PLACEWORKS

MEMORANDUM

DATE May 30, 2019

TO Erick Serrano, Associate Planner, City of Cupertino

FROM Terri McCracken, Associate Principal, PlaceWorks

SUBJECT Cupertino Village Hotel Project Initial Study and Mitigated Negative Declaration Responses to Comments Memo

INTRODUCTION

The City of Cupertino distributed a Notice of Intent to adopt a Mitigated Negative Declaration for the Cupertino Village Hotel Project on Thursday, November 8, 2018. This initiated a 30-day public comment period for agencies and interested parties to submit comments on the Initial Study and Mitigated Negative Declaration (IS/MND). Comments were accepted through Friday, December 7, 2018. Two late comment letters were received after the 30-day public comment period.

Although CEQA and the CEQA Guidelines do not require a Lead Agency to prepare written responses to comments received on an IS/MND, the City has elected to prepare the following written responses with the intent of conducting a comprehensive evaluation of the proposed project.

Responses to comments received during the 30-day review period are provided in Table 1 and responses to the late comments are provided in Table 2, both of which are attached to this Responses to Comments Memo. The tables are organized by comment letter number, name of commenter, date of comment letter, a summary of the comment, and a brief response to the comment. All the comment letters received by the City are attached to this Response to Comments Memo in their original format.

The Public Review Draft IS/MND dated Novermber 8, 2019 has been updated to reflect typographical corrections, insignificant modifications, amplifications, and clarifications. Underline text represents language that has been added to the IS/MND; text with ~~strikethrough~~ has been deleted from the IS/MND. The comments and responses, and text revisions discussed in this Responses to Comments Memo do not require any "substantial revisions" to the IS/MND as defined in the California Environmental Quality Act (CEQA) Guidelines Section 15073.5. No new, avoidable significant impacts have been identified, and no mitigation measures or project revisions are required to reduce the evironmental effects of the propose project to a less-than-significant level. Accordingly, no recirculation of the Public Review Draft IS/MND is required. This Responses to Comments Memo, together with the revised IS/MND, constitutes the Final Draft IS/MND for the proposed project.

Attachments:

Comment Letters Received During the 30-day Public Review Period

- Comment Letter 1: Gayle Totton, B.S., M.A., Ph.D., Associate Governmental Projec Analyst, State of California- Native American Heritage Commission, November 27, 2018
- Comment Letter 2: Ben Aghegnehu, Associate Transportation Planner, County of Santa Clara – Roads & Airports, December 5, 2018
- Comment Letter 3: Andrew Miner, Assistant Director, Community Development, City of Sunnyvale, December 7, 2018
- Comment Letter 4: Patricia Maurice, District Branch Chief, California Department of Transportation, December 7, 2018

Late Comment Letters Received After the 30-day Public Review Period

- Comment Letter 5: Michael Lozeua, Lozeau|Drury LLP, January 11, 2019
- Comment Letter 6: Brian Flynn, Lozeau|Drury LLP, March 11, 2019
- Comment Letter 7: Kitty Moore, City of Cupertino Planning Commissioner, March 17, 2019

RESPONSES TO COMMENTS

Table 1 Responses to Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Name/	Date	Response
1	Gayle Totton, B.S., M.A., Ph.D. Associate Governmental Project Analyst State of California – Native American Heritage Commission	11/27/18	**Comment 1.1:** The commenter introduces the Native American Heritage Commission (NAHC) and lists the reviewed sections. **Response 1.1:** The comment is noted. **Comment .1.2:** The commenter encourages the City go beyond the consultation requirements under Assembly Bill (AB) 52, which have technically been met, and to reach out to tribes on the NAHC Tribal Consultation Under AB 52: Requirements and Best Practices list. **Response 1.2:** The comment is acknowledged; however, the comment has no bearing on the environmental analysis of the project. The commenter's request will be forwarded to the decision-makers for consideration. **Comment 1.3:** The commenter requests that the mitigation measure language for Tribal Cultural Resources be revised to address Tribal Cultural Resources and Archaeological Resources separately and distinctly. The commenter states that mitigation language for Archaeological Resources is not always appropriate for measures specifically for handling Tribal Cultural Resources and recommends using sample mitigation measures in the March 2017 AB 52 Technical Advisory. **Response 1.3:** The comment is acknowledged, and Mitigation Measure CULT-1 has been revised to include separate appropriate measures for Tribal Cultural Resources and Archaeological Resources. This revision is shown in the Final Draft IS/MND and does not affect any conclusions or significance determinations provided in the Public Review Draft IS/MND. **Comment 1.4:** The commenter states that the Most Likely Descendant timeline in the Environmental Analysis, Section IV, Cultural Resources, of the Public Review Draft IS/MND is incorrect and should be revised to state that "the descendants shall complete their inspection and make their recommendations or preferences within 48 hours after being allowed access to the site." **Response 1.4:** The comment is acknowledged. Section IV, Cultural Resources, of the Public Review Draft IS/MND has been revised to show that the Most Likely Descendant would have 48 hours, after being allowed access to the site,

Table 1 Responses to Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Name/	Date	Response
			to make recommendations or preferences regarding the remains. This revision is shown in the Final Draft IS/MND and does not affect any conclusions or significance determinations in Public Review Draft IS/MND.
2	Ben Aghegnehu Associate Transportation Planner County of Santa Clara – Roads & Airports	12/5/18	**Comment 2.1:** The commenter introduces the County of Santa Clara Roads and Airport Department. **Response 2.1:** The comment is noted. **Comment 2.2:** The commenter requests that the Transportation Impact Analysis, included as Appendix D of the Public Draft IS/MND, include the Lawrence Expressway/Calvert, Lawrence Expressway/Moorpark, and Lawrence Expressway/Saratoga as study intersections. **Response 2.2:** These three Lawrence Expressway intersections are all located south of I-280 and are too far from the project site to consider for level-of-service analysis. Based on the project's trip distribution pattern, the project would add only 6 AM (morning) peak hour trips and 4 PM (evening) peak hour trips in the northbound direction on Lawrence Expressway, and 4 AM peak hour trips and 6 PM peak hour trips in the southbound direction on Lawrence Expressway. This is well below the 10-trips-per-lane rule that is typically applied to determine which intersections to study. **Comment 2.3:** The commenter states that the correct signal timing information and history should be used if not using Congestion Management Plan (CMP) approved Traffix reports. County intersection Traffix reports should have the same signal timing values that match the date and time of counts or must be CMP-approved Traffix reports. **Response 2.3:** Signal timing was checked for the following 6 CMP intersections that were studied: • *Wolfe Road /El Camino Real (#1):* The average delay and level of service match the CMP. • *De Anza Boulevard /Homestead Road (#5):* The level of service matches the CMP, but the average delay is slightly different because the CMP lane geometry is incorrect for the southbound approach. The CMP shows two left-turn/two through/one through-right-turn and an average delay of 36.9 seconds. Based on field observations the traffic consultant (Hexagon) shows two left-turn/three through/one right-turn with an average delay of 36.4 seconds.

Table 1 Responses to Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Name/	Date	Response
			• *Lawrence Expressway /Homestead Road (#7):* The level of service matches the CMP, but the average delay is slightly different because minimum green times are slightly different. The CMP shows an average delay of 74.4 seconds and the traffic consultant (Hexagon) calculates an average delay of 74.8 seconds. Once the minimum green times are updated, average delay and level of service match. • *Wolfe Road/I-280 NB Ramp (#10):* The level of service and average delay are different because the CMP lane geometry is incorrect for the westbound approach (off-ramp). The CMP shows one shared left-turn/right-turn lane and one right-turn lane. Currently, there are two left-turn and two right-turn lanes (based on field observations). • *Wolfe Road/I-280 SB Ramp (#11):* The level of service and average delay are different because the CMP lane geometry is incorrect for the eastbound approach (off-ramp). The CMP shows one left-turn lane and one right-turn lane. Currently, there are two left-turn and two right-turn lanes (based on field observations). • *Wolfe Road/Stevens Creek Boulevard (#13):* The average delay and level of service match the CMP. Comment 2.4: The commenter requests correction of a typo on page 4-76 of the Public Review Draft IS/MND showing that the Transportation Demand Management (TDM) reduction for the shuttle program is 5 percent, because the Transportation Impact Analysis prepared for the proposed project and included as Appendix D shows this value to be 3 percent. Response 2.4: The TDM reduction has been revised to reflect 3 percent. This revision is shown in the Final Draft IS/MND and does not affect any conclusions or significance determinations in Public Review Draft IS/MND.
3	Andrew Miner Assistant Director City of Sunnyvale – Community Development	12/7/18	Comment 3.1: The commenter introduces the City of Sunnyvale. Response 3.1: The comment is noted. Comment 3.2: The commenter requests that the City of Cupertino provide outreach to Sunnyvale residents within 1,000 feet of the site, and that the notice area be expanded if the traffic impacts show potential significant impacts

Table 1 Responses to Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Name/	Date	Response
			to the nearby Sunnyvale neighborhood. **Response 3.2:** The comment is acknowledged. As shown in responses to comments 3.3 and 3.4 below, no new traffic impacts would occur as a result of the correction to the intersection configuration and the level-of-service calculations of Wolfe Road/ Fremont Avenue (#2) intersection were corrected in the Final Draft IS/MND to reflect the correct intersection configuration. The City of Cupertino has complied with the notification procedures required by CEQA, which include providing notice to the City of Sunnyvale. **Comment 3.3:** The commenter states the intersection of Wolfe Road/Fremont Avenue (#2) has one northbound left turn lane, and not two northbound left turn lanes. The commenter requests that the lane configurations Figure 5 in the Transportation Impact Analysis included in Appendix D of the IS/MND and level-of-service calculations be corrected for this intersection. **Response 3.3:** Figure 5 (Existing Lane Configurations) of the Transportation Impact Analysis has been revised to reflect the correct northbound lane geometry (one northbound left-turn lane) at Wolfe Road/ Fremont Avenue (#2) intersection. This revision is shown in the Final Draft IS/MND and does not affect any conclusions or significance determinations in Public Review Draft IS/MND. **Comment 3.4:** The commenter requests a correction in level-of-service calculation for the Wolfe Road/ Fremont Avenue (#2) intersection because it should be Protected + Permitted signal phasing in the southbound direction. **Response 3.4:** The Transportation Impact Analysis level-of-service calculations have been revised to reflect the correct northbound lane geometry (one northbound left-turn lane) and southbound signal phasing (Protected + Permitted) at the Wolfe Road/ Fremont Avenue (#2) intersection. This revision is shown in the Final Draft IS/MND and does not affect any conclusions or significance determinations in Public Review Draft IS/MND. **Comment 3.5:** The commenter requests that the Project Trip Generation Estimates Table be revised, because TDM

Table 1 Responses to Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Name/	Date	Response
			reductions are not typically applied to hotel projects and that the project applicant should ensure TDM measures are implemented for hotel guests. **Response 3.5:** The shuttle (TDM) reduction was applied according to the 2014 VTA Transportation Impact Analysis Guidelines (Table 1: Standard Auto Trip Reduction Rates, p. 33). No changes are required.
4	Patricia Maurice District Branch Chief State of California – California Department of Transportation	12/7/18	**Comment 4.1:** The commenter introduces the California Department of Transportation (Caltrans) and describes their new mission to reduce statewide vehicle mile traveled (VMT) and increase non-auto modes of active transportation. The commenter also provides a summary of the proposed project. **Response 4.1:** The comment is noted. **Comment 4.2:** The commenter encourages the City to condition the project to implement Transportation Demand Management (TDM) cited in the August 30, 2018 Draft Transportation Impact Analysis. **Response 4.2:** The comment is acknowledged. As discussed in the Public Review Draft IS/MND, the proposed project would incorporate TDM measures to offset transportation-related greenhouse gas (GHG) emissions and to reduce overall vehicle miles traveled (VMT) consistent with the 2014 VTA Transportation Impact Analysis Guidelines (Table 1: Standard Auto Trip Reduction Rates, p. 33). **Comment 4.3:** The commenter suggests that the proposed project should be conditioned to contribute fair share traffic impact fees toward the Interstate-280 Channel Trail Junipero Serra Trail Project as conditions of approval, per the City of Cupertino 2016 Bicycle Transportation Plan due to the project's close proximity to the Priority Development Area (PDA) in the City of Cupertino. The commenter also requests a copy of the final staff report and conditions of approval for review. **Response 4.3:** The comment is acknowledged. Consistent with CEQA Guidelines Section 15126.4(a)(3), no mitigation measures are required where no impact is identified. However, the project applicant will pay all applicable fees as required. The City of Cupertino has complied with the notification procedures required by CEQA, which include providing notice to Caltrans. The final staff report for the proposed project will be posted on the City's website: https://www.cupertino.org/our-city/agendas-minutes.

Table 1 Responses to Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Name/	Date	Response
			Comment 4.4: The comment describes the role of a Lead Agency and how the City of Cupertino would be responsible for all project mitigation, including needed improvements in the State Transportation Network, through permit conditions, agreements, or other legally binding instruments under the control of the City. **Response 4.4:** The comment is noted.

RESPONSES TO LATE COMMENTS

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
5	Michael Lozeau Lozeau|Drury LLP	01/11/19	**Comment 5.1:** The commenter requests the CalEEmod input files and construction schedule documentation for the project, in order to review the air quality and GHG analysis. **Response 5.1:** The files requested were provided to the commenter by the City on Tuesday, February 19, 2019.
6	Brian B. Flynn Lozeau|Drury LLP	03/11/19	**Comment 6.1:** The commenter introduces the Laborers International Union of North America and lists the preparers of the comments, which include hired experts in the fields of biological resources and hazardous materials. This comment asserts that the Public Review Draft IS/MND is not adequate and requests that an EIR be prepared. **Response 6.1:** The comment is noted. Responses to this assertion are provided in the responses to comments that follow. The following responses summarize the main points of disagreement among the commenter and the experts hired by the commenter. In some instances the responses to comments that follow include insignificant modifications, amplifications, and clarifications to the Public Review Draft IS/MND, which are shown in the Final Draft IS/MND, and demonstrate that the MND is the appropriate CEQA document for the proposed project, and that the preparation of an EIR is not required pursuant to CEQA and the CEQA Guidelines (see CEQA Guidelines Section 15073.5(d)). **Comment 6.2:** The commenter provides an overview of the project description and describes the tiering process applied to the environmental evaluation in the Public Review Draft IS/MND. **Response 6.2:** The comment is noted. Please refer to CEQA Guidelines Section 15152, which allows for tiered MNDs,

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			and to CEQA Guidelines Sections 15070 and 15073.5 regarding preparation of and the criteria applicable to recirculation of MNDs. Comment 6.3: The commenter provides an interpretation of the legal background for tiering from the General Plan EIR, substantial evidence, and fair argument standards. Response 6.3: The comment is noted. Comment 6.4: The commenter introduces Appendix A to the comment letter, which is a letter prepared by the commenter's hired biologist Kenneth Smallwood, PhD. Response 6.4: The following responses to Appendix A of the comment letter were prepared by James Martin, Principal of Environmental Collaborative, to provide an independent review of the analysis and conclusions reached in the Biological Resources section of the IS/MND. Mr. Martin has over 30 years of experience as a consulting biologist and wetland specialist and has been involved in the review and preparation of hundreds of project applications. This includes preparation of the Biological Resources sections of the on the City of Cupertino's *General Plan Amendment, Housing Element Update, and Associated Rezoning Project EIR*,[1] which include a program-level evaluation of the project site, the IS/MND on the nearby City of Sunnyvale's *Butcher's Corner Project EIR*,[2] and other proposed hotel, residential, commercial, institutional, infrastructure and open space projects throughout the Bay Area and Northern California. As part of Mr. Martin's adequacy review of the Biological Resources section of the IS/MND, he reviewed the entire section in the IS/MND, together with the Biological Resources section of the City's *General Plan Amendment, Housing Element Update, and Associated Rezoning Project EIR*, the Biological Resources section of the *Apple Campus 2 Project EIR*,[3] relevant comments made by the commenter, the comment letter by the commenter's biologist dated

[1] City of Cupertino certified General Plan Amendment, Housing Element Update, and Associated Rezoning EIR, State Clearinghouse Number 2014032007. December 2014. City of Cupertino approved General Plan Amendment, Housing Element Update, and Associated Rezoning EIR Final Addendum, State Clearinghouse Number 2014032007. October 2015.

[2] City of Sunnyvale certified *Butcher's Corner Project EIR*, State Clearinghouse Number 2015032085, December 2016.

[3] City of Cupertino, certified *Apple Campus 2 Project EIR, State Clearinghouse Number 2011082055.* 2013.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			January 14, 2019, and records on occurrences of special-status species and sensitive natural communities maintained by the California Natural Diversity Database (CNDDB) of the California Department of Fish and Wildlife (CDFW). Following the background review, Mr. Martin conducted a site visit on Monday, April 1, 2019, visually inspecting the landscaping, exterior of the two existing structures, and noting birds observed or heard vocalizing from trees on the site and surrounding properties. On Monday, May 20, 2019, Mr. Martin conducted an additional inspection of the buildings that would be demolished and the trees that would be removed to further evaluate the potential for roosting bats on the site. Based on Mr. Martin's independent review, he determined that the Biological Resource section of the IS/MND adequately addresses the potential impacts on biological resources and identifies mitigation to reduce any potentially significant impacts to a less-than-significant level. The IS/MND includes a description of the existing conditions on the site (which is currently developed with two commercial buildings: the occupied by the Duke of Edinburgh Pub and Restaurant and a vacant commercial building; parking and ornamental landscaping for the existing commercial spaces, including numerous trees) its location in an urbanized area with limited wildlife habitat values and low suitability to support special-status species, and the potential that birds protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFG Code) may nest on the site and that Mitigation Measure BIO-1 ensured compliance with these mandatory laws to avoid substantial disturbance to nesting birds or destruction of any nests in active use. Mitigation Measure BIO-1 is identified in the IS/MND to determine whether any bird nests in active use are present on the site, and to ensure that an appropriately-sized buffer is provided to prevent their loss or nest abandonment during construction if any active nests are detected during the bird nesting season (February 1 to August 31). Based on information provided by the commenter's biologist, discussions of the following topics have been added to the Biological Resource section of the IS/MND: (1) the potential significance of birds possibly colliding into the new building, resulting in their injury or death; (2) the potential for bats to roost on the site, based on the commenter's biologist's reported observation of an unidentified bat on the site; and (3) the potential for presence of special-status species to be present on the site. These discussions, which are summarized below, do not affect any conclusions or significance determinations provided in Public Review Draft IS/MND. **Bird Collision.** Avian injury and mortality resulting from collisions with buildings, towers and other man-made

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			structures is a common occurrence in city and suburban settings. Some birds are unable to detect and avoid glass and have difficulty distinguishing between actual objects and their reflected images, particularly when the glass is transparent and views through the structure are possible. Night-time lighting can interfere with movement patterns of some night-migrating birds, causing disorientation or attracting them to the light source. The frequency of bird collisions in a particular area is dependent on numerous factors, including: characteristics of building height, fenestration (the arrangement of windows and doors on the sides of a building) and exterior treatments of windows and their relationship to other buildings and vegetation in the area; local and migratory avian populations, their movement patterns, and proximity of water, food and other attractants, time of year; prevailing winds; weather conditions; and other variables. The proposed hotel would alter the physical characteristics of the site; however, this change is not expected to contribute to a substantial increase in the risk of local and migratory bird collisions. This is due to several reasons, including the fact that the surrounding area is already intensively developed with structures of similar height, bulk and surface treatment; that the dense mass of existing trees along the North Wolf Road frontage would be retained and serve to largely screen the east facade of the new structure; and that the proposed building materials would be non-reflective; and the proposed lighting would be low-level illumination with no up-lighting. As stated above. the site vicinity is already intensively developed with urban use. In addition, the site is occupied by two existing structures, the proposed new structure would be less than the height of many of the existing trees to be retained on the site, the proposed structure would be similar in character to the other buildings in the area, and most birds, as under existing conditions, would likely acclimate to the presence of the new building once completed. Therefore, the potential risk of bird collision with the new building would be a less-than-significant impact. There are design options to minimize the risk of bird collisions through the use of well-documented bird-safe designs for window treatments, roof top equipment, and night-time lighting. While any bird collisions that do occur should not have a substantial adverse effect on special-status bird species or more common bird species that may be flying through the vicinity, the applicant has committed to implementing bird-safe design measures in the new building, which would further address the low risk of collision. These include the following provisions in the new

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			building: • **Non-Reflective Glass:** No reflective glass would be used in the building. The San Francisco Bird Safe Recommendations[4] states that reflective glass should be avoided as some birds in certain circumstances might see vegetation in the reflection and fly into a building. • **Fritted Glass on N. Wolfe Road (East) Elevation's 4th, 5th and rooftop floors:** Fritted glass is a non-reflective glass that is used to reduce glare and lower the danger to birds. Fritting on the two top guest floor windows of the new building (4th and 5th floors) facing east toward N. Wolfe Road is intended to help inhibit photography of Apple Park and preserve Apple's privacy. It would also help prevent possible bird strikes. Fritting helps diminish the transparency of glass and is a documented approach to helping reduce the probability of bird collisions. Transparent glass used in "design traps," such as glass bridges or parapets, can also be problematic, but the only location where a glass parapet would be used is on the roof around the rooftop lounge area. This glass screening would also use fritted glass to avoid potential bird strikes. • **Building Lighting:** Overly lit buildings can be problematic, especially if there is uplighting. The project is required to meet City code minimum standards on exterior lighting;[5] therefore, the new building would have no up-lighting. The source, intensity, and type of exterior lighting for the project site would generally be provided for the purpose of orienting site users and for safety needs. All on-site lighting would be low-level illumination and shielded to reduce light spill or glare. • **Tree Screening:** The tall, dense ash trees on the outside of the sidewalk and the redwoods along the N. Wolfe frontage of the site are to be retained and would further screen the east façade of the building. • **Reduced Unnecessary Interior Lights:** Energy conservation measures would be used as part of interior lighting for the new building, such as employing automatic sensors to turn off lights when guests are not

[4] San Francisco Planning Department, 2011. *Standards for Bird-Safe Buildings*, San Francisco, California. Adopted July 14;

[5] City of Cupertino Municipal Code, Title 19, Chapter 19, 68, Architectural and Site Review, Section 19.168.030, Permitted, Conditional, and Excluded Uses; Chapter 19.124, Parking Regulations, Section 19.124.040, Regulations for Off-Street Parking; Title 16, Buildings and Construction, Chapter 16.58, Green Building Ordinance, includes the CALGreen requirements with local amendments for projects in the city, specifically, CALGreen Section 5.106.8, Light Pollution Reduction, establishes Backlight, Uplight and Glare ratings to minimize the effects of light pollution for nonresidential development.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			present in guest rooms. The location of the project site, the building design features and selected materials, were determined to adequately address the remote potential for special-status bird species dispersing through the site vicinity to collide with the new structure and be injured or killed. These measures would serve to minimize the potential for bird strikes through the use of bird-friendly design guidelines in the treatment of windows and other aspects of the proposed hotel building and would ensure any potential impact would be less than significant for special-status birds and more common bird species. **Bat Roosting.** In his comment letter dated January 14, 2019, the commenter's biologist reports observing a bat of an unidentified species on the site but provides no other information on this observation. Numerous bat species are known to be in the Cupertino area, most of which are relatively common and are not considered special-status species. The California Natural Diversity Base does not show any occurrences of special-status bats within the site vicinity or from anywhere in Cupertino but does show records within several miles of Cupertino. This includes occurrences of Townsend's big-eared bat (*Corynorhinus townsendii*), hoary bat (*Lasiurus cinereus*), and Yuma myotis (*Myotis yumanensis*). These three species have no legal protected status under the State or federal Endangered Species Acts, but Townsend's big-eared bat is considered a Species of Special Concern by the CDFW. These species have various priority rankings with the Western Bat Working Group (WBWG), ranging from "High" for Townsend's big-eared bat, "Medium" for hoary bat, to "Low-Medium" for Yuma myotis. Bat species found in the Cupertino vicinity may forage and occasionally roost in the site vicinity, but suitable habitat conditions for maternity roots is absent from the site. The potential for any special-status bat species to be present on the site is considered highly remote, given the urbanization of the site vicinity and intensity of human activity, which typically discourages possible occupation by special-status bats, the results of a follow-up site inspection was conducted on May 20, 2019 which confirmed there were no signs of bat roosting or occupation in the buildings to be demolished or trees to be removed. As part of the inspection, Mr. Martin performed a perimeter check of both buildings and inspected the trees to be removed for any cavities that could be occupied for signs of bat roosting. The only openings into the attic of the former bank building that could allow for bat access into the structures were covered with spider webs or showed no signs of bat access (i.e., scratches or staining), indicating no presence of common or special-status bat species. The interior and attics of both buildings were inspected by Mr. Martin with a

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			high intensity flashlight to discern whether any bats or evidence of bat occupation were present. After a thorough inspection, no individual bats or signs of common or special-status bats (i.e., droppings, staining or scratches, or body parts) were detected in either of the buildings or trees to be removed. The applicant agreed to seal the remaining openings into the attic of the former bank building to prevent any possibility that bats could enter the attic space in the future, which would ensure no inadvertent take of any bat species during building demolition if individuals were occupying the structures and could not escape. Similarly, none of the trees to be removed had any cavities or exfoliating bark where bats could become trapped during tree removal. In the remote instance that one or more bats were roosting in one of the trees to be removed on the site, it could easily move to other trees on the site or nearby vegetation or structures in the surrounding area. No evidence of any roosting by any bat species, including maternity roosts of any kind, was observed on the site during the inspection, no significant impacts on common or special-status bat species are anticipated, and no additional analysis or mitigation is considered necessary in the IS/MND. Special-Status Species and Baseline Data. Section III, Biological Resources, of the Public Review Draft IS/MND includes a summary of data from the CNDDB, which contains no records of special-status plant or animal species on the project site or urbanized areas surrounding the project site. The section indicates that there is a possibility that birds could nest in trees and other landscaping on the project site, makes reference to the MBTA and CFG Code (the Code enforced by the California Department of Fish and Wildlife [CDFW]), and identifies Mitigation Measure BIO-1 to protect special-status species and ensure any active nests are avoided. Based on the assumed conditions and confirmed during the field reconnaissance survey by Mr. Martin, the site is completely urbanized and does not contain habitat conditions necessary to support occurrences of special-status plants or animals. As acknowledged in the Biological Resources section of the Public Review Draft IS/MND, there remains a possibility that white-tailed kite, Cooper's hawk, other raptors, and other bird species may occasionally disperse through the site vicinity. However, no essential habitat for these or other special-status species is present on the site due to its developed condition. Even the potential for nesting by white-tailed kite and other special-status bird species sometimes found in urban areas is considered highly unlikely, given the intensity of human activity in the immediate site vicinity. Smaller passerine birds utilize the mature trees along the North Wolfe Road frontage for foraging and nesting, but Mitigation Measure BIO-1 as presented in the Public Review Draft IS/MND

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			would adequately address any potential impacts on nesting birds and would ensure compliance with the MBTA and CFG Code. Adherence to the bird safe design guidelines discussed above under Bird Collision would address the remote potential that special-status bird species dispersing through the site vicinity could collide with the new structure and be injured or killed. This would serve to minimize the potential for bird strikes through the use of bird-friendly design guidelines in the treatment of windows and other aspects of the proposed hotel building and would ensure impacts would be less than significant for special-status birds and more common bird species. There also remains a remote possibility that special-status bat species and other more common bat species may forage in the site vicinity, as discussed above. However, there was no evidence of presence of any common or special-status bat species during the site inspection discussed above under Bat Roosting. No evidence of any roosting by any bat species, including maternity roosts of any kind, was observed on the site during the inspection, , no significant impacts on common or special-status bat species are anticipated, and no additional analysis or mitigation is considered necessary in the IS/MND. No other special-status species are considered to have even a remote potential for occurrence on the site. Given the developed condition of the site and urbanized characteristics of the surrounding area, detection surveys for special-status species suggested by the commenter's biologist are not warranted. The 26 species identified as “special-status” by the commenter's biologist in Table 2 of his comment letter (see page 5), which he contends have been reported “on or near” the site, are all bat and bird species that may occasionally fly over or forage in the site vicinity. The majority of these 26 species are presumably included on the commenter's biologist’s list because of their protection under CFG Code or conservation concerns. None of these species are listed as threatened or endangered under the California or federal Endangered Species Acts, or would qualify as an endangered, rare or threatened species under the definition in Section 15380 of the CEQA Guidelines, and with the exception of those considered to be a Species of Special Concern by the CDFW, would not generally be considered a special-status species under CEQA review. The City of Cupertino does not have a definition of special-status species to provide clarification on what qualifies as a special-status species under its jurisdiction, but widespread and common species such as Allen’s hummingbird, Nuttall’s woodpecker, oak titmouse, American kestrel, red-tailed hawk, barn owl, and California gull and many of the other species listed in Table 2 would not qualify as a special-status species under CEQA. In any case, the proposed project would not have a “substantial adverse effect, either directly or through habitat modification” on any special-status species, and mitigation identified in the Public Draft IS/MND, would conservatively ensure avoidance of any nesting bird species

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			in the remote instance that they were present on or flew over the site. Comment 6.5: The commenter contends that the wildlife baseline for the IS/MND is inadequate because the IS/MND underestimated the number of special-status species that may be impacted by the proposed project, and concludes that an EIR is necessary to ensure that any impacts are mitigated to a less-than-significant level. Response 6.5: The opinion of the commenter regarding the adequacy of the wildlife baseline in the IS/MND is noted. The commenter further states that the commenter's biologist conducted a site survey on January 12, 2019, that he observed 13 species of wildlife, and that the commenter's biologist contends that 26 special-status species of wildlife would potentially use the site. Please refer to response to comment 6.4, above, regarding "Special-Status Species and Baseline Data" and the incorporation of bird-friendly design treatments into the proposed new hotel to minimize the potential for inadvertent loss of individual birds. With implementation of Mitigation Measure BIO-1 and adherence to the bird-safe design guidelines proposed to be incorporated into the project design by the applicant, potential impacts on special-status species would be mitigated to a level of less-than-significant and preparation of an EIR is not necessary. Comment 6.6: The commenter expresses an opinion regarding bird window collisions. Response 6.6: The opinion of the commenter regarding the adequacy of the impact analysis is noted. Please refer to response to comment 6.4, above, regarding "Bird Collision" and the bird-friendly design treatments that would be used for the proposed hotel building to reduce the risk of collision of special-status birds and more common bird species. The commenter further summarizes the risks associated with bird collisions, the estimates made by the commenter's biologist that the proposed project could result in 476 bird deaths per year, and the commenter's biologist's suggestions to address the risks of bird collisions. While there is a potential risk of bird collisions, the estimates for project-related bird deaths by the commenter's biologist appear to be greatly exaggerated and do not consider methods to minimize the risk of bird collision by implementing bird-safe designs. One of the studies

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			referenced by the commenter's biologist reported the results of 5 years of monitoring bird collisions at the California Academy of Sciences building in Golden Gate Park.[6] This California Academy of Sciences study was the basis for determining which species observed by the commenter's biologist during his site survey were indicated as "window victims" in Tables 1 and 2 of his comments. Through the 5-year course of the California Academy of Sciences study (February 10, 2008 to December 31, 2013), a total of 355 birds struck windows in the building and were stunned enough to be found and counted. Of this total, 308 strikes resulted in mortalities (87 percent), while the remaining 47 were released following data collection and were considered to have a good prognosis for survival. It should be noted that substantial modifications were made to that building, which is much larger than the proposed project, is located in Golden Gate Park, and is almost entirely faced in glass, in 2011 to reduce bird strikes, but the data is useful as a comparison to the commenter's biologist's estimates for 476 bird deaths per year as a result of the proposed project and serves as an indication that the commenter's biologist's estimate of bird loss is greatly exaggerated. As described above in response to comment 6.4, the project site is not considered a high-risk site for collision and bird-safe design guidelines are included in the design of the project that would minimize any potential collision incidents. Comment 6.7: The commenter expresses an opinion regarding the potential adverse impact on wildlife from vehicle collisions due to increased traffic from the proposed project. Response 6.7: The opinion of the commenter is noted. Suitable habitat for California red-legged frog (*Rana draytonii*), American badger (*Taxidea taxus*), and mountain lion (*Puma concolor*) is absent on the site and surrounding area. No direct impacts on these or other special-status species that travel on land are anticipated as a result of project implementation due to the absence of suitable habitat and the extent of existing urbanization in the site vicinity. The assertion by the commenter's biologist that "…some special-status species that are likely absent from the project site would be killed by traffic generated by the project… [emphasis added]", including listed species, is pure conjecture and is not substantial evidence. Data reported by the commenter's biologist on wildlife

