposes, the IS/Proposed MND indicates that emissions due to emergency operations are not included in the determination of whether the project would result in a cumulatively considerable net increase of non-attainment criteria air pollutants (IS/Proposed MND, p. 5.3-15). To ensure that the net increase in reasonably foreseeable NO<sub>x</sub> emissions including routine testing and maintenance would not be cumulatively considerable, the LDC would need to acquire and surrender offsets using the banked emissions reduction credits available from third-party holders within the BAAQMD to purchase and surrender 28.4 tons of NO<sub>x</sub> offsets (IS/Proposed MND Table 5.3-6, p. 5.3-16). The applicant affirms this commitment in the "Laurelwood Data Center Bay Area AQMD Policy Compliance Letter" dated July 29, 2019 (Jacobs 2019j [TN 229116]).

Therefore, the IS/Proposed MND correctly evaluated the offset requirements according to the BAAQMD's June 3, 2019 policy. Staff expects the NO<sub>x</sub> emissions of the emergency generators during normal testing would be fully offset through the permitting process with the BAAQMD. The project emissions would not be cumulatively considerable. The project impact would not be significant.

**Sarvey-3 (p. 2, footnote 3):** . . . *Please note that the applicant used an operating scenario which it cannot use as the diesel generators cannot be operated above their 2.75 MW continuous rating. Using the operating scenario that the applicant has proposed 44 generators operating at 80% load will lead the project to emit over 100 tons per year of NO<sub>x</sub> and be subject to PSD and Title V.*

## Staff Response:

The intervenor's assumption of 44 generators operating at 80 percent load is not consistent with the applicant's expectation of worst-case operating scenario. The applicant's response to data request #3 in LDC Responses to Formal and Informal Data Requests (Jacobs 2019c [TN 227626]) states that:

20 generators for each building are expected to operate at 80 percent load to support the full building loads including the roof mechanical systems (in the case of an emergency and utilization at 100% of the maximum electrical utility of the LDC at 99 MW). Any load supported by a failed generator will be replaced with a redundant generator. A house generator system will be designated bringing the total running generators to 21 for one building and 41 for both buildings. (p. 8)

To respond to the comment, staff did an additional calculation of the annual NO<sub>x</sub> emissions with 21 hours of testing and maintenance per year per engine for all 56 engines each operating at 100 percent load and 100 hours of emergency operation per year per engine for 41 engines each operating at 80 percent load. The applicant provided the NO<sub>x</sub> hourly emission rates of 41.9 pounds per hour (lbs/hr) for 100 percent load and 31.9 lbs/hr for 75 percent load in data request response set 1B (Jacobs 2019g [TN 228854]).

Staff calculated the NO<sub>x</sub> hourly emission rates to be 33.9 lbs/hr for 80 percent load based on interpolation between the emission rates for 100 percent load and 75 percent load cases. Staff calculated the annual NO<sub>x</sub> emissions under this scenario to be 94.1 tpy<sup>1</sup>, which would still be less than 100 tpy. Therefore, staff does not expect the project would be subject to Title V or PSD. However, the applicability of Title V and PSD would be determined through the permitting process with the BAAQMD. The annual emissions of other criteria pollutants are much less than 100 tpy. Therefore, staff has not re-calculated the annual emissions of other criteria pollutants.

## References

**Jacobs 2019c** – Jacobs (Jacobs). (TN 227626). LDC Responses to Formal and Informal Data Requests. Data Response Set 1A, dated April 11, 2019. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-SPPE-01>.

**Jacobs 2019g** – Jacobs (Jacobs). (TN 228854). LDC Data Request Response Set 1B, dated June 27, 2019. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-SPPE-01>.

**Jacobs 2019j** – Jacobs (Jacobs). (TN 229116). Laurelwood Data Center Bay Area AQMD Policy Compliance Letter, dated July 29, 2019. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-SPPE-01>.

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<sup>1</sup> Basis for 94.1 tpy = [(41.9 lb/hr × 21 hr/yr × 56 engines) + (33.9 lb/hr × 100 hr/yr × 41 engines)] / 2000 lb/ton.

