

# Memorandum

Re:	LS1 Data Center Project—Response to Appeal from Adams Broadwell Joseph & Cardozo
Project	LS1 Data Center Project (PLN2019-13745)
Date:	October 16, 2019
Prepared by:	Jessica Viramontes and Heidi Mekkelson, ICF
Prepared for:	Nimisha Agrawal, City of Santa Clara Community Development Department

### Introduction

This memorandum provides responses to the appeal filed by Adams Broadwell Joseph & Cardozo (hereafter, "Adams Broadwell letter") dated September 25, 2019, which was attached to the letter, regarding the City of Santa Clara's Architectural Review Committee's September 18, 2019 decision to approve and adopt the CEQA findings for the LS1 Data Center Project (PLN2019-13745).

The responses to the Adams Broadwell letter are organized into the following topics, which correspond with the topics in the appeal letter:

- Environmental Setting Description for Biological Resources
- DPM Emissions
- Protected Trees
- Energy Impacts
- Project Floor Area Ratio (FAR) Impacts
- Cumulative Energy Impacts
- Discretionary Use Policy 5.3.5-P12
- General Plan Policy 5.3.1-P10

## **Response to Comment Regarding the Environmental Setting Description for Biological Resources**

The Adams Broadwell letter asserts that the potential for special-status species to occur on the project site was not properly disclosed and adequate mitigation measures were not included in the Initial Study/proposed MND. See Response B-2 in the Response to Comments. ICF's biologist reviewed the Adams Broadwell letter and prepared the attached memorandum that verifies the conclusions presented in the Biological Resources analysis in the Initial Study/proposed MND (see Attachment 1). The ICF biologist's qualifications are also included in Attachment 1.

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## **Response to Comment Regarding DPM Emissions**

The Adams Broadwell letter asserts that Response B-6 in the Response to Comments fails to explain how the assumptions outlined in Appendices 1-A, 1-B, and 2-A of the Air Quality Technical Report (AQTR) support the conclusion presented in Section 4.3.3.10, Community Risk Impacts, of the Initial Study/proposed Mitigated Negative Declaration (MND). Therefore, the comment asserts that operation of the project could exceed the Bay Area Air Quality Management District's (BAAQMD) 10 in a million threshold for increased cancer risk; the proposed project could result in a potentially significant, unmitigated impact; and the City must prepare an environmental impact report. The assumptions outlined in Attachments 1-A, 1-B, and 2-A of the AQTR applicable to the conclusion in the Initial Study/proposed MND that construction of the project would not exceed BAAQMD's threshold for increased cancer risk are described below. The AQTR is included as Appendix 4.3-1 of the Initial Study.

As stated on page 44 of the Initial Study/proposed MND, BAAQMD has adopted an incremental cancer threshold to evaluate receptor exposure to sources of diesel particulate matter (DPM) and other toxic air contaminant emissions. The "substantial" increase defined by BAAQMD is exposure of a sensitive receptor to emissions sources resulting in an excess cancer risk level of more than 10 in 1 million. The proposed project was evaluated against this threshold. DPM emissions were calculated based on PM2.5 diesel exhaust emissions. This approach is consistent with the methodology required by BAAQMD, which is described in its CEQA Air Quality Guidelines as follows: "The analysis shall disclose the following about construction-related activities: ...7. Amount of on-site diesel-generated PM2.5 exhaust (assuming that all on-site diesel PM2.5 exhaust is diesel PM)."

Only the construction activities that emit PM2.5 diesel exhaust were factored into the health risk analysis prepared for the project. As shown in Attachments 1-A and 1-B of the AQTR, construction of the proposed project would result in criteria air pollutant emissions from many types of sources: off-road equipment, employee commute trips, on-site onroad vehicles, offsite onroad vehicles, earth moving, demolition, paving, and coating. As discussed in Response B-6 in the Response to Comments, in Attachments 1-A and 1-B the terms "PM10 D" and PM2.5 D" refer to particulate matter from fugitive dust, not particulate matter from diesel exhaust. There would be sources of criteria pollutant emissions during project construction that would not generate diesel exhaust (e.g., gasoline-fueled employee commute trips, dust from earth moving and demolition activities, offgassing emissions from paving and coating activities). As shown in Attachments 1-A and 1-B of the AQTR, activities that emit diesel PM2.5 exhaust only include off-road equipment and diesel-fueled vehicles driving on-site and offsite. This is made explicit in Attachment 2-A, which states that "the construction inventory [for the health risk analysis] used the same methodology as the mass emissions analysis [i.e., Attachment 1-B] to identify mass daily criteria pollutant emissions and is based on the total PM2.5 exhaust emission generated both on-site by equipment<sup>1</sup> and off-site by trucks."

To conduct the health risk analysis for the project, the total PM2.5 exhaust emissions under the mitigated scenario were calculated for on-site equipment (i.e., off-road equipment and on-site onroad vehicles) and offsite onroad vehicles. The daily PM2.5 exhaust emissions from diesel-fueled off-road equipment and onsite and offsite on-road vehicles is presented in Attachment 1-B. For additional clarification, total emissions over the entire construction period are shown in Tables 1

<sup>&</sup>lt;sup>1</sup> In this case, equipment refers to both off-road equipment and diesel-fueled on-site onroad vehicles.

through 3. As described in the AQTR, the offroad and onroad equipment emissions are calculated based on the activity rates, horsepower bin, load factor, fuel type, and emission factors of each piece of equipment presented in Appendix 1-B (see pages 49, 51, and 52 of the AQTR). The total construction DPM emissions value for on-site equipment (0.0273 tons) includes offroad equipment (0.0191 tons of PM2.5 exhaust emissions, per Table 1) and onsite trucks (0.0082 tons of PM2.5 exhaust emissions, per Table 2). In addition, the PM2.5 exhaust emissions from offsite onroad vehicles (0.0026 tons, per Table 3) represent the construction emissions that would occur largely offsite.

