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Applicant’s Letters

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

BALANCED PLANNING, INC

TO: SEAN TRIPPI, PRINCIPAL PLANNER

FROM: BETH PAINTER

SUBJECT: **NOVA WAREHOUSE, P16-00456**

DATE: FEBRUARY 22, 2019

CC: RON FEDRICK, ANDREA MATARAZZO

For the County's review and inclusion in the project file, the applicant provides the following clarifying information.

Reduction in Parking Spaces

The project site can provide the required 241 parking spaces as shown on the July 24, 2017 Site Plan, (Sheet C1.0). The original application requested a reduction to the required parking (Narrative, page 3 of 4), but did not specify how many spaces would be required. The warehouse facility will be run by up to 20 full time and 20 part time employees. Therefore the maximum number of spaces required is much less than the code calculation of 241. A maximum of 80 parking spaces will be completed with construction. The site however could accommodate the remaining spaces should the building be converted to another use in the future. The conversion to another use would require a modification to the use permit.

Refrigeration in Warehouse

This location is ideal for a warehouse not only because it is in a designated Industrial Zoning District, but also because it can take advantage of passive night cooling, which has a net positive impact on energy consumption. The FCS memo (dated October 15, 2018) included an estimate of the average monthly electrical use for this building. Energy efficiencies (such as use of cool roofing materials, maximum insulation, minimal fenestration, night cooling and use of solar) will be incorporated into the final design to ensure that the building is energy efficient. New buildings by design are significantly more energy efficient than older warehouses, and the project does not involve any unusual characteristics that would result in excessive long-term operational demand for electricity. New buildings such as the proposed project must meet energy efficiency standards, which are part of the Title 24 building code, to conserve energy and avoid unnecessary energy consumption. The code applies to the building envelope, space conditioning (heating, ventilating and air conditioning) systems, water heating systems, and lighting systems. The California Building Energy Efficiency Standards are meant to promote energy efficiency as the name implies, and as such, they avoid the wasteful and inefficient consumption of energy.

Biological Site visit data

The letter from Pioneer Law Group dated February 21, 2019 includes additional information on the length of time the project Biologists spent for each site visit.

If you need any additional information, please don't hesitate to contact me.

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pioneer
law group, llp

Andrea A. Matarazzo
Partner
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direct: (916) 287-9502

February 21, 2019

Via Electronic Mail
Sean.Trippi@countyofnapa.org

Sean Trippi, Principal Planner
Napa County Planning,
Building & Environmental Services
1195 Third Street, Suite 210
Napa, CA 94559

Re: Nova Warehouse, Use Permit P16-00456
Our File No. 5279-001

Dear Mr. Trippi:

Attached for your review and use is information provided by Zentner Planning & Ecology regarding their evaluation of biological resources for the proposed Nova Wine Warehouse at 185 Devlin Road in Napa County ("Project") pursuant to the California Environmental Quality Act ("CEQA").

As shown in the attached summary of Zentner's focused surveys and assessments, the firm's expert biologists carefully viewed the existing conditions of the Project site in order to understand those conditions in relation to the activities proposed and make a proper analysis of potential environmental impacts. Biologists walked the entire site and visually examined the entire extent of potential impact within the Project area to identify any features and habitat elements that could indicate the presence of special status species. Appropriate biological survey methods are determined based largely on the nature of a given Project site, along with other factors. While often urged by non-experts or project challengers, full resource inventories and protocol-level surveys for all potentially occurring species are not required under CEQA and frequently are unwarranted where, as here, suitable habitat is not present. (See, e.g., Zentner Memorandum

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in Response to Biological Resources Questions, October 2, 2018, pp. 2-4; *Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383.)

In *Association of Irritated Residents*, for example, the Court of Appeal rejected the claim that protocol-level surveys were necessary to adequately determine the significance of impacts to special status species and stated that "CEQA does not require a lead agency to conduct every recommended test and perform all recommended research to evaluate the impacts of a proposed project. The fact that additional studies might be helpful does not mean that they are required." Consequently, when there is sufficient information regarding biological resources to determine potential impacts to those resources, additional studies are not required under CEQA.

Here, the surveys conducted by Zentner Planning & Ecology thoroughly evaluated existing conditions on the Project site and reported, as an example, that no active or inactive burrowing owl nests of any kind were found on the property or within its zone of influence, nor were any burrows found that would indicate current or recent occupation by western burrowing owl. As per standard Napa County requirements, if construction were planned to begin during the nesting season, preconstruction nesting bird surveys would be conducted once again prior to the commencement of construction, and any active nests discovered would be protected per the requirements of the California Fish and Game Code. This standard implementation of established regulatory requirements, which is applicable to nearly all development projects in the State of California, would ensure that there would be no adverse effects to nesting birds. (See, e.g., Zentner Memorandum in Response to Biological Resources Questions, October 2, 2018, pp. 7-8; see *Citizens Opposing a Dangerous Environment v. County of Kern* (2014) 228 Cal.App.4th 360 [compliance with existing regulatory framework as a mitigation measure to reduce impacts to less than significant level is appropriate under CEQA].)

As summarized above and in the previous responses provided in our December 4, 2018 letter to David Morrison, and based on substantial evidence in light of the whole record, Napa County has satisfied the requirements of CEQA

by preparing the Initial Study/Mitigation Negative Declaration ("IS/MND") for the Project.

We again respectfully request that the Project be scheduled for an approval hearing as soon as possible.

Very truly yours,

PIONEER LAW GROUP, LLP

ANDREA A. MATARAZZO

AAM:sr

Nova Warehouse Project: Focused Site Surveys and Assessments

Date	Approx. Time On-Site	Task	Personnel
April 26, 2016	2 hours	Initial site review	Sean Micallef; Zentner Planning and Ecology (ZPE)
May 6, 2016	7 hours	Special habitats and species surveys	Sean Micallef and Emily Mathews (ZPE)
May 17, 2016	2.5 hours	Survey of riparian habitats and species	Sean Micallef (ZPE)
June 2, 2016	2.5 hours	Focused bird survey	Sean Micallef (ZPE); Glen Holstein (subconsultant and expert ornithologist)
July 5, 2016	2 hours	Botanical focused survey for papoose tarplant (*Centromadia parryi ssp. parryi*)	Sean Micallef (ZPE)

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December 4, 2018

Via Electronic Mail -
David.Morrison@countyofnapa.org

David Morrison, Planning Director
Napa County Planning,
Building & Environmental Services
1195 Third Street, Suite 210
Napa, CA 94559

Re: Nova Wine Warehouse, Use Permit P16-00456
Our File No. 5279-001

Dear Mr. Morrison:

As you know, under direction from the Napa County Planning, Building & Environmental Services department, an Initial Study/Mitigated Negative Declaration ("IS/MND") was prepared for the proposed Nova Wine Warehouse at 185 Devlin Road in Napa County. The IS/MND was circulated for public review in compliance with the California Environmental Quality Act ("CEQA") and came before the Napa County Planning Commission on July 19, 2018.

At the Planning Commission's July 19th hearing on the proposed project, a comment letter was presented to the Commission by an attorney for the Laborers International Union of North America, Local 324 ("LIUNA"). The attorney's testimony and comment letter objected to approval of the proposed project and asserted a variety of reasons for the challenge. The attached technical memoranda identify and respond to each of the allegations made in the LIUNA comment letter pertaining to biological resources, air quality, and greenhouse gas emissions/climate change. Our understanding is that the County's staff have

identified and responded to each of the allegations made in the LIUNA comment letter pertaining to transportation and circulation.

Because the LIUNA letter presents no legitimate environmental concerns and the record contains no substantial evidence that the project, as mitigated, may result in a significant effect on the environment, we respectfully request that the project be scheduled for an approval hearing as soon as possible.

Very truly yours,

PIONEER LAW GROUP, LLP

ANDREA A. MATARAZZO

AAM:jis
Enclosures

FIRSTCARBON SOLUTIONS

Memo

Date:	October 15, 2018
To:	Sean Trippi, Principal Planner Napa County
From:	Jason Brandman, Vice President and Jason Paukovits, Air Quality, Greenhouse Gas (GHG), and Global Climate Change Planning Specialist
Subject:	Response to Comments on the Greenhouse Gas Analysis for the Nova Warehouse Project

FirstCarbon Solutions, Inc. (FCS) is pleased to provide the following responses to comments received on the Greenhouse Gas (GHG) technical memorandum prepared for the proposed Nova Warehouse project, which is located in the County of Napa. FCS developed the GHG technical memorandum, dated April 20, 2018, to be consistent with the requirements of the California Environmental Quality Act (CEQA) Guidelines. Detailed responses are provided for all comments received on the GHG memorandum. Additional documentation for emission estimates included in the responses are provided in Attachment A.

Response to Comments

Lozeau Drury LLP Comment Letter re Nova Wine Warehouse, Use Permit P16-00456 Mitigated Negative Declaration (dated July 17, 2018)

Comment 1. 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.

Response to Comment 1

The greenhouse gas (GHG) analysis for the Project utilizes the latest version of the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. CalEEMod allows the user to select both a land use type (e.g., industrial) and land use subtype (e.g., warehouse). The model provides default electricity baseline values based on commercial surveys. Those default values can be updated if more detailed and project specific information is available. As stated on Page 5 of the memo, "Nova Group provided the estimated average monthly electricity usage, which is 52,000 KWh," or approximately 621,000 KWh per year. Therefore, although the model land use is still listed as "Unrefrigerated Warehouse," the electricity rates

have been updated in the model based on detailed and specific Project information and accurately represent the projected electricity consumption for the Project.

Comment 2. 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.

Response to Comment 2

As discussed in the Traffic Impact Study, a review of standard rates for warehousing uses indicated that the use of floor area to estimate trips would result in an unreasonable number of employees compared to what is planned for the Project (138 employees compared to 40 employees). According to W-Trans, the 20 full-time employees were assumed to generate an average of three trips each, or 60 trips daily while the 20 part-time employees would typically generate two trips each, or 40 trips daily. In addition, W-Trans developed the estimate of truck trips for the proposed project based on a survey of land uses, including a wine storage facility of similar square footage. This results in the estimate of 50 truck deliveries per day, or 100 truck trip ends daily. Application of the rates with the number of employees as the independent variable would result in 202 total trips per day during typical operations. All trips generated by the land 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.

Comment 3. 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 CO2E per year, which is more than twice the 1,100 MT CO2E 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.

Response to Comment 3

The comment indicates that an updated GHG analysis was prepared including "more site specific information," yet the commenter's analysis makes only generalized assumptions and speculates about the Project's impacts based on default values for refrigeration and daily vehicle trips. These assumptions are inaccurate and result an overly conservative analysis that is erroneous because it is not

representative of actual emissions associated with the proposed Project. Specific responses are provided to each of the items listed in Exhibit B of the comment letter.