## CUMULATIVE AIR QUALITY & PUBLIC HEALTH IMPACTS

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**Sarvey-4 (pp. 3-4):** *The initial study fails to conduct a cumulative impact analysis for air quality impacts. . . . a cumulative impact analysis . . . shall examine TAC [toxic air contaminants] and/or PM2.5 [particulate material 2.5 microns in size] sources that are located within 1,000 feet of a proposed project site . . . includ[ing]. . . freeways and high volume roadways . . . [and] nearby TAC sources . . .*

**Sarvey-5 (pp. 5-6):** *The Laurelwood data center project is surrounded by Intel Corporation's Mission campus. The approximate 50-acre campus houses several corporate organizations: engineering (design, research and development), software engineering, sales and marketing, legal, supply network, and human resources, **and has more than 7,000 employees.** [Emphasis in original.]*

**Sarvey-6 (p. 6):** *On the other side of the LDC is highway 101 with its large amount on [sic, of] NOx, PM and TAC emissions, that the initial study fails to quantify or examine. Montague expressway, another busy major roadway, sits on the other side of the LDC. A new data center has been approved by the City of Santa Clara at 2305 Mission College Blvd.*

### Staff Response:

The IS/Proposed MND discussion of cumulative impacts to air quality (under Air Quality CEQA criterion "b") describes the project's emissions and concludes that the project would not result in a cumulatively considerable net increase of any criteria pollutant (pp. 5.3-13 to 5.3-16). Additional information in Section 5.20, Mandatory Findings of Significance, on cumulative risk and hazards addresses the combination of construction and operation, and potential emergency operations, and concludes that the project would not expose sensitive receptors to substantial TAC concentrations (pp. 5.20-2 to 5.20-4).

The comments suggest that the cumulative impact analysis should quantify the effects of other existing and future sources, including emissions from industry and freeways in the baseline conditions. The comment provides the Intel Corp. Mission Campus as an example of a past project. The comment (Sarvey-5) includes a copy of a 2012 BAAQMD cancer risk evaluation for the facility of 205 in a million, which appears to be a screening estimate from the BAAQMD Stationary Source Screening Tool.<sup>2</sup> Site-specific risk assessment would be expected to reveal substantially lower results. Actual emissions data for that facility were also attached to Mr. Sarvey's testimony (Sarvey, Appendix 1) showing relatively low current (2019) emissions of 5.82 lb/day NOx and 0.0811 lb/day DPM. For context, the actual emissions from that neighboring facility in the baseline conditions occur at much lower rates than those analyzed in the Staff analysis of LDC's emissions (Table 5.3-6, p. 5.3-16).

Future projects, such as the proposed, potential data center at 2305 Mission College Boulevard, are considered in the IS/Proposed MND by using a summary of projections

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<sup>2</sup> <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>.

in the cumulative analysis of this project. On this basis, the contribution from the proposed LDC to the cumulative air quality impact would not be singularly or cumulatively considerable (p. 5.20-2).

Staff agrees that the area is industrialized and many past, present, and probable future projects presently or will foreseeably contribute to the localized air quality. The existing air quality and the setting for the project reflects the baseline emissions from the following common source types: “Common stationary source types of TAC and PM2.5 emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to BAAQMD permit requirements. The other, often more significant, common source type is on-road motor vehicles on freeways and roads such as trucks and cars, and off-road sources such as construction equipment, ships and trains.” (BAAQMD 2017b, p. 5-2.)

The IS/Proposed MND follows the BAAQMD guidelines for evaluating the local community risk and hazard impact related to the proposed project. The IS/Proposed MND Table 5.3-4, p. 5.3-10 shows the applicable BAAQMD thresholds of significance for risk and hazards for new sources and receptors. As a single source facility that would be permitted by BAAQMD, the IS/Proposed MND compares the project-level impact to the threshold excess lifetime cancer risk level of 10 in 1 million (p. 5.3-11; consistent with BAAQMD 2017b, Figure 5-2, p. 5-6). Because the project-level impact would be less than this threshold level, the contribution from the project to the cumulative impact would not be substantial and would not be singularly or cumulatively considerable (pp. 5.20-2 to 5.20-4). No further quantification of emissions or impacts from past, present, and probable future projects is necessary.

**Sarvey-7 (p.4):** *Additional requirements apply to an area that is included in BAAQMD’s Community at Risk Program (CARE). **The facility is located in an area included in the BAAQMD’s CARE program.** [Emphasis in original.]*