Construction Year	Average Daily Emissions (pounds per day)	Annual Emissions (tons per year)	
2019 (54 working days)	0.1198	0.0032	
2020 (279 working days)	0.1111	0.0155	
2021 (47 working days)	0.0163	0.0004	
Construction Period Total		0.0191	

#### Table 1. Mitigated Construction PM2.5 Exhaust Emissions from Onsite Off-road Equipment

#### Table 2. Mitigated Construction PM2.5 Exhaust Emissions from Onsite Onroad Vehicles

Construction Year	Average Daily Emissions (pounds per day)	Annual Emissions (tons per year)	
2019 (54 working days)	0.0302	0.0008	
2020 (279 working days)	0.0504	0.0070	
2021 (47 working days)	0.0133	0.0003	
Construction Period Total		0.0082	

#### Table 3. Mitigated Construction PM2.5 Exhaust Emissions from Offsite Onroad Vehicles<sup>1</sup>

Construction Year	Average Daily Emissions (pounds per day)	Annual Emissions (tons per year)	
2019 (54 working days)	0.0750	0.0020	
2020 (279 working days)	0.0038	0.0005	
2021 (47 working days)	0.0022	0.0001	
Construction Period Total		0.0026	

<sup>1</sup>For the health risk analysis, the analysis focuses on emissions that would occur on roadways that would affect receptors near the project site. It was estimated that trucks would emit 0.00004 tons of PM2.5 exhaust over the construction period along the truck path near the project site.

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The PM2.5 emissions values presented in Appendices 2-A and 2-B (see page 85 of the AQTR) are derived from the mitigated mass emissions analysis in Appendix 1-B.<sup>2</sup> As shown on page 2 of Appendix 2-A, on-site equipment would emit 0.0273 tons of PM2.5 exhaust over the project construction period and trucks would emit 0.0026 tons of PM2.5 exhaust over the project construction period.<sup>3</sup> These values of 0.0273 and 0.0026 are consistent with the daily emissions shown in Appendix 1-B, summed up over the total construction period, and Tables 1 through 3 above.

The PM2.5 exhaust emissions from on-site equipment and trucks were the inputs for the air pollution dispersion modeling conducted for the proposed project. The air pollution dispersion modeling results were used to conduct the health risk assessment, which indicated that the proposed project would not result in an increased cancer risk greater than BAAQMD's threshold of 10 in a million (see Table 4.3-8 of the Initial Study/proposed MND). As discussed in Response B-6 in the Response to Comments, the fugitive dust emission rate from earth moving activities that the Adams Broadwell letter asserted should be used (see Comment B-21 in the Response to Comments) as the emission rate for the air pollution dispersion modeling is inaccurate because it is the emission rate for fugitive dust emissions. Therefore, the corresponding conclusion from the Adams Broadwell letter that, if using the earth moving fugitive dust emission rate, (1) the proposed project would exceed the threshold for increased cancer risk, (2) the proposed project has a potentially significant, unmitigated impact, and (3) the City must prepare an EIR, is invalid. Based on the above, the proposed project would not exceed the threshold for increased cancer risk, the proposed project does not have a potentially significant, unmitigated impact, and the City does not need to prepare an EIR for the project.

## **Response to Comment Regarding Protected Trees**

*The Adams Broadwell letter asserts that Mitigation Measure BIO-2.1 fails to adequately mitigate the project's potentially significant impacts.* As stated in the first bullet point of Mitigation Measure BIO-2.1, the intent of the mitigation measure is to provide for a 2:1 replacement of any tree removed from the project site. However, recognizing that, in this case, site constraints may not allow for a 2:1 replacement on-site, the mitigation measure includes options for achieving what the City would consider an equivalent replacement off-site. The City has reviewed Mitigation Measure BIO-2.1 in the context of this comment and determined that the language in Mitigation Measure BIO-2.1 is unclear as originally drafted. Accordingly, Mitigation Measure BIO-2.1 on page 61 of the Initial Study has been revised as follows:

**MM BIO-2.1:** Prior to issuance of building permits, the applicant shall submit a Tree Replacement Plan to the City Arborist and Community Development Department for review

<sup>&</sup>lt;sup>2</sup> The mass emissions analysis in Appendix 1-A is for the unmitigated scenario and is irrelevant to the health risk analysis.

<sup>&</sup>lt;sup>3</sup> However, truck emissions estimates from the mass emissions inventory are based on the entire truck trip length, which was assumed to be 20 miles per trip. For the health risk analysis, the analysis focuses on emissions that would occur on roadways that would affect receptors near the project site. To account only for emissions near the project site, the total mass truck emissions were scaled down by the roadway length as represented in the dispersion model, which is assumed to be 0.33 miles. For purposes of the health risk analysis, it was, estimated that trucks would emit 0.00004 tons of PM2.5 exhaust over the construction period along the truck path near the project site.

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and approval. The Plan shall provide for equivalent replacement of any tree removed from the project site, as follows:

- The project sponsor shall replace removed trees at a 2:1 ratio within the project site. If 2:1 replacement is not feasible because of site constraints, the project sponsor <u>shall in</u> addition or instead implement one of the two following options, as determined by the <u>Community Development Director</u>. may instead replace trees at a 1:1 ratio within the project site with approval from the Community Development Director if the tree is larger in size and an appropriate species. Tree species and sizes shall be reviewed and approved, as applicable, by the City arborist.
- The 24-inch box of a replacement tree may be increased to either a 36-inch box or a 48inch box to supplement the on-site tree planting plan. If trees are replaced at a 1:1 ratio, the replacement trees shall have a 36-inch box.
- If required by the Community Development Director, an alternative site, within a 2-mile radius of the project site, shall be identified for any additional tree planting necessary to satisfy the requirement to achieve a 2:1 replacement ratio. Alternative sites may include local parks, schools, and/or street frontages.
- If required by the Community Development Director, the sponsor shall pay an in-lieu fee for any additional tree planting necessary to satisfy the requirement to achieve a 2:1 replacement ratio. The fee shall be paid the City of Santa Clara for in-lieu off-site tree planting in the community and shall be determined by the City's adopted fee schedule at the time of approval for tree removal. These funds shall be used for tree planting and the maintenance of planted trees. A donation receipt for off-site tree planting shall be provided to the Director of Community Development prior to issuance of building permits.

