“F”

LIUNA Letters

Nova Wine Warehouse P16-00456-UP
Planning Commission Hearing Date May 1, 2019

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

Via Email

July 17, 2018

Joelle Gallagher, Commissioner
Dave Whitmer, Commissioner
Anne Cottrell, Commissioner
Terry Scott, Commissioner
Jeri Gill, Commissioner
Napa County Planning Commission
915 I Street
City Council Chambers – NCH
Sacramento, CA 95814
joellegPC@gmail.com
Dave.Whitmer@countyofnapa.org
anne.cottrell@lucene.com
tkscottco@aol.com
JeriGillPC@outlook.com

Sean Trippi, Principal Planner
Napa County
1195 Third Street, Room 210
Napa, CA 94559
Sean.Trippi@countyofnapa.org

David Morrison
Planning Director and Staff Liaison to Napa County Planning Commission
1195 Third Street, Suite 210
Napa, CA 94559
David.Morrison@countyofnapa.org

Re: Nova Wine Warehouse, Use Permit P16-00456 Mitigated Negative Declaration

Honorable Members of the Planning Commission:

I am writing on behalf of Laborers International Union of North America, Local 324 and its members living and working in and around Napa County ("LIUNA") regarding the Mitigated Negative Declaration ("MND") prepared for the proposed Nova Wine Warehouse, Use Permit P16-00456 (the "Project"). The matter will come before the Napa County Planning Commission on July 18, 2018, and is listed as Agenda Item 7.B.

After reviewing the MND prepared for the Project along with our experts, we believe there is a fair argument that the Project may have significant adverse environmental impacts and that an environmental impact report should therefore be prepared pursuant to the California Environmental Quality Act, Public Resources Code §§ 21000, et seq.

LIUNA submits herewith the expert comments of wildlife ecologist Dr. Shawn Smallwood. Dr. Smallwood's expert comments and resume are attached hereto as Exhibit A. LIUNA also submits herewith comments on the Project's air and greenhouse gas emissions from the environmental consulting firm Soil/Water/Air Protection Enterprise ("SWAPE"). SWAPE's comments and the resumes of their consultants are attached hereto as Exhibit B. LIUNA also submits comments from expert transportation analyst Daniel Smith, Jr., P.E., a registered civil and traffic engineer. Mr. Smith's expert comments and resume are attached hereto as Exhibit C.

LIUNA reserves the right to supplement these comments in advance of and during public hearings concerning the Project. *Galante Vineyards v. Monterey Peninsula Water Management Dist*., 60 Cal. App. 4th 1109, 1121 (1997). Thank you for your attention to this matter.

PROJECT DESCRIPTION

The Project proposes to construct a new light industrial building with approximately 400,500 square feet of floor area which includes approximately 391,934 square feet of warehouse space, and 8,566 square feet of office space. MND, p. 1. While no tenant has been identified, the warehouse is intended for wine storage. *Id*. On-site parking will be provided for 241 vehicles, as well as 22 truck/trailer spaces. *Id*. The east elevation of the warehouse will include 34 depressed loading docs, and the west elevation will include 46 depressed loading docks. *Id*. The MND estimates that the Project will employ 20 full-time employees, and 20 part-time employees. *Id*.

The Project site is currently vacant, has been previously graded, and is located within a partially developed industrial/business park. A portion of the northern boundary of the Project site is adjacent to Suscol Creek. The site includes non-native grasses, a smattering of bushes, and a riparian area along Suscol Creek. Two properties totaling 49.8 acres adjoin the west side of the Project site. The northerly property is planted in vines, with the southerly property is undeveloped and wraps around the southern end of the property. *Id*.

LEGAL STANDARDS

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 Environment v. South Coast Air Quality Management 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.) "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 Environment v. Calif. Resources 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; *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,* 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 University of California* (1988) 47 Cal.3d 376, 392.) The EIR process "protects not only the environment but also informed self-government." (*Pocket Protectors,* 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." (Pub. Resources Code, § 21080(d); see also *Pocket Protectors*, 124 Cal.App.4th at 927.) In 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 ["CEQA Guidelines"]), only if there is not even a "fair argument" that the project will have a significant environmental effect. (Pub. Resources Code, §§ 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.)

Where an initial study shows that the project may have a significant effect on the environment, a mitigated negative declaration may be appropriate. However, 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." (Public Resources Code §§ 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. (Pub. Resources Code, §§ 21082.2(a), 21100, 21151(a); *Pocket Protectors,* 124 Cal.App.4th at 927; *League for Protection of Oakland's etc. Historic Resources 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. (CEQA Guidelines, § 15064(f)(1); *Pocket Protectors*, 124 Cal.App.4th at 931; *Stanislaus Audubon Society v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-15; *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*, 124 Cal.App.4th at 928 [emphasis in original].)

As a matter of law, "substantial evidence includes . . . expert opinion." (Pub. Resources Code, § 21080(e)(1); CEQA Guidelines, § 15064(f)(5).) CEQA Guidelines demand that where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the environmental effects to be significant and prepare an EIR. (CEQA Guidelines § 15064(f)(5); Pub. Res. Code § 21080(e)(1); *Pocket Protectors,*124 Cal.App.4th at 935.) "Significant environmental effect" is defined very broadly as "a substantial or potentially substantial adverse change in the environment." (Pub. Resources Code, § 21068; see also CEQA Guidelines, § 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.,* 13 Cal.3d at 83.) In *Pocket Protectors*, the court explained how expert opinion is considered. The Court limited agencies and courts to weighing the admissibility of the evidence. (*Pocket Protectors,* 124 Cal.App.4th at 935.) In the context of reviewing a negative declaration, "neither the lead agency nor a court may 'weigh' conflicting substantial evidence to determine whether an EIR must be prepared in the first instance." (*Id*.) Where a disagreement arises regarding the validity of a negative declaration, the courts require an EIR. As the Court explained, "[i]t is the function of an EIR, not a negative declaration, to resolve conflicting claims, based on substantial evidence, as to the environmental effects of a project." (*Id*.)

CEQA requires that an environmental document include a description of the project's environmental setting or "baseline." (CEQA Guidelines, § 15063(d)(2).) The CEQA "baseline" is the set of environmental conditions against which to compare a project's anticipated impacts. (*CBE v. SCAQMD*, 48 Cal.4th at 321.) CEQA Guidelines section 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*”].)

ANALYSIS

I. An EIR is Required because the Project will have Significant Impacts on Biological Resources.

A. The MND Fails to Adequately Analyze Impacts to Biological Resources.

The MND concludes that a number of special-status species will not be impacted by the project, but did not follow any protocols developed to detect those species. Detection surveys are needed to determine potential impacts to biological resources and to inform formulation of appropriate mitigation measures. Smallwood, p. 15. “Detection survey guidelines have been developed by professional biologists for good reasons. Special-status spices are often difficult to detect, and negative findings should be based on standards designed to ensure a reasonable likelihood of detection had been implemented.” Smallwood, p. 7. For example, to comply with the California Department of Fish & Wildlife burrowing owl breeding season survey guidelines, at least four surveys are needed, each separated by three weeks, and according to specific schedule attributes. *Id*. at 15.

Despite the importance of species-specific standards and methods, in this instance, “[n]o detection survey protocols were implemented for any special-status species of wildlife that have been reportedly observed all around the project site.” Smallwood, p. 7.

According to the consulting firm Zentner and Zentner that prepared the biological impact assessment, they visited the Project site on four days from later April to early June 2016. They provide no details on the times of day they visited, how long they stayed, and what they did to survey for wildlife. Smallwood, p. 7. As far as what is documents, Zentner and Zentner could have been on the site for 10 minutes per visit. Without this information, and without conducting scientifically appropriate survey detection methods, there is no substantial evidence to support the conclusion that the Project will not have a biological impact.

B. The Project May Have Significant Impacts on Special Status Species, Requiring Prepareion of an EIR.

Dr. Smallwood concludes that the biological analysis conducted as part of the SMND are woefully incomplete and inadequate, and are not based on substantial evidence.

California red-legged frog. The California red-legged frog is a federally threatened species. Smallwood, p. 10. Zentner and Zentner dismissed the likelihood of impacts on the California red-legged frog because the Project site lacks breeding habitat. Dr. Smallwood disagrees with this conclusion. Based on his experience conducting many California red-legged frog surveys, “[t]o successfully breed, California red-legged frogs require more of the environment than just their ‘breeding habitat;’ they also require upland refugia and dispersal routes." Smallwood, p. 10. Therefore, Dr. Smallwood concludes that "project impacts to this species are likely." *Id*.

Tricolored blackbird. This species is listed as threatened under the California Endangered Species Act. Zentner and Zentner dismissed the likelihood of impacts on the tricolored blackbird based on lack of habitat on the Project site. Dr. Smallwood disagrees with this conclusion. Smallwood, p. 10. Dr. Smallwood has "many times observed tricolored blackbirds foraging in tall- and short-stature vegetation both during the breeding and nonbreeding season."

Golden eagle. Zentner and Zentner dismissed the likelihood of impacts on this species because the site lacks breeding habitat. According to Dr. Smallwood, however, "golden eagles cannot breed successfully without access to foraging habitat within their nesting territories, and for that matter, within their larger home ranges outside the breeding season, because without food folder eagles cannot survive to reproduce to feed their chicks." *Id*. Accordingly, Dr. Smallwood concludes that the "Project would adversely affect golden eagles." *Id*.

Western burrowing owl. Zentner and Zentner dismissed the likelihood of impacts on burrowing owls because the habitat is marginal for burrowing owls. Zentner and Zentner did not implement the appropriate CDFW (2012) survey guidelines, and therefore lack the foundation to conclude that the species' occurrence is unlikely. Smallwood, p. 11.

Ferruginous hawk. Zentner and Zentner dismissed the likelihood of impacts on this species because breeding habitat does not occur on the project site. According to Dr. Smallwood, "Ferruginous hawks breed far to the north and visits this part of California during the winter. Foraging over winter is just as important to the persistence of this species as is breeding habitat because breeding cannot succeed in the absence of foraging. The project would have adverse consequences for ferruginous hawk by destroying the species' winter forage."

Swainson's hawk. Swainson's hawk is listed as threated under the California Endangered Species Act. Zentner and Zentner determined that this species is likely to occur onsite. Dr. Smallwood agrees. He saw a family of Swainson's hawks flying right next to the site when he visited. Smallwood, p. 11. "Based on the determination of presence of this species alone, the preparation of an EIR is warranted. A more thorough analysis of project impacts on Swainson's hawk is needed, and so is a more detailed mitigation plan."

Northern harrier. Zentner and Zentner concluded that this species is unlikely to occur onsite because they would have been observed otherwise. Dr. Smallwood rejects this logic. Dr. Smallwood has surveyed for northern harriers over thousands of hours in areas where northern harriers are relatively abundant. Smallwood, p. 11-12. At any given observation station, Dr. Smallwood will detect northern harriers during some surveys and not during others. In addition, "northern harriers become more cryptic during the breeding season, which is when Zentner and Zentner visited the project site." *Id*. at 12. Dr. Smallwood concludes that northern harriers next in the precise type of environment that is available at the Project site. *Id*.

Pallid bat. Zentner and Zentner improperly concluded that bats are unlikely to occur onsite and the habitat to be marginal. According to Dr. Smallwood, however, most species of bats roost in a variety of settings, occupying a variety of roosts in both natural and manmade structures. Smallwood, p. 12.

C. The Project will have a Significant Impact on Wildlife Movement and Habitat Fragmentation.

The MND fails to analyze the Project's impact on wildlife movement. Instead, the MND improperly dismisses the Project's potential to impact wildlife movement by applying a false threshold of significance. Smallwood, p. 12. The MND claims that impacts to wildlife movement result solely from interference with wildlife movement corridors. *Id*. But the CEQA threshold of significance is much broader than this. Under CEQA, a project will have a significant biological impact if it would "[i]nterfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites." CEQA Guidelines, App. G. According to Dr. Smallwood:

> The primary phrase of the standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. In fact, whereas natural corridors sometimes exist, the corridor concept mostly applies to human landscape engineering to reduce the effects of habitat fragmentation (Smallwood 2015). Wildlife movement in the region is often diffuse rather than channeled (Runge et al. 2014, Taylor et al. 2011) unless anthropogenic changes have forced channeling (Smallwood 2015). Wildlife movement also includes stop-over habitat used by birds and bats (Taylor et al. 2011), staging habitat (Warnock 2010), and crossover habitat used by nonvolant wildlife during dispersal, migration or home range patrol.

Smallwood, pp. 12-13.

Dr. Smallwood also concludes that 150-foot setback from the Creek is insufficient to avoid impacts to wildlife moving across the Project site. "The functionality of Suscol Creek as a movement route would diminish significantly with a warehouse built 150 feet away." Smallwood, p. 13.

Moreover, as Dr. Smallwood points out, the Project site is within one of two remaining patches of open space along an 18-mile stretch of valley bottom from Napa to Vallejo. "Any terrestrial species of wildlife requiring open space for east-west travel will be severely harmed by the loss of this open space." *Id*. An EIR is needed to adequately analyze and mitigate the Project's impacts on habitat fragmentation and wildlife movement.

At a minimum, Dr. Smallwood concludes that substantial compensatory mitigation is needed to mitigate the Project's impacts on wildlife movement.

D. The MND Fails to Analyze the Project's Impacts on Wildlife from Additional Traffic Generated by the Project.

The MND contains no analysis of the impacts of the Project's added road traffic on special-status species of wildlife, including species such as the California red-legged frog, California tiger salamander, and American badgers. Smallwood, p. 13. Regardless of whether these species live on site, these and other special status species must cross roadways that will experience increased traffic volume as a result of the Project. *Id*.

Vehicle collisions with special-status species is not a minor issue. Dr. Smallwood explains:

> 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). It is possible that project-related traffic impacts will far exceed the impacts of land conversion to commercial use. But not one word of traffic-related impacts appears in the EIR – a gross shortfall of the CEQA review.

Smallwood, p. 13.

An EIR should be prepared to analyze the Project's impacts on biological resources as a result of increased traffic collisions, and compensatory mitigation should be required to reduce this impact.

E. The MND Fails to Analyze the Project's Impacts from the use of Pest Control Measures.

The MND does not discuss the potential impact of using pesticides inside and outside of the proposed warehouse. As a wine storage distribution facility, there will likely be steps taken to abate pests. There are many businesses that that provide services for controlling stored products pests, perching birds, and rodents and other mammal pests within and around distribution warehouses. Smallwood, p. 14. These businesses advertise exclusion strategies and fumigation for stored products pests, glue boards for rodents, and other measures including anticoagulant poisons and acute toxicants. *Id*. The use of these methods "can harm non-target wildlife through direct exposure and indirect exposure via predation and scavenging." *Id*. "Pest control involving toxicants can result in the spread of toxicants beyond the warehouse." *Id*.

An EIR is needed to analyze the potential impacts of animal damage control associated with the proposed Project. Anticipated animal control strategies at the Project should be detailed, and impacts mitigated.

F. The Project will have Cumulative Impacts on Biological Resources.

Dr. Smallwood concludes that the Project will have a significant cumulative impact on biological resources. Smallwood, p. 15. According to Dr. Smallwood, "[p]roject impacts on any special-status species should, by default, be considered as contributions to cumulative effects. This is so because all special-status species are so listed due to cumulative effects of human activities." Smallwood, p. 15. In addition, Dr. Smallwood notes that the Project site is within one of two remaining patches of open space along an 18-mile stretch of valley bottom from Napa to Vallejo. When combined with previous and future development, "[a]ny terrestrial species of wildlife requiring open space for east-west travel will be severely harmed by the loss of this open space. Smallwood, p. 13. An EIR is needed to fully analyze and mitigate the Project's cumulative biological impacts.

G. Mitigation Measures BIO-1 and BIO-2 are inadequate.

The MND proposes preconstruction surveys as mitigation measures for potential impacts on California red-legged frog and breeding birds. But Dr. Smallwood explains that detection surveys should be implemented to inform an EIR, and then mitigation measures proposed based on the results of those surveys. Smallwood, p. 15. Preconstruction surveys for breeding birds are inadequate mitigation. *Id*. "Detection surveys are necessary for informing the public and decision-makers about potential impacts and appropriate mitigation for breeding birds. Appropriate detection surveys, which are available for multiple bird species, should be implemented to inform an EIR." *Id*.

II. The Project Will Have Significant Greenhouse Gas Impacts.

A. The MND Fails to Consider Required Cold Storage for the Warehouse.

The Project's air quality and greenhouse gas emissions were estimated assuming the Project's warehouse land use will be exclusively unrefrigerated warehouse. SWAPE, p. 3. Because the Project is intended as a wine warehouse, climate control and refrigeration will be needed in at least a portion of the warehouse. *Id*. SWAPE explains that refrigerated warehouses release more air pollutants and GHG emissions than unrefrigerated warehouses. *Id*. By not including refrigerated warehouse as a potential land use, the Project's operational emissions may be grossly underestimated. *Id*. at 4. The air quality analysis must be updated to account for potential cold storage needs at the warehouse.

B. The MND's Daily Operational Vehicle Trip Estimates is Incorrect.

According to the MND's Trip Generation Study, the Project will only generate 202 daily vehicle trips during operation. Trip Generation Study, p. 2. Rather than rely on the ITE *Trip Generation Manual* to determine expected daily trips based on the floor area of the Project, the Study based its estimate on the number of employees the warehouse will generate. SWAPE, p. 5. The Study's assertion that "the use of rates based on total floor area appears to be unreasonable" is not supported by any evidence.

C. An Updated Analysis Demonstrates that the Project Will Have a Significant Greenhouse Gas Impact.

SWAPE prepared an updated GHG analysis including more site specific information and updated parameters. SWAPE, p. 6. Since the exact amount of cold storage is unknown, SWAPE conservatively estimated 15% of the warehouse would be refrigerated. *Id*. In addition, SWAPE relied on default values to estimate daily vehicle trips, as is industry standard. *Id*.

When the corrected input parameters are sued, SWAPE found that the Project will emit 2,687 MT CO_2E per year, which is more than twice the 1,100 MT CO_2E CEQA threshold of significance established by the Bay Area Air Quality Management District ("BAAQMD"). *Id.* As a result, the Project will have a significant GHG impact, which must be analyzed and mitigated in an EIR.

D. The MND Fails to Demonstrate Consistency with Long-Term Statewide Greenhouse Gas Reduction Goals.

The Project's GHG Technical Memo only accounts for the reductions in GHG emissions required to meet the 2020 emission reduction targets set forth in AB 32. In doing so, the MND fails to demonstrate consistency with the more stringent 2030 reduction targets set forth in Executive Order B-30-15 and Senate Bill 32. SWAPE, p. 7. These require Californian to achieve a new, more aggressive statewide emissions reductions target of 40% below 1990 levels by 2030. *Id.* This new GHG reduction goal is wildly acknowledged as a necessary interim target to ensure that California meets its long-range goals of reducing GHG emissions by 80% below 1990 levels by 2050. *Id*. Without any evidence showing that the Project would comply with these more stringent goals, the Project may have a potentially significant impact that has not been analyzed and mitigated.

III. The MND Underestimates the Project's Traffic Impact.

The MND's analysis of the Project's traffic generation relies on assumptions that are inconsistent with the proposed Project. Smith, p. 1. Traffic engineer Dan Smith explains in his comments that the MND estimates trip generation using ITE *Trip Generation, 9th Edition* rates for warehouse use on a per-employee basis. *Id*. The MND assumes that the Project will employee 20 full-time and 20-part time employees, according to the Project applicant. *Id*. However, the Project description and the physical site plan disclose that there will be 80 loading docks, 22 trailer parking spaces, and 241 passenger vehicle parking spaces. *Id*. at 1-2; MND at 1. Accordingly, the Project provides passenger parking spaces for <u>six times</u> as many vehicles as would be needed for the 40 employees if they were all on site at the same time, and all drove alone to and from work. Smith, p. 2. It appears that the employee count may be an initial workforce, with additional employees coming on board at a later time. According to Mr. Smith, the MND underestimates the Project's trip generation by six times. *Id*. This discrepancy must be corrected.

IV. The MND's Cumulative Impact Analysis Violates CEQA.

For each environmental impact, the MND concludes that the Project would not result in cumulatively significant impacts. MND, p. 24. This conclusion is based on improper reasoning, and an analysis that is not in compliance with CEQA.

An initial study and MND must discuss a Project's significant cumulative impacts. 14 CCR § 15130(a). This requirement flows from CEQA section 21083, which requires a finding that a project may have a significant effect on the environment if "the possible effects of a project are individually limited but cumulatively considerable. . . . 'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

"Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." 14 CCR § 15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects." *Id.* "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." *Comm. for a Better Env't v. Cal. Resources Agency* ("*CBE v. CRA*") (2002) 103 Cal.App.4th 98, 117; 14 CCR § 15355(b). A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand.

The CEQA Guidelines allow two methods for satisfying the cumulative impacts analysis requirement: the list-of-projects approach, and the summary-of projects approach. Under either method, the MND must summarize the expected environmental effects of the project and related projects, provide a reasonable analysis of the cumulative impacts, and examine reasonable mitigation options. 14 CCR § 15130(b). The MND's cumulative impacts analysis does not comply with either of these requirements.

The MND's conclusory cumulative impact analysis is devoid of substantial evidence and errs as a matter of law and commonsense. Lacking any substantial evidence, the MND fails to provide sufficient information for the public to evaluate cumulative impacts that may result from approval of the Project.

Indeed, the MND does not mention a single past, present, or future project that it evaluated cumulatively with the instant Project. Without any information on what – if any – cumulative projects were considered, and what environmental impacts those cumulative projects have, the public and decision makers lack any information on which to assess the validity of the cumulative impacts conclusions under CEQA.

The entire cumulative impact analysis for the Project consists of nothing more than the following paragraph:

> The project does not have impacts that are individually limited but cumulatively considerable…..The project does not propose new development that would have a significant impact on the environment or substantially change the existing conditions. With the imposition of standard and project specific conditions of approval, the project does not have impacts that are individually limited but cumulatively considerable.

MND, p. 24.

This bare conclusion does not constitute an analysis. Without even the most basic information about any of the cumulative projects or their environmental impacts, the MND's general cumulative impact conclusion is not supported by substantial evidence.

In addition to being conclusory, the cumulative "analysis" is also based on flawed logic. The conclusion that the Project will have no cumulative impact because each individual impact has been reduced to a less-than-significant level relies on the exact argument CEQA's cumulative impact analysis is meant to protect against. The entire purpose of the cumulative impact analysis is to prevent the situation where mitigation occurs to address project-specific impacts, without looking at the bigger picture. This argument, applied over and over again, has resulted in major environmental damage, and is a major reason why CEQA was enacted. As the court stated in *CBE v. CRA*, 103 Cal. App. 4th at 114:

> Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

(citations omitted).