Comment 4. 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.

Response to Comment 4

The GHG analysis was developed using the most recently available BAAQMD CEQA Guidelines and thresholds of significance. Since the State of California has taken strong legislative and programmatic action to achieve GHG reductions beyond 2020, the BAAQMD has initiated an update to reflect new or revised requirements in the State CEQA Guidelines, recent court decisions, improved analytical methodologies, and new mitigation strategies.[1] The BAAQMD hosted a public workshop in September 2017 to receive input on the CEQA guidelines update, but has not provided revised guidelines or thresholds for GHG emissions. Therefore, the quantitative analysis in the GHG analysis is based on the most recent thresholds available and recommended by the BAAQMD. AB 32 and SB 32 set overall statewide goals for emission reductions, and do not assume that emissions for each and every project will decrease in future years. Therefore, because thresholds for future emissions are currently under development, the analysis does not evaluate impacts after 2020 based on a quantitative threshold.

To address consistency with statewide goals, the GHG analysis for the proposed Project evaluated consistency with the policies and measures in the AB 32 Scoping Plan. The 2017 Climate Change Scoping Plan Update addressing the SB 32 legislation was adopted by the California Air Resources Board to consider the 2030 emission goals for the state. The measures in the 2017 Scoping Plan Update are similar to, but more stringent, than those for the 2008 Scoping Plan and include Renewable Energy Mandates for utilities, increasing building energy efficiency, low carbon fuel standard, cleaner technology and fuels for vehicle manufacturers. Similar to the analysis for the AB 32 Scoping Plan, the proposed Project would be consistent with any applicable GHG emission reduction measures in the 2017 Scoping Plan Update.

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[1] BAAQMD. 2018. CEQA Guidelines Update Underway. http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

Exhibit B. SWAPE Comments on the Nova Wine Warehouse Project (dated July 13, 2018)

Comment B-1. 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"). 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. 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 pollutant and GHG emissions and make known which default values were changed as well as provide a justification for the values selected.

Response to Comment B-1

The comment provides a summary of the inputs and outputs for the CalEEMod model. No additional response is required.

Comment B-2

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.

Response to Comment B-2

See Response to Comment 3. Specific responses are provided to each of the technical items listed in the comment letter.

Comment B-3. Failure to Consider Cold-Storage Requirements for Warehouse.

As stated in the comment, "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)."

The comment continues by stating that "Refrigerated warehouses release more air pollutants and GHG emissions when compared to unrefrigerated warehouses for several reasons. First, warehouses equipped with cold storage (refrigerators and freezers, for example) are known to consume more energy

when compared to warehouses without cold storage. 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. 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."

Response to Comment B-3

See Response to Comment 1. The comment makes generalized assumptions about refrigerated warehouses compared to unrefrigerated warehouses. Those statements may be accurate for those land use types. However, the GHG analysis was developed based on Project-specific data that incorporates trip generation and energy consumption consistent with the Project design.

Comment B-4. 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.

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).

Response to Comment B-4

See Response to Comment 2. The comment is correct in that the CalEEMod emission estimates were based on a rate of 180 trips per day. This discrepancy is a result of minor changes to the traffic estimates that occurred during development of the GHG technical memorandum and would not change the findings presented in the analysis. However, to further demonstrate the impacts of the proposed Project would not change the results of the GHG analysis, the emission estimates have been revised based on the rate of 202 daily vehicle trips consistent with the traffic analysis. The results are shown below in a revised Table 3 and the attached CalEEMod outputs.

As shown in the revised Table 3, the Project is expected to generate 994 MT CO2e per year; the Project's operational GHG emissions would not exceed the applicable BAAQMD significance threshold of 1,100

MT CO2e per year. Therefore, the findings are consistent with the analysis and results provided in the environmental document.

Table 3: Project Greenhouse Gas Emissions

Source	Annual MT CO_2e
Area	<1
Energy	214
Mobile	628
Waste[1]	151
Water	1
Total	994
BAAQMD Threshold	**1,100**
Exceeds Threshold?	NO

Notes:
MT CO_2e = metric tons of carbon dioxide equivalents.
Emissions may vary slightly due to rounding.
[1] Applicant applies the solid waste recycle program. 20 percent of solid waste would be recycled.
Source of emissions: FCS and CalEEMod.
Source of thresholds: BAAQMD 2017.

Comment B-5. 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.

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 CO2e/yr. 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.

Response to Comment B-5

See Response to Comments 1 and 3. The analysis provided by the commenter increases the estimate of daily trips from 202 to 673 per day, which is a 233 percent increase from the number of trips estimated by the traffic analysis prepared for the proposed Project. As stated in the comment letter, "we relied upon CalEEMod default values to estimate the total number of daily operational vehicle trips for the proposed warehouse." The default electricity rate was also used, which substantially increased the annual consumption from approximately 621,000 kWh per year in the environmental document to 1.1 million kWh per year. These assumptions are inaccurate and result in an overly conservative analysis that is erroneous because it is not representative of actual emissions associated with the proposed Project. As also indicated on page 2 of that same comment letter, "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." The default values for energy use and trip generation for the GHG analysis in the environmental document were updated to project-specific values based on the design and operational details of this particular Project. In addition, the GHG analysis for the Project used a more conservative fleet mix and assumed a higher percentage of trucks than included in the comment letter (e.g., 27.4 percent for HHDT in the GHG technical memorandum compared to 24.7 percent for the comment letter).

Comment B-6. Failure to Demonstrate Consistency with Long-Term Statewide Goals

The comment states that the project's GHG Technical Memo evaluates the Project's consistency with the AB 32 Scoping Plan and that the memo only makes note of the GHG emissions reductions required to meet 2020 emission reductions set forth by AB 32. The comment also notes that since the GHG Technical Memo does not 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. The comment indicates that in order to successfully reach the 2030 statewide goal, California would have to reduce its emissions by 49 percent below the "business-as-usual" levels. The comment continues to state that this 49 percent reduction target should be considered as a threshold of significance against which to measure Project impacts. 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.

Response to Comment B-6

See Response to Comment 4.

Key Staff

Jason Paukovits is an Air Quality, Greenhouse Gas (GHG), and Global Climate Change Planning Specialist with more than 16 years of experience working on a diverse range of construction, residential, commercial, industrial, and transportation projects. He specializes in CEQA and National Environmental Policy Act (NEPA) documentation and in offering long-range planning and mitigation strategies associated with air quality, climate change, and energy impacts. He has a broad background in environmental analysis, project management, contract administration, regional planning, and project-specific review. Through his work as both a consultant and government employee, Mr. Paukovits has significant experience with agency coordination and local, State, and federal environmental and planning regulations. For example, he managed air quality planning and policy development for the eight San Joaquin Valley metropolitan planning organizations and led the development of the 2007 Regional Transportation Plan for Fresno County, including the management of the Environmental Impact Report (EIR), staff activities, and coordination with State and federal agencies. Mr. Paukovits was also responsible for contract administration; compliance with local, state, and federal mandates; conformity analyses; and management of the Congestion Mitigation and Air Quality grant program. In addition, he coordinated the development of GHG policies for the Fresno Council of Governments with the California Attorney General's office and local jurisdictions.

Ella Li, MEM, is an Air Quality Scientist with more than seven years of combined research and work experience. Ms. Li is well versed in the provisions of the Clean Air Act (CAA), particularly with regard to maximum achievable control technology (MACT) and the New Source Performance Standards (NSPS). Ms. Li has experience in the preparation of technical studies supporting CEQA and NEPA documentation for commercial, industrial, mixed-use, residential, recreational, educational, and other development project types. She has performed air quality, health risk assessment (HRA), and greenhouse gas (GHG) analyses using a wide range of models, including the US Environmental Protection Agency (EPA)-approved air dispersion model (AERMOD), California Air Resources Board (ARB)-approved model EMFAC 2014, CalEEMod Version 2013 and 2016, and OFFROAD. Ms. Li also assists ADEC Innovations' (ADEC's) Environmental, Social, and Governance (ESG) Team with the preparation of CDP documentation and GHG emission inventory, including Scope 1, 2 and 3 emission sources for multinational companies. In addition, Ms. Li is knowledgeable regarding Science-Based Targets (SBT) and determining company-specific GHG reduction targets. Ms. Li leads trainings regarding the SBT process and comparison of the seven SBT methods. She is proficient with the use of software such as Stata, MATLAB, ArcGIS, AutoCAD, Netica, and the Python programming language.

Kimberly Johnson assists in preparing air quality and greenhouse gas (GHG) analyses, indirect source reviews (ISRs), climate action plans (CAPs), and other technical studies supporting California Environmental Quality Act documentation and compliance. Ms. Johnson utilizes her knowledge in Environmental Economics, Environmental Public Health, Natural Disasters, Organic Chemistry, Biology, Statistics, Environmental Science, Macroeconomics, and Microeconomics in assisting FCS with completing environmental documentation.

Attachment A:
CalEEMod Outputs

Nova Warehouse

Napa County, Annual

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

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)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Utility Info based on Renewable Portofolio Standards

Land Use - Total project area is 22.76 acre, which includes warehouses, parking lots, onsite roads, landscape and undeveloped area. Information provided by client and site plan.

Construction Phase - anticipated start date April 2019

Demolition - no demolition

Grading - confirmed by client that cut and fill would be balance on-site

Vehicle Trips - average daily trips provided by traffic memo from Beth Painter Sep 6th

Energy Use - info from Ron's email. The usage would be 52,000 kwp per month.