As a result of this revision, the following revisions have also been made to the Initial Study.

Page 9 of the Initial Study has been revised as follows:

The project would remove approximately 12 trees (Canary Island pine, white birch, and black locust) of the 20 existing trees on the project site. As discussed in Section 4.4, *Biological Resources*, none of these trees are protected species, and no street trees would be removed. Ten of the trees that would be removed have a circumference of 36 inches or more. A tree replacement plan at 2:1 ratio would be required as a standard condition of approval for the project. However, by past practice <del>and to have an onsite benefit rather than an off-site benefit</del>, the City has allowed for an alternative plan subject to the approval of the Community Development Director. The alternative plan could <u>allow for off-site tree</u> replacements or payment of in-lieu fees for off-site replacements have a lower replacement ratio if the tree is larger in size and appropriate species. As shown in the conceptual landscape plans, up to 15 new trees (including evergreen magnolia) would be planted on the perimeter of the project site (refer to Figure 3.0-6 at the end of this section). In addition, shrubs and ground cover would be planted throughout the project site. Tree protection measures would be employed to preserve the existing trees.

Page 29 of the Initial Study has been revised as follows:

The project would remove approximately 12 trees (Canary Island pine, white birch, and black locust) of the 20 existing trees on the project site. As discussed in Section 4.4, Biological *Resources*, a tree replacement plan at 2:1 ratio would be required as a standard condition of approval for the project. However, by past practice and to have an onsite benefit rather than an off site benefit, the City has allowed for an alternative plan subject to the approval of the Community Development Director. The alternative plan could <u>allow for off-site tree</u> replacements or payment of in-lieu fees for off-site replacements have a lower replacement ratio if the tree is larger in size and appropriate species. As shown in the conceptual landscape plans, up to 15 new trees (including evergreen magnolia) would be planted on the perimeter of the project site (refer to Figure 3.0-6 in Chapter 3, Project Description). With implementation of the project, the project site would include up to 23 trees, including both existing trees that would remain and new trees. In addition, shrubs and ground cover would be planted throughout the project site. Therefore, the project would not result in adverse aesthetic impacts related to tree or landscape removal because the number of trees would increase under the project. For a discussion of potential biological resource impacts associated with proposed tree removal and new landscaping, refer to Section 4.4, Biological Resources.

Page 60 of the Initial Study has been revised as follows:

The project would remove approximately 12 trees (Canary Island pine, white birch, and black locust) of the 20 existing trees on the project site. None of these trees are protected species, and no street trees would be removed. Ten of the trees that would be removed have a circumference of 36 inches or more. A tree replacement plan at 2:1 ratio would be required as a standard condition of approval for the project, consistent with General Plan Policy 5.3.1-P10. However, by past practice and to have an onsite benefit rather than an off-site benefit, the City has allowed for an alternative plan subject to the approval of the Community Development Director. The alternative plan could allow for off-site tree replacements or payment of in-lieu fees for off-site replacements have a lower replacement ratio if the tree is larger in size and appropriate species. Refer to Mitigation Measure BIO-2.1 below for replacement requirements specific to the project.

The text in Table 4.11-1 on page 123 of the Initial Study has been revised as follows:

Consistent. The project would remove approximately 12 of the 20 trees on the project site. A tree replacement plan at 2:1 ratio would be required as a standard condition of approval for the project, consistent with General Plan Policy 5.3.1-P10. However, by past practice <del>and</del> to have an onsite benefit rather than an off-site benefit, the City has allowed for an alternative plan subject to the approval of the Community Development Director. Consistent with the intent of this policy, which is to increase the urban forest and minimize the heat island effect, the alternative plan could allow for off-
effect, the alternative plan could <u>allow for off-</u> <u>site tree replacements or payment of in-lieu</u>

fees for off-site replacements have a lower
replacement ratio if the tree is larger in size
and appropriate species. Refer to Mitigation
Measure BIO-2.1 in Section 4.4, <i>Biological</i>
<i>Resources</i> , for replacement requirements
specific to the project. Up to 15 new trees,
including evergreen magnolia, would be
planted on the perimeter of the project site.
With implementation of the project, the project
site would have up to 23 trees, including both
the existing trees that would remain and the
new trees. Thus, the project would be
consistent with the City's historical
interpretation of its own tree replacement
policies and standards, including the intent of
this policy.

Pages 6 and 7 of the Tree Inventory (Appendix 4.4-1 of the Initial Study) has been revised as follows:

As stated above, a total of 27 trees were documented in this tree inventory, 20 of which are within the project site and seven of which are adjacent to the project site. Of these 27 trees, a total of 21 trees are protected, 14 of which are within the project site. The project would remove approximately 12 (Canary Island pine, white birch, and black locust) of the 20 existing trees on the project site. None of these trees are protected species, and no street trees would be removed. Ten of the trees that would be removed have a circumference of 36 inches or more. A tree replacement plan at 2:1 ratio would be required as a standard condition of approval for the project, consistent with General Plan Policy 5.3.1-P10. However, by past practice and to have an onsite benefit rather than an off-site benefit, the City has allowed for an alternative plan subject to the approval of the Community Development Director. The alternative plan could allow for off-site tree replacements or payment of in-lieu fees for off-site replacements have a lower replacement ratio if the tree is larger in size and appropriate species. Provided below are the general mitigation measures and protection measures recommended by ICF related to tree removal.