A new cumulative impacts analysis is needed for the Project that complies with CEQA's requirement to look at the Project's environmental impact, combined with the impacts of other past, current, and probable future projects. An EIR must be prepared to fully analyze the Project's cumulative impacts.

//
//
//
//
//
//
//

CONCLUSION

For the foregoing reasons, an EIR is required to analyze and mitigate the Project's potentially significant environmental impacts. The MND is wholly inadequate. Thank you for your attention to these comments.

Sincerely,

Rebecca L. Davis
Lozeau | Drury LLP

EXHIBIT A

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

County of Napa
Planning, Building and Environmental Services Department
1195 Third St., Suite 210
Napa, CA 94559

16 July 2018

RE: Nova Business Park

To Whom It May Concern,

I write to comment on the biological resources portion of the Nova Business Park Initial Study/Negative Declaration (County of Napa 2016) and supporting documents (Zentner and Zentner 2016), which I understand is to be a new warehousing development on 23.2 acres by Devlin Road and Suscol Creek.

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 also worked for four years as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research is 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 have authored 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 served as Associate Editor of Biological Conservation and of wildlife biology's premier scientific journal, The Journal of Wildlife Management, and I served on the Editorial Board of Environmental Management.

I have performed wildlife surveys in California for thirty-three years. I studied the impacts of human activities and human infrastructure on wildlife, including on golden eagle, Swainson's hawk, burrowing owl, San Joaquin kangaroo rat, mountain lion, California tiger salamander, California red-legged frog, and other species. I have performed research on wildlife mortality caused by wind turbines, electric distribution lines, agricultural practices, and road traffic, and I've performed wildlife surveys at many proposed project sites. I collaborate with colleagues worldwide on the underlying science and policy issues related to anthropogenic impacts on wildlife.

My CV is attached.

SITE VISIT

I visited the proposed project site on 15 July 2018, from 18: 50 hours to 20:20 hours, scanning with binoculars from Devlin Road and Vista Point Drive. Conditions were warm and sunny. In only 90 minutes I detected 24 species of vertebrate wildlife (Table 1). The site is rich in wildlife, partly because the site borders a riparian forest and partly because the site is within one of the last two remaining patches of open space in what is transforming into a continuous north-south stretch of industrial, commercial, and residential development from Napa to Vallejo. Any terrestrial species of wildlife needing to move east or west through open space have two passage points remaining across 18 miles of valley floor, and the proposed project site composes a substantial portion of one of those two remaining passage points. I have no doubt that had I stayed longer, or had I visited during additional times of year and times of day, I would have seen many more species of wildlife.

Many birds are breeding on site. A large nest was visible in one of the Eucalyptus trees that would need to be removed for the project (Figure 1). A Swainson's hawk fledgling underwent flight training with its parents (Figure 2). A group of four American kestrels chased each other around, including two adults and two fledglings (Figure 3). Fledgling mountain bluebirds foraged near the site (Figure 4). Large flocks of red-winged blackbirds circled around, including fledglings. Adult birds of various species remained in full breeding plumage. House finches were abundant (Figure 5), and northern mockingbirds defended their nesting territories against all intruders (Figure 6). Adult American crows also trained their fledglings on and around the project site (Figure 7).

Black-tailed deer also use the riparian forest of Suscol Creek as refugia (Figure 8), and undoubtedly use the project site for foraging and socializing.

Figure 1. *Large nest in a tree planned for removal to accommodate the project. Photographed 15 July 2018.*

Figure 2. *A Swainson's hawk fledgling developing flight skills in presence of parents 200 m from the proposed project site 15 July 2018.*

Figure 3. *One of four American kestrels foraging over and nearby the proposed project site 15 July 2018.*

Figure 4. *Western bluebird juveniles perched next to proposed project site 15 July 2018.*

Table 1. *Species of wildlife I observed during an evening visit on 15 July 2018 at the site of the proposed Nova Business Park site.*

Species	***Scientific name***	**Status[1]**
Turkey vulture	*Cathartes aura*	CDFW 3503.5
Cooper's hawk	*Accipiter cooperi*	CDFW 3503.5, TWL
Red-tailed hawk	*Buteo jamaicensis*	CDFW 3503.5
Swainson's hawk	*Buteo swainsoni*	CT, CDFW 3503.5, BCC
American kestrel	*Falco sparverius*	CDFW 3503.5
Mourning dove	*Zenaita macroura*	
Eurasian collared-dove	*Streptopelia decaocto*	Non-native
California gull	*Larus californicus*	TWL
Black phoebe	*Sayornis nigricans*	
Western scrub-jay	*Aphelocoma californica*	
Common raven	*Corvus corax*	
American crow	*Corvus brachyrhynchos*	
Barn swallow	*Hirundo rustica*	
Northern rough-winged swallow	*Stelgidopteryx serripennis*	
Western bluebird	*Sialia mexicana*	
Northern mockingbird	*Mimus polyglottos*	
European starling	*Sturnus vulgaris*	Non-native
Spotted towhee	*Pipilo maculatus*	
Red-winged blackbird	*Agelaius phoeniceus*	
Brewer's blackbird	*Euphagus cyanocephalus*	
American goldfinch	*Carduelis tristis*	
House finch	*Carpodacus mexicanus*	
American goldfinch	*Carduelis tristis*	
Black-tailed deer	*Odocoileus hemionus*	

[1] Listed as BCC = federal Bird Species of Conservation Concern, CT = California threatened, CDFW 3503.5 = California Department of Fish and Wildlife Code 3503.5 (Birds of prey), TWL = Taxa to Watch List (Shuford and Gardali 2008).

Within only 90 minutes I saw multiple special-status species (Table 1), the presence of each warranting the preparation of an EIR. I saw Swainson's hawks, which are listed as Threatened under the California Endangered Species Act. I also saw a Cooper's hawk, which is on the CDFW Taxa to Watch List. I also saw other species protected by CDFW's raptor code, including Turkey vulture, American kestrel, and Red-tailed hawk. I also saw California gulls flying over the proposed project site, and this species is on CDFW's Taxa to Watch List. I am certain I would have seen many more special-status species had I stayed longer or visited on different dates.

Figure 5. *A pair of house finches perch near each other near the proposed project site 15 July 2018.*

Figure 6. *A northern mockingbird chases off another 0ut-of-view bird near the proposed project site (background) 15 July 2018.*

Figure 7. *An adult American crow checks whether I pose a threat to its fledglings flying near the project site 15 July 2018.*

Figure 8. *A black-tailed deer peers from the riparian forest of Suscol Creek, bordering the proposed project site 15 July 2018.*

BIOLOGICAL IMPACTS ASSESSMENT

According to Zentner and Zentner (2016:4), "*Wildlife at the site appears limited primarily to common suburban/rural species*." Zentner and Zentner provided no criteria or diagnostics for determining the site's limitation to common species. Based on a few site visits to survey for plant species, there was no basis for this conclusion. No detection survey protocols were implemented for any of the special-status species of wildlife that have been reportedly observed all around the project site (Table 2). Zentner and Zenter's conclusion was not credible.

Another Zentner and Zentner (2016:4) conclusion was, "*Therefore, foraging likely mostly takes place in adjacent areas where vegetation is primarily shorter grassland with much fewer ruderal species where hunting would be easier*." This statement is repeated in County of Napa (2016:8). This conclusion referred to foraging by red-tailed hawk, red-shouldered hawk, white-tailed kite, American kestrel, and coyote. County of Napa (2016:8) repeats the conclusion, but out of context of any particular species, thereby giving the false impression that all wildlife forage in the same way. However, even the suite of species which were the subject of Zentner and Zentner's conclusion forage over a variety of vegetation covers, not just short-stature grassland. I have many times recorded the named species foraging in tall, dense stands of vegetation. Zentner and Zentner's conclusion was false and misleading.

Zentner and Zentner (2016:7) reported seeing no other special-status species of wildlife other than Swainson's hawk during their site visits. However, I would not be surprised that they saw no other special-status species because they followed no guidelines or protocols for detecting special-status species. Detection survey guidelines have been developed by professional biologists for good reasons. Special-status species are often difficult to detect, and negative findings should be based on standards designed to ensure a reasonable likelihood of detection had been implemented.

According to Zentner and Zentner (2016), they visited the proposed project site on four days from late April to earl June 2016. They provided no details on times of day they visited the site, how long they stayed, and what they did to survey for wildlife. They failed to explain what they did. Were they on site for 10 minutes per visit? Were they surveying for plants and happened to look up for wildlife occasionally? Without reporting methods even the minimal standards of wildlife detection surveys were unmet.

County of Napa (2016:8) claims, "*As is the case with the potential occurrence of special status plants, the majority of the special-status animal species occurring within the region are highly unlikely to occur on the project site because the site is not within their range*." This claim is false. The special-status species listed in Zentner and Zentner (2016) were listed because the project occurs within their geographic ranges.

Table 2. *Species reported on eBird (https://eBird.org) on or near the proposed project site.*

Species	Scientific name	Status[1]	Location
Long-billed curlew	*Numenius americanus*	TWL	Nearby eBird posting
California gull	*Larus californicus*	TWL	Nearby eBird posting
Bald eagle	*Haliaeetus leucocephalus*	BGEPA, BCC, CE	Nearby eBird postings
Golden eagle	*Aquila chrysaetos*	BGEPA, BCC, CFP	Nearby eBird posting
Red-tailed hawk	*Buteo jamaicensis*	CDFW 3503.5	Nearby eBird postings
Ferruginous hawk	*Buteo regalis*	CDFW 3503.5, TWL	Nearby eBird postings
Swainson's hawk	*Buteo swainsoni*	BCC, CT	Nearby eBird postings
Red-shouldered hawk	*Buteo lineatus*	CDFW 3503.5	Nearby eBird postings
Sharp-shinned hawk	*Accipiter striatus*	CDFW 3503.5, TWL	Nearby eBird posting
Cooper's hawk	*Accipiter cooperi*	CDFW 3503.5, TWL	Nearby eBird posting
Northern harrier	*Circus cyaneus*	SSC3	Nearby eBird postings
White-tailed kite	*Elanus leucurus*	CFP, TWL	Nearby eBird postings
American kestrel	*Falco sparverius*	CDFW 3503.5	Nearby eBird postings
Merlin	*Falco columbarius*	CDFW 3503.5, TWL	Nearby eBird postings
Prairie falcon	*Falco mexicanus*	CDFW 3503.5, TWL	Nearby eBird postings
Peregrine falcon	*Falco peregrinus*	CE, CFP	Nearby eBird postings
Burrowing owl	*Athene cunicularia*	FCC, SSC2	Nearby eBird postings
Short-eared owl	*Asio flammeus*	SSC3	Nearby eBird postings
Great-horned owl	*Bubo virginianus*	CDFW 3503.5	Nearby eBird postings
Long-eared owl	*Asio otus*	SSC3	Nearby eBird postings
Barn owl	*Tyto alba*	CDFW 3503.5,	Nearby eBird postings
Oak titmouse	*Baeolophus inornatus*	BCC	Nearby eBird postings
Loggerhead shrike	*Lanius ludovicianus*	FSC, SSC2	Nearby eBird postings
Yellow warbler	*Setophaga petechia*	SSC2	Nearby eBird postings
Common yellowthroat	*Geothlypis trichas sinuosa*	SSC3	Nearby eBird postings
Savannah sparrow	*Passerculus sandwichensis alaudinus*	SSC3	Nearby eBird postings
Grasshopper sparrow	*Ammodramus savannarum*	SSC2	Nearby eBird posting
Samuel's song sparrow	*Melospiza melodia samuelis*	SSC3	Nearby eBird postings
Tricolored blackbird	*Agelaius tricolor*	CT	Nearby eBird postings
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	SSC3	Nearby eBird postings
Lawrence's goldfinch	*Spinus lawrencei*	BCC	Nearby eBird posting

[1] Listed as FCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, BCC = federal Bird Species of Conservation Concern, CE = California endangered, CT = California threatened, 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 (Shuford and Gardali 2008), and TWL = Taxa to Watch List (Shuford and Gardali 2008).

Also according to County of Napa (2016:8), "*The CNDDB lists seven records of pallid bats within five miles of the project site but has no records of the species on the site...*" This conclusion is based on a misuse of CNDDB. CNDDB is useful only for confirming the presence of a species, but cannot be used to conclude absence because the reporting to CNDDB is voluntary and not based on scientific sampling or equal access to properties. The limitations of CNDDB are well-known, and are summarized in a warning presented by CDFW on the CNDDB web site (https://www.wildlife.ca.gov/Data/CNDDB/About): "*We work very hard to keep the CNDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers...*"

California red-legged frog, *Rana draytonii*

Zentner and Zentner (2016) dismissed the likelihood of impacts on California red-legged frog, a federally threatened species, because the site lacks breeding habitat. However, I have done many California red-legged frog surveys, including many positive and negative findings, and in my experience this species disappears from streams and pond when surrounding upland areas have been converted to intensive human uses or where ground squirrels have been eradicated. To successfully breed, California red-legged frogs require more of the environment than just their "breeding habitat;" they also require upland refugia and dispersal routes. Therefore, I disagree with Zentner and Zentner (2016) and County of Napa (2016), and I conclude that project impacts to this species are likely. Detection survey guidelines should be implemented (U.S. Fish and Wildlife Service 2005).

Tricolored blackbird, *Agelaius tricolor*

This species, which is now listed as threatened under the California Endangered Species Act, was also dismissed by Zentner and Zentner for lack of habitat on the project site. I disagree. I have many times observed tricolored blackbirds foraging in tall- and short-stature vegetation both during the breeding and nonbreeding seasons. I might have seen this species near the project site on 15 July 2018, but the lighting was poor and my observation too brief to confirm presence of the species.

Golden eagle, *Aquila chrysaetos*

Zentner and Zentner (2016) dismissed impacts to golden eagle because the site lacks breeding habitat. However, golden eagles cannot breed successfully without access to foraging habitat within their nesting territories, and for that matter, within their larger home ranges outside the breeding season, because without food golden eagles cannot survive to reproduce or feed their chicks. The project would adversely affect golden eagles.

Western burrowing owl, *Athene cunicularia*

Zentner and Zentner determined burrowing owls are unlikely to occur on the project site because the habitat is marginal for burrowing owls. This determination is inconsistent with the CDFW (2012) guidelines on detection surveys and mitigation for burrowing owls. Detection surveys need to be performed according to a schedule and according to a suite of explicit standards before negative findings would be acceptable to CDFW and California's wildlife professionals. Zentner and Zentner (2016) failed to implement the CDFW (2012) survey guidelines, and therefore lacked foundation for concluding the species' occurrence is unlikely.

Ferruginous hawk, *Buteo regalis*

Zentner and Zentner determined ferruginous hawk will be unaffected by the project because breeding habitat does not occur on the project site. Ferruginous hawks breed far to the north and visits this part of California during the winter. Foraging over winter is just as important to the persistence of this species as is breeding habitat because breeding cannot succeed in the absence of foraging. The project would have adverse consequences for ferruginous hawk by destroying the species' winter forage.

Swainson's hawk, *Buteo swainsoni*

Zentner and Zentner (2016:8) determined this species, which is listed as threatened under the California Endangered Species Act, is likely to occur on site. I concur. I also saw a family of Swainson's hawks flying right next to the site. Based on the determination of presence of this species alone, the preparation of an EIR is warranted. A more thorough analysis of project impacts on Swainson's hawk is needed, and so is a more detailed mitigation plan.

County of Napa (2016:9) attempted to minimize impact estimates on Swainson's hawk by claiming, "*...because the site is primarily composed of relatively dense, ruderal grassland, the quality of the foraging habitat is only of moderate value and would be considered secondary foraging habitat*." There is no such thing as secondary foraging habitat. This terms appears to have been contrived by County of Napa, because having worked extensively on Swainson's hawk (Smallwood 1995) and the habitat concept (Smallwood 2002, 2015), I have yet to see any use of 'secondary foraging habitat' as a scientific term. What criteria would be used to distinguish 'primary foraging habitat' from 'secondary foraging habitat?' Wherever a Swainson's hawk nests, forages, finds refuge, or stops over during migration qualifies as habitat. Habitat is defined by the species' use of the environment (Hall et al. 1997, Morrison et al. 1998).

Northern harrier, *Circus cyaneus*

Zentner and Zentner concluded this species is unlikely to occur on site because they would have been observed otherwise. This reason for the conclusion is nonsense. I have surveyed for northern harrier over thousands of hours of raptor use and behavior surveys in areas where northern harriers are relatively abundant. At any given observation station I will detect northern harriers during some surveys and not during others. Also, northern harriers become more cryptic during the breeding season, which is when Zentner and Zentner visited the project site. They grow more cryptic because they are ground nesters and they make an effort to hide their nests from predators. Northern harriers nest in just the type of environment at the project site.

Other special-status species of birds

Zentner and Zentner dismissed impacts to other birds as well, based on lack of breeding habitat for each. I would concur for a few of the species, but not for all of them. More importantly, Zentner and Zentner neglected to consider the project's impacts on many species of birds by destroying stopover habitat (discussed below).

Pallid bat, Antrozous pallidus

Having not seen any roosts, likely because they did not search for roosts, Zentner and Zentner determined the species' habitat to be marginal and the species unlikely to occur on site. However, most species of bats roost in a variety of settings (Kunz and Lumsden 2003). In an extensive review of literature on bat roosting behavior, the very first sentence of Kunz and Lumsden (2003:3) reads, "*Bats occupy a wide variety of roosts in both natural and manmade structures*." By the third page of their review, Kunz and Lumsden (2003:5) were presenting photos and summaries of the variety of cavities and other structures used by roosting bats, including on trees and limbs <25 cm diameter, on snags, live trees, exfoliating bark, exposed boles, cavities in bird nests, in foliage, furled leaves, within termite and ant nests, and on artificial structures. Without actually searching for bats it is perhaps too easy to conclude that roosting habitat is unavailable, but I nearly always see this conclusion in environmental reviews and it cannot always be correct. Bats must roost somewhere, and according to the scientific literature reviewed by Kunz and Lumsden (2003), they find roost opportunities in many different situations. Therefore, I disagree with the finding of Zentner and Zentner, and in erring on the side of caution in the absence of evidence to the contrary, I have to conclude that the project will have significant impacts on pallid bats.

Wildlife Movement

County of Napa (2016) neglects to assess the project's potential impacts on wildlife movement in the region. Zentner and Zentner (2016) addressed the issue, but applied the nonexistent CEQA standard that impacts on wildlife movement result solely from interference with wildlife movement corridors. The CEQA standard is broader than implied by Zentner and Zentner. The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. In fact, whereas natural corridors sometimes exist, the corridor concept mostly applies to human landscape engineering to reduce the effects of habitat fragmentation (Smallwood 2015). Wildlife movement in the region is often diffuse rather than channeled (Runge et al. 2014, Taylor et al. 2011) unless anthropogenic changes have forced channeling

(Smallwood 2015). Wildlife movement also includes stop-over habitat used by birds and bats (Taylor et al. 2011), staging habitat (Warnock 2010), and crossover habitat used by nonvolant wildlife during dispersal, migration or home range patrol. Contrary to the characterization by Zentner and Zentner, wildlife moving through the area are unlikely constrained to the riparian forest of Suscol Creek. Nor is a 150-foot setback from the Creek sufficient to avoid impacts to all wildlife moving across the project site. The functionality of Suscol Creek as a movement route would diminish significantly with a warehouse built 150 feet away.

As mentioned earlier, the proposed project site is within one of two remaining patches of open space along an 18-mile stretch of valley bottom from Napa to Vallejo. Any terrestrial species of wildlife requiring open space for east-west travel will be severely harmed by the loss of this open space. An EIR should be prepared to adequately address the project's potential impacts on habitat fragmentation and wildlife movement.

Traffic Impacts on Wildlife

A fundamental shortfall of the IS/Neg Dec is its failure to analyze the impacts of the project's added road traffic on special-status species of wildlife, including species such as California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), and American badgers (*Taxidea taxus*) that, regardless of whether they live on the site, must cross roadways that will experience increased traffic volume caused by this project. County of Napa (2016) provides no analysis of impacts on wildlife that will be caused by increased traffic on roadways servicing the project.

According to County of Napa (2016:21), the proposed project would deviate from most warehouse projects in California by supporting fewer jobs per unit area of warehouse floor space. County of Napa (2016) uses this projected difference to predict a daily trip generation rate of 202. It is unclear to me, however, that County of Napa considers truck trips needed to service the project. Also missing from the analysis is any consideration of trip distances and likely trip destinations and origins. These trip attributes are important because the project's impacts on wildlife will reach as far from the project as cars and trucks travel to or from the project site.

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). It is possible that project-related traffic impacts will far exceed the impacts of land conversion to commercial use. But not one word of traffic-related impacts appears in County of Napa (2016) – a gross shortfall of the CEQA review.

Many thousands of roadkill wildlife incidents have been reported to the UC Davis Road Ecology Center (Shilling et al. 2017). In 2017, one of the major hotspots of road-killed wildlife overlaps the project site (Shilling et al. 2017). In fact, the wildlife roadkill hotspot in the project area was found to be statistically highly significant (see Figure 5 of

Shilling et al. 2017). The costs to drivers is also high (Shilling et al. 22017). An EIR should be prepared to assess wildlife mortality that will be caused by increased traffic on existing roadways, and it should provide mitigation measures.

Pest Control and Target and Non-target Mortality

No impacts assessment or mitigation measures are discussed in County of Napa (2016) regarding the use of pesticides within and outside the proposed warehouse. As a wine storage and distribution facility, surely there would be steps taken to abate wildlife pests. Multiple businesses advertise their services on the internet for controlling stored products pests, perching birds, and rodent and other mammal pests within and around distribution warehouses (e.g., https://www.catseyepest.com/pest-control/commercial-pest-control/warehouse-and-distribution-facilities, http://advancedipm.com/commercial/commercial-pest-management-for-warehouses-and-distribution-centers/, https://www.terminix.com/blog/commercial/how-pests-impact-warehouses/. These types of businesses advertise exclusion strategies, as well as fumigation for stored products pests, glue boards for rodents, and 'other measures.' Having a background in animal damage control, I am familiar with 'other methods,' including the use of anticoagulant poisons and acute toxicants such as strychnine. I also know from experience that the use of toxicants can harm non-target wildlife through direct exposure and indirect exposure via predation and scavenging. In other words, pest control involving toxicants can result in the spread of toxicants beyond the warehouse.