[6] Kahle, L.Q., M.E. Flannery, and J.P. Dumbacher, 2016, *Bird-window collisions at a west-coast urban park museum: analyses of bird biology and window attributes from Golden Gate Park, San Francisco*.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			mortality along Vasco Road does not disclose that this roadway is a heavily used commuter route that passes through considerable undeveloped rangelands between Livermore and Brentwood. Traffic associated with the proposed project would largely be distributed from the heavily travelled North Wolfe Road and other arterials through urbanized areas in Cupertino and Sunnyvale as well as to the surrounding freeway system, where collisions with special-status species are not likely. While there is a remote possibility that vehicle activity generated by the project could result in an increase in collisions with birds, any birds that frequent or occupy the site are already acclimated to the considerable vehicle traffic on North Wolfe Road, Pruneridge Avenue and the entrance to Cupertino Village Shopping Center on the north side of the site. The frequency of any bird-vehicle collisions would most likely be very infrequent and would not meet the "substantial" threshold under CEQA significance criteria for impacts on special-status species and wildlife movement opportunities; therefore, and preparation of an EIR is not required. Further, because the project would not have a significant impact on wildlife movement opportunities, the project contribution to cumulative impacts raised as a concern by the commenter would not be cumulatively considerable and no additional analysis is necessary. Comment 6.8: The commenter expressed an opinion regarding wildlife movement due to the proposed project. Response 6.8: The opinion of the commenter regarding wildlife movement is noted. As noted by the commenter, the CEQA significance criterion of concern related to wildlife movement opportunities is whether a proposed project would "interfere substantially" with the movement of any native resident or migratory fish or wildlife species, their wildlife corridors or nursery sites. As discussed under criterion (d) in Section III, Biological Resources of the Public Review Draft IS/MND, development on the site would occur in an urbanized area where there is no aquatic habitat present that would support any resident or migratory fish, and where any sensitive wildlife resources or important wildlife movement corridors are absent. As described in the IS/MND (see page 4-18) Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG)[7] habitat mapping program

[7] The CALVEG system was initiated in January 1978 by the Region 5 Ecology Group of the US Forest Service to classify California's existing vegetation communities for use in statewide resource planning. CALVEG maps use a hierarchical classification on the following categories: forest; woodland; chaparral; shrubs; and herbaceous.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			classifies the site as an "urban area" that tends to have low to poor wildlife habitat value due to replacement of natural communities, fragmentation of remaining open space areas and parks, and intensive human disturbance. The diversity of urban wildlife depends on the extent and type of landscaping and remaining open space, as well as the proximity to natural habitat. It is important to note that infill sites in urbanized areas that are not in proximity to natural habitat are not considered to be wildlife movement corridors as a general practice. There is no existing wildlife movement corridor designation on the site by any agency, including the United States Fish and Wildlife or the California Department of Fish and Wildlife, and there is no reason for the City to treat the site or the surrounding area as such. Wildlife species common to urban and suburban habitat could be displaced where existing structures are demolished and landscaping is removed as part of future development, but these species are relatively abundant, and adapted to human disturbance. As described in Section 3.2.3, Landscaping, of the Project Description in the Public Review Draft IS/MND (see page 3-27), the project site would include landscaping that surrounds the proposed hotel structure, much like the existing conditions. Maintaining a portion of the existing trees along the North Wolfe Road frontage is proposed to continue the existing mature tree canopy, which would act as a buffer from the street for the hotel outdoor uses. These mature trees would continue to available for foraging, resting, and possibly nesting by bird species and retaining them is not a change in the physical environment. In addition, newly planted trees consisting of Chinese redbud, Evergreen dogwood, Forest knight oak, Urban pinnacle oak, Southern live oak, Engelmann oak, Coast redwood, and Marina strawberry tree, would replace any removed trees on the perimeter of the site much like existing conditions. The existing trees that would remain include eight existing Evergreen ash trees and 10 Coast redwood trees. See Final Draft IS/MND Figure 3-17. As stated above in Section 1.1.4.2, Zoning, the project is required to submit a Landscape Project Submittal for approval by the City. The retention of existing trees and the habitat they provide the birds and other wildlife of concern to the commenter's biologist, contrary to his assertion that the project would "cut wildlife off" from utilizing the mature trees on the site. As concluded in the Biological Resources section of the Public Review Draft IS/MND, project impacts on the movement of fish and wildlife, wildlife corridors, or wildlife nursery sites would be considered less than significant, no mitigation measures would be required. Comment 6.9: The commenter expresses an opinion regarding the cumulative impacts of past, on-going, and future projects on wildlife.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			Response 6.9: The opinion of the commenter is noted. Mitigation Measure BIO-1 is identified in the Public Review Draft IS/MND to determine whether any bird nests in active use are present on the site, and to ensure that an appropriately-sized buffer is provided to prevent their loss or nest abandonment during construction if any active nests are detected during the bird nesting season. As discussed above under "Special-Status Species and Baseline Data", the proposed project would not have a "substantial adverse effect, either directly or through habitat modification" on any special-status species and Mitigation Measure BIO-1 would conservatively ensure avoidance of any nesting bird species in the remote instance that they were present on or flew over the site, and no EIR is considered necessary. Because the project would not have a significant impact on wildlife movement opportunities, the project contribution to cumulative impacts raised as a concern by the commenter would not be cumulatively considerable and no additional analysis is considered necessary. As explained above in response to comment 6.8, mature trees on the site would be retained as part of the project and would continue to be available for foraging, resting, and possibly nesting by bird species, and new trees would be planted. The proposed building would generally be located within the footprint of the existing buildings and parking lot on the site, and the project would not interfere substantially with important wildlife movement opportunities or sensitive habitat areas. **Comment 6.10:** The commenter introduces Appendix B to the comment letter, which is a letter prepared by the commenter's hired environmental consulting firm SWAPE. **Response 6.10:** Responses to the comments made by the commenter and their environmental consulting firm as provided in Appendix B of the comment letter are provided below in responses to Comments 11 through 21. **Comment 6.11:** The commenter expresses an opinion regarding potential residual pesticide compounds at the project site. **Response 6.11:** As described in the Public Review Draft IS/MND in Section VIII, Hazards and Hazardous Materials, a Phase I Environmental Site Assessment (Phase I ESA) was prepared for the project site by Northgate Environmental Management in November 2017. As described in the Phase I ESA, although the site and the surrounding area were graded and developed with commercial and residential land uses over 42 years ago, much of Cupertino, including the project site, were developed with orchards dating from at least the 1930's through the late 1960s. Therefore, shallow soils on the site, like those in the surrounding areas, have the potential to include residual pesticide

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			compounds in shallow soils.[8] Following the release of the Public Review Draft IS/MND, as recommended in the Phase 1 ESA, soil samples were taken from the project site on March 25, 2019 and tested. Soil samples taken from project site did not find residual pesticide compounds that exceed the San Francisco RWQCB Environmental Screening Levels (ESLs) for residential land use, commercial land use, or construction worker exposure. However, the shallow soils exceed the ESLs for off-site reuse. Soil samples indicated that residual pesticides present in the soil are above San Francisco Bay RWQCB ESLs for evaluating potential leaching to shallow groundwater and for potential terrestrial habitat exposure. Neither of these exposure scenarios are applicable to the proposed project. As described in Chapter 3, Project Description, and Chapter 4, Environmental Analysis, under criterion (f) in Section XVI, Utilities and Service Systems, of the Public Review Draft IS/MND no off-site reuse of any soil removed from the project would occur and all soils would be disposed of at the Zanker Materials Recovery and Landfill in San Jose. As stated in the Soil Sample Report, and confirmed by PlaceWorks engineers, the disposal of the soils at a landfill is an appropriate disposal method.[9] The Final Draft IS/MND has been revised to include this information on the results of the Soil Sample Report. This revision does not affect any conclusions or significance determinations in Public Review Draft IS/MND. The Phase 1 ESA and Soil Sampling Report are included in Appendix E of the Final Draft IS/MND. Comment 6.12: The commenter expresses an opinion about the input parameters to estimate project emissions. Response 6.12: Appendix A, Air Quality and Greenhouse Gas Emissions Data, of the Final Draft IS/MND has been revised to include air quality modeling utilizing the California Emissions Model (CalEEMod), Version 2016.3.2. The revised "Existing" model run scenario is based on a 10,444 square foot commercial building and 3,385 square foot restaurant, based on trip generation provided by Hexagon. This revision does not affect any conclusions or significance determinations provided in Public Review Draft IS/MND. Comment 6.13: The commenter expresses an opinion regarding the land uses that were modeled for existing conditions.

[8] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017, pages 1 and 2 (Summary).

[9] Northgate Environmental Management, 2019. Soil Sampling Report, 10765 – 10801 North Wolfe Road, Cupertino, California. March 25, 2019, page 4 and 5.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			Response 6.13: As identified in the response to comment 6.12, above, the existing conditions scenario was re-modeled to account for the 3,385 square foot restaurant and 10,444 square foot commercial building. This modeling and a summary of the emissions results can be found in Appendix A of the Final Draft IS/MND. As identified in Appendix A, the potential net increase in GHG emissions associated with the proposed project would not exceed the BAAQMD *de minimus* bright-line GHG threshold of 1,100 metric tons of carbon dioxide-equivalent ($MTCO_2e$). Modeling of energy use associated with both the project and existing land uses is conservative. For existing emissions, energy use is based on rates associated with a building constructed in 2005 for the existing commercial and restaurant building, because rates prior to 2005 are not available in CalEEMod. For buildout, modeling is based on the 2016 Building and Energy Efficiency Standards and does not take into account improvements in building energy efficiency for the proposed hotel due to compliance with the new 2019 Building and Energy Efficiency Standards, which will apply to projects constructed after January 1, 2020. The carbon intensity for both the existing and project energy have been updated to account for the carbon intensity of the Silicon Valley Clean Energy (SVCE), which is Cupertino's new community choice aggregate community-owned energy provider. In addition, the proposed project is consistent with the City of Cupertino's Climate Action Plan, which mitigates the cumulative impacts of GHG emissions in the City consistent with statewide goals under Assembly Bill 32 (AB 32). **Comment 6.14:** The commenter expresses an opinion regarding the number of vehicle trips modeled for the existing emissions. **Response 6.14:** As identified above in response to comment 6.12, the existing emissions modeling was revised based on trip generation for the restaurant and retail building. Modeling includes trips generated by the currently vacant 10,444 square foot portion of the building. Based on date provided by Hexagon, the existing uses generate 507 average daily vehicle trips (ADT). This modeling and a summary of the emissions results can be found in Appendix A of the Final Draft IS/MND. As identified in Appendix A, the potential increase in GHG emissions would not exceed the BAAQMD *de minimus* bright-line GHG threshold of 1,100 $MTCO_2e$. Modeling of the proposed project's transportation emissions include reductions due to compliance with the *Bay Area Commuter Benefits Program*. As identified in the Transportation Impact Analysis, the proposed project would provide a shuttle service for the hotel that would result in a 3 percent reduction in vehicle trips and would. In addition, the hotel is across the street from the Apple Park. However, trip reductions from proximity to the Apple Park and the onsite shuttle are not accounted for in the project model run; therefore, modeling of the project's transportation emissions are conservative. In addition, the proposed project is consistent with the City of Cupertino's Climate Action Plan, which mitigates the cumulative impacts of GHG emissions in the City, consistent with statewide goals under AB 32.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			Comment 6.15: The commenter expresses an opinion regarding the trip length for hauling demolition debris. **Response 6.15:** The project applicant has indicated that the building and asphalt materials that would be come from the demolition of the existing site structures and improvements would be reused onsite or recycled in accordance with the City of Cupertino's Construction and Demolition (C&D) diversion requirements. All construction, demolition, and renovation projects in the City are required to complete a C&D Recycling Plan and C&D Recycling Report identifying a 65 percent waste diversion goal. This requirement is discussed in criterion (f) in Section XVI, Utilities and Service Systems, of the IS/MND. Based on the C&D material generated by demolition activities, demolition waste is assumed to be disposed of a the Zanker Materials Recovery and Landfill in San Jose, which is approximately 11 miles from the project site rather than 19 miles as stated in the Public Review Draft IS/MND. Revisions to the construction model runs and a summary of the emissions results can be found in Appendix A of the Final Draft IS/MND. The Final Draft IS/MND, at page 3-31, has been revised to reflect the shorter distance from the project site to the landfill. This revision does not affect any conclusions or significance determinations provided in Public Review Draft IS/MND.
			Comment 6.16: The commenter expresses an opinion regarding the number of hauling trips during site preparation and grading. **Response 6.16:** The applicant identified there would be the following amounts of grading and associated truck trips: ▪ 2,200 cubic yards of soil exported over 5 days with 12 cubic yard trucks, resulting in 37 trip ends per day during site preparation phase. ▪ 43,000 cubic yards of soil exported over 30 days using 12 cubic yard trucks, resulting in 119 trip ends per day during the grading phase. ▪ 800 cubic yards of soil exported, and 400 cubic yards imported over 8 days for a total of 13 trip ends per day during the grading phase. Appendix A of the Final Draft IS/MND includes a revised construction model run and the results of the revised emissions modeling. As identified in Appendix A of the Final Draft IS/MND, the increase in haul truck trips per day does not substantially affect the modeling results and emissions continue to be under the BAAQMD thresholds. Appendix B, Health Risk Assessment, of the Final Draft IS/MND contains a revised construction health risk

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			assessment (HRA) based on the above-described change to the haul parameters. Construction air quality impacts continue to be less than significant. This revision does not affect any conclusions or significance determinations in Public Review Draft IS/MND. Comment 6.17: The commenter expresses an opinion regarding the number of worker trips to estimate emissions. Response 6.17: The applicant provided an estimate of worker and vendor trips. Appendix A of the Final Draft IS/MND includes a revised construction model run and a summary of the emissions results. As described in Appendix A, the increase in vendor and worker trips per day does not substantially affect the modeling results and emissions continue to be below the BAAQMD thresholds. Appendix B of the Final Draft IS/MND includes revised construction health risk assessment (HRA) based on the change to the worker trip parameters. Construction air quality impacts continue to be less than significant. This revision does not affect any conclusions or significance determinations in Public Review Draft IS/MND. Comment 6.18: The commenter expresses an opinion regarding calculating health risks during construction. Response 6.18: See response to comment 6.16, above. The construction HRA was revised to take into account the nominal increase in emissions from the change to the number of daily haul truck trips. As identified in Appendix B of the Final Draft IS/MND, construction-related risk remains below 10 in one million cancer risk with implementation of Mitigation Measure AQ-2, which was previously identified in the Public Review Draft IS/MND. Comment 6.19: The commenter expresses an opinion regarding the emission estimated to calculate health risks during operation. Response 6.19: Based on discussion between staff at PlaceWorks and BAAQMD,[10] hotels are not considered sensitive uses because guests are onsite for a short duration, which is much shorter than 30-years or 70-years used to calculate long-term health risks. In addition, hotel projects are not considered a new major source of toxic air contaminants (TACs). Examples of projects which generate substantial TAC emissions are distribution centers with more than 100 trucks per day, or 40 trucks with transport refrigeration units (TRUs) per day, refineries, chrome platers, dry cleaners, gasoline dispensing facilities, and railyards (based on CARB's *2005 Air Quality and Land Use*

[10] Bay Area Air Quality Management District. Sigalle Michael, Senior Environmental Planner. 2014, April 10. Personal Communication.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			Handbook). Possible emission sources associated with hotels would either be permitted through BAAQMD to limit TAC emissions (e.g., diesel-fueled emergency generators, water boilers with natural gas combustion) and hotel-related truck deliveries would be less than CARB's recommended advisory criteria for distribution centers (100 trucks per day). The Final Draft IS/MND has been revised to reflect this response. This revision does not affect any conclusions or significance determinations in Public Review Draft IS/MND. Comment 6.20: The commenter states that their hired scientists from SWAPE conducted a screening-level health risk assessment for the operational emissions which indicated a significant health risk impact. Response 6.20: Criterion (d) of Section II, Air Quality, of the IS/MND, has been revised to clarify that hotel projects are not considered a new major source of TACs, and would not expose off-site sensitive receptors to substantial TAC concentrations as noted above. The screening-level HRA prepared by the commenter's scientists (Appendix B of this Comment Letter) incorrectly correlates exhaust PM_{10} (fine particulate matter) emissions generated by project operational emission sources to diesel particulate matter (DPM) emissions. The commenter's scientists screening-level HRA calculates DPM emissions for diesel-fueled trucks associated with the hotel project. On page 9 of SWAPE HRA, the diesel-particulate matter (DPM) exhaust emission rate from the operational phase of the project is based on the exhaust PM_{10} annual emission rate from CalEEMod annual model runs. However, the exhaust PM_{10} emissions from CalEEMod do not directly correlate to DPM from operational emission sources. For instance, over 80 percent of operation-generated exhaust PM_{10} would be from natural gas combustion associated with building energy use. Natural gas combustion would not generate diesel particulate matter, because diesel fuel is not part of the combustion process. In addition, the predominant mobile emission source associated with proposed hotel and restaurant land uses would be gasoline-fueled passenger cars, and not diesel-fueled trucks. For these reasons, the exhaust PM_{10} emissions from the operational CalEEMod annual output cannot be directly correlated to DPM for the purposes of an HRA. Therefore, the HRA performed by PlaceWorks' registered engineer, Steve Bush, and presented in Appendix B of the IS/MND is accurate. Comment 6.21: The commenter expresses an opinion regarding the project's GHG emissions. Response 6.21: Appendix A of the Final Draft IS/MND includes revised GHG modeling utilizing the California Emissions Model (CalEEMod), Version 2016.3.2. As explained in the responses above, the revised "Existing" model

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			run scenario is based on a 10,444 square foot commercial building and 3,385 square foot restaurant, based on trip generation provided by Hexagon. Modeling includes trips generated by the currently vacant 10,444 square foot portion of the building. In addition, the construction model run was revised based on comments regarding the number of haul truck trips, worker trips, and vendor trips. This modeling and the emissions results can be found in Appendix B of the Final Draft IS/MND. As identified in Appendix B, the potential increase in GHG emissions would not exceed the BAAQMD *de minimus* bright-line GHG threshold of 1,100 $MTCO_2e$. Modeling of energy use associated with both the project and existing land uses is conservative. For existing emissions, energy use is based on rates associated with a building constructed in 2005 for the existing commercial and restaurant building because rates prior to 2005 are not available in CalEEMod. For buildout, modeling is based on the 2016 Building and Energy Efficiency Standards and does not take into account improvements in building energy efficiency for the proposed hotel from compliance with the new 2019 Building and Energy Efficiency Standards, which apply to projects constructed after January 1, 2020. The carbon intensity for both the existing and project energy have been updated to account for the carbon intensity of the Santa Clara Valley Energy. Modeling of the proposed project's transportation emissions include reductions due to compliance with the Bay Area Commuter Benefits Program. As identified in the Transportation Impact Analysis, the proposed project would provide a shuttle service for the hotel that would result in a 3 percent reduction in vehicle trips. In addition, the hotel is across the street from the new Apple Park. However, trip reductions from proximity to the Apple Park and the onsite shuttle are not accounted for in the project model run; therefore, modeling of the project's transportation emissions are conservative. In addition, the proposed project is consistent with the City of Cupertino's Climate Action Plan, which mitigates the cumulative impacts of GHG emissions in the City, consistent with statewide goals under AB 32. This revision does not affect any conclusions or significance determinations in Public Review Draft IS/MND. Comment 6.22: The commenter introduces Appendix C to the comment letter, which is a letter prepared by the commenter's hired industrial hygienist Francis Offermann. The comments provided by the commenter and the industrial hygienist speculate about what types of building materials would be used during construction and express their opinions regarding potential air quality impacts from those materials. Specifically, they are concerned that formaldehyde emissions from project construction materials that contain formaldehyde would occur. Response 6.22: See response to comment 6.19 above. The commenter speculates about the types of indoor building materials that would be used during hotel construction. However, the measure identified by the commenter regarding use of CARB-approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the building interior will be forwarded to the decision-makers for consideration as a condition of approval.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			Building materials used onsite would not exacerbate environmental hazards.
7	Kitty Moore	09/17/19	**Comment 7.1:** The commenter asks why there is no mention of the Good Samaritan preschool adjacent to the 99 Ranch market in the Existing Conditions and requests to know why the Phase I ESA referenced in the Public IS/MND not online. **Response 7.1:** The text in Section VII, Hazards and Hazardous Materials has been revised in the Final Draft IS/MND to reflect that the Good Samaritan preschool is approximately 830 feet (0.16 miles) from the site and is, therefore, within 0.25 miles of the project site. As described in Section VII, Hazards and Hazardous Materials, in criterion (c) of the IS/MND, the operation of a hotel would not involve the storage, handling, or disposal of hazardous materials in sufficient quantities to pose a significant risk to the public, including the Good Samaritan preschool. As part of the ongoing project process, but after the release of the IS/MND, soil sampling and testing was completed and residual pesticide compounds related to historic agricultural land use were below the San Francisco RWQCB Environmental Screening Levels (ESLs) for residential land use, commercial land use, or construction worker exposure.[11] Furthermore, impacts to sensitive receptors within 200 feet of the project site were evaluated in Section II, Air Quality, under criterion (d). As shown in this discussion, impacts were determined to be less than significant with implementation of Mitigation Measure AQ-2. Therefore, impacts related to the release of hazardous materials during construction at the Good Samaritan preschool, which is further away from the project site (830 feet compared to 200 feet), also would be less than significant with mitigation. These revisions are shown in the Final Draft IS/MND and do not affect any conclusions or significance determinations provided in the Public Review Draft IS/MND. With respect to the commenter's request regarding the placement of the Phase 1 ESA on the City's website, as described in the IS/MND in Chapter 1, Introduction, all documents cited in the IS/MND and used in its preparation are incorporated by reference into IS/MND. Copies of documents referenced in the IS/MND are available for review at the City of Cupertino Community Development Department at 10300 Torre Avenue, Cupertino, California 95014. **Comment 7.2:** The commenter inquires why the Dry Cleaners at Cupertino Village, as well as an orchard and a gas

[11] Northgate Environmental Management, 2019. Soil Sampling Report, 10765 – 10801 North Wolfe Road, Cupertino, California. March 25, 2019.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			station, are listed on the Department of Toxic Substance Control's Envirostor database for Assessor's Parcel Number (APN) 316-45-017 (i.e., the project site), but is not listed in the Existing Conditions for the IS/MND. The commenter expresses a concern that the proposed below-ground parking facility will disturb the soil. **Response 7.2:** The comment is acknowledged and the text in Section VII, Hazards and Hazardous Materials has been revised in the Final Draft IS/MND to reflect that the records search did not reveal any hazardous materials or LUST (leaking underground storage tanks) on or within close proximity to the project site that are of concern. The commenter is correct that the Envirostor Identification Number 60000385 titled "The Cupertino Village Dry Cleaners" is described as consisting of seven contiguous parcels, of which only one includes the project site. The description in the Envirostor database addresses 12.5 acres and, therefore, addresses areas outside of the project site. As described in the General Plan EIR[12] and the project-specific Phase 1 Environmental Site Assessment (ESA) that was prepared for the proposed project,[13] none of the nearby sites represent a significant potential threat to soil, vapor, or groundwater quality at the project site because the hazardous materials at those locations were either 1) previously removed; 2) the sampling results from those sites showed no unacceptable levels of hazardous materials; 3) there is no documented contamination issues; 4), those sites have been closed because they are no longer a hazard; 5) those sites are too far from the project site; 6) those sites are downgradient from the proposed hotel site and do not present a migration hazard to the proposed hotel's site; and 7) ongoing active remediation programs and site management under regulatory oversight have found those sites not be hazardous. The Phase I ESA prepared for the project site[14] states that the project site is part of a larger property that is listed on the HAZNET database, most likely because of the dry-cleaning facility formerly located at the adjacent Cupertino Village Shopping Center. The database listing indicates that 0.68 tons of materials were removed from that site in

[12] City of Cupertino, certified General Plan Amendment, Housing Element Update, and Associated Rezoning EIR, State Clearinghouse Number 2014032007. December 4, 2014, Chapter 4.7, Hazards and Hazardous Materials, Table 4.7-2, Hazardous Materials and LUST (leaking underground storage tanks) Sites

[13] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017.

[14] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			2006, and in the opinion of the preparer of the Phase I ESA the listing does not present a significant potential for concern.[15] Because the hazardous materials at the dry-cleaning facility site were removed, and since no hazardous materials (volatile organic compounds – VOCs) have been detected in the groundwater at the shopping center indicating that the contamination was limited to subsurface soil and soil vapor, a soil vapor extraction system was installed at the former dry cleaners tenant space, the building was demolished in 2015 and was replaced by an open paved area, the former dry cleaners site does not appear to present a significant potential threat to the project site. Other sites in the vicinity that could have been sources of hazardous materials were either found not to involve hazardous materials use, have closed, or performed cleanup of groundwater and underground storage tanks and received case closure, or are undergoing remediation under regulatory oversight pursuant to remedies that are protective of human health and the environment. In addition, the sites are too far from the project site to present a significant potential threat to soil, soil vapor, or groundwater quality at the site, and in the case of the ongoing remediation the site is cross-gradient to downgradient orientation from the project site and do not present a hazard to the project site.[16] The Phase I ESA did not identify any recognized environmental conditions (RECs, HRECs or CRECs) associated with the site.[17] With respect to past orchard use, according to the Phase I ESA, the site and the surrounding area was graded and developed with commercial and residential land uses over 42 years ago, but prior to that time much of Cupertino, including the project site, was cultivated as an orchard from at least the 1930s through the late 1960s. Therefore, like the surrounding areas, residual pesticide compounds could potentially be present in shallow soil at the site.[18] As part of the ongoing project process, but after the release of the Public Review Draft IS/MND, soil sampling and testing[19] was completed and did not find residual pesticide compounds related to historic agricultural land use that

[15] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017, page 11.

[16] City of Cupertino, certified General Plan Amendment, Housing Element Update, and Associated Rezoning EIR, State Clearinghouse Number 2014032007. December 4, 2014, Chapter 4.7, Hazards and Hazardous Materials, Table 4.7-2, Hazardous Materials and LUST (leaking underground storage tanks) Sites.

[17] Northgate Environmental Management, 2019. Soil Sampling Report, 10765 – 10801 North Wolfe Road, Cupertino, California. March 25, 2019, page 29.

[18] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017, pages 1 and 2 (Summary).

[19] Northgate Environmental Management, 2019. Soil Sampling Report, 10765 – 10801 North Wolfe Road, Cupertino, California. March 25, 2019.

Table 2 Responses to Late Comments on the Public Review Draft Initial Study and Mitigated Negative Declaration

No.	Commenter	Date	Response
			exceed the San Francisco RWQCB Environmental Screening Levels (ESLs) for residential land use, commercial land use, or construction worker exposure.[20] Soil samples indicated that residual pesticides present in the soil are above San Francisco Bay RWQCB ESLs for evaluating potential leaching to shallow groundwater and for potential terrestrial habitat exposure. Neither of these exposure scenarios are applicable to the proposed project. As described in Chapter 3, Project Description, and Chapter 4, Environmental Analysis, under criterion (f) in Section XVI, Utilities and Service Systems, of the Public Review Draft IS/MND no off-site reuse of any soil removed from the project would occur and all soils would be disposed of at the Zanker Materials Recovery and Landfill in San Jose. As stated in the Soil Sample Report, and confirmed by PlaceWorks engineers, the disposal of the soils at a landfill is an appropriate disposal method.[21] The Phase 1 ESA and Soil Sampling Report are included in Appendix E of the Final Draft IS/MND. The text of the Final Draft IS/MND has been revised to include this information, including the results of the soil samples and testing that was done on the project site. These revisions do not affect any conclusions or significance determinations in IS/MND.

[20] Northgate Environmental Management, 2019. Soil Sampling Report, 10765 – 10801 North Wolfe Road, Cupertino, California. March 25, 2019, page 4.

[21] Northgate Environmental Management, 2019. Soil Sampling Report, 10765 – 10801 North Wolfe Road, Cupertino, California. March 25, 2019, page 4 and 5.

ATTACHMENTS:
COMMENT LETTERS RECEIVED DURING THE 30-DAY PUBLIC REVIEW PERIOD

LATE COMMENT LETTERS RECEIVED AFTER THE 30-DAY PUBLIC REVIEW PERIOD

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710

November 27, 2018

Erick Serrano
City of Cupertino
10300 Torre Avenue
Cupertino, CA 95014

Also sent via e-mail: ericks@cupertino.org

Re: SCH# 2018112025, Cupertino Village Hotel Project, City of Cupertino; Santa Clara County, California

Dear Mr. Serrano:

The Native American Heritage Commission (NAHC) has reviewed the Mitigated Negative Declaration (MND) prepared for the project referenced above. The review included the Introduction and Project Description; the Initial Study Environmental Checklist; and the Environmental Analysis, section IV, Cultural Resources and section V, Tribal Cultural Resources prepared by PlaceWorks for the City of Cupertino. We have the following concerns:

1. While consultation requirements under AB-52 have technically been met (no letters recieved from tribes), the NAHC recommends that consultation outreach to the tribes on the NAHC list is consistent with Best Practices. Please refer to: http://nahc.ca.gov/wp-content/uploads/2015/04/AB52TribalConsultationRequirementsAndBestPractices_Revised_3_9_16.pdf

2. There are no mitigation measures specifically addressing Tribal Cultural Resources separately and distinctly from Archaeological Resources. Mitigation measures must take Tribal Cultural Resources into consideration as required under AB-52, **with or without consultation** occurring. Mitigation language for archaeological resources is not always appropriate for measures specifically for handling Tribal Cultural Resources. Sample mitigation measures for Tribal Cultural Resources can be found in the CEQA guidelines at http://opr.ca.gov/docs/Revised_AB_52_Technical_Advisory_March_2017.pdf

3. The Most Likely Descendant timeline in the Environmental Analysis, Cultural Resources section (d) is incorrect. Public Resources Code section 5097.98 specifically states "the descendants shall complete their inspection and make their recommendations or preferences within **48 hours after being allowed access to the site".**

Please contact me at gayle.totton@nahc.ca.gov or call (916) 373-3714 if you have any questions.

Sincerely,

Gayle Totton

Gayle Totton, B.S., M.A., Ph.D.
Associate Governmental Project Analyst

Attachment

cc: State Clearinghouse

ADDITIONAL INFORMATION

The California Environmental Quality Act (CEQA)[1], specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[2] If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.[3] In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended in 2014 by Assembly Bill 52. (AB 52).[4] **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** AB 52 created a separate category for "tribal cultural resources"[5], that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.[6] Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.[7] Your project may also be subject to **Senate Bill 18 (SB 18)** (Burton, Chapter 905, Statutes of 2004), Government Code 65352.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. **Both SB 18 and AB 52 have tribal consultation requirements**. Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966[8] may also apply.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/. Additional information regarding AB 52 can be found online at http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf, entitled "Tribal Consultation Under AB 52: Requirements and Best Practices".

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments is also attached.

Pertinent Statutory Information:

Under AB 52:

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice.

A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.[9] and **prior to the release of a negative declaration, mitigated negative declaration or environmental impact report**. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18).[10]

The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.
b. Recommended mitigation measures.
c. Significant effects.[11]

1. The following topics are discretionary topics of consultation:

a. Type of environmental review necessary.
b. Significance of the tribal cultural resources.

[1] Pub. Resources Code § 21000 et seq.
[2] Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b); CEQA Guidelines Section 15064.5 (b)
[3] Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1); CEQA Guidelines § 15064 (a)(1)
[4] Government Code 65352.3
[5] Pub. Resources Code § 21074
[6] Pub. Resources Code § 21084.2
[7] Pub. Resources Code § 21084.3 (a)
[8] 154 U.S.C. 300101, 36 C.F.R. § 800 et seq.
[9] Pub. Resources Code § 21080.3.1, subds. (d) and (e)
[10] Pub. Resources Code § 21080.3.1 (b)
[11] Pub. Resources Code § 21080.3.2 (a)

c. Significance of the project's impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. [12]

With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process **shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10.** Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.[13]

If a project may have a significant impact on a tribal cultural resource, **the lead agency's environmental document shall discuss** both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.[14]

Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.[15]

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 **shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program**, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.[16]

If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, **the lead agency shall consider feasible mitigation** pursuant to Public Resources Code section 21084.3 (b).[17]

An environmental impact report **may not be certified**, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days.[18]

This process should be documented in the Tribal Cultural Resources section of your environmental document.

Under SB 18:

Government Code § 65352.3 (a) (1) requires consultation with Native Americans on general plan proposals for the purposes of "preserving or mitigating impacts to places, features, and objects described § 5097.9 and § 5091.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65560 (a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

- SB 18 applies to **local governments** and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf
- Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe**.[19]
- There is no Statutory Time Limit on Tribal Consultation under the law.