Prior to issuance of building permits, the applicant shall submit a Tree Replacement Plan to the City Arborist and Community Development Department for review and approval. The Plan shall provide for equivalent replacement of any tree removed from the project site, as follows:

- The project sponsor shall replace removed trees at a 2:1 ratio within the project site. If 2:1 replacement is not feasible because of site constraints, the project sponsor <u>shall in</u> addition or instead implement one of the two following options, as determined by the <u>Community Development Director</u>. may instead replace trees at a 1:1 ratio within the project site with approval from the Community Development Director if the tree is larger in size and an appropriate species. Tree species and sizes shall be reviewed and approved, as applicable, by the City arborist.
- The 24-inch box of a replacement tree may be increased to either a 36-inch box or a 48inch box to supplement the on-site tree planting plan. If trees are replaced at a 1:1 ratio, the replacement trees shall have a 36-inch box.

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- If required by the Community Development Director, an alternative site, within a 2-mile radius of the project site, shall be identified for any additional tree planting necessary to satisfy the requirement to achieve a 2:1 replacement ratio. Alternative sites may include local parks, schools, and/or street frontages.
- If required by the Community Development Director, the sponsor shall pay an in-lieu fee for any additional tree planting necessary to satisfy the requirement to achieve a 2:1 replacement ratio. The fee shall be paid the City of Santa Clara for in-lieu off-site tree planting in the community and shall be determined by the City's adopted fee schedule at the time of approval for tree removal. These funds shall be used for tree planting and the maintenance of planted trees. A donation receipt for off-site tree planting shall be provided to the Director of Community Development prior to issuance of building permits.

As stated in Response B-8 in the Response to Comments, and as discussed in the staff report prepared by the City for the Planning Commission hearing, the City maintains discretion to interpret its own policies and plans provided a significant effect on the environment does not occur. The identified mitigation measure, which allows for the planting or funding of off-site trees to achieve an equivalent 2:1 replacement, is consistent with the City's historical interpretation of its own tree replacement policies and standards. By way of example, the City has applied this same interpretation of its tree replacement policy for the 2232-2240 El Camino Real project, the 2895 Northwestern Parkway (Building V6) Data Center Project, and the 3200 Scott Boulevard Office Redevelopment Project.

## **Response to Comment Regarding Energy Impacts**

The Adams Broadwell letter asserts that the project may have significant, unmitigated impacts on energy resources because the Initial Study's estimate of the project's power use efficiency (PUE) is deficient. See Response A-1 and Response B-10 in the Response to Comments. In addition to what is already stated in Response A-1 and Response B-10, the estimated mechanical PUE of 1.19 is based on data generated by Vertiv, the cooling equipment manufacturer. These values are calculated for the operating conditions and IT load specific to the project, using the manufacturer's performance testing of the equipment as the basis for the calculations. The mechanical PUE presented in Response B-10 only accounts for the mechanical system energy consumption, not the overall building energy consumption. Estimates of mechanical PUE vary widely across data centers; accordingly, Response B-10 focusses on mechanical PUE and provides substantial evidence demonstrating the validity of the mechanical PUE estimate.

The table below depicts how the remaining components affecting PUE are included in the overall PUE value of 1.37 presented in the Initial Study/proposed MND. All electrical equipment losses represented have been verified by the respective manufacturers.

Preliminary Electrical System Loads (kW)			
IT load	8,500		
UPS Loss (3.2%)	272		
UPS Batt charge (5%)	425		

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PDU ineff. (1.56%)	132.6
MV xfmr ineff (1.36%)	204
Data room cooling (1.19PUE)	1,615
Infrastructure room cooling	450
Lights (.5 wsf)	43.5
Misc.	45
Total Support	3,187.1
PUE	1.37

As estimate of the energy consumed by the project is provided in Section 4.6, *Energy*, of the Initial Study, beginning on page 64. The energy analysis includes an estimate of the energy consumed during construction and demolition activities, as well as operational activities (e.g., data storage, heating, air-conditioning, lighting, refrigeration, employee vehicle usage, generator testing, and landscape maintenance). As stated on page 66, the estimated energy demand is based on estimations provided by the project engineer. If project-specific data were not available, the energy demand was estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. The CalEEMod worksheets included in Appendix 4.3-1 of the Initial Study provide detailed breakdowns of equipment and activities assumed in the energy analysis.

## **Response to Comment Regarding Project FAR Impacts**

The Adams Broadwell letter asserts that the project's FAR would conflict with the Santa Clara General Plan, resulting in a potentially significant, unmitigated environmental impact. See Response B-16 in the Response to Comments. In addition to what is already stated in Response B-16, it is noted that the Low-Intensity Office/R&D land use designation is one of four land use designations in the General Plan's Office/Industrial land use category. As stated in Response B-16 in the Response to Comments, the City maintains discretion to interpret Santa Clara General Plan policies with respect to the General Plan's purposes. These FARs reflect intended employment intensities in industrial areas assumed in the Santa Clara General Plan rather than assumptions or requirements for open space around industrial buildings. The proposed FAR for the project is 1.09, which would exceed the maximum FAR allowable under the Santa Clara General Plan (1.0). However, the project as proposed is generally consistent with the General Plan, and the FAR standard in the General Plan is a guideline and not a definitive development standard, like a provision in the Zoning Ordinance would be. As stated above, the General Plan's FAR limitations are intended to control employment density, and the project's employment density would be low. Based on the above analysis, the project would not conflict with the allowed uses or assumed employment intensity for the Low Intensity Office and R&D. Moreover, the FAR limitations were not imposed to avoid or mitigate an environmental effect, and a land use impact under CEQA only occurs when a project would violate a General Plan land use policy imposed to avoid or mitigate an environmental effect. Consequently, even though the project does not achieve strict consistency with every General Plan land use policy, there would be no land use impact under CEQA, and there are numerous Santa Clara General Plan policies with which the project does achieve consistency. Therefore, the project would be consistent with the Santa Clara General Plan designation for the project site.