I reviewed the scientific literature for animal damage control methods associated with warehousing. Little to no serious scientific attention has been directed toward animal damage control in warehouse settings. Nevertheless, that businesses are advertising their animal damage control services in warehousing indicates either an awareness or an assumption that the warehousing industry experiences damage from wildlife. There also exists a how-to manual on managing animal pests in distribution warehouses (http://www.pctonline.com/article/vertebrate-pests--the-fight-against-pallet-mice/), further indicating conflicts exist between wildlife and distribution warehousing. It is important, therefore, that an EIR be prepared to seriously address the potential impacts of animal damage control associated with this proposed project. Industry practices related to animal damage control should be detailed, as well as anticipated practices at this project. Potential impacts caused by these practices need to be assessed, and suitable mitigation measures formulated along with assurances that they will be implemented.

Cumulative Impacts

According to County of Napa 2016:24), "*The site … does not contain any known listed plant or animal species*." This conclusion is false. A Swainson's hawk was reportedly seen on the site by Zentner and Zentner (2016). I also saw Swainson's hawks there, as well as a Cooper's hawk and multiple additional special-status species. Swainson's hawks are listed as Threatened under California's Endangered Species Act. An EIR should be prepared, and its conclusions need to be based on factual evidence.

The County's cumulative effects analysis is flawed by relying on a false CEQA standard for determining whether a project's impacts will be cumulatively considerable. County of Napa (2016:24) implies that a given project impact is cumulatively considerable only when it has not been fully mitigated. In essence, County of Napa (2016) implies that cumulative impacts are really residual impacts left over by inadequate mitigation at the project. This notion of residual impact being the source of cumulative impact is inconsistent with CEQA's definition of cumulative effects. Individually mitigated projects do not negate the significance of cumulative impacts. If they did, then CEQA would not require a cumulative effects analysis.

An EIR is needed to assess cumulative effects of the proposed project. Project impacts on any special-status species should, by default, be considered as contributions to cumulative effects. This is so because all special-status species are so listed due to cumulative effects of human activities. Many professional biologists devoted considerable time and effort to identify which species warrant extra protections due to cumulative effects of human actions. Deliberations over such listings extended to multiple stakeholders, regulators, and decision-makers. Species attributed special-status are in need of diligent cumulative effects analysis, including those potentially affected by the proposed project.

MITIGATION MEASURES

BIO 1 Preconstruction surveys for California red-legged frog would be inadequate mitigation. Detection surveys are necessary for informing the public and decision-makers about potential impacts and appropriate mitigation for this species. Appropriate detection surveys should be implemented to inform an EIR.

BIO 2 Preconstruction surveys for breeding birds would be inadequate mitigation. Detection surveys are necessary for informing the public and decision-makers about potential impacts and appropriate mitigation for breeding birds. Appropriate detection surveys, which are available for multiple bird species, should be implemented to inform an EIR.

RECOMMENDED MEASURES

Detection Surveys

Detection surveys are needed to inform preconstruction take-avoidance surveys and to inform the formulation of appropriate mitigation measures. For example, to comply with the CDFW (2012) burrowing owl breeding-season survey guidelines, at least four surveys are needed, each separated by 3 weeks and according to specific schedule attributes. Preconstruction take-avoidance surveys are not even close to equivalent with detection surveys. The preconstruction take-avoidance surveys are supposed to be informed by detection surveys; otherwise, the preconstruction surveys likely will fail to detect nesting burrowing owls (or other species) and will result in unmitigated takings.

Detection surveys are needed to estimate impacts and to formulate appropriate minimization and compensatory mitigation measures.

Wildlife Movement

County of Napa (2016) provides no mitigation for adverse impacts on regional movement of wildlife. At a minimum, the IS/Neg Dec needs to include substantial compensatory mitigation 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.

Road Mortality

Compensatory mitigation is needed for the increased wildlife mortality that will be caused by the project's contribution to increased road traffic in the region. I suggest that this mitigation can be directed toward funding of research to identify fatality patterns and effective impact reduction measures.

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 injuries will likely be caused by the increased trip generation of cars and trucks. Many animals need treatment caused by collision injuries and an increasing number appear to be injured by the turbulence of passing trucks.

Animal Damage Control

I suggest that measures are needed to minimize the direct and indirect effects of using toxicants to control wildlife damage in and around the warehouse. One measure might consist of an assurance that no toxicants will be placed outside the warehouse, of if they must be placed, then they are placed within stations that prevent access by non-target species. Another measure might consist of compensatory mitigation for harm to non-target wildlife caused by animal damage control on the project site (see previous measure under Funding Wildlife Rehabilitation Facilities).

Thank you for your attention,

____
Shawn Smallwood, Ph.D.

REFERENCES CITED

CDFW (California Department of Fish and Wildlife). 2012. Staff Report on Burrowing Owl Mitigation. Sacramento, California.

County of Napa. 2016. Nova Wine Warehouse, Use Permit P16-00456 Initial Study/Negative Declaration. Napa, California.

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.

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.

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.

Kunz, T. H., and L. F. Lumsden. 2003. Ecology of cavity and foliage roosting bats. Pages 3–89 in T. H. Kunz and M. B. Fenton, Eds., Bat ecology. The University of Chicago Press, Chicago.

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.

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.

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

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

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.

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.

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.

U.S. Fish and Wildlife Service. 2005. Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog. (https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/crf_survey_guidance__aug2005.pdf

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

Zentner and Zentner. 2016. Fedrick Warehouse Special Status Habitat and Species Analysis. Report to Nova Group, Inc. No location reported.

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

July 13, 2018

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

Subject: Comments on the Nova Wine Warehouse Project

Dear Mr. Drury,

We have reviewed the June 2018 Initial Study (IS) for the Nova Wine Warehouse Project ("Project") located in Napa, California. The Project Applicant proposes to construct a new light industrial building with approximately 400,500 square feet of floor area which includes approximately 391,934 sq. ft. of warehouse space and 8,566 sq. ft. of office space. No tenants have been identified, however the warehouse is intended for wine storage. On-site parking for 241 vehicles, 22 truck/trailer spaces, landscaping, and signage are also included with the proposal.

Our review concludes that the IS/MND fails to adequately evaluate the Project's Hydrology and Water Quality, Air Quality, and Greenhouse Gas (GHG) impacts. As a result, emissions associated with the 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 impacts the Project may have on the surrounding environment.

Hydrology and Water Quality

The Project is directly adjacent to Suscol Creek, a tributary to the Napa River. The IS mentions the Project will be subject to the Napa County Stormwater Ordinance[1] but provides no specific measures that will be taken to achieve compliance. The IS concludes:

> Given the essentially level terrain, and the County's Best Management Practices, which comply with RWQCB requirements, the project does not have the potential to significantly impact water quality and discharge standards (p. 16).

[1] https://www.countyofnapa.org/DocumentCenter/View/2977/Napa-County-Stormwater-and-Runoff-Pollution-Control-Ordinance-PDF

A DEIR is necessary to identify the measures that will be necessary to achieve compliance with the Napa County Stormwater Ordinance.

The Napa County Stormwater Ordinance requires an Erosion and Sediment Control Plan (ESCP) to be required for any project subject to a grading permit. The ESCP is to be approved by a Napa County enforcement official. At a minimum, the ESCP shall include:

- Description of the proposed project and soil disturbing activity;
- Site specific construction-phase BMPs;
- Rationale for selecting the BMPs, including if needed, soil loss calculations;
- A list of applicable permits associated with the soil disturbing activity, such as:
  - Construction General Permit (CGP); Clean Water Act Section 404 Permit; Clean Water Act Section
  - 401 Water Quality Certification; Streambed/Lake Alteration Agreement (1600 Agreements) (p. 11).

None of these requirements were addressed in the IS which again simply states that the Project will "not have the potential to impact water quality and discharge standards" (p. 16).

The Project may also require the preparation of a Stormwater Control Plan (SCP), according to the Napa County Stormwater Ordinance (p. 9). An SCP is separate and distinct from the ESCP.

SCPs are to include conditions of approval that reduce stormwater pollutant discharges through the construction, operation and maintenance of source control measures, low impact development design, site design measures, stormwater treatment measures and hydromodification management measures. Increases in runoff shall be managed in accordance with the post construction requirements.

The IS does not disclose how compliance with Napa County Ordinance requirements will be achieved. A DEIR is required to identify specific steps that will be taken to comply with the Napa County Stormwater Ordinance, along with mitigation measures that would include BMPs that will be effective in reducing any pollutants that would potentially impact Suscol Creek.

Air Quality and Greenhouse Gas

Failure to Adequately Estimate Greenhouse Gas Emissions

The IS 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 criteria air

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

[3] CalEEMod User Guide, p. 2, 9, *available at:* http://www.caleemod.com/

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, located in the Nova Warehouse Greenhouse Gas Memorandum ("Memo"), we found that several unsubstantiated inputs were used to estimate the Project's emissions. As a result, emissions associated with the Project are underestimated. A DEIR should be prepared that adequately assesses the potential impacts that operation of the Project may have on regional and local air quality and global climate change.

Failure to Consider Cold-Storage Requirements for Warehouse

The Project's emissions were estimated assumes that the Project's warehouse land use will be composed of unrefrigerated warehouses, exclusively, and as a result, the Project's operational emissions may be grossly underestimated.

According to the CalEEMod output files provided, the proposed warehouse was modeled as "Unrefrigerated Warehouse-No Rail" (see excerpt below) (Memo, pp. 12).

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	400.50	1000sqft	9.19	400,500.00	0
Other Non-Asphalt Surfaces	88.70	1000sqft	2.04	88,700.00	0
Parking Lot	241.00	Space	2.17	96,400.00	0

Assuming that the Project's proposed warehouse will be composed of entirely unrefrigerated warehouse space, however, is incorrect, since the IS specifically notes that the future tenants of the proposed warehouses are unknown (p. 1). Additionally, the IS states that the warehouse "is intended for wine storage" (p. 1). For this reason, it can be reasonably assumed that at least a portion of the proposed warehouse land uses will be made up of refrigerated warehouses, and therefore, should be modeled as such. Thus, assuming that the warehouse will be unrefrigerated is unsubstantiated. Since the IS states that the future tenants of the proposed warehouses are known and because CEQA requires that the most conservative analysis be conducted, a portion of the warehouse building should have been modeled as refrigerated space, and the other portion as unrefrigerated space in order account for the additional emissions that refrigeration requirements could generate.

By modeling the Project's emissions assuming that no refrigerated warehouses will operate on-site, the IS greatly underestimates the actual emissions that would occur once the proposed Project is operational. Refrigerated warehouses release more air pollutants and GHG emissions when compared to unrefrigerated warehouses for several reasons. First, warehouses equipped with cold storage

[4] CalEEMod User Guide, p. 7, 13, *available at:* http://www.caleemod.com/ (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.)

(refrigerators and freezers, for example) are known to consume more energy when compared to warehouses without cold storage.[5] Second, warehouses equipped with cold storage typically require refrigerated trucks, which are known to idle for much longer, even up to an hour, when compared to unrefrigerated hauling trucks.[6] Lastly, according to a July 2014 *Warehouse Truck Trip Study Data Results and Usage* presentation prepared by the South Coast Air Quality Management District (SCAQMD), it was found that hauling trucks that require refrigeration result in greater truck trip rates when compared to non-refrigerated hauling trucks.[7]

As is discussed by the SCAQMD, "CEQA requires the use of 'conservative analysis' to afford 'fullest possible protection of the environment.'"[8] As a result, the most conservative analysis should be conducted. With this in mind, the proposed Project should be modeled as "Refrigerated Warehouse-No Rail," or at the very least, a portion of the proposed building should be modeled as "Refrigerated Warehouse-No Rail," with the remaining portion of the building modeled as "Unrefrigerated Warehouse-No Rail," so as to take into consideration the possibility that future tenants may require both cold storage and non-cold storage.

By not including refrigerated warehouses as a potential land use in the air quality model, the Project's operational emissions may be grossly underestimated, as the future tenants are currently unknown. Unless the Project Applicant can demonstrate that the future tenants of these proposed buildings will be limited to unrefrigerated warehouse uses, exclusively, it should be assumed that a mix of cold and non-cold storage will be provided on-site. A Project-specific DEIR should be prepared to account for the possibility of refrigerated warehouse needs by future tenants.

Incorrect Operational Daily Vehicle Trip Estimation

A Trip Generation Study ("Study") was prepared for the Project by W-Trans California Traffic Engineering Consultants. Review of the Study demonstrates that the methods used to calculate the number of daily operational vehicle trips for the proposed Project is unsubstantiated and may significantly underestimate the actual number of daily vehicle trips that are likely to occur during operation. As a result, the emissions estimates provided in the Project's CalEEMod output files are also underestimated and should therefore not be relied upon to determine significance.

According to the Study, the Project will only generate a total of 202 daily vehicle trips during operation (see excerpt below) (Trip Generation Study, p. 2).

---

[5] Managing Energy Costs in Warehouses, Business Energy Advisor, *available at*: http://bizenergyadvisor.com/warehouses

[6] "Estimation of Fuel Use by Idling Commercial Trucks," p. 8, *available at:* http://www.transportation.anl.gov/pdfs/TA/373.pdf

[7] "Warehouse Truck Trip Study Data Results and Usage" Presentation. SCAQMD Mobile Source Committee, July 2014, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/finaltrucktripstudymsc072514.pdf?sfvrsn=2, p. 7, 9

[8] "Warehouse Truck Trip Study Data Results and Usage" Presentation. SCAQMD Inland Empire Logistics Council, June 2014, *available at*: http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/final-ielc_6-19-2014.pdf?sfvrsn=2

Table 1 – Trip Generation Summary											
Operation	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Employees	40	5.05	202	0.51	24	18	6	0.66	26	10	16

The Study states that the trip generation rates provided in the *Trip Generation Manual,* 10th Edition, 2017 by the Institute of Transportation Engineers (ITE) were "explored to determine the most appropriate rates to apply to the proposed [warehouse]" (p. 2). The Study continues on to explain how the trip generation rate for the Project was determined. Specifically, the Study states,

> "Consideration was given to evaluating the project based on the floor area, as is common for many land uses. However, a review of standard rates for warehousing uses and a comparison of those based on area versus those based on employees indicate that the average ratio between employees and floor space is about 2,900 square feet per employee. For the project site, this would translate to an anticipated work force of about 138 persons based on a total floor area of 400,500 square feet. Given that this project expects to have only about 30 percent of this number of employees, use of the rates based on total floor area appears unreasonable" (p. 1).

The Study further explains the method used to estimate the number of daily operational vehicle trips, stating,

> "Application of the rates with the number of employees as the independent variable would result in 202 trips per day during typical operation with 24 trips during the morning peak hour and 26 trips during the evening peak hour. Given that the operation would require 20 full-time employees and 20 part-time employees, use of the rates based on employees appears reasonable. Given that employees would not all work the same shift, it is anticipated that there would be fewer than one trip per employee during each peak hour, with only a portion of the employees arriving and departing during each of these hours and the remainder arriving and departing outside the peak periods. It is noted that as is the case with standard trip generation rates, all trips generated by the use are included, so while the independent variable is employees, trips associated with trucks making deliveries or picking up case goods, visitors and other non-employees are reflected in the rate and resulting trip estimates" (p. 1).

As seen above, the Study estimates the number of operational daily vehicle trips for the proposed warehouse based on the number of estimated employees that the warehouse will generate. However, as the Study clearly states, "evaluating the project based on the floor area… is common for many land uses", and thus, the Study's reliance on the number of employees that will work on site is a divergence from how daily operational vehicle trips are typically calculated. The Study's assertion that "the use of rates based on total floor area appears unreasonable" is unsupported and appears to be based on speculation rather than factual evidence. Thus, the Study's failure to estimate vehicle trips based on the square footage of the building is improper and is inconsistent with the methods and recommendations in the ITE's *Trip Generation Manual.* Because the number of daily vehicle trips is used to estimate the Project's operational criteria air pollutant GHG emissions within CalEEMod, the use of an underestimated daily vehicle trip value results in an underestimation of the Project's emissions. Furthermore, review of the Project's CalEEMod output files demonstrates that the Project Applicant failed to correctly input 202 daily vehicle trips into the model. Instead, the model estimates the operational mobile-source and GHG emissions resulting from 180 daily vehicle trips, which underestimates the number of daily vehicle trips by 22 trips per day or 8,030 trips per year (see excerpt below) (Memo, pp. 33).

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	180.23	180.23	180.23	581,348	575,534
Total	180.23	180.23	180.23	581,348	575,534

Thus, the emissions estimates provided within the Project's CalEEMod output files should not be relied upon to determine the significance of the Project's impacts. Until an updated traffic study and air pollution model are prepared, the Project should not be approved.

Updated Analysis Demonstrates Significant Greenhouse Gas Impact

In an effort to more adequately evaluate the Project's potential GHG impacts, we prepared an updated CalEEMod model using the most recent CalEEMod version, CalEEMod.2016.3.2, that includes more site-specific information and corrected input parameters. Since it is unknown how many tenants will require cold-storage, we conservatively assumed that approximately 15 percent of the warehouse buildings will be made up of refrigerated warehouses. Additionally, we relied upon CalEEMod default values to estimate the total number of daily operational vehicle trips for the proposed warehouse.

When correct input parameters are used to model emissions from the proposed Project, we find that the Project's GHG emissions increase when compared to the IS's model. Specifically, we find that the Project's GHG emissions exceed the Bay Area Air Quality Management District's (BAAQMD) bright-line threshold of 1,100 metric tons of carbon dioxide equivalents per year (MT CO_2e/yr), in conflict with findings in the IS (see table below).

Proposed Project's Annual Greenhouse Gas Emissions	
Phase	**MT CO_2e/year**
Construction (Amortized)	37
Proposed Project Operational	2,650
Total	**2,687**
BAAQMD Threshold	**1,100**
Exceed?	***Yes***

As demonstrated above, when correct input parameters are used to model emissions, we find that the Project's GHG emissions increase significantly when compared to the IS's GHG emissions estimation of 1,011 MT CO_2e/yr[9]. This updated emissions estimate demonstrates that when the Project's emissions are estimated correctly, the Project would result in significant impacts that were not previously identified in the IS. As a result, a Project-specific DEIR should be prepared that includes an updated model to adequately estimate the Project's emissions, and mitigation measures should be identified and incorporated to reduce these emissions to a less-than-significant level.

Failure to Demonstrate Consistency with Long-Term Statewide Goals

The Project's GHG Technical Memo ("Memo") evaluates the Project's consistency with the Assembly Bill 32 (AB 32) Scoping Plan (Memo, p. 6). The Memo, however, only makes note of the GHG emissions reductions required to meet 2020 emission reductions set forth by AB 32. Specifically, the Memo notes that "the year 2020 GHG emission reduction goal of AB 32 corresponds with the mid-term target established by Executive Order S-3-05, which aims to reduce California's fair-share contribution of GHGs in 2050 to levels that would stabilize the climate" (Memo, p. 6). Governor Brown recently issued an executive order to establish an even more ambitious GHG reduction target for 2030, which is not addressed in the Memo or IS. Specifically, in September 2016, Governor Brown signed Senate Bill 32, enacting HEALTH & SAFETY CODE § 38566. AR 305. This statue ("SB 32") requires California to achieve a new, more aggressive 40% reduction in GHG emissions over the 1990 levels by 2030.[10] "This 40 percent reduction is widely acknowledged as a necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emissions to 80 percent below 1990 levels by the year 2050."[11] Therefore, by failing to demonstrate consistency with the reduction targets set forth by SB 32, the Project may conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. As a result, the Project may have a potentially significant impact that was not previously addressed in the IS/MND, and as such, a DEIR should be prepared.

SB 32[12] requires emissions reductions above those mandated by AB 32 to reduce GHG emissions 40 percent below their 1990 levels by 2030. 1990 statewide GHG emissions are estimated to be approximately 431 million $MTCO_2e$ ($MMTCO_2e$).[13] Therefore, by 2030 California will be required to reduce statewide emissions by 172 $MMTCO_2e$ (431 x 40%), which results in a statewide limit on GHG emissions of 259 $MMTCO_2e$. 2020 "business-as-usual" levels are estimated to be approximately 509 $MMTCO_2e$.[14] Therefore, in order to successfully reach the 2030 statewide goal of 259 $MMTCO_2e$, California would have to reduce its emissions by 49 percent below the "business-as-usual" levels. This reduction target indicates that compliance with these more aggressive reduction goals, beyond what is mandated by AB 32, will be necessary.

---

[9] This value was calculated by adding the amortized construction emissions to the Project's operational emissions.
[10] *Ibid.*
[11] *Cleveland*, 3 Cal.5th at 519.
[12] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32
[13] http://www.arb.ca.gov/cc/inventory/data/bau.htm
[14] http://energyinnovation.org/wp-content/uploads/2015/04/CA_CapReport_Mar2015.pdf

This 49 percent reduction target should be considered as a threshold of significance against which to measure Project impacts. Because the proposed Project is unlikely to be redeveloped again prior to 2030, the 2030 goals are applicable to any evaluation of the Project's impacts. A DEIR should be prepared to demonstrate the Project's compliance with these more aggressive measures specified in SB 32. Specifically, the Project should demonstrate, at a minimum, a reduction of 49 percent below "business-as-usual" levels. It should be noted that this reduction percentage is applicable to statewide emissions, which is not directly applicable to a project-level analysis. As a result, an additional analysis would need to be conducted to translate the new statewide targets into a project-specific threshold against which Project GHG emissions can be compared. A DEIR should be prepared to quantify any reductions expected to be achieved by mitigation measures, shown by substantial evidence that such measures will be effective, and should demonstrate how these measures will reduce the emissions below the new 2030 significance threshold.

Sincerely,

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

Hadley Nolan

Nova Warehouse

Napa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	60.08	1000sqft	1.38	60,075.00	0
Unrefrigerated Warehouse-No Rail	340.43	1000sqft	7.82	340,425.00	0
Other Asphalt Surfaces	88.70	1000sqft	2.04	88,700.00	0
Parking Lot	241.00	Space	2.17	96,400.00	0

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s) 3.6

Precipitation Freq (Days) 64

Climate Zone 4

Operational Year 2020

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 491.65

CH4 Intensity (lb/MWhr) 0.025

N2O Intensity (lb/MWhr) 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with IS air model.

Land Use - 15 percent of warehouse spaced modeled as refrigerated warehouse space, as future tenants are unknown.

Construction Phase -

Vehicle Trips - Consistent with IS air model.

Energy Use - Consistent with IS air model.

Water And Wastewater - Reflects total of 500,000 gallons/year from the IS air pollution model.