[12] Pub. Resources Code § 21080.3.2 (a)
[13] Pub. Resources Code § 21082.3 (c)(1)
[14] Pub. Resources Code § 21082.3 (b)
[15] Pub. Resources Code § 21080.3.2 (b)
[16] Pub. Resources Code § 21082.3 (a)
[17] Pub. Resources Code § 21082.3 (e)
[18] Pub. Resources Code § 21082.3 (d)
[19] (Gov. Code § 65352.3 (a)(2)).

- Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research,[20] the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction.[21]
- Conclusion Tribal Consultation: Consultation should be concluded at the point in which:
    - The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    - Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.[22]

NAHC Recommendations for Cultural Resources Assessments:

- Contact the NAHC for:
    - A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    - A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
        - The request form can be found at http://nahc.ca.gov/resources/forms/.
- Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    - If part or the entire APE has been previously surveyed for cultural resources.
    - If any known cultural resources have been already been recorded on or adjacent to the APE.
    - If the probability is low, moderate, or high that cultural resources are located in the APE.
    - If a survey is required to determine whether previously unrecorded cultural resources are present.
- If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    - The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- Avoidance and preservation of the resources in place, including, but not limited to:
    - Planning and construction to avoid the resources and protect the cultural and natural context.
    - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    - Protecting the cultural character and integrity of the resource.
    - Protecting the traditional use of the resource.
    - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.[23]
- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.[24]

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

- Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources.[25] In areas of identified

[20] pursuant to Gov. Code section 65040.2,
[21] (Gov. Code § 65352.3 (b)).
[22] (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).
[23] (Civ. Code § 815.3 (c)).
[24] (Pub. Resources Code § 5097.991).
[25] per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)).

archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

From:	Erick Serrano
To:	Terri McCracken; Jessica Setiawan; Brian Jackson
Subject:	FW: Cupertino Village Hotel comments
Date:	Wednesday, December 05, 2018 2:40:19 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png image006.png image007.png image008.png

---

Hi Everyone,

Here is a comment we received in regards to the project.

Erick Serrano
Associate Planner
Planning Division
ErickS@cupertino.org
(408) 777-3205

From: Aghegnehu, Ben [mailto:ben.aghegnehu@rda.sccgov.org]
Sent: Wednesday, December 05, 2018 2:31 PM
To: Erick Serrano <ErickS@cupertino.org>
Cc: Talbo, Ellen <Ellen.Talbo@rda.sccgov.org>
Subject: Cupertino Village Hotel comments

Subject: Cupertino Village Hotel comments

Erick Serrano,
Associate Planner
City of Cupertino, Community Development Department
10300 Torre Avenue
Cupertino, CA 95014

Dear Mr. Erick Serrano
The County of Santa Clara Roads and Airports Department appreciates the opportunity to review the Cupertino Village Hotel and is submitting the following comments:

- Please include in the TIA the Lawrence Expressway/Calvert, Lawrence Expressway/Moorpark intersections, Lawrence Expressway/Saratoga as study intersections.
- County intersection Traffix reports must have signal timing values that match the date

and time of counts or must be CMP approved Traffix reports. Please, Contact County to obtain correct signal timing information and history if not using CMP approved Traffix reports.

- Please, correct typo on page 4-76 of the Initial Study showing that the TDM reduction for the shuttle program is 5% (TIA shows this value to be 3%).

If you have any questions or concerns about these comments, please contact me at 408-573-2462 or ben.aghegnehu@rda.sccgov.org

Thank you,

Ben Aghegnehu
Associate Transportation Planner
County of Santa Clara | Roads & Airports
101 Skyport Rd | San Jose, CA, 95110
408-573-2462 (o)

Sunnyvale

Community Development Department
456 West Olive Avenue
Sunnyvale, CA 94088-3707
TDD/TYY 408-730-7501
sunnyvale.ca.gov

December 7, 2018

Erick Serrano, Associate Planner
City of Cupertino, Community Development Department
10300 Torre Avenue
Cupertino, CA 95014
E-Mail: ericks@cupertino.org

Re: Comments on the Initial Study and proposed Mitigated Negative Declaration of the proposed Cupertino Village Hotel Project

Dear Mr. Serrano,

Thank you for the opportunity to review the Initial Study and proposed Mitigated Negative Declaration for the proposed Village Hotel Project (Project) in Cupertino. This letter includes all City of Sunnyvale comments.

A. General Questions and Comments

1. We request that the City of Cupertino provide outreach to Sunnyvale residents within 1,000 feet of the site, and that the notice area be expanded if the traffic impacts show potential significant impacts to the nearby Sunnyvale neighborhood.

B. Traffic and Transportation Input

If you have questions on the following traffic related items, please contact Ralph Garcia, Senior Transportation Engineer, at rgarcia@sunnyvale.ca.gov or (408) 730-7551.

1. The intersection of Wolfe Road and Fremont Avenue has one northbound left turn lane (not two). Correct Lane Configurations figure and level of service calculations.

2. The intersection of Wolfe Road and Fremont Avenue should be Protected + Permitted signal phasing in the southbound direction. Correct level of service calculations.

3. Project Trip Generation Estimates Table – TDM reductions are not typically applied to Hotel projects. Project applicant should ensure TDM measures are implemented for hotel guests.

Sunnyvale

The City of Sunnyvale appreciates your consideration of the comments described above. Please contact Kelly Cha, Associate Planner, at (408) 730-7408 or kcha@sunnyvale.ca.gov if you have any questions or concerns about items discussed in this letter.

Sincerely,

Andrew Miner
Assistant Director, Community Development

Cc: Jennifer Ng, Deputy Director, Public Works
Shahid Abbas, Transportation/Traffic Manager, Public Works
Amber Blizinski, Principal Planner, Community Development
Ralph Garcia, Senior Transpiration Engineer, Public Works

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
P.O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
FAX (510) 286-5559
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life!

December 7, 2018

SCH# 2018112025
04-SCL-2018-00503
GTS ID 13568

Mr. Erick Serrano, Associate Planner
City of Cupertino
10300 Torre Avenue
Cupertino, CA 95014

Cupertino Village Hotel Project – Mitigated Negative Declaration (MND)

Dear Mr. Serrano:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced project. In tandem with the Metropolitan Transportation Commission's (MTC) Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS), Caltrans mission signals a modernization of our approach to evaluating and mitigating impacts to the State Transportation Network (STN). Caltrans' *Strategic Management Plan 2015-2020* aims to reduce Vehicle Miles Travelled (VMT) by tripling bicycle and doubling both pedestrian and transit travel by 2020. Our comments are based on the MND. Additional comments may be forthcoming pending final review.

Project Understanding

The applicant proposes to demolish two existing commercial buildings and construct a 185-room boutique hotel, including event meeting rooms and a restaurant on a 1.72-acre site at 10801 North Wolfe Road, Cupertino. The proposed project is a five-story hotel with two levels of below-grade parking; the first floor of the hotel will be at ground level and would include the lobby, reception area, an event room, meeting rooms, restaurant/bar for hotel and non-hotel guests, kitchen, mechanical rooms, laundry, electrical rooms, housekeeping, loading dock, employee lockers, and storage spaces. The second floor would include a fitness room, an administrative office, mechanical rooms, electrical rooms, housekeeping space, an employee breakroom, telecom room, storage space, and hotel rooms. Floors three through five would consist of mostly guest-rooms except for space for mechanical equipment, housekeeping, and telecom rooms. The roof would have an outdoor lounge/bar that would be open to hotel guests and other customers not staying at the hotel. Access to the site will be provided via a driveway at the North Wolfe Road/Apple Park Way and North Wolfe Road/Pruneridge Avenue interchanges. Regional access will be provided approximately 783 feet north of the site at the Interstate (I) 280/North Wolfe Road interchange.

Vehicle Trip Reduction

In Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade*, this project falls under **Place Type 1b Urban Centers**, which includes areas with high density, mixed use places with high jobs-housing ratios, well-connected streets network, high levels of transit service and pedestrian-supportive environments with major activity centers and a full range of horizontally-and-vertically mixed land uses. In addition, existing and proposed high capacity transit stations/corridors are planned in the project vicinity. Given this Place Type and intensification of use, which typically leads to high levels of VMT and corresponding low levels of active transportation, we encourage the Lead Agency to condition the project to implement Transportation Demand Management (TDM) cited in the August 30, 2018 *Draft Transportation Impact Analysis*.

Multimodal Planning

This project is located in close proximity to the Priority Development Area (PDA) in the City of Cupertino. Priority Development Areas are identified by the Association of Bay Area Governments as areas for investment, new homes, and job growth. To support PDA goals, the proposed project should be conditioned to contribute fair share traffic impact fees toward the Interstate-280 Channel Trail Junipero Serra Trail Project as conditions of approval, per the *City of Cupertino 2016 Bicycle Transportation Plan*. Please submit a copy of the final staff report and conditions of approval to Caltrans for our review.

Lead Agency

As the Lead Agency, the City of Cupertino is responsible for all project mitigation, including any needed improvements to the STN. The project's financing, scheduling, implementation responsibilities and monitoring should be fully discussed for all proposed mitigation measures, prior to the submittal of an encroachment permit. Potential mitigation measures that include the requirements of other agencies—such as Caltrans—are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

Should you have any questions regarding this letter, please contact Stephen Conteh at (510) 286-5534 or Stephen.conteh@dot.ca.gov.

Sincerely,

PATRICIA MAURICE
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

From: Michael Lozeau [mailto:michael@lozeaudrury.com]
Sent: Friday, January 11, 2019 2:04 PM
To: Erick Serrano <ErickS@cupertino.org>
Cc: Hannah Hughes <hannah@lozeaudrury.com>
Subject: Cupertino Village Hotel Project

Dear Mr. Serrano,

I am reviewing the documents posted regarding the Cupertino Village Hotel project. After reviewing Appendix A relating to the IS/MND's air quality and GHG analysis, it does not appear that the CalEEmod input files have been provided to the public to include in their review. Nor is there a document explaining the construction schedule and equipment expected to be used in constructing the project. Could you please forward me the CalEEmod input files and construction schedule documentation for the project so that I can complete my review?

Thank you,

Mike Lozeau

--
Michael R. Lozeau
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, California 94607
(510) 836-4200
(510) 836-4205 (fax)
michael@lozeaudrury.com

LOZEAU DRURY LLP
T 510.836.4200
F 510.836.4205
410 12th Street, Suite 250
Oakland, Ca 94607
www.lozeaudrury.com
michael@lozeaudrury.com

March 11, 2019

Via E-mail and Hand Delivery

Ray Wang, Chair
Vikram Saxena, Vice Chair
Kitty Moore, Commissioner
Alan Takahashi, Commissioner
David Fung, Commissioner
Planning Commission
City of Cupertino
10300 Torre Avenue
Cupertino, CA 95014
Email: rwang@cupertino.org
vsaxena@cupertino.org
kmoore@cupertino.org
atakahashi@cupertino.org
dfung@cupertino.org

Erick Serrano, Associate Planner
Community Development Department
City of Cupertino
10300 Torre Avenue
Cupertino, CA 95014
ericks@cupertino.org

Re: Comment on the Initial Study/Mitigated Negative Declaration for The Cupertino Village Hotel Project (SCH 2018112025)

Dear Chair Wang, Honorable Members of the Planning Commission, and Mr. Serrano:

I am writing on behalf of the Laborers International Union of North America, Local Union 270 and its members living in and around the City of Cupertino ("LIUNA") regarding the Initial Study/Mitigated Negative Declaration ("IS/MND") for the Cupertino Village Hotel Project proposed for the parcel located at 10765-10801 North Wolfe Road in Cupertino (the "Project"). The Project is currently being considered by the Planning Commission ("Commission") at the March 12, 2019 Planning Commission Meeting. After reviewing the IS/MND, we conclude that it fails to analyze all environmental impacts and to implement all necessary mitigation measures. LIUNA respectfully requests that the City of Cupertino ("the City") prepare an EIR in order to incorporate our concerns discussed below.

This comment has been prepared with the assistance of Shawn Smallwood, Ph.D., an expert wildlife biologist who has expertise in the areas relevant to the IS/MND. Dr. Smallwood's comment and curriculum vitae are attached as Exhibit A hereto and are incorporated herein by reference in their entirety. This comment has also been prepared with the assistance of SWAPE,

an environmental consulting firm. SWAPE's comment is attached as Exhibit B hereto and is incorporated herein by reference in its entirety. This comment has also been prepared with the assistance of Certified Industrial Hygienist, Francis "Bud" Offermann, PE, CIH. Mr. Offerman's comment and curriculum vitae are attached as Exhibit C hereto and is incorporated herein by reference in its entirety.

I. PROJECT DESCRIPTION

The Project site is a 1.72-acre site (APN 316-45-017) located at 10765-10801 North Wolfe Road, currently developed with an existing restaurant building and a vacant commercial building. The proposed Project would demolish the two commercial buildings and construct a new five-story boutique hotel with 185 rooms as well as event meeting rooms, a restaurant, and below-grade parking. Under the current zoning and land use designations, the permitted maximum height is 60 feet. The proposed project would require an amendment to the General Plan to increase the hotel room development allocation to 185 hotel rooms in the North Vallco Area to allow for the construction and operation of the proposed hotel. With an average of two guests per hotel room, the hotel would generate up to 370 guests at maximum capacity. The largest event meeting room would accommodate up to 450 people and the smaller meeting rooms would accommodate up to 350 people.

The IS/MND incorporated by reference the discussions in the City's General Plan Amendment, Housing Element Update and associated Rezoning Project Environmental Impact Report (EIR) that was certified by the Cupertino City Council in December 2014 and the addendum to that EIR that was approved by the City Council in October 2015 ("General Plan EIR"), and the Vallco Special Area Specific Plan EIR that was certified by the Cupertino City Council in September 2018 ("Vallco Specific Plan EIR"). The IS/MND is intended to provide the subsequent project-level environmental review for the Project.

II. LEGAL STANDARD

The City is tiering its environmental review for the Project from the 2014-2015 General Plan EIR as well as the Vallco Specific Plan EIR. (IS/MND, pp. 1-1 to 1-2.) CEQA's many provisions addressing zoning designations and specific plans as separate projects—albeit related projects—from subsequent specific development projects underscore that the Project's construction and operation is a separate and distinct project from the prior EIRs. **"**Agencies are encouraged to tier the environmental analyses which they prepare for ***separate*** but related projects including general plans, zoning changes, and development projects." (14 Cal. Admin. Code § 15152(b).) Just because tiering is appropriate does not mean that a specific development project is deemed to be the same project as the prior approved area plan or general plan:

> Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for ***a later project pursuant to or consistent with*** the program, plan, policy, or ordinance should limit the EIR or negative declaration on the ***later project*** to effects which:

> (1) Were not examined as significant effects on the environment in the prior EIR; or
> (2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means.

(14 Cal. Admin. Code § § 15152(d) (emphasis added).) Thus, the tiering provision expressly treats a later site specific development project as a separate project from the planning level decisions. When tiering from a programmatic EIR, the City must employ the fair argument standard. (14 Cal. Admin. Code §§ 15152(f) ("a later EIR shall be required when the initial study or other analysis finds that the later project ***may cause significant effects*** on the environment that were not adequately addressed in the prior EIR"), 15070.)

As the California Supreme Court held, "[i]f no EIR has been prepared for a nonexempt project, but substantial evidence in the record supports a fair argument that the project may result in significant adverse impacts, the proper remedy is to order preparation of an EIR." (*Communities for a Better Env't v. South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 319-320 (*CBE v. SCAQMD*) [citing *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, 88; *Brentwood Assn. for No Drilling, Inc. v. City of Los Angeles* (1982) 134 Cal.App.3d 491, 504–505.].) "Significant environmental effect" is defined very broadly as "a substantial or potentially substantial adverse change in the environment." (Pub. Res. Code ["PRC"] § 21068; *see also* 14 CCR § 15382.) An effect on the environment need not be "momentous" to meet the CEQA test for significance; it is enough that the impacts are "not trivial." (*No Oil, Inc., supra*, 13 Cal.3d at 83.) "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Communities for a Better Env't v. Cal. Res. Agency* (2002) 103 Cal.App.4th 98, 109 (*CBE v. CRA*).)

The EIR is the very heart of CEQA. (*Bakersfield Citizens for Local Control v. City of Bakersfield (*2004) 124 Cal.App.4th 1184, 1214 (*Bakersfield Citizens*); *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 927.) The EIR is an "environmental 'alarm bell' whose purpose is to alert the public and its responsible officials to environmental changes before they have reached the ecological points of no return." (*Bakersfield Citizens, supra*, 124 Cal.App.4th at 1220.) The EIR also functions as a "document of accountability," intended to "demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." (*Laurel Heights Improvements Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 392.) The EIR process "protects not only the environment but also informed self-government." (*Pocket Protectors, supra*, 124 Cal.App.4th at 927.)

An EIR is required if "there is substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment." (PRC § 21080(d); see also *Pocket Protectors, supra*, 124 Cal.App.4th at 927.) In very limited circumstances, an agency may avoid preparing an EIR by issuing a negative declaration, a written statement briefly indicating that a project will have no significant impact thus requiring

no EIR (14 Cal. Code Regs. § 15371), only if there is not even a "fair argument" that the project will have a significant environmental effect. (PRC, §§ 21100, 21064.) Since "[t]he adoption of a negative declaration . . . has a terminal effect on the environmental review process," by allowing the agency "to dispense with the duty [to prepare an EIR]," negative declarations are allowed only in cases where "the proposed project will not affect the environment at all." (*Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440.) A mitigated negative declaration is proper only if the project revisions would avoid or mitigate the potentially significant effects identified in the initial study "to a point where clearly no significant effect on the environment would occur, and…there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (PRC §§ 21064.5 and 21080(c)(2); *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 331.) In that context, "may" means a reasonable possibility of a significant effect on the environment. (PRC §§ 21082.2(a), 21100, 21151(a); *Pocket Protectors, supra*, 124 Cal.App.4th at 927; *League for Protection of Oakland's etc. Historic Res. v. City of Oakland* (1997) 52 Cal.App.4th 896, 904–905.)

Under the "fair argument" standard, an EIR is required if any substantial evidence in the record indicates that a project may have an adverse environmental effect—even if contrary evidence exists to support the agency's decision. (14 CCR § 15064(f)(1); *Pocket Protectors, supra*, 124 Cal.App.4th at 931; *Stanislaus Audubon Society v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-51; *Quail Botanical Gardens Found., Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1602.) The "fair argument" standard creates a "low threshold" favoring environmental review through an EIR rather than through issuance of negative declarations or notices of exemption from CEQA. (*Pocket Protectors, supra*, 124 Cal.App.4th at 928.)

The "fair argument" standard is virtually the opposite of the typical deferential standard accorded to agencies. As a leading CEQA treatise explains:

> This 'fair argument' standard is very different from the standard normally followed by public agencies in making administrative determinations. Ordinarily, public agencies weigh the evidence in the record before them and reach a decision based on a preponderance of the evidence. [Citations]. The fair argument standard, by contrast, prevents the lead agency from weighing competing evidence to determine who has a better argument concerning the likelihood or extent of a potential environmental impact. The lead agency's decision is thus largely legal rather than factual; it does not resolve conflicts in the evidence but determines only whether substantial evidence exists in the record to support the prescribed fair argument.

(Kostka & Zishcke, *Practice Under CEQA*, §6.29, pp. 273-274.) The Courts have explained that "it is a question of law, not fact, whether a fair argument exists, and the courts owe no deference to the lead agency's determination. Review is de novo, with a preference for resolving doubts in favor of environmental review." (*Pocket Protectors, supra*, 124 Cal.App.4th at 928.)

III. DISCUSSION

A. The IS/MND Failed to Adequately Analyze and Mitigate the Potential Adverse Impacts of the Project on Wildlife.

The comment of Dr. Shawn Smallwood is attached as Exhibit A. Dr. Smallwood has identified several issues with the IS/MND for the Project. His concerns are summarized below.

1. <u>The wildlife baseline relied upon by the IS/MND is inadequate because the IS/MND underestimated the number of special-status species that may be impacted by the Project.</u>

The IS/MND characterizes the Project site as urban and therefore vacant of wildlife habitat. (IS/MND, p. 4-17 to 4-18.) However, there were no detection surveys performed and, as Dr. Smallwood points out:

> [W]ildlife habitat is defined not by the City of Cupertino, but rather by wildlife use of the environment. . . . Multiple species of wildlife find ways to adapt to urban environments, including for foraging, nesting, cover, and as stop-over refuge during migration. Wildlife habitat exists on urban landscapes, and CEQA review is therefore warranted.

(Ex. A, p. 4.) Dr. Smallwood conducted an approximately 3.5 hour site visit on January 12, 2019 and observed 13 species of wildlife, including a bat of undetermined species and 7 bird species known to be vulnerable to window collisions. (Ex. A, pp. 1-2.) By looking at occurrence records and geographic range maps, Dr. Smallwood identified 26 special-status species of wildlife, which would potentially use the Project site at one time or another. (Ex. A, p. 4.)

Every CEQA document must start from a "baseline" assumption. The CEQA "baseline" is the set of environmental conditions against which to compare a project's anticipated impacts. (*Communities for a Better Envt. v. So. Coast Air Qual. Mgmt. Dist*. (2010) 48 Cal. 4th 310, 321.) Section 15125(a) of the CEQA Guidelines (14 C.C.R., § 15125(a)) states in pertinent part that a lead agency's environmental review under CEQA:

> "…must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant."

(*See*, *Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125 (*Save Our Peninsula*).) By failing to assess the presence of wildlife at or flying through the site, the IS/MND fails to provide any baseline from which to analyze the Project's impacts on wildlife. The occurrence of special-status species at or near the Project site warrants discussion and analysis in an EIR to ensure that any impacts are mitigated to a less than significant level.

2. The IS/MND failed to address the potential adverse impact on bird species from window collisions.

The IS/MND makes no mention of the potential impacts to birds caused from collisions with the glass windows of the Project. Analyzing the potential impact on wildlife of window collisions is especially important because "[w]indow collisions are often characterized as either the second or third largest source of human-caused bird mortality." (Ex. A, p. 8.) As a preliminary matter, "[t]he types of windows proposed and their orientations and interactions with landscaping need to be examined for hazards to birds. (*Id*. at p. 7.) For this particular project, the threat of bird collisions is heightened by its location across the street from the landscaped Apple Park where numerous birds have been documented.

Dr. Smallwood reviewed a number of studies in order to calculate the number of bird collisions per m^2 of glass windows per year. (Ex. A, pp. 7-10.) According to his calculations, each m^2 of glass would result in 0.163 bird deaths per year. (*Id*. at p. 10.) Dr. Smallwood then looked at the building design for the Project and estimated that the Project would include approximately 2,920 m^2 of glass windows. (*Id*.) Based on the estimated 2,920 m^2 of glass windows and the 0.163 bird deaths per m^2 of glass windows, Dr. Smallwood estimates that the Project could result in 476 bird deaths per year. (*Id*.) Because this impact was not addressed in the IS/MND and Dr. Smallwood has presented substantial evidence of a fair argument that the Project's windows will impact birds, the City must prepare an EIR to analyze the impact of window collision on bird species.

In order to mitigate the impact of the window collisions on bird species, Dr. Smallwood has suggested several possible mitigation measures. Dr. Smallwood suggests: (1) marking the windows (e.g. decals, film, fritted glass); (2) managing outdoor landscape to reduce reflection of vegetation; (3) managing indoor landscape; and (4) managing nocturnal lighting. (Ex. A, pp. 14-15.) For mitigation measures involving the siting and design of the Project, Dr. Smallwood suggests: (1) deciding on the location of structures; (2) deciding on the façade and orientation of structures; (3) selecting types and sizes of windows; (4) minimizing transparency through two parallel façades; (5) minimizing views of interior plants; and (6) landscaping so as to increase distance between windows and vegetation. (*Id*. at p. 15.) Dr. Smallwood also suggests that the City also look to the guidelines developed by the American Bird Conservancy and the City of San Francisco to minimize injuries and fatalities to bird species. (*Id*. at p. 16.)

3. The IS/MND failed to address the potential adverse impact on wildlife from vehicle collisions due to increased traffic from the Project.

According to the IS/MND, the Project would generate 1,636 net new daily vehicle trips (IS/MND, p. 4-75.) The increase in vehicle trips are likely to result in increased wildlife fatalities because vehicle collisions "crush and kill wildlife" and "the impacts have often been found to be significant at the population level." (Ex. A, p. 16.) In terms of avian mortality, it is estimated that vehicle collisions result in the death of 89 million to 340 million birds per year. (Id.) "Members of some special-status species that are likely absent from the project site would be killed by

traffic generated by the project, including the Federally Threatened California red-legged frog (*Rana draytonii*) California Species of Concern American badger (*Taxidea taxus*) and California specially protected mountain lion (*Puma concolor*)." (*Id*.) Because the cumulative impact of vehicle collisions on wildlife was not addressed at all in the IS/MND, "An analysis is needed of whether increased traffic on roads in and around Cupertino would similarly result in intense local impacts on wildlife," especially on a cumulative impact level. (*Id*.) Because Dr. Smallwood has provided substantial evidence of a fair argument that this impact from the Project's traffic may be significant, the City must analyze such impacts in an EIR.

Factors that affect the rate of vehicle collision with wildlife include: the type of roadway, human population density, temperature, extent of vegetation cover, and intersections with streams and riparian vegetation. (Ex. A, p. 17.) The City should formulate mitigation measures based on those factors in an EIR.

4. <u>The IS/MND failed to address the potential adverse impact on wildlife movement due to the Project.</u>

The IS/MND summarily dismisses potential impacts on wildlife movement because the site is within an urban setting. (IS/MND, p. 27.) However, the CEQA standard regarding wildlife movement is whether a project will "Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors…" (CEQA Guidelines, App. G.) Under this standard, the question is whether the Project with interfere with wildlife movement regardless of whether such movement is channeled by a corridor. Dr. Smallwood notes, "Because urban and commercial sprawl has eliminated natural surfaces from most of the landscape, the mature trees on a site such as that of the proposed project is of critical importance as stop-over habitat for migratory wildlife and as staging habitat" (Ex. A, p. 17 [citation omitted].) Dr. Smallwood also observes, "The project would further cut wildlife off from stop-over and staging habitat, and would therefore interfere with wildlife movement in the region." (*Id*.) Because these impacts were not addressed in the IS/MND and Dr. Smallwood has presented substantial evidence of a fair argument that the Project will significantly impact wildlife movement through the Project area, the City must prepare an EIR which analyses and mitigates such impacts.

5. <u>The IS/MND failed to address the cumulative impacts of past, on-going, and future projects on wildlife.</u>

The IS/MND lists foreseeable future projects as a form of cumulative effects analysis, but neglects to also list past and ongoing projects. As Dr. Smallwood notes, "Had City of Cupertino listed all projects, past, present and reasonably foreseeable projects, then the need for a serious cumulative effects analysis would emerge as obvious. Nearly all of the natural spaces have been taken from Cupertino and San Jose, leaving only a scattering of copses of trees as stop-over habitat for use by birds and bats." (Ex. A, pp. 17-18.)

For wildlife, cumulative effects can often be interpreted as effects on the numerical capacity, breeding success, genetic diversity, or other population performance metrics expressed at the regional scale. (Ex. A, p. 18.) Dr. Smallwood concludes, "These effects could be predicted and measured. If birds were to lose all stop-over habitat across the South Bay, then the numerical capacity of migration might decline for multiple species. Unfortunately, little is known about stop-over habitat requirements, such as how often migrants lose their lives for lack of stop-over habitat. Nevertheless, crude assessments are possible and imperative." (*Id*.) Because past and on-going projects were not accounted for, the IS/MND failed to provide substantial evidence that the Project would not have a significant cumulative effect on wildlife. As such, the City must prepare an EIR to analyze this impact and incorporate mitigation measures to bring such an impact to a less-than-significant level.

B. The IS/MND Failed to Account for Residual Pesticide Compounds at the Project Site

SWAPE, an environmental consulting firm, reviewed the IS/MND. SWAPE's comment letter is attached as Exhibit B and their findings are summarized in the following sections.

SWAPE notes that the Phase I Environmental Site Assessment ("Phase I Assessment") prepared for the Project site in 2017 found that the site was cultivated as an orchard from the 1930s until the late 1960s. (Phase I Environmental Site Assessment, p. 1.) Thus, "residual pesticide compounds (primarily DDT-related pesticides and metals) could potentially be present in shallow soil at the Site, which could potentially impact redevelopment of the Site involving earthwork." (*Id*.) The Phase I Assessment recommended:

> Northgate recommends that Cupertino Village, LP evaluate shallow soil at the Site for the potential presence of pesticides and metals prior to any earthwork being conducted. If pesticides are present, Northgate recommends that Cupertino Village, LP develop an appropriate Site Management Plan that outlines procedures for appropriate handling or off-Site disposal of pesticide-impacted soil, and a Health and Safety Plan designed to minimize potential exposure of workers and the public to pesticides during earthwork and construction at the Site.

(*Id*.)

Despite these recommendations in the Phase I Assessment, the recommendations were not incorporated into the IS/MND in any way. No mitigation requiring the testing of soils for pesticide residues, as recommended by the Phase I Assessment, was included. No mitigation measures requiring the development of a site management plan and health and safety plan to protect worker health and the public if pesticides are detected, as recommended by the Phase I Assessment, was included. Rather than wait until after approval of the project, soil samples should be taken as part of the CEQA environmental review in order to establish an adequate baseline for determining impacts from soil contamination and to develop mitigations that would address such contamination as part of the IS/MND or an EIR.

It is well-established that CEQA requires analysis of toxic soil contamination that may be disturbed by a Project, and that the effects of this disturbance on human health and the environment must be analyzed. CEQA requires a finding that a project has a "significant effect on the environment" if "the environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." (PRC §21083(b)(3).) As the Court of Appeal has stated, "[a] new project located in an area that will expose its occupants to preexisting dangerous pollutants can be said to have substantial adverse effect on human beings." (*Cal. Building Industry Assn. v. Bay Area Air Quality Mgm't Dist.* (2013) 218 Cal.App.4th 1171 (*CBIA v. BAAQMD*).) The existence of toxic soil contamination at a project site is a significant impact requiring review and mitigation in an EIR. (*McQueen v. Bd. of Dirs.* (1988) 202 Cal.App.3d 1136, 1149; *Assoc. For A Cleaner Env't v. Yosemite Comm. College Dist.* (2004) 116 Cal.App.4th 629 (*ACE v. Yosemite*).) This mitigation may not be deferred until a future time after Project approval. (*Sundstrom v. County of Mendocino* (1988) 202 Cal. App. 3d 296, 306; *Citizens for Responsible Equitable Envt'l Dev. v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 330-31 (*CREED*).)

The City must properly investigate the site and prepare an EIR to adequately analyze and mitigate the potential impact of residual pesticide compounds in the soil at the Project site. Mitigation measures in the EIR must include a measure for the preparation of a site management plan and a health and safety plan to protect workers and the public, as recommended by the Phase I assessment.

C. The IS/MND Relied on Unsubstantiated Input Parameters to Estimate Project Emissions and Thus Failed to Adequately Analyze the Project's Air Quality Impacts.

The IS/MND for the Project relies on emissions calculated from the California Emissions Estimator Model Version CalEEMod.2016.3.2 ("CalEEMod"). This model relies on recommended default values or on site specific information related to a number of factors. The model is used to generate a project's construction and operational emissions. SWAPE reviewed the Project's CalEEMod output files and found that the values input into the model were inconsistent with information provided in the IS/MND. This results in an underestimation of the Project's emissions. As a result, the Project may have a significant air quality impacts and an EIR is required to properly analyze these potential impacts.

1. <u>The IS/MND failed to include all land uses to model existing emissions.</u>

According to the IS/MND, "the site is currently developed with two commercial buildings: an occupied 3,385-square-foot building that is currently occupied by the Duke of Edinburgh Pub and Restaurant, and a vacant 10,044-square-foot commercial building." (IS/MND, pp. 3-4.) However, SWAPE reviewed the CalEEMod inputs and found that the IS/MND modeled the existing land uses as a 13,430 square-foot "Quality Restaurant." (Ex. B, p. 3.) As SWAPE noted, "According to the CalEEMod User's Guide, the correct land use type and size is necessary in order to correctly calculate impacts from architectural coatings and energy use." (*Id.*) Thus, the IS/MND has provided inaccurate operational emissions associated with the

Project and it cannot be relied upon as substantial evidence to estimate emissions. The City must prepare an EIR utilizing the correct input parameters for the existing use of the site in order to properly inform the public of the current emissions on the Project site.

2. The IS/MND overestimated the current number of vehicle trips to model existing emissions.

According to the IS/MND's Transportation Impact Analysis, the existing Project site generates approximately 220 vehicle trips per day and the proposed Project will generate approximately 1,856 vehicle trips per day for a net gain of 1,636 vehicle trips per day. (IS/MND, App. D, p. 25.) In other words, the net increase in traffic emissions from the Project will be from the 1,636 new additional vehicle trips.