Water And Wastewater - info from client RFI response

Construction Off-road Equipment Mitigation - Basic Construction Mitigation Measures

Waste Mitigation - info confirmed by client

Fleet Mix - fleet mix is adjusted based on average daily trips and default fleet mix.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
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	0.27
tblFleetMix	LDA	0.57	0.31
tblFleetMix	LDT1	0.04	0.02
tblFleetMix	LDT2	0.17	0.09
tblFleetMix	LHD1	0.03	0.12
tblFleetMix	LHD2	6.5510e-003	0.03
tblFleetMix	MCY	5.6930e-003	0.00
tblFleetMix	MDV	0.12	0.07
tblFleetMix	MH	1.1230e-003	0.00
tblFleetMix	MHD	0.02	0.08
tblFleetMix	OBUS	3.8260e-003	0.00
tblFleetMix	SBUS	1.0210e-003	0.00
tblFleetMix	UBUS	1.8680e-003	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	491.65
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	ST_TR	1.68	0.50
tblVehicleTrips	SU_TR	1.68	0.50
tblVehicleTrips	WD_TR	1.68	0.50
tblWater	IndoorWaterUseRate	92,615,625.00	500,000.00

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	2.3970	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	**2.3970**	**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	0.3042	0.1579	0.4621	0.1023	0.1476	0.2499	0.0000	620.4833	620.4833	0.0921	0.0000	622.7848
2020	2.3970	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	**2.3970**	**3.7719**	**2.8789**	**6.8200e-003**	**0.3042**	**0.1579**	**0.4621**	**0.1023**	**0.1476**	**0.2499**	**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	19.73	0.00	13.99	27.06	0.00	12.76	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	2.5187	2.5187
		Highest	2.5187	2.5187

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	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	212.5998	212.5998	8.4600e-003	2.7700e-003	213.6360
Mobile	0.1134	2.4125	1.0550	6.6100e-003	0.2584	0.0116	0.2700	0.0710	0.0110	0.0820	0.0000	627.1787	627.1787	0.0316	0.0000	627.9693
Waste						0.0000	0.0000		0.0000	0.0000	76.4200	0.0000	76.4200	4.5163	0.0000	189.3273
Water						0.0000	0.0000		0.0000	0.0000	0.1586	0.6034	0.7620	0.0163	3.9000e-004	1.2865
Total	**1.9103**	**2.4807**	**1.1189**	**7.0200e-003**	**0.2584**	**0.0168**	**0.2752**	**0.0710**	**0.0162**	**0.0872**	**76.5786**	**840.3949**	**916.9735**	**4.5727**	**3.1600e-003**	**1,032.2331**

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	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	212.5998	212.5998	8.4600e-003	2.7700e-003	213.6360
Mobile	0.1134	2.4125	1.0550	6.6100e-003	0.2584	0.0116	0.2700	0.0710	0.0110	0.0820	0.0000	627.1787	627.1787	0.0316	0.0000	627.9693
Waste						0.0000	0.0000		0.0000	0.0000	61.1360	0.0000	61.1360	3.6130	0.0000	151.4619
Water						0.0000	0.0000		0.0000	0.0000	0.1586	0.6034	0.7620	0.0163	3.9000e-004	1.2865
Total	**1.9103**	**2.4807**	**1.1189**	**7.0200e-003**	**0.2584**	**0.0168**	**0.2752**	**0.0710**	**0.0162**	**0.0872**	**61.2946**	**840.3949**	**901.6895**	**3.6695**	**3.1600e-003**	**994.3676**

	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**	**19.96**	**0.00**	**1.67**	**19.75**	**0.00**	**3.67**

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:

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

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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**

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					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	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**	**0.0407**	**0.0120**	**0.0526**	**0.0223**	**0.0110**	**0.0333**	**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**

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					0.0586	0.0000	0.0586	0.0243	0.0000	0.0243	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**	**0.0586**	**0.0357**	**0.0943**	**0.0243**	**0.0329**	**0.0572**	**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**

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**

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	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0164**	**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**

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	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0164**	**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**

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	0.1134	2.4125	1.0550	6.6100e-003	0.2584	0.0116	0.2700	0.0710	0.0110	0.0820	0.0000	627.1787	627.1787	0.0316	0.0000	627.9693
Unmitigated	0.1134	2.4125	1.0550	6.6100e-003	0.2584	0.0116	0.2700	0.0710	0.0110	0.0820	0.0000	627.1787	627.1787	0.0316	0.0000	627.9693

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	202.01	202.01	202.01	651,626	651,626
Total	202.01	202.01	202.01	651,626	651,626

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-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
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 Non-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
Unrefrigerated Warehouse-No Rail	0.312976	0.021444	0.094471	0.066158	0.119799	0.029809	0.081267	0.274076	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	138.4382	138.4382	7.0400e-003	1.4100e-003	139.0338
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	138.4382	138.4382	7.0400e-003	1.4100e-003	139.0338
NaturalGas Mitigated	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1616	74.1616	1.4200e-003	1.3600e-003	74.6023
NaturalGas Unmitigated	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1616	74.1616	1.4200e-003	1.3600e-003	74.6023

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 Non-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
Unrefrigerated Warehouse-No	1.38974e+006	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1616	74.1616	1.4200e-003	1.3600e-003	74.6023
Total		**7.4900e-003**	**0.0681**	**0.0572**	**4.1000e-004**		**5.1800e-003**	**5.1800e-003**		**5.1800e-003**	**5.1800e-003**	**0.0000**	**74.1616**	**74.1616**	**1.4200e-003**	**1.3600e-003**	**74.6023**

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 Non-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
Unrefrigerated Warehouse-No Rail	1.38974e+006	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1616	74.1616	1.4200e-003	1.3600e-003	74.6023
Total		**7.4900e-003**	**0.0681**	**0.0572**	**4.1000e-004**		**5.1800e-003**	**5.1800e-003**		**5.1800e-003**	**5.1800e-003**	**0.0000**	**74.1616**	**74.1616**	**1.4200e-003**	**1.3600e-003**	**74.6023**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	620775	138.4382	7.0400e-003	1.4100e-003	139.0338
Total		**138.4382**	**7.0400e-003**	**1.4100e-003**	**139.0338**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	620775	138.4382	7.0400e-003	1.4100e-003	139.0338
Total		**138.4382**	**7.0400e-003**	**1.4100e-003**	**139.0338**

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**

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	0.7620	0.0163	3.9000e-004	1.2865
Unmitigated	0.7620	0.0163	3.9000e-004	1.2865

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.5 / 0	0.7620	0.0163	3.9000e-004	1.2865
Total		**0.7620**	**0.0163**	**3.9000e-004**	**1.2865**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.5 / 0	0.7620	0.0163	3.9000e-004	1.2865
Total		**0.7620**	**0.0163**	**3.9000e-004**	**1.2865**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	61.1360	3.6130	0.0000	151.4619
Unmitigated	76.4200	4.5163	0.0000	189.3273

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	376.47	76.4200	4.5163	0.0000	189.3273
Total		**76.4200**	**4.5163**	**0.0000**	**189.3273**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	301.176	61.1360	3.6130	0.0000	151.4619
Total		**61.1360**	**3.6130**	**0.0000**	**151.4619**

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

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Planning & Ecology

October 2, 2018

Sean Trippi
Principal Planner
Napa County
1195 Third Street, Second Floor
Napa, CA 94559

RE: Nova Wine Warehouse, Use Permit P16-00456 Mitigated Negative Declaration Memorandum in Response to Biological Resources Questions

Dear Mr. Trippi:

This firm prepared the biological resources studies and analysis used to evaluate potential impacts of the above-referenced project. After the environmental document was circulated for review and comment, the County's Planning Commission received two comment letters dated July 16th and 17th, 2018, from Lozeau Drury, LLP on behalf of Laborers International Union of North America, Local 324. In those letters and in the Lozeau Drury testimony before the Planning Commission, the Union posed questions regarding biological resources on the project site. We have reviewed the comments, questions, and supporting documentation submitted by Lozeau Drury and their biologist, Mr. Shawn Smallwood, regarding biological resources and the analysis of potential impacts in the County's Mitigated Negative Declaration ("MND") This memorandum summarizes and responds to each of those questions and comments.

1. **The information submitted by Lozeau Drury is not accurate.**

Mr. Smallwood makes a number of errors when purporting to analyze potential impacts to the biological resources in connection with the Napa Wine Warehouse project and in critiquing the Biological Report (Zentner and Zentner 2016). Mr. Smallwood's errors likely largely stem from his never having been on the property or project site and only being able to "view" the site from the road over 1,000 feet away at the closest possible point.

In order for a biologist to make a proper analysis of the project and its potential impacts, it is absolutely critical for the biologist to view and understand the existing conditions of that site. Absent of this, the biologist has to make assumptions that lead to factual errors. These errors pervade Mr. Smallwood's comments and are detailed below.

2. **Lozeau Drury's allegation that the MND fails to adequately analyze impacts tobiological resources is neither accurate nor credible and is unsupported by substantial evidence.**

Because he has never been on the project site, Mr. Smallwood fails to accurately consider the existing conditions of the project site. Though the letter from Lozeau Drury ("Attorney") does accurately state that the project site had been previously graded, Mr. Smallwood does not discuss this and likely did not know when he conducted his "binocular" review of the project site. Without any knowledge of the existing habitat conditions the reviewer would have had to rely on the surrounding, more natural and much less impacted landscapes to provide his biological analysis. As noted above and discussed in further detail below, Mr. Smallwood's characterization of existing conditions on the project site is incorrect.

The Attorney's primary argument is that protocol levels surveys for species were not conducted and they use burrowing owls as an example. However, not every site requires protocol-level surveys for every species. There should be some indication that a site provides suitable habitat before undertaking those intensive surveys. For example, burrowing owls have specific habitat requirements not discussed by the attorneys or their biologist. The overriding characteristics of suitable burrowing owl habitat are the presence of existing burrows for roosting and nesting and short vegetation (Shuford and Gardali 2008). Neither of these conditions are present at the site. The site is composed of tall, dense vegetation with an overall lack of ground squirrel or other burrows. In short, the site is poor habitat for burrowing owls and no indications of burrowing owl use were observed on the site. More information regarding burrowing owls follows later in these responses.

3. **The record contains no evidence supporting a fair argument that the project may have significant impacts on Special Status Species.**

   California red-legged frog (CRLF): Mr. Smallwood states that "to successfully breed, California red-legged frogs require more of their environment then just their breeding habitat". We agree with this assessment; CRLF do require more than just adequate breeding habitat for successful breeding, not less. CRLF also need quality upland refugia habitat usually consisting of a variety of burrowing animals and usually the CRLF are part of a metapopulation consisting of a variety of breeding habitats in a region. However, if there is no available breeding habitat on-site, they can't breed on-site.

The current property not only lacks breeding habitat, but also lacks quality upland refugia or movement habitat in the uplands. Quality upland refugia habitat consists of grasslands with cracks or fissures, ground squirrel or other rodent burrows in proximity to breeding habitat. Proximity to breeding habitat is critical. However, no known metapopulations exist in the region. In fact, very few individual CRLF are known from the entire region. Given the lack of breeding habitat onsite and the absence of regional sources of CRLF populations, the poor-quality upland habitat onsite, and the lack of refugia habitat on the site, the property is not considered movement habitat for CRLF and there is no evidence that the project may have a substantial adverse effect on this species or its habitat.