Fleet Mix - Reflects project-specific fleet mix.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	2.14	0.94
tblEnergyUse	NT24E	1.07	0.47
tblEnergyUse	T24E	0.32	0.14
tblFleetMix	HHD	0.04	0.25
tblFleetMix	HHD	0.04	0.25
tblFleetMix	LDA	0.57	0.25
tblFleetMix	LDA	0.57	0.25
tblFleetMix	LDT1	0.04	0.02
tblFleetMix	LDT1	0.04	0.02
tblFleetMix	LDT2	0.17	0.08
tblFleetMix	LDT2	0.17	0.08
tblFleetMix	LHD1	0.03	0.18
tblFleetMix	LHD1	0.03	0.18
tblFleetMix	LHD2	6.5510e-003	0.05
tblFleetMix	LHD2	6.5510e-003	0.05
tblFleetMix	MCY	5.6930e-003	0.00
tblFleetMix	MCY	5.6930e-003	0.00

tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	1.1230e-003	0.00
tblFleetMix	MH	1.1230e-003	0.00
tblFleetMix	MHD	0.02	0.12
tblFleetMix	MHD	0.02	0.12
tblFleetMix	OBUS	3.8260e-003	0.00
tblFleetMix	OBUS	3.8260e-003	0.00
tblFleetMix	SBUS	1.0210e-003	0.00
tblFleetMix	SBUS	1.0210e-003	0.00
tblFleetMix	UBUS	1.8680e-003	0.00
tblFleetMix	UBUS	1.8680e-003	0.00
tblLandUse	LandUseSquareFeet	60,080.00	60,075.00
tblLandUse	LandUseSquareFeet	340,430.00	340,425.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	491.65
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblWater	IndoorWaterUseRate	13,893,500.00	316,448.71
tblWater	IndoorWaterUseRate	78,724,437.50	180,554.28

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	0.4018	3.7719	2.8789	6.8200e-003	0.4255	0.1579	0.5834	0.1593	0.1476	0.3069	0.0000	620.4837	620.4837	0.0921	0.0000	622.7851
2020	2.3996	2.4140	2.1163	5.4200e-003	0.1890	0.0941	0.2831	0.0513	0.0884	0.1398	0.0000	490.7665	490.7665	0.0599	0.0000	492.2630
Maximum	**2.3996**	**3.7719**	**2.8789**	**6.8200e-003**	**0.4255**	**0.1579**	**0.5834**	**0.1593**	**0.1476**	**0.3069**	**0.0000**	**620.4837**	**620.4837**	**0.0921**	**0.0000**	**622.7851**

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	0.4018	3.7719	2.8789	6.8200e-003	0.4255	0.1579	0.5834	0.1593	0.1476	0.3069	0.0000	620.4833	620.4833	0.0921	0.0000	622.7848
2020	2.3996	2.4140	2.1163	5.4200e-003	0.1890	0.0941	0.2831	0.0513	0.0884	0.1398	0.0000	490.7663	490.7663	0.0599	0.0000	492.2628
Maximum	**2.3996**	**3.7719**	**2.8789**	**6.8200e-003**	**0.4255**	**0.1579**	**0.5834**	**0.1593**	**0.1476**	**0.3069**	**0.0000**	**620.4833**	**620.4833**	**0.0921**	**0.0000**	**622.7848**

	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	4-1-2019	6-30-2019	1.6125	1.6125
2	7-1-2019	9-30-2019	1.2606	1.2606
3	10-1-2019	12-31-2019	1.2768	1.2768
4	1-1-2020	3-31-2020	1.1442	1.1442
5	4-1-2020	6-30-2020	1.1310	1.1310
6	7-1-2020	9-30-2020	2.5214	2.5214
		Highest	2.5214	2.5214

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	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Energy	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	323.4831	323.4831	0.0141	4.4100e-003	325.1485
Mobile	0.4183	8.3259	3.6999	0.0225	0.8760	0.0473	0.9234	0.2432	0.0452	0.2883	0.0000	2,131.6893	2,131.6893	0.1028	0.0000	2,134.2592
Waste						0.0000	0.0000		0.0000	0.0000	76.4220	0.0000	76.4220	4.5164	0.0000	189.3324
Water						0.0000	0.0000		0.0000	0.0000	0.1577	0.5997	0.7574	0.0162	3.9000e-004	1.2792
Total	**2.2154**	**8.3950**	**3.7647**	**0.0229**	**0.8760**	**0.0526**	**0.9286**	**0.2432**	**0.0504**	**0.2936**	**76.5797**	**2,455.7851**	**2,532.3648**	**4.6495**	**4.8000e-003**	**2,650.0332**

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	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Energy	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	323.4831	323.4831	0.0141	4.4100e-003	325.1485
Mobile	0.4183	8.3259	3.6999	0.0225	0.8760	0.0473	0.9234	0.2432	0.0452	0.2883	0.0000	2,131.6893	2,131.6893	0.1028	0.0000	2,134.2592
Waste						0.0000	0.0000		0.0000	0.0000	76.4220	0.0000	76.4220	4.5164	0.0000	189.3324
Water						0.0000	0.0000		0.0000	0.0000	0.1577	0.5997	0.7574	0.0162	3.9000e-004	1.2792
Total	**2.2154**	**8.3950**	**3.7647**	**0.0229**	**0.8760**	**0.0526**	**0.9286**	**0.2432**	**0.0504**	**0.2936**	**76.5797**	**2,455.7851**	**2,532.3648**	**4.6495**	**4.8000e-003**	**2,650.0332**

	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	4/1/2019	4/12/2019	5	10	
2	Grading	Grading	4/13/2019	5/24/2019	5	30	
3	Building Construction	Building Construction	5/25/2019	7/17/2020	5	300	
4	Paving	Paving	7/18/2020	8/14/2020	5	20	
5	Architectural Coating	Architectural Coating	8/15/2020	9/11/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 4.21

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 600,750; Non-Residential Outdoor: 200,250; Striped Parking Area: 11,106 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	246.00	96.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	49.00	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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

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	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6341	0.6341	2.0000e-005	0.0000	0.6346
Total	**3.8000e-004**	**2.9000e-004**	**2.9200e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6341**	**0.6341**	**2.0000e-005**	**0.0000**	**0.6346**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

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	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6341	0.6341	2.0000e-005	0.0000	0.6346
Total	**3.8000e-004**	**2.9000e-004**	**2.9200e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6341**	**0.6341**	**2.0000e-005**	**0.0000**	**0.6346**

3.3 Grading - 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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.1301**	**0.0357**	**0.1658**	**0.0540**	**0.0329**	**0.0868**	**0.0000**	**83.5520**	**83.5520**	**0.0264**	**0.0000**	**84.2129**

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	1.2700e-003	9.5000e-004	9.7300e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1138	2.1138	7.0000e-005	0.0000	2.1155
Total	**1.2700e-003**	**9.5000e-004**	**9.7300e-003**	**2.0000e-005**	**2.3700e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.1138**	**2.1138**	**7.0000e-005**	**0.0000**	**2.1155**

3.3 Grading - 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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.1301**	**0.0357**	**0.1658**	**0.0540**	**0.0329**	**0.0868**	**0.0000**	**83.5519**	**83.5519**	**0.0264**	**0.0000**	**84.2128**

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	1.2700e-003	9.5000e-004	9.7300e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1138	2.1138	7.0000e-005	0.0000	2.1155
Total	**1.2700e-003**	**9.5000e-004**	**9.7300e-003**	**2.0000e-005**	**2.3700e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.1138**	**2.1138**	**7.0000e-005**	**0.0000**	**2.1155**

3.4 Building Construction - 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					
Off-Road	0.1854	1.6547	1.3474	2.1100e-003		0.1013	0.1013		0.0952	0.0952	0.0000	184.5568	184.5568	0.0450	0.0000	185.6808
Total	**0.1854**	**1.6547**	**1.3474**	**2.1100e-003**		**0.1013**	**0.1013**		**0.0952**	**0.0952**	**0.0000**	**184.5568**	**184.5568**	**0.0450**	**0.0000**	**185.6808**

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	0.0400	1.0089	0.2818	2.0500e-003	0.0494	7.8300e-003	0.0572	0.0143	7.4900e-003	0.0218	0.0000	196.4788	196.4788	0.0109	0.0000	196.7505
Worker	0.0820	0.0615	0.6262	1.5100e-003	0.1526	1.1000e-003	0.1537	0.0406	1.0100e-003	0.0416	0.0000	136.0639	136.0639	4.3000e-003	0.0000	136.1715
Total	**0.1220**	**1.0703**	**0.9080**	**3.5600e-003**	**0.2019**	**8.9300e-003**	**0.2109**	**0.0549**	**8.5000e-003**	**0.0634**	**0.0000**	**332.5426**	**332.5426**	**0.0152**	**0.0000**	**332.9219**

3.4 Building Construction - 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					
Off-Road	0.1854	1.6547	1.3474	2.1100e-003		0.1013	0.1013		0.0952	0.0952	0.0000	184.5566	184.5566	0.0450	0.0000	185.6806
Total	**0.1854**	**1.6547**	**1.3474**	**2.1100e-003**		**0.1013**	**0.1013**		**0.0952**	**0.0952**	**0.0000**	**184.5566**	**184.5566**	**0.0450**	**0.0000**	**185.6806**

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	0.0400	1.0089	0.2818	2.0500e-003	0.0494	7.8300e-003	0.0572	0.0143	7.4900e-003	0.0218	0.0000	196.4788	196.4788	0.0109	0.0000	196.7505
Worker	0.0820	0.0615	0.6262	1.5100e-003	0.1526	1.1000e-003	0.1537	0.0406	1.0100e-003	0.0416	0.0000	136.0639	136.0639	4.3000e-003	0.0000	136.1715
Total	**0.1220**	**1.0703**	**0.9080**	**3.5600e-003**	**0.2019**	**8.9300e-003**	**0.2109**	**0.0549**	**8.5000e-003**	**0.0634**	**0.0000**	**332.5426**	**332.5426**	**0.0152**	**0.0000**	**332.9219**

3.4 Building Construction - 2020

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					
Off-Road	0.1516	1.3718	1.2047	1.9200e-003		0.0799	0.0799		0.0751	0.0751	0.0000	165.6011	165.6011	0.0404	0.0000	166.6112
Total	**0.1516**	**1.3718**	**1.2047**	**1.9200e-003**		**0.0799**	**0.0799**		**0.0751**	**0.0751**	**0.0000**	**165.6011**	**165.6011**	**0.0404**	**0.0000**	**166.6112**

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	0.0292	0.8337	0.2221	1.8600e-003	0.0450	4.5800e-003	0.0495	0.0130	4.3800e-003	0.0174	0.0000	178.1484	178.1484	9.2800e-003	0.0000	178.3803
Worker	0.0680	0.0492	0.5063	1.3300e-003	0.1390	9.7000e-004	0.1400	0.0370	8.9000e-004	0.0379	0.0000	120.0667	120.0667	3.3800e-003	0.0000	120.1513
Total	**0.0971**	**0.8829**	**0.7284**	**3.1900e-003**	**0.1839**	**5.5500e-003**	**0.1895**	**0.0500**	**5.2700e-003**	**0.0553**	**0.0000**	**298.2151**	**298.2151**	**0.0127**	**0.0000**	**298.5316**

3.4 Building Construction - 2020

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					
Off-Road	0.1516	1.3718	1.2047	1.9200e-003		0.0799	0.0799		0.0751	0.0751	0.0000	165.6009	165.6009	0.0404	0.0000	166.6110
Total	**0.1516**	**1.3718**	**1.2047**	**1.9200e-003**		**0.0799**	**0.0799**		**0.0751**	**0.0751**	**0.0000**	**165.6009**	**165.6009**	**0.0404**	**0.0000**	**166.6110**

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	0.0292	0.8337	0.2221	1.8600e-003	0.0450	4.5800e-003	0.0495	0.0130	4.3800e-003	0.0174	0.0000	178.1484	178.1484	9.2800e-003	0.0000	178.3803
Worker	0.0680	0.0492	0.5063	1.3300e-003	0.1390	9.7000e-004	0.1400	0.0370	8.9000e-004	0.0379	0.0000	120.0667	120.0667	3.3800e-003	0.0000	120.1513
Total	**0.0971**	**0.8829**	**0.7284**	**3.1900e-003**	**0.1839**	**5.5500e-003**	**0.1895**	**0.0500**	**5.2700e-003**	**0.0553**	**0.0000**	**298.2151**	**298.2151**	**0.0127**	**0.0000**	**298.5316**

3.5 Paving - 2020

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					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	5.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0191**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1902**

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	5.8000e-004	4.2000e-004	4.3200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0239	1.0239	3.0000e-005	0.0000	1.0247
Total	**5.8000e-004**	**4.2000e-004**	**4.3200e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0239**	**1.0239**	**3.0000e-005**	**0.0000**	**1.0247**

3.5 Paving - 2020

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					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	5.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0191**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1901**

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	5.8000e-004	4.2000e-004	4.3200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0239	1.0239	3.0000e-005	0.0000	1.0247
Total	**5.8000e-004**	**4.2000e-004**	**4.3200e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0239**	**1.0239**	**3.0000e-005**	**0.0000**	**1.0247**

3.6 Architectural Coating - 2020

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					
Archit. Coating	2.1270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**2.1294**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

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	1.8900e-003	1.3700e-003	0.0141	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	3.3449	3.3449	9.0000e-005	0.0000	3.3472
Total	**1.8900e-003**	**1.3700e-003**	**0.0141**	**4.0000e-005**	**3.8700e-003**	**3.0000e-005**	**3.9000e-003**	**1.0300e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**3.3449**	**3.3449**	**9.0000e-005**	**0.0000**	**3.3472**

3.6 Architectural Coating - 2020

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					
Archit. Coating	2.1270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**2.1294**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

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	1.8900e-003	1.3700e-003	0.0141	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	3.3449	3.3449	9.0000e-005	0.0000	3.3472
Total	**1.8900e-003**	**1.3700e-003**	**0.0141**	**4.0000e-005**	**3.8700e-003**	**3.0000e-005**	**3.9000e-003**	**1.0300e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**3.3449**	**3.3449**	**9.0000e-005**	**0.0000**	**3.3472**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	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
	tons/yr										MT/yr					
Mitigated	0.4183	8.3259	3.6999	0.0225	0.8760	0.0473	0.9234	0.2432	0.0452	0.2883	0.0000	2,131.6893	2,131.6893	0.1028	0.0000	2,134.2592
Unmitigated	0.4183	8.3259	3.6999	0.0225	0.8760	0.0473	0.9234	0.2432	0.0452	0.2883	0.0000	2,131.6893	2,131.6893	0.1028	0.0000	2,134.2592

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	100.93	100.93	100.93	325,582	325,582
Unrefrigerated Warehouse-No Rail	571.92	571.92	571.92	1,844,837	1,844,837
Total	672.86	672.86	672.86	2,170,419	2,170,419

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	9.50	7.30	7.30	100.00	0.00	0.00	92	5	3
Unrefrigerated Warehouse-No	9.50	7.30	7.30	100.00	0.00	0.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.569185	0.038999	0.171806	0.120317	0.026328	0.006551	0.017860	0.035422	0.003826	0.001868	0.005693	0.001021	0.001123
Parking Lot	0.569185	0.038999	0.171806	0.120317	0.026328	0.006551	0.017860	0.035422	0.003826	0.001868	0.005693	0.001021	0.001123
Refrigerated Warehouse-No Rail	0.252900	0.017300	0.076300	0.053500	0.183300	0.045600	0.124400	0.246700	0.000000	0.000000	0.000000	0.000000	0.000000
Unrefrigerated Warehouse-No Rail	0.252900	0.017300	0.076300	0.053500	0.183300	0.045600	0.124400	0.246700	0.000000	0.000000	0.000000	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	248.2956	248.2956	0.0126	3.0300e-003	249.5143
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	248.2956	248.2956	0.0126	3.0300e-003	249.5143
NaturalGas Mitigated	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	75.1874	75.1874	1.4400e-003	1.3800e-003	75.6342
NaturalGas Unmitigated	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	75.1874	75.1874	1.4400e-003	1.3800e-003	75.6342

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					
Other Asphalt Surfaces	0	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
Parking Lot	0	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
Refrigerated Warehouse-No Rail	227684	1.2300e-003	0.0112	9.3800e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.1501	12.1501	2.3000e-004	2.2000e-004	12.2223
Unrefrigerated Warehouse-No Rail	1.18127e+006	6.3700e-003	0.0579	0.0486	3.5000e-004		4.4000e-003	4.4000e-003		4.4000e-003	4.4000e-003	0.0000	63.0373	63.0373	1.2100e-003	1.1600e-003	63.4119
Total		**7.6000e-003**	**0.0691**	**0.0580**	**4.2000e-004**		**5.2500e-003**	**5.2500e-003**		**5.2500e-003**	**5.2500e-003**	**0.0000**	**75.1874**	**75.1874**	**1.4400e-003**	**1.3800e-003**	**75.6342**

5.2 Energy by Land Use - NaturalGas

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					
Other Asphalt Surfaces	0	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
Parking Lot	0	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
Refrigerated Warehouse-No Rail	227684	1.2300e-003	0.0112	9.3800e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.1501	12.1501	2.3000e-004	2.2000e-004	12.2223
Unrefrigerated Warehouse-No Rail	1.18127e+006	6.3700e-003	0.0579	0.0486	3.5000e-004		4.4000e-003	4.4000e-003		4.4000e-003	4.4000e-003	0.0000	63.0373	63.0373	1.2100e-003	1.1600e-003	63.4119
Total		**7.6000e-003**	**0.0691**	**0.0580**	**4.2000e-004**		**5.2500e-003**	**5.2500e-003**		**5.2500e-003**	**5.2500e-003**	**0.0000**	**75.1874**	**75.1874**	**1.4400e-003**	**1.3800e-003**	**75.6342**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	585731	130.6232	6.6400e-003	1.5900e-003	131.2643
Unrefrigerated Warehouse-No Rail	527659	117.6725	5.9800e-003	1.4400e-003	118.2500
Total		**248.2957**	**0.0126**	**3.0300e-003**	**249.5143**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	585731	130.6232	6.6400e-003	1.5900e-003	131.2643
Unrefrigerated Warehouse-No Rail	527659	117.6725	5.9800e-003	1.4400e-003	118.2500
Total		**248.2957**	**0.0126**	**3.0300e-003**	**249.5143**

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	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Unmitigated	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139

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	0.2127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5761					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.4000e-004	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Total	**1.7895**	**6.0000e-005**	**6.7500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0131**	**0.0131**	**3.0000e-005**	**0.0000**	**0.0139**

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	0.2127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5761					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.4000e-004	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Total	**1.7895**	**6.0000e-005**	**6.7500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0131**	**0.0131**	**3.0000e-005**	**0.0000**	**0.0139**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.7574	0.0162	3.9000e-004	1.2792
Unmitigated	0.7574	0.0162	3.9000e-004	1.2792

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0.316449 / 0	0.4823	0.0103	2.5000e-004	0.8145
Unrefrigerated Warehouse-No Rail	0.180554 / 0	0.2752	5.8900e-003	1.4000e-004	0.4647
Total		**0.7574**	**0.0162**	**3.9000e-004**	**1.2792**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0.316449 / 0	0.4823	0.0103	2.5000e-004	0.8145
Unrefrigerated Warehouse-No Rail	0.180554 / 0	0.2752	5.8900e-003	1.4000e-004	0.4647
Total		**0.7574**	**0.0162**	**3.9000e-004**	**1.2792**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	76.4220	4.5164	0.0000	189.3324
Unmitigated	76.4220	4.5164	0.0000	189.3324

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	56.48	11.4649	0.6776	0.0000	28.4039
Unrefrigerated Warehouse-No Rail	320	64.9571	3.8389	0.0000	160.9285
Total		**76.4220**	**4.5164**	**0.0000**	**189.3324**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	56.48	11.4649	0.6776	0.0000	28.4039
Unrefrigerated Warehouse-No Rail	320	64.9571	3.8389	0.0000	160.9285
Total		**76.4220**	**4.5164**	**0.0000**	**189.3324**

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

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

1640 5th St.., Suite 204 Santa
Santa Monica, California 90401
Tel: (949) 887-9013
Email: mhagemann@swape.com

Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

<u>Other Experience:</u>

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

HADLEY KATHRYN NOLAN

SOIL WATER AIR PROTECTION ENTERPRISE
2656 29th Street, Suite 201
Santa Monica, California 90405
Mobile: (678) 551-0836
Office: (310) 452-5555
Fax: (310) 452-5550
Email: hadley@swape.com

EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES **B.S. ENVIRONMENTAL SCIENCES & ENVIRONMENTAL SYSTEMS AND SOCIETY** *JUNE 2016*

PROJECT EXPERIENCE

SOIL WATER AIR PROTECTION ENTERPRISE ***SANTA MONICA, CA***

AIR QUALITY SPECIALIST

SENIOR PROJECT ANALYST: CEQA ANALYSIS & MODELING

- Modeled construction and operational activities for proposed land use projects using CalEEMod to quantify criteria air pollutant and greenhouse gas (GHG) emissions.
- Organized presentations containing figures and tables that compare results of criteria air pollutant analyses to thresholds.
- Quantified ambient air concentrations at sensitive receptor locations using AERSCREEN, a U.S. EPA recommended screening level dispersion model.
- Conducted construction and operational health risk assessments for residential, worker, and school children sensitive receptors.
- Prepared reports that discuss adequacy of air quality and health risk analyses conducted for proposed land use developments subject to CEQA review by verifying compliance with local, state, and regional regulations.

SENIOR PROJECT ANALYST: GREENHOUSE GAS MODELING AND DETERMINATION OF SIGNIFICANCE

- Evaluated environmental impact reports for proposed projects to identify discrepancies with the methods used to quantify and assess GHG impacts.
- Quantified GHG emissions for proposed projects using CalEEMod to produce reports, tables, and figures that compare emissions to applicable CEQA thresholds and reduction targets.
- Determined compliance of proposed land use developments with AB 32 GHG reduction targets, with GHG significance thresholds recommended by Air Quality Management Districts in California, and with guidelines set forth by CEQA.

PROJECT ANALYST: ASSESSMENT OF AIR QUALITY IMPACTS FROM PROPOSED DIRECT TRANSFER FACILITY

- Assessed air quality impacts resulting from implementation of a proposed Collection Service Agreement for Exclusive Residential and Commercial Garbage, Recyclable Materials, and Organic Waste Collection Services for a community.
- Organized tables and maps to demonstrate potential air quality impacts resulting from proposed hauling trip routes.
- Conducted air quality analyses that compared quantified criteria air pollutant emissions released during construction of direct transfer facility to the Bay Area Air Quality Management District's (BAAQMD) significance thresholds.
- Prepared final analytical report to demonstrate local and regional air quality impacts, as well as GHG impacts.