Instead of modeling the current vehicle emissions on the Project site based on the current 220 vehicle trips per day, the IS/MND improperly modeled current emissions based on 1,636 trips per day. (Ex. B, p. 4.) Thus, the IS/MND improperly estimates that the increased vehicle emissions will come from only 220 new vehicle trips rather than the actual 1,636 new vehicle trips. Such a modeling error significantly overestimates the existing vehicle emissions at the Project site and cannot be relied upon as substantial evidence to determine the significance of the Project's impact. (*Id*.) The City must prepare an EIR utilizing the correct input parameters for the existing use of the site in order to properly inform the public of the current emissions on the Project site.

3. The IS/MND underestimated the trip length for hauling demolition debris.

According to the IS/MND, "[d]emolition debris would be off-hauled for disposal at the Zanker Materials Recovery and Landfill in San Jose, approximately 19 miles from the project site." (IS/MND, p. 3-31.) However, SWAPE's review of the CalEEMod output files demonstrates that the Project Applicant modeled construction emissions assuming that demolition hauling trucks would only travel 10 miles. (Ex. B, pp. 4-5.) By underestimating the trip length by 9 miles per trip, the IS/MND underestimates construction emissions from the Project and cannot be relied upon as substantial evidence to determine the significance of the Project's construction emissions. (*Id*. at p. 5.) The City must prepare an EIR utilizing the correct input parameters for construction emissions in order to properly assess the impact of the Project.

4. The IS/MND underestimated the number of hauling trips during site preparation and grading.

According to the IS/MND's Air Quality and Greenhouse Gas Background and Modeling Data, the grading phase of the Project's construction will entail exporting 43,800 cubic-yards (CY) of cut soil and importing 400 CY of new soil and the site preparation phase of the Project's construction will entail exporting 2,200 CY of soil. (IS/MND, App. A, p. 46.) With each haul truck having a carrying capacity of 12 cubic yards, the IS/MND's emissions model estimates that the Project would have 129 total hauling trip ends during grading and 37 total end trips during site preparation. (*Id*.)

Based on the estimated amount of import (400 CY) and export (43,800 CY) during grading as well as the hauling truck carrying capacity (12 CY), SWAPE notes that the Project would actually generate approximately 7,366 total hauling trips during the grading phase. (Ex. B, p. 6.) Based on the 2,200 cubic yards of soil export during site preparation and the hauling truck carrying capacity, SWAPE notes that the Project would generate approximately 367 total hauling trucks trips during site preparation. (*Id*.) Thus, the IS/MND significantly underestimates the number of hauling trips and associated emissions during grading and site preparation and cannot be relied upon as substantial evidence to determine the significance of the Project's emissions. The City must prepare an EIR utilizing the correct input parameters for hauling trips in order to properly assess the impact of the Project.

5. <u>The IS/MND used the incorrect number of worker trips to estimate emissions.</u>

The IS/MND provides the number of worker trips expected during each phase of construction. (IS/MND, App. A, p. 49.) However, SWAPE found that the number of worker trips in the IS/MND's CalEEMod model does not match the estimated number of worker trips per phase of construction provided in the IS/MND. (Ex. B, p. 8.) Instead of using the number of worker trips provided in the IS/MND, the CalEEMod model in the IS/MND used CalEEMod's default estimates. (*Id*.) However, according to the CalEEMod User's Guide, the user can override default inputs with more accurate, project-specific information. (*Id*.) Because the project-specific number of worker trips is known and presented in the IS/MND, the CalEEMod model should have used those specific estimates in order to more accurately estimate the Project's construction emissions. (*Id*.) The City must prepare an EIR utilizing the correct input parameters for the number of worker trips in order to properly assess the impact of the Project.

D. The IS/MND Failed to Adequately Evaluate Health Risks from Diesel Particulate Matter Emissions

The IS/MND evaluated the Project's health-related impact by preparing a health risk assessment (HRA) that assesses diesel particulate matter (DPM) emissions released during construction and concluded that the Project would result in an excess cancer risk of 24.5 in one million. (IS/MND, pp. 4-12 to 4-13.) With mitigation, the IS/MND concludes that the excess cancer risk would be reduced to 1.5 in one million, which would be less than significant. (IS/MND, p. 4-14.) However, SWAPE disagrees with the conclusion of the IS/MND because the IS/MND relied on a CalEEMod model that underestimated emissions and IS/MND failed to conduct an operational HRA. (Ex. B, p. 8.)

1. <u>The IS/MND used incorrect emission estimates to calculate health risks during construction.</u>

The IS/MND's construction HRA relies upon emission estimates from a flawed CalEEMod model to estimate the excess cancer risk posed to nearby residents as a result of emissions generated during construction-related activity. (Ex. B, p. 8.) As noted above, SWAPE

found that the emissions model in the IS/MND relied upon incorrect and unsubstantiated input parameters in order to estimate the Project's emissions. As SWAPE notes, "Because the emissions estimates from the Project's CalEEMod model are underestimated, it is reasonable to assume that the Project's construction-related HRA also underestimates the health risk posed to sensitive receptors near the Project site." (*Id*.) By underestimating the emissions in its CalEEMod model, the IS/MND's construction HRA is "unreliable and should not be relied upon to determine the significance of the Project's construction-related health impact." (*Id*. at p. 9.) The City must prepare an EIR in order to correct the flaws in its CalEEMod inputs and conduct an HRA based on the proper emissions estimates.

2. <u>The IS/MND failed to conduct an operational health risk assessment.</u>

The IS/MND determined that the operational health risk would be less than significant without conducting an operational HRA. (IS/MND, p. 4-15.) The IS/MND attempts to justify this by stating:

> When siting new sensitive receptors, the BAAQMD CEQA Guidelines recommend examining sources of TACs and PM2.5 emissions within 1,000 feet that would adversely affect individuals within the proposed project. BAAQMD has developed screening tools to identify stationary and mobile sources of TACs and diesel-PM2.5 in the vicinity of sensitive land uses, and developed screening thresholds for assessing potential health risks from these sources. Using the BAAQMD screening tools, it is determined that the project site is not within 1,000 feet of any sources of air emission (permitted or non-permitted stationary sources, freeways, or high volume roadways). Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation, and impacts would be less than significant"

(IS/MND, pp. 4-14 to 4-15.) However, the IS/MND's failure to conduct an operational HRA is inconsistent with the approach recommended by the California Office of Environmental Health Hazard Assessment ("OEHHA"). (Ex. B, p. 9.) OEHHA recommends a health risk assessment of a project's operational emissions for projects that will be in place for more than 6 months. (*Id*.) Projects lasting more than 6 months should be evaluated for the duration of the project, and an exposure duration of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident. (*Id*.) The Project would last at least 30 years and certainly much longer than six months. These recommendations reflect the most recent health risk assessment policy. By failing to conduct an operational HRA, the IS/MND fails to provide substantial evidence that the operational emissions of the Project would not be significant. As such, the City must prepare an EIR which includes an operational HRA to assess the health risks to nearby sensitive receptors.

3. SWAPE conducted a screening-level health risk assessment for operational emissions which indicated a significant health risk impact.

SWAPE prepared a screening-level HRA to evaluate potential impacts from operation of the Project. SWAPE used AERSCREEN, the leading screening-level air quality dispersion model. (Ex. B, p. 10.) SWAPE used a sensitive receptor distance of 24 meters (the distance to the closest residential receptor according to the IS/MND) and analyzed impacts to individuals at different stages of life based on OEHHA and BAAQMD guidance. (*Id*. at pp. 10-11.)

SWAPE found that the excess cancer risk for adults, children, and infants at a sensitive receptor located approximately 25 meters away over the course of Project operation are approximately 16, 100, and 11 in one million, respectively. (Ex. B, p. 12.) Moreover, the excess lifetime cancer risk over the course of a Project operation is approximately 130 in one million. (*Id*.) The risks to adults, children and lifetime residents appreciably exceed the BAAQMD's threshold of 10 in one million. SWAPE's screening-level HRA "demonstrates that operation of the Project could result in a potentially significant health risk impact, when correct exposure assumptions and up-to-date, applicable guidance are used." (*Id*.) This is a potentially significant impact not addressed in the IS/MND. Because the IS/MND did not conduct an operational HRA, the I/MND lacks substantial evidence that the health risks are less than significant. As such, the City must prepare an EIR with a more refined HRA that is representative of site conditions in order to evaluate the Project's health risk impact and to include suitable mitigation measures.

E. The IS/MND Failed to Adequately Assess the Impact of the Project's Greenhouse Gas Emissions.

The IS/MND determined that the Project's net greenhouse gas ("GHG") emissions would be approximately 1,059 MT CO2e/year and, as a result, will be less than significant. (IS/MND, p. 4-32.) The IS/MND states:

> As shown in Table 4-6 above, development of the proposed project would result in a net increase of GHG emissions of 1,059 MTCO2e/year at opening year (2021), which would not exceed BAAQMD's brightline threshold of 1,100 MTCO2e per year for operations. Therefore, project-related GHG emissions impacts would be less than significant"

(IS/MND, p. 4-33.) However, as described above, the IS/MND relied on a flawed CalEEMod model to determine the existing net emissions. In order to determine the Project's GHG impact, SWAPE conducted a simple analysis using the Project's proposed GHG emissions and SWAPE's updated existing GHG emissions. SWAPE prepared an updated CalEEMod model to estimate the Project's existing emissions in the year 2021 and corrected the land uses and the daily vehicle trips that the restaurant generates. (Ex. B, p. 13.)

With the Project's existing land use emissions modeled correctly, SWAPE found that the Project's net GHG emissions were 1,787 MT CO2e/year, exceeding the BAAQMD's threshold

of 1,100 MT CO2e/year. (IS/MND, p. 13.) This is a significant impact not previously assessed or identified in the IS/MND. SWAPE also noted that the Project's net GHG emissions are still most likely underestimated as the proposed Project's construction emissions are based on a flawed CalEEMod model. (*Id*.) Because the emissions models in the IS/MND are based on flawed CalEEMod inputs, the IS/MND fails to present substantial evidence that the Project's GHG emissions are less than significant. Furthermore, SWAPE has presented substantial evidence of a fair argument that the Project's GHG emissions will be significant. As such, the City must prepare an EIR with an updated assessment of the Project's GHG emission and additional mitigation should be identified to reduce the Project's air quality and GHG impacts to a less-than-significant level.

F. There is Substantial Evidence of a Fair Argument That the Hotel Project's Emissions of Formaldehyde to the Air Will Have Significant Health Impacts on Future Employees.

Certified Industrial Hygienist, Francis "Bud" Offermann, PE, CIH, one of the world's leading experts on indoor air quality, has conducted a review of the proposed hotel project and relevant documents regarding the Project's indoor air emissions. Mr. Offerman concludes that it is likely that the Project will expose future workers employed at the hotel to significant impacts related to indoor air quality, in particular emissions of the cancer-causing chemical formaldehyde. Mr. Offerman's comment letter and CV are attached as Exhibit C.

Mr. Offermann explains that many composite wood products typically used in hotel construction contain formaldehyde-based glues which off-gas formaldehyde over a very long time period. He states, "The primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and particle board. These materials are commonly used in residential and hotel building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims." (Ex. C, pp. 2-3.)

Formaldehyde is a known human carcinogen. Mr. Offermann states that there is a fair argument that full-time workers at the hotel project will be exposed to a cancer risk from formaldehyde of approximately 18.4 cancers per million. (Ex. C, p. 4.) This is almost double the Bay Area Air Quality Management District ("BAAQMD") CEQA significance threshold for airborne cancer risk of 10 cancers per million. Mr. Offerman states:

> With respect to this project, Cupertino Village Hotel, since this is a hotel, guests are expected to have short-term exposures (e.g. less than a week), but employees are expected to experience longer-term exposures (e.g. 40 hours per week, 50 weeks per year). The longer-term exposures for employees are anticipated to result in significant cancer risks resulting from exposures to formaldehyde released by the building materials and furnishing commonly found in residences and hotels.

(*Id*. at p. 3.) Mr. Offermann concludes that this significant environmental impact should be analyzed in an EIR and mitigation measures should be imposed to reduce the risk of formaldehyde exposure. (*Id*. at pp. 4-5.) Mr. Offermann identifies mitigation measures that are available to reduce these significant health risks, including the installation of air filters and a requirement that the applicant use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the buildings' interiors. (*Id*. at pp. 11-12.)

When a project exceeds a duly adopted CEQA significance threshold, as here, this alone establishes a fair argument that the project will have a significant adverse environmental impact and an EIR is required. Indeed, in many instances, such air quality thresholds are the only criteria reviewed and treated as dispositive in evaluating the significance of a project's air quality impacts. (*See, e.g. Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 960 [County applies BAAQMD's "published CEQA quantitative criteria" and "threshold level of cumulative significance"]; *see also, Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 110-11 ["A 'threshold of significance' for a given environmental effect is simply that level at which the lead agency finds the effects of the project to be significant"].) The California Supreme Court made clear the substantial importance that an air district significance threshold plays in providing substantial evidence of a significant adverse impact. (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 327 ["As the [South Coast Air Quality Management] District's established significance threshold for NOx is 55 pounds per day, these estimates [of NOx emissions of 201 to 456 pounds per day] constitute substantial evidence supporting a fair argument for a significant adverse impact."].) Since expert evidence demonstrates that the Project will exceed the BAAQMD's CEQA significance threshold, there is a fair argument that the Project will have significant adverse impacts and an EIR is required.

The City has a duty to investigate issues relating to a project's potential environmental impacts, especially those issues raised by an expert's comments. *(Cty. Sanitation Dist. No. 2 v. Cty. of Kern*, (2005) 127 Cal.App.4th 1544, 1597–98 ["under CEQA, the lead agency bears a burden to investigate potential environmental impacts"].) In addition to assessing the hotel project's potential health impacts to workers, Mr. Offermann identifies the investigatory path that the City should be following in developing an EIR to more precisely evaluate the hotels' future formaldehyde emissions and establishing mitigation measures that reduce the cancer risk below the BAAQMD level. (Ex. C, pp. 5-9.) Such an analysis would be similar in form to the air quality modeling and traffic modeling typically conducted as part of a CEQA review.

The failure to address the project's formaldehyde emissions is contrary to the California Supreme Court's decision in *California Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4th 369, 386 (*CBIA*). At issue in *CBIA* was whether the Air District could enact CEQA guidelines that advised lead agencies that they must analyze the impacts of adjacent environmental conditions on a project. The Supreme Court held that CEQA does not generally require lead agencies to consider the environment's effects on a project. (*CBIA*, 62 Cal.4th at 800-01.) However, to the extent a project may exacerbate existing adverse environmental

conditions at or near a project site, those would still have to be considered pursuant to CEQA. (*Id*. at 801 ["CEQA calls upon an agency to evaluate existing conditions in order to assess whether a project could exacerbate hazards that are already present."].) In so holding, the Court expressly held that CEQA's statutory language required lead agencies to disclose and analyze "impacts on ***a project's users or residents*** that arise ***from the project's effects*** on the environment." (*Id*. at p. 800 [emphasis added].)

The carcinogenic formaldehyde emissions identified by Mr. Offermann are not an existing environmental condition. Those emissions to the air will be from the hotel project. Employees will be users of the hotel. Currently, there is presumably little if any formaldehyde emissions at the site. Once the project is built, emissions will begin at levels that pose significant health risks. Rather than excusing the City from addressing the impacts of carcinogens emitted into the indoor air from the project, the Supreme Court in *CBIA* expressly finds that this type of effect by the project on the environment and a "project's users and residents" must be addressed in the CEQA process.

The Supreme Court's reasoning is well-grounded in CEQA's statutory language. CEQA expressly includes a project's effects on human beings as an effect on the environment that must be addressed in an environmental review. "Section 21083(b)(3)'s express language, for example, requires a finding of a 'significant effect on the environment' (§ 21083(b)) whenever the 'environmental effects of a project will cause substantial adverse effects *on human beings*, either directly or indirectly.'"(*CBIA*, 62 Cal.4th at p. 800 [emphasis in original].) Likewise, "the Legislature has made clear—in declarations accompanying CEQA's enactment—that public health and safety are of great importance in the statutory scheme." (*Id*. [citing e.g., §§ 21000, subds. (b), (c), (d), (g), 21001, subds. (b), (d)].) It goes without saying that the hundreds of future employees at the project are human beings and the health and safety of those workers is as important to CEQA's safeguards as nearby residents currently living adjacent to the project site.

Because Mr. Offermann's expert review is substantial evidence of a fair argument of a significant environmental impact to future users of the project, an EIR must be prepared to disclose and mitigate those impacts.

IV. CONCLUSION

In light of the above comments, the City must prepare an EIR for the Project and the draft EIR should be circulated for public review and comment in accordance with CEQA. Thank you for considering these comments.

Sincerely,

Brian B. Flynn
Lozeau | Drury LLP

EXHIBIT A

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Erick Serrano, Associate Planner
City of Cupertino Community Development Department
10300 Torre Avenue
Cupertino, CA 95014 14 January 2019

RE: Cupertino Village Hotel

Dear Mr. Serrano,

I write to comment on the City of Cupertino's (Placeworks 2018) Initial Study prepared for the proposed Cupertino Village Hotel, which I understand would add 185 hotel rooms in a 60-foot tall building on 1.72 acres of land. Architectural diagrams indicate the hotel's façades would support 2,920 m^2 of glass windows.

My qualifications for preparing expert comments are the following. I hold a Ph.D. degree in Ecology from University of California at Davis, where I subsequently worked for four years as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on animal density and distribution, habitat selection, habitat restoration, interactions between wildlife and human infrastructure and activities, conservation of rare and endangered species, and on the ecology of invading species. I perform research on wildlife mortality caused by wind turbines, electric distribution lines, agricultural practices, and road traffic. I authored numerous papers on special-status species issues, including "Using the best scientific data for endangered species conservation" (Smallwood et al. 1999), and "Suggested standards for science applied to conservation issues" (Smallwood et al. 2001). I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and the Raptor Research Foundation, and I've been a part-time lecturer at California State University, Sacramento. I was Associate Editor of wildlife biology's premier scientific journal, The Journal of Wildlife Management, as well as of Biological Conservation, and I was on the Editorial Board of Environmental Management. I have performed wildlife surveys in California for thirty-three years, including at many proposed project sites. My CV is attached.

SITE VISIT

I visited the site of the proposed project from 14:44 to 18:15 hours on 12 January 2019 – a windless, partly overcast day. Using binoculars, I scanned for wildlife from the site's perimeter until 17:30 hours, and then I scanned for nocturnal wildlife using a FLIR T620 thermal-imaging camera with an 88.9 mm telephoto lens.

The site was occupied by two buildings surrounded by dozens of mature trees of several species. It was across the street from a large patch of open space associated with the

Apple Campus, a natural draw for many birds and bats. I saw 13 species of wildlife, including a bat of undetermined species and 7 bird species known to be vulnerable to window collisions (Table 1). I saw numerous bird nests, which confirmed that birds breed on site (Photo 1), and mourning doves (Photo 2), black-chinned hummingbirds (Photo 3), black phoebe (Photo 4), yellow-rumped warblers (Photo 5), and many American crows, some of which exhibited copulatory behavior (Photo 6). I also saw California gulls, which are on California's Taxa to Watch List.

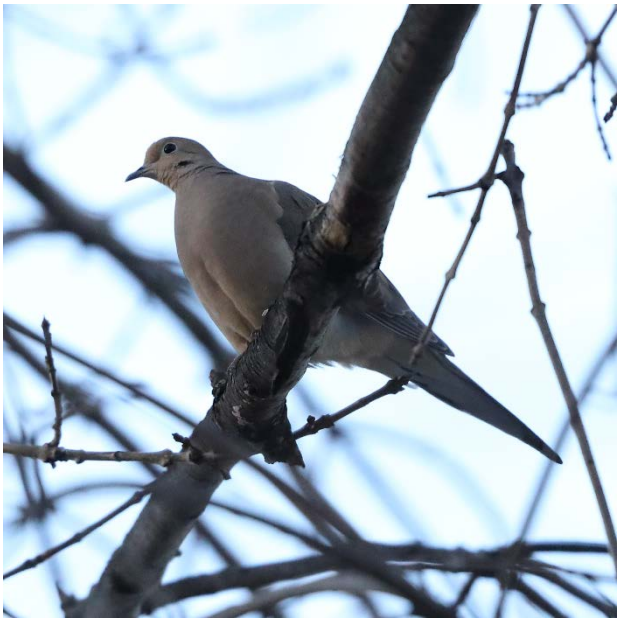
Table 1. *Species of wildlife I observed 14:44 to 18:15 hours, 12 January 2019, at site of proposed Cupertino Village Hotel, along with number of minutes to first detection and whether found as window collision victims in nearby study (Kahle et al. 2016).*

Species	***Scientific name***	**Status[1]**	**Minutes to first detection**	**Window victims**
Killdeer	*Charadrius vociferus*		186	Yes
Herring gull	*Larus argentatus*		30	No
California gull	*Larus californicus*	TWS	24	No
Mourning dove	*Zenaida macroura*		19	Yes
Anna's hummingbird	*Calypte anna*		22	Yes
Black-chinned hummingbird	*Archilochus alexandri*		27	No
Black phoebe	*Sayornis nigricans*		34	Yes
American crow	*Corvus brachyrhynchos*		0	No
Common raven	*Corvus corax*		74	No
American robin	*Turdus migratorius*		76	Yes
Yellow-rumped warbler	*Setophaga coronata*		1	Yes
House finch	*Haemorhous mexicanus*		0	Yes
Bat			196	

[1] Listed as TWL = Taxa to Watch List (Shuford and Gardali 2008).

Photo 1. *One of numerous nests on the proposed project site, 12 January 2019.*

Photo 2, right. *One of several mourning doves at the project site on 12 January 2019. Mourning doves were exhibiting copulatory behavior.*



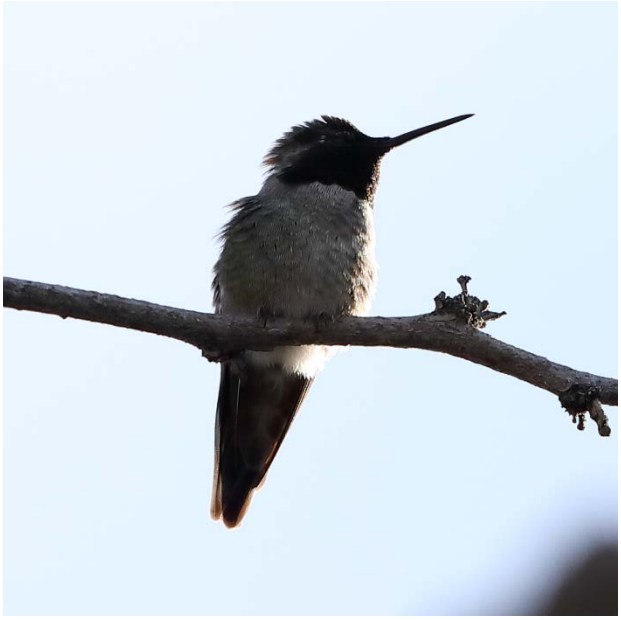
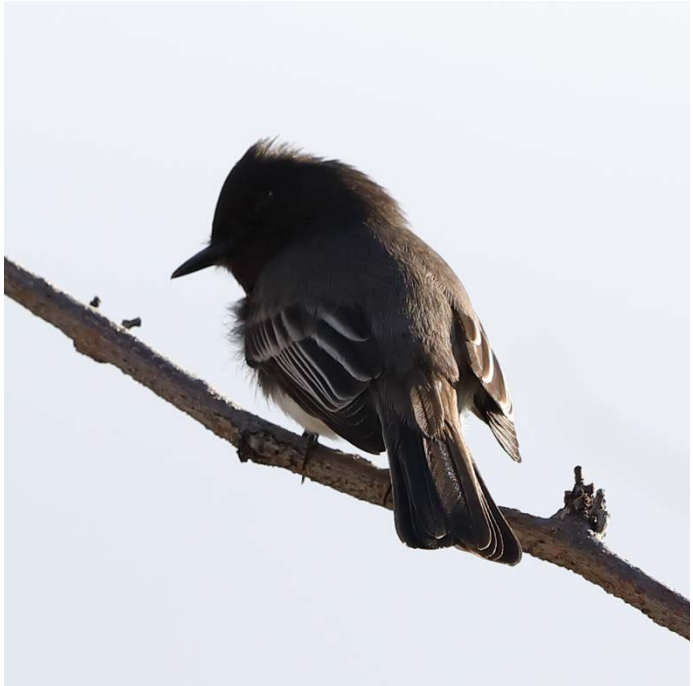


Photo 3, left. *Black-chinned hummingbird on the project site, 12 January 2019.*

Photo 4, right. *Black phoebe on the site of the proposed project, 12 January 2019.*



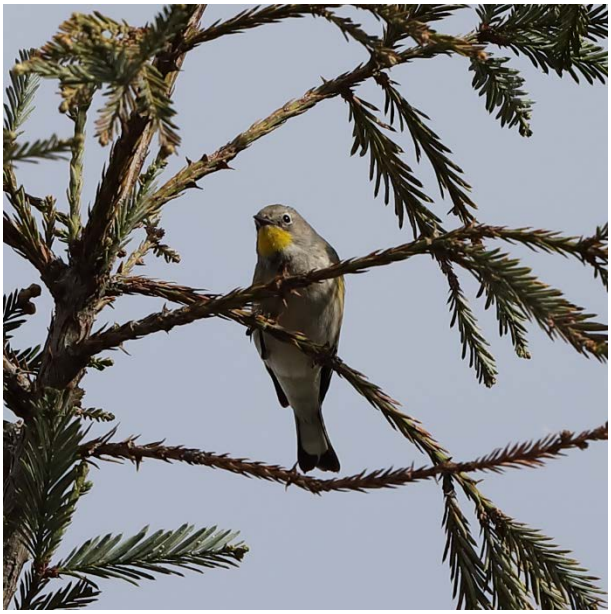


Photo 5, left. *Yellow-rumped warbler on the site of the proposed project, 12 January 2019.*

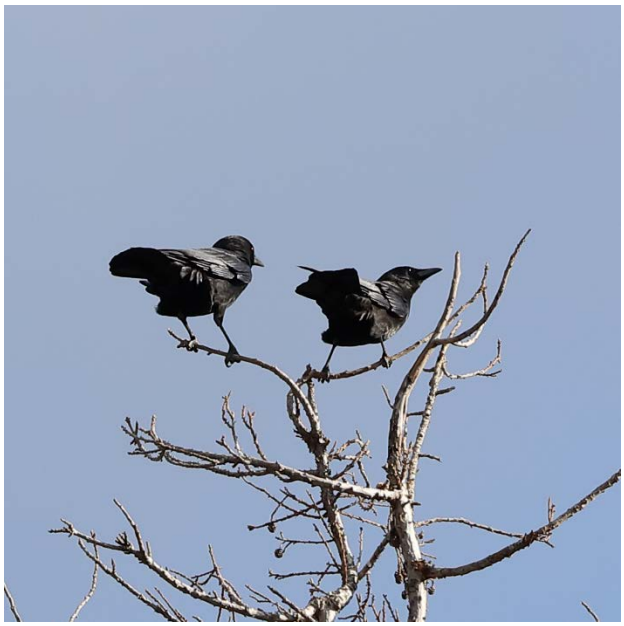


Photo 6, right. *American crows exhibiting copulatory behavior on the proposed project site, 12 January 2019.*

BIOLOGICAL IMPACTS ASSESSMENT

Apparently without the benefit of any survey by professional wildlife ecologists, City of Cupertino characterizes the site as urban and therefore vacant of wildlife habitat (Placeworks 2018:4-17 to 4-18). The only concession to potential wildlife impacts is the possibility that birds protected by the international Migratory Bird Treaty Act "could" nest in the trees on site. In fact, birds do nest in the trees site, as shown in Photo 1. I saw two species attempting copulation on site. Whereas I concur that the site is urban, I must point out that wildlife habitat is defined not by the City of Cupertino, but rather by wildlife use of the environment (Hall et al. 1997, Morrison et al. 1998). Multiple species of wildlife find ways to adapt to urban environments, including for foraging, nesting, cover, and as stop-over refuge during migration. Wildlife habitat exists on urban landscapes, and CEQA review is therefore warranted.

Reviewing occurrence records and geographic range maps, I identified 26 special-status species of wildlife potentially using the site at one time or another, including 5 bat species (Table 2). eBird records confirmed the Apple Campus's open space draws special-status species of birds, as exemplified in Figure 1, but birds also make use of the wider urban environment, likely for stop-over during migration or dispersal. The use of the area by special-status species, and the vulnerability of 6 of the species to window collisions, warrants preparation of an EIR.

Table 2. *Species reported on eBird (https://eBird.org) on or near the proposed project site, and whether found as window collision victims in nearby study (Kahle et al. 2016).*

Species	Scientific name	Status[1]	Occurrence potential	Window victims
Pallid bat	*Antrozous pallidus*	SSC, WBWG3	Possible	
Western red bat	*Lasiurus blossevillii*	SSC	Possible	
Fringed myotis	*Myotis thysanodes*	SSC, WBWG4	Possible	
Long-eared myotis	*Myotis evotis*	WBWG3	Possible	
Small-footed myotis	*Myotis cililabrum*	WBWG	Possible	
California gull	*Larus californicus*	TWL	eBird posts nearby	No
Red-tailed hawk	*Buteo jamaicensis*	CDFW 3503.5	eBird posts nearby	Yes
Ferruginous hawk	*Buteo regalis*	TWL, CDFW 3503.5	eBird posts nearby	No
Red-shouldered hawk	*Buteo lineatus*	CDFW 3503.5	eBird posts nearby	No
Sharp-shinned hawk	*Accipiter striatus*	CDFW 3503.5, TWL	eBird posts nearby	No
Cooper's hawk	*Accipiter cooperi*	CDFW 3503.5, TWL	eBird posts nearby	Yes
White-tailed kite	*Elanus leucurus*	CFP, TWL, CDFW 3503.5	eBird posts nearby	No
American kestrel	*Falco sparverius*	CDFW 3503.5	eBird posts nearby	No
Merlin	*Falco columbarius*	CDFW 3503.5, TWL	eBird posts nearby	No
Peregrine falcon	*Falco peregrinus*	CE, CFP, BCC	eBird posts nearby	No
Great-horned owl	*Bubo virginianus*	CDFW 3503.5	eBird posts nearby	No
Western screech-owl	*Megascops kennicotti*	CDFW 3503.5	eBird posts nearby	No
Barn owl	*Tyto alba*	CDFW 3503.5	eBird posts nearby	No
Vaux's swift	*Chaetura vauxi*	SCC2	eBird posts nearby	No
Costa's hummingbird	*Calypte costae*	BCC	eBird posts nearby	Yes
Allen's hummingbird	*Selasphorus sasin*	BCC	eBird posts nearby	Many
Nuttall's woodpecker	*Picoides nuttallii*	BCC	eBird posts nearby	No
Olive-sided flycatcher	*Contopus cooperi*	SSC2	eBird posts nearby	No
Oak titmouse	*Baeolophus inornatus*	BCC	eBird posts nearby	No
Yellow warbler	*Setophaga petechia*	SSC2, BCC	eBird posts nearby	Yes
Common yellowthroat	*Geothlypis trichas*	BCC	eBird posts nearby	Yes

[1] Listed as BCC = U.S. Fish and Wildlife Service Bird Species of Conservation Concern, CE = California endangered, CFP = California Fully Protected (CDFG Code 4700), CDFW 3503.5 = California Department of Fish and Wildlife Code 3503.5 (Birds of prey), and SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively, and TWL = Taxa to Watch List (Shuford and Gardali 2008), and WBWG = priority listing by Western Bat Working Group.