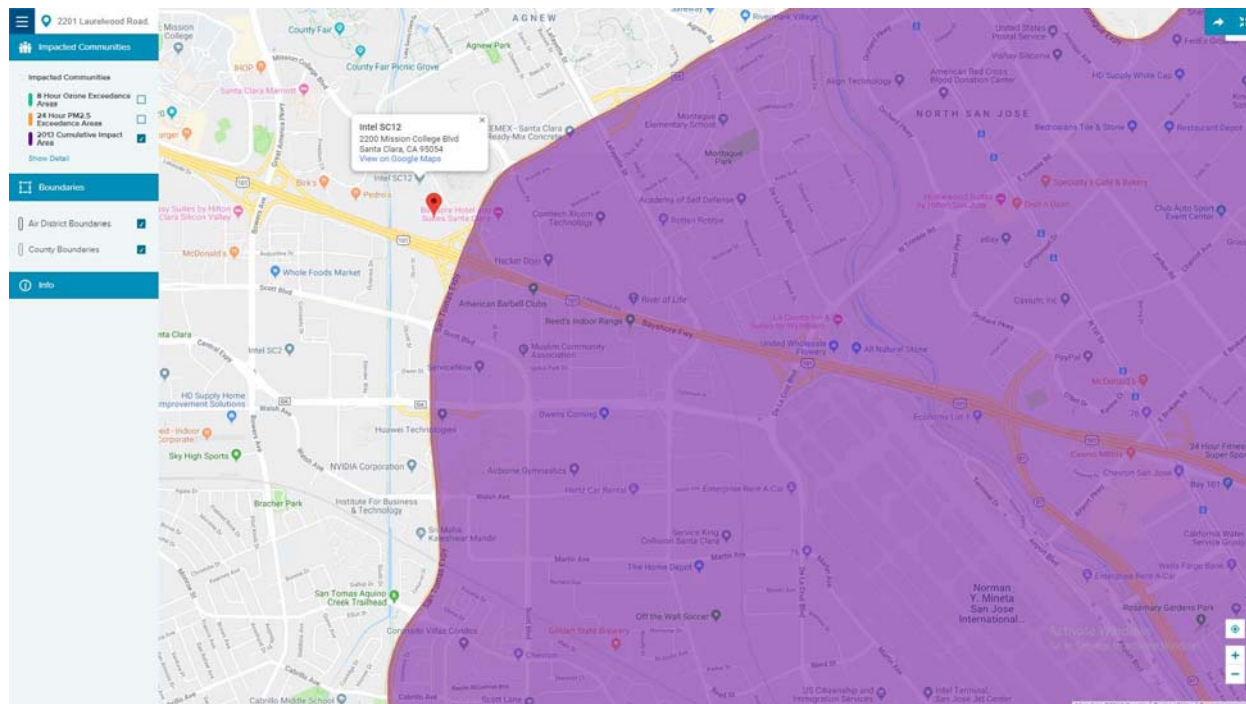
#### **Staff Response:**

The comment refers to guidelines referenced in the IS/Proposed MND (BAAQMD 2017b) and introduces the BAAQMD’s CARE program. In the BAAQMD guidelines, a CARE impacted community is one of the region’s “urban or industrialized communities where the exposure to TACs is relatively high in comparison to others” (BAAQMD 2017b). The boundaries of the San Jose ‘impacted community’ encompass the industrialized portions of Santa Clara near the LDC project and the San Jose International Airport.

Staff included an analysis in Section 5.21, Environmental Justice, of how, or if, the project would impact an environmental justice population. As discussed on page 5.21-10 of the IS/Proposed MND, staff in the technical areas that could have project impacts that could combine with the indicators in CalEnviroScreen also reviewed the data for the census tracts around the project site considered disadvantaged communities. Air quality staff concluded that project impacts on the environmental justice population would be less than significant and public health impacts on the environmental justice population would also be less than significant. Refer to pages 5.21-12 and 5.21-14 for more detailed discussion of staff’s conclusions in these technical areas.

Because BAAQMD's program is directed towards decision-making by local jurisdictions, staff presents the boundary for the CARE program in **Figure 1**, below, which shows that the LDC project is adjacent to but not inside the CARE 'impacted community'. LDC would be just northwest of Montague Expressway and north of the Bayshore Freeway.

Figure 1. BAAQMD's CARE Program Boundary



Available at: <http://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program>.

The 2014 CARE program retrospective report (Figure 2.6 of BAAQMD 2014)<sup>3</sup> summarizes regional modeling for TAC levels in 2015 and shows the project area experiences a potential cancer risk from baseline levels of air toxics between 150 to 300 cancer cases per million. A pilot community risk reduction plan was under development for San Jose at the time of the 2014 CARE program retrospective (BAAQMD 2014, p. 8). More recently, the BAAQMD has expanded its Community Health Protection Program for working with local jurisdictions in the Bay Area to plan and implement Assembly Bill 617 (C. Garcia, Chapter 136, Statutes of 2017).<sup>4</sup>

**Sanvey-8 (p. 7):** *An outage on . . . [the Silicon Valley Power northwest] . . . loop could impact as many as 10 data centers and an unknown number of diesel generators.*

<sup>3</sup> BAAQMD. 2014. Improving Air Quality & Health in Bay Area Communities Community Air Risk Evaluation Program Retrospective & Path Forward (2004 - 2013). April 2014. Available at: [http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/CA\\_RE\\_Retrospective\\_April2014.ashx?la=en](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/CA_RE_Retrospective_April2014.ashx?la=en).