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## **Response to Comment Regarding Cumulative Energy Impacts**

The Adams Broadwell letter states that the project's energy impacts would be cumulatively considerable, that the City failed to properly conduct the cumulative impact analysis, and that the addition of new related projects to the cumulative analysis in the Response to Comments requires recirculation. See Response B-3 in the Response to Comments. Response B-3 includes revisions to page 174 of the Initial Study that provide additional background information regarding Silicon Valley Powers (SVP)'s 2018 Integrated Resources Plan (IRP). See also Response B-14. Response B-14 includes revisions that update the related projects table in the Initial Study (Table 4.21-1 on page 171) and the Initial Study's cumulative analysis.

The project would not have a cumulatively considerable impact on energy for the reasons already stated in Section 4.6, *Energy*, of the Initial Study, as revised in Response B-3. CEQA Guidelines Section 15130 establishes that when determining whether a cumulative impact must be analyzed, a lead agency must determine whether the combined impact of the project and other projects is significant, and whether the project's incremental effect is cumulatively considerable. The Initial Study's analysis of cumulative energy impacts evaluates SVP's estimated peak demand and future 20-year energy forecasts for its entire service area. Thus the analysis accounts for the combined impact of the project and other projects in the relevant cumulative context. The analysis also determines that the project's energy-conserving features.

As stated in Response B-14, the revisions to Table 4.21-1 clarify and amplify information provided in the Initial Study. Response B-14 notes that none of the related projects that were added to the table would be close enough to the project site to result in new cumulative construction impacts. The rest of the cumulative analyses in the Initial Study consider a broader cumulative setting, which captures additional recently approved and reasonably foreseeable projects that are not specifically identified in Table 4.21-1. Thus, the revisions do not provide new information that would result in any new significant impact or any substantial increase in the severity of an impact identified in the Initial Study/proposed MND. The commenter does not provide evidence or facts to substantiate how the revisions constitute substantial new information warranting recirculation. Therefore, recirculation of the Initial Study/proposed MND is not required.

## **Response to Comment Regarding Discretionary Use Policy 5.3.5**-P12

The Adams Broadwell letter asserts that Discretionary Use Policy 5.3.5-P12 was erroneously applied to the proposed project, the project exceeds the maximum FAR for the site's land use designation, and is inconsistent with the Santa Clara General Plan. The comment also references Policy 5.5.1-P9. Therefore, the letter asserts that the Architectural Committee cannot find that the design and location of the project is consistent with the character of the neighborhood. See the discussion above regarding the project's FAR impacts and response B-16 in the Response to Comments. Furthermore, refer to the response above for the FAR impacts, which describes the City's broad discretion to interpret Santa Clara General Plan policies with respect to the General Plan's purposes.

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# **Response to Comment Regarding General Plan Policy 5.3.1-P10**

The Adams Broadwell letter asserts that Condition of Approval C6 conflicts with Santa Clara General Plan Policy 5.3.1-P10 because it permits a lower tree replacement rate than what is required under the General Plan. See the discussion above regarding the project's tree replacement impacts and revisions to Mitigation Measure BIO-2.1.



# Memorandum

Re:	LS1 Data Center Project—Energy Impacts Response to Appeal from Adams Broadwell Joseph & Cardozo	
Project	LS1 Data Center Project (PLN2019-13745)	
Date:	October 18, 2019	
Prepared by:	Travis Michalke, PE, CEM (ICF Resources)	
Prepared for:	Nimisha Agrawal, City of Santa Clara Community Development Department	

This memorandum supplements ICF's response, dated October 16, 2019, to the appeal filed by Adams Broadwell Joseph & Cardozo (hereafter, "Adams Broadwell letter") dated September 25, 2019, with third-party peer review of the Project's Power Usage Effectiveness ("PUE").

The Adams Broadwell letter asserts that the project may have significant, unmitigated impacts on energy resources because the Initial Study's estimate of the project's power use efficiency (PUE) is deficient. ICF's response to the Adams Broadwell letter provides a detailed breakdown of the PUE calculation. I provided an engineering peer review of this calculation and found the PUE to be reasonable when compared to newly constructed data centers of similar construction and location.

Firstly, data center energy end use as listed in the "Preliminary Electrical System Loads (kW)" table was determined to be within the range of what would be expected when compared to the requirements of California Title 24 and allocation of data center energy end use found in the *Center for Expertise for Energy Efficiency for Data Centers, Data Center Profiler Tool*. Secondly, the mechanical system performance was determined reasonable based on equipment manufacturer's performance data and the Vertiv report, *Analysis of Pumped Refrigerant Systems* report<sup>4</sup>, which compares the energy performance of the proposed mechanical system to other high-efficiency data center systems and indicates the equipment's compliance with Title 24 and approval by the California Energy Commission for use in California data centers.

I am a senior building energy analyst with ICF's Building Energy Analytics division. I have over 20 years of experience in building science, sustainable buildings, energy efficiency, modeling, analytics, and policy development. I have extensive experience in commercial buildings, including data centers, and in leading analysis, development, and design of energy projects. I have a B.S. in Mechanical Engineering from Virginia Tech, and am a registered professional engineer, Leadership in Energy and Environmental Design (LEED) accredited professional, certified energy manager, certified energy auditor, certified demand side manager, and green building engineer.