Tricolored blackbird: As with nearly all bird species, nesting habitat is the protected habitat. Tricolored nesting habitat is characterized by large tracks of dense cattails (*Typha sp.)* or bulrush (*Schoenoplectus sp.*). They breed in colonies by the many hundreds or thousands and are unmistakable. This habitat does not exist on or near the site. As with other bird species, tricolored blackbirds forage away from these areas and are found as individuals in open grassland sites. However, foraging habitat for this species is not biologically sensitive and is widely available in the region. The project site and the region are surrounded by thousands of acres of grassland habitat that provide quality foraging habitat for a variety of species of birds and other wildlife species. As noted in the Biological Report (Zentner and Zentner 2016), the habitat onsite is ruderal grassland and does not provide quality foraging habitat. The project would not result in a substantial adverse effect on this species or its habitat, even if the birds had been observed on the project site, which they have not. The property is not nesting habitat for the Tricolored blackbird there is no evidence that this species or its habitat may be significantly impacted by the project.

Golden Eagle: The site completely lacks nesting habitat for golden eagles. The primary habitat onsite is tall, dense, ruderal grassland. This type of tall, dense and weedy vegetation is difficult for raptors and other animals to forage in because prey is difficult to find and capture. In addition, a lack of burrowing mammals, which are a significant part of an eagle's prey base, was notable on the site, potentially as a result of past land use disturbances and grading. The combination of this weedy vegetation and lack of prey results in the site being poor quality foraging habitat for golden eagles and other raptors. Additionally, the property is surrounded by thousands of acres of better quality foraging habitat including the nearby spray fields and open grasslands and oak savannah. The property is not nesting habitat for golden eagles there is no evidence that the project may have a substantial adverse effect on this species or its habitat.

Western burrowing owl: The site provides poor quality habitat for raptors, but the site is even worse habitat for burrowing owls. No ground squirrels or ground squirrel burrows were noted on the site, which burrowing owls enlarge for breeding. Instead, an overall lack of burrows and all burrowing animals was noted throughout the site.

This lack of burrowing animals is likely due to the previous disturbance history of the site and grading, which likely compacted the soils. As well, the tall dense vegetation also provides poor habitat for burrowing owls who prefer to be able to see their prey and need to be able to see predators. Finally, no signs of burrowing owls were noted on the site despite the surveys that specifically looked for signs of current or past use. For all of these reasons, the site lacks burrowing owl habitat and there is no evidence that the project may have a substantial adverse effect on this species or its habitat. LSA (LSA 2015) came to the same conclusions when they conducted their analysis of the site.

Ferruginous hawk: Dr. Smallwood asserts that the project would destroy the Ferruginous hawk's winter forage. However, as stated in the project documents, the site has been previously graded and is now dominated by ruderal vegetation. This tall, dense, ruderal vegetation makes for poor raptor foraging habitat. In contrast, the large area of surrounding open space to the east and west including the nearby spray-fields and farmed lands farther east, provide high quality foraging habitat for this and other raptor species. The property is not good quality foraging habitat for the Ferruginous hawk and there is no evidence that the project may have a substantial adverse effect on this species or its habitat.

Swainson's hawk: The site contains poor foraging habitat for raptors. The site is dominated by tall, dense, ruderal vegetation that makes finding and capturing small mammals difficult and small mammals are an important part of the Swainson's hawk diet. As well, an overall lack of small mammal burrows were noted on the project site. Foraging primarily takes place on land outside of the project site that has good quality foraging habitat for this species.

It's useful to note that the SR 29/221 Soscol Junction Improvement Project EA/EIR (Caltrans 2015), which is directly adjacent to the project site, concluded that 23.66 acres of Swainson's hawk foraging habitat accounted for just 0.16% of their potential foraging habitat and that loss of this small amount of vegetation relative to their territory size would not have a substantial adverse effect, either directly or indirectly, on the Swainson's hawk or its habitat, nor would it substantially reduce the number or restrict the range of that species. The proposed project would affect a smaller potential foraging area (22.5 acres), which is characterized by much poorer quality habitat than that considered in the Soscol Junction project. The property does not provide any quality foraging habitat for the Swainson's hawk, and the amount of poor-quality foraging habitat that will be developed is not substantial. There is no evidence that this species or its habitat may be significantly impacted by the project.

Northern harrier: Dr. Smallwood incorrectly states that northern harrier nest in the precise type of environment that is available at the project site. Because he never visited the site, it is difficult to understand what he means by "environment". Given that he wasn't onsite, he must be referring to the habitat outside of the project site. Northern

harriers are ground nesters in grasslands and scrub. However, the project site is dominated by ruderal vegetation that is not well-suited to northern harrier. It is correct to state that Northern harriers are cryptic during nesting, but not only were no harriers observed, no harrier nests were observed on the site, despite the fact the entire site was surveyed via walking on multiple days. Finally, standard mitigation for northern harriers is to require a preconstruction survey if project work is to commence during the breeding season. If nesting harriers or other birds are found, the nest area is avoided with an agency-approved buffer until the young have fledged. After the young have fledge, the project can commence. The required mitigation measures are considered more than adequate for this species. There is no evidence that this species or its habitat may be significantly impacted by the project.

Other special-status bird species: As noted previously, nesting bird habitat is protected for most bird species and the site was identified as having the potential to host nesting birds. Mitigation measure Bio-2 requires a standard nesting survey prior to construction activities to ensure that no nesting birds will be impacted by construction. If nesting birds are found, a no-work buffer would be instituted in consultation with the CDFW. These are standard measures to ensure that the project does not have any impacts to nesting birds.

Pallid bat: Mr. Smallwood concludes that since he hasn't been on the site and been able to observe the habitat that he must assume that the project will have significant impacts on pallid bats. Mr. Smallwood thus takes an indefensible position and one that can only be made by someone who has not been on the project site. The Western Bat Working Group notes that roosts are conspicuous and easy to identify and characterized by culled insect parts and guano. Zentner staff conducted extensive surveys of the entire site including and especially the riparian zone, which is the primary potential habitat on the site. No evidence of roosting bats were observed on the site. Even if roosting bats had been observed in the riparian zone, this riparian habitat is protected by the project with an additional 150-foot buffer, which is more than adequate to protect the roosting habitat of the bats. There is no evidence that this species or its habitat may be significantly impacted by the project.

4. **The record contains no evidence supporting a fair argument that the project may have a significant impact on wildlife movement and habitat fragmentation.**

Mr. Smallwood grossly overstates the site as being one of the last two remaining patches of open space. The truth is that vast regions of open space still exist between the project site and Fairfield to the east and to the marshes and beyond to the west with numerous crossings between. The site is situated between two existing light industrial developments within a broader, approximately 1.25-mile wide crossing. The project site itself is just a fraction of that area and will leave well over a mile-wide corridor of habitat in this location. Furthermore, this area was not identified as part of a regional movement Corridor by Napa County (NCCDPD

2005). The area that was identified in the biological report as a potential movement corridor for wildlife is the Soscol Creek riparian corridor, which the project will avoid. The project has no substantial adverse effect on open space, and very large areas of higher quality habitat remain in the region for unimpaired movement of wildlife species.

Mr. Smallwood states that wildlife movement is important regardless of whether the movement is channeled by a corridor, but then states that the Soscol Creek riparian zone is a movement "route". Essentially the same as a corridor, the biological report agrees that this is potentially an important movement route or corridor, and that it will be preserved by the project. Mr. Smallwood then goes on to state that a 150-foot setback is too close to the movement route but provides no substantiation for this claim regarding how or why it would diminish the movement route or for which species. There is no evidence that the site, which has been previously graded and is dominated by ruderal vegetation, provides resources for wildlife movement for any species. This type of site is primarily used by common urban and suburban adapted species such as coyote (*Canis latrans*), raccoon (*Procyon lotor*), deer (*Odocoileus hemionus*), skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*) and birds. These and other similar species are found throughout the urban and suburban habitats, including developed habitats and the presence of the building will not fragment their habitat or substantially interfere with their movement or the movement of any wildlife species.

5. **The record contains no evidence supporting a fair argument that the project may have a significant impact on wildlife from additional traffic generated by the project.**

There are several traffic-related actions that can potential lead to significant increases in wildlife impacts. These include road widening, increasing speed limits and vehicle speeds on existing roads, creating additional road systems, or significantly increasing the number of trips on existing roads. The proposed project would do none of these. There is no evidence whatsoever that the project may lead to significant traffic generated impacts on wildlife.

6. **The record contains no evidence supporting a fair argument that the project may have a significant impact resulting from the use of pest control measures.**

The EPA limits the use of certain chemicals in order to protect wildlife. The applicant will hire a pest control operator that will comply with all existing laws and regulations, including EPA regulations that govern the use of those chemicals. For a project of this type and the character of existing conditions on the project site, there is no evidence that the project may have a significant impact resulting from the use of pest control measures, and no basis to conclude that compliance with regulatory standards would be inadequate to ensure, in any event, that there would be a significant adverse effect.

7. **The record contains no evidence supporting a fair argument that the project may have cumulative impacts on biological resources.**

The project will not have a significant impact on biological resources. As a relatively degraded site due to previous grading and dominance by non-native vegetation, the site provides poor habitat for most wildlife species.
Because of the disturbed nature of the site and the character of existing conditions in relation to species needs, the proposed project will not have a substantial adverse effect, either directly or indirectly, on any species. Therefore, the project is not expected to have impacts that are individually limited, but cumulative significant.

8. **Mitigation Measures BIO-1 and BIO-2 are more than adequate to ensure that impacts to biological resources, if any, are not significant.**

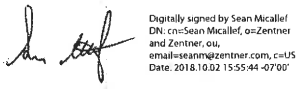
Preconstruction surveys are part of standard mitigation practices to ensure that species, which are not likely to be found on the site, are not on the project site prior to work commencing and that no take occurs as a result of the project. In the case of Bio-1, CRLF are unlikely to be on the project site due to lack of breeding habitat and poor upland habitat as noted earlier. However unlikely though, a preconstruction survey is a final measure to ensure that CRLF are not on the site prior to construction. Measure Bio-1 simply documents that although it is highly unlikely, if a CRLF is discovered at that point, the best mitigation measure, in keeping with agency-standard practices, is to consult with the CDFW and the USFWS to determine the best possible avoidance and minimization measures as well as any potential any additional mitigation measures.

Like Bio-1, Bio-2 also requires more than just preconstruction surveys as mitigation. And also like Bio-1, the preconstruction nesting bird surveys called for in Bio-2 are industry-standard measures to ensure no losses of nesting birds if trees are removed during the nesting season. The next portion of BIO-2 outlines other mitigation measures will take place if nesting birds are found on the site. These measures are also industry-standard measures that comply with current agency requirements. These measures include proposing standard no-work buffers and erecting ESA fencing and monitoring to protect these buffers until the young birds have fledged. The monitoring biologist would provide recommendations regarding the buffer width but would consult with CDFW staff to best determine the appropriate nesting buffer.