PROJECT ANALYST: EXPOSURE ASSESSMENT OF LEAD PRODUCTS FOR PROPOSITION 65 COMPLIANCE DETERMINATION

- Calculated human exposure and lifetime health risk for over 300 lead products undergoing Proposition 65 compliance review.
- Compiled and analyzed laboratory testing data and produced tables, charts, and graphs to exhibit emission levels.
- Compared finalized testing data to Proposition 65 Maximum Allowable Dose Levels (MADLs) to determine level of compliance.
- Prepared final analytical lead exposure Certificate of Merit (COM) reports and organized supporting data for use in environmental enforcement statute Proposition 65 cases.

ACCOMPLISHMENTS

- **Academic Honoree,** Dean's List, University of California, Los Angeles ***MAR 2013, MAR 2014, JAN 2015, JAN 2016***

EXHIBIT C

July 16, 2018

Mr. Richard Drury
Lozeau Drury
410 12th Street, Suite 250
Oakland, CA 94607

Subject: **Nova Wine Warehouse Initial Study Mitigated Negative Declaration (UP - 00456)** P18029

Dear Mr. Drury:

At your request, I have reviewed the Initial Study / Mitigated Negative Declaration (the "IS/MND") for the Nova Wine Warehouse Project (the "Project") in the County of Napa (the "County"). My review is specific to the traffic and transportation section of the IS/MND and its supporting documentation.

My qualifications to perform this review include registration as a Civil and Traffic Engineer in California and over 49 years professional consulting engineering practice in the traffic and transportation industry. I have both prepared and performed adequacy reviews of numerous transportation and circulation sections of environmental impact reports prepared under the California Environmental Quality Act (CEQA) including mixed use complexes. My professional resume is attached. Findings of my review are summarized below.

The Assumptions Regarding Trip Generation Are Inconsistent With the Proposed Facilities to be Provided

The IS/MND estimates trip generation for the Project based on ITE *Trip Generation, 9th Edition* rates for warehouse use on a per employee basis. The number of employees assumed is 20 full-time and 20 part time personnel, based on the assertion of the Project sponsor. However, the Project Description in the IS/MND and the physical site plan indicate there would be 80 loading docks, 22 trailer parking spaces and 241 passenger vehicle parking spaces. Hence, the Project provides passenger vehicle parking spaces for *six times* as many vehicles as would be needed for the 40 employees if they all were on site at the same time and all drove alone to and from work. It is obvious that the 40 employees represents an initial work force that will considerably expand as use of the proposed warehouse increases. It is also obvious that that the IS/MND underestimates the Project's trip generation by about 6-fold.

Consequently, its conclusion that the Project would have a less than significant impact with regard to causing an increase in traffic which is substantial in relation to existing traffic load and capacity of the street system and/or conflict with General Plan Policy CIR-16 which seeks to maintain an adequate Level of Service (LOS) at signalized and unsignalized intersections is improperly supported and more likely than not incorrect.

Conclusion

This concludes my current comments on the Nova Wine Warehouse Project FEIR. Given the vast disparity between the number of employees assumed in the traffic analysis and the number that could be supported by the passenger vehicle parking facilities provided on the site plan, there is fair argument that the IS/MND traffic analysis is defective and that further analysis should be done. The range of disparity of what is assumed in the traffic analysis and what could be supported by the parking facilities provided is such that it could also be consequential for the air quality and greenhouse gas analyses in the IS/MND

Sincerely,

Smith Engineering & Management
A California Corporation

REGISTERED PROFESSIONAL ENGINEER
DANIEL T SMITH, JR.
No. 0938
Exp. 6-30-20
TRAFFIC
STATE OF CALIFORNIA

Daniel T. Smith Jr., P.E.
President

Attachment 1
Resume of Daniel T. Smith Jr., P.E.

SMITH ENGINEERING & MANAGEMENT

DANIEL T. SMITH, Jr.
President

EDUCATION

Bachelor of Science, Engineering and Applied Science, Yale University, 1967
Master of Science, Transportation Planning, University of California, Berkeley, 1968

PROFESSIONAL REGISTRATION

California No. 21913 (Civil)
California No. 938 (Traffic)
Nevada No. 7969 (Civil)
Washington No. 29337 (Civil)
Arizona No. 22131 (Civil)

PROFESSIONAL EXPERIENCE

Smith Engineering & Management, 1993 to present. President.
DKS Associates, 1979 to 1993. Founder, Vice President, Principal Transportation Engineer.
De Leuw, Cather & Company, 1968 to 1979. Senior Transportation Planner.
Personal specialties and project experience include:

Litigation Consulting. Provides consultation, investigations and expert witness testimony in highway design, transit design and traffic engineering matters including condemnations involving transportation access issues; traffic accidents involving highway design or traffic engineering factors; land use and development matters involving access and transportation impacts; parking and other traffic and transportation matters.

Urban Corridor Studies/Alternatives Analysis. Principal-in-charge for State Route (SR) 102 Feasibility Study, a 35-mile freeway alignment study north of Sacramento. Consultant on I-280 Interstate Transfer Concept Program, San Francisco, an AA/EIS for completion of I-280, demolition of Embarcadero freeway, substitute light rail and commuter rail projects. Principal-in-charge, SR 238 corridor freeway/expressway design/environmental study, Hayward (Calif.) Project manager, Sacramento Northeast Area multi-modal transportation corridor study. Transportation planner for I-80N West Terminal Study, and Harbor Drive Traffic Study, Portland, Oregon. Project manager for design of surface segment of Woodward Corridor LRT, Detroit, Michigan. Directed staff on I-80 National Strategic Corridor Study (Sacramento-San Francisco), US 101-Sonoma freeway operations study, SR 92 freeway operations study, I-880 freeway operations study, SR 152 alignment studies, Sacramento RTD light rail systems study, Tasman Corridor LRT AA/EIS, Fremont-Warm Springs BART extension plan/EIR, SRs 70/99 freeway alternatives study, and Richmond Parkway (SR 93) design study.

Area Transportation Plans. Principal-in charge for transportation element of City of Los Angeles General Plan Framework, shaping nations largest city two decades into 21'st century. Project manager for the transportation element of 300-acre Mission Bay development in downtown San Francisco. Mission Bay involves 7 million gsf office/commercial space, 8,500 dwelling units, and community facilities. Transportation features include relocation of commuter rail station; extension of MUNI-Metro LRT; a multi-modal terminal for LRT, commuter rail and local bus; removal of a quarter mile elevated freeway; replacement by new ramps and a boulevard; an internal roadway network overcoming constraints imposed by an internal tidal basin; freeway structures and rail facilities; and concept plans for 20,000 structured parking spaces. Principal-in-charge for circulation plan to accommodate 9 million gsf of office/commercial growth in downtown Bellevue (Wash.). Principal-in-charge for 64 acre, 2 million gsf multi-use complex for FMC adjacent to San Jose International Airport. Project manager for transportation element of Sacramento Capitol Area Plan for the state governmental complex, and for Downtown Sacramento Redevelopment Plan. Project manager for Napa (Calif.) General Plan Circulation Element and Downtown Riverfront Redevelopment Plan, on parking program for downtown Walnut Creek, on downtown transportation plan for San Mateo and redevelopment plan for downtown Mountain View (Calif.), for traffic circulation and safety plans for California cities of Davis, Pleasant Hill and Hayward, and for Salem, Oregon.

Transportation Centers. Project manager for Daly City Intermodal Study which developed a $7 million surface bus terminal, traffic access, parking and pedestrian circulation improvements at the Daly City BART station plus development of functional plans for a new BART station at Colma. Project manager for design of multi-modal terminal (commuter rail, light rail, bus) at Mission Bay, San Francisco. In Santa Clarita Long Range Transit Development Program, responsible for plan to relocate system's existing timed-transfer hub and development of three satellite transfer hubs. Performed airport ground transportation system evaluations for San Francisco International, Oakland International, Sea-Tac International, Oakland International, Los Angeles International, and San Diego Lindberg.

Campus Transportation. Campus transportation planning assignments for UC Davis, UC Berkeley, UC Santa Cruz and UC San Francisco Medical Center campuses; San Francisco State University; University of San Francisco; and the University of Alaska and others. Also developed master plans for institutional campuses including medical centers, headquarters complexes and research & development facilities.

Special Event Facilities. Evaluations and design studies for football/baseball stadiums, indoor sports arenas, horse and motor racing facilities, theme parks, fairgrounds and convention centers, ski complexes and destination resorts throughout western United States.

Parking. Parking programs and facilities for large area plans and individual sites including downtowns, special event facilities, university and institutional campuses and other large site developments; numerous parking feasibility and operations studies for parking structures and surface facilities; also, resident preferential parking .

Transportation System Management & Traffic Restraint. Project manager on FHWA program to develop techniques and guidelines for neighborhood street traffic limitation. Project manager for Berkeley, (Calif.), Neighborhood Traffic Study, pioneered application of traffic restraint techniques in the U.S. Developed residential traffic plans for Menlo Park, Santa Monica, Santa Cruz, Mill Valley, Oakland, Palo Alto, Piedmont, San Mateo County, Pasadena, Santa Ana and others. Participated in development of photo/radar speed enforcement device and experimented with speed humps. Co-author of Institute of Transportation Engineers reference publication on neighborhood traffic control.

Bicycle Facilities. Project manager to develop an FHWA manual for bicycle facility design and planning, on bikeway plans for Del Mar, (Calif.), the UC Davis and the City of Davis. Consultant to bikeway plans for Eugene, Oregon, Washington, D.C., Buffalo, New York, and Skokie, Illinois. Consultant to U.S. Bureau of Reclamation for development of hydraulically efficient, bicycle safe drainage inlets. Consultant on FHWA research on effective retrofits of undercrossing and overcrossing structures for bicyclists, pedestrians, and handicapped.

MEMBERSHIPS

Institute of Transportation Engineers Transportation Research Board

PUBLICATIONS AND AWARDS

Residential Street Design and Traffic Control, with W. Homburger *et al*. Prentice Hall, 1989.

Co-recipient, Progressive Architecture Citation, *Mission Bay Master Plan*, with I.M. Pei WRT Associated, 1984.

Residential Traffic Management, State of the Art Report, U.S. Department of Transportation, 1979.

Improving The Residential Street Environment, with Donald Appleyard et al., U.S. Department of Transportation, 1979.

Strategic Concepts in Residential Neighborhood Traffic Control, International Symposium on Traffic Control Systems, Berkeley, California, 1979.

Planning and Design of Bicycle Facilities: Pitfalls and New Directions, Transportation Research Board, Research Record 570, 1976.

Co-recipient, Progressive Architecture Award, *Livable Urban Streets, San Francisco Bay Area and London*, with Donald Appleyard, 1979.

5311 Lowry Road, Union City, CA 94587 tel: 510.489.9477 fax: 510.489.9478

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

Via Email

July 16, 2018

Joelle Gallagher, Commissioner
Dave Whitmer, Commissioner
Anne Cottrell, Commissioner
Terry Scott, Commissioner
Jeri Gill, Commissioner
Napa County Planning Commission
915 I Street
City Council Chambers – NCH
Sacramento, CA 95814
joellegPC@gmail.com
Dave.Whitmer@countyofnapa.org
anne.cottrell@lucene.com
tkscottco@aol.com
JeriGillPC@outlook.com

Sean Trippi, Principal Planner
Napa County
1195 Third Street, Room 210
Napa, CA 94559
Sean.Trippi@countyofnapa.org

David Morrison
Planning Director and Staff Liaison to Napa County Planning Commission
1195 Third Street, Suite 210
Napa, CA 94559
David.Morrison@countyofnapa.org

Re: **Nova Wine Warehouse, Use Permit P16-00456 Mitigated Negative Declaration**

Honorable Members of the Planning and Design Commission:

I am writing on behalf of Laborers International Union of North America, Local 324 and its members living and working in and around Napa County ("LIUNA") regarding the Mitigated Negative Declaration ("MND") prepared for the proposed Nova Wine Warehouse, Use Permit P16-00456 (the "Project"). The matter will come before the Napa County Planning Commission on July 19, 2018, and is listed as Agenda Item 7.B.

After reviewing the MND prepared for the Project along with our experts, we believe there is a fair argument that the Project may have significant adverse environmental impacts and that an environmental impact report should therefore be prepared pursuant to the California Environmental Quality Act, Public Resources Code §§ 21000, et seq.

LIUNA submits herewith the expert comments of wildlife ecologist Dr. Shawn Smallwood. Dr. Smallwood's expert comments and resume are attached hereto as Exhibit A. LIUNA also submits herewith comments on the Project's air and greenhouse gas emissions from the environmental consulting firm Soil/Water/Air Protection Enterprise ("SWAPE"). SWAPE's comments and the resumes of their consultants are attached hereto as Exhibit B. LIUNA also submits comments from expert transportation analyst Daniel Smith, Jr., P.E., a registered civil and traffic engineer. Mr. Smith's expert comments and resume are attached hereto as Exhibit C.

LIUNA reserves the right to supplement these comments in advance of and during public hearings concerning the Project. *Galante Vineyards v. Monterey Peninsula Water Management Dist*., 60 Cal. App. 4th 1109, 1121 (1997). Thank you for your attention to this matter.

Sincerely,

Rebecca L. Davis
Lozeau | Drury LLP

EXHIBIT A

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

County of Napa
Planning, Building and Environmental Services Department
1195 Third St., Suite 210
Napa, CA 94559

16 July 2018

RE: Nova Business Park

To Whom It May Concern,

I write to comment on the biological resources portion of the Nova Business Park Initial Study/Negative Declaration (County of Napa 2016) and supporting documents (Zentner and Zentner 2016), which I understand is to be a new warehousing development on 23.2 acres by Devlin Road and Suscol Creek.

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 also worked for four years as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research is 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 have authored 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 served as Associate Editor of Biological Conservation and of wildlife biology's premier scientific journal, The Journal of Wildlife Management, and I served on the Editorial Board of Environmental Management.

I have performed wildlife surveys in California for thirty-three years. I studied the impacts of human activities and human infrastructure on wildlife, including on golden eagle, Swainson's hawk, burrowing owl, San Joaquin kangaroo rat, mountain lion, California tiger salamander, California red-legged frog, and other species. I have performed research on wildlife mortality caused by wind turbines, electric distribution lines, agricultural practices, and road traffic, and I've performed wildlife surveys at many proposed project sites. I collaborate with colleagues worldwide on the underlying science and policy issues related to anthropogenic impacts on wildlife.

My CV is attached.

SITE VISIT

I visited the proposed project site on 15 July 2018, from 18: 50 hours to 20:20 hours, scanning with binoculars from Devlin Road and Vista Point Drive. Conditions were warm and sunny. In only 90 minutes I detected 24 species of vertebrate wildlife (Table 1). The site is rich in wildlife, partly because the site borders a riparian forest and partly because the site is within one of the last two remaining patches of open space in what is transforming into a continuous north-south stretch of industrial, commercial, and residential development from Napa to Vallejo. Any terrestrial species of wildlife needing to move east or west through open space have two passage points remaining across 18 miles of valley floor, and the proposed project site composes a substantial portion of one of those two remaining passage points. I have no doubt that had I stayed longer, or had I visited during additional times of year and times of day, I would have seen many more species of wildlife.

Many birds are breeding on site. A large nest was visible in one of the Eucalyptus trees that would need to be removed for the project (Figure 1). A Swainson's hawk fledgling underwent flight training with its parents (Figure 2). A group of four American kestrels chased each other around, including two adults and two fledglings (Figure 3). Fledgling mountain bluebirds foraged near the site (Figure 4). Large flocks of red-winged blackbirds circled around, including fledglings. Adult birds of various species remained in full breeding plumage. House finches were abundant (Figure 5), and northern mockingbirds defended their nesting territories against all intruders (Figure 6). Adult American crows also trained their fledglings on and around the project site (Figure 7).

Black-tailed deer also use the riparian forest of Suscol Creek as refugia (Figure 8), and undoubtedly use the project site for foraging and socializing.

Figure 1. *Large nest in a tree planned for removal to accommodate the project. Photographed 15 July 2018.*

Figure 2. *A Swainson's hawk fledgling developing flight skills in presence of parents 200 m from the proposed project site 15 July 2018.*

Figure 3. *One of four American kestrels foraging over and nearby the proposed project site 15 July 2018.*

Figure 4. *Western bluebird juveniles perched next to proposed project site 15 July 2018.*

Table 1. *Species of wildlife I observed during an evening visit on 15 July 2018 at the site of the proposed Nova Business Park site.*

Species	***Scientific name***	**Status[1]**
Turkey vulture	*Cathartes aura*	CDFW 3503.5
Cooper's hawk	*Accipiter cooperi*	CDFW 3503.5, TWL
Red-tailed hawk	*Buteo jamaicensis*	CDFW 3503.5
Swainson's hawk	*Buteo swainsoni*	CT, CDFW 3503.5, BCC
American kestrel	*Falco sparverius*	CDFW 3503.5
Mourning dove	*Zenaita macroura*	
Eurasian collared-dove	*Streptopelia decaocto*	Non-native
California gull	*Larus californicus*	TWL
Black phoebe	*Sayornis nigricans*	
Western scrub-jay	*Aphelocoma californica*	
Common raven	*Corvus corax*	
American crow	*Corvus brachyrhynchos*	
Barn swallow	*Hirundo rustica*	
Northern rough-winged swallow	*Stelgidopteryx serripennis*	
Western bluebird	*Sialia mexicana*	
Northern mockingbird	*Mimus polyglottos*	
European starling	*Sturnus vulgaris*	Non-native
Spotted towhee	*Pipilo maculatus*	
Red-winged blackbird	*Agelaius phoeniceus*	
Brewer's blackbird	*Euphagus cyanocephalus*	
American goldfinch	*Carduelis tristis*	
House finch	*Carpodacus mexicanus*	
American goldfinch	*Carduelis tristis*	
Black-tailed deer	*Odocoileus hemionus*	

[1] Listed as BCC = federal Bird Species of Conservation Concern, CT = California threatened, CDFW 3503.5 = California Department of Fish and Wildlife Code 3503.5 (Birds of prey), TWL = Taxa to Watch List (Shuford and Gardali 2008).

Within only 90 minutes I saw multiple special-status species (Table 1), the presence of each warranting the preparation of an EIR. I saw Swainson's hawks, which are listed as Threatened under the California Endangered Species Act. I also saw a Cooper's hawk, which is on the CDFW Taxa to Watch List. I also saw other species protected by CDFW's raptor code, including Turkey vulture, American kestrel, and Red-tailed hawk. I also saw California gulls flying over the proposed project site, and this species is on CDFW's Taxa to Watch List. I am certain I would have seen many more special-status species had I stayed longer or visited on different dates.

Figure 5. *A pair of house finches perch near each other near the proposed project site 15 July 2018.*

Figure 6. *A northern mockingbird chases off another 0ut-of-view bird near the proposed project site (background) 15 July 2018.*

Figure 7. *An adult American crow checks whether I pose a threat to its fledglings flying near the project site 15 July 2018.*

Figure 8. *A black-tailed deer peers from the riparian forest of Suscol Creek, bordering the proposed project site 15 July 2018.*

BIOLOGICAL IMPACTS ASSESSMENT

According to Zentner and Zentner (2016:4), "*Wildlife at the site appears limited primarily to common suburban/rural species*." Zentner and Zentner provided no criteria or diagnostics for determining the site's limitation to common species. Based on a few site visits to survey for plant species, there was no basis for this conclusion. No detection survey protocols were implemented for any of the special-status species of wildlife that have been reportedly observed all around the project site (Table 2). Zentner and Zenter's conclusion was not credible.

Another Zentner and Zentner (2016:4) conclusion was, "*Therefore, foraging likely mostly takes place in adjacent areas where vegetation is primarily shorter grassland with much fewer ruderal species where hunting would be easier*." This statement is repeated in County of Napa (2016:8). This conclusion referred to foraging by red-tailed hawk, red-shouldered hawk, white-tailed kite, American kestrel, and coyote. County of Napa (2016:8) repeats the conclusion, but out of context of any particular species, thereby giving the false impression that all wildlife forage in the same way. However, even the suite of species which were the subject of Zentner and Zentner's conclusion forage over a variety of vegetation covers, not just short-stature grassland. I have many times recorded the named species foraging in tall, dense stands of vegetation. Zentner and Zentner's conclusion was false and misleading.

Zentner and Zentner (2016:7) reported seeing no other special-status species of wildlife other than Swainson's hawk during their site visits. However, I would not be surprised that they saw no other special-status species because they followed no guidelines or protocols for detecting special-status species. Detection survey guidelines have been developed by professional biologists for good reasons. Special-status species are often difficult to detect, and negative findings should be based on standards designed to ensure a reasonable likelihood of detection had been implemented.

According to Zentner and Zentner (2016), they visited the proposed project site on four days from late April to earl June 2016. They provided no details on times of day they visited the site, how long they stayed, and what they did to survey for wildlife. They failed to explain what they did. Were they on site for 10 minutes per visit? Were they surveying for plants and happened to look up for wildlife occasionally? Without reporting methods even the minimal standards of wildlife detection surveys were unmet.

County of Napa (2016:8) claims, "*As is the case with the potential occurrence of special status plants, the majority of the special-status animal species occurring within the region are highly unlikely to occur on the project site because the site is not within their range*." This claim is false. The special-status species listed in Zentner and Zentner (2016) were listed because the project occurs within their geographic ranges.

Table 2. *Species reported on eBird (https://eBird.org) on or near the proposed project site.*

Species	Scientific name	Status[1]	Location
Long-billed curlew	*Numenius americanus*	TWL	Nearby eBird posting
California gull	*Larus californicus*	TWL	Nearby eBird posting
Bald eagle	*Haliaeetus leucocephalus*	BGEPA, BCC, CE	Nearby eBird postings
Golden eagle	*Aquila chrysaetos*	BGEPA, BCC, CFP	Nearby eBird posting
Red-tailed hawk	*Buteo jamaicensis*	CDFW 3503.5	Nearby eBird postings
Ferruginous hawk	*Buteo regalis*	CDFW 3503.5, TWL	Nearby eBird postings
Swainson's hawk	*Buteo swainsoni*	BCC, CT	Nearby eBird postings
Red-shouldered hawk	*Buteo lineatus*	CDFW 3503.5	Nearby eBird postings
Sharp-shinned hawk	*Accipiter striatus*	CDFW 3503.5, TWL	Nearby eBird posting
Cooper's hawk	*Accipiter cooperi*	CDFW 3503.5, TWL	Nearby eBird posting
Northern harrier	*Circus cyaneus*	SSC3	Nearby eBird postings
White-tailed kite	*Elanus leucurus*	CFP, TWL	Nearby eBird postings
American kestrel	*Falco sparverius*	CDFW 3503.5	Nearby eBird postings
Merlin	*Falco columbarius*	CDFW 3503.5, TWL	Nearby eBird postings
Prairie falcon	*Falco mexicanus*	CDFW 3503.5, TWL	Nearby eBird postings
Peregrine falcon	*Falco peregrinus*	CE, CFP	Nearby eBird postings
Burrowing owl	*Athene cunicularia*	FCC, SSC2	Nearby eBird postings
Short-eared owl	*Asio flammeus*	SSC3	Nearby eBird postings
Great-horned owl	*Bubo virginianus*	CDFW 3503.5	Nearby eBird postings
Long-eared owl	*Asio otus*	SSC3	Nearby eBird postings
Barn owl	*Tyto alba*	CDFW 3503.5,	Nearby eBird postings
Oak titmouse	*Baeolophus inornatus*	BCC	Nearby eBird postings
Loggerhead shrike	*Lanius ludovicianus*	FSC, SSC2	Nearby eBird postings
Yellow warbler	*Setophaga petechia*	SSC2	Nearby eBird postings
Common yellowthroat	*Geothlypis trichas sinuosa*	SSC3	Nearby eBird postings
Savannah sparrow	*Passerculus sandwichensis alaudinus*	SSC3	Nearby eBird postings
Grasshopper sparrow	*Ammodramus savannarum*	SSC2	Nearby eBird posting
Samuel's song sparrow	*Melospiza melodia samuelis*	SSC3	Nearby eBird postings
Tricolored blackbird	*Agelaius tricolor*	CT	Nearby eBird postings
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	SSC3	Nearby eBird postings
Lawrence's goldfinch	*Spinus lawrencei*	BCC	Nearby eBird posting

[1] Listed as FCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, BCC = federal Bird Species of Conservation Concern, CE = California endangered, CT = California threatened, 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 (Shuford and Gardali 2008), and TWL = Taxa to Watch List (Shuford and Gardali 2008).