<sup>&</sup>lt;sup>4</sup> See: https://www.vertiv.com/globalassets/shared/analysis-of-pumped-refrigerant-economizers.pdf, accessed October 18, 2019.



# Attachment 1

# Memorandum

Re:	LS1 Data Center Project—Response to Adams Broadwell Joseph & Cardozo Comment Regarding the Environmental Setting Description for Biological Resources
Project	LS1 Data Center Project (PLN2019-13745)
Date:	October 16, 2019
Prepared by:	Torrey Edell, ICF
Prepared for:	Nimisha Agrawal, City of Santa Clara Community Development Department

### Introduction

The LS1 Data Center Project (project) proposes to demolish a vacant single-story 31,088 square-foot industrial warehouse, as well as associated surface parking. In its place, the project applicant would construct a three-story, approximately 80,000 sf data center building and paved surface parking lot with 20 spaces. The project site is 1.68 acres (73,386 square feet [sf]) and located at 2175 Martin Avenue in Santa Clara, California.

I conducted a biological investigation, including a desktop review and field survey, of the entire project site and surrounding vicinity in January 2019 to support the preparation of Section 4.4, *Biological Resources*, in the Initial Study/proposed Mitigated Negative Declaration (MND). The purpose of the biological investigation was to collect information on land cover types within and near the project site, presence/absence of natural<sup>5</sup> and sensitive<sup>6</sup> habitats within and near the project site, presence/absence of special-status species, potential for special-status species to occur within the project site, and type/location/size of existing trees within the project site. Prior to conducting the field survey, I conducted a desktop review. The desktop review included consulting state-and-federal databases to review records of special-status species occurrences and sensitive habitats within the project site and surrounding vicinity and cross-referencing those records with aerial photographs of the existing project site and regional conditions. In addition, I reviewed wetland inventory data prior to the field survey. During the field survey, I walked the entire project site to document the project site's existing conditions. I also walked the surrounding vicinity to document the existing conditions in the vicinity of the project site.

The project site is developed with a single-story building that is currently vacant. The project site also includes a paved L-shaped surface parking lot with approximately 80 parking spaces. There are 20 trees, along with limited landscaping (including ornamental shrubs and grassy lawn), on the project site. The project site is in a highly urbanized area, and as discussed on page 56 of the Initial Study, no natural or sensitive habitats are present on the project site based on the results of the

<sup>&</sup>lt;sup>5</sup> Natural habitat is defined as habitat that has not been planted/landscaped and is not dominated by non-native species.

<sup>&</sup>lt;sup>6</sup> Sensitive habitat is defined as habitat/communities identified by the California Department of Fish and Wildlife as of greater environmental concern in California based on their rarity and existing threats and stressors (California Department of Fish and Wildlife 2019).

biological investigation. The nearest waterway is San Tomas Aquino Creek, which is highly disturbed; separated from the project site by urban development, San Thomas Aquino Expressway, and Caltrain tracks; and is more than 0.5 mile from the project site. Therefore, San Tomas Aquino Creek (and any trees, aquatic species, and wetland-oriented species therein) would not be affected by project construction. In addition, it is extremely unlikely that any listed species could reach the project site given the man-made barriers between the creek and the project site. This analysis is based on the observations of the project site and the vicinity that I noted during the field survey. The biological investigation performed for the project resulted in a determination that the project site has no potential to support rare, threatened, and endangered species, or species of special concern listed by either/both the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife (CDFW), or any plants included on the California Native Plant Society's Inventory of Rare and Endangered Plants (hereafter collectively referred to as listed species).

In addition, no listed species were observed during the field survey. As discussed in Response B-2 in the Response to Comments, the California Natural Diversity Database indicates that 22 species have been documented in the U.S. Geological Survey 7.5-minute quadrangle in which the project site occurs (San Jose West).<sup>7</sup> Of the 22 species, 8 species (including California tiger salamander, foothill yellow-legged frog, and northern California legless lizard) are considered to be extirpated or possibly extirpated. In addition, nearly all of the occurrences are unreliable because that they are outdated and have poor accuracy. Given the lack of accurate occurrence records as well as the lack of suitable habitat within and near the project site, the IS/proposed MND correctly concludes the project would not result in impacts on any species identified as a candidate, sensitive, or special-status species; riparian habitat; or other sensitive natural communities or wetlands.

The only biological resources within the project site that could be affected by the project are trees, shrubs, and nesting birds. Trees of a certain species and/or size are protected in both the Santa Clara General Plan and Santa Clara City Code. To avoid conflicts with any local policies or ordinances that protect biological resources, Mitigation Measure BIO-2.1 requires the project applicant to submit a Tree Replacement Plan and Mitigation Measure BIO-2.2 requires the project applicant to implement tree protection measures during construction for trees that are not identified for removal. Implementation of the identified mitigation measures, would reduce construction impacts on protected trees to a less-than-significant level. In addition, landscaped trees and shrubs provide habitat for nesting migratory birds, which are protected under the Migratory Bird Treaty Act. To avoid or reduce impacts on nesting birds during construction, Mitigation Measure BIO-1.1 requires the project applicant to conduct nesting bird surveys and ensure that nesting birds are not affected by construction. Implementation of the identified mitigation measure would reduce construction impacts on protected raptors and other migratory birds to a less-than-significant level.

I am a multi-disciplinary biologist with a background in botanical and wildlife resources and wetland ecology. I have a BS in Ecology and Systematic Biology from California Polytechnic State University, San Luis Obispo, and 15 years of experience in conducting biological site assessments for environmental impact analyses. My resume is included on the following page.

<sup>&</sup>lt;sup>7</sup> California Department of Fish and Wildlife. 2019. California Natural Diversity Database. RareFind 5. Available: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed August 29, 2019.