The attorney states that detection surveys are necessary for informing the public. However, that was the purpose of the surveys that were conducted as part of the biological analyses of the site. The preconstruction surveys are standard measures meant to ensure that, no matter how unlikely it is that species will be present, no impacts occur even if wildlife does stray onto the site just prior to construction.

Please let me know if you need any additional information.

Thank you,



Sean Micallef

Partner/Chief Ecologist

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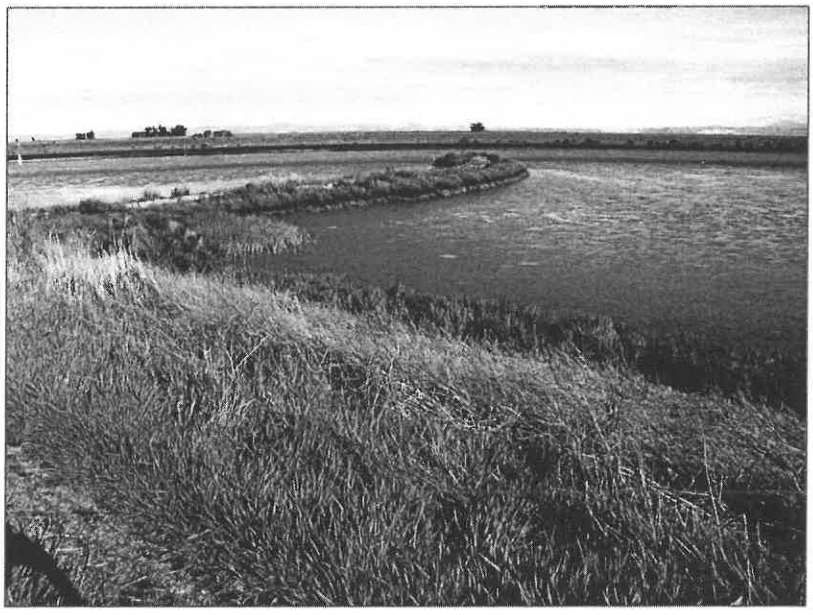

Statement of Qualifications

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ZENTNER
Planning & Ecology

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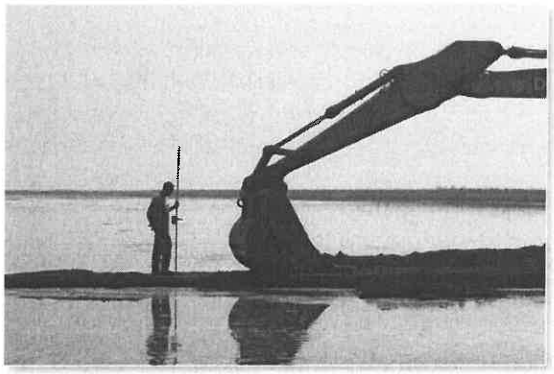
Who We Are

Zentner Planning and Ecology is a professional consulting firm specializing in the planning, permitting, and monitoring of projects involving special status habitats and species and other biological resources. Founded in 1986, with headquarters in Oakland, California, we have successfully completed more than 1,000 projects throughout the western United States including wetland delineations, plant and wildlife species surveys and assessments, restoration design and construction, and mitigation bank site analysis and establishment. Our diverse expertise includes the preparation of environmental documents and studies in support of proposed projects requiring California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) reviews.

Over the years, we have established excellent relationships with Federal, State, and local resource agencies and project proponents. We have processed and received permit approvals for simple to complex projects from a variety of agencies including the U.S. Army Corps of Engineers, Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, California Department of Fish and Wildlife, and local county governments. We work closely with clients and regulatory agency staff to craft solutions that meet the goals of the projects and the regulatory requirements.

We are committed to providing our clients with the best service in the profession. The partners at Zentner Planning and Ecology are directly involved in every project and our clients are highly satisfied with the work we do, with more than 70% of our business coming from repeat clients.

Our field studies are conducted by experienced scientists and specialists to ensure data accuracy and objectivity. The Zentner Planning and Ecology team is comprised of senior ecologists who have spent more than a decade working together, which allows us to efficiently assess a wide variety of sites including seasonal wetlands, riparian woodlands, vernal pools, freshwater marshes, estuaries, and man-made ponds.



Off-site restoration and mitigation bank construction at the Shin Kee project in Lodi, California

We have developed specific methodologies that have enhanced our reputation for the highest level of quality and thoroughness. Zentner Planning and Ecology was also the first to complete an Endangered Species Act section 7 consultation for Sacramento County for the giant garter snake, a large aquatic snake inhabiting small waterways and ditches in the Central Valley. Not only are we known for excellent biological documentation and project management, but our assessments are also written clearly and concisely to eliminate preventable questions during the review stage. Each assessment is reviewed prior to its release by our principals.

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Summary of Services

Biological Consulting

- Biological resource assessments
- Pre-construction surveys, construction monitoring, and mitigation monitoring
- Ecological constraints analyses and due diligence assessments
- Surveying and mapping of wildlife and plant species following U.S. Fish and Wildlife Service and California Department of Fish and Wildlife protocols and other guidelines
- Federal Endangered Species Act section 7 and California Endangered Species Act section 2018 consultations
- Nesting bird surveying and monitoring for California Department of Transportation (Caltrans) Natural Environment Study (NES) and Biological Assessment (BA) documents

Environmental Permitting and Compliance Support

- Environmental support for NEPA and CEQA compliance
- Independent third-party support to assist federal staff in reviewing applications and preparing environmental documentation under NEPA
- Preparing permit applications and project approvals from Corps of Engineers, U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS)
- Preparing permit applications and project approvals from California Coastal Commission, California State Lands Commission, Bay Conservation and Development Commission, California Department of Fish and Wildlife, and State Regional Water Quality Control Board (RWQCB)

Wetlands and Waterways

- Jurisdictional delineation and mapping
- Clean Water Act section 404 (wetland) individual as well as nationwide permitting and section 401 (water quality) certification
- California Department of Fish and Wildlife lake and streambed alteration agreements
- Wetland and riparian restoration

Restoration and Mitigation Banking

- Agency coordination and mitigation planning-California Rapid Assessment Method (CRAM)
- Preparation of habitat restoration and mitigation plans
- Mitigation bank establishment for wetlands and special status species
- Long-term monitoring and maintenance
- Preparation of bank enabling instrument

Ecological Mapping and Design

- Computer Aided Design (CAD)
- Geographic Information System (GIS) - Esri ArcGIS
- Adobe Illustrator, Photoshop and other design products
- Global Positioning Systems (GPS) surveying and mapping applications

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Biological Consulting

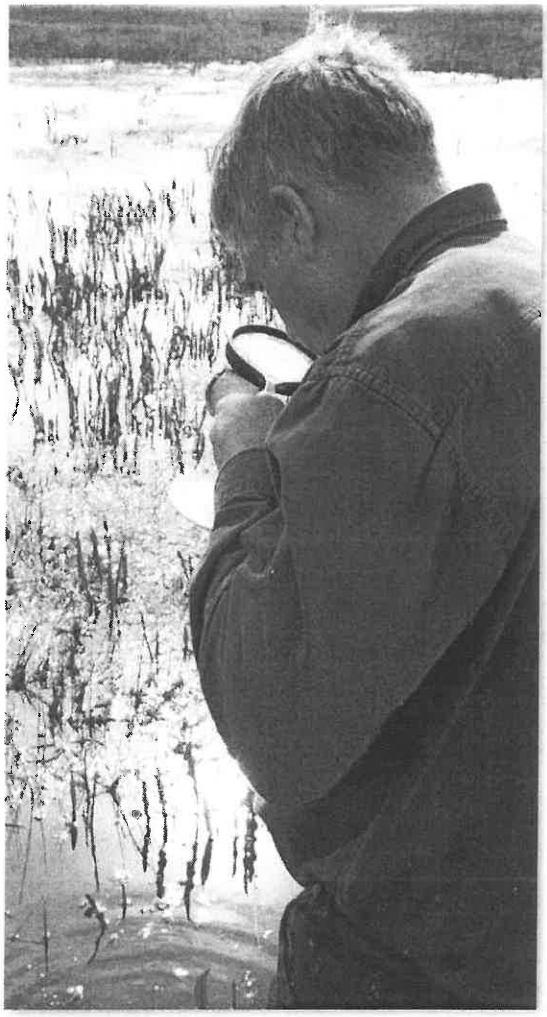
Zentner Planning and Ecology has completed a variety of biotic analyses including: plant and wildlife surveys, vegetation mapping, habitat evaluations, and the biologic portions of NEPA and CEQA documents.

We have worked on a diversity of assessments for protected species in almost every habitat type in the west. This work has included numerous protocol-level surveys for listed or other special status species including California red-legged frog, burrowing owl, vernal pool branchiopods (for which we are also certified), giant garter snake, and others. Each year, we conduct dozens of nesting bird surveys, raptor surveys due diligence surveys, and constraints analyses, usually within very short timeframes.

Our surveys and other assessments are thorough and complete and consistent with agency requirements. Because of our knowledge of California ecosystems and the regulatory environment, we can quickly place a team in the field that is both familiar with the resources as well as knowledgeable of the permitting requirements. We have completed construction and mitigation monitoring for a wide variety of habitats including vernal pools, native grasslands, and riparian woodlands; and have then analyzed their progress with a variety of tools.

We tailor our work to fit the needs of the specific project. We can provide a fast turnaround to final report, which is often needed for project commencement. We can complete a general review, where we simply determine the likelihood of any particular species occurring at a site, or a detailed analysis for the presence or absence of a specific animal or plant.

The foundation of Zentner Planning and Ecology was built upon our expertise in conducting biological studies and preparing concise, accurate, and easily understood environmental and planning documents that appeal to both agency staff and the layperson. Because of our experience, our staff is proficient at guiding these documents through the often-frustrating local review processes.



Our senior ecologists are certified to perform special status species surveys for a variety of wildlife, including fairy shrimp and other vernal pool invertebrates.

ZENTNER
Planning & Ecology

Permitting and NEPA / CEQA Support

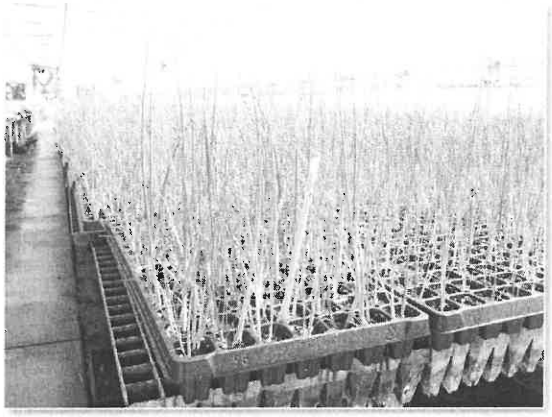
Zentner Planning and Ecology has decades of experience in State and Federal permitting. We are familiar with each of the resource agency districts in the western U.S. and their specific policies and procedures. This experience allows us to anticipate both the permit requirements and the likelihood of success of various project scenarios. We have secured some of the largest and most complex Clean Water Act section 404 wetland permits that were approved in both the San Francisco and Sacramento Districts of the Corps of Engineers.