<sup>4</sup> See: <http://www.baaqmd.gov/community-health/community-health-protection-program>.



## Staff Response:

The IS/Proposed MND explored the potential for data centers to be forced into emergency operations due to outages and quantified the historic outages and numbers of data centers experiencing interruption (IS/Proposed MND, p. 5.3-28). The comment speculates that an electrical outage on the SVP system serving the proposed project would trigger emergency operations by other data centers with diesel generators. Staff agrees that historic electrical outages have affected multiple facilities, although the IS/Proposed MND shows that outages would be infrequent and would not have long durations. There is no indication that adding the proposed project to the electrical system would directly or indirectly increase the likelihood of outages that could trigger emergency operations at other nearby data centers. The IS/Proposed MND provides air quality analysis for the LDC under hypothetical emergency operations (pp. 5.3-29 to 5.3-34). Any further quantification of the emissions or air quality impacts caused by other data centers in emergency situations in conjunction with the LDC would require speculation of the nature already noted in the IS/Proposed MND (pp. 5.3-26 to 5.3-29).

To date, none of the outages have propagated to all customers or even all data center customers on a loop. SVP has designed the loops with breakers to limit a cascade event (e.g., an N-1-1 event), making an outage of 10 data centers unlikely. (Note, page 14 in Appendix B to the IS/Proposed MND shows 11 data centers on the NW Loop that would supply the LDC.) Further, in Appendix B, outages, whether from equipment or procedural failures, are evaluated and used by SVP to upgrade equipment and procedures to reduce future outage frequency and duration. On page 8 of Appendix B, SVP in their response to question 3 states:

This outage was caused during maintenance work with the Relay Technician. During the testing, the relay was required to be reset prior to returning to service. Since the relay was not reset, when put back into service the device tripped. **The Standard Operating Procedure was revised** [emphasis added] to include the step of resetting the relay prior to placing back into service. This was not a N-1-1 cascading type outage. The outage lasted 12 minutes.

In Appendix B, on page 5 in response d., SVP states that:

Every outage is analyzed for root cause. Most of the outages that occur on the 60kV system are outside SVP's control, e.g. Mylar balloon, squirrels or animals, car accidents, and similar events. If the outage is suspected to be caused by a failure of the intended protection scheme or equipment, **then further analysis is performed and appropriate changes are implemented to minimize impact of future outages.** [Emphasis added.] After the outage in May, 2016, SVP performed additional circuit breaker testing and DC wire checks to maintain the reliability of its system.

## References

**BAAQMD 2017b** – Bay Area Air Quality Management District (BAAQMD). California Environmental Quality Act, Air Quality Guidelines. Updated May 2017. Available online at: <http://www.baaqmd.gov/~media/files/planning-and->

## CONSTRUCTION HEALTH RISK ASSESSMENT

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**Sarvey-9 (p. 8):** *The construction HRA conducted in the initial study concludes that the health risk from construction would result in an excess cancer risk of 75.26 in a million, a significant impact. According to the initial study, “Diesel particulate matter (DPM) was the only TAC modeled; its emissions result from exhaust of onsite diesel-fueled construction equipment and vehicles. Since DPM was assumed to be best represented by PM10 emitted as a result of onsite fuel combustion, **fugitive dust emissions were excluded as they are not expected to include DPM.**” [Emphasis in original.]*

### Staff Response:

The excess cancer risk of 75.26 in a million is the applicant’s screening result for the point of maximum impact (PMI) (Jacobs 2019I [TN 229274]). Refined analysis of the applicant’s result shows the excess cancer risk is 3.56 in a million at the PMI, which is lower than 10 in a million, the BAAQMD threshold of significance in Table 5.3-4, p. 5.3-10. Also, there is no residence at the PMI. Staff’s analysis identified an apartment building (at 1425 Laurelwood Road) as the nearest residence. The cancer risk for this location, the maximally exposed individual resident (MEIR), would be 4.01 in a million, also lower than the significance threshold of 10 in a million.

**Sarvey-10 (pp. 8-9):** *The project site has had a release of the solvent trichloroethene to the soil and the groundwater. Construction activities will resuspend this contaminated soil and impact local workers at Intel and other sensitive receptors near the project.*

### Staff Response:

According to Section 5.9, Hazards and Hazardous Materials, a plume of trichloroethylene (TCE) is assumed to originate from the general vicinity of previously on-site Building 3 on Figure 5.9-1 (p. 5.9-3) and migrate to the north onto property owned by Intel. Because of the ongoing plume control, the site is considered an open case for remediation by the San Francisco Regional Water Quality Control Board (RWQCB), and has a deed restriction and implementation of a soil management plan (SMP) for activities that include excavation of the subsurface soil.