## **TORREY EDELL**

#### **Biologist**

Torrey Edell has over 15 years of experience in botany and terrestrial vertebrate ecology. Her experience includes project management, staff coordination and training, botanical and wildlife surveys, agency coordination, wetland delineations, and preparation of environmental documents and permits. She is also skilled in the California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) process and has worked with municipal and federal clients throughout California. Torrey regularly authors regulatory permitting applications for the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife.

#### **Project Experience**

#### **Energy and Fuels**

#### Access Road Maintenance Program—PG&E, Various Locations throughout PG&E's Service Territory, 01/2016 – 01/2017

**Project Manager.** Torrey conducted habitat assessments and monitoring throughout PG&E's service region for special-status species, wetlands, and nesting birds within 1.5 miles of access roads. She completes BCRs and desktop environmental reviews and determines if field surveys are necessary. Torrey prescribes AMMs to prevent to minimize and avoid impacts to



#### **Years of Experience**

Professional start date: 06/2004
 ICF start date: 01/2013

#### Education

 BS, Ecology and Systematic Biology, California Polytechnic State University, San Luis Obispo, 2007

plants and animals with potential to occur in each project area. She performs biological monitoring for special-status species including species in tidal marsh habitat when work occurs at or near a high sensitivity area. She attends bi-weekly check in calls with PG&E land planner and biologist, and coordinates staffing with ICF technical specialist and scheduling and provides quality assurance reviews. Torrey also prepared task order agreements and scheduled work with subconsultants for field verifications and construction monitoring.

# 70Y Wood Pole Replacement Program—PG&E, Northern and Central California, 02/2013 – 01/2016

Assistant Project Manager. Torrey coordinated staffing and scheduling. She conducted habitat assessments and monitoring throughout PG&E's service region for special-status species, wetlands, and nesting birds within 1.5 miles of a utility pole removal location. She completed Biological Constraints Reviews (BCRs) and desktop environmental review, and determined if field surveys were necessary. Torrey prescribed AMMs to minimize and avoid impacts to plants and animals with potential to occur in each project area. She performed biological monitoring for special-status species in a variety of habitats including tidal marsh habitat when work occurred at or near a high sensitivity area (e.g., documented occurrence of listed species directly adjacent to a work area). Torrey also attended bi-weekly check in calls with PG&E land planner and biologist and provided quality assurance reviews.



#### Highway 152 Road Widening Project—Caltrans, 2014-2016.

**Biologist.** Served as biological monitor. Performed nesting bird surveys and construction monitoring for California red-legged frog, California tiger salamander, and San Joaquin Kit Fox. Informs crews of special-status species issues and completes daily monitoring log and punch list.

#### Crosswinds Church—(also the name of the client), 2013-2015.

**Biologist.** Conduct weekly ESA fencing inspections and western burrowing owl surveys. Monitor for California red-legged frog during construction activities near Arroyo Los Positas.

# Santa Clara Valley Habitat Conservation Plan Implementation—Santa Clara Valley Habitat Agency, 2013-Present.

**Project Manager.** Weekly coordination with the Santa Clara Habitat Agency. Responsible for managing staff and assuring that assigned tasks are completed. Authored the Coyote Ridge Management and Monitoring Plan, various clarification/interpretation memos, and technical guidance memos. Torrey also assist with annual report preparation and on-call permitting tasks.

# East Contra Costa County HCP/NCCP Implementation—East Contra Costa County Habitat Conservancy. 2013 – Present.

**Project Manager.** Torrey develops preserve management plans, working closely with the Habitat Conservancy through multiple rounds of revisions. She assists with planning and design for wetland and stream restoration projects and permitting and environmental compliance for restoration projects.

#### Cathodic Protection Test Stations Project—PG&E, Northern and Central California, 2014–2015

**Project Manager, Wildlife Biologist, and Botanist.** Torrey completed environmental constraints analyses along gas lines 124a, 124b, and 172a with multiple study areas (dig sites) along each line. The analysis included a desktop review of potential sensitive resources at each location, and include field verification visits. She also performed preconstruction surveys and construction monitoring as determined necessary by the constraints analysis for species including but not limited to burrowing owl, California tiger salamander, and California red-legged frog. Torrey also coordinated staffing and scheduling, tracked budget, and held regular checks in with PG&E manager.

#### Snowy Plover Monitoring Program—California State Parks, Morro Bay, California, 2003-2010.

**Biologist.** Monitored western snowy plover populations with California State Parks seasonally for six years. Typically tracked populations at Villa Creek, Estero Bluffs, Morro Bay Strand, Montana De Oro, and San Simeon State Park five days a week during the breeding season. Constructed symbolic fencing around suitable nesting habitat and exclosures around active nests. Conducted monitoring on foot, using binoculars and scopes when possible. Located nests and chicks and determined success or failure of nests. If nests hatched, chicks were tracked to fledge. If nests failed, determined the cause. Also tracked unauthorized activities and predators on the beach. Maintained nest database and authored an annual report at the end of the breeding season.





**Attachment 2** 

# Memorandum

Re:	LS1 Data Center Project—Energy Impacts Response to Appeal from Adams Broadwell Joseph & Cardozo
Project	LS1 Data Center Project (PLN2019-13745)
Date:	October 18, 2019
Prepared by:	Travis Michalke, PE, CEM (ICF Resources)
Prepared for:	Nimisha Agrawal, City of Santa Clara Community Development Department

This memorandum supplements ICF's response, dated October 16, 2019, to the appeal filed by Adams Broadwell Joseph & Cardozo (hereafter, "Adams Broadwell letter") dated September 25, 2019, with third-party peer review of the Project's Power Usage Effectiveness ("PUE").

The Adams Broadwell letter asserts that the project may have significant, unmitigated impacts on energy resources because the Initial Study's estimate of the project's power use efficiency (PUE) is deficient. ICF's response to the Adams Broadwell letter provides a detailed breakdown of the PUE calculation. I provided an engineering peer review of this calculation and found the PUE to be reasonable when compared to newly constructed data centers of similar construction and location.