With our experience and history of positive efforts, we can quickly identify significant issues, define the policy and precedent implications, and develop the information necessary to support project approval by the agencies. Zentner Planning and Ecology has experience throughout the coastal zone of California, including San Francisco Bay, securing permits and other approvals. We have worked with the Bay Conservation and Development Commission and the California Coastal Commission and their staffs in most policy areas, including wetlands, endangered species, access, water-related industry, park priority lands, and fills. While the processing of these permits can be complex, our experience provides us with the ability to develop the strategies needed for attaining the required approvals.

We have negotiated California State lands leases for complex projects including both temporary and permanent facilities, dredging projects, and other complicated improvements affecting State lands. Perhaps no other environmental permit has become more complicated than those of the Regional Water Quality Control Boards. We are experts at navigating through storm water, mitigation, and other regulations of the regional boards. We understand the complex process and agency expectations during the Endangered Species Act section 7 consultations, or their California counterpart, the section 2081 approval process.

One of the most exacting elements of any consultation is the crafting of mitigation measures. Our experience with successful habitat construction allows us to develop appropriate mitigation measures that also reflect project economics.

Conversely, our team can integrate seamlessly to accommodate the staffing needs of Federal and State agencies to support permitting demands, as well as to provide third-party NEPA and CEQA support. The Zentner Planning and Ecology team has direct experience issuing permits as adjunct or on-call staff to public agencies. We work closely with an agency to help communicate issues of concern, both internally and externally, and can coordinate closely with other reviewing agencies to address regulatory requirements; permit conditions; and mitigation, monitoring and conservation strategies. We are experienced in intergovernmental coordination, stakeholder consultations, gathering information for hearings and public noticing requirements, and responding to public comments.



Tule plants at four weeks

ZENTNER
Planning & Ecology

Restoration and Mitigation Banking

Ecosystem Restoration and Mitigation

- California Rapid Assessment Method
- Grading plans and planting plans
- Rough and fine grading of restoration areas
- Planting-trees, shrubs and grass plugs
- Native plant salvage and propagation
- Irrigation design and setup

Zentner Planning and Ecology has been involved with mitigation construction for more than two decades. We have completed mitigation plans for almost every habitat type in the West from vernal pools (we prepared the first ever large-scale vernal pool mitigation plan) to riparian systems (our multi-objective flood channel/riparian mitigation designs have been showcased in *Public Works* magazine). Our experience in both designing and constructing mitigation projects sets us apart from those who only design. Our record of successful mitigation projects allows us to incorporate innovative and cost-effective features into mitigation plans.

We grade and survey our own projects to ensure that the restored areas are in conformance with project design and that the micro-topography is accurate. Zentner Planning and Ecology has developed a planting methodology that ensures positive results. We have also designed and built successful mitigation projects even during years of historic drought. The sum of this experience means that we design and build mitigation that will succeed – we know what works.

Our mitigation plans typically contain detailed specifications regarding local plants. Mitigation projects often require salvage of important or locally rare plant material as well as seed collection and propagation of on-site and/or local materials. We have the experience and expertise to quickly determine what plants can be grown from seed, which can be salvaged, and whether certain plants survive better from cuttings than from seed. We have expertise in the art of tule (*Schoenoplectus* sp.) propagation at a large scale and have teamed with Pacific Coast Seed to complete successful seed treatments of *Schoenoplectus* for field application under appropriate site conditions.

Mitigation Banking

- Local entitlements
- Planning surveys and survey reports for Habitat Conservation Plans (HCP)
- Land Management Plans
- Open Space Plans
- Vegetation and Invasive Species Management Plans
- Special Area Management Plans (SAMP)
- Caltrans NESs and BAs

Although setting up a mitigation bank can be a long process, the rewards at the end make it worth the time it takes. Zentner Planning and Ecology has established mitigation banks for both wetlands and listed species. For the City of Eureka and a consortium of landowners, we processed a coastal development permit approval for one of the first wetland mitigation banks on the California coast. We have also worked on banks involving giant garter snake, California red-legged frog, and other species. We have completed work on the biological documents required for bank establishment and then guided these documents through the necessary review processes.

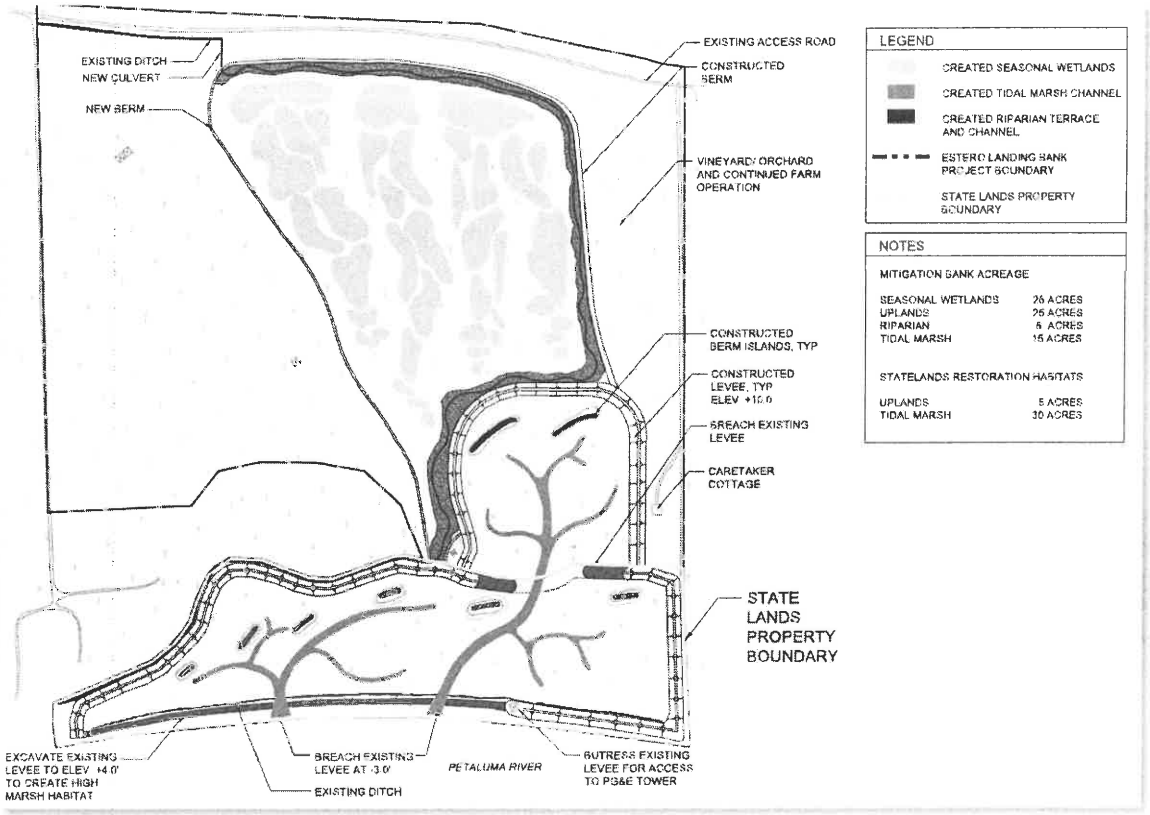
For developing cost estimates for habitat management purposes, we use Property Analysis Record (PAR) software that was developed by the Center for Natural Lands Management and the Corps of Engineers' Stewardship Calculator. We use these tools to calculate the anticipated costs of all identified management actions over time, as well as to

factor in overhead, inflation, and conservative rates of return on the initial endowment amount.

Establishing a mitigation bank not only includes their long-term management needs, it often involves the need to consider the role of communities during the design and implementation of the plan. We have developed natural habitats within residential subdivisions and other areas of intensive use, which have become important features for neighboring homes, businesses, and others.

Example Project: Mariner's Walk Mitigation Bank

Finding mitigation sites in relatively well-developed areas can be problematic. Uplands with potential for restoration are often earmarked for other development projects, making them cost-prohibitive for mitigation work. At Mariner's Walk in Martinez, Zentner Planning and Ecology worked with staff of the Regional Water Quality Control Board to identify local mitigation sites for an Olson Company project in western Contra Costa County. When no readily available sites were found, we identified a mitigation site in neighboring Solano County across the Carquinez Strait. Although initially reluctant to cross county borders, Regional Water Quality Control Board staff were persuaded by our ecological analysis demonstrating the similarities between the development and mitigation sites, and the project was approved.



ZENTNER
Planning & Ecology

Wetlands and Waterways

Zentner Planning and Ecology has completed hundreds of wetland delineation projects. Our reputation as wetland delineation experts is based on our work on difficult and complex projects as well as expeditious and accurate mapping for less challenging sites. We use GPS, aerial photographs, topographic maps, field surveys and other tools to identify the plant, soil, and hydrological conditions that define the wetland boundaries.

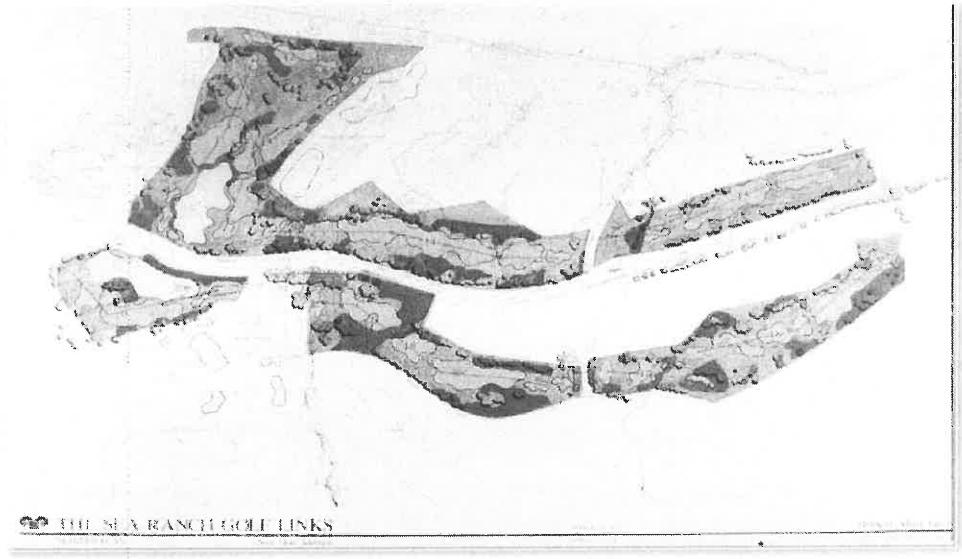
When needed for due diligence or other purposes, we conduct reconnaissance-level wetlands/waters mapping for rapid assessments or for master planning of large areas. In addition to Corps of Engineers' section 404 (wetlands) and section 10 (navigable waters) delineations; we are also experts in the delineation of jurisdictional areas under the San Francisco Bay Conservation and Development Commission and the California Coastal Commission.