Ground disturbing activities associated with the demolition of existing buildings, the removal of underground utilities, and construction of the project would have the potential to encounter contaminated groundwater and soil. However, the SMP would require that any groundwater encountered during construction be retained in trailerized heavy-gauge steel “frac” tanks on-site, pending characterization. Following characterization, the groundwater could be treated using the existing treatment system and discharged to the storm drain system pursuant to the NPDES General permit, or transported offsite for permitted disposal. Also, the soil management plan would require that the soil investigations be augmented during demolition and construction by real time visual and

photoionization inspection<sup>5</sup> of subsurface excavations. Moreover, the San Francisco Bay RWQCB would review the groundwater and soil removal plans before the start of construction to ensure that worker safety, public health, and the environment are protected. Therefore, the construction of the project would create a less than significant impact to the public or the environment.

## **References**

**Jacobs 2019I** – Jacobs (Jacobs). (TN 229274). LDC Chiller GHG and HRA Data Responses, dated August 8, 2019. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-SPPE-01>.

## **ENERGY RESOURCES**

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**Sarvey-11 (p. 9):** *The LDC as proposed has a significant impact on energy resources . . . This project proposes to burn 14,280 barrels of diesel fuel, the most polluting fossil fuel available and it doesn't produce any energy. This would be the definition of inefficient and wasteful use of energy.*

### **Staff Response:**

Staff disagrees with Mr. Sarvey. The electricity produced by the diesel-fired standby generators (gensets) is useful energy, and electricity delivery to the grid is not a requirement in the determination of what is a jurisdictional thermal power plant (IS/Proposed MND, Appendix A), or whether any adverse impact to energy resources could occur. Further, the proposed data center diesel-fueled standby power generation equipment satisfies numerous and specific functions - the standby generation must be reliable, cheap, small (or high power density), fast-starting, and fast-ramping, and must be able to use a stable fuel with a small footprint (or with a high energy density). The diesel gensets use a reasonable amount of fuel in testing and maintenance to demonstrate their reliability. Additionally, if called upon in an emergency, the analysis demonstrates on pages 5.6-3 to 5.6-5 of the IS/Proposed MND that the use of this fuel would not be wasteful, inefficient, or unnecessary in light of the objective to deliver reliable electricity under the very specific needs for the data center.

**Sarvey-12 (p. 9):** *Even while not producing any energy and assuming the project will only be tested for 21 hours a year the project will emit 24.7 tpy of NOx while the project area is in nonattainment for ozone and particulate matter.*

### **Staff Response:**

See Staff Response to Comment **Sarvey-2**.

**Sarvey-13 (p. 11):** *The LDC power usage will lead to additional resource needs, which intermittent renewables will not provide.*

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<sup>5</sup> A photoionization detector or PID is a type of gas detector. Typical photoionization detectors measure volatile organic compounds and other gases in concentrations from sub parts per billion to 10,000 parts per million (ppm).

## Staff Response:

LDC is one of a number of new, large data centers being developed in Santa Clara, to be near the data customers they serve and to have access to a skilled workforce. Also, SVP may provide cheaper and more reliable electric power than competing electric service providers. Data centers can move to different locations within the western states in the Western Electricity Coordinating Council (WECC) region, or even worldwide, to take advantage of electricity pricing and to meet their customers' needs for redundancy and separation of storage locations. In that context, LDC is not a discrete load growth that could be avoided – consumer demand has resulted in growth of data centers, with their inherent energy demands. However, because of the abundant availability of renewable resources across the western states, staff anticipates one cannot conclude that intermittent renewables cannot meet data center load growth.

## GREENHOUSE GAS EMISSIONS

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**Sarvey-14 (p. 11):** *In order to tier off the Climate Action Plan, the plan must be being fully implemented and on track to meet its target. The initial study does not discuss this. Regardless, an examination of the Santa Clara Climate Action Plan demonstrates that the project is not consistent with the Plan.*

**Sarvey-15 (p. 11):** *The GHG emission reduction strategy in the City of Santa Clara's Climate Action plan is focused on reducing overall electricity use.*

## Staff Response:

The City of Santa Clara's 2013 Climate Action Plan (2013 CAP) (Santa Clara 2013) mentions reducing overall electricity use. This paragraph, on page 53, is under **Focus Area 1: Coal-Free and Large Renewables, Goal: Eliminate coal from SVP's portfolio and increase use of natural gas and renewable energy**. The measures in this Coal-Free and Large Renewables focus area concentrate on reducing the GHG intensity of the electricity delivered in Santa Clara, rather than reducing overall electricity use. The whole paragraph where the phrase was mentioned states:

SVP's provision of low-cost electricity to customers plays a critical role in sustaining Santa Clara's industrial and high-tech economy. Opportunities to reduce emissions from energy in the city are focused on reducing overall electricity use and achieving greater reliance on electricity sources with lower GHG intensities. Since nearly half (48%) of Santa Clara's emissions result from electricity use, removing GHG-intensive sources of electricity such as coal are effective approaches to achieving the City's GHG reduction goals. (Santa Clara 2013, p. 53.)