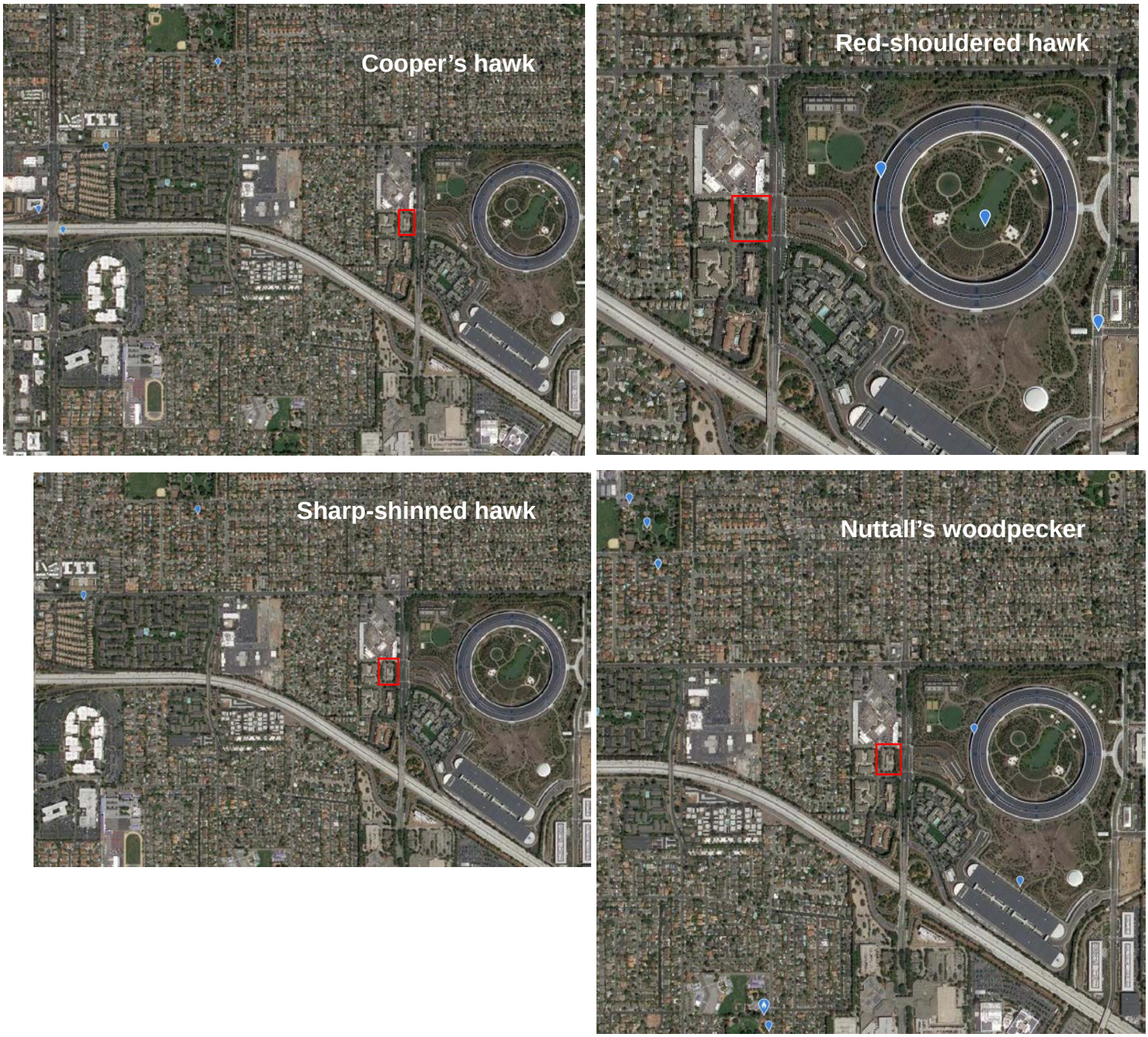


Figure 1. *Examples of eBird sighting records (blue teardrops) in the project (red polygon) area, including Cooper's hawk, sharp-shinned hawk, red-shouldered hawk, and Nuttall's woodpecker.*

WINDOW COLLISIONS

City of Cupertino (Placeworks 2018) does not analyze potential impacts to birds caused by the hotel's glass windows. Architectural diagrams indicate the hotel's façades would support 2,920 m^2 of glass windows. Many of the windows would reflect outdoor

landscaping including trees and shrubs, which could lure birds toward false cover. The types of windows proposed and their orientations and interactions with landscaping need to be examined for hazards to birds. Seven of the bird species I saw on site (Table 1) and 6 special-status species potentially occurring on site (Table 2) are known to collide with windows in the area (Kahle et al. 2016). An EIR needs to be prepared to address potential impacts and how to mitigate them. Below is a discussion of the issue, ranging from interpreting available impact estimates to collision factors and mitigation.

Glass-façades of buildings intercept and kill many birds, but these façades are differentially hazardous to birds based on spatial extent, contiguity, orientation, and many other factors. At Washington State University, Johnson and Hudson (1976) found 266 bird fatalities of 41 species within 73 months of monitoring of a three-story glass walkway (no fatality adjustments attempted). Prior to marking the windows to warn birds of the collision hazard, the collision rate was 84.7 per year. At that rate, and not attempting to adjust the fatality estimate for the proportion of fatalities not found, 4,235 birds were likely killed over the 50 years since the start of their study, and that's at a relatively small building façade (Photo 7). Accounting for the proportion of fatalities not found, the number of birds killed by this walkway over the last 50 years would have been about 12,705. And this is just for one 3-story, glass-sided walkway between two college campus buildings.

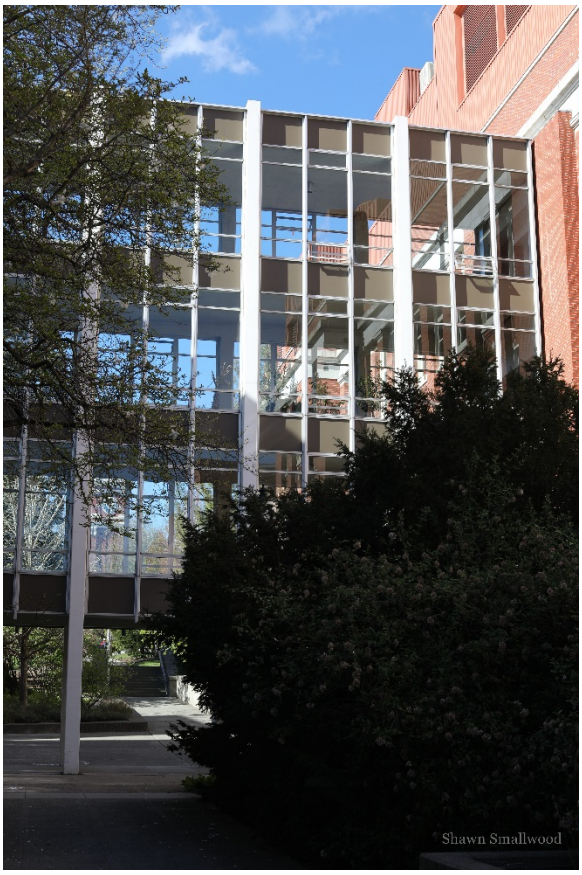


Photo 7*. A walkway connecting two buildings at Washington State University where one of the earliest studies of bird collision mortality found 85 bird fatalities per year prior to marking windows (254 bird deaths per year adjusted for the proportion of carcasses likely not found). Given that the window markers have long since disappeared, this walkway has likely killed at least 12,705 birds since 1968, and continues to kill birds. Notice that the transparent glass on both sides of the walkway gives the impression of unimpeded airspace that can be navigated safely by birds familiar with flying between tree branches. Also note the reflected images of trees, which can mislead birds into seeing safe perch sites. Further note the distances of ornamental trees, which allow birds taking off from those trees to reach full speed upon arrival at the windows.*

Window collisions are often characterized as either the second or third largest source or human-caused bird mortality. The numbers behind these characterizations are often attributed to Klem's (1990) and Dunn's (1993) estimates of about 100 million to 1 billion bird fatalities in the USA, or more recently Loss et al.'s (2014) estimate of 365-988 million bird fatalities in the USA or Calvert et al.'s (2013) and Machtans et al.'s (2013) estimates of 22.4 million and 25 million bird fatalities in Canada, respectively. However, these estimates and their interpretation warrant examination because they were based on opportunistic sampling, volunteer study participation, and fatality monitoring by more inexperienced than experienced searchers.

Klem's (1990) estimate was based on speculation that 1 to 10 birds are killed per building per year, and this speculated range was extended to the number of buildings estimated by the US Census Bureau in 1986. Klem's speculation was supported by fatality monitoring at only two houses, one in Illinois and the other in New York. Also, the basis of his fatality rate extension has changed greatly since 1986. Whereas his estimate served the need to alert the public of the possible magnitude of the bird-window collision issue, it was highly uncertain at the time and undoubtedly outdated more than three decades hence. Indeed, by 2010 Klem (2010) characterized the upper end of his estimated range – 1 billion bird fatalities – as conservative. Furthermore, the estimate lumped species together as if all birds are the same and the loss of all birds to windows has the same level of impact.

Homes with birdfeeders are associated with higher rates of window collisions than are homes without birdfeeders (Kummer and Bayne 2015, Kummer et al. 2016a), so the developed area might pose even greater hazard to birds if it includes numerous birdfeeders. Another factor potentially biasing national or North American estimates low was revealed by Bracey et al.'s (2016) finding that trained fatality searchers found 2.6× the number of fatalities found by homeowners on the days when both trained searchers and homeowners searched around homes. The difference in carcass detection was 30.4-fold when involving carcasses volitionally placed by Bracey et al. (2016) in blind detection trials. This much larger difference in trial carcass detection rates likely resulted because their placements did not include the sounds that typically alert homeowners to actual window collisions, but this explanation also raises the question of how often homeowner participants with such studies miss detecting window-caused fatalities because they did not hear the collisions.

By the time Loss et al. (2014) performed their effort to estimate annual USA bird-window fatalities, many more fatality monitoring studies had been reported or were underway. Loss et al. (2014) were able to incorporate many more fatality rates based on scientific monitoring, and they were more careful about which fatality rates to include. However, they included estimates based on fatality monitoring by homeowners, which in one study were found to detect only 38% of the available window fatalities (Bracey et al. 2016). Loss et al. (2014) excluded all fatality records lacking a dead bird in hand, such as injured birds or feather or blood spots on windows. Loss et al.'s (2014) fatality metric was the number of fatalities per building (where in this context a building can include a house, low-rise, or high-rise structure), but they assumed that this metric was

based on window collisions. Because most of the bird-window collision studies were limited to migration seasons, Loss et al. (2014) developed an admittedly assumption-laden correction factor for making annual estimates. Also, only 2 of the studies included adjustments for carcass persistence and searcher detection error, and it was unclear how and to what degree fatality rates were adjusted for these factors. Although Loss et al. (2014) attempted to account for some biases as well as for large sources of uncertainty mostly resulting from an opportunistic rather than systematic sampling data source, their estimated annual fatality rate across the USA was highly uncertain and vulnerable to multiple biases, most of which would have resulted in fatality estimates biased low.

In my review of bird-window collision monitoring, I found that the search radius around homes and buildings was very narrow, usually 2 meters. Based on my experience with bird collisions in other contexts, I would expect that a large portion of bird-window collision victims would end up farther than 2 m from the windows, especially when the windows are higher up on tall buildings. In my experience, searcher detection rates tend to be low for small birds deposited on ground with vegetation cover or woodchips or other types of organic matter. Also, vertebrate scavengers entrain on anthropogenic sources of mortality and quickly remove many of the carcasses, thereby preventing the fatality searcher from detecting these fatalities. Adjusting fatality rates for these factors – search radius bias, searcher detection error, and carcass persistence rates – would greatly increase nationwide estimates of bird-window collision fatalities.

The existing conditions – the developed area – is undoubtedly killing many birds each year. Not only are windows killing many birds, but so too are house cats, feral cats, electric distribution lines, electric power poles, and autos. This said, the proposed project will add a level of impact that is entirely missing from the CEQA review. Constructing a five-story building will not only take aerial habitat from birds, but it will also interfere with the movement of birds in the region and it will result in large numbers of annual window collision fatalities.

Buildings can intercept many nocturnal migrants as well as birds flying in daylight. As mentioned above, Johnson and Hudson (1976) found 266 bird fatalities of 41 species within 73 months of monitoring of a four-story glass walkway at Washington State University (no adjustments attempted). Somerlot (2003) found 21 bird fatalities among 13 buildings on a university campus within only 61 days. Monitoring twice per week, Hager at al. (2008) found 215 bird fatalities of 48 species, or 55 birds/building/year, and at another site they found 142 bird fatalities of 37 species for 24 birds/building/year. Gelb and Delacretaz (2009) recorded 5,400 bird fatalities under buildings in New York City, based on a decade of monitoring only during migration periods, and some of the high-rises were associated with hundreds of fatalities each. Klem et al. (2009) monitored 73 building façades in New York City during 114 days of two migratory periods, tallying 549 collision victims, nearly 5 birds per day. Borden et al. (2010) surveyed a 1.8 km route 3 times per week during 12-month period and found 271 bird fatalities of 50 species. Parkins et al. (2015) found 35 bird fatalities of 16 species within only 45 days of monitoring under 4 building façades. From 24 days of survey over a 48 day span, Porter and Huang (2015) found 47 fatalities under 8

buildings on a university campus. Sabo et al. (2016) found 27 bird fatalities over 61 days of searches under 31 windows. In San Francisco, Kahle et al. (2016) found 355 collision victims within 1,762 days under a 5-story building. Ocampo-Peñuela et al. (2016) searched the perimeters of 6 buildings on a university campus, finding 86 fatalities after 63 days of surveys. One of these buildings produced 61 of the 86 fatalities, and another building with collision-deterrent glass caused only 2 of the fatalities, thereby indicating a wide range in impacts likely influenced by various factors. There is ample evidence available to support my prediction that the proposed project will result in many collision fatalities of birds.

Project Impact Prediction

Predicting the number of bird collisions at a new project is challenging because the study of window collisions remains in its early stages. Researchers have yet to agree on a collision rate metric. Some have reported findings as collisions per building per year and some as collisions per building per day. Some have reported findings as collisions per m^2 of window. The problem with the temporal factor in the collision rate metrics has been monitoring time spans varying from a few days to 10 years, and even in the case of the 10-year span, monitoring was largely restricted to spring and fall migration seasons. Short-term monitoring during one or two seasons of the year cannot represent a 'year,' but monitoring has rarely spanned a full year. Using 'buildings' in the metric treats buildings as all the same size, when we know they are not. Using square meters of glass in the metric treats glass as the only barrier upon which birds collide against a building's façade, when we know it is not. It also treats all glass as equal, even though we know that collision risk varies by type of glass as well as multiple factors related to contextual settings.

Without the benefit of more advanced understanding of window collision factors, my prediction of project impacts will be uncertain. Klem's (1990) often-cited national estimate of avian collision rate relied on an assumed average collision rate of 1 to 10 birds per building per year, but studies since then have all reported higher rates of collisions 12 to 352 birds per building per year. Because the more recent studies were likely performed at buildings known or suspected to cause many collisions, collision rates from them could be biased high. By the time of these comments I had reviewed and processed results of bird collision monitoring at 21 buildings and façades for which bird collisions per m^2 of glass per year could be calculated and averaged. These averaged 0.163 bird deaths per m^2 of glass per year (95% CI: 0.0406-0.2844). Looking over the proposed building's design, I estimated the building would include 2,920 m^2 of glass windows, which applied to the mean fatality rate would predict **476 bird deaths per year (95% CI: 119-830)** at the building. After 50 years the toll from this average annual fatality rate would be 23,800 bird deaths, with an empirically founded upper-end possibility of 41,500 deaths. As mentioned earlier, the accuracy of this prediction depends on factors known or hypothesized to affect window collision rates, and it could be mitigated within the current building design or additionally mitigated to a much reduced rate. I will discuss these window collision factors and mitigation in the comments that follow.

Window Collision Factors

Below is a list of collision factors I found in the scientific literature. Following this list are specific notes and findings taken from the literature and my own experience.

(1) Inherent hazard of a structure in the airspace used for nocturnal migration or other flights
(2) Window transparency, falsely revealing passage through structure or to indoor plants
(3) Window reflectance, falsely depicting vegetation, competitors, or open airspace
(4) Black hole or passage effect
(5) Window or façade extent, or proportion of façade consisting of window or other reflective surface
(6) Size of window
(7) Type of glass
(8) Lighting, which is correlated with window extent and building operations
(9) Height of structure (collision mechanisms shift with height above ground)
(10) Orientation of façade with respect to winds and solar exposure
(11) Structural layout causing confusion and entrapment
(12) Context in terms of urban-rural gradient, or surrounding extent of impervious surface vs vegetation
(13) Height, structure, and extent of vegetation grown near home or building
(14) Presence of birdfeeders or other attractants
(15) Relative abundance
(16) Season of the year
(17) Ecology, demography and behavior
(18) Predatory attacks or cues provoking fear of attack
(19) Aggressive social interactions

(1) Inherent hazard of structure in airspace.—Not all of a structure's collision risk can be attributed to windows. Overing (1938) reported 576 birds collided with the Washington Monument in 90 minutes on one night, 12 September 1937. The average annual fatality count had been 328 birds from 1932 through 1936. Gelb and Delacretaz (2009) and Klem et al. (2009) also reported finding collision victims at buildings lacking windows, although many fewer than they found at buildings fitted with widows. The takeaway is that any building going up at the project site would likely kill birds, although the impacts of a glass-sided building would likely be much greater.

(2) Window transparency.—Widely believed as one of the two principal factors contributing to avian collisions with buildings is the transparency of glass used in windows on the buildings (Klem 1989). Gelb and Delacretaz (2009) felt that many of the collisions they detected occurred where transparent windows revealed interior vegetation.

(3) Window reflectance.—Widely believed as one of the two principal factors contributing to avian collisions with buildings is the reflectance of glass used in windows

on the buildings (Klem 1989). Reflectance can deceptively depict open airspace, vegetation as habitat destination, or competitive rivals as self-images (Klem 1989). Gelb and Delacretaz (2009) felt that many of the collisions they detected occurred toward the lower parts of buildings where large glass exteriors reflected outdoor vegetation. Klem et al. (2009) and Borden et al. (2010) also found that reflected outdoor vegetation associated positively with collisions. Depictions of the proposed building include palm trees likely to be reflected in the windows.

(4) Black hole or passage effect.—Although this factor was not often mentioned in the bird-window collision literature, it was suggested in Sheppard and Phillips (2015). The black hole or passage effect is the deceptive appearance of a cavity or darkened ledge that certain species of bird typically approach with speed when seeking roosting sites. The deception is achieved when shadows from awnings or the interior light conditions give the appearance of cavities or protected ledges. This factor appears potentially to be nuanced variations on transparency or reflectance or possibly an interaction effect of both of these factors.

(5) Window or façade extent.—Klem et al. (2009), Borden et al. (2010), Hager et al. (2013), and Ocampo-Peñuela et al. (2016) reported increased collision fatalities at buildings with larger reflective façades or higher proportions of façades composed of windows. However, Porter and Huang (2015) found a negative relationship between fatalities found and proportion of façade that was glazed. Some of the proposed windows appear to be quite large and extensive.

(6) Size of window.—According to Kahle et al. (2016), collision rates were higher on large-pane windows compared to small-pane windows.

(7) Type of glass.—Klem et al. (2009) found that collision fatalities associated with the type of glass used on buildings. Otherwise, little attention has been directed towards the types of glass in buildings.

(8) Lighting.—Parkins et al. (2015) found that light emission from buildings correlated positively with percent glass on the façade, suggesting that lighting is linked to the extent of windows. Zink and Eckles (2010) reported fatality reductions, including an 80% reduction at a Chicago high-rise, upon the initiation of the Lights-out Program. However, Zink and Eckles (2010) provided no information on their search effort, such as the number of searches or search interval or search area around each building.

(9) Height of structure.—I found little if any hypothesis-testing related to building height, including whether another suite of factors might relate to collision victims of high-rises. Are migrants more commonly the victims of high-rises or of smaller buildings?

(10) Orientation of façade.—Some studies tested façade orientation, but not convincingly. Confounding factors such as the extent and types of windows would require large sample sizes of collision victims to parse out the variation so that some

portion of it could be attributed to orientation of façade. Whether certain orientations cause disproportionately stronger or more realistic-appearing reflections ought to be testable through measurement, but counting dead birds under façades of different orientations would help.

(11) Structural layout.—Bird-safe building guidelines have illustrated examples of structural layouts associated with high rates of bird-window collisions, but little attention has been directed towards hazardous structural layouts in the scientific literature. An exception was Johnson and Hudson (1976), who found high collision rates at 3 stories of glassed-in walkways atop an open breezeway, located on a break in slope with trees on one side of the structure and open sky on the other, Washington State University.

(12) Context in urban-rural gradient.—Numbers of fatalities found in monitoring have associated negatively with increasing developed area surrounding the building (Hager et al. 2013), and positively with more rural settings (Kummer et al. 2016a). Based on what is known, I cannot at this time predict whether the project's location would contribute more or less to the collision risk already posed by the proposed extent of windows and nearness to trees and wetlands.

(13) Height, structure and extent of vegetation near building.—Correlations have sometimes been found between collision rates and the presence or extent of vegetation near windows (Hager et al. 2008, Borden et al. 2010, Kummer et al. 2016a, Ocampo-Peñuela et al. 2016). However, Porter and Huang (2015) found a negative relationship between fatalities found and vegetation cover near the building. In my experience, what probably matters most is the distance from the building that vegetation occurs. If the vegetation that is used by birds is very close to a glass façade, then birds coming from that glass will be less likely to attain sufficient speed upon arrival at the façade to result in a fatal injury. Too far away and there is probably no relationship. But 30 to 50 m away, birds alighting from vegetation can attain lethal speeds by the time they arrive at the windows.

(14) Presence of birdfeeders.—Dunn (1993) reported a weak correlation ($r = 0.13$, $P < 0.001$) between number of birds killed by home windows and the number of birds counted at feeders. However, Kummer and Bayne (2015) found that experimental installment of birdfeeders at homes increased bird collisions with windows 1.84-fold.

(15) Relative abundance.—Collision rates have often been assumed to increase with local density or relative abundance (Klem 1989), and positive correlations have been measured (Dunn 1993, Hager et al. 2008). However, Hager and Craig (2014) found a negative correlation between fatality rates and relative abundance near buildings.

(16) Season of the year.—Borden et al. (2010) found 90% of collision fatalities during spring and fall migration periods. The significance of this finding is magnified by 7-day carcass persistence rates of 0.45 and 0.35 in spring and fall, rates which were considerably lower than during winter and summer (Hager et al. 2012). In other words,

the concentration of fatalities during migration seasons would increase after applying seasonally-explicit adjustments for carcass persistence. Fatalities caused by collisions into the glass façades of the project's buildings would likely be concentrated in fall and spring migration periods.

(17) Ecology, demography and behavior.—Klem (1989) noted that certain types of birds were not found as common window-caused fatalities, including soaring hawks and waterbirds. Cusa et al. (2015) found that species colliding with buildings surrounded by higher levels of urban greenery were foliage gleaners, and species colliding with buildings surrounded by higher levels of urbanization were ground foragers. Sabo et al. (2016) found no difference in age class, but did find that migrants are more susceptible to collision than resident birds.

(18) Predatory attacks.—Panic flights caused by raptors were mentioned in 16% of window strike reports in Dunn's (1993) study. I have witnessed Cooper's hawks chasing birds into windows, including house finches next door to my home and a northern mocking bird chased directly into my office window. Predatory birds likely to collide with the project's windows would include Peregrine falcon, red-shouldered hawk, Cooper's hawk, and sharp-shinned hawk.

(19) Aggressive social interactions.—I found no hypothesis-testing of the roles of aggressive social interactions in the literature other than the occasional anecdotal account of birds attacking their self-images reflected from windows. However, I have witnessed birds chasing each other and sometimes these chases resulting in one of the birds hitting a window.

Window Collision Solutions

Given the magnitude of bird-window collision impacts, there are obviously great opportunities for reducing and minimizing these impacts going forward. Existing structures can be modified or retrofitted to reduce impacts, and proposed new structures can be more carefully sited and designed to minimize impacts. However, the costs of some of these measures can be high and can vary greatly, but most importantly the efficacies of many of these measures remain uncertain. Both the costs and effectiveness of all of these measures can be better understood through experimentation and careful scientific investigation. Post-construction fatality monitoring should be an essential feature of any new building project. Below is a listing of mitigation options, along with some notes and findings from the literature.

(1) Retrofitting to reduce impacts

(1A) Marking windows
(1B) Managing outdoor landscape vegetation
(1C) Managing indoor landscape vegetation
(1D) Managing nocturnal lighting

(1A) Marking windows.—Whereas Klem (1990) found no deterrent effect from decals on windows, Johnson and Hudson (1976) reported a fatality reduction of about 69% after placing decals on windows. In an experiment of opportunity, Ocampo-Peñuela et al. (2016) found only 2 of 86 fatalities at one of 6 buildings – the only building with windows treated with a bird deterrent film. At the building with fritted glass, bird collisions were 82% lower than at other buildings with untreated windows. Kahle et al. (2016) added external window shades to some windowed façades to reduce fatalities 82% and 95%. Many external and internal glass markers have been tested experimentally, some showing no effect and some showing strong deterrent effects (Klem 1989, 1990, 2009, 2011; Klem and Saenger 2013; Rössler et al. 2015).

Following up on the results of Johnson and Hudson (1976), I decided to mark windows of my home, where I have documented 5 bird collision fatalities between the time I moved in and 6 years later. I marked my windows with decals delivered to me via US Postal Service from a commercial vendor. I have documented no fatalities at my windows during the 7 years hence. Just recently (8 December 2018) I photographed a ruby-crowned kinglet pulling up short of my window (Photo 8), right at one of my installed markers. In my assessment, markers are very effective.

Photo 8. *Ruby-crowned kinglet puts on the brakes in front of a decal I applied to mark windows of my home, 8 December 2018. This window killed birds prior to marking, but I have found no window collision victims since marking the windows. Windows with attractive built-in marking are commercially available.*

(2) Siting and Designing to minimize impacts

(2A) Deciding on location of structure
(2B) Deciding on façade and orientation
(2C) Selecting type and sizes of windows
(2D) Designing to minimize transparency through two parallel façades
(2E) Designing to minimize views of interior plants
(2F) Landscaping to increase distances between windows and trees and shrubs

Guidelines on Building Design

If the project goes forward, it should at a minimum adhere to available guidelines on building design intended to minimize collision hazards to birds. The American Bird

Conservancy (ABC) produced an excellent set of guidelines recommending actions to: (1) Minimize use of glass; (2) Placing glass behind some type of screening (grilles, shutters, exterior shades); (3) Using glass with inherent properties to reduce collisions, such as patterns, window films, decals or tape; and (4) Turning off lights during migration seasons (Sheppard and Phillips 2015). The City of San Francisco (San Francisco Planning Department 2011) also has a set of building design guidelines, based on the excellent guidelines produced by the New York City Audubon Society (Orff et al. 2007). The ABC document and both the New York and San Francisco documents provide excellent alerting of potential bird-collision hazards as well as many visual examples. The San Francisco Planning Department's (2011) building design guidelines are more comprehensive than those of New York City, but they could have gone further. For example, the San Francisco guidelines probably should have also covered scientific monitoring of impacts as well as compensatory mitigation for impacts that could not be avoided, minimized or reduced.

ROAD MORTALITY

According to City of Cupertino (Placeworks 2018), the project would generate 1,636 average daily automobile trips. These trips would extend the project's impacts on wildlife well beyond the project footprint, because cars crush and kill wildlife attempting to cross California's roadways (Shilling et al. 2017). Vehicle collisions have accounted for the deaths of many thousands of reptile, amphibian, mammal, bird, and arthropod fauna, and the impacts have often been found to be significant at the population level (Forman et al. 2003). Increased use of existing roads will increase wildlife fatalities (see Figure 7 in Kobylarz 2001). Members of some special-status species that are likely absent from the project site would be killed by traffic generated by the project, including Federally Threatened California red-legged frog (*Rana draytonii*), California Species of Concern American badger (*Taxidea taxus*), and California specially protected mountain lion (*Puma concolor*). Nothing about these likely impacts is addressed in City of Cupertino (Placeworks 2018).

Across North America traffic impacts have taken devastating tolls on wildlife (Forman et al. 2003). In Canada, 3,562 birds were estimated killed per 100 km of road per year (Bishop and Brogan 2013), and the US estimate of avian mortality on roads is 2,200 to 8,405 deaths per 100 km per year, or 89 million to 340 million total per year (Loss et al. 2014). Local impacts can be more intense than nationally.

In a recent study of traffic-caused wildlife mortality, investigators found 1,275 carcasses of 49 species of mammals, birds, amphibians and reptiles over 15 months of searches along a 2.5 mile stretch of Vasco Road in Contra Costa County, California (Mendelsohn et al. 2009). Using carcass detection trials performed on land immediately adjacent to the traffic mortality study (Brown et al. 2016) to adjust the found fatalities for the proportion of fatalities not found due to scavenger removal and searcher error, the estimated traffic-caused fatalities was 12,187. This fatality estimate translates to a rate of 3,900 wild animals per mile per year killed along 2.5 miles of road in 1.25 years. In terms comparable to the national estimates, the estimates from the Mendelsohn et al.

(2009) study would translate to 243,740 animals killed per 100 km of road per year, or 29 times that of Loss et al.'s (2014) upper bound estimate and 68 times the Canadian estimate. An analysis is needed of whether increased traffic on roads in and around Cupertino would similarly result in intense local impacts on wildlife.

Wildlife roadkill is not randomly distributed, so can be predicted. Causal factors include types of roadway, human population density, and temperature (Chen and Wu 2014), as well as time of day and adjacency and extent of vegetation cover (Chen and Wu 2014, Bartonička et al. 2018), and intersections with streams and riparian vegetation (Bartonička et al. 2018). For example, species of mammalian Carnivora are killed by vehicle traffic within 0.1 miles of stream crossings >40 times other than expected (K. S. Smallwood, 1989-2018 unpublished data). These factors also point the way toward mitigation measures, which should be formulated in an EIR.

ARTIFICIAL LIGHT

City of Cupertino (Placeworks 2018) neglects to address the project's impacts on wildlife that would be caused by the addition of artificial lighting. Artificial lighting causes a variety of substantial impacts on a variety of wildlife species (Rich and Longcore 2006). Added lighting could cause displacement or altered activity patterns of at least some species. An EIR should be prepared to address potential lighting impacts on wildlife, and how those impacts could be mitigated.

WILDLIFE MOVEMENT

City of Cupertino (Placeworks 2018) summarily dismisses potential impacts on wildlife movement because the site is within an urban setting. However, wildlife moving across a region often must traverse urban environments to complete their migrations or dispersal from natal territories. When crossing urban environments, wildlife make use of open spaces and trees as stop-over habitat. Because urban and commercial sprawl has eliminated natural surfaces from most of the landscape, the mature trees on a site such as that of the proposed project is of critical importance as stop-over habitat for migratory wildlife (Runge et al. 2014, Taylor et al. 2011), and as staging habitat (Warnock 2010). Many species of wildlife likely use the proposed project site for movement across the South Bay. The project would further cut wildlife off from stop-over and staging habitat, and would therefore interfere with wildlife movement in the region. An EIR should be prepared to adequately address the project's potential impacts on habitat fragmentation and wildlife movement.

CUMULATIVE IMPACTS

City of Cupertino (Placeworks 2018) lists foreseeable future projects as a form of cumulative effects analysis, but neglects to also list past and ongoing projects. Had City of Cupertino listed all projects, past, present and reasonably foreseeable projects, then the need for a serious cumulative effects analysis would emerge as obvious. Nearly all of the natural spaces have been taken from Cupertino and San Jose, leaving only a

scattering of copses of trees as stop-over habitat for use by birds and bats. The project would also obviously be seen as adding more glass windows as collision hazards to birds traversing a landscape stacked with lethal façades of windows, almost none of which has been mitigated for collision impacts. It would also obviously be seen as adding more traffic extending the project's and the region's impacts far beyond their respective footprints. Just as a bullet's impact is often felt far beyond the end of a rifle's barrel, a car's impact is felt beyond the end of a project's driveway.

When it comes to wildlife, cumulative effects can often be interpreted as effects on the numerical capacity (Smallwood 2015), breeding success, genetic diversity, or other population performance metrics expressed at the regional scale. In the case of migrating birds, the project's cumulative effects could be measured as numerical reductions of breeding birds at far-off breeding sites, as migrating adults and next-year's recruits lose access to stop-over habitat. These effects could be predicted and measured. If birds were to lose all stop-over habitat across the South Bay, then the numerical capacity of migration might decline for multiple species. Unfortunately, little is known about stop-over habitat requirements, such as how often migrants lose their lives for lack of stop-over habitat. Nevertheless, crude assessments are possible and imperative.

An EIR needs to be prepared to appropriately analyze the project's contribution to cumulative impacts. It also needs to present mitigation measures to minimize impacts, or to compensate for cumulative impacts. An EIR should assess the combined impacts of all projects, including this one. An EIR is needed to formulate appropriate mitigation for cumulative window collisions and traffic-caused wildlife mortality.

MITIGATION

City of Cupertino (Placeworks 2018) proposes only one mitigation measure for impacts to special-status species of wildlife.

Mitigation Measure BIO-1-Nesting birds. Whereas preconstruction surveys should be performed, they should not be performed without first performing detection surveys designed for each special-status species likely affected by the project. Detection surveys are needed in support of absence determinations, as preconstruction surveys were not designed for that purpose. Detection surveys are also needed to inform preconstruction surveys, i.e., where best to concentrate preconstruction survey efforts, and they are needed for formulating appropriate mitigation.