We also developed a "Pre-application Screen" analysis almost a decade ago to quickly identify wetland issues for any site and we modified this technique to allow quick yet reliable mapping of large tracts of land.

Once delineations are complete, we work closely with our clients to ensure that the mapping results are understood and portrayed in the most appropriate fashion. We then verify the delineations with the Corps of Engineers or, as required, with State or local agencies.

Representative projects

- A wetland delineation for the City of Fairfield (Solano County) of nearly 3,000 acres in the Peabody-Walters Master Plan Area including a complex of vernal pools and streams intermixed with uplands
- A delineation of the BCDC jurisdiction for Mare Island, Solano County
- Mapping of the Corps of Engineers' section 10 jurisdictional waterways for the Corte Madera Inn, Marin County



Sea Ranch Village (Sonoma County) wetland and buffer were designed by Zentner Planning and Ecology; golf course was designed by Robert Muir Graves

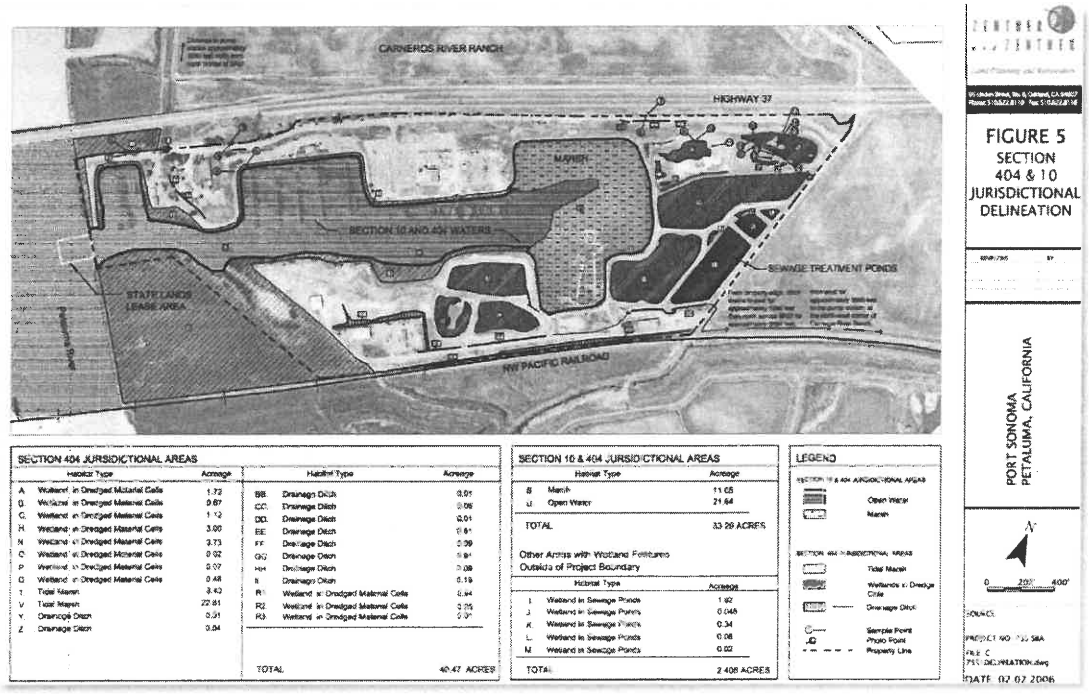
ZENTNER
Planning & Ecology

Ecological Mapping and Design

Ecological monitoring covers both construction and post-construction monitoring. We conduct construction monitoring of projects to protect the resources of a specific site, the client, and the contractors working on-site. We do this by ensuring that contractors are well informed and trained regarding site resources, species, and permit conditions, which leads to work being completed smoothly and efficiently, whether for project development or mitigation.

Zentner Planning and Ecology has completed post-construction monitoring and annual monitoring reports for a wide variety of habitats including vernal pools, native grasslands, and riparian woodlands. While monitoring requirements will vary by project and habitat, each year for the past two decades or more, we have typically completed analyses of geomorphology, hydrology, plants and wildlife, endangered species, and many other elements. Our monitoring reports are consistently praised by our clients and the reviewing agencies for their thoroughness and accuracy.

The ecological designers at Zentner Planning and Ecology come from a mix of ecology, landscape architecture, and design backgrounds. These diverse backgrounds allow us to develop visual appealing and accurate graphics for an array of diverse projects, purposes, and audiences. Our staff is equally at home working with CAD files from engineers and GIS data from local agencies or public data. To provide the most accurate information needed, our wetland delineations are completed using sub-meter accurate GPS units. When needed, the graphics are often rendered in Adobe illustrator or other software to produce the final product for our clients and agency staffs.



ZENTNER
Planning & Ecology

Company Certifications

Zentner Planning and Ecology is certified as a Small Business with the:

- California Department of General Services #1066140
- Port of Oakland
- Contra Costa County
- Valley Transportation Authority (VTA)

Professional Affiliations

- California Botanical Society
- Society for Range Management
- California Native Grasslands Association
- California Native Plant Society
- The Wildlife Society Western Section

Federal and State Certifications

We are approved biological monitors by the U.S. Fish and Wildlife Service for:

- California red-legged frog
- Giant garter snake
- Alameda whipsnake
- Burrowing owl
- California tiger salamander
- Western pond turtle
- Special status bats
- Special status birds
- Special status plants

We are also certified by the U.S. Fish and Wildlife Service to complete vernal pool branchiopod surveys throughout California.

ZENTNER
Planning & Ecology

Representative Project: Shin Kee Marsh Restoration

San Joaquin County, California

Client:
A.G. Spanos Company

Contact:
Karen Garrett; (209) 955-2574

Project Type:
Biological Assessments
Mitigation Plan
Monitoring
RWQCB 401 Water Quality Certification
USFWS & NMFS Section 7 Consultation
Corps of Engineers' Nationwide Permit
Plant Salvage
Plant Propagation

Time Period: 2007-Present

Value of Contract: $280,000

The Shin Kee project consists of the restoration of 126 acres of former farmland to brackish tidal marsh, riparian wetlands, and native-dominated uplands and habitat for the giant garter snake. Zentner Planning and Ecology completed ecological and other studies to design a self-sufficient system at the eastern edge of the Sacramento–San Joaquin River Delta.

This is the largest wetland restoration project in the east Delta, an area that was once the largest freshwater wetland in the United States. Included within the work was a value-engineering analysis that allowed us to reduce costs considerably by using salvaged plant material thereby reducing the use of container grown plants, the extent of irrigation piping, and the grading costs.

Construction began in summer 2008 and planting was completed early spring 2009. Approximately 6,000 trees and shrubs and almost 500,000 native grass and marsh plugs were planted in a heterogeneous landscape that was graded to mimic the natural form. Under the direction of Jeff Glaspy (Emeritus), Zentner Planning and Ecology propagated and planted more than 100,000 superplugs of tule (primarily *Schoenoplectus acutus*) and dozens of acres of treated seed on the project site as habitat for the giant garter snake. Initial monitoring showed that both the tule planting and seeding have been extremely successful.

ZENTNER
Planning & Ecology

Representative Project: Roddy Ranch Biological Surveys

Contra Costa County, California

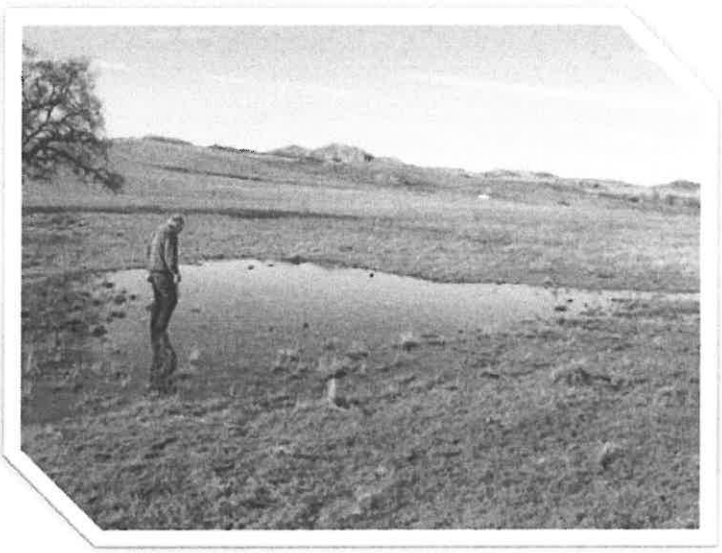
Client:
Gramercy Capital Corporation

Contact:
Kelley Stough; (310) 435-4215

Project Type:
Biological Assessments
Biologic Section for EIR
Resource Management Plan
Jurisdictional Delineation
Biotic Resources Mitigation Plan
Restoration Plan
Public Meetings

Time Period: 2007-Present

Value of Contract: $298,000



Roddy Ranch is a 2,000-acre ranch in southern Antioch, Contra Costa County. The site includes rolling grasslands, oak woodlands, and chaparral east of Mount Diablo as well as creeks, wetlands, and alkali flat habitats. The complex habitats on the site increased the potential for special status species. Zentner Planning and Ecology was hired to complete biotic assessments of the site's special status habitats and species. Wildlife surveys included protocol-level (breeding and non-breeding) surveys for red-legged frogs and burrowing owls. We were able to identify frogs in many of the site's ponds and wetlands, and at least one burrowing owl. The burrowing owl surveys also led to the observations of several badgers on the project site. We completed two seasons of vernal pool fairy shrimp surveys, botanical surveys, and assessments for San Joaquin kit fox.

Zentner Planning and Ecology incorporated the biological information into the biotic section of the Environmental Impact Report (EIR) documents, followed by meetings with local, State, and Federal agency staff to discuss the project well before the permitting process began. This technique allows for a much smoother course toward obtaining permits. The proposed restoration will incorporate wetlands and species that were identified within the development site into a comprehensive plan to restore the entire valley and link it with existing and proposed open space areas.