The project would not cause any change in SVP's sources of electricity or the GHG intensity of the electricity supply.

**Sarvey-16 (p. 11):** *The City has adopted a Performance metric for 2020 of 159,100 MWh of electricity savings for the entire city which would achieve an estimated reduction in GHG emissions of 27,600 MTCO<sub>2e</sub> [metric tons of*

*carbon dioxide equivalent]. The Laurelwood Data Center, “would consume up to the maximum electrical usage of 867,240 MWh [megawatt hours] per year,” which would be 600% of the reduction target and clearly not be compliant with the City of Santa Clara GHG emission reduction strategy.*

**Staff Response:**

Page 56 of the 2013 CAP (Santa Clara 2013) mentions the Performance metric for 2020 of 159,100 MWh of electricity savings that would achieve GHG emission reduction of 27,600 MTCO<sub>2</sub>e. However, this reduction goal was mentioned under measure **2.1 Community electricity efficiency – Achieve City-adopted electricity efficiency targets to reduce community-wide electricity use by 5% through incentives, pilot projects, and rebate programs**. Staff does not expect this measure to be applicable to the project. The electrical usage of the project should not be compared with the electricity savings goal of this single measure.

***Sarvey-17 (pp. 11-12):** According to the 2013 CAP the Santa Clara community needs to reduce emissions by an additional 309,600 MTCO<sub>2</sub>e by 2020 to achieve the emissions target (15% below 2008 baseline levels). Operation of the project would generate 255,583 metric tons of CO<sub>2</sub>e per year in indirect emissions alone. Inclusion of emissions from the LDC’s maximum possible electricity use and other non-stationary sources brings this contribution to a maximum of 14 percent of the total City GHG emissions.*

***(p. 16, footnote 46):** Initial study estimates GHG emissions to be less at 171,770 MTCO<sub>2</sub>e/yr Initial Study Page 163 of 291 Discrepancy is not explained. [Emphasis in original.]*

**Staff Response:**

The fact that the 2013 CAP sets a GHG emissions reduction target does not mean the City prohibits any new development. The GHG emissions forecast presented in Chapter 2 of the 2013 CAP estimates how emissions will grow if no reduction efforts are taken at the federal, state, or local level. Then Chapter 3 of the 2013 CAP identifies an emissions reduction target for the forecast years (additional 309,600 MTCO<sub>2</sub>e by 2020, i.e., 15 percent below 2008 baseline levels). The difference between the emissions forecast and the reduction target represents the necessary reduction in GHG emissions and sets the focus for the reduction measures presented in Chapter 4 of the 2013 CAP. Therefore, the City’s GHG emissions reduction target accounts for business growth, rather than prohibiting it.

In addition, the 255,583 MTCO<sub>2</sub>e/yr of indirect emissions (14 percent of the total City GHG emissions) presented in the Laurelwood SPPE application is outdated information. Staff explained the revisions in GHG emission estimate on pages 5.8-9 and 5.8-10 of the IS/MND. The majority of the GHG emissions would come from energy use. The applicant used CalEEMod default GHG emissions factor for PG&E to calculate the electricity based indirect GHG emissions. As explained in note a under Table 5.8-4, staff corrected the calculation with the use of the SVP 2017 GHG emissions factor of 430 pounds of CO<sub>2</sub>e/MWh, which reduced the GHG emissions from 254,322 MTCO<sub>2</sub>e

(shown in SPPE application) to 170,170 MTCO<sub>2e</sub> shown in Table 5.8-4 (p. 5.8-10). As explained on page 5.8-9 of the IS/Proposed MND, the reduction in GHG emissions related to water use was because of the revised cooling technology (from chillers to adiabatic condenser cooling system), which reduced water demand. Staff also added emissions due to cooling system R-134a leakage. Staff included the list of the references and the above explanations under Table 5.8-4 (p. 5.8-10) of the IS/Proposed MND.