Preconstruction surveys should not compose the totality of mitigation for project impacts on wildlife. Preconstruction surveys cannot prevent, minimize, or reduce the effects of habitat loss. Their sole purpose is to detect the readily detectable individuals for temporary buffering from construction or for salvage relocation just prior to destruction by tractor blade. Preconstruction surveys are intended to detect individuals that were either missed during detection surveys or that moved onto the site since the detection surveys and subsequent relocation efforts.

RECOMMENDED MEASURES

Detection Surveys

Detection surveys are needed to inform a project decision, as well as preconstruction take-avoidance surveys and the formulation of appropriate mitigation measures. Protocol-level detection surveys have been developed for most special-status species of wildlife, some of which overlap to various degrees in methodology. Without detection surveys, absence determinations lack foundation.

Wildlife Movement

City of Cupertino (Placeworks 2018) provides no mitigation for adverse impacts on regional movement of wildlife. At a minimum, compensatory mitigation is needed in response to the project's impacts on wildlife movement, including impacts on birds using the site as stop-over or staging habitat during migration. The proposed project site supports mature trees needed by bats and birds as stop-over habitat during long-distance dispersal or migration.

Artificial Lighting

A mitigation objective should be minimization of nighttime light pollution. Compensatory mitigation could also include steps to reduce artificial lighting elsewhere in the South Bay, preferably where such efforts would most effectively reduce impacts on wildlife.

Window Collisions

Transparency and reflectance increase collision risk, but there are materials available to minimize the effects of transparency and reflectance, including the glass itself. Landscaping around buildings can also affect collision risk, but risks can be minimized by carefully planning the landscaping. Interior lighting also increases risk to nocturnal migrants, but the effects of interior lighting is readily mitigated by minimizing use of lights as well as the lighting of any interior landscaping. I recommend consulting available guidelines on minimizing impacts to wildlife caused by windows. For example, the American Bird Conservancy produced an excellent set of guidelines recommending: (1) Minimize use of glass; (2) Placing glass behind some type of screening (grilles, shutters, exterior shades); (3) Using glass with inherent properties to reduce collisions, such as patterns, window films, decals or tape; and (4) Turning off lights during migration seasons (Sheppard and Phillips 2015). The City of San Francisco (San Francisco Planning Department 2011) also has a set of building design guidelines, based on the excellent guidelines produced by the New York City Audubon Society (Orff et al. 2007).

In addition to measures for minimizing wind collision impacts, I recommend fatality monitoring around the building's perimeter. Such monitoring should be scientific,

adhering to standards developed for fatality monitoring in other window collision studies and along electrical circuits and at wind projects.

Fund Wildlife Rehabilitation Facilities

Compensatory mitigation ought also to include funding contributions to wildlife rehabilitation facilities to cover the costs of injured animals that will be delivered to these facilities for care. Most of the wildlife injuries will likely be caused by window collisions, collisions with cars driven to and from the site by hotel guests, and attacks by dogs walked by hotel guests. But the project's impacts can also be offset by funding the treatment of injuries to animals caused by other buildings, electric lines, cars, and cats.

Thank you for your attention,

_____
Shawn Smallwood, Ph.D.

REFERENCES CITED

Bartonička, T., R. Andrášik, M. Dula, J. Sedoník, and M. Bíl. 2018. Identification of local factors causing clustering of animal-vehicle collisions. Journal of Wildlife Management. Journal of Wildlife Management DOI: 10.1002/jwmg.21467

Bishop, C. A. and J. M. Brogan. 2013. Estimates of avian mortality attributed to vehicle collisions in Canada. Avian Conservation and Ecology 8:2. http://dx.doi.org/10.5751/ACE-00604-080202.

Borden, W. C., O. M. Lockhart, A. W. Jones, and M. S. Lyons. 2010. Seasonal, taxonomic, and local habitat components of bird-window collisions on an urban university campus in Cleveland, OH. Ohio Journal of Science 110(3):44-52.

Bracey, A. M., M. A. Etterson, G. J. Niemi, and R. F. Green. 2016. Variation in bird-window collision mortality and scavenging rates within an urban landscape. The Wilson Journal of Ornithology 128:355-367.

Brown, K., K. S. Smallwood, J. Szewczak, and B. Karas. 2016. Final 2012-2015 Report avian and bat monitoring project Vasco Winds, LLC. Prepared for NextEra Energy Resources, Livermore, California.

Calvert, A. M., C. A. Bishop, R. D. Elliot, E. A. Krebs, T. M. Kydd, C. S. Machtans, and G. J. Robertson. 2013. A synthesis of human-related avian mortality in Canada. Avian Conservation and Ecology 8(2): 11. http://dx.doi.org/10.5751/ACE-00581-080211

Chen, X. and S. Wu. 2014. Examining patterns of animal–vehicle collisions in Alabama, USA. Human-Wildlife Interactions 8:235-244.

Cusa M, Jackson DA, Mesure M. 2015. Window collisions by migratory bird species: urban geographical patterns and habitat associations. Urban Ecosystems 18(4):1–20. DOI 10.1007/s11252-015-0459-3.

Dunn, E. H. 1993. Bird mortality from striking residential windows in winter. Journal of Field Ornithology 64:302-309.

Forman, T. T., D. Sperling, J. A. Bisonette, A. P. Clevenger, C. D. Cutshall, V. H. Dale, L. Fahrig, R. France, C. R. Goldman, K. Heanue, J. A. Jones, F. J. Swanson, T. Turrentine, and T. C. Winter. 2003. Road Ecology. Island Press, Covello, California.

Gelb, Y. and N. Delacretaz. 2009. Windows and vegetation: Primary factors in Manhattan bird collisions. Northeastern Naturalist 16:455-470.

Hager, S. B, and M. E. Craig. 2014. Bird-window collisions in the summer breeding season. PeerJ 2:e460 DOI 10.7717/peerj.460.

Hager, S. B., H. Trudell, K. J. McKay, S. M. Crandall, and L. Mayer. 2008. Bird density and mortality at windows. Wilson Journal of Ornithology 120:550-564.

Hager, S. B., B. J. Cosentino, and K. J. McKay. 2012. Scavenging effects persistence of avian carcasses resulting from window collisions in an urban landscape. Journal of Field Ornithology 83:203-211.

Hager S. B., B. J. Cosentino, K J. McKay, C. Monson, W. Zuurdeeg, and B. Blevins. 2013. Window area and development drive spatial variation in bird-window collisions in an urban landscape. PLoS ONE 8(1): e53371. doi:10.1371/journal.pone.0053371

Hall, L. S., P. R. Krausman, and M. L. Morrison. 1997. "The Habitat Concept and a Plea for Standard Terminology." Wildlife Society Bulletin 25:173-82.

Johnson, R. E., and G. E. Hudson. 1976. Bird mortality at a glassed-in walkway in Washington State. Western Birds 7:99-107.

Kahle, L. Q., M. E. Flannery, and J. P. Dumbacher. 2016. Bird-window collisions at a west-coast urban park museum: analyses of bird biology and window attributes from Golden Gate Park, San Francisco. PLoS ONE 11(1):e144600 DOI 10.1371/journal.pone.0144600.

Klem, D., Jr. 1989. Bird-window collisions. Wilson Bulletin 101:606-620.

Klem, D., Jr. 1990. Collisions between birds and windows: mortality and prevention. Journal of Field Ornithology 61:120-128.

Klem, D., Jr. 2009. Preventing bird-window collisions. The Wilson Journal of Ornithology 121:314-321.

Klem, D., Jr. 2010. Avian mortality at windows: the second largest human source of bird mortality on earth. Pages 244-251 in Proc. Fourth Int. Partners in Flight Conference: Tundra to Tropics.

Klem, D., Jr. 2011. Evaluating the effectiveness of Acopian Birdsavers to deter or prevent bird-glass collisions. Unpublished report.

Klem, D., Jr. and P. G. Saenger. 2013. Evaluating the effectiveness of select visual signals to prevent bird-window collisions. The Wilson Journal of Ornithology 125:406–411.

Klem, D. Jr., C. J. Farmer, N. Delacretaz, Y. Gelb and P. G. Saenger. 2009. Architectural and landscape risk factors associated with bird-glass collisions in an urban environment. Wilson Journal of Ornithology 121:126-134.

Kobylarz, B. 2001. The effect of road type and traffic intensity on amphibian road mortality. Journal of Service Learning in Conservation Biology 1:10-15.

Kummer J. A., and E. M. Bayne. 2015. Bird feeders and their effects on bird-window collisions at residential houses. Avian Conservation and Ecology 10(2):6 DOI 10.5751/ACE-00787-100206.

Kummer, J. A., E. M. Bayne, and C. S. Machtans. 2016. Use of citizen science to identify factors affecting bird-window collision risk at houses. The Condor: Ornithological Applications 118:624-639. DOI: 10.1650/CONDOR-16-26.1

Loss, S. R., T. Will, S. S. Loss, and P. P. Marra. 2014. Bird–building collisions in the United States: Estimates of annual mortality and species vulnerability. The Condor: Ornithological Applications 116:8-23. DOI: 10.1650/CONDOR-13-090.1

Loss, S. R., T. Will, and P. P. Marra. 2014. Estimation of bird-vehicle collision mortality on U.S. Roads. Journal of Wildlife Management 78:763-771.

Machtans, C. S., C. H. R. Wedeles, and E. M. Bayne. 2013. A first estimate for Canada of the number of birds killed by colliding with building windows. Avian Conservation and Ecology 8(2):6. http://dx.doi.org/10.5751/ACE-00568-080206

Mendelsohn, M., W. Dexter, E. Olson, and S. Weber. 2009. Vasco Road wildlife movement study report. Report to Contra Costa County Public Works Department, Martinez, California.

Morrison, M. L., B. G. Marcot, and R. W. Mannan. 1998. Wildlife-Habitat Relationships: Concepts and Applications. 2nd edition. University of Wisconsin Press Madison, WI.

Ocampo-Peñuela, N., R. S. Winton, C. J. Wu, E. Zambello, T. W. Wittig and N. L. Cagle . 2016. Patterns of bird-window collisions inform mitigation on a university campus. PeerJ4:e1652;DOI10.7717/peerj.1652

Orff, K., H. Brown, S. Caputo, E. J. McAdams, M. Fowle, G. Phillips, C. DeWitt, and Y. Gelb. 2007. Bird-safe buildings guidelines. New York City Audubon, New York.

Overing, R. 1938. High mortality at the Washington Monument. The Auk 55:679.

Parkins, K. L., S. B. Elbin, and E. Barnes. 2015. Light, glass, and bird–building collisions in an urban park. Northeastern Naturalist 22:84-94.

Placeworks. 2018. The Cupertino Village Hotel Project for the City of Cupertino. Prepared for City of Cupertino, California.

Porter, A., and A. Huang. 2015. Bird collisions with glass: UBC pilot project to assess bird collision rates in Western North America. UBC Social Ecological Economic Development Studies (SEEDS) Student Report. Report to Environment Canada, UBC SEEDS and UBC BRITE.

Rich, C., and T. Longcore. 2006. Ecological consequences of artificial night lighting. Island Press, Covelo, California.

Rössler, M., E. Nemeth, and A. Bruckner. 2015. Glass pane markings to prevent bird-window collisions: less can be more. Biologia 70: 535—541. DOI: 10.1515/biolog-2015-0057

Runge, C. A., T. G. Martin, H. P. Possingham, S. G. Willis, and R. A. Fuller. 2014. Conserving mobile species. Frontiers in Ecology and Environment 12(7): 395–402, doi:10.1890/130237.

Sabo, A. M., N. D. G. Hagemeyer, A. S. Lahey, and E. L. Walters. 2016. Local avian density influences risk of mortality from window strikes. PeerJ 4:e2170; DOI 10.7717/peerj.2170

San Francisco Planning Department. 2011. Standards for bird-safe buildings. San Francisco Planning Department, City and County of San Francisco, California.

Santos, S. M., F. Carvalho, and A. Mira. 2011. How long do the dead survive on the road? Carcass persistence probability and implications for road-kill monitoring surveys. PLoS ONE 6(9): e25383. doi:10.1371/journal.pone.0025383

Shilling, F., D. Waetjen, and K. Harrold. 2017. Impact of wildlife-vehicle conflict on California drivers and animals. https://roadecology.ucdavis.edu/files/content/projects/CROS-CHIPs_Hotspots_2017_Report_fin.pdf

Sheppard, C., and G. Phillips. 2015. Bird-friendly building design, 2nd Ed., American Bird Conservancy, The Plains, Virginia.

Shuford, W. D., and T. Gardali, [eds.]. 2008. California bird species of special concern: a ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California.

Smallwood, K. S. 2015. Habitat fragmentation and corridors. Pages 84-101 in M. L. Morrison and H. A. Mathewson, Eds., Wildlife habitat conservation: concepts, challenges, and solutions. John Hopkins University Press, Baltimore, Maryland, USA.

Smallwood, K.S., J. Beyea and M. Morrison. 1999. Using the best scientific data for endangered species conservation. Environmental Management 24:421-435.

Smallwood, K.S., A. Gonzales, T. Smith, E. West, C. Hawkins, E. Stitt, C. Keckler, C. Bailey, and K. Brown. 2001. Suggested standards for science applied to conservation issues. Transactions of the Western Section of the Wildlife Society 36:40-49.

Somerlot, K. E. 2003. Survey of songbird mortality due to window collisions on the Murray State University campus. Journal of Service Learning in Conservation Biology 1:1–19.

Taylor, P. D., S. A. Mackenzie, B. G. Thurber, A. M. Calvert, A. M. Mills, L. P. McGuire, and C. G. Guglielmo. 2011. Landscape movements of migratory birds and bats reveal an expanded scale of stopover. PlosOne 6(11): e27054. doi:10.1371/journal.pone.0027054.

Warnock, N. 2010. Stopping vs. staging: the difference between a hop and a jump. Journal of Avian Biology 41:621-626.

Zink, R. M., and J. Eckles. 2010. Twin cities bird-building collisions: a status update on “Project Birdsafe.” The Loon 82:34-37.

Kenneth Shawn Smallwood
Curriculum Vitae

3108 Finch Street
Davis, CA 95616
Phone (530) 756-4598
Cell (530) 601-6857
puma@dcn.org

Born May 3, 1963 in Sacramento, California.
Married, father of two.

Ecologist

Expertise

- Finding solutions to controversial problems related to wildlife interactions with human industry, infrastructure, and activities;
- Wildlife monitoring and field study using GPS, thermal imaging, behavior surveys;
- Using systems analysis and experimental design principles to identify meaningful ecological patterns that inform management decisions.

Education

Ph.D. Ecology, University of California, Davis. September 1990.
M.S. Ecology, University of California, Davis. June 1987.
B.S. Anthropology, University of California, Davis. June 1985.
Corcoran High School, Corcoran, California. June 1981.

Experience

- 477 professional publications, including:
- 81 peer reviewed publications
- 24 in non-reviewed proceedings
- 370 reports, declarations, posters and book reviews
- 8 in mass media outlets
- 87 public presentations of research results at meetings
- Reviewed many professional papers and reports
- Testified in 4 court cases.

Editing for scientific journals: Guest Editor, *Wildlife Society Bulletin*, 2012-2013, of invited papers representing international views on the impacts of wind energy on wildlife and how to mitigate the impacts. Associate Editor, *Journal of Wildlife Management*, March 2004 to 30 June 2007. Editorial Board Member, *Environmental Management*, 10/1999 to 8/2004. Associate Editor, *Biological Conservation*, 9/1994 to 9/1995.

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The

five-member committee investigated causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC reviewed the science underlying the Alameda County Avian Protection Program, and advised the County on how to reduce wildlife fatalities.

Consulting Ecologist, 2004-2007, California Energy Commission (CEC). Provided consulting services as needed to the CEC on renewable energy impacts, monitoring and research, and produced several reports. Also collaborated with Lawrence-Livermore National Lab on research to understand and reduce wind turbine impacts on wildlife.

Consulting Ecologist, 1999-2013, U.S. Navy. Performed endangered species surveys, hazardous waste site monitoring, and habitat restoration for the endangered San Joaquin kangaroo rat, California tiger salamander, California red-legged frog, California clapper rail, western burrowing owl, salt marsh harvest mouse, and other species at Naval Air Station Lemoore; Naval Weapons Station, Seal Beach, Detachment Concord; Naval Security Group Activity, Skaggs Island; National Radio Transmitter Facility, Dixon; and, Naval Outlying Landing Field Imperial Beach.

Fulbright Research Fellow, Indonesia, 1988. Tested use of new sampling methods for numerical monitoring of Sumatran tiger and six other species of endemic felids, and evaluated methods used by other researchers.

Peer Reviewed Publications

Smallwood, K. S. 2017. Long search intervals under-estimate bird and bat fatalities caused by wind turbines. Wildlife Society Bulletin 41:224-230.

Smallwood, K. S. 2017. The challenges of addressing wildlife impacts when repowering wind energy projects. Pages 175-187 in Köppel, J., Editor, Wind Energy and Wildlife Impacts: Proceedings from the CWW2015 Conference. Springer. Cham, Switzerland.

May, R., Gill, A. B., Köppel, J. Langston, R. H.W., Reichenbach, M., Scheidat, M., Smallwood, S., Voigt, C. C., Hüppop, O., and Portman, M. 2017. Future research directions to reconcile wind turbine–wildlife interactions. Pages 255-276 in Köppel, J., Editor, Wind Energy and Wildlife Impacts: Proceedings from the CWW2015 Conference. Springer. Cham, Switzerland.

Smallwood, K. S. 2017. Monitoring birds. M. Perrow, Ed., Wildlife and Wind Farms - Conflicts and Solutions, Volume 2. Pelagic Publishing, Exeter, United Kingdom. www.bit.ly/2v3cR9Q

Smallwood, K. S., L. Neher, and D. A. Bell. 2017. Siting to Minimize Raptor Collisions: an example from the Repowering Altamont Pass Wind Resource Area. M. Perrow, Ed., Wildlife and Wind Farms - Conflicts and Solutions, Volume 2. Pelagic Publishing, Exeter, United Kingdom. www.bit.ly/2v3cR9Q

Johnson, D. H., S. R. Loss, K. S. Smallwood, W. P. Erickson. 2016. Avian fatalities at wind energy facilities in North America: A comparison of recent approaches. Human–Wildlife Interactions 10(1):7-18.

Sadar, M. J., D. S.-M. Guzman, A. Mete, J. Foley, N. Stephenson, K. H. Rogers, C. Grosset, K. S. Smallwood, J. Shipman, A. Wells, S. D. White, D. A. Bell, and M. G. Hawkins. 2015. Mange Caused by a novel Micnemidocoptes mite in a Golden Eagle (*Aquila chrysaetos*). Journal of Avian Medicine and Surgery 29(3):231-237.

Smallwood, K. S. 2015. Habitat fragmentation and corridors. Pages 84-101 in M. L. Morrison and H. A. Mathewson, Eds., Wildlife habitat conservation: concepts, challenges, and solutions. John Hopkins University Press, Baltimore, Maryland, USA.

Mete, A., N. Stephenson, K. Rogers, M. G. Hawkins, M. Sadar, D. Guzman, D. A. Bell, J. Shipman, A. Wells, K. S. Smallwood, and J. Foley. 2014. Emergence of Knemidocoptic mange in wild Golden Eagles (Aquila chrysaetos) in California. Emerging Infectious Diseases 20(10):1716-1718.

Smallwood, K. S. 2013. Introduction: Wind-energy development and wildlife conservation. Wildlife Society Bulletin 37: 3-4.

Smallwood, K. S. 2013. Comparing bird and bat fatality-rate estimates among North American wind-energy projects. Wildlife Society Bulletin 37:19-33. + Online Supplemental Material.

Smallwood, K. S., L. Neher, J. Mount, and R. C. E. Culver. 2013. Nesting Burrowing Owl Abundance in the Altamont Pass Wind Resource Area, California. Wildlife Society Bulletin: 37:787-795.

Smallwood, K. S., D. A. Bell, B. Karas, and S. A. Snyder. 2013. Response to Huso and Erickson Comments on Novel Scavenger Removal Trials. Journal of Wildlife Management 77: 216-225.

Bell, D. A., and K. S. Smallwood. 2010. Birds of prey remain at risk. Science 330:913.

Smallwood, K. S., D. A. Bell, S. A. Snyder, and J. E. DiDonato. 2010. Novel scavenger removal trials increase estimates of wind turbine-caused avian fatality rates. Journal of Wildlife Management 74: 1089-1097 + Online Supplemental Material.

Smallwood, K. S., L. Neher, and D. A. Bell. 2009. Map-based repowering and reorganization of a wind resource area to minimize burrowing owl and other bird fatalities. Energies 2009(2):915-943. http://www.mdpi.com/1996-1073/2/4/915

Smallwood, K. S. and B. Nakamoto. 2009. Impacts of West Nile Virus Epizootic on Yellow-Billed Magpie, American Crow, and other Birds in the Sacramento Valley, California. The Condor 111:247-254.

Smallwood, K. S., L. Rugge, and M. L. Morrison. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments: The Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 73:1082-1098.

Smallwood, K. S. and B. Karas. 2009. Avian and Bat Fatality Rates at Old-Generation and

Repowered Wind Turbines in California. Journal of Wildlife Management 73:1062-1071.

Smallwood, K. S. 2008. Wind power company compliance with mitigation plans in the Altamont Pass Wind Resource Area. Environmental & Energy Law Policy Journal 2(2):229-285.

Smallwood, K. S., C. G. Thelander. 2008. Bird Mortality in the Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 72:215-223.

Smallwood, K. S. 2007. Estimating wind turbine-caused bird mortality. Journal of Wildlife Management 71:2781-2791.

Smallwood, K. S., C. G. Thelander, M. L. Morrison, and L. M. Rugge. 2007. Burrowing owl mortality in the Altamont Pass Wind Resource Area. Journal of Wildlife Management 71:1513-1524.

Cain, J. W. III, K. S. Smallwood, M. L. Morrison, and H. L. Loffland. 2005. Influence of mammal activity on nesting success of Passerines. J. Wildlife Management 70:522-531.

Smallwood, K.S. 2002. Habitat models based on numerical comparisons. Pages 83-95 *in* Predicting species occurrences: Issues of scale and accuracy, J. M. Scott, P. J. Heglund, M. Morrison, M. Raphael, J. Haufler, and B. Wall, editors. Island Press, Covello, California.

Morrison, M. L., K. S. Smallwood, and L. S. Hall. 2002. Creating habitat through plant relocation: Lessons from Valley elderberry longhorn beetle mitigation. Ecological Restoration 21: 95-100.

Zhang, M., K. S. Smallwood, and E. Anderson. 2002. Relating indicators of ecological health and integrity to assess risks to sustainable agriculture and native biota. Pages 757-768 *in* D.J. Rapport, W.L. Lasley, D.E. Rolston, N.O. Nielsen, C.O. Qualset, and A.B. Damania (eds.), Managing for Healthy Ecosystems, Lewis Publishers, Boca Raton, Florida USA.

Wilcox, B. A., K. S. Smallwood, and J. A. Kahn. 2002. Toward a forest Capital Index. Pages 285-298 *in* D.J. Rapport, W.L. Lasley, D.E. Rolston, N.O. Nielsen, C.O. Qualset, and A.B. Damania (eds.), Managing for Healthy Ecosystems, Lewis Publishers, Boca Raton, Florida USA.

Smallwood, K.S. 2001. The allometry of density within the space used by populations of Mammalian Carnivores. Canadian Journal of Zoology 79:1634-1640.

Smallwood, K.S., and T.R. Smith. 2001. Study design and interpretation of Sorex density estimates. Annales Zoologi Fennici 38:141-161.

Smallwood, K.S., A. Gonzales, T. Smith, E. West, C. Hawkins, E. Stitt, C. Keckler, C. Bailey, and K. Brown. 2001. Suggested standards for science applied to conservation issues. Transactions of the Western Section of the Wildlife Society 36:40-49.

Geng, S., Yixing Zhou, Minghua Zhang, and K. Shawn Smallwood. 2001. A Sustainable Agro-ecological Solution to Water Shortage in North China Plain (Huabei Plain). Environmental Planning and Management 44:345-355.

Smallwood, K. Shawn, Lourdes Rugge, Stacia Hoover, Michael L. Morrison, Carl Thelander. 2001. Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. Pages 23-37 in S. S. Schwartz, ed., Proceedings of the National Avian-Wind Power Planning Meeting IV. RESOLVE, Inc., Washington, D.C.

Smallwood, K.S., S. Geng, and M. Zhang. 2001. Comparing pocket gopher (*Thomomys bottae*) density in alfalfa stands to assess management and conservation goals in northern California. Agriculture, Ecosystems & Environment 87: 93-109.

Smallwood, K. S. 2001. Linking habitat restoration to meaningful units of animal demography. Restoration Ecology 9:253-261.

Smallwood, K. S. 2000. A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Environmental Management 26, Supplement 1:23-35.

Smallwood, K. S., J. Beyea and M. Morrison. 1999. Using the best scientific data for endangered species conservation. Environmental Management 24:421-435.

Smallwood, K. S. 1999. Scale domains of abundance among species of Mammalian Carnivora. Environmental Conservation 26:102-111.

Smallwood, K.S. 1999. Suggested study attributes for making useful population density estimates. Transactions of the Western Section of the Wildlife Society 35: 76-82.

Smallwood, K. S. and M. L. Morrison. 1999. Estimating burrow volume and excavation rate of pocket gophers (Geomyidae). Southwestern Naturalist 44:173-183.

Smallwood, K. S. and M. L. Morrison. 1999. Spatial scaling of pocket gopher (*Geomyidae*) density. Southwestern Naturalist 44:73-82.

Smallwood, K. S. 1999. Abating pocket gophers (*Thomomys* spp.) to regenerate forests in clearcuts. Environmental Conservation 26:59-65.

Smallwood, K. S. 1998. Patterns of black bear abundance. Transactions of the Western Section of the Wildlife Society 34:32-38.

Smallwood, K. S. 1998. On the evidence needed for listing northern goshawks (*Accipter gentilis*) under the Endangered Species Act: a reply to Kennedy. J. Raptor Research 32:323-329.

Smallwood, K. S., B. Wilcox, R. Leidy, and K. Yarris. 1998. Indicators assessment for Habitat Conservation Plan of Yolo County, California, USA. Environmental Management 22: 947-958.

Smallwood, K. S., M. L. Morrison, and J. Beyea. 1998. Animal burrowing attributes affecting hazardous waste management. Environmental Management 22: 831-847.

Smallwood, K. S, and C. M. Schonewald. 1998. Study design and interpretation for mammalian

carnivore density estimates. Oecologia 113:474-491.

Zhang, M., S. Geng, and K. S. Smallwood. 1998. Nitrate contamination in groundwater of Tulare County, California. Ambio 27(3):170-174.

Smallwood, K. S. and M. L. Morrison. 1997. Animal burrowing in the waste management zone of Hanford Nuclear Reservation. Proceedings of the Western Section of the Wildlife Society Meeting 33:88-97.

Morrison, M. L., K. S. Smallwood, and J. Beyea. 1997. Monitoring the dispersal of contaminants by wildlife at nuclear weapons production and waste storage facilities. The Environmentalist 17:289-295.

Smallwood, K. S. 1997. Interpreting puma (*Puma concolor*) density estimates for theory and management. Environmental Conservation 24(3):283-289.

Smallwood, K. S. 1997. Managing vertebrates in cover crops: a first study. American Journal of Alternative Agriculture 11:155-160.

Smallwood, K. S. and S. Geng. 1997. Multi-scale influences of gophers on alfalfa yield and quality. Field Crops Research 49:159-168.

Smallwood, K. S. and C. Schonewald. 1996. Scaling population density and spatial pattern for terrestrial, mammalian carnivores. Oecologia 105:329-335.

Smallwood, K. S., G. Jones, and C. Schonewald. 1996. Spatial scaling of allometry for terrestrial, mammalian carnivores. Oecologia 107:588-594.

Van Vuren, D. and K. S. Smallwood. 1996. Ecological management of vertebrate pests in agricultural systems. Biological Agriculture and Horticulture 13:41-64.

Smallwood, K. S., B. J. Nakamoto, and S. Geng. 1996. Association analysis of raptors on an agricultural landscape. Pages 177-190 in D.M. Bird, D.E. Varland, and J.J. Negro, eds., Raptors in human landscapes. Academic Press, London.

Erichsen, A. L., K. S. Smallwood, A. M. Commandatore, D. M. Fry, and B. Wilson. 1996. White-tailed Kite movement and nesting patterns in an agricultural landscape. Pages 166-176 in D. M. Bird, D. E. Varland, and J. J. Negro, eds., Raptors in human landscapes. Academic Press, London.

Smallwood, K. S. 1995. Scaling Swainson's hawk population density for assessing habitat-use across an agricultural landscape. J. Raptor Research 29:172-178.

Smallwood, K. S. and W. A. Erickson. 1995. Estimating gopher populations and their abatement in forest plantations. Forest Science 41:284-296.

Smallwood, K. S. and E. L. Fitzhugh. 1995. A track count for estimating mountain lion *Felis*

concolor californica population trend. Biological Conservation 71:251-259

Smallwood, K. S. 1994. Site invasibility by exotic birds and mammals. Biological Conservation 69:251-259.

Smallwood, K. S. 1994. Trends in California mountain lion populations. Southwestern Naturalist 39:67-72.

Smallwood, K. S. 1993. Understanding ecological pattern and process by association and order. Acta Oecologica 14(3):443-462.

Smallwood, K. S. and E. L. Fitzhugh. 1993. A rigorous technique for identifying individual mountain lions *Felis concolor* by their tracks. Biological Conservation 65:51-59.

Smallwood, K. S. 1993. Mountain lion vocalizations and hunting behavior. The Southwestern Naturalist 38:65-67.

Smallwood, K. S. and T. P. Salmon. 1992. A rating system for potential exotic vertebrate pests. Biological Conservation 62:149-159.

Smallwood, K. S. 1990. Turbulence and the ecology of invading species. Ph.D. Thesis, University of California, Davis.

EXHIBIT B

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

2656 29th Street, Suite 201
Santa Monica, CA 90405

Matt Hagemann, P.G, C.Hg.
(949) 887-9013
mhagemann@swape.com

March 1, 2019

Michael Lozeau
Lozeau Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Comments on The Cupertino Village Hotel Project

Dear Mr. Lozeau,

We have reviewed the November 2018 Initial Study and Mitigated Negative Declaration (IS/MND) for the Cupertino Village Hotel Project ("Project") located in the City of Cupertino ("City"). The Project Applicant proposes to demolish two commercial buildings in order to construct a five-story, 185-room boutique hotel and amenities including a restaurant, event meeting rooms, and fitness facilities across a 1.72-acre site.

Our review concludes that the DEIR fails to adequately evaluate the Project's Hazards and Hazardous Waste, Air Quality, and Greenhouse Gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. A draft environmental impact report (DEIR) should be prepared to adequately assess and mitigate the potential air quality and health risk impacts the Project may have on the surrounding environment.

Hazards and Hazardous Waste

A 2107 Phase I Environmental Site Assessment was prepared for the Project site and found that the site was cultivated as an orchard from the 1930s until the late 1960s.[1]

The Phase I concludes:

> As such, residual pesticide compounds (primarily DDT-related pesticides and metals) could potentially be present in shallow soil at the Site, which could potentially impact redevelopment of the Site involving earthwork. (p. 1)

[1] Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road Cupertino, California, Northgate Environmental Management, Inc., November 6, 2017

The Phase I recommended:

> Northgate recommends that Cupertino Village, LP evaluate shallow soil at the Site for the potential presence of pesticides and metals prior to any earthwork being conducted. If pesticides are present, Northgate recommends that Cupertino Village, LP develop an appropriate Site Management Plan that outlines procedures for appropriate handling or off-Site disposal of pesticide-impacted soil, and a Health and Safety Plan designed to minimize potential exposure of workers and the public to pesticides during earthwork and construction at the Site. (p. 1)

These recommendations were not incorporated in the IS/MND in any way. No mitigation, to provide for the testing of soils for pesticide residues, as recommended in the Phase I, was included. No mitigation, as recommended in Phase I, for the development of a site management plan and a health and safety plan to protect worker health and the public if pesticides are detected, was included.