Also according to County of Napa (2016:8), "*The CNDDB lists seven records of pallid bats within five miles of the project site but has no records of the species on the site…*" This conclusion is based on a misuse of CNDDB. CNDDB is useful only for confirming the presence of a species, but cannot be used to conclude absence because the reporting to CNDDB is voluntary and not based on scientific sampling or equal access to properties. The limitations of CNDDB are well-known, and are summarized in a warning presented by CDFW on the CNDDB web site (https://www.wildlife.ca.gov/Data/CNDDB/About): "*We work very hard to keep the CNDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers…*"

California red-legged frog, *Rana draytonii*

Zentner and Zentner (2016) dismissed the likelihood of impacts on California red-legged frog, a federally threatened species, because the site lacks breeding habitat. However, I have done many California red-legged frog surveys, including many positive and negative findings, and in my experience this species disappears from streams and pond when surrounding upland areas have been converted to intensive human uses or where ground squirrels have been eradicated. To successfully breed, California red-legged frogs require more of the environment than just their "breeding habitat;" they also require upland refugia and dispersal routes. Therefore, I disagree with Zentner and Zentner (2016) and County of Napa (2016), and I conclude that project impacts to this species are likely. Detection survey guidelines should be implemented (U.S. Fish and Wildlife Service 2005).

Tricolored blackbird, *Agelaius tricolor*

This species, which is now listed as threatened under the California Endangered Species Act, was also dismissed by Zentner and Zentner for lack of habitat on the project site. I disagree. I have many times observed tricolored blackbirds foraging in tall- and short-stature vegetation both during the breeding and nonbreeding seasons. I might have seen this species near the project site on 15 July 2018, but the lighting was poor and my observation too brief to confirm presence of the species.

Golden eagle, *Aquila chrysaetos*

Zentner and Zentner (2016) dismissed impacts to golden eagle because the site lacks breeding habitat. However, golden eagles cannot breed successfully without access to foraging habitat within their nesting territories, and for that matter, within their larger home ranges outside the breeding season, because without food golden eagles cannot survive to reproduce or feed their chicks. The project would adversely affect golden eagles.

Western burrowing owl, *Athene cunicularia*

Zentner and Zentner determined burrowing owls are unlikely to occur on the project site because the habitat is marginal for burrowing owls. This determination is inconsistent with the CDFW (2012) guidelines on detection surveys and mitigation for burrowing owls. Detection surveys need to be performed according to a schedule and according to a suite of explicit standards before negative findings would be acceptable to CDFW and California's wildlife professionals. Zentner and Zentner (2016) failed to implement the CDFW (2012) survey guidelines, and therefore lacked foundation for concluding the species' occurrence is unlikely.

Ferruginous hawk, *Buteo regalis*

Zentner and Zentner determined ferruginous hawk will be unaffected by the project because breeding habitat does not occur on the project site. Ferruginous hawks breed far to the north and visits this part of California during the winter. Foraging over winter is just as important to the persistence of this species as is breeding habitat because breeding cannot succeed in the absence of foraging. The project would have adverse consequences for ferruginous hawk by destroying the species' winter forage.

Swainson's hawk, *Buteo swainsoni*

Zentner and Zentner (2016:8) determined this species, which is listed as threatened under the California Endangered Species Act, is likely to occur on site. I concur. I also saw a family of Swainson's hawks flying right next to the site. Based on the determination of presence of this species alone, the preparation of an EIR is warranted. A more thorough analysis of project impacts on Swainson's hawk is needed, and so is a more detailed mitigation plan.

County of Napa (2016:9) attempted to minimize impact estimates on Swainson's hawk by claiming, "*...because the site is primarily composed of relatively dense, ruderal grassland, the quality of the foraging habitat is only of moderate value and would be considered secondary foraging habitat*." There is no such thing as secondary foraging habitat. This terms appears to have been contrived by County of Napa, because having worked extensively on Swainson's hawk (Smallwood 1995) and the habitat concept (Smallwood 2002, 2015), I have yet to see any use of 'secondary foraging habitat' as a scientific term. What criteria would be used to distinguish 'primary foraging habitat' from 'secondary foraging habitat?' Wherever a Swainson's hawk nests, forages, finds refuge, or stops over during migration qualifies as habitat. Habitat is defined by the species' use of the environment (Hall et al. 1997, Morrison et al. 1998).

Northern harrier, *Circus cyaneus*

Zentner and Zentner concluded this species is unlikely to occur on site because they would have been observed otherwise. This reason for the conclusion is nonsense. I have surveyed for northern harrier over thousands of hours of raptor use and behavior surveys in areas where northern harriers are relatively abundant. At any given observation station I will detect northern harriers during some surveys and not during others. Also, northern harriers become more cryptic during the breeding season, which is when Zentner and Zentner visited the project site. They grow more cryptic because they are ground nesters and they make an effort to hide their nests from predators. Northern harriers nest in just the type of environment at the project site.

Other special-status species of birds

Zentner and Zentner dismissed impacts to other birds as well, based on lack of breeding habitat for each. I would concur for a few of the species, but not for all of them. More importantly, Zentner and Zentner neglected to consider the project's impacts on many species of birds by destroying stopover habitat (discussed below).

Pallid bat, Antrozous pallidus

Having not seen any roosts, likely because they did not search for roosts, Zentner and Zentner determined the species' habitat to be marginal and the species unlikely to occur on site. However, most species of bats roost in a variety of settings (Kunz and Lumsden 2003). In an extensive review of literature on bat roosting behavior, the very first sentence of Kunz and Lumsden (2003:3) reads, "*Bats occupy a wide variety of roosts in both natural and manmade structures*." By the third page of their review, Kunz and Lumsden (2003:5) were presenting photos and summaries of the variety of cavities and other structures used by roosting bats, including on trees and limbs <25 cm diameter, on snags, live trees, exfoliating bark, exposed boles, cavities in bird nests, in foliage, furled leaves, within termite and ant nests, and on artificial structures. Without actually searching for bats it is perhaps too easy to conclude that roosting habitat is unavailable, but I nearly always see this conclusion in environmental reviews and it cannot always be correct. Bats must roost somewhere, and according to the scientific literature reviewed by Kunz and Lumsden (2003), they find roost opportunities in many different situations. Therefore, I disagree with the finding of Zentner and Zentner, and in erring on the side of caution in the absence of evidence to the contrary, I have to conclude that the project will have significant impacts on pallid bats.

Wildlife Movement

County of Napa (2016) neglects to assess the project's potential impacts on wildlife movement in the region. Zentner and Zentner (2016) addressed the issue, but applied the nonexistent CEQA standard that impacts on wildlife movement result solely from interference with wildlife movement corridors. The CEQA standard is broader than implied by Zentner and Zentner. The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. In fact, whereas natural corridors sometimes exist, the corridor concept mostly applies to human landscape engineering to reduce the effects of habitat fragmentation (Smallwood 2015). Wildlife movement in the region is often diffuse rather than channeled (Runge et al. 2014, Taylor et al. 2011) unless anthropogenic changes have forced channeling

(Smallwood 2015). Wildlife movement also includes stop-over habitat used by birds and bats (Taylor et al. 2011), staging habitat (Warnock 2010), and crossover habitat used by nonvolant wildlife during dispersal, migration or home range patrol. Contrary to the characterization by Zentner and Zentner, wildlife moving through the area are unlikely constrained to the riparian forest of Suscol Creek. Nor is a 150-foot setback from the Creek sufficient to avoid impacts to all wildlife moving across the project site. The functionality of Suscol Creek as a movement route would diminish significantly with a warehouse built 150 feet away.

As mentioned earlier, the proposed project site is within one of two remaining patches of open space along an 18-mile stretch of valley bottom from Napa to Vallejo. Any terrestrial species of wildlife requiring open space for east-west travel will be severely harmed by the loss of this open space. An EIR should be prepared to adequately address the project's potential impacts on habitat fragmentation and wildlife movement.

Traffic Impacts on Wildlife

A fundamental shortfall of the IS/Neg Dec is its failure to analyze the impacts of the project's added road traffic on special-status species of wildlife, including species such as California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), and American badgers (*Taxidea taxus*) that, regardless of whether they live on the site, must cross roadways that will experience increased traffic volume caused by this project. County of Napa (2016) provides no analysis of impacts on wildlife that will be caused by increased traffic on roadways servicing the project.

According to County of Napa (2016:21), the proposed project would deviate from most warehouse projects in California by supporting fewer jobs per unit area of warehouse floor space. County of Napa (2016) uses this projected difference to predict a daily trip generation rate of 202. It is unclear to me, however, that County of Napa considers truck trips needed to service the project. Also missing from the analysis is any consideration of trip distances and likely trip destinations and origins. These trip attributes are important because the project's impacts on wildlife will reach as far from the project as cars and trucks travel to or from the project site.

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). It is possible that project-related traffic impacts will far exceed the impacts of land conversion to commercial use. But not one word of traffic-related impacts appears in County of Napa (2016) – a gross shortfall of the CEQA review.

Many thousands of roadkill wildlife incidents have been reported to the UC Davis Road Ecology Center (Shilling et al. 2017). In 2017, one of the major hotspots of road-killed wildlife overlaps the project site (Shilling et al. 2017). In fact, the wildlife roadkill hotspot in the project area was found to be statistically highly significant (see Figure 5 of

Shilling et al. 2017). The costs to drivers is also high (Shilling et al. 22017). An EIR should be prepared to assess wildlife mortality that will be caused by increased traffic on existing roadways, and it should provide mitigation measures.

Pest Control and Target and Non-target Mortality

No impacts assessment or mitigation measures are discussed in County of Napa (2016) regarding the use of pesticides within and outside the proposed warehouse. As a wine storage and distribution facility, surely there would be steps taken to abate wildlife pests. Multiple businesses advertise their services on the internet for controlling stored products pests, perching birds, and rodent and other mammal pests within and around distribution warehouses (e.g., https://www.catseyepest.com/pest-control/commercial-pest-control/warehouse-and-distribution-facilities, http://advancedipm.com/commercial/commercial-pest-management-for-warehouses-and-distribution-centers/, https://www.terminix.com/blog/commercial/how-pests-impact-warehouses/. These types of businesses advertise exclusion strategies, as well as fumigation for stored products pests, glue boards for rodents, and 'other measures.' Having a background in animal damage control, I am familiar with 'other methods,' including the use of anticoagulant poisons and acute toxicants such as strychnine. I also know from experience that the use of toxicants can harm non-target wildlife through direct exposure and indirect exposure via predation and scavenging. In other words, pest control involving toxicants can result in the spread of toxicants beyond the warehouse.

I reviewed the scientific literature for animal damage control methods associated with warehousing. Little to no serious scientific attention has been directed toward animal damage control in warehouse settings. Nevertheless, that businesses are advertising their animal damage control services in warehousing indicates either an awareness or an assumption that the warehousing industry experiences damage from wildlife. There also exists a how-to manual on managing animal pests in distribution warehouses (http://www.pctonline.com/article/vertebrate-pests--the-fight-against-pallet-mice/), further indicating conflicts exist between wildlife and distribution warehousing. It is important, therefore, that an EIR be prepared to seriously address the potential impacts of animal damage control associated with this proposed project. Industry practices related to animal damage control should be detailed, as well as anticipated practices at this project. Potential impacts caused by these practices need to be assessed, and suitable mitigation measures formulated along with assurances that they will be implemented.

Cumulative Impacts

According to County of Napa 2016:24), "*The site … does not contain any known listed plant or animal species*." This conclusion is false. A Swainson's hawk was reportedly seen on the site by Zentner and Zentner (2016). I also saw Swainson's hawks there, as well as a Cooper's hawk and multiple additional special-status species. Swainson's hawks are listed as Threatened under California's Endangered Species Act. An EIR should be prepared, and its conclusions need to be based on factual evidence.

The County's cumulative effects analysis is flawed by relying on a false CEQA standard for determining whether a project's impacts will be cumulatively considerable. County of Napa (2016:24) implies that a given project impact is cumulatively considerable only when it has not been fully mitigated. In essence, County of Napa (2016) implies that cumulative impacts are really residual impacts left over by inadequate mitigation at the project. This notion of residual impact being the source of cumulative impact is inconsistent with CEQA's definition of cumulative effects. Individually mitigated projects do not negate the significance of cumulative impacts. If they did, then CEQA would not require a cumulative effects analysis.

An EIR is needed to assess cumulative effects of the proposed project. Project impacts on any special-status species should, by default, be considered as contributions to cumulative effects. This is so because all special-status species are so listed due to cumulative effects of human activities. Many professional biologists devoted considerable time and effort to identify which species warrant extra protections due to cumulative effects of human actions. Deliberations over such listings extended to multiple stakeholders, regulators, and decision-makers. Species attributed special-status are in need of diligent cumulative effects analysis, including those potentially affected by the proposed project.

MITIGATION MEASURES

BIO 1 Preconstruction surveys for California red-legged frog would be inadequate mitigation. Detection surveys are necessary for informing the public and decision-makers about potential impacts and appropriate mitigation for this species. Appropriate detection surveys should be implemented to inform an EIR.

BIO 2 Preconstruction surveys for breeding birds would be inadequate mitigation. Detection surveys are necessary for informing the public and decision-makers about potential impacts and appropriate mitigation for breeding birds. Appropriate detection surveys, which are available for multiple bird species, should be implemented to inform an EIR.

RECOMMENDED MEASURES

Detection Surveys

Detection surveys are needed to inform preconstruction take-avoidance surveys and to inform the formulation of appropriate mitigation measures. For example, to comply with the CDFW (2012) burrowing owl breeding-season survey guidelines, at least four surveys are needed, each separated by 3 weeks and according to specific schedule attributes. Preconstruction take-avoidance surveys are not even close to equivalent with detection surveys. The preconstruction take-avoidance surveys are supposed to be informed by detection surveys; otherwise, the preconstruction surveys likely will fail to detect nesting burrowing owls (or other species) and will result in unmitigated takings.

Detection surveys are needed to estimate impacts and to formulate appropriate minimization and compensatory mitigation measures.

Wildlife Movement

County of Napa (2016) provides no mitigation for adverse impacts on regional movement of wildlife. At a minimum, the IS/Neg Dec needs to include substantial compensatory mitigation 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.

Road Mortality

Compensatory mitigation is needed for the increased wildlife mortality that will be caused by the project's contribution to increased road traffic in the region. I suggest that this mitigation can be directed toward funding of research to identify fatality patterns and effective impact reduction measures.

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 injuries will likely be caused by the increased trip generation of cars and trucks. Many animals need treatment caused by collision injuries and an increasing number appear to be injured by the turbulence of passing trucks.

Animal Damage Control

I suggest that measures are needed to minimize the direct and indirect effects of using toxicants to control wildlife damage in and around the warehouse. One measure might consist of an assurance that no toxicants will be placed outside the warehouse, of if they must be placed, then they are placed within stations that prevent access by non-target species. Another measure might consist of compensatory mitigation for harm to non-target wildlife caused by animal damage control on the project site (see previous measure under Funding Wildlife Rehabilitation Facilities).

Thank you for your attention,

Shawn Smallwood

____
Shawn Smallwood, Ph.D.

REFERENCES CITED

CDFW (California Department of Fish and Wildlife). 2012. Staff Report on Burrowing Owl Mitigation. Sacramento, California.

County of Napa. 2016. Nova Wine Warehouse, Use Permit P16-00456 Initial Study/Negative Declaration. Napa, California.

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.

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.

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.

Kunz, T. H., and L. F. Lumsden. 2003. Ecology of cavity and foliage roosting bats. Pages 3–89 in T. H. Kunz and M. B. Fenton, Eds., Bat ecology. The University of Chicago Press, Chicago.

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.

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.

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

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

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.

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.

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.

U.S. Fish and Wildlife Service. 2005. Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog. (https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/crf_survey_guidance__aug2005.pdf

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

Zentner and Zentner. 2016. Fedrick Warehouse Special Status Habitat and Species Analysis. Report to Nova Group, Inc. No location reported.

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

July 13, 2018

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

Subject: **Comments on the Nova Wine Warehouse Project**

Dear Mr. Drury,

We have reviewed the June 2018 Initial Study (IS) for the Nova Wine Warehouse Project ("Project") located in Napa, California. The Project Applicant proposes to construct a new light industrial building with approximately 400,500 square feet of floor area which includes approximately 391,934 sq. ft. of warehouse space and 8,566 sq. ft. of office space. No tenants have been identified, however the warehouse is intended for wine storage. On-site parking for 241 vehicles, 22 truck/trailer spaces, landscaping, and signage are also included with the proposal.

Our review concludes that the IS/MND fails to adequately evaluate the Project's Hydrology and Water Quality, Air Quality, and Greenhouse Gas (GHG) impacts. As a result, emissions associated with the 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 impacts the Project may have on the surrounding environment.

Hydrology and Water Quality

The Project is directly adjacent to Suscol Creek, a tributary to the Napa River. The IS mentions the Project will be subject to the Napa County Stormwater Ordinance[1] but provides no specific measures that will be taken to achieve compliance. The IS concludes:

> Given the essentially level terrain, and the County's Best Management Practices, which comply with RWQCB requirements, the project does not have the potential to significantly impact water quality and discharge standards (p. 16).

[1] https://www.countyofnapa.org/DocumentCenter/View/2977/Napa-County-Stormwater-and-Runoff-Pollution-Control-Ordinance-PDF

A DEIR is necessary to identify the measures that will be necessary to achieve compliance with the Napa County Stormwater Ordinance.

The Napa County Stormwater Ordinance requires an Erosion and Sediment Control Plan (ESCP) to be required for any project subject to a grading permit. The ESCP is to be approved by a Napa County enforcement official. At a minimum, the ESCP shall include:

- Description of the proposed project and soil disturbing activity;
- Site specific construction-phase BMPs;
- Rationale for selecting the BMPs, including if needed, soil loss calculations;
- A list of applicable permits associated with the soil disturbing activity, such as:
  - Construction General Permit (CGP); Clean Water Act Section 404 Permit; Clean Water Act Section
  - 401 Water Quality Certification; Streambed/Lake Alteration Agreement (1600 Agreements) (p. 11).

None of these requirements were addressed in the IS which again simply states that the Project will "not have the potential to impact water quality and discharge standards" (p. 16).

The Project may also require the preparation of a Stormwater Control Plan (SCP), according to the Napa County Stormwater Ordinance (p. 9). An SCP is separate and distinct from the ESCP.

SCPs are to include conditions of approval that reduce stormwater pollutant discharges through the construction, operation and maintenance of source control measures, low impact development design, site design measures, stormwater treatment measures and hydromodification management measures. Increases in runoff shall be managed in accordance with the post construction requirements.

The IS does not disclose how compliance with Napa County Ordinance requirements will be achieved. A DEIR is required to identify specific steps that will be taken to comply with the Napa County Stormwater Ordinance, along with mitigation measures that would include BMPs that will be effective in reducing any pollutants that would potentially impact Suscol Creek.

Air Quality and Greenhouse Gas

Failure to Adequately Estimate Greenhouse Gas Emissions

The IS 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 criteria air

[2] CalEEMod website, *available at*: http://www.caleemod.com/
[3] CalEEMod User Guide, p. 2, 9, *available at:* http://www.caleemod.com/

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, located in the Nova Warehouse Greenhouse Gas Memorandum ("Memo"), we found that several unsubstantiated inputs were used to estimate the Project's emissions. As a result, emissions associated with the Project are underestimated. A DEIR should be prepared that adequately assesses the potential impacts that operation of the Project may have on regional and local air quality and global climate change.

Failure to Consider Cold-Storage Requirements for Warehouse

The Project's emissions were estimated assumes that the Project's warehouse land use will be composed of unrefrigerated warehouses, exclusively, and as a result, the Project's operational emissions may be grossly underestimated.

According to the CalEEMod output files provided, the proposed warehouse was modeled as "Unrefrigerated Warehouse-No Rail" (see excerpt below) (Memo, pp. 12).

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	400.50	1000sqft	9.19	400,500.00	0
Other Non-Asphalt Surfaces	88.70	1000sqft	2.04	88,700.00	0
Parking Lot	241.00	Space	2.17	96,400.00	0

Assuming that the Project's proposed warehouse will be composed of entirely unrefrigerated warehouse space, however, is incorrect, since the IS specifically notes that the future tenants of the proposed warehouses are unknown (p. 1). Additionally, the IS states that the warehouse "is intended for wine storage" (p. 1). For this reason, it can be reasonably assumed that at least a portion of the proposed warehouse land uses will be made up of refrigerated warehouses, and therefore, should be modeled as such. Thus, assuming that the warehouse will be unrefrigerated is unsubstantiated. Since the IS states that the future tenants of the proposed warehouses are known and because CEQA requires that the most conservative analysis be conducted, a portion of the warehouse building should have been modeled as refrigerated space, and the other portion as unrefrigerated space in order account for the additional emissions that refrigeration requirements could generate.

By modeling the Project's emissions assuming that no refrigerated warehouses will operate on-site, the IS greatly underestimates the actual emissions that would occur once the proposed Project is operational. Refrigerated warehouses release more air pollutants and GHG emissions when compared to unrefrigerated warehouses for several reasons. First, warehouses equipped with cold storage

[4] CalEEMod User Guide, p. 7, 13, *available at:* http://www.caleemod.com/ (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.)