The updated GHG emissions of 171,770 MTCO<sub>2e</sub>/yr shown on page 5.8-5 of the IS/Proposed MND, would be about 9.7 percent of the City's 2016 GHG emissions inventory of 1,769,178 MTCO<sub>2e</sub> shown on page 5.8-5 of the IS/ Proposed MND. However, page 5.8-10 of the IS/Proposed MND states:

As shown in **Table 5.8-4**, operation of the project is estimated to generate 171,770 MTCO<sub>2e</sub>/yr from maximum possible electricity use and other non-stationary sources. This emissions estimate does not include efficiency measures that would be pursued as part of the project, nor does it reflect implementation of state and local measures to reduce GHG emissions, for example, SB 350 and SB 100 that would continue the ongoing substantial reductions in GHG emissions from electricity generation.

Staff expects the project GHG emissions would be lower with implementation of the GHG reduction measures. As demonstrated in the IS/Proposed MND, the project would be consistent with the 2013 CAP.

**Sarvey-18 (p. 14):** *The PUE for the LDC is too high. . . . Requiring the LDC to achieve a similar PUE of 1.6 to 1.9 [sic, staff's response assumes Mr. Sarvey intended to say 1.06 to 1.09] as the adjacent data centers currently achieve would lead to a reduction in electrical needs of approximately 164,755 MWh to 137,758 MW per year.*

#### **Staff Response:**

The IS/Proposed MND discusses this topic on pages 5.6-4 to 5.6-5 and on page 5.8-11. The LDC anticipates having an average rack power rating range of 8 to 10 kilowatts (Jacobs 2019a, Section 3.8.3 [TN 227273-1]), resulting in a proposed PUE of 1.25. With this lower level of power density per rack, no additional study of PUE would be warranted by Measure 2.3 of the Climate Action Plan. The PUE metric was designed to compare facilities of similar size and within similar climatic conditions. The PUE is a function of the building shell, the energy efficiency measures, and the server density and efficiency. The LDC's projected PUE ratio represents this project-specific data center design that meets the needs of the customer and the types or servers they use and the degree of climate control they need or are comfortable with for their equipment. Lastly, since all data centers have competitive incentive to minimize energy costs to attract data center customers, the PUE is primarily a mechanism for the customers to comparison shop for the data center that best balances the factors to their needs.

Mr. Sarvey has provided some PUE figures for adjacent data centers, but it is not clear that those data centers would deliver comparable services and at the same level of reliability as the LDC would offer. An example (Intel Campus) is for a smaller data

center with a power capacity of 5 MW, which is much lower than and not directly comparable to the capacity of the proposed LDC. Additionally, Mr. Sarvey's information (p. 13) indicates that data center owners and operators can adapt to real-world conditions and make changes to incrementally improve the actual PUE performance over time. No additional analysis of energy efficiency is necessary.

**Sarvey-19 (p. 14):** *GHG Emissions Are Significant . . . The project is not eligible to use the CAP to evaluate full-build emissions to determine its significance under CEQA, because the CAP is based on 2020 GHG reduction goals and this project will not be completed before 2023. Therefore, the initial study does not provide the substantial evidence needed to justify a less than significant determination.*

**Staff Response:**

Page 5.14-3 of the IS/Proposed MND stated that the construction of the project is estimated to complete in the 2nd quarter of 2021. Therefore, the intervenor's statement that the project will not be completed before 2023 is inconsistent with the IS/Proposed MND.

Even though the project would not be finished by the end of 2020, consistency with the CAP framework is still a relevant consideration in the analysis of the project's GHG impacts because many of the policies will be carried forward by the City to address post-2020 emissions in its next CAP update.

The IS/Proposed MND appropriately included a discussion of the project's consistency with the City CAP. In addition, it included a discussion of the project's consistency with the Santa Clara General Plan, which addresses the GHG emissions reduction through 2035. The IS/Proposed MND also discussed the project's consistency with Bay Area 2017 Clean Air Plan, Plan Bay Area 2040/California SB 375, California SB 100, and AB 32 Scoping Plan, all of which address GHG emissions reduction beyond 2020. The IS/Proposed MND also demonstrated that GHG emissions of the project's standby generators would be less than BAAQMD's bright-line threshold of 10,000 MTCO<sub>2</sub>e/yr. Therefore, the IS/Proposed MND provided substantial evidence to justify a less than significant determination.

**Sarvey-20 (p. 15):** *Despite BAAQMD's proposed prohibition of backup diesel generators to lower criteria air pollutant and GHG emissions at data centers, LDC still proposes their use with 56 of these extremely polluting devices.*

**Staff Response:**

The comment does not provide any evidence of a proposal by BAAQMD to prohibit backup diesel generators. The BAAQMD does not prohibit standby or backup diesel generators. BAAQMD would require that the diesel standby generators would meet permit requirements.