A DEIR should be prepared to incorporate the recommendation in the Phase I ESA for the evaluation of pesticide residuals in soil. Mitigation in the DEIR should also include a measure for the preparation of a site management plan and a health and safety plan to protect workers and the public.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The IS/MND for the Project relies on emissions calculated from the California Emissions Estimator Model Version CalEEMod.2016.3.2 ("CalEEMod").[2] CalEEMod provides recommended default values based on site specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but CEQA requires that such changes be justified by substantial evidence.[3] Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters were utilized in calculating the Project's air pollutant and GHG emissions, and make known which default values were changed as well as provide a justification for the values selected.[4]

When reviewing the Project's CalEEMod output files we found that several of the values inputted into the model are not consistent with information disclosed in the IS/MND. As a result, emissions associated with the Project are greatly underestimated. A DEIR should be prepared that adequately assesses the

---

[2] CalEEMod website, *available at*: http://www.caleemod.com/

[3] CalEEMod User Guide, p. 2, 9, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4

[4] CalEEMod User Guide, p. 7, 13, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4 (A key feature of the CalEEMod program is the "remarks" feature, where the user explains why a default setting was replaced by a "user defined" value. These remarks are included in the report.)

potential impacts that operation of the Project may have on regional and local air quality and global climate change.

Failure to Include All Land Uses to Model Existing Emissions

Review of the IS/MND's CalEEMod modeling for the existing site demonstrates that the Project Applicant incorrectly modeled the existing land uses. As a result, the Project site's existing emissions are completely incorrect.

According to the IS/MND, "the site is currently developed with two commercial buildings: an occupied 3,385-square-foot building that is currently occupied by the Duke of Edinburgh Pub and Restaurant, and a vacant 10,044-square-foot commercial building" (p. 3-4). However, review of the CalEEMod modeling for the existing site demonstrates that the Project Applicant modeled the existing land uses as a 13,430 square foot "Quality Restaurant" (see excerpt below) (Appendix A, pp. 154).

Cupertino Village Hotel Existing Conditions 2021
Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Quality Restaurant	13.43	1000sqft	0.31	13,430.00	0

As you can see in the excerpt above, the Project Applicant models the entire existing site as a Quality Restaurant. According to the CalEEMod User's Guide, the correct land use type and size is necessary in order to correctly calculate impacts from architectural coatings and energy use.[5] As a result, the operational emissions associated with the existing Project site are incorrect and should not be relied upon to estimate emissions.

Overestimated Number of Vehicle Trips Modeled for Existing Emissions

Review of the Transportation Impact Analysis (TIA) demonstrates that existing Project site generates approximately 220 trips per day and the proposed Project would generate approximately 1,856 trips per day (Table 7, Appendix D, p. 25). Therefore, the proposed Project would generate a net increase of 1,636 vehicle trips per day (see excerpt below) (Table 7, Appendix D, p. 25).

[5] *Ibid.*

Table 7
Project Trip Generation Estimates

Land Use	Size	Daily Rate	Daily Trips	AM Peak Hour Rate	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour Rate	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Proposed Uses											
Boutique Hotel [1]	185 rooms	12.23	2,263	0.62	67	48	115	0.73	66	69	135
Hotel and Retail Internal Mixed-Use Reduction (10%) [2]			(226)		(6)	(5)	(11)		(7)	(7)	(14)
TDM Reduction for Financial Incentives (5%) [2]			(113)		(3)	(2)	(5)		(3)	(3)	(6)
TDM Reduction for Dedicated Shuttle Program (3%) [2]			(68)		(2)	(1)	(3)		(2)	(2)	(4)
Subtotal			**1,856**		**56**	**40**	**96**		**54**	**57**	**111**
Existing Uses											
Duke of Edinburgh Restaurant [3]	3.39 ksf		(220)		-	-	-		(18)	(4)	(22)
Net Project Trips			**1,636**		**56**	**40**	**96**		**36**	**53**	**89**

Notes:
KSF = 1,000 square feet
[1] Trip generation based on average trip rates for Hotel (Land Use 310, Occ. Rooms) published in ITE's *Trip Generation Manual, 10th Edition, 2017.*
[2] Trip reduction based on Standard Auto Trip Reduction Rates published in VTA's *Transportation Impact Analysis Guidelines, 2014.*
[3] Trip credits based on PM peak hour count conducted on March 27, 2018. Daily trip credit calculated by multiplying PM peak hour trips by a factor of 10.

As you can see in the table above, the existing site generates 220 vehicle trips per day and the net increase in emissions will be 1,636 vehicle trips per day. However, review of the CalEEMod output files for the existing emissions demonstrates that the Project Applicant models the existing site's emissions assuming 1,636 daily trips instead of 220 daily trips (see excerpt below) (Appendix A, pp. 158).

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate: Weekday	Saturday	Sunday	Unmitigated Annual VMT	Mitigated Annual VMT
Quality Restaurant	1,636.18	1,636.18	1636.18	1,940,779	1,940,779
Total	1,636.18	1,636.18	1,636.18	1,940,779	1,940,779

As you can see in the excerpt above, the IS/MND models existing emissions assuming 1,636 daily vehicle trips. Therefore, the existing, operational emissions are modeled assuming the site generates approximately 1,416 extra vehicle trips per day or 516,840 extra trips per year. As a result, the existing emissions are significantly overestimated and should not be used to determine Project significance.

Underestimated Demolition Hauling Trip Length

Review of the CalEEMod output files for the proposed Project demonstrates that the Project underestimated the hauling truck trip length during the demolition phase of construction. As a result, the Project's construction emissions are underestimated.

According to the IS/MND, "[d]emolition debris would be off-hauled for disposal at the Zanker Materials Recovery and Landfill in San Jose, approximately 19 miles from the project site" (p. 3-31). However, review of the CalEEMod output files demonstrates that the Project Applicant modeled construction emissions assuming that demolition hauling trucks would only travel 10 miles (see excerpt below) (Appendix A, pp. 74).

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demo Haul	0	0.00	0.00	187.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Haul	0	0.00	0.00	37.00	10.80	7.30	30.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Haul	0	0.00	0.00	129.00	10.80	7.30	30.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	138.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

As you can see in the excerpt above, the IS/MND models emissions assuming demolition hauling trips would only travel 10 miles. As a result, construction emissions are completely underestimated and should not be relied upon to determine Project significance.

Unsubstantiated Reduction in Site Preparation and Grading Hauling Trips

Review of the CalEEMod output files demonstrates that the Project Applicant modeled emissions assuming an unsubstantiated number of hauling trips during site preparation and grading. As a result, construction emissions are significantly underestimated.

According to the Air Quality and Greenhouse Gas Background and Modeling Data in Appendix A, the grading phase of construction will include exporting 43,800 cubic yards (CY) of cut soil and importing 400 CY of soil (Appendix A, pp. 46). Additionally, the site preparation phase of construction will include exporting 2,200 CY of soil (Appendix A, pp. 46). Furthermore, according to Appendix A, each haul truck will have a carrying capacity of 12 cubic yards (Appendix A, pp. 46). The Project Applicant estimates that the Project would have 129 total hauling trip ends during grading and 37 total end trips during site preparation (see excerpt below) (Appendix A, pp. 46).

Soil Haul

Phase	Total Import Volume (CY)*	Total Export Volume (CY)*	Haul Truck Capacity (CY)*	Haul Distance (miles)*	Total Trip Ends*	Total Days*	Trip Ends/Day
Site Prepration	0	2,200	12	30	37	5	8
Rough Grading	0	43,000	12	30	120	30	4
Fine Grading	400	800	12	30	9	8	2
	400	43,800			129	31	

**Provided by the Applicant.*

As a result, the Project Applicant models emissions assuming that that the Project would have 129 total grading hauling trips and 37 total site preparation hauling trips (see excerpt below) (Appendix A, pp. 74).

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demo Haul	0	0.00	0.00	187.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Haul	0	0.00	0.00	37.00	10.80	7.30	30.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Haul	0	0.00	0.00	129.00	10.80	7.30	30.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	138.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

However, these hauling trip numbers are completely incorrect and underestimate the actual number of hauling trips needed to import and export soil during the grading and site preparation phases of construction. Based on the estimated amount of import (400 CY) and export (43,800 CY) during grading as well as the hauling truck carrying capacity (12 CY), the Project would actually generate approximately 7,366 total hauling trips (Calculate: ((43,800 CY + 400 CY)/12) x 2 = 7,366). Furthermore, based on the 2,200 cubic yards of soil export during site preparation and the hauling truck carrying capacity, the Project would generate approximately 367 total hauling trucks trips during site preparation (Calculate: (2,200 CY/12) x 2 = 366.67). Therefore, the Project Applicant significantly underestimates the number of hauling trips required during grading and site preparation.

Incorrect Number of Worker Trips

The Project Applicant provides the number of worker trips expected during each phase of construction in the construction equipment list provided in Appendix A (see excerpt below) (Appendix A, pp. 49).

CalEEMod Construction Off-Road Equipment Inputs*

Phase Equipment Type		Unit Amount	Hours /Day	HP	LF	Vendor Trips
Demolition						
Concrete/Industrial Saws	Concrete/Industrial Saws	1	8	81	0.73	
Excavators	Excavators	1	8	158	0.4	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	2	8	91	0.37	
Water Truck**						4
Worker Trips		7				
Site Preparation						
Blade	Grader	1	8	187	0.73	
Scraper	Scrapers	1	8	367	0.48	
Tractor/Loader/Backhoe	Tractors/Loaders/Backhoes	1	8	97	0.37	
Water Truck**						4
Worker Trips		5				
Grading						
Concrete/Industrial Saw	Concrete/Industrial Saws	1	8	81	0.73	
Excavator	Excavators	1	8	247	0.3819	
Tractor/Loader/Backhoe	Tractor/Loader/Backhoe	2	8	97	0.4	
Water Truck**						4
Worker Trips		5				
Building Construction						
Cranes	Cranes	1	4	231	0.29	
Forklifts	Forklifts	2	6	89	0.2	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	2	7	97	0.37	
Vendor Trips						24
Worker Trips		146				
Paving						
Pavers	Pavers	1	8	130	0.42	
Rollers	Rollers	1	8	80	0.38	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	1	8	97	0.37	
Vendor Trips						
Worker Trips		10				
Painting						
Air Compressors	Air Compressors	1	6	78	0.48	
Worker Trips		29				

However, review of the Project's CalEEMod output files demonstrates that the Project Applicant used CalEEMod default worker trips to estimate emissions (see excerpt below) (Appendix A, p. 74).

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demo Haul	0	0.00	0.00	187.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Haul	0	0.00	0.00	37.00	10.80	7.30	30.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Haul	0	0.00	0.00	129.00	10.80	7.30	30.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	138.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

As you can see in the excerpt above, the worker trip numbers in the CalEEMod model does not match the Project Applicant's estimated number of worker trips per phase of construction. The Project Applicant models emissions using CalEEMod default estimates. However, according to the CalEEMod User's Guide, the user can override default inputs with more accurate, project-specific information.[6] Therefore, since the project-specific number of worker trips is known, the IS/MND should have used the estimated number of trips in order to more accurately estimate the Project's construction emissions.

Diesel Particulate Matter Inadequately Evaluated

The IS/MND evaluates the Project's health-related impact by preparing a health risk assessment (HRA) that assesses diesel particulate matter (DPM) emissions released during construction (p. 4-12). The IS/MND determines that the Project would result in an excess cancer risk of 24.5 in one million (Table 4-4, p. 4-13). However, with mitigation the risk will be reduced to 1.5 in one million and, therefore, will be less than significant (Table 4-5, p. 4-14). We find the IS/MND's finding of a less than significant impact, however, to be incorrect for several reasons: (1) the Project Applicant relies of a CalEEMod model that underestimates emissions; and (2) the Project Applicant failed to conduct an operational HRA.

Use of Incorrect Emission Estimates in Construction Health Risk

The IS/MND conducts a construction HRA and determines that the health risk would be less than significant with implementation of Mitigation Measure AQ-2 (Table 4-5, p. 4-14). This, however, is incorrect. The IS/MND's construction HRA relies upon emission estimates from a flawed CalEEMod model to estimate the excess cancer risk posed to nearby residents as a result of emissions generated during construction-related activity. Specifically, our review of the Project's CalEEMod model and corresponding emissions estimates, as discussed in the sections above, found that the model relied upon incorrect and unsubstantiated input parameters in order to estimate the Project's emissions. Because the emissions estimates from the Project's CalEEMod model are underestimated, it is reasonable to assume that the Project's construction-related HRA also underestimates the health risk posed to sensitive receptors near the Project site. As a result, we find the IS/MND's HRA and subsequent

[6] http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 9

significance determination to be incorrect and unreliable and should not be relied upon to determine the significance of the Project's construction-related health impact.

Failure to Conduct an Operational Health Risk

Furthermore, the IS/MND determines that the operational health risk would be less than significant without conducting an operational HRA (p. 4-15). The IS/MND attempts to justify this by stating,

> "When siting new sensitive receptors, the BAAQMD CEQA Guidelines recommend examining sources of TACs and PM2.5 emissions within 1,000 feet that would adversely affect individuals within the proposed project. BAAQMD has developed screening tools to identify stationary and mobile sources of TACs and diesel-PM2.5 in the vicinity of sensitive land uses, and developed screening thresholds for assessing potential health risks from these sources. Using the BAAQMD screening tools, it is determined that the project site is not within 1,000 feet of any sources of air emission (permitted or non-permitted stationary sources, freeways, or high volume roadways). Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation, and impacts would be less than significant" (p. 4-14 – 4-15).

The IS/MND's failure to conduct to a quantified operational HRA, however, is incorrect.

The omission of a proper HRA is inconsistent with the most recent guidance published by the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing recommendations and guidance on how to conduct health risk assessments in California. In February of 2015, OEHHA released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*, which was formally adopted in March of 2015.[7] This guidance document describes the types of projects that warrant the preparation of a health risk assessment. Once construction is complete, Project operation will generate truck trips, which will generate additional exhaust emissions, thus continuing to expose nearby sensitive receptors to DPM emissions. The OEHHA document recommends that exposure from projects lasting more than 6 months should be evaluated for the duration of the project, and recommends that an exposure duration of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident (MEIR). The IS/MND does not provide the expected lifetime of the Project, but we can reasonable assume that the Project will operate for at least 30 years if not more. Therefore, per OEHHA guidelines, health risk impacts from Project construction and operation should have been evaluated by the Addendum. These recommendations reflect the most recent health risk assessment policy, and as such, an assessment of health risks to nearby sensitive receptors from construction and operation should be included in a revised CEQA evaluation for the Project.

For the reasons mentioned above, we find the IS/MND's evaluation of the Project's health risk impacts resulting from construction and operation to be inadequate and unreliable. As a result, the IS/MND fails

[7] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

to provide a comprehensive analysis of the sensitive receptor impacts that may occur as a result of exposure to the Project's potentially substantial air pollutant emissions.

Updated Health Risk Assessment Indicates Significant Health Impact

In an effort to determine the risk associated with operational DPM emissions, we prepared a screening-level health risk assessment. The results of our assessment, as described below, demonstrate that DPM emissions generated over the course of Project operation may result in a significant health risk impact.

In order to conduct our screening level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model. [8] The model replaced SCREEN3, and AERSCREEN is included in the OEHHA[9] and the California Air Pollution Control Officers Associated (CAPCOA)[10] guidance as the appropriate air dispersion model for Level 2 health risk screening assessments ("HRSAs"). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

We prepared a preliminary HRA of the Project's operational health-related impact to sensitive receptors using the net annual PM10 exhaust estimates from the IS/MND's proposed Project's CalEEMod model and SWAPE's updated existing CalEEMod output files.[11] According to the IS/MND, the closest residential receptor is approximately 80 feet, or 24 meters, from the Project site (p. 4-12). Consistent with recommendations set forth by OEHHA, we used a residential exposure duration of 30 years, with operational emissions beginning during the last 0.25 years of the infant stage of life, immediately after the 24-month construction is completed (p. 3-31). The IS/MND proposed annual CalEEMod model's annual emissions and SWAPE existing CalEEMod model's annual emissions indicate that net operational activities will generate approximately 85 pounds of DPM per year over the 28-years of operation. The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project construction, we calculated an average DPM emission rate by the following equation.

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{85.3\ lbs}{365\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.001226\ g/s}$$

[8] "AERSCREEN Released as the EPA Recommended Screening Model," USEPA, April 11, 2011, *available at:* http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf

[9] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[10] "Health Risk Assessments for Proposed Land Use Projects," CAPCOA, July 2009, *available at:* http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

[11] We prepared an updated CalEEMod model for the existing emissions. Based on Google Earth, we modeled the land uses as a Quality Restaurant and general office buildings. Additionally, we only accounted for the 220 daily vehicle trips that the restaurant generates.

Using this equation, we estimated an operational emission rate of 0.001226 grams per second (g/s). Operational activity was simulated as a 1.72-acre rectangular area source in AERSCREEN, with dimensions of 98 meters by 71 meters. A release height of three meters was selected to represent the height of exhaust stacks on operational equipment and other heavy-duty vehicles, and an initial vertical dimension of one and a half meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution.

The AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant be estimated by multiplying the single-hour concentration by 10%.[12] For example, for the MEIR the single-hour concentration estimated by AERSCREEN for Project operation, the single-hour concentration at the MEIR estimated by AERSCREEN is approximately 3.886 $\mu g/m^3$ DPM at approximately 25 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.3886 $\mu g/m^3$ for Project operation at the MEIR.

We calculated the excess cancer risk to the residential receptors located closest to the Project site using applicable HRA methodologies prescribed by OEHHA and the Bay Area Air Quality Management District (BAAQMD). The annualized average concentration for operation was used for the remainder of the 30-year exposure period after the 24-month construction period, which makes up the remainder of the infant stage of life (0-2 years), the entirety of the child stage of life (2 to 16 years), and the entirety of the adult stage of life (16 to 30 years). Consistent with OEHHA guidance and the IS/MND's construction HRA, we used Age Sensitivity Factors (ASFs) to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution.[13] According to the updated OEHHA guidance, quantified cancer risk should be multiplied by a factor of ten during the first two years of life (infant) and should be multiplied by a factor of three during the child stage of life (2 to 16 years). Furthermore, consistent with the IS/MND's construction HRA, we used 95th percentile breathing rates for infants. Finally, consistent with the IS/MND's construction HRA and BAAQMD guidance, we used a Fraction of Time at Home (FAH) Value of 0.72 for the infant and child receptors and we used a FAH Value of 0.73 for the adult receptors.[14] We used a cancer potency factor of 1.1 $(mg/kg\text{-}day)^{-1}$ and an averaging time of 25,550 days. The results of our calculations are shown below.

Operational Cancer Risk at the Maximum Exposed Individual Residential Receptor					
Parameter	**Description**	**Units**	**Infant**	**Child**	**Adult**
Cair	Concentration	ug/m3	0.3886	0.3886	0.3886
DBR	Daily breathing rate	L/kg-day	1090	572	261
EF	Exposure Frequency	days/year	350	350	350

[12] http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf
[13] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf
[14] "Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines." BAAQMD, January 2016, *available at*: http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en, p. 4

ED	Exposure Duration	years	0.25	14	14
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	1.5E-06	4.3E-05	1.9E-05
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	10	3	1
FAH	Fraction of Time at Home	-	0.72	0.72	0.73
	Cancer Risk by Age Group		***1.1E-05***	***1.0E-04***	***1.6E-05***
	Total Operational Cancer Risk				***1.3E-04***

The excess cancer risk posed to adults, children, and infants at the MEIR located approximately 25 meters away, over the course of Project operation are approximately 16, 100, and 11 in one million. Furthermore, the excess operational cancer risk over the course of Project operation is approximately 130 in one million. The child, adult, and lifetime operational cancer risks greatly exceed the BAAQMD's threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the IS/Addendum.

It should be noted that our operational analysis represents a screening-level HRA, which is known to be more conservative, and tends to err on the side of health protection, in contrast to the more refined construction HRA prepared by the Project Applicant.[15] The purpose of a screening-level HRA, however, is to determine whether a more refined HRA needs to be conducted. If the results of a screening-level assessment are above applicable thresholds, then the Project needs to conduct a more refined HRA that is more representative of site-specific concentrations. Our screening-level HRA demonstrates that operation of the Project could result in a potentially significant health risk impact, when correct exposure assumptions and up-to-date, applicable guidance are used. As a result, a refined operational health risk assessment must be prepared to examine air quality impacts generated by Project construction and operation using site-specific meteorology. An EIR should be prepared to adequately evaluate the health risk impacts resulting from the Project's air pollutant emissions, and should include additional mitigation measures to reduce these impacts to a less-than-significant level.

Greenhouse Gas

Failure to Adequately Assess the Project's Greenhouse Gas Impacts

The IS/MND determines that the Project's net GHG emissions will be approximately 1,059 MT CO2e/year and, as a result, will be less than significant (Table 4-6, p. 4-32). The IS/MND states,

> "As shown in Table 4-6 above, development of the proposed project would result in a net increase of GHG emissions of 1,059 MTCO2e/year at opening year (2021), which would not exceed BAAQMD's brightline threshold of 1,100 MTCO2e per year for operations. Therefore, project-related GHG emissions impacts would be less than significant" (p. 4-33).

[15] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf p. 1-5

However, as described in the sections above, the IS/MND relies on a flawed existing CalEEMod model to determine the net emissions. In an effort to determine the proposed Project's GHG impact, we conducted a simple analysis using the Project's proposed GHG emissions and SWAPE's updated existing GHG emissions. SWAPE prepared an updated CalEEMod model to estimate the Project's existing emissions in 2021. The model corrected the land uses and the daily vehicle trips that the restaurant generates. When the Project's updated net emissions are compared to BAAQMD's brightline threshold of 1,100 MT CO2e/year, we find that the Project's GHG emissions could have a potentially significant impact on global climate change (see table below).

Estimated Operational Greenhouse Gas Emissions	
Emission Source	**Proposed Project (MT CO2e/year)**
Amortized Construction	22
Area	0.005
Energy	848
Mobile	1,040
Waste	53
Water	6
Existing Project Emissions	-182
Total	**1,787**
BAAQMD Significance Threshold	**1,100**
Exceed?	***Yes***

When the Project's existing land use emissions are modeled correctly, the Project's net GHG emissions clearly exceed the BAAQMD's threshold of 1,100 MT CO2e/year, thus resulting in a significant impact not previously assessed or identified in the Addendum. It should be noted that the Project's net GHG emissions are most likely underestimated as the proposed Project's construction emissions are based on a flawed CalEEMod model. As a result, a DEIR should be prepared that with an updated assessment of the Project's GHG emissions, and additional mitigation should be identified to reduce the Project's air quality and GHG impacts to a less-than-significant level. Without a DEIR and responsive mitigation, substantial evidence exists to support a fair argument that the Project may have significant, unmitigated impacts on GHG emissions.

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or

otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Kaitlyn Heck

Cupertino Village Hotel Existing Site

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Quality Restaurant	3.38	1000sqft	0.08	3,385.00	0
General Office Building	10.00	1000sqft	0.23	10,044.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	294.77	**CH4 Intensity (lb/MWhr)**	0.05	**N2O Intensity (lb/MWhr)**	0.01

1.3 User Entered Comments & Non-Default Data

Project Characteristics - per the IS/MND's CalEEMod model

Land Use - reivew of Google Earth demonstrates that the exisitng commercial building is compromised of empty offices/

Construction Phase - OPERATION only

Off-road Equipment - OPERATION ONLY

Vehicle Trips - office building is vacant, therefore wont generate trips. Quality Restaurant trip rates account for 220 trips/day.

Fleet Mix - per the IS/MND's CalEEMod

Energy Use -

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.02	3.8970e-003
tblFleetMix	LDA	0.61	0.71
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.18	0.21
tblFleetMix	LHD1	0.01	2.8140e-003
tblFleetMix	LHD2	4.9910e-003	9.4100e-004
tblFleetMix	MCY	5.3340e-003	6.7860e-003
tblFleetMix	MDV	0.11	0.02
tblFleetMix	MH	7.6100e-004	0.00
tblFleetMix	MHD	0.01	2.3480e-003
tblFleetMix	OBUS	2.1150e-003	0.00
tblFleetMix	SBUS	6.2300e-004	0.00
tblFleetMix	UBUS	1.5540e-003	0.00
tblLandUse	LandUseSquareFeet	3,380.00	3,385.00
tblLandUse	LandUseSquareFeet	10,000.00	10,044.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.05
tblProjectCharacteristics	CO2IntensityFactor	641.35	294.77
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.01
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	94.36	65.09
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	72.16	65.09
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	89.95	65.09

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	3.7000e-004	4.4700e-003	2.1400e-003	1.0000e-005	2.8000e-004	1.8000e-004	4.7000e-004	3.0000e-005	1.7000e-004	2.0000e-004	0.0000	0.4554	0.4554	1.4000e-004	0.0000	0.4588
Maximum	**3.7000e-004**	**4.4700e-003**	**2.1400e-003**	**1.0000e-005**	**2.8000e-004**	**1.8000e-004**	**4.7000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4554**	**0.4554**	**1.4000e-004**	**0.0000**	**0.4588**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	3.7000e-004	4.4700e-003	2.1400e-003	1.0000e-005	2.8000e-004	1.8000e-004	4.7000e-004	3.0000e-005	1.7000e-004	2.0000e-004	0.0000	0.4553	0.4553	1.4000e-004	0.0000	0.4588
Maximum	**3.7000e-004**	**4.4700e-003**	**2.1400e-003**	**1.0000e-005**	**2.8000e-004**	**1.8000e-004**	**4.7000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4553**	**0.4553**	**1.4000e-004**	**0.0000**	**0.4588**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**2-25-2019**	**5-24-2019**	0.0104	0.0104
		Highest	0.0104	0.0104

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0595	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Energy	4.6800e-003	0.0426	0.0358	2.6000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	85.0782	85.0782	7.4600e-003	2.1600e-003	85.9096
Mobile	0.0413	0.0530	0.3688	9.2000e-004	0.0958	7.4000e-004	0.0966	0.0255	6.8000e-004	0.0262	0.0000	82.8874	82.8874	2.9900e-003	0.0000	82.9621
Waste						0.0000	0.0000		0.0000	0.0000	2.5130	0.0000	2.5130	0.1485	0.0000	6.2259
Water						0.0000	0.0000		0.0000	0.0000	0.8894	2.5685	3.4579	0.0918	2.2400e-003	6.4211
Total	**0.1055**	**0.0955**	**0.4047**	**1.1800e-003**	**0.0958**	**3.9700e-003**	**0.0998**	**0.0255**	**3.9100e-003**	**0.0294**	**3.4024**	**170.5344**	**173.9368**	**0.2508**	**4.4000e-003**	**181.5190**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0595	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Energy	4.6800e-003	0.0426	0.0358	2.6000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	85.0782	85.0782	7.4600e-003	2.1600e-003	85.9096
Mobile	0.0413	0.0530	0.3688	9.2000e-004	0.0958	7.4000e-004	0.0966	0.0255	6.8000e-004	0.0262	0.0000	82.8874	82.8874	2.9900e-003	0.0000	82.9621
Waste						0.0000	0.0000		0.0000	0.0000	2.5130	0.0000	2.5130	0.1485	0.0000	6.2259
Water						0.0000	0.0000		0.0000	0.0000	0.8894	2.5685	3.4579	0.0918	2.2400e-003	6.4211
Total	**0.1055**	**0.0955**	**0.4047**	**1.1800e-003**	**0.0958**	**3.9700e-003**	**0.0998**	**0.0255**	**3.9100e-003**	**0.0294**	**3.4024**	**170.5344**	**173.9368**	**0.2508**	**4.4000e-003**	**181.5190**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/9/2019	3/11/2019	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0413	0.0530	0.3688	9.2000e-004	0.0958	7.4000e-004	0.0966	0.0255	6.8000e-004	0.0262	0.0000	82.8874	82.8874	2.9900e-003	0.0000	82.9621
Unmitigated	0.0413	0.0530	0.3688	9.2000e-004	0.0958	7.4000e-004	0.0966	0.0255	6.8000e-004	0.0262	0.0000	82.8874	82.8874	2.9900e-003	0.0000	82.9621

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Quality Restaurant	220.00	220.00	220.00	260,962	260,962
Total	220.00	220.00	220.00	260,962	260,962

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761
Quality Restaurant	0.706030	0.043477	0.213708	0.020000	0.002814	0.000941	0.002348	0.003897	0.000000	0.000000	0.006786	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	38.7534	38.7534	6.5700e-003	1.3100e-003	39.3095
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	38.7534	38.7534	6.5700e-003	1.3100e-003	39.3095
NaturalGas Mitigated	4.6800e-003	0.0426	0.0358	2.6000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	46.3248	46.3248	8.9000e-004	8.5000e-004	46.6001
NaturalGas Unmitigated	4.6800e-003	0.0426	0.0358	2.6000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	46.3248	46.3248	8.9000e-004	8.5000e-004	46.6001

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	164420	8.9000e-004	8.0600e-003	6.7700e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7741	8.7741	1.7000e-004	1.6000e-004	8.8262
Quality Restaurant	703674	3.7900e-003	0.0345	0.0290	2.1000e-004		2.6200e-003	2.6200e-003		2.6200e-003	2.6200e-003	0.0000	37.5507	37.5507	7.2000e-004	6.9000e-004	37.7739
Total		**4.6800e-003**	**0.0426**	**0.0357**	**2.6000e-004**		**3.2300e-003**	**3.2300e-003**		**3.2300e-003**	**3.2300e-003**	**0.0000**	**46.3248**	**46.3248**	**8.9000e-004**	**8.5000e-004**	**46.6001**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	164420	8.9000e-004	8.0600e-003	6.7700e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7741	8.7741	1.7000e-004	1.6000e-004	8.8262
Quality Restaurant	703674	3.7900e-003	0.0345	0.0290	2.1000e-004		2.6200e-003	2.6200e-003		2.6200e-003	2.6200e-003	0.0000	37.5507	37.5507	7.2000e-004	6.9000e-004	37.7739
Total		**4.6800e-003**	**0.0426**	**0.0357**	**2.6000e-004**		**3.2300e-003**	**3.2300e-003**		**3.2300e-003**	**3.2300e-003**	**0.0000**	**46.3248**	**46.3248**	**8.9000e-004**	**8.5000e-004**	**46.6001**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	179085	23.9446	4.0600e-003	8.1000e-004	24.2882
Quality Restaurant	110757	14.8088	2.5100e-003	5.0000e-004	15.0214
Total		**38.7534**	**6.5700e-003**	**1.3100e-003**	**39.3095**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	179085	23.9446	4.0600e-003	8.1000e-004	24.2882
Quality Restaurant	110757	14.8088	2.5100e-003	5.0000e-004	15.0214
Total		**38.7534**	**6.5700e-003**	**1.3100e-003**	**39.3095**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0595	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Unmitigated	0.0595	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.0000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Total	**0.0595**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.0000**	**2.5000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.0000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Total	**0.0595**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.0000**	**2.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.4579	0.0918	2.2400e-003	6.4211
Unmitigated	3.4579	0.0918	2.2400e-003	6.4211

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	1.77734 / 1.08934	2.3595	0.0582	1.4300e-003	4.2407
Quality Restaurant	1.02594 / 0.0654858	1.0984	0.0336	8.2000e-004	2.1805
Total		**3.4579**	**0.0918**	**2.2500e-003**	**6.4211**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	1.77734 / 1.08934	2.3595	0.0582	1.4300e-003	4.2407
Quality Restaurant	1.02594 / 0.0654858	1.0984	0.0336	8.2000e-004	2.1805
Total		**3.4579**	**0.0918**	**2.2500e-003**	**6.4211**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.5130	0.1485	0.0000	6.2259
Unmitigated	2.5130	0.1485	0.0000	6.2259

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	9.3	1.8878	0.1116	0.0000	4.6770
Quality Restaurant	3.08	0.6252	0.0370	0.0000	1.5489
Total		**2.5130**	**0.1485**	**0.0000**	**6.2259**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	9.3	1.8878	0.1116	0.0000	4.6770
Quality Restaurant	3.08	0.6252	0.0370	0.0000	1.5489
Total		**2.5130**	**0.1485**	**0.0000**	**6.2259**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

cupertinooperational

Start date and time 02/25/19 13:58:08

AERSCREEN 16216

Cupertino Hotel

Cupertino Hotel

---------- DATA ENTRY VALIDATION ----------

	METRIC	ENGLISH
** AREADATA **	----------	----------
Emission Rate:	0.123E-02 g/s	0.973E-02 lb/hr
Area Height:	3.00 meters	9.84 feet
Area Source Length:	98.00 meters	321.52 feet
Area Source Width:	71.00 meters	232.94 feet
Vertical Dimension:	1.50 meters	4.92 feet
Model Mode:	URBAN	
Population:	60777	
Dist to Ambient Air:	1.0 meters	3. feet

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature: 250.0 / 310.0 K -9.7 / 98.3 Deg F

```
 Minimum Wind Speed:     0.5 m/s

 Anemometer Height:   10.000 meters

 Dominant Surface Profile: Urban
 Dominant Climate Type:    Average Moisture

 Surface friction velocity (u*): not adjusted

DEBUG OPTION OFF



 AERSCREEN output file:
 cupertinooperational.out



 *** AERSCREEN Run is Ready to Begin



 No terrain used, AERMAP will not be run
**************************************************
```