(refrigerators and freezers, for example) are known to consume more energy when compared to warehouses without cold storage.[5] Second, warehouses equipped with cold storage typically require refrigerated trucks, which are known to idle for much longer, even up to an hour, when compared to unrefrigerated hauling trucks.[6] Lastly, according to a July 2014 *Warehouse Truck Trip Study Data Results and Usage* presentation prepared by the South Coast Air Quality Management District (SCAQMD), it was found that hauling trucks that require refrigeration result in greater truck trip rates when compared to non-refrigerated hauling trucks.[7]

As is discussed by the SCAQMD, "CEQA requires the use of 'conservative analysis' to afford 'fullest possible protection of the environment.'"[8] As a result, the most conservative analysis should be conducted. With this in mind, the proposed Project should be modeled as "Refrigerated Warehouse-No Rail," or at the very least, a portion of the proposed building should be modeled as "Refrigerated Warehouse-No Rail," with the remaining portion of the building modeled as "Unrefrigerated Warehouse-No Rail," so as to take into consideration the possibility that future tenants may require both cold storage and non-cold storage.

By not including refrigerated warehouses as a potential land use in the air quality model, the Project's operational emissions may be grossly underestimated, as the future tenants are currently unknown. Unless the Project Applicant can demonstrate that the future tenants of these proposed buildings will be limited to unrefrigerated warehouse uses, exclusively, it should be assumed that a mix of cold and non-cold storage will be provided on-site. A Project-specific DEIR should be prepared to account for the possibility of refrigerated warehouse needs by future tenants.

Incorrect Operational Daily Vehicle Trip Estimation

A Trip Generation Study ("Study") was prepared for the Project by W-Trans California Traffic Engineering Consultants. Review of the Study demonstrates that the methods used to calculate the number of daily operational vehicle trips for the proposed Project is unsubstantiated and may significantly underestimate the actual number of daily vehicle trips that are likely to occur during operation. As a result, the emissions estimates provided in the Project's CalEEMod output files are also underestimated and should therefore not be relied upon to determine significance.

According to the Study, the Project will only generate a total of 202 daily vehicle trips during operation (see excerpt below) (Trip Generation Study, p. 2).

---

[5] Managing Energy Costs in Warehouses, Business Energy Advisor, *available at*: http://bizenergyadvisor.com/warehouses

[6] "Estimation of Fuel Use by Idling Commercial Trucks," p. 8, *available at:* http://www.transportation.anl.gov/pdfs/TA/373.pdf

[7] "Warehouse Truck Trip Study Data Results and Usage" Presentation. SCAQMD Mobile Source Committee, July 2014, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/finaltrucktripstudymsc072514.pdf?sfvrsn=2, p. 7, 9

[8] "Warehouse Truck Trip Study Data Results and Usage" Presentation. SCAQMD Inland Empire Logistics Council, June 2014, *available at*: http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/final-ielc_6-19-2014.pdf?sfvrsn=2

Table 1 – Trip Generation Summary											
Operation	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Employees	40	5.05	202	0.51	24	18	6	0.66	26	10	16

The Study states that the trip generation rates provided in the *Trip Generation Manual,* 10th Edition, 2017 by the Institute of Transportation Engineers (ITE) were "explored to determine the most appropriate rates to apply to the proposed [warehouse]" (p. 2). The Study continues on to explain how the trip generation rate for the Project was determined. Specifically, the Study states,

> "Consideration was given to evaluating the project based on the floor area, as is common for many land uses. However, a review of standard rates for warehousing uses and a comparison of those based on area versus those based on employees indicate that the average ratio between employees and floor space is about 2,900 square feet per employee. For the project site, this would translate to an anticipated work force of about 138 persons based on a total floor area of 400,500 square feet. Given that this project expects to have only about 30 percent of this number of employees, use of the rates based on total floor area appears unreasonable" (p. 1).

The Study further explains the method used to estimate the number of daily operational vehicle trips, stating,

> "Application of the rates with the number of employees as the independent variable would result in 202 trips per day during typical operation with 24 trips during the morning peak hour and 26 trips during the evening peak hour. Given that the operation would require 20 full-time employees and 20 part-time employees, use of the rates based on employees appears reasonable. Given that employees would not all work the same shift, it is anticipated that there would be fewer than one trip per employee during each peak hour, with only a portion of the employees arriving and departing during each of these hours and the remainder arriving and departing outside the peak periods. It is noted that as is the case with standard trip generation rates, all trips generated by the use are included, so while the independent variable is employees, trips associated with trucks making deliveries or picking up case goods, visitors and other non-employees are reflected in the rate and resulting trip estimates" (p. 1).

As seen above, the Study estimates the number of operational daily vehicle trips for the proposed warehouse based on the number of estimated employees that the warehouse will generate. However, as the Study clearly states, "evaluating the project based on the floor area… is common for many land uses", and thus, the Study's reliance on the number of employees that will work on site is a divergence from how daily operational vehicle trips are typically calculated. The Study's assertion that "the use of rates based on total floor area appears unreasonable" is unsupported and appears to be based on speculation rather than factual evidence. Thus, the Study's failure to estimate vehicle trips based on the square footage of the building is improper and is inconsistent with the methods and recommendations in the ITE's *Trip Generation Manual.* Because the number of daily vehicle trips is used to estimate the Project's operational criteria air pollutant GHG emissions within CalEEMod, the use of an underestimated daily vehicle trip value results in an underestimation of the Project's emissions. Furthermore, review of the Project's CalEEMod output files demonstrates that the Project Applicant failed to correctly input 202 daily vehicle trips into the model. Instead, the model estimates the operational mobile-source and GHG emissions resulting from 180 daily vehicle trips, which underestimates the number of daily vehicle trips by 22 trips per day or 8,030 trips per year (see excerpt below) (Memo, pp. 33).

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	180.23	180.23	180.23	581,348	575,534
Total	180.23	180.23	180.23	581,348	575,534

Thus, the emissions estimates provided within the Project's CalEEMod output files should not be relied upon to determine the significance of the Project's impacts. Until an updated traffic study and air pollution model are prepared, the Project should not be approved.

Updated Analysis Demonstrates Significant Greenhouse Gas Impact

In an effort to more adequately evaluate the Project's potential GHG impacts, we prepared an updated CalEEMod model using the most recent CalEEMod version, CalEEMod.2016.3.2, that includes more site-specific information and corrected input parameters. Since it is unknown how many tenants will require cold-storage, we conservatively assumed that approximately 15 percent of the warehouse buildings will be made up of refrigerated warehouses. Additionally, we relied upon CalEEMod default values to estimate the total number of daily operational vehicle trips for the proposed warehouse.

When correct input parameters are used to model emissions from the proposed Project, we find that the Project's GHG emissions increase when compared to the IS's model. Specifically, we find that the Project's GHG emissions exceed the Bay Area Air Quality Management District's (BAAQMD) bright-line threshold of 1,100 metric tons of carbon dioxide equivalents per year (MT CO_2e/yr), in conflict with findings in the IS (see table below).

Proposed Project's Annual Greenhouse Gas Emissions	
Phase	**MT CO_2e/year**
Construction (Amortized)	37
Proposed Project Operational	2,650
Total	**2,687**
BAAQMD Threshold	**1,100**
Exceed?	***Yes***

As demonstrated above, when correct input parameters are used to model emissions, we find that the Project's GHG emissions increase significantly when compared to the IS's GHG emissions estimation of 1,011 MT CO_2e/yr[9]. This updated emissions estimate demonstrates that when the Project's emissions are estimated correctly, the Project would result in significant impacts that were not previously identified in the IS. As a result, a Project-specific DEIR should be prepared that includes an updated model to adequately estimate the Project's emissions, and mitigation measures should be identified and incorporated to reduce these emissions to a less-than-significant level.

Failure to Demonstrate Consistency with Long-Term Statewide Goals

The Project's GHG Technical Memo ("Memo") evaluates the Project's consistency with the Assembly Bill 32 (AB 32) Scoping Plan (Memo, p. 6). The Memo, however, only makes note of the GHG emissions reductions required to meet 2020 emission reductions set forth by AB 32. Specifically, the Memo notes that "the year 2020 GHG emission reduction goal of AB 32 corresponds with the mid-term target established by Executive Order S-3-05, which aims to reduce California's fair-share contribution of GHGs in 2050 to levels that would stabilize the climate" (Memo, p. 6). Governor Brown recently issued an executive order to establish an even more ambitious GHG reduction target for 2030, which is not addressed in the Memo or IS. Specifically, in September 2016, Governor Brown signed Senate Bill 32, enacting HEALTH & SAFETY CODE § 38566. AR 305. This statue ("SB 32") requires California to achieve a new, more aggressive 40% reduction in GHG emissions over the 1990 levels by 2030.[10] "This 40 percent reduction is widely acknowledged as a necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emissions to 80 percent below 1990 levels by the year 2050."[11] Therefore, by failing to demonstrate consistency with the reduction targets set forth by SB 32, the Project may conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. As a result, the Project may have a potentially significant impact that was not previously addressed in the IS/MND, and as such, a DEIR should be prepared.

SB 32[12] requires emissions reductions above those mandated by AB 32 to reduce GHG emissions 40 percent below their 1990 levels by 2030. 1990 statewide GHG emissions are estimated to be approximately 431 million $MTCO_2e$ ($MMTCO_2e$).[13] Therefore, by 2030 California will be required to reduce statewide emissions by 172 $MMTCO_2e$ (431 x 40%), which results in a statewide limit on GHG emissions of 259 $MMTCO_2e$. 2020 "business-as-usual" levels are estimated to be approximately 509 $MMTCO_2e$.[14] Therefore, in order to successfully reach the 2030 statewide goal of 259 $MMTCO_2e$, California would have to reduce its emissions by 49 percent below the "business-as-usual" levels. This reduction target indicates that compliance with these more aggressive reduction goals, beyond what is mandated by AB 32, will be necessary.

[9] This value was calculated by adding the amortized construction emissions to the Project's operational emissions.
[10] *Ibid.*
[11] *Cleveland*, 3 Cal.5th at 519.
[12] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32
[13] http://www.arb.ca.gov/cc/inventory/data/bau.htm
[14] http://energyinnovation.org/wp-content/uploads/2015/04/CA_CapReport_Mar2015.pdf

This 49 percent reduction target should be considered as a threshold of significance against which to measure Project impacts. Because the proposed Project is unlikely to be redeveloped again prior to 2030, the 2030 goals are applicable to any evaluation of the Project's impacts. A DEIR should be prepared to demonstrate the Project's compliance with these more aggressive measures specified in SB 32. Specifically, the Project should demonstrate, at a minimum, a reduction of 49 percent below "business-as-usual" levels. It should be noted that this reduction percentage is applicable to statewide emissions, which is not directly applicable to a project-level analysis. As a result, an additional analysis would need to be conducted to translate the new statewide targets into a project-specific threshold against which Project GHG emissions can be compared. A DEIR should be prepared to quantify any reductions expected to be achieved by mitigation measures, shown by substantial evidence that such measures will be effective, and should demonstrate how these measures will reduce the emissions below the new 2030 significance threshold.

Sincerely,

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

Hadley Nolan

Nova Warehouse
Napa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	60.08	1000sqft	1.38	60,075.00	0
Unrefrigerated Warehouse-No Rail	340.43	1000sqft	7.82	340,425.00	0
Other Asphalt Surfaces	88.70	1000sqft	2.04	88,700.00	0
Parking Lot	241.00	Space	2.17	96,400.00	0

1.2 Other Project Characteristics

Urbanization Urban | **Wind Speed (m/s)** 3.6 | **Precipitation Freq (Days)** 64

Climate Zone 4 | **Operational Year** 2020

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 491.65 | **CH4 Intensity (lb/MWhr)** 0.025 | **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with IS air model.

Land Use - 15 percent of warehouse spaced modeled as refrigerated warehouse space, as future tenants are unknown.

Construction Phase -

Vehicle Trips - Consistent with IS air model.

Energy Use - Consistent with IS air model.

Water And Wastewater - Reflects total of 500,000 gallons/year from the IS air pollution model.

Fleet Mix - Reflects project-specific fleet mix.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	2.14	0.94
tblEnergyUse	NT24E	1.07	0.47
tblEnergyUse	T24E	0.32	0.14
tblFleetMix	HHD	0.04	0.25
tblFleetMix	HHD	0.04	0.25
tblFleetMix	LDA	0.57	0.25
tblFleetMix	LDA	0.57	0.25
tblFleetMix	LDT1	0.04	0.02
tblFleetMix	LDT1	0.04	0.02
tblFleetMix	LDT2	0.17	0.08
tblFleetMix	LDT2	0.17	0.08
tblFleetMix	LHD1	0.03	0.18
tblFleetMix	LHD1	0.03	0.18
tblFleetMix	LHD2	6.5510e-003	0.05
tblFleetMix	LHD2	6.5510e-003	0.05
tblFleetMix	MCY	5.6930e-003	0.00
tblFleetMix	MCY	5.6930e-003	0.00

tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	1.1230e-003	0.00
tblFleetMix	MH	1.1230e-003	0.00
tblFleetMix	MHD	0.02	0.12
tblFleetMix	MHD	0.02	0.12
tblFleetMix	OBUS	3.8260e-003	0.00
tblFleetMix	OBUS	3.8260e-003	0.00
tblFleetMix	SBUS	1.0210e-003	0.00
tblFleetMix	SBUS	1.0210e-003	0.00
tblFleetMix	UBUS	1.8680e-003	0.00
tblFleetMix	UBUS	1.8680e-003	0.00
tblLandUse	LandUseSquareFeet	60,080.00	60,075.00
tblLandUse	LandUseSquareFeet	340,430.00	340,425.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	491.65
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblWater	IndoorWaterUseRate	13,893,500.00	316,448.71
tblWater	IndoorWaterUseRate	78,724,437.50	180,554.28

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	0.4018	3.7719	2.8789	6.8200e-003	0.4255	0.1579	0.5834	0.1593	0.1476	0.3069	0.0000	620.4837	620.4837	0.0921	0.0000	622.7851
2020	2.3996	2.4140	2.1163	5.4200e-003	0.1890	0.0941	0.2831	0.0513	0.0884	0.1398	0.0000	490.7665	490.7665	0.0599	0.0000	492.2630
Maximum	**2.3996**	**3.7719**	**2.8789**	**6.8200e-003**	**0.4255**	**0.1579**	**0.5834**	**0.1593**	**0.1476**	**0.3069**	**0.0000**	**620.4837**	**620.4837**	**0.0921**	**0.0000**	**622.7851**

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	0.4018	3.7719	2.8789	6.8200e-003	0.4255	0.1579	0.5834	0.1593	0.1476	0.3069	0.0000	620.4833	620.4833	0.0921	0.0000	622.7848
2020	2.3996	2.4140	2.1163	5.4200e-003	0.1890	0.0941	0.2831	0.0513	0.0884	0.1398	0.0000	490.7663	490.7663	0.0599	0.0000	492.2628
Maximum	**2.3996**	**3.7719**	**2.8789**	**6.8200e-003**	**0.4255**	**0.1579**	**0.5834**	**0.1593**	**0.1476**	**0.3069**	**0.0000**	**620.4833**	**620.4833**	**0.0921**	**0.0000**	**622.7848**

	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	4-1-2019	6-30-2019	1.6125	1.6125
2	7-1-2019	9-30-2019	1.2606	1.2606
3	10-1-2019	12-31-2019	1.2768	1.2768
4	1-1-2020	3-31-2020	1.1442	1.1442
5	4-1-2020	6-30-2020	1.1310	1.1310
6	7-1-2020	9-30-2020	2.5214	2.5214
		Highest	2.5214	2.5214

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	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Energy	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	323.4831	323.4831	0.0141	4.4100e-003	325.1485
Mobile	0.4183	8.3259	3.6999	0.0225	0.8760	0.0473	0.9234	0.2432	0.0452	0.2883	0.0000	2,131.6893	2,131.6893	0.1028	0.0000	2,134.2592
Waste						0.0000	0.0000		0.0000	0.0000	76.4220	0.0000	76.4220	4.5164	0.0000	189.3324
Water						0.0000	0.0000		0.0000	0.0000	0.1577	0.5997	0.7574	0.0162	3.9000e-004	1.2792
Total	**2.2154**	**8.3950**	**3.7647**	**0.0229**	**0.8760**	**0.0526**	**0.9286**	**0.2432**	**0.0504**	**0.2936**	**76.5797**	**2,455.7851**	**2,532.3648**	**4.6495**	**4.8000e-003**	**2,650.0332**

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	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Energy	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	323.4831	323.4831	0.0141	4.4100e-003	325.1485
Mobile	0.4183	8.3259	3.6999	0.0225	0.8760	0.0473	0.9234	0.2432	0.0452	0.2883	0.0000	2,131.6893	2,131.6893	0.1028	0.0000	2,134.2592
Waste						0.0000	0.0000		0.0000	0.0000	76.4220	0.0000	76.4220	4.5164	0.0000	189.3324
Water						0.0000	0.0000		0.0000	0.0000	0.1577	0.5997	0.7574	0.0162	3.9000e-004	1.2792
Total	**2.2154**	**8.3950**	**3.7647**	**0.0229**	**0.8760**	**0.0526**	**0.9286**	**0.2432**	**0.0504**	**0.2936**	**76.5797**	**2,455.7851**	**2,532.3648**	**4.6495**	**4.8000e-003**	**2,650.0332**

	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	4/1/2019	4/12/2019	5	10	
2	Grading	Grading	4/13/2019	5/24/2019	5	30	
3	Building Construction	Building Construction	5/25/2019	7/17/2020	5	300	
4	Paving	Paving	7/18/2020	8/14/2020	5	20	
5	Architectural Coating	Architectural Coating	8/15/2020	9/11/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 4.21

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 600,750; Non-Residential Outdoor: 200,250; Striped Parking Area: 11,106 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	246.00	96.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	49.00	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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

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	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6341	0.6341	2.0000e-005	0.0000	0.6346
Total	**3.8000e-004**	**2.9000e-004**	**2.9200e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6341**	**0.6341**	**2.0000e-005**	**0.0000**	**0.6346**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

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	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6341	0.6341	2.0000e-005	0.0000	0.6346
Total	**3.8000e-004**	**2.9000e-004**	**2.9200e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6341**	**0.6341**	**2.0000e-005**	**0.0000**	**0.6346**

3.3 Grading - 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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.1301**	**0.0357**	**0.1658**	**0.0540**	**0.0329**	**0.0868**	**0.0000**	**83.5520**	**83.5520**	**0.0264**	**0.0000**	**84.2129**

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	1.2700e-003	9.5000e-004	9.7300e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1138	2.1138	7.0000e-005	0.0000	2.1155
Total	**1.2700e-003**	**9.5000e-004**	**9.7300e-003**	**2.0000e-005**	**2.3700e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.1138**	**2.1138**	**7.0000e-005**	**0.0000**	**2.1155**

3.3 Grading - 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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.1301**	**0.0357**	**0.1658**	**0.0540**	**0.0329**	**0.0868**	**0.0000**	**83.5519**	**83.5519**	**0.0264**	**0.0000**	**84.2128**

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	1.2700e-003	9.5000e-004	9.7300e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1138	2.1138	7.0000e-005	0.0000	2.1155
Total	**1.2700e-003**	**9.5000e-004**	**9.7300e-003**	**2.0000e-005**	**2.3700e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.1138**	**2.1138**	**7.0000e-005**	**0.0000**	**2.1155**

3.4 Building Construction - 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					
Off-Road	0.1854	1.6547	1.3474	2.1100e-003		0.1013	0.1013		0.0952	0.0952	0.0000	184.5568	184.5568	0.0450	0.0000	185.6808
Total	**0.1854**	**1.6547**	**1.3474**	**2.1100e-003**		**0.1013**	**0.1013**		**0.0952**	**0.0952**	**0.0000**	**184.5568**	**184.5568**	**0.0450**	**0.0000**	**185.6808**

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	0.0400	1.0089	0.2818	2.0500e-003	0.0494	7.8300e-003	0.0572	0.0143	7.4900e-003	0.0218	0.0000	196.4788	196.4788	0.0109	0.0000	196.7505
Worker	0.0820	0.0615	0.6262	1.5100e-003	0.1526	1.1000e-003	0.1537	0.0406	1.0100e-003	0.0416	0.0000	136.0639	136.0639	4.3000e-003	0.0000	136.1715
Total	**0.1220**	**1.0703**	**0.9080**	**3.5600e-003**	**0.2019**	**8.9300e-003**	**0.2109**	**0.0549**	**8.5000e-003**	**0.0634**	**0.0000**	**332.5426**	**332.5426**	**0.0152**	**0.0000**	**332.9219**

3.4 Building Construction - 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					
Off-Road	0.1854	1.6547	1.3474	2.1100e-003		0.1013	0.1013		0.0952	0.0952	0.0000	184.5566	184.5566	0.0450	0.0000	185.6806
Total	**0.1854**	**1.6547**	**1.3474**	**2.1100e-003**		**0.1013**	**0.1013**		**0.0952**	**0.0952**	**0.0000**	**184.5566**	**184.5566**	**0.0450**	**0.0000**	**185.6806**

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	0.0400	1.0089	0.2818	2.0500e-003	0.0494	7.8300e-003	0.0572	0.0143	7.4900e-003	0.0218	0.0000	196.4788	196.4788	0.0109	0.0000	196.7505
Worker	0.0820	0.0615	0.6262	1.5100e-003	0.1526	1.1000e-003	0.1537	0.0406	1.0100e-003	0.0416	0.0000	136.0639	136.0639	4.3000e-003	0.0000	136.1715
Total	**0.1220**	**1.0703**	**0.9080**	**3.5600e-003**	**0.2019**	**8.9300e-003**	**0.2109**	**0.0549**	**8.5000e-003**	**0.0634**	**0.0000**	**332.5426**	**332.5426**	**0.0152**	**0.0000**	**332.9219**

3.4 Building Construction - 2020

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					
Off-Road	0.1516	1.3718	1.2047	1.9200e-003		0.0799	0.0799		0.0751	0.0751	0.0000	165.6011	165.6011	0.0404	0.0000	166.6112
Total	**0.1516**	**1.3718**	**1.2047**	**1.9200e-003**		**0.0799**	**0.0799**		**0.0751**	**0.0751**	**0.0000**	**165.6011**	**165.6011**	**0.0404**	**0.0000**	**166.6112**