**Sarvey-21 (p. 15):** *Recently BAAQMD has implemented a new policy regarding multiple back up diesel generators, which requires that 100 hours of emergency operation per year be assumed in calculating the potential to emit....GHG*

*emissions from 100 hours of emergency operation will be approximately 12,300 MTCO<sub>2</sub>e/yr and would be a significant impact under BAAQMD's regulatory scheme.*

**Staff Response:**

The BAAQMD's June 3, 2019 policy titled "Calculating Potential to Emit for Emergency Backup Power Generators" would not apply to determining the significance of GHG emissions. The BAAQMD 2017 CEQA Guidelines (BAAQMD 2017b) does not provide any guidance on whether emergency operation should be included in calculating the GHG emissions of back-up generators.

If the BAAQMD's June 3, 2019 policy does apply, the intervenor incorrectly calculated the GHG emissions assuming 100 hours of emergency operation per year per engine for all 56 engines. To respond to the comment, staff did additional GHG emission calculations with two assumptions of emergency operation: (1) 100 hours of emergency per year per engine for 33 engines each operating at 100 percent load; (2) 100 hours of emergency per year per engine for 41 engines each operating at 80 percent load. These GHG emission estimates are added to 2,583 MTCO<sub>2</sub>e/yr of GHG emissions for 21 hours of testing and maintenance per year per engine for all 56 engines each operating at 100 percent load. With the assumption number (1), the total GHG emissions for the project operation (testing and maintenance plus emergency) would be 9,833 MTCO<sub>2</sub>e/yr. With the assumption number (2), the total GHG emissions for the project operation (testing and maintenance plus emergency) would be 9,935 MTCO<sub>2</sub>e/yr. The total GHG emissions for the project operation would still be below the significance threshold of 10,000 MTCO<sub>2</sub>e/yr. This is also well below the definition of a "significant emission rate" for GHG (75,000 tons/yr) in BAAQMD Rule 2-2-227.

It should also be noted that the applicant expects 12.3 hours per engine per year of average annual testing (Jacobs 2019d [TN228748]). In addition, the monthly generation tests would require the engines to operate at 50 percent load, rather than 100 percent load. Therefore, the assumption of 21 hours per engine per year at 100 percent load already conservatively included the applicant's expected 12.3 hours per engine of average annual testing with reasonably expected annual average emergency operation hours. If 12.3 hours (rather than 21 hours) of testing and maintenance were used in the calculation with 100 hours of emergency operation, the total GHG emissions for the project operation would be even lower than the values shown above.

**Sarvey-22 (p. 16):** *No proof that the Santa Clara CAP is fully implemented and achieving its GHG reductions is included in the initial study.*

**Staff Response:**

Page 5.8-13 of the IS/Proposed MND states:

The project owner will apply for building permits from the City of Santa Clara. The project owner will incorporate measures specified by the City of Santa Clara during the design review process to ensure compliance with applicable laws, ordinances, regulations, and standards. Conformance with the applicable design codes and policies will be enforced by the City of Santa Clara (Jacobs 2019e).



See also Staff Responses to Sarvey-14 through Sarvey-17 regarding determining consistency with the 2013 CAP.

**Sarvey-23 (pp.16-17):** *As illustrated in the table below the power mix of SVP for non-residential projects is almost identical to the State of California Power Mix.*

**Staff Response:**

Thank you for the information. Similar information appears in the IS/Proposed MND Table 5.8-3 (pp. 5.8-8, 5.8-9). Achieving the RPS goals and demonstrating progress towards California's 100% clean energy future will occur at a slightly different pace across all of California's energy providers and customer classes. That SVP's mix matches California's mix today, in one snapshot in time, does not mean that SVP and California's power mix will remain in lockstep as renewables are added, demand and efficiency measures are implemented, and demand changes across California and its electricity providers.

**References**

**Jacobs 2019a** – Jacobs (Jacobs). (TN 227273-1). Application for Small Power Plant Exemption: Laurelwood Data Center, dated March 5, 2019. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-SPPE-01>.

**Jacobs 2019d** – Jacobs (Jacobs). (TN228748). LDC Updated SPPE Project Description, dated June 13, 2019. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-SPPE-01>.

**Jacobs 2019e** – Jacobs (Jacobs). (TN 228822). LDC Response to Informal Data Requests. Data Response Set 3, dated June 21, 2019. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-SPPE-01>.

**Santa Clara 2013** – City of Santa Clara (Santa Clara). Santa Clara Climate Action Plan. December 2013. Available online at: <http://santaclaraca.gov/Home/ShowDocument?id=10170>. Accessed on: May 2019.