Firstly, data center energy end use as listed in the "Preliminary Electrical System Loads (kW)" table was determined to be within the range of what would be expected when compared to the requirements of California Title 24 and allocation of data center energy end use found in the *Center for Expertise for Energy Efficiency for Data Centers, Data Center Profiler Tool*. Secondly, the mechanical system performance was determined reasonable based on equipment manufacturer's performance data and the Vertiv report, *Analysis of Pumped Refrigerant Systems* report<sup>8</sup>, which compares the energy performance of the proposed mechanical system to other high-efficiency data center systems and indicates the equipment's compliance with Title 24 and approval by the California Energy Commission for use in California data centers.

I am a senior building energy analyst with ICF's Building Energy Analytics division. I have over 20 years of experience in building science, sustainable buildings, energy efficiency, modeling, analytics, and policy development. I have extensive experience in commercial buildings, including data centers, and in leading analysis, development, and design of energy projects. I have a B.S. in Mechanical Engineering from Virginia Tech, and am a registered professional engineer, Leadership in Energy and Environmental Design (LEED) accredited professional, certified energy manager, certified energy auditor, certified demand side manager, and green building engineer.

<sup>&</sup>lt;sup>8</sup> See: https://www.vertiv.com/globalassets/shared/analysis-of-pumped-refrigerant-economizers.pdf, accessed October 18, 2019.

# **TRAVIS MICHALKE, PE, CEM** Senior Managing Consultant, Building Energy Analytics

Travis Michalke is a senior mechanical engineer and building energy analyst with more than 20-years of experience that includes engineering design and energy efficiency for data centers. He is the technical engineering lead for Maryland Energy Administration's Data Center Energy Efficiency Grant Program and a technical advisor for one of DOE's Better Buildings, Better Plants Program data center partners. Prior to joining ICF, Travis spent much of his 15-year engineering career designing data centers and mission critical facilities for commercial and federal customers. During that time, he designed new and renovation data centers throughout the US for large and small data center customers; designed the Pentagon's National Military Command Center, and co-directed his company's mission critical team. Travis has also supported development of prototypical data center engineering design standards and specifications, is an experienced and certified energy manager with working knowledge of relevant building energy codes and standards.

## **Project Experience**

Energy Programs Technical Support Provider, Maryland

**Energy Administration, 2018-Present.** Mr. Michalke provides engineering support to the Maryland Energy Administration (MEA) to serve the participants of its Business and State and Local Incentive Data Center Energy Efficiency Grant program. In this role,

#### Years of Experience

- Professional start date: 1997
- ICF start date: 2012

#### Education

 BS, Mechanical Engineering, Virginia Tech, 1997

#### **Professional Certifications**

- Licensed Professional Engineer
- Certified Energy Manager (CEM)
- LEED Accredited Professional
- Certified Energy Auditor (CEA)
- Certified Measurement and Verification Professional (CMVP)
- ASHRAE Building Energy Modeling Professional (BEMP)
- Certified Demand-Side Manager (CDSM)
- Green Building Engineer (GBE)

Travis assesses the potential energy benefits of proposed energy projects. This includes technical review of applicant energy efficiency measures and projects; verification of baseline energy performance and operational conditions; validation and development of energy savings estimates and project economics; and verification and documentation for installed energy efficiency projects.

**Better Buildings, Better Plants Program, Department of Energy, 2017-Present.** Mr. Michalke serves as a Technical Account Manager for DOE's Better Buildings, Better Plants Program. In this role, Travis works with closely with one of the program's data center partners to help establish and improve data collection and analysis methods; provide guidance on DOE tools; help access additional resources; and connect partners to one another for peer-to-peer learning.

**Data Center Design Experience, Various Clients, 1997-2012.** While employed at KTA, Mr. Michalke provided HVAC engineering design, project management, and technical support to various mission critical telecommunication customers. Immediately prior to joining ICF, Travis co-directed KTA's Mission Critical Studio. Travis's experience includes design of legacy and extreme density data centers; design for new construction builds; prototype assessment; and retrofit projects aimed at improving operational performance, energy efficiency, and infrastructure uptime and reliability.

**Data Center Prototype Builds, Confidential Client, 2011-2012.** While employed at KTA, Travis participated in the engineering system design and evaluation of two prototypical data centers. The design consisted of high efficiency air-cooled chillers piped in a variable-primary configuration with emergency chilled water storage tanks to support growth in four 1.1 MW increments. High efficiency chilled-water CRAC units incorporating VFDs and air-side economizers were designed for underflow



LS1 Data Center Project – Response to Appeal from Adams Broadwell Joseph & Cardozo October 16, 2019 Page 2 of 19

air distribution in a hot aisle/cold aisle configuration. Recommendations were reviewed and provided for improving the buildings envelope for compliance with ASHRAE 90.1, incorporation of evaporative pre-cooling, and system wide energy performance improvements through incorporating higher ambient indoor environmental temperatures in accordance with TIA and ASHRAE.

**Data Center Expansion, Time Warner Cable, 2011-2012.** While employed at KTA, Travis led the design of an expansion to the TWC LEED certified data center. The design included the incorporation of high efficiency air-cooled chillers and water-side economizers piped in a variable-primary flow configuration. Travis led an evaluation that was commissioned to review the existing central plant system controls; aimed at increasing plant control and stability. Recommendations were provided to relocate control and monitoring points and modify the chilled-water bypass piping and control valve.

### **Employment History**

ICF	Senior Managing Consultant, Building Energy Analytics	2012-present
KTA Group	Co-Director Mission Critical Studio	2010-2012
	Director of Energy Services	2010-2012
	Mechanical Engineer	1997-2010