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	0.0292	0.8337	0.2221	1.8600e-003	0.0450	4.5800e-003	0.0495	0.0130	4.3800e-003	0.0174	0.0000	178.1484	178.1484	9.2800e-003	0.0000	178.3803
Worker	0.0680	0.0492	0.5063	1.3300e-003	0.1390	9.7000e-004	0.1400	0.0370	8.9000e-004	0.0379	0.0000	120.0667	120.0667	3.3800e-003	0.0000	120.1513
Total	**0.0971**	**0.8829**	**0.7284**	**3.1900e-003**	**0.1839**	**5.5500e-003**	**0.1895**	**0.0500**	**5.2700e-003**	**0.0553**	**0.0000**	**298.2151**	**298.2151**	**0.0127**	**0.0000**	**298.5316**

3.4 Building Construction - 2020

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					
Off-Road	0.1516	1.3718	1.2047	1.9200e-003		0.0799	0.0799		0.0751	0.0751	0.0000	165.6009	165.6009	0.0404	0.0000	166.6110
Total	**0.1516**	**1.3718**	**1.2047**	**1.9200e-003**		**0.0799**	**0.0799**		**0.0751**	**0.0751**	**0.0000**	**165.6009**	**165.6009**	**0.0404**	**0.0000**	**166.6110**

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	0.0292	0.8337	0.2221	1.8600e-003	0.0450	4.5800e-003	0.0495	0.0130	4.3800e-003	0.0174	0.0000	178.1484	178.1484	9.2800e-003	0.0000	178.3803
Worker	0.0680	0.0492	0.5063	1.3300e-003	0.1390	9.7000e-004	0.1400	0.0370	8.9000e-004	0.0379	0.0000	120.0667	120.0667	3.3800e-003	0.0000	120.1513
Total	**0.0971**	**0.8829**	**0.7284**	**3.1900e-003**	**0.1839**	**5.5500e-003**	**0.1895**	**0.0500**	**5.2700e-003**	**0.0553**	**0.0000**	**298.2151**	**298.2151**	**0.0127**	**0.0000**	**298.5316**

3.5 Paving - 2020

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					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	5.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0191**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1902**

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	5.8000e-004	4.2000e-004	4.3200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0239	1.0239	3.0000e-005	0.0000	1.0247
Total	**5.8000e-004**	**4.2000e-004**	**4.3200e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0239**	**1.0239**	**3.0000e-005**	**0.0000**	**1.0247**

3.5 Paving - 2020

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					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	5.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0191**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1901**

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	5.8000e-004	4.2000e-004	4.3200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0239	1.0239	3.0000e-005	0.0000	1.0247
Total	**5.8000e-004**	**4.2000e-004**	**4.3200e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0239**	**1.0239**	**3.0000e-005**	**0.0000**	**1.0247**

3.6 Architectural Coating - 2020

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					
Archit. Coating	2.1270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**2.1294**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

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	1.8900e-003	1.3700e-003	0.0141	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	3.3449	3.3449	9.0000e-005	0.0000	3.3472
Total	**1.8900e-003**	**1.3700e-003**	**0.0141**	**4.0000e-005**	**3.8700e-003**	**3.0000e-005**	**3.9000e-003**	**1.0300e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**3.3449**	**3.3449**	**9.0000e-005**	**0.0000**	**3.3472**

3.6 Architectural Coating - 2020

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					
Archit. Coating	2.1270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**2.1294**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

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	1.8900e-003	1.3700e-003	0.0141	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	3.3449	3.3449	9.0000e-005	0.0000	3.3472
Total	**1.8900e-003**	**1.3700e-003**	**0.0141**	**4.0000e-005**	**3.8700e-003**	**3.0000e-005**	**3.9000e-003**	**1.0300e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**3.3449**	**3.3449**	**9.0000e-005**	**0.0000**	**3.3472**

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	0.4183	8.3259	3.6999	0.0225	0.8760	0.0473	0.9234	0.2432	0.0452	0.2883	0.0000	2,131.6893	2,131.6893	0.1028	0.0000	2,134.2592
Unmitigated	0.4183	8.3259	3.6999	0.0225	0.8760	0.0473	0.9234	0.2432	0.0452	0.2883	0.0000	2,131.6893	2,131.6893	0.1028	0.0000	2,134.2592

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	100.93	100.93	100.93	325,582	325,582
Unrefrigerated Warehouse-No Rail	571.92	571.92	571.92	1,844,837	1,844,837
Total	672.86	672.86	672.86	2,170,419	2,170,419

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	100.00	0.00	0.00	92	5	3
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	100.00	0.00	0.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.569185	0.038999	0.171806	0.120317	0.026328	0.006551	0.017860	0.035422	0.003826	0.001868	0.005693	0.001021	0.001123
Parking Lot	0.569185	0.038999	0.171806	0.120317	0.026328	0.006551	0.017860	0.035422	0.003826	0.001868	0.005693	0.001021	0.001123
Refrigerated Warehouse-No Rail	0.252900	0.017300	0.076300	0.053500	0.183300	0.045600	0.124400	0.246700	0.000000	0.000000	0.000000	0.000000	0.000000
Unrefrigerated Warehouse-No Rail	0.252900	0.017300	0.076300	0.053500	0.183300	0.045600	0.124400	0.246700	0.000000	0.000000	0.000000	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	248.2956	248.2956	0.0126	3.0300e-003	249.5143
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	248.2956	248.2956	0.0126	3.0300e-003	249.5143
NaturalGas Mitigated	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	75.1874	75.1874	1.4400e-003	1.3800e-003	75.6342
NaturalGas Unmitigated	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	75.1874	75.1874	1.4400e-003	1.3800e-003	75.6342

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					
Other Asphalt Surfaces	0	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
Parking Lot	0	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
Refrigerated Warehouse-No Rail	227684	1.2300e-003	0.0112	9.3800e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.1501	12.1501	2.3000e-004	2.2000e-004	12.2223
Unrefrigerated Warehouse-No Rail	1.18127e+006	6.3700e-003	0.0579	0.0486	3.5000e-004		4.4000e-003	4.4000e-003		4.4000e-003	4.4000e-003	0.0000	63.0373	63.0373	1.2100e-003	1.1600e-003	63.4119
Total		**7.6000e-003**	**0.0691**	**0.0580**	**4.2000e-004**		**5.2500e-003**	**5.2500e-003**		**5.2500e-003**	**5.2500e-003**	**0.0000**	**75.1874**	**75.1874**	**1.4400e-003**	**1.3800e-003**	**75.6342**

5.2 Energy by Land Use - NaturalGas

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					
Other Asphalt Surfaces	0	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
Parking Lot	0	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
Refrigerated Warehouse-No Rail	227684	1.2300e-003	0.0112	9.3800e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.1501	12.1501	2.3000e-004	2.2000e-004	12.2223
Unrefrigerated Warehouse-No Rail	1.18127e+006	6.3700e-003	0.0579	0.0486	3.5000e-004		4.4000e-003	4.4000e-003		4.4000e-003	4.4000e-003	0.0000	63.0373	63.0373	1.2100e-003	1.1600e-003	63.4119
Total		**7.6000e-003**	**0.0691**	**0.0580**	**4.2000e-004**		**5.2500e-003**	**5.2500e-003**		**5.2500e-003**	**5.2500e-003**	**0.0000**	**75.1874**	**75.1874**	**1.4400e-003**	**1.3800e-003**	**75.6342**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	585731	130.6232	6.6400e-003	1.5900e-003	131.2643
Unrefrigerated Warehouse-No Rail	527659	117.6725	5.9800e-003	1.4400e-003	118.2500
Total		**248.2957**	**0.0126**	**3.0300e-003**	**249.5143**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	585731	130.6232	6.6400e-003	1.5900e-003	131.2643
Unrefrigerated Warehouse-No Rail	527659	117.6725	5.9800e-003	1.4400e-003	118.2500
Total		**248.2957**	**0.0126**	**3.0300e-003**	**249.5143**

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	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Unmitigated	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139

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	0.2127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5761					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.4000e-004	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Total	**1.7895**	**6.0000e-005**	**6.7500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0131**	**0.0131**	**3.0000e-005**	**0.0000**	**0.0139**

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	0.2127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5761					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.4000e-004	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Total	**1.7895**	**6.0000e-005**	**6.7500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0131**	**0.0131**	**3.0000e-005**	**0.0000**	**0.0139**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.7574	0.0162	3.9000e-004	1.2792
Unmitigated	0.7574	0.0162	3.9000e-004	1.2792

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0.316449 / 0	0.4823	0.0103	2.5000e-004	0.8145
Unrefrigerated Warehouse-No Rail	0.180554 / 0	0.2752	5.8900e-003	1.4000e-004	0.4647
Total		**0.7574**	**0.0162**	**3.9000e-004**	**1.2792**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0.316449 / 0	0.4823	0.0103	2.5000e-004	0.8145
Unrefrigerated Warehouse-No Rail	0.180554 / 0	0.2752	5.8900e-003	1.4000e-004	0.4647
Total		**0.7574**	**0.0162**	**3.9000e-004**	**1.2792**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	76.4220	4.5164	0.0000	189.3324
Unmitigated	76.4220	4.5164	0.0000	189.3324

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	56.48	11.4649	0.6776	0.0000	28.4039
Unrefrigerated Warehouse-No Rail	320	64.9571	3.8389	0.0000	160.9285
Total		**76.4220**	**4.5164**	**0.0000**	**189.3324**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	56.48	11.4649	0.6776	0.0000	28.4039
Unrefrigerated Warehouse-No Rail	320	64.9571	3.8389	0.0000	160.9285
Total		**76.4220**	**4.5164**	**0.0000**	**189.3324**

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

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

1640 5th St.., Suite 204 Santa
Santa Monica, California 90401
Tel: (949) 887-9013
Email: mhagemann@swape.com

Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

HADLEY KATHRYN NOLAN

SOIL WATER AIR PROTECTION ENTERPRISE
2656 29th Street, Suite 201
Santa Monica, California 90405
Mobile: (678) 551-0836
Office: (310) 452-5555
Fax: (310) 452-5550
Email: hadley@swape.com

EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES **B.S. ENVIRONMENTAL SCIENCES & ENVIRONMENTAL SYSTEMS AND SOCIETY** *JUNE 2016*

PROJECT EXPERIENCE

SOIL WATER AIR PROTECTION ENTERPRISE ***SANTA MONICA, CA***

AIR QUALITY SPECIALIST

SENIOR PROJECT ANALYST: CEQA ANALYSIS & MODELING

- Modeled construction and operational activities for proposed land use projects using CalEEMod to quantify criteria air pollutant and greenhouse gas (GHG) emissions.
- Organized presentations containing figures and tables that compare results of criteria air pollutant analyses to thresholds.
- Quantified ambient air concentrations at sensitive receptor locations using AERSCREEN, a U.S. EPA recommended screening level dispersion model.
- Conducted construction and operational health risk assessments for residential, worker, and school children sensitive receptors.
- Prepared reports that discuss adequacy of air quality and health risk analyses conducted for proposed land use developments subject to CEQA review by verifying compliance with local, state, and regional regulations.

SENIOR PROJECT ANALYST: GREENHOUSE GAS MODELING AND DETERMINATION OF SIGNIFICANCE

- Evaluated environmental impact reports for proposed projects to identify discrepancies with the methods used to quantify and assess GHG impacts.
- Quantified GHG emissions for proposed projects using CalEEMod to produce reports, tables, and figures that compare emissions to applicable CEQA thresholds and reduction targets.
- Determined compliance of proposed land use developments with AB 32 GHG reduction targets, with GHG significance thresholds recommended by Air Quality Management Districts in California, and with guidelines set forth by CEQA.

PROJECT ANALYST: ASSESSMENT OF AIR QUALITY IMPACTS FROM PROPOSED DIRECT TRANSFER FACILITY

- Assessed air quality impacts resulting from implementation of a proposed Collection Service Agreement for Exclusive Residential and Commercial Garbage, Recyclable Materials, and Organic Waste Collection Services for a community.
- Organized tables and maps to demonstrate potential air quality impacts resulting from proposed hauling trip routes.
- Conducted air quality analyses that compared quantified criteria air pollutant emissions released during construction of direct transfer facility to the Bay Area Air Quality Management District's (BAAQMD) significance thresholds.
- Prepared final analytical report to demonstrate local and regional air quality impacts, as well as GHG impacts.

PROJECT ANALYST: EXPOSURE ASSESSMENT OF LEAD PRODUCTS FOR PROPOSITION 65 COMPLIANCE DETERMINATION

- Calculated human exposure and lifetime health risk for over 300 lead products undergoing Proposition 65 compliance review.
- Compiled and analyzed laboratory testing data and produced tables, charts, and graphs to exhibit emission levels.
- Compared finalized testing data to Proposition 65 Maximum Allowable Dose Levels (MADLs) to determine level of compliance.
- Prepared final analytical lead exposure Certificate of Merit (COM) reports and organized supporting data for use in environmental enforcement statute Proposition 65 cases.

ACCOMPLISHMENTS

- **Academic Honoree,** Dean's List, University of California, Los Angeles ***MAR 2013, MAR 2014, JAN 2015, JAN 2016***

EXHIBIT C

July 16, 2018

Mr. Richard Drury
Lozeau Drury
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Nova Wine Warehouse Initial Study Mitigated Negative Declaration (UP - 00456) P18029

Dear Mr. Drury:

At your request, I have reviewed the Initial Study / Mitigated Negative Declaration (the "IS/MND") for the Nova Wine Warehouse Project (the "Project") in the County of Napa (the "County"). My review is specific to the traffic and transportation section of the IS/MND and its supporting documentation.

My qualifications to perform this review include registration as a Civil and Traffic Engineer in California and over 49 years professional consulting engineering practice in the traffic and transportation industry. I have both prepared and performed adequacy reviews of numerous transportation and circulation sections of environmental impact reports prepared under the California Environmental Quality Act (CEQA) including mixed use complexes. My professional resume is attached. Findings of my review are summarized below.

The Assumptions Regarding Trip Generation Are Inconsistent With the Proposed Facilities to be Provided

The IS/MND estimates trip generation for the Project based on ITE *Trip Generation, 9th Edition* rates for warehouse use on a per employee basis. The number of employees assumed is 20 full-time and 20 part time personnel, based on the assertion of the Project sponsor. However, the Project Description in the IS/MND and the physical site plan indicate there would be 80 loading docks, 22 trailer parking spaces and 241 passenger vehicle parking spaces. Hence, the Project provides passenger vehicle parking spaces for *six times* as many vehicles as would be needed for the 40 employees if they all were on site at the same time and all drove alone to and from work. It is obvious that the 40 employees represents an initial work force that will considerably expand as use of the proposed warehouse increases. It is also obvious that that the IS/MND underestimates the Project's trip generation by about 6-fold.

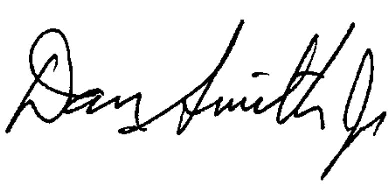
Consequently, its conclusion that the Project would have a less than significant impact with regard to causing an increase in traffic which is substantial in relation to existing traffic load and capacity of the street system and/or conflict with General Plan Policy CIR-16 which seeks to maintain an adequate Level of Service (LOS) at signalized and unsignalized intersections is improperly supported and more likely than not incorrect.

Conclusion

This concludes my current comments on the Nova Wine Warehouse Project FEIR. Given the vast disparity between the number of employees assumed in the traffic analysis and the number that could be supported by the passenger vehicle parking facilities provided on the site plan, there is fair argument that the IS/MND traffic analysis is defective and that further analysis should be done. The range of disparity of what is assumed in the traffic analysis and what could be supported by the parking facilities provided is such that it could also be consequential for the air quality and greenhouse gas analyses in the IS/MND

Sincerely,

Smith Engineering & Management
A California Corporation



Daniel T. Smith Jr., P.E.
President

TRAFFIC • TRANSPORTATION • MANAGEMENT
5311 Lowry Road, Union City, CA 94587 tel: 510.489.9477 fax: 510.489.9478

Attachment 1
Resume of Daniel T. Smith Jr., P.E.

SMITH ENGINEERING & MANAGEMENT

DANIEL T. SMITH, Jr.
President

EDUCATION

Bachelor of Science, Engineering and Applied Science, Yale University, 1967
Master of Science, Transportation Planning, University of California, Berkeley, 1968

PROFESSIONAL REGISTRATION

California No. 21913 (Civil)
California No. 938 (Traffic)
Nevada No. 7969 (Civil)
Washington No. 29337 (Civil)
Arizona No. 22131 (Civil)

PROFESSIONAL EXPERIENCE

Smith Engineering & Management, 1993 to present. President.
DKS Associates, 1979 to 1993. Founder, Vice President, Principal Transportation Engineer.
De Leuw, Cather & Company, 1968 to 1979. Senior Transportation Planner.
Personal specialties and project experience include:

Litigation Consulting. Provides consultation, investigations and expert witness testimony in highway design, transit design and traffic engineering matters including condemnations involving transportation access issues; traffic accidents involving highway design or traffic engineering factors; land use and development matters involving access and transportation impacts; parking and other traffic and transportation matters.

Urban Corridor Studies/Alternatives Analysis. Principal-in-charge for State Route (SR) 102 Feasibility Study, a 35-mile freeway alignment study north of Sacramento. Consultant on I-280 Interstate Transfer Concept Program, San Francisco, an AA/EIS for completion of I-280, demolition of Embarcadero freeway, substitute light rail and commuter rail projects. Principal-in-charge, SR 238 corridor freeway/expressway design/environmental study, Hayward (Calif.) Project manager, Sacramento Northeast Area multi-modal transportation corridor study. Transportation planner for I-80N West Terminal Study, and Harbor Drive Traffic Study, Portland, Oregon. Project manager for design of surface segment of Woodward Corridor LRT, Detroit, Michigan. Directed staff on I-80 National Strategic Corridor Study (Sacramento-San Francisco), US 101-Sonoma freeway operations study, SR 92 freeway operations study, I-880 freeway operations study, SR 152 alignment studies, Sacramento RTD light rail systems study, Tasman Corridor LRT AA/EIS, Fremont-Warm Springs BART extension plan/EIR, SRs 70/99 freeway alternatives study, and Richmond Parkway (SR 93) design study.

Area Transportation Plans. Principal-in charge for transportation element of City of Los Angeles General Plan Framework, shaping nations largest city two decades into 21'st century. Project manager for the transportation element of 300-acre Mission Bay development in downtown San Francisco. Mission Bay involves 7 million gsf office/commercial space, 8,500 dwelling units, and community facilities. Transportation features include relocation of commuter rail station; extension of MUNI-Metro LRT; a multi-modal terminal for LRT, commuter rail and local bus; removal of a quarter mile elevated freeway; replacement by new ramps and a boulevard; an internal roadway network overcoming constraints imposed by an internal tidal basin; freeway structures and rail facilities; and concept plans for 20,000 structured parking spaces. Principal-in-charge for circulation plan to accommodate 9 million gsf of office/commercial growth in downtown Bellevue (Wash.). Principal-in-charge for 64 acre, 2 million gsf multi-use complex for FMC adjacent to San Jose International Airport. Project manager for transportation element of Sacramento Capitol Area Plan for the state governmental complex, and for Downtown Sacramento Redevelopment Plan. Project manager for Napa (Calif.) General Plan Circulation Element and Downtown Riverfront Redevelopment Plan, on parking program for downtown Walnut Creek, on downtown transportation plan for San Mateo and redevelopment plan for downtown Mountain View (Calif.), for traffic circulation and safety plans for California cities of Davis, Pleasant Hill and Hayward, and for Salem, Oregon.

Transportation Centers. Project manager for Daly City Intermodal Study which developed a $7 million surface bus terminal, traffic access, parking and pedestrian circulation improvements at the Daly City BART station plus development of functional plans for a new BART station at Colma. Project manager for design of multi-modal terminal (commuter rail, light rail, bus) at Mission Bay, San Francisco. In Santa Clarita Long Range Transit Development Program, responsible for plan to relocate system's existing timed-transfer hub and development of three satellite transfer hubs. Performed airport ground transportation system evaluations for San Francisco International, Oakland International, Sea-Tac International, Oakland International, Los Angeles International, and San Diego Lindberg.
Campus Transportation. Campus transportation planning assignments for UC Davis, UC Berkeley, UC Santa Cruz and UC San Francisco Medical Center campuses; San Francisco State University; University of San Francisco; and the University of Alaska and others. Also developed master plans for institutional campuses including medical centers, headquarters complexes and research & development facilities.
Special Event Facilities. Evaluations and design studies for football/baseball stadiums, indoor sports arenas, horse and motor racing facilities, theme parks, fairgrounds and convention centers, ski complexes and destination resorts throughout western United States.
Parking. Parking programs and facilities for large area plans and individual sites including downtowns, special event facilities, university and institutional campuses and other large site developments; numerous parking feasibility and operations studies for parking structures and surface facilities; also, resident preferential parking .
Transportation System Management & Traffic Restraint. Project manager on FHWA program to develop techniques and guidelines for neighborhood street traffic limitation. Project manager for Berkeley, (Calif.), Neighborhood Traffic Study, pioneered application of traffic restraint techniques in the U.S. Developed residential traffic plans for Menlo Park, Santa Monica, Santa Cruz, Mill Valley, Oakland, Palo Alto, Piedmont, San Mateo County, Pasadena, Santa Ana and others. Participated in development of photo/radar speed enforcement device and experimented with speed humps. Co-author of Institute of Transportation Engineers reference publication on neighborhood traffic control.
Bicycle Facilities. Project manager to develop an FHWA manual for bicycle facility design and planning, on bikeway plans for Del Mar, (Calif.), the UC Davis and the City of Davis. Consultant to bikeway plans for Eugene, Oregon, Washington, D.C., Buffalo, New York, and Skokie, Illinois. Consultant to U.S. Bureau of Reclamation for development of hydraulically efficient, bicycle safe drainage inlets. Consultant on FHWA research on effective retrofits of undercrossing and overcrossing structures for bicyclists, pedestrians, and handicapped.

MEMBERSHIPS

Institute of Transportation Engineers Transportation Research Board

PUBLICATIONS AND AWARDS

Residential Street Design and Traffic Control, with W. Homburger *et al*. Prentice Hall, 1989.
Co-recipient, Progressive Architecture Citation, *Mission Bay Master Plan*, with I.M. Pei WRT Associated, 1984.
Residential Traffic Management, State of the Art Report, U.S. Department of Transportation, 1979.
Improving The Residential Street Environment, with Donald Appleyard et al., U.S. Department of Transportation, 1979.
Strategic Concepts in Residential Neighborhood Traffic Control, International Symposium on Traffic Control Systems, Berkeley, California, 1979.
Planning and Design of Bicycle Facilities: Pitfalls and New Directions, Transportation Research Board, Research Record 570, 1976.
Co-recipient, Progressive Architecture Award, *Livable Urban Streets, San Francisco Bay Area and London*, with Donald Appleyard, 1979.