ZENTNER
Planning & Ecology

Representative Project: Stanford Native Meadow Restoration

Santa Clara County, California

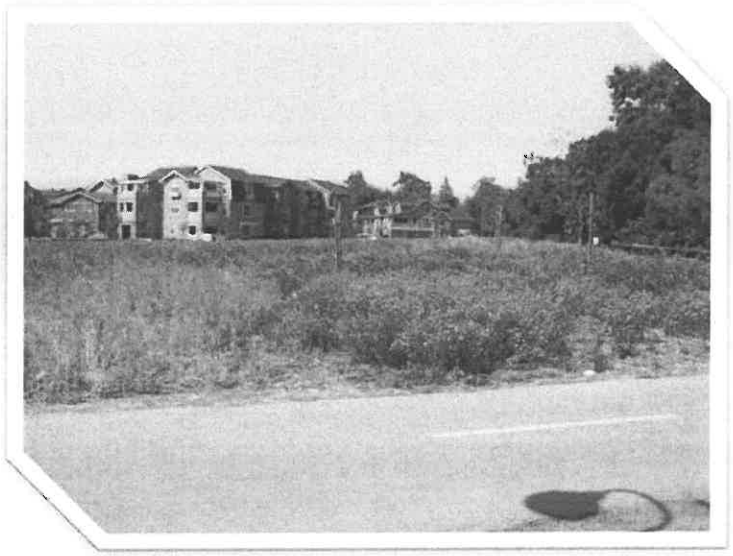
Client:
Stanford Management Company

Contact:
Bill Plate; (650) 926-0200

Project Type:
Restoration Plan
Local Permitting
Construction Monitoring
Post-Construction Monitoring
Seeding and Planting

Time Period: 2003-2007

Value of Contract: $145,000



Stanford had initiated a native meadow restoration project in fulfillment of an Environmental Impact Report condition, but the project had not met its objectives. Instead, the meadow was dominated by non-native species and there was little evidence of native grasses. Zentner Planning and Ecology was hired to conduct seeding and planting trials while guiding the project through the local planning process. With the results of these trials in hand, the project was allowed to proceed and native grassland planting commenced. We monitored the removal of the previously failed restoration effort as well as the installation of the new meadow. The revised meadow restoration proved successful, leading to the involvement of non-profit and community groups to continue its stewardship into the future. The project was such a success that the Stanford Powwow Planning Committee enlisted our services to restore a native meadow dance circle, a project completed with the students and ultimately by the Powwow participants.

ZENTNER
Planning & Ecology

Representative Clients

A.G. Spanos
Castle Companies
Castlelake L.P.
Catholic Management Services
Cattellus Development Corporation
CEMEX
Central Contra Costa Sanitary District
Chevron Land Co.
Citation Homes
City of Fairfield
City of Fremont
City of Palo Alto
City of Sacramento
City of San Ramon
City of Vallejo
Contra Costa County
Davidon Homes
DR Horton
Edenbridge Homes
Eenhoorn, LLC
GCL Solar Energy, Inc.
Genentech
Granite Construction
Hall Equities Group
Humboldt County
Kiewit Corp.
King and Lyons / ProLogis
KSH Architects
Mission Clay Products
Nova Group, Inc.
Oliver and Company
Pacific Gas and Electric
Port Sonoma Marina
Resources for Community Development
Sacramento County
Santa Clara Valley Transportation Authority
Sea Ranch Village Inc.
Solar Power Partners
Standard Pacific Homes, Inc.
Stanford University
SummerHill Homes
Taylor Morrison
The Dutra Group
Trimark Communities
True Life Companies
Warmington Residential

ZENTNER
Planning & Ecology

Key Personnel

A diversified and knowledgeable staff provides the necessary skills to complete every phase of a project. Our specialists form a close-knit team at Zentner Planning and Ecology. Knowledge and experience are the hallmarks of a good environmental consulting firm.

SEAN MICALLEF
PARTNER / CHIEF ECOLOGIST

Mr. Micallef manages the preparation of biological assessments, including related field work, and conducts surveys for special status wildlife and plants. Sean is certified to complete surveys for, or has experience surveying for California red-legged frogs, giant garter snakes, vernal pool branchiopods, burrowing owls, nesting raptors, and all species of plants. He conducts wetland delineations and prepares Federal, State and local permit approvals for development projects.

JOHN ZENTNER
SENIOR MANAGER / FOUNDER

Mr. Zentner specializes in environmental and land use permitting and entitlements, wetland science, and habitat restoration. He has particular experience in Federal, State and local permitting and regulations, wetland boundary determinations, and mitigation programs. John has managed numerous complex, multi-permit projects, as well as habitat boundary and mitigation plans, and Clean Water Act section 404 permit approvals He has also been called upon as an expert witness in these areas.

BRIAN DAVIS
PARTNER / COMPTROLLER

Mr. Davis oversees all financial and business planning activities, including budgeting and invoicing, reporting and monitoring on organizational performance metrics, providing financial oversight and monitoring, administering contracts and agreements, and ensuring insurance requirements are met.

EMILY MATHEWS
BIOLOGIST / PROJECT MANAGER

Ms. Mathews works primarily on permit processing, botanical and wildlife surveys, wetland delineations, and project implementation and management. Emily has a broad range of experiences in natural resource management and project management working in a variety of environmentally sensitive ecosystems. In addition, Ms. Mathews has well-rounded experience with community engagement and providing community-based restoration and education opportunities.

CHRISTOPHER J LONG
ECOLOGICAL DESIGNER

Mr. Long specializes in environmental planning and wetland restoration. He has experience monitoring construction and restoration projects in ecologically sensitive salt marsh habitats. He conducts wetland delineations as well as pre-construction surveys for special status species. He also prepares State and local permit applications for development projects affecting wetlands and special status species.

CARLIANE JOHNSON
BIOLOGIST / BUSINESS DEVELOPMENT

Ms. Johnson has 29 years' experience preparing NEPA documents and natural resource management plans, providing regulatory compliance support, and engaging with stakeholders. She has also prepared Navy Encroachment Action Plans, Air Force Integrated Natural Resources Management Plans, restoration management strategies, and other monitoring plans for terrestrial and marine resources.

SEAN MICALLEF
PARTNER/CHIEF ECOLOGIST

ZENTNER
Planning & Ecology

PROFESSIONAL SUMMARY
As a Senior Ecologist for Zentner and Zentner, Mr. Micallef manages the preparation of biological assessments, including related field work and completes surveys for special status wildlife and plants. Sean is certified to complete surveys for, or has experience surveying for California red-legged frogs, giant garter snakes, vernal pool branchiopods, burrowing owls, nesting raptors and all species of plants. He also conducts wetland delineations, monitors construction and mitigation projects. Finally, Mr. Micallef prepares Federal, State and local permit approvals for development projects affecting aquatic habitats and special status species.

EDUCATION
San Francisco State University, California,
M.A. in Geography: Natural Resource Management (1998)

University of California, Davis,
B.S. in Environmental Resource Science (1992)

PROFESSIONAL EXPERIENCE
Partner/Chief Ecologist, Zentner and Zentner, Oakland, California (1998 – present).

Biological Science Technician, National Park Service, Grand Canyon National Park, Arizona (1997). Responsible for implementation of resource management vegetation projects. Conducted GPS surveys of disturbed areas and exotic vegetation. Performed site preparation, plant salvage, transplanting, and seed collection as well as propagating and maintaining plants at native nursery. Served as park interpreter and supervisor for local group restoration projects.

GIS Technician, Dames and Moore, San Francisco, California (1995). Performed GIS tasks including digitizing, data input and manipulation to produce cartographic maps of endangered habitats and species.

Revegetation Project Manager, Golden Gate National Recreation Area (1994 – 1995). Planned, coordinated and developed resource management projects in a large urban National Park. Delineated restoration areas and authored revegetation and monitoring plans.

Map Researcher, Pinnacle Data Corporation (1992 – 1993). Read and interpreted parcel and plat maps, surveys and legal descriptions, as well as FEMA flood hazard maps.

LIST OF PUBLICATIONS
Mariner's Cove and Beyond: Observations of Tidal Salt Marsh Construction Techniques, Ecological Restoration, Vol. 19 No. 2, 2001.

The Ecology of Oatgrass: The Champagne of Grasses, Grasslands, Vol. 18, No. 3, 2008.

The Effect of Grazing on the Grassland Vegetation of Mt. Diablo State Park, California. Masters Thesis, 1998.

PROFESSIONAL ACTIVITIES
US Fish and Wildlife Service certification: vernal pool branchiopods.

Member, California Botanical Society

Member, Society for Range Management

Member, California Native Grasslands Association

Member and Research Grant Recipient, California Native Plant Society

EMILY MATHEWS
PROJECT MANAGER

ZENTNER
Planning & Ecology

PROFESSIONAL SUMMARY
Emily Mathews has a broad range of experiences in realm of natural resource management. Her background is focused on habitat restoration, endangered species, biological monitoring, and project management in a variety of environmentally sensitive ecosystems. In addition, Ms. Mathews has well-rounded experience with community engagement and providing community based restoration and education opportunities. With experience in a variety of wetland and plant communities, she has a thorough understanding of the complexities of project management from initial permitting to post-construction monitoring. As an Assistant Project Manager for Zentner and Zentner, Ms. Mathews works primarily on permit processing, vegetation and wildlife surveys, wetland delineation processing, and project implementation and management.

EDUCATION
University of California, Santa Cruz
B.S. in Marine Biology (2012)

PROFESSIONAL EXPERIENCE
Assistant Project Manager, Zentner and Zentner. Oakland, California (December 2014 – present).

Biology Intern, US Fish and Wildlife Service, Alameda, California (2014). Assisted with habitat restoration in sensitive environments and monitoring and management of engendered species including the least tern and the lange's metalmark butterfly.

Community Engagement Coordinator/SNAP AmeriCorps Member, The League to Save Lake Tahoe. South Lake Tahoe, California, California (2012-2013). Lead and coordinated community based restoration events and assisted with the development and implementation of citizen monitoring programs that examined aquatic invasive plants and water clarity.

Habitat Restoration Intern, Save The Bay. Oakland, California (2012). Assisted with database management and the coordination and implementation of weekly volunteer based restoration events.

Research Assistant, Raimondi Carr Laboratory – Long Marine Lab. Santa Cruz, California (2012). Aided in the monitoring and collection and preparation of samples for a project examining long-term shifts in biodiversity at Elkhorn Slough.

Research Assistant, Heron Island Research Center. Heron Island, Queensland, Australia (2011). Managed monitoring data and assisted with sample collection and analysis for research project studying the diversity of benthic organisms surrounding coral bommies.