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season	Albedo	Bo	zo
Winter	0.35	1.50	1.000
Spring	0.14	1.00	1.000
Summer	0.16	2.00	1.000
Autumn	0.18	2.00	1.000

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 02/25/19 14:04:37

 ****

```
  Running AERMOD

 Processing Winter


Processing surface roughness sector  1


****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   3
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   6
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   8


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  35


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   9
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  40


    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 *******************************************


  Running AERMOD

 Processing Spring


Processing surface roughness sector  1


****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   5
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  20
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   8


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  35
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   9


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  40


    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 *******************************************


  Running AERMOD

 Processing Summer


Processing surface roughness sector  1


****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***
```

```
****************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

****************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

****************************************************
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
```

```
****************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

****************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

****************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
```

```
****************************************************
Processing wind flow sector   8

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  35

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

****************************************************
Processing wind flow sector   9

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  40

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 *******************************************

  Running AERMOD
 Processing Autumn

Processing surface roughness sector  1

****************************************************
```

```
Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************
```

```
Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************
```

```
Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   8


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  35


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   9


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  40


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


FLOWSECTOR   ended 02/25/19 14:04:57
```

```
REFINE       started 02/25/19 14:04:57


 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


REFINE       ended 02/25/19 14:04:59


 ***********************************************

 AERSCREEN Finished Successfully

 With no errors or warnings

 Check log file for details

 ************************************************


 Ending date and time  02/25/19 14:04:59
```

cupertinooperational_max_conc_distance

```
 Concentration     Distance Elevation  Diag  Season/Month   Zo sector       Date
  H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS     HT
REF TA     HT
   0.31457E+01         1.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.38861E+01        25.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
*  0.44367E+01        50.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31875E+01        75.00      0.00  30.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.20756E+01       100.00      0.00  30.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15521E+01       125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12363E+01       150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.10157E+01       175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.85507E+00       200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.73373E+00       225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.63905E+00       250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.56377E+00       275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.50254E+00       300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.45184E+00       325.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.40954E+00       350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.37342E+00       375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.34251E+00       400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.31580E+00       425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.29252E+00       450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.27199E+00       475.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.25382E+00       500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.23774E+00       525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.22334E+00       550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21035E+00       575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19863E+00       600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18790E+00       625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17817E+00       650.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16927E+00       675.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16114E+00       700.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15364E+00       725.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14674E+00       750.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.14037E+00       775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13447E+00       800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12900E+00       825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12389E+00       850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11911E+00       875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11463E+00       900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11043E+00       925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.10648E+00       950.01      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.10279E+00       975.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.99302E-01      1000.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.96032E-01      1025.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.92938E-01      1050.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.90011E-01      1075.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.87240E-01      1100.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.84615E-01      1125.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.82124E-01      1150.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.79759E-01      1175.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.77504E-01      1200.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.75358E-01      1225.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.73953E-01      1250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.71970E-01      1275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.70078E-01      1300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.68271E-01      1325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.66542E-01      1350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.64888E-01      1375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.63305E-01      1400.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.61786E-01      1425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.60330E-01      1450.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.58932E-01      1475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.57590E-01      1500.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.56299E-01      1525.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.55058E-01      1550.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.53863E-01      1575.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.52713E-01      1600.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.51604E-01      1625.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.50536E-01      1650.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.49505E-01      1675.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.48510E-01      1700.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.47549E-01      1725.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.46620E-01      1750.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.45723E-01      1775.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.44855E-01      1800.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.44015E-01      1824.99      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.43202E-01      1850.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.42415E-01      1875.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.41652E-01      1900.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.40912E-01      1924.99      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.40195E-01      1950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.39500E-01      1975.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.38825E-01      2000.00      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.38170E-01      2025.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.37534E-01      2050.00      0.00  40.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.36916E-01      2075.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.36315E-01      2100.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.35731E-01      2124.99      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.35163E-01      2150.00      0.00  30.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.34611E-01      2175.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.34074E-01      2200.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.33550E-01      2225.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.33041E-01      2250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.32545E-01      2275.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.32061E-01      2300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.31590E-01      2325.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.31131E-01      2350.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.30683E-01      2375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.30246E-01      2399.99      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.29820E-01      2425.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.29404E-01      2449.99      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.28998E-01      2475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.28602E-01      2500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.28215E-01      2525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.27837E-01      2550.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.27467E-01      2575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.27106E-01      2600.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.26754E-01      2625.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.26409E-01      2650.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.26071E-01      2675.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.25741E-01      2700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.25419E-01      2725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.25103E-01      2750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.24794E-01      2775.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.24491E-01      2800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.24195E-01      2824.99      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.23905E-01      2850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.23621E-01      2875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.23343E-01      2900.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.23070E-01      2925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.22803E-01      2950.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.22541E-01      2975.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.22284E-01      3000.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.22033E-01      3025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21786E-01      3050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21544E-01      3075.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21306E-01      3100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21073E-01      3125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20845E-01      3150.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.20621E-01      3174.99      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20400E-01      3200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20184E-01      3225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19972E-01      3250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19764E-01      3275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19559E-01      3300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19358E-01      3325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19161E-01      3350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18967E-01      3375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18776E-01      3400.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18589E-01      3425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18405E-01      3450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18224E-01      3475.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18046E-01      3500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17871E-01      3525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17699E-01      3550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.17530E-01      3575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17364E-01      3600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17200E-01      3625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17039E-01      3650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16881E-01      3675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16725E-01      3700.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16572E-01      3725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16421E-01      3750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16272E-01      3775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16126E-01      3800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15982E-01      3825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15840E-01      3850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15700E-01      3875.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15563E-01      3900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15427E-01      3925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15294E-01      3950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.15162E-01      3975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15033E-01      4000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14905E-01      4025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14780E-01      4050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14656E-01      4075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14534E-01      4100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14413E-01      4125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14295E-01      4150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14178E-01      4175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14062E-01      4200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13949E-01      4225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13837E-01      4250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13726E-01      4275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13617E-01      4300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13509E-01      4325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13403E-01      4350.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.13299E-01      4375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13195E-01      4400.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13094E-01      4425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12993E-01      4450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12894E-01      4475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12796E-01      4500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12699E-01      4525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12604E-01      4550.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12510E-01      4575.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12417E-01      4599.99      0.00  40.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12325E-01      4625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12235E-01      4650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12145E-01      4675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.12057E-01      4700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11970E-01      4725.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11884E-01      4750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

```
  0.11799E-01      4775.00      0.00  40.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11715E-01      4800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11632E-01      4825.00      0.00  40.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11550E-01      4850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11469E-01      4875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11389E-01      4900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11310E-01      4925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11232E-01      4950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11155E-01      4975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.11079E-01      5000.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

EXHIBIT C

IEE INDOOR ENVIRONMENTAL ENGINEERING IEE
1448 Pine Street, Suite 103 San Francisco, California 94109
Telephone: (415) 567-7700
E-mail: offermann@IEE-SF.com
http://www.iee-sf.com

Date: March 8, 2019

To: Michael R. Lozeau
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, California 94607

From: Francis J. Offermann PE CIH

Subject: Indoor Air Quality: Cupertino Village Hotel IAQ (P-4225)

Pages: 14

Indoor Air Quality Impacts

Indoor air quality (IAQ) directly impacts the comfort and health of building occupants, and the achievement of acceptable IAQ in newly constructed and renovated buildings is a well-recognized design objective. For example, IAQ is addressed by major high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014). Indoor air quality in homes is particularly important because occupants, on average, spend approximately ninety percent of their time indoors with the majority of this time spent at home (EPA, 2011). Some segments of the population that are most susceptible to the effects of poor IAQ, such as the very young and the elderly, occupy their homes almost continuously. Additionally, an increasing number of adults are working from home at least some of the time during the workweek. Indoor air quality also is a serious concern for workers in hotels, offices and other business establishments.

The concentrations of many air pollutants often are elevated in homes and other buildings relative to outdoor air because many of the materials and products used indoors contain and release a variety of pollutants to air (Hodgson et al., 2002; Offermann and Hodgson, 2011). With respect to indoor air contaminants for which inhalation is the primary route of

exposure, the critical design and construction parameters are the provision of adequate ventilation and the reduction of indoor sources of the contaminants.

Indoor Formaldehyde Concentrations Impact. In the California New Home Study (CNHS) of 108 new homes in California (Offermann, 2009), 25 air contaminants were measured, and formaldehyde was identified as the indoor air contaminant with the highest cancer risk as determined by the California Proposition 65 Safe Harbor Levels (OEHHA, 2017a), No Significant Risk Levels (NSRL) for carcinogens. The NSRL is the daily intake level calculated to result in one excess case of cancer in an exposed population of 100,000 (i.e., ten in one million cancer risk) and for formaldehyde is 40 µg/day. The NSRL concentration of formaldehyde that represents a daily dose of 40 µg is 2 µg/m^3, assuming a continuous 24-hour exposure, a total daily inhaled air volume of 20 m^3, and 100% absorption by the respiratory system. All of the CNHS homes exceeded this NSRL concentration of 2 µg/m^3. The median indoor formaldehyde concentration was 36 µg/m^3, and ranged from 4.8 to 136 µg/m^3, which corresponds to a median exceedance of the 2 µg/m^3 NSRL concentration of 18 and a range of 2.3 to 68.

Therefore, the cancer risk of a resident living in a California home with the median indoor formaldehyde concentration of 36 µg/m^3, is 180 per million as a result of formaldehyde alone. The CEQA significance threshold for airborne cancer risk is 10 per million, as established by the Bay Area Air Quality Management District (BAAQMD, 2017).

Besides being a human carcinogen, formaldehyde is also a potent eye and respiratory irritant. In the CNHS, many homes exceeded the non-cancer reference exposure levels (RELs) prescribed by California Office of Environmental Health Hazard Assessment (OEHHA, 2017b). The percentage of homes exceeding the RELs ranged from 98% for the Chronic REL of 9 µg/m^3 to 28% for the Acute REL of 55 µg/m^3.

The primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and particle board. These materials are commonly used in residential, office, and retail building

construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims.

In January 2009, the California Air Resources Board (CARB) adopted an airborne toxics control measure (ATCM) to reduce formaldehyde emissions from composite wood products, including hardwood plywood, particleboard, medium density fiberboard, and also furniture and other finished products made with these wood products (California Air Resources Board 2009). While this formaldehyde ATCM has resulted in reduced emissions from composite wood products sold in California, they do not preclude that homes built with composite wood products meeting the CARB ATCM will have indoor formaldehyde concentrations that are below cancer and non-cancer exposure guidelines.

A follow up study to the California New Home Study (CNHS) was conducted in 2016-2018 (Chan et. al., 2018), and found that the median indoor formaldehyde in new homes built after the 2009 CARB formaldehyde ATCM had lower indoor formaldehyde concentrations, with a median indoor concentrations of 25 $\mu g/m^3$ as compared to a median of 36 $\mu g/m^3$ found in the 2007 CNHS.

Thus, while new homes built after the 2009 CARB formaldehyde ATCM have a 30% lower median indoor formaldehyde concentration and cancer risk, the median lifetime cancer risk is still 125 per million for homes built with CARB compliant composite wood products, which is more than 12 times the CEQA significance threshold for airborne cancer risk of 10 per million, as established by the Bay Area Air Quality Management District (BAAQMD, 2017).

With respect to this project, Cupertino Village Hotel, since this is a hotel, guests are expected to have short-term exposures (e.g. less than a week), but employees are expected to experience longer-term exposures (e.g. 40 hours per week, 50 weeks per year). The longer-term exposures for employees are anticipated to result in significant cancer risks resulting from exposures to formaldehyde released by the building materials and furnishing commonly found in residences and hotels.

Because this hotel will be constructed with CARB Phase 2 Formaldehyde ATCM materials, and be ventilated with the minimum code required amount of outdoor air, the indoor hotel formaldehyde concentrations are likely similar to those concentrations observed in residences built with CARB Phase 2 Formaldehyde ATCM materials, which is a median of 25 $\mu g/m^3$.

Assuming that the employees work 8 hours per day and inhale 20 m^3 of hotel air per day, the formaldehyde dose per work-day at the hotel is 167 µg/day.

Assuming that the hotel employees work 5 days per week and 50 weeks per year for 45 years (start at age 20 and retire at age 65) the average 70 year lifetime formaldehyde daily dose is 73.6 µg/day.

This is 1.84 times the NSRL (OEHHA, 2017a) of 40 µg/day and represents a cancer risk of 18.4 per million, which exceeds the CEQA cancer risk of 10 per million. This impact should be analyzed in an environmental impact report ("EIR"), and the agency should impose all feasible mitigation measures to reduce this impact. Several feasible mitigation measures are discussed below and these and other measures should be analyzed in an EIR.

While measurements of the indoor concentrations of formaldehyde in residences built with CARB Phase 2 Formaldehyde ATCM materials (Chan et. al., 2018), indicate that indoor formaldehyde concentrations in buildings built with similar materials (e.g. residences, hotels, offices, schools) will pose cancer risks in excess of the CEQA cancer risk of 10 per million, a determination of the cancer risk that is specific to this project and the materials used to construct these buildings can and should be conducted prior to completion of a supplemental environmental review for the Project.

The following describes a method that should be used in order to prepare an adequate supplemental EIR or negative declaration for determining whether the indoor concentrations resulting from the formaldehyde emissions of the specific building materials selected for the building exceed cancer and non-cancer guidelines. Such a design analyses can be used to identify those materials as well as reasonably foreseeable

furnishings prior to the completion of the City's supplemental CEQA review, that have formaldehyde emission rates that contribute to indoor concentrations that exceed cancer and non-cancer guidelines, so that alternative lower emitting materials may be selected and/or higher minimum outdoor air ventilation rates can be increased to achieve acceptable indoor concentrations and incorporated as mitigation measures for this project.

Building Material/Furnishing Formaldehyde Emissions Assessment.

This formaldehyde emissions assessment should be used in the environmental review under CEQA to assess the indoor formaldehyde concentrations from the proposed loading of building materials as well as anticipated furnishings, the area-specific formaldehyde emission rate data for building materials/furnishings, and the design minimum outdoor air ventilation rates. This assessment allows the applicant (and the City) to determine before the conclusion of the environmental review process and the building materials are specified, purchased, and installed if the total chemical emissions will exceed cancer and non-cancer guidelines, and if so, allow for changes in the selection of specific material and/or the design minimum outdoor air ventilations rates such that cancer and non-cancer guidelines are not exceeded.

1.) Define Indoor Air Quality Zones. Divide the buildings into separate indoor air quality zones, (IAQ Zones). IAQ Zones are defined as areas of well-mixed air. Thus, each ventilation system with recirculating air is considered a single zone, and each room or group of rooms where air is not recirculated (e.g. 100% outdoor air) is considered a separate zone. For IAQ Zones with the same construction material/furnishings and design minimum outdoor air ventilation rates. (e.g. hotel rooms, apartments, condominiums, etc.) the formaldehyde emission rates need only be assessed for a single IAQ Zone of that type.

2.) Calculate Material/Furnishing Loading. For each IAQ Zone, determine the building material and furnishing loadings (e.g., m^2 of material/m^2 floor area, units of furnishings/m^2 floor area) from an inventory of all potential indoor formaldehyde sources, including flooring, ceiling tiles, furnishings, finishes, insulation, sealants, adhesives, and any products constructed with composite wood products containing urea-formaldehyde resins (e.g., plywood, medium density fiberboard, particleboard).

3.) Calculate the Formaldehyde Emission Rate. For each building material, calculate the formaldehyde emission rate (µg/h) from the product of the area-specific formaldehyde emission rate (µg/m^2-h) and the area (m^2) of material in the IAQ Zone, and from each furnishing (e.g. chairs, desks, etc.) from the unit-specific formaldehyde emission rate (µg/unit-h) and the number of units in the IAQ Zone.

NOTE: As a result of the high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014), most manufacturers of building materials furnishings sold in the United States conduct chemical emission rate tests using the California Department of Health "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers", (CDPH, 2017), or other equivalent chemical emission rate testing methods. Most manufacturers of building furnishings sold in the United States conduct chemical emission rate tests using ANSI/BIFMA M7.1 Standard Test Method for Determining VOC Emissions (BIFMA, 2018), or other equivalent chemical emission rate testing methods.

CDPH, BIFMA, and other chemical emission rate testing programs, typically certify that a material or furnishing does not create indoor chemical concentrations in excess of the maximum concentrations permitted by their certification. For instance, the CDPH emission rate testing requires that the measured emission rates when input into an office, school, or residential model do not exceed one-half of the OEHHA Chronic Exposure Guidelines (OEHHA, 2017b) for the 35 specific VOCs, including formaldehyde, listed in Table 4-1 of the CDPH test method (CDPH, 2017). These certifications themselves do not provide the actual area-specific formaldehyde emission rate (i.e., µg/m^2-h) of the product, but rather provide data that the formaldehyde emission rates do not exceed the maximum rate allowed for the certification. Thus for example, the data for a certification of a specific type of flooring may be used to calculate that the area-specific emission rate of formaldehyde is less than 31 µg/m^2-h, but not the actual measured specific emission rate, which may be 3, 18, or 30 µg/m^2-h. These area-specific emission rates determined from the product certifications of CDPH, BIFA, and other certification programs can be used as an initial estimate of the formaldehyde emission rate.

If the actual area-specific emission rates of a building material or furnishing is needed (i.e. the initial emission rates estimates from the product certifications are higher than desired), then that data can be acquired by requesting from the manufacturer the complete chemical emission rate test report. For instance if the complete CDPH emission test report is requested for a CDHP certified product, that report will provide the actual area-specific emission rates for not only the 35 specific VOCs, including formaldehyde, listed in Table 4-1 of the CDPH test method (CDPH, 2017), but also all of the cancer and reproductive/developmental chemicals listed in the California Proposition 65 Safe Harbor Levels (OEHHA, 2017a), all of the toxic air contaminants (TACs) in the California Air Resources Board Toxic Air Contamination List (CARB, 2011), and the 10 chemicals with the greatest emission rates.

Alternatively, a sample of the building material can be submitted to a chemical emission rate testing laboratory, such as Berkeley Analytical Laboratory (https://berkeleyanalytical.com), to measure the formaldehyde emission rate.

4.) Calculate the Total Formaldehyde Emission Rate. For each IAQ Zone, calculate the total formaldehyde emission rate (i.e. µg/h) from the individual formaldehyde emission rates from each of the building material/furnishings as determined in Step 3.

5.) Calculate the Indoor Formaldehyde Concentration. For each IAQ Zone, calculate the indoor formaldehyde concentration (µg/m^3) from Equation 1 by dividing the total formaldehyde emission rates (i.e. µg/h) as determined in Step 4, by the design minimum outdoor air ventilation rate (m^3/h) for the IAQ Zone.

$$C_{in} = \frac{E_{total}}{Q_{oa}} \quad \text{(Equation 1)}$$

where:

C_{in} = indoor formaldehyde concentration (µg/m^3)

E_{total} = total formaldehyde emission rate (µg/h) into the IAQ Zone.

Q_{oa} = design minimum outdoor air ventilation rate to the IAQ Zone (m^3/h)

The above Equation 1 is based upon mass balance theory, and is referenced in Section 3.10.2 “Calculation of Estimated Building Concentrations” of the California Department

of Health "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers", (CDPH, 2017).

6.) Calculate the Indoor Exposure Cancer and Non-Cancer Health Risks. For each IAQ Zone, calculate the cancer and non-cancer health risks from the indoor formaldehyde concentrations determined in Step 5 and as described in the OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines; Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2015).

7.) Mitigate Indoor Formaldehyde Exposures of exceeding the CEQA Cancer and/or Non-Cancer Health Risks. In each IAQ Zone, provide mitigation for any formaldehyde exposure risk as determined in Step 6, that exceeds the CEQA cancer risk of 10 per million or the CEQA non-cancer Hazard Quotient of 1.0.

Provide the source and/or ventilation mitigation required in all IAQ Zones to reduce the health risks of the chemical exposures below the CEQA cancer and non-cancer health risks.

Source mitigation for formaldehyde may include:

1.) reducing the amount materials that emit formaldehyde
2.) substituting a different material with a lower area-specific emission rate of formaldehyde

Ventilation mitigation for formaldehyde emitted from building materials and/or furnishings may include:

1.) increasing the design minimum outdoor air ventilation rate to the IAQ Zone.

NOTE: Mitigating the formaldehyde emissions through use of less material, or use of lower emitting materials, is the preferred mitigation option, as mitigation with increased outdoor air ventilation increases initial and operating costs associated with the heating/cooling systems.

Outdoor Air Ventilation Impact. Another important finding of the CNHS, was that the outdoor air ventilation rates in the homes were very low. Outdoor air ventilation is a very important factor influencing the indoor concentrations of air contaminants, as it is the primary removal mechanism of all indoor air generated air contaminants. Lower outdoor air exchange rates cause indoor generated air contaminants to accumulate to higher indoor air concentrations. Many homeowners rarely open their windows or doors for ventilation as a result of their concerns for security/safety, noise, dust, and odor concerns (Price, 2007). In the CNHS field study, 32% of the homes did not use their windows during the 24-hour Test Day, and 15% of the homes did not use their windows during the entire preceding week. Most of the homes with no window usage were homes in the winter field session. Thus, a substantial percentage of homeowners never open their windows, especially in the winter season. The median 24-hour measurement was 0.26 ach, with a range of 0.09 ach to 5.3 ach. A total of 67% of the homes had outdoor air exchange rates below the minimum California Building Code (2001) requirement of 0.35 ach. Thus, the relatively tight envelope construction, combined with the fact that many people never open their windows for ventilation, results in homes with low outdoor air exchange rates and higher indoor air contaminant concentrations.

The Cupertino Village Hotel development is located close to roads with moderate to high traffic (e.g., I-280 and N. Wolfe Road) and as such is anticipated to be in a noise impacted area. The Public Review Draft Initial Study (Placeworks, 2018) contains no analyses of the existing or projected future traffic noise levels, but rather just considers the increases noise levels as a result of the project.

An on-site noise survey by a qualified acoustic firm should be conducted to assess the true outdoor noise levels prior to the completion of the City's CEQA review and project approval, and that noise reduction strategies be included as needed to achieve acceptable interior noise levels of 45 dBA CNEL or less.

It is most likely that to achieve acceptable interior noise levels, mechanical outdoor air ventilation will be required in all noise impacted buildings, so that windows and doors could

be kept closed at the occupant's discretion to control exterior noise within the interior spaces.

<u>$PM_{2.5}$ Outdoor Concentrations Impact</u>. An additional impact of the nearby motor vehicle traffic associated with this project, are the outdoor concentrations of $PM_{2.5}$.

This development is located in Cupertino, CA. The Public Review Draft Initial Study (Placeworks, 2018) contains no analyses of the existing $PM_{2.5}$ outdoor air concentrations, but rather just considers the emissions resulting from the project.

In 2017, San Jose had 6 days that exceeded the National (EPA) maximum 24-hour average of 35 $\mu g/m^3$ (BAAQMD, 2017b).

An air quality analyses should be conducted to determine the concentrations of $PM_{2.5}$ in the outdoor and indoor air that people inhale each day. This air quality analyses needs to consider the cumulative impacts of the project related emissions, existing and projected future emissions from local $PM_{2.5}$ sources (e.g. stationary sources, motor vehicles, and airport traffic) upon the outdoor air concentrations at the project site. If the outdoor concentrations are determined to exceed the California and National annual average $PM_{2.5}$ exceedence concentration of 12 $\mu g/m^3$, or the National 24-hour average exceedence concentration of 35 $\mu g/m^3$, then the buildings need to have a mechanical supply of outdoor air that has air filtration with sufficient $PM_{2.5}$ removal efficiency, such that the indoor concentrations of outdoor $PM_{2.5}$ particles is less than the California and National $PM_{2.5}$ annual and 24-hour standards.

It is my experience that based on the projected high traffic noise levels, the concentration of $PM_{2.5}$ will exceed the National $PM_{2.5}$ 24-hour standards and warrant installation of high efficiency air filters (i.e. MERV 13 or higher) in all mechanically supplied outdoor air ventilation systems.

Indoor Air Quality Impact Mitigation Measures

The following are recommended mitigation measures to minimize the impacts upon indoor quality:

- indoor formaldehyde concentrations
- outdoor air ventilation
- $PM_{2.5}$ outdoor air concentrations

Indoor Formaldehyde Concentrations Mitigation. Use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins (CARB, 2009). Alternatively, conduct the previously described Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment, to determine that the combination of formaldehyde emissions from building materials and furnishings do not create indoor formaldehyde concentrations that exceed the CEQA cancer and non-cancer health risks.

Outdoor Air Ventilation Mitigation. Provide each habitable room with a continuous mechanical supply of outdoor air that meets or exceeds the California 2016 Building Energy Efficiency Standards (California Energy Commission, 2015) requirements of the greater of 15 cfm/occupant or 0.15 cfm/ft^2 of floor area. Following installation of the system conduct testing and balancing to insure that required amount of outdoor air is entering each habitable room and provide a written report documenting the outdoor air flow rates. Do not use exhaust only mechanical outdoor air systems, use only balanced outdoor air supply and exhaust systems or outdoor air supply only systems. Provide a manual for the building management that describes the purpose of the mechanical outdoor air system and the operation and maintenance requirements of the system.

$PM_{2.5}$ Outdoor Air Concentration Mitigation. Install air filtration with sufficient $PM_{2.5}$ removal efficiency (e.g. MERV 13 or higher) to filter the outdoor air entering the mechanical outdoor air supply systems, such that the indoor concentrations of outdoor $PM_{2.5}$ particles are less than the California and National $PM_{2.5}$ annual and 24-hour standards. Install the air filters in the system such that they are accessible for replacement by the

building maintenance staff. Include in the mechanical outdoor air ventilation system manual instructions on how to replace the air filters and the estimated frequency of replacement.

References

Bay Area Air Quality Management District (BAAQMD). 2017a. California Environmental Quality Act Air Quality Guidelines. Bay Area Air Quality Management District, San Francisco, CA. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Bay Area Air Quality Management District (BAAQMD). 2017b. Air Quality Summary Reports. Bay Area Air Quality Management District, San Francisco, CA. http://www.baaqmd.gov/about-air-quality/air-quality-summaries

California Air Resources Board. 2009. Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products. California Environmental Protection Agency, Sacramento, CA. https://www.arb.ca.gov/regact/2007/compwood07/fro-final.pdf

California Building Code. 2001. California Code of Regulations, Title 24, Part 2 Volume 1, Appendix Chapter 12, Interior Environment, Division 1, Ventilation, Section 1207: 2001 California Building Code, California Building Standards Commission. Sacramento, CA.

California Building Standards Commission (2014). 2013 California Green Building Standards Code. California Code of Regulations, Title 24, Part 11. California Building Standards Commission, Sacramento, CA http://www.bsc.ca.gov/Home/CALGreen.aspx.

California Energy Commission, 2015. 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, California Code of Regulations, Title 24, Part 6.

http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf

Chan, W., Kim, Y., and Singer, B. 2018. Indoor Air Quality in New California Homes with Mechanical Ventilation, Proceedings of Indoor Air 2018, Philadelphia, PA.

EPA. 2011. Exposure Factors Handbook: 2011 Edition, Chapter 16 – Activity Factors. Report EPA/600/R-09/052F, September 2011. U.S. Environmental Protection Agency, Washington, D.C.

Hodgson, A. T., D. Beal, J.E.R. McIlvaine. 2002. Sources of formaldehyde, other aldehydes and terpenes in a new manufactured house. Indoor Air 12: 235–242.

OEHHA (Office of Environmental Health Hazard Assessment). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines; Guidance Manual for Preparation of Health Risk Assessments.

OEHHA (Office of Environmental Health Hazard Assessment). 2017a. Proposition 65 Safe Harbor Levels. No Significant Risk Levels for Carcinogens and Maximum Allowable Dose Levels for Chemicals Causing Reproductive Toxicity. Available at: http://www.oehha.ca.gov/prop65/pdf/safeharbor081513.pdf

OEHHA - Office of Environmental Health Hazard Assessment. 2017b. All OEHHA Acute, 8-hour and Chronic Reference Exposure Levels. Available at: http://oehha.ca.gov/air/allrels.html

Offermann, F. J. 2009. Ventilation and Indoor Air Quality in New Homes. California Air Resources Board and California Energy Commission, PIER Energy Related Environmental Research Program. Collaborative Report. CEC 500-2009-085. https://www.arb.ca.gov/research/apr/past/04-310.pdf

Offermann, F. J. and A. T. Hodgson (2011). Emission Rates of Volatile Organic Compounds in New Homes. Proceedings Indoor Air 2011 (12th International Conference on Indoor Air Quality and Climate 2011). June 5-10, 2011, Austin, TX USA.

Placeworks. 2018. Public Review Draft Initial Study – The Cupertino Village Hotel Project.

Price, Phillip P., Max Sherman, Robert H. Lee, and Thomas Piazza. 2007. Study of Ventilation Practices and Household Characteristics in New California Homes. California Energy Commission, PIER Program. CEC-500-2007-033. Final Report, ARB Contract 03-326. Available at: www.arb.ca.gov/research/apr/past/03-326.pdf.

USGBC. 2014. LEED BD+C Homes v4. U.S. Green Building Council, Washington, D.C. http://www.usgbc.org/credits/homes/v4

Expert Witness Services

View Curriculum Vitae (PDF)

Francis (Bud) J. Offermann PE CIH

President: Indoor Environmental Engineering,
San Francisco, CA. December, 1981 - present.
e-mail: **offermann@iee-sf.com**

Education

- M.S. Mechanical Engineering Stanford University, Stanford, CA.
- Graduate Studies in Air Pollution Monitoring and Control University of California, Berkeley, CA.
- B.S. in Mechanical Engineering Rensselaer Polytechnic Institute, Troy, N.Y.

Professional Affiliations

ACGIH, AIHA, ASHRAE, CSI, ASTM, ISIAQ, PARMA, and USGBC

Work Experience

Mr. Offermann PE, CIH, has 36 years experience as an IAQ researcher, technical author, and workshop instructor. He is president of Indoor Environmental Engineering, a San Francisco based IAQ R&D consulting firm. As president of Indoor Environmental Engineering, Mr. Offermann directs an interdisciplinary team of environmental scientists, chemists, and mechanical engineers in indoor air quality building investigations. Under Mr. Offermann's supervision, IEE has developed both pro-active and reactive IAQ measurement methods and diagnostic protocols. He has supervised over 2,000 IAQ investigations in commercial, residential, and institutional buildings and conducted numerous forensic investigations related to IAQ.

Litigation Experience

Mr. Offermann has been qualified numerous times in court as an expert in the field of indoor air quality and ventilation for both plaintiffs and defendants. He has been deposed over 150 times in cases involving indoor air quality/ventilation issues in commercial, residential, and institutional buildings involving construction defects, and/or operation and maintenance problems. Examples of indoor air quality cases he has worked on are alleged personal injury and/or property damages from mold and bacterial contamination/moisture intrusion, building renovation activities, insufficient outdoor air ventilation, off gassing of volatile organic compounds from building materials and coatings, malfunctioning gas heaters and carbon monoxide poisoning, and applications of pesticides. Mr. Offermann has testified with respect to the scientific admissability of expert testimony regarding indoor air quality issues via Daubert and Kelly-Frye motions.

From: Kitty Moore <ckittymoore@gmail.com>
Date: March 17, 2019 at 11:32:07 AM PDT
To: <benjaminf@cupertino.org>
Cc: <timmb@cupertino.org>, <sscharf@cupertino.org>
Subject: Cupertino Village Hotel MND APN

Hi Benjamin,

Out of an abundance of caution, I want to mention some things I noticed looking over the MND.

As you know, I have been trying to get the minutes from the December 13, 2018 ERC regarding the Cupertino Village Hotel MND. This month's ERC was canceled limiting the opportunity to have the minutes approved.

Looking at the MND for Cupertino Village Hotel, APN 316-45-017, I am wondering why there is no mention of the Good Samaritan preschool adjacent to the 99 Ranch market in the Existing Conditions. That is probably within 1/4 mile of the site. Additionally, the Dry Cleaners at Cupertino Village shows up on DTSC's Envirostor. The listing also mentions orchard use and a gas station. That listing does not show up in Existing Conditions for the MND.

MND, see Existing Conditions PDF
81: https://www.cupertino.org/home/showdocument?id=23016

Envirostor records for the Cupertino Village Dry
Cleaners: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60000385

The Envirostor records include APN 316-45-017, which is the proposed hotel site APN.

Phase I ESA for Vallco shows the Cupertino Village Cleaners on PDF 262-
274: https://www.cupertino.org/home/showdocument?id=20875

Cupertino Village Hotel proposes a multi level subterranean garage, which will disturb the soil.

There is a Phase I ESA referenced in the MND but it is not online:

Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017, page 1 (Summary).

It would seem these issues need to be addressed.

Thank you,

Kitty